

JANUARY 1976 \$1.50

# HIGH FIDELITY

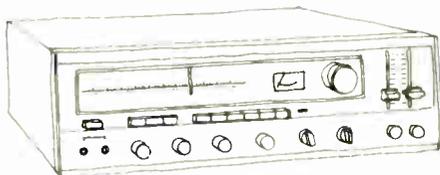
and musical america

**LAZAR BERMAN: Mystery Soviet pianist talks about his coming U.S.A. tour**

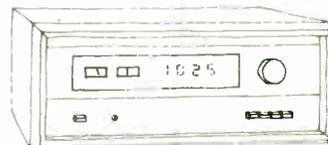
**THE MET**  
Problems and prospects



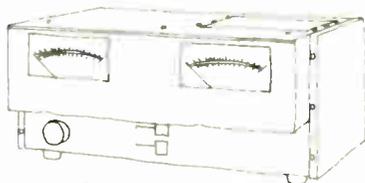
Shure M95ED phono cartridge



Realistic QTA-770 receiver



SAE Mk. VIB FM tuner



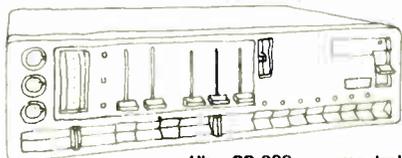
GAS Ampzilla amplifier kit



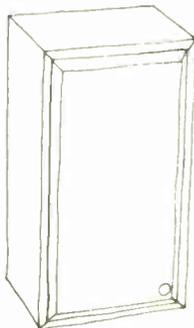
Thorens TD-145 turntable

# 10 Lab Test Reports

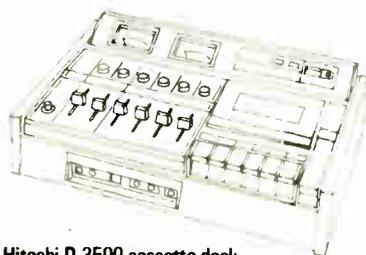
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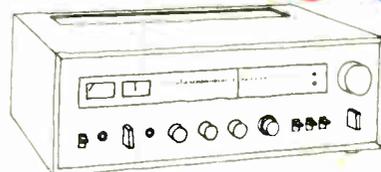
Uher CG-360 cassette deck



KLH CL-4 loudspeaker



Hitachi D-3500 cassette deck



Yamaha CR-400 receiver



Audio-Technica AT-706 headphones

# n Dolby\* under \$200.†

Twin illuminated VU meters, plus separate input level controls for each channel help you set accurate recording levels. Stereo microphone inputs as well as the headphone output jack are all easily accessible on the front panel.

By any point of reference, compare the CT-F2121's combination of performance and features with cassette decks costing much more. You can come to only one conclusion — at under \$200†, this is the most extraordinary cassette deck value ever offered.

**Frequency Response (Chrome Tape):**  
30-16,000 Hz  
**Wow & Flutter (WRMS):** 0.12%  
**Signal-to-Noise Ratio (with Dolby):** 58dB  
**Input Sensitivity:** 0.3mV — 63mV (mic);  
63mV — 12V (line)  
**Outputs:** 450mV (line & DIN); 80mV 8 ohms  
(headphones)

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The CT-F2121 comes ready for custom installation. Handsome, optional cabinet with walnut veneered top and sides also available.

**PIONEER**  
when you want something better



\*Dolby is a trademark of Dolby Laboratories, Inc. †(Optional cabinet with walnut veneered top and sides. Approximate value, \$24.95.) Prices listed above are manufacturer's

# The most extraordinary cassette deck value ever offered.



# The new 2121. With

Ever since the cassette deck stepped into the spotlight with proven high fidelity performance, great advances in tape and cassette deck technology have been made. Despite this progress, most of the high fidelity industry was convinced that it was virtually impossible to build a really superior front-loading, front-control cassette deck equipped with Dolby — that could sell for less than two hundred dollars.

Pioneer thought it might be impossible, too. But we figured it was worth the try.

The engineers at Pioneer were given the 2121 project two years ago. They were asked to build a front-access, front-control cassette deck loaded with features. A deck that would outperform any unit in the two hundred dollar price range that had ever been built before.

The result is the no-compromise CT-F2121 — a cassette deck with enormous capability, performance, reliability and features. Pioneer believes the CT-F2121 has the greatest combination of value ever put into a cassette deck at such an extremely reasonable price.



Switch from one mode to another, bypassing the Stop lever.

### Everything's up front for optimum operating convenience.

Pioneer's engineers have designed the CT-F2121 to give you the highest degree of flexibility in use. You can stack it easily with other components in your system because every control function, as well as cassette loading, is operable from the front panel. In addition, the illuminated cassette compartment permits rapid cassette loading at an easy-to-see 30° angle. An LED indicator lets you know when you're in the recording mode. And, as all Pioneer components, the controls are simple to use and logically arranged.

### Improved sound reproduction with built-in Dolby B system.

The CT-F2121's selectable Dolby B provides as much as 10dB improvement in signal-to-noise ratio with standard low noise tapes. There's an even greater improvement with chromium dioxide tape. An indicator light tells you instantly when the Dolby system is in operation. And to insure better, interference-free recordings of FM stereo broadcasts, Pioneer has built in a multiplex filter.

### Outstanding performance with every type of tape.

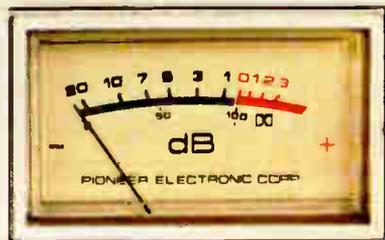
Separate bias and equalization switches permit you to use any kind of cassette tape: standard low noise, chromium dioxide — and even the newest ferrichrome formulations. The CT-F2121 brings out the fullest capabilities of each tape. And to produce the best performance, the operating manual of the CT-F2121 gives you a chart listing the most popular cassette tape brands with their recommended bias and equalization control settings. *There's never any guesswork.*



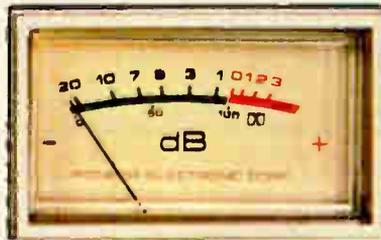
Separate bias & equalization switches for any type of cassette tape.

### Versatile features increase listening enjoyment and simplify recording.

Pioneer has outdone itself on the CT-F2121 with a host of easy-to-use features. A long life permalloy-solid record and play head and a ferrite erase head insure excellent signal-to-noise ratio. The transport operating levers that permit, direct, jam-proof switching from one mode to another without having to operate the Stop lever, are a great advancement. And, like Pioneer's more expensive cassette decks, the CT-F2121 has a separate electronic servo-system and a solenoid that provides automatic stop at the end of tape travel in play, record, fast wind and rewind.



REC



TAPE DOLBY NR  
BIAS EQ

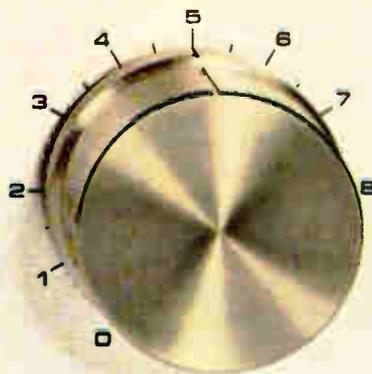


STO STO OFF  
CrO<sub>2</sub> CrO<sub>2</sub>/Fe-Cr ON

PHONES L—MIC—R



INPUT  
LEFT — RIGHT



EJECT DOOR

PUSH  
CLOSE

**PIONEER** STEREO CASSETTE TAPE DECK MODEL CT-F2121

value only. Actual resale prices will be set by the individual Pioneer dealer at his own option.

# Creation of the new Calibration Standard filled a need...the acceptance of Stanton's 681 TRIPLE-E is unprecedented!



It was no accident!

The Recording Industry needed a new calibration standard because it had been cutting discs with higher accuracy to achieve greater definition and sound quality.

So, the engineers turned to Stanton for a cartridge of excellence to serve as a primary calibration standard in recording system check-outs.

The result: the new calibration standard, The Stanton 681 TRIPLE-E.

The rest is history!

Major recording studios adopted it... as did many of the smaller producers. Radio stations across the world put the 681 TRIPLE-E on all of their turntables, both for on-the-air broadcasting and for disc-to-tape transfer.

And, audiophiles by their purchases have voted it the outstanding stereo cartridge available.

The Stanton 681 TRIPLE-E offers improved tracking at all fre-

quencies. It achieves perfectly flat frequency response beyond 20 kHz. Its ultra miniaturized stylus assembly has substantially less mass than previously, yet it possesses even greater durability than had been previously thought possible to achieve.

Each 681 TRIPLE-E is guaranteed to meet its specifications within exacting limits and each one boasts the most meaningful warranty possible. An individually calibrated test result is packed with each unit.

As Julian D. Hirsch of Hirsch-Houck Labs wrote in *Popular Electronics Magazine* in April, 1975: "When we used the cartridge to play the best records we had through the best speaker systems at our disposal, the results were spectacular"

Whether your usage involves recording, broadcasting, or home entertainment, your choice should be the choice of the professionals... the STANTON 681 TRIPLE-E.

For further information write Stanton Magnetics, Inc., Terminal Drive, Plainview, N.Y. 11803



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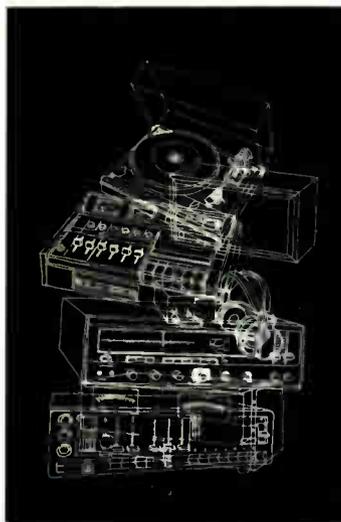
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JANUARY 1976

VOLUME 26, NUMBER 1

# HIGH FIDELITY

and musical america



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## Coming Next Month

Ever wonder whether those home tape recordings you spend so much time, effort, and money on are really the best you can get? In our February issue, Robert Long and Edward J. Foster show how some easily usable charts can help you set the electromagnetic boundaries your recorder and tape type allow, and how to fit specific kinds of music into these boundaries for **The Best Tape Recordings You'll Ever Make**. And Paul Moor takes a close look at the working methods of the late **Walter Felsenstein**, whose Komische Oper in East Berlin has long been a mecca for all who look on opera as a living art. Plus five test reports, Gene Lees on Bill Evans, Paul Henry Lang on Angel's new recording of Weber's *Euryanthe*, and more.

### SOLUTION TO HIFI-CROSTIC NO. 7

M[AYMIE] R. KRYTHE: *All about Christmas*  
"Adeste Fideles" is known to have been popular both in France and Germany as early as the seventeenth century. In France it was called "The Midnight Mass," for the monks chanted it as they marched in a procession to church on Christmas Eve.

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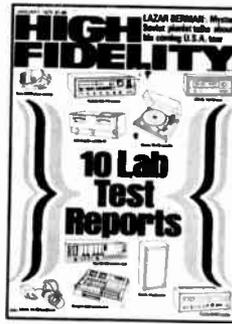
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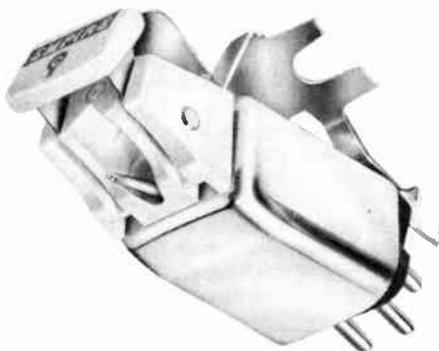
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## Letters

### Kaufman's Saint-Saëns

In the September issue Shirley Fleming reviewed an Orion release of the Saint-Saëns Third Violin Concerto played by Louis Kaufman, with Maurits van den Berg conducting the Netherlands Philharmonic. I have owned a ten-inch Musical Masterpiece Society disc (MMS 62) of this material by the same artists for over twenty years. Since neither Mr. Kaufman nor Maurits van den Berg has been really active in recordings of late, it would be interesting to know if these are the same. The old MMS release was certainly pre-stereo by some years. It also contains some thirty-four minutes of music—very short shrift from a \$6.98 LP, particularly if it is a reissue of the old performance.

Donald C. Birkby  
Stamford, Conn.

Orion confirms that its Saint-Saëns disc is indeed a reissue of the MMS performance. It insists, however, that the disc is not rechanneled—and since some companies were already taping in stereo in 1955, when the recording first appeared (at a \$1.65 list!) it could very well be real stereo.

### Concert Broadcasts

Thank you for Robert Finn's "Taping Orchestras for Broadcast" (August). The broadcasts of our symphony orchestras are about the best offerings of our poorly programmed radio stations.

As a ship's officer away from home for many months a year, I have had great pleasure from my small collection of Boston Symphony recordings. I prefer them to records, as the audience sounds make me feel more as though I were in attendance and very often a degree of excitement is generated in a concert that is seldom found on a disc. My recordings do not, however, adversely affect the revenues of record companies, as I often purchase records of the works that I have heard on these concerts.

It is a pity that Mr. Finn didn't expand his subject matter to include chamber music and the Library of Congress's broadcasts, performed by the best groups available on Stradivarius instruments. Because of several grants from foundations that sponsor the concerts and dissemination of the tapes, these are available to radio stations. Surely these concerts would win more friends for chamber music if they were better known.

Robert G. Munns  
Woods Hole, Mass.

Your recent article on the transcription services of the major orchestras was extremely informative and points out the importance of these services in bringing symphonic music to the FM-radio audience.

However, I would like to point out that the services you named are not unique. Glenwood Audio is a recently established company that produces transcriptions for



Louis Kaufman  
Reissued, yes; rechanneled, no.

broadcast. We offer a variety of material, including orchestral, choral, chamber, and organ concerts performed by American and European artists and ensembles. We will be happy to supply information about our service to any radio-station program director.

Gretchen Schroeder  
Glenwood Audio  
Box 297  
Somerville, Mass. 02143

In "Taping Orchestras for Broadcast," Robert Finn has misquoted me and also cast an ugly and inaccurate light on the International Conference of Symphony and Opera Musicians' association with the American Federation of Musicians.

Mr. Finn quoted me as saying that "if the tapes invariably were played without commercial sponsorship, ICSOM would have no objection." What I said was that we might look at taping differently if the local stations were not selling the time to sponsors and thereby making a profit on our services. This is very different from saying we would approve the broadcasts if they were not sponsored.

ICSOM's relationship with the AFM was described as "a kind of wary but brotherly relationship—most players in larger orchestras hold dual membership." ICSOM is purely and simply a conference of symphony and opera musicians within the framework of the AFM. Many international unions have conferences within the larger organization. Some are based on geographic location, and some on various trades and other forms of groupings. We are all union musicians and have formed a conference within the framework and bylaws of the AFM, with its full support, to help each other meet and solve problems of our profession. The "wariness" and "duality of membership" simply do not exist.

ICSOM's position on broadcast taping of symphony concerts was properly stated: "What we would like is to be paid an estab-

lished union price for the tapes." We want the tapes divorced from pension plans, and it is to this end that we are addressing ourselves.

Irving Segall  
Chairman, ICSOM  
Philadelphia, Pa.

### Broadcast Pioneer

One glaring omission in your August article, "Taping Orchestras for Broadcast": William Busiek has engineered the Symphony Hall broadcasts of the Boston Symphony since 1951, the year when the BSO and other Boston institutions gathered under Ralph Lowell's leadership to found WGBH-FM (and later -TV). This certainly qualifies Bill as a pioneer of FM symphony broadcasts. And the BSO's interest in public broadcasting has paid off on television as well, with the popular WGBH-produced Evenings, at Pops and at Symphony, on PBS.

It is also perhaps worth noting that high-speed duplication has yet to provide results rivaling live broadcasts. Busiek, who should know, says that these broadcasts had their greatest potential in the WGBH/WBCN dual-FM broadcasts of about 1960, since the two mono signals gave total stereo separation and were permitted frequency response up to 20 kHz. Despite the present limit of 15 kHz, though, and the reduced separation of FM multiplex, current efforts with Dolby-A noise reduction from the Symphony Hall studio to our transmitter have given New England listeners some spectacularly clean and quiet broadcasts.

John H. Beck  
Radio Manager, WGBH  
Boston, Mass.

### Broadcast Quality (cont.)

In regard to Peter Hamilton's October letter concerning the dull sound of American concert broadcasts, might it be that we have been so conditioned to the "live" sound of recorded orchestras taping in empty halls that we cannot recognize the much drier sound of an orchestra performing to a full house? When I first played in a community orchestra I was struck by the difference in sound and balances, a difference emphasized for me in my years as a member of the Cornell Symphony Orchestra, playing in an extremely "live" hall that, from an on-stage perspective, went absolutely "dead" at concerts.

I would certainly agree that the beautifully lush sound one hears on DG recordings of the Boston Symphony is far more colorful and enjoyable than the sound on BSO Transcription Trust tapes, but neither is a true representation of what one hears in Symphony Hall at a concert. Each acoustical setting emphasizes different elements of the music, and sometimes one hears interesting details in transcription tapes that are buried in the more reverberant ambience of empty-hall commercial recordings.

Speaking of transcription tapes, the recent PBS broadcast performance of the Ives Fourth Symphony, with José Serebrier conducting a Polish orchestra, had some of the best mono sound I have ever heard over a television concert broadcast. The perform-



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Every two piece, 7 lb., 3 inch thick, die cast aluminum platter is dynamically balanced. Once in motion, it acts as a massive flywheel to assure specified wow and flutter value even with the voltage varied from 105 to 127 volts AC.

#### The Main Bearing

The stainless steel shaft extending from the platter is aged, by alternate exposures to extreme changes in temperature, preventing it from ever warping. The tip is then precision ground and pol-

ished before lapping it into two oilite, self-lubricating bearings, reducing friction and reducing rumble to one of the lowest figures ever measured in a professional turntable; -63 dB CBS ARLL.\*

#### The Suspension

Piston damped, 16 gauge steel coil springs cradle the arm and platter. You can dance without your stylus joining in.

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\*Independently tested and recorded in High Fidelity's 1974 Test Reports.

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CIRCLE 8 ON READER-SERVICE CARD

ance revealed a tonally magnificent ensemble that outshone the London Philharmonic's recent RCA recording.

Arthur S. Leonard  
Cambridge, Mass.

### About the Vibraslap

Regarding Andrew Porter's October review of the Nonesuch recording of George Crumb's *Music for a Summer Evening*, I hope that I may be of some service to Mr. Porter and to your readers concerning the vibraslap (which, as Mr. Porter notes, the composer specifies "may be substituted for the quijada"), inasmuch as I believe it was I who first brought the instrument to the attention of Mr. Crumb a few years ago.

The quijada is indeed the jawbone of a donkey—the sound is produced by slapping the bone against the butt of the hand, thus causing the loosened teeth to rattle. However, not only is the quijada rather hard to come by, but it also possesses a marked propensity to break, as borne out once by my own bloodied and bone-splinter-riddled hand.

The vibraslap is a very recent invention (manufactured by the Latin Percussion Corporation), hence Mr. Porter's inability to find it in Sibyl Marcuse's dictionary of musical instruments. It was developed specifically to replace the all too fragile quijada, and it basically consists of a thin wooden shell inside of which small cylindrical pieces of metal may be set in motion. While the vibraslap sound may not be a carbon copy of that of the authentic quijada (the ass's teeth don't seem to rattle quite so much as the metallic teeth of the vibraslap), I have found that the sounds are quite similar. And it is indeed a vibraslap that is used in the Nonesuch recording of *Music for a Summer Evening*.

Christopher Rouse  
Ithaca, N.Y.

### Mussorgsky, Anyone?

I read with interest in the October "Behind the Scenes" that Philips may celebrate the 225th anniversary of Mozart's birth in 1981 by issuing his complete works on disc. I would like to point out that 1981 also marks the 100th anniversary of Mussorgsky's death. May we dare hope that Philips—or anyone—will take time out from the undeniable joys of, say, K. 28 to give us a recording of *Boris Godunov* in the composer's own scoring? Surely the enthusiasm accorded last year's Metropolitan production provides some indication that the time is ripe for such a recording. How much longer will we have to wait?

Robert W. Oldani  
Ann Arbor, Mich.

### Recycled Records

In these days of noisy pressings it would seem that there is one largely overlooked contributing factor that should be easily controllable: the practice of resealing and redistributing defective records.

A record-store-owning friend of mine recently received from a distributor a four-record set (list price \$31.92) shrink-wrapped and labeled "Direct Import—Factory Sealed." Under the wrap was penned the word "Defective." I received a three-record

set (list price \$23.94) in which, on one of the labels, the word "Defective" had been written. Though these are the most flagrant cases I have encountered, there have been many suspiciously battered booklets, liners, and covers that would lead one to believe that the product is not as fresh as the company would have you think. (This worn packaging has inevitably contained one or more defective records.) I might add that all of the suspicious records I have received have been on high-priced (\$7.98 list) imports distributed by independent distributors and not by the manufacturers themselves.

I would suggest that the consumer indicate on the label of any record returned that the disc is defective. This would serve no-

tice to any subsequent purchaser that his "new" record has been found wanting by a fellow consumer.

Richard M. Tuckerman  
Lenox, Mass.

### One Swan, Hold the Orchestra

In response to R. D. Darrell's September review of Christine Walevska's Philips disc of Saint-Saëns's "Complete Works for Cello and Orchestra": While *Carnival of the Animals* is for two pianos and orchestra, "The Swan" contained therein is for cello and two pianos, not cello and orchestra.

Douglas B. Moore (cellist)  
Williams College  
Williamstown, Mass.



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## The Conductor Who Refuses to Record

by Paul Moor

"RECORDINGS? The destruction of music!" The vehement speaker was the Romanian-born, stateless conductor Sergiu Celibidache, long resident in Paris.

Celibidache (pronounced chay-lee-bee-DAH-kay), now sixty-three, recently hurled these thunderbolts of opinion at Dr. Klaus Lang, a young staff member of the radio station Sender Freies Berlin: "You don't listen to recordings in the same acoustics as those where they were made. Acoustics have a living function, for instance, in determining tempos. You cannot take a tempo suitable for a hall in Berlin and transfer it to a hall in London. With short reverberation you have to pick up the tempos, with long reverberation you have to take care the tempo doesn't cause musical values to overlap, causing frightful confusion.

"You yourself are an opponent of recordings, but you do not know it, for you are deaf. You think you are not deaf, because you hear me speaking. You do not hear what really matters. A microphone amplifies certain overtones and cancels out others. There may be interesting sounds on a record—from a quite unmusical standpoint. What, in a recording, is genuine?"

Although Celibidache demands and gets high fees, poses uniquely demanding conditions, and picks and

chooses the few engagements he accepts, he has remained less widely celebrated than a number of less formidable conductors whose names regularly appear on record labels. A student of music in wartime Berlin after earlier studies in mathematics, philosophy, and musicology, he made a sensationally impressive debut with the Berlin Philharmonic soon after the war, during the period when denazification proceedings had removed Wilhelm Furtwängler from his post. In 1947 Celibidache became that orchestra's chief conductor.

Berlin still reverberates from the imprecations he fired off when he departed in 1952, most of them aimed at Furtwängler, a man never noted for favorably regarding gifted young rivals. Celibidache concedes his own "combative" nature. In recent years in Berlin one has heard that another conductor, Herbert von Karajan, has had three esteemed colleagues on his blacklist whom he has allowed no contact whatever with his manifold enterprises: Celibidache, Bernstein, and Carlos Kleiber.

Celibidache fans tend to idolize him, and he and many Berliners still carry on a mutual love affair even with their Prince Charming long since banished. Not only Berliners treasure the two lone recordings he made long ago before the scales fell from his eyes and ears: Mendelssohn's violin con-

certo (with Siegfried Borries) and Scotch Symphony with the Berlin Philharmonic (Electrola HZEL 700), and the Tchaikovsky Fifth with the London Philharmonic (German Decca 641909).

Celibidache's distaste for recording carries over in his attitude toward radio concerts. "I do not give radio concerts," he says, "I give concerts. If the radio wants to broadcast or tape them, I cannot say no, otherwise I should have to die or find another profession. But if I had the money and could pay for the concert without help from the radio, naturally I should prefer that."

He goes on to explain his method of interpreting music: "Analysis is the essential means of preparing an interpretation, but an analysis most conductors ignore completely: phenomenological analysis.

"Let us take, say, a C sharp. The succession and the combination of the intervals that have led to that C sharp are contained in that C sharp, and so is the future of that C sharp. And so I must feel, must sense, the past and the future. But where? In the simultaneity—that is, in what the philosophers call the 'becoming conscious' and not in the 'being conscious.'

"On the one hand, what is the material that I may not, cannot, interpret? And what is the relationship between what puts the material into motion and the human consciousness?

"What, after all, is music? Movement! What moves? Nothing more or less than our consciousness. One can feel music without hearing tones. The farmer who has nothing more in mind than to express his happiness or his mood in the morning—he sings, but that's not notes, not a score, nothing. That is a form of dynamics that expresses itself."

Celibidache's demands for rehearsal time make orchestra managers blanch. "I concentrate now on two orchestras, in Paris the National and in Stuttgart the South German Radio Orchestra," he says [since this interview, Celibidache has severed his connection with the former]. "In Paris I have twelve rehearsals for a concert, in Stuttgart fourteen. The number of rehearsals depends upon the quality of the orchestra, but not in the way you might think. The better an orchestra is, the more you must rehearse with it, for it offers you more possibilities. In a mediocre orchestra, the flutist, for example, can play in only three ways instead of three hundred. In such a case I expect the orchestra to play together—a little piano, a little forte—and that's that. But if it offers me five hundred different possibilities

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CR-600	.1%	.5%	.8%
CR-400	.1%	1.0%	1.0%

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Between our \$330 CR-400 and our \$850 CR-1000, we have two other models.

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Unless you're a true audiophile, some of the features on our top-of-the-line receivers might seem a bit like gilding the lily. Selectable turnover tone controls, variable FM muting, two-position filters, even a special five-position tape monitor selector.

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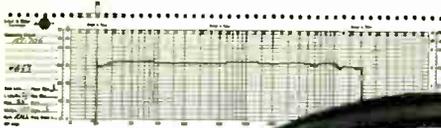
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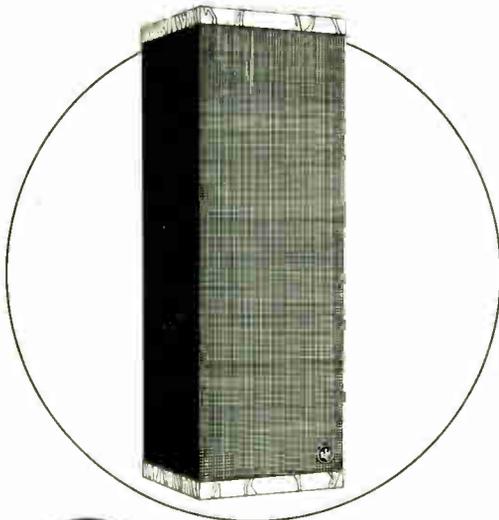
\*Mr. Feldman, reporting in *Tape Deck Quarterly*, Spring, 1975 noted that the AT-706 response varied no more than  $\pm$  2 dB from 20 to 22,000 Hz. He also stated, "What we heard corresponded with what we had plotted..." Hear the incredible new AT-706 headphones at Audio-Technica dealers everywhere.



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of producing tone, then which is the best for combining the flute with, say, the bassoon? That is a question of taking time.

"I have conducted the Vienna Philharmonic, a mediocre orchestra. It has one single mezzoforte—they cannot at all understand structure, the natural order of instruments, sound. And, in addition, no interest. Just imagine, this is an orchestra that makes cuts in Mozart, legalized for all time. In Mozart! Imagine! And such an orchestra records twenty Mozart symphonies with a big conductor who does not once open his mouth! That's music today for you. Not for me. I have no time for such an orchestra."

How does he view the younger emerging conductors? "There is not one new conductor who still understands music or who can grasp the difference between notes and music. None! They are all note-chasers, and music has nothing to do with notes. Notes are a vehicle for the transport of a substance. The substance materializes itself through this vehicle, but it is not in the notes. I find myself floating in a bath of musical ignorance such as the world has never known before. We have no more technicians today."

"Why is a conductor's 'personality' supposed to be decisive?" Celibidache continues. "It is a precondition that a conductor have the authority to carry something over to the orchestra, but nobody has asked himself what [to] carry over. Vulgarity! Triviality!"

"What does the world know about the composer's intentions? For 150 years it has proven that it has understood nothing. Under Wagner's baton, the *Siegfried Idyll* lasted thirty minutes, under Bernard Haitink's twelve. I assume that Wagner knew better. A scandal! And what a scandal Knappertsbusch was! Everyone spoke about his 'broad' tempos—that was not broad tempos, that was nonmusic to the nth degree! He had absolutely no sensitivity to the relationship between vertical pressure and horizontal flow, and that, after all, makes all the difference in music. What did Furtwängler leave us in the way of true music? You can't take over one single bar. Who today can realize the composer's intentions? Certainly not Mehta or Maazel or any of those others.

"*Um Gottes Willen*. I do not speak of myself. I started out the same way. I do not say now that I can do it. I say only that what I hear is not music. You must tell me if for you what I make is music."

And thousands of Celibidache fans in various countries do, vociferously.

CIRCLE 29 ON READER-SERVICE CARD



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*Creem*, MARCH 1975

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*Modern Hi-Fi and Music* (Aug./Sept. 1975) reports:

“wow and flutter of 0.03% at 33 $\frac{1}{3}$  rpm and rumble less than -65db; specifications which are more typical of a good manual than most automatics.”

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WHEN LISTENING BECOMES AN ART

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The  
Lees  
Side



## Dizzy Gillespie—More Credit, Please

by Gene Lees

A REMARKABLE NEW ALBUM, titled "Oscar Peterson and Dizzy Gillespie" (Pablo 2310 740), presents two of the major figures in jazz, trumpet and piano in duet, without bassist or drummer. With no rhythm section, Gillespie and Peterson are all but naked. But they bring it all off with dazzling élan.

This recording, which contains Ellington's "Caravan," Gillespie's lovely "Con Alma," some blues, and some standards, such as "Alone Together," was issued two weeks after a sellout retrospective on Dizzy's career in New York. The concert touched on various phases of his life, on his work with both small groups and big

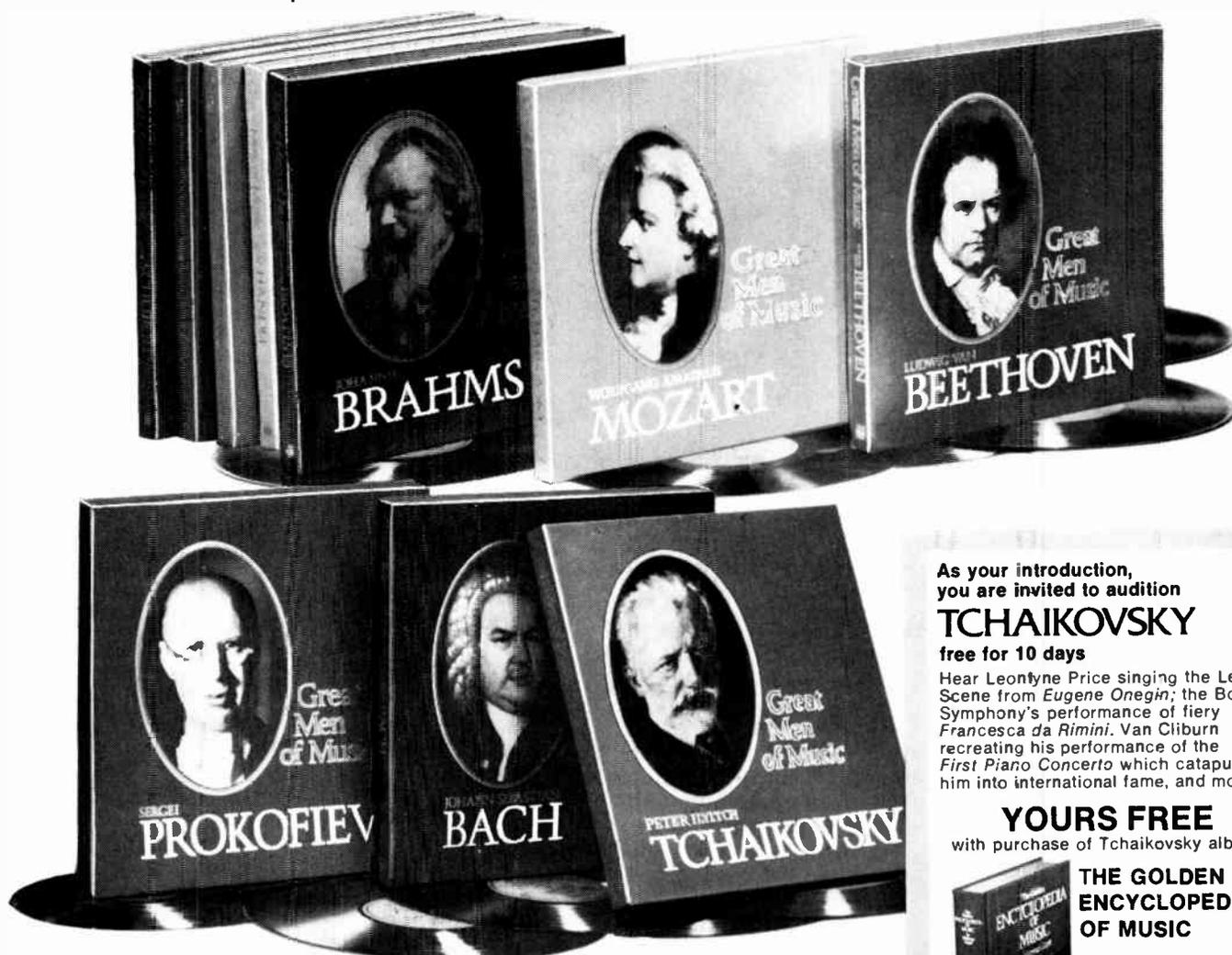
bands—specifically the two bands he led in the late '40s and '50s. Film composer Lalo Schifrin, a member of the large fraternity of musicians discovered and trained by Gillespie, played piano in one segment of the performance. This is how he described that evening: "It was practically the original big band on that stage, with many of the same musicians, including Charlie Persip [the drummer in the '40s band]. It was like traveling down a time tunnel. It was weird. The band had only one rehearsal, but it played the charts as if it were a road band coming in off a six-month tour. It was one of the most exciting concerts I have ever heard."

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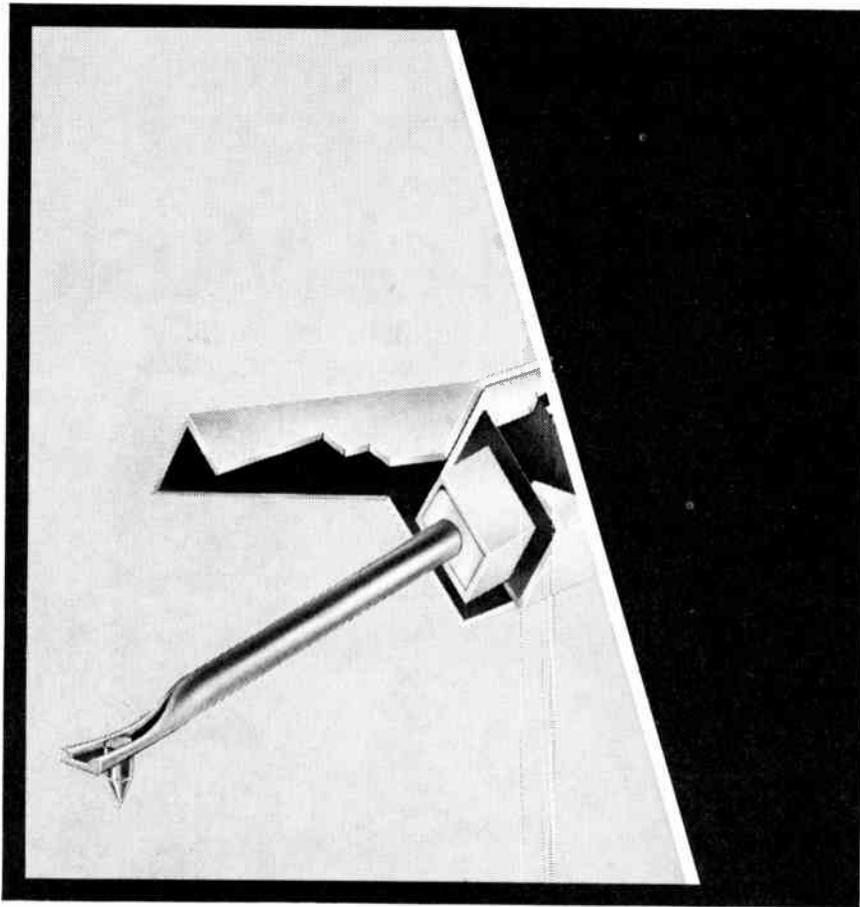


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CIRCLE 34 ON READER-SERVICE CARD

During the years when the record companies were interested almost exclusively in cheap and profitable popular music, Gillespie's work was shamefully ignored. Now we are getting a flow of his records again, and he is—as musicians agree—at the peak of his form.

John Birks Gillespie just keeps getting better. His invention is more fluent than ever. His control of the horn—whether he is playing with a broad, open tone or that intimate close-to-the-mike muted sound that is so distinctly his own, or is even squeezing out those mocking, laughing, sensual half-valve sounds—is quite incomparable.

Considering the respect—no, adulation—in which Dizzy is held by musicians, it may sound odd to say that I don't think he has been given enough recognition in the history of American music. The critical word there is "enough."

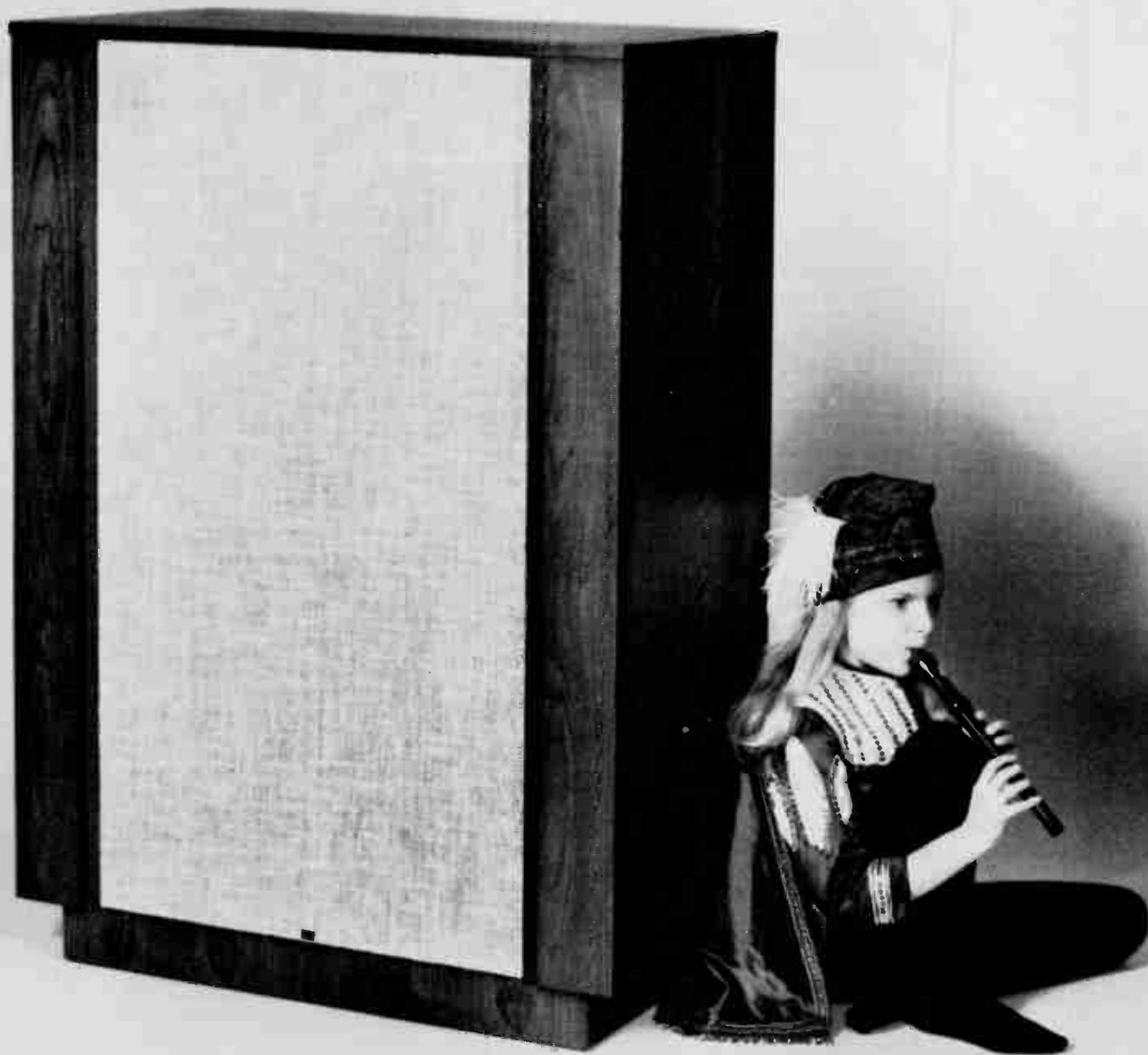
The emphasis, in academic and critical writings, is usually placed on his friend and colleague Charlie Parker. Why is it? I think the reason lies in puritanism and the love of dramatic darkness. Bird shot dope, suffered, and died. The yearning for resurrection is manifest in the phrase "Bird lives." Dizzy has lived, prevailed, and even enjoyed life. He isn't the stuff of which books and movies are made. But he is the stuff of which music is made, and that is what matters.

I find it hard to accept that Dizzy "got it" from Bird. For one thing, bebop was to an extent an inevitable development out of the previous simplistic harmony of jazz. Chromaticism was in the air, and Charlie Christian was moving in the direction of what would be called bop when Dizzy and Bird arrived on the scene. (As a matter of fact, even the word "bebop" wasn't new. I recently came across it in the lyrics to "Spaghetti Rag," a tune published in 1910!) The double-time characteristic of bebop was presaged in the work of Benny Carter and Coleman Hawkins. Quincy Jones, another of the people that Dizzy helped to develop, points out that, if you play Hawkins' "There Will Never Be Another You" at 45 rpm instead of 33, it sounds exactly like Parker.

"The controversy about Dizzy and Parker," says Schifrin, "reminds me of the controversy about cubism. Was [cubism] invented by Braque or Picasso? Braque was doing in France what Picasso was doing in Spain.

"Bird was doing in Kansas City what Dizzy was doing in New York, and when they met and heard each other in Minton's, they couldn't be-

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lieve it. They had been making parallel developments."

In terms of dissemination of the influence of bebop, every musician I know who was close to the situation believes that Gillespie was the major factor—because he was, and is, an utterly generous teacher. You simply hang around, and sooner or later he starts showing you things. Schifrin says, "He would have the patience to show a bassist the changes to all the tunes, with all the passing chords.

"Dizzy told me when I joined him, 'I'm not going to tell you what to do. I'm going to tell you what not to do.' If you're doing the right things, Dizzy won't tell you anything."

I asked what Schifrin got from him. "Everything," answered the man who, before his stint with Gillespie, had studied at length with Messiaen and Koechlin.

Another musician whose career has been influenced by Gillespie is Ray Brown, considered by many to be the greatest bassist in the world. He was with the late-1940s band that was recreated at the retrospective concert. Of the years with Gillespie, Brown says, "I wouldn't have traded that gig for any amount of money. We all learned from Dizzy. Anybody who says he didn't is telling some stories—and I don't care what instrument you played."

"The difference between Bird and Dizzy," Brown continued, "is that Bird never showed me a chord. You just had to listen to him, and you got everything from that. He didn't have the time to sit down and show you what he knew. And I don't know whether he knew it or it was just natural with him. Dizzy wrote music. He was more knowledgeable . . . academically.

"Bird had that natural genius mind. You played something, he could put something with it. But Bird wrote only one arrangement for us. And all he did was write the horn parts for him and Dizzy. He didn't write anything for the rhythm section.

"If you did something wrong, he'd say, 'No, not that.' But if Dizzy said, 'That's wrong,' he'd go over to the piano and show you why. Or to the drums. He couldn't play bass, but he could tell me when I was playing bad notes."

At a recent recording session, Gillespie and Brown got into a disagreement over the chord changes to "Jitterbug Waltz." Ray said, "Hey, man, un-uhn, don't argue with me. I learned from you—you made me go and learn this stuff. Now I know it."

Dizzy laughed. They played it Ray's way. ●

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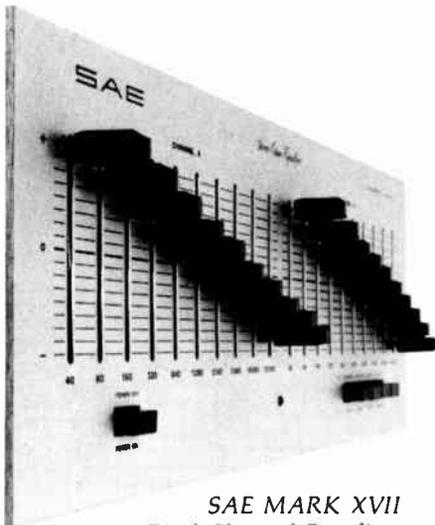


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## Behind The Scenes

ONF. In 1974, the Orchestre National de l'ORTF celebrated a happy fortieth anniversary; after the disastrously lackluster Sixties, and despite the challenge of the newly created Orchestre de Paris (which proved little challenge after all), the orchestra had regained the prestige of its prewar and postwar glory years, thanks primarily to the directorship of a remarkably wise and able administrator, Pierre Vozlinsky. Then came a near-fatal blow: As part of a bureaucratic shuffle designed to streamline the central government, the Office de Radiodiffusion-Télévision Française itself was "dismantled," its numerous functions variously fragmented, cut back, switched to other government agencies, or eliminated altogether.

The ORTF's regional orchestras were reduced to three, and in Paris the Orchestre Philharmonique and Orchestre Lyrique will be merged. The National became the Orchestre National de France, but more than the name was streamlined. The *démantèlement* was designed to "trim personnel" (the official phrase is "*dégraisser les effectifs*," which has a particularly ugly and impersonal ring); the principal strategy was forced retirement at sixty and generous early retirement at fifty-five. As a result, the National was decimated, losing not only numerical strength ("*effectifs*"), but also its most experienced players.

Somebody apparently realized that you can't "trim" a symphony orchestra, and the National is now budgeted for 117 people, ironically an increase of nine over its previous size. But to reach that figure, forty-four new musicians will have to be hired all at once, whereupon the whole will have to be reforged into an ensemble. (No doubt there is a bureaucrat paid to explain where the "economy" comes in here. The new retirement program is surely costing a small fortune; and until permanent replacements can be hired, the ONF must engage large numbers of free-lance musicians, many of whom are the newly retired former members of the orchestra!)

Vozlinsky meanwhile seems determined to preserve and expand the National's role as a "means of animation" in French musical life. In a first-rate "dossier" on the ONF's current

situation, the September 1975 issue of the French magazine *Harmonie* quotes Vozlinsky at length on his artistic philosophy, and he makes clear that the orchestra must maintain an innovative role with respect to repertory (while maintaining the highest standards of quality), both as a broadcast orchestra and as one of the dominant forces in Paris concert activity.

Naturally recordings will play a part in the ONF's future. In September, guest conductor Leonard Bernstein conducted and recorded the Berlioz Requiem (for which tenor Stuart Burrows and the Orchestre Philharmonique were also pressed into service) and a Ravel program (including *Shéhérazade* with Marilyn Horne) for CBS. Decca/London plans a Schumann disc conducted by Kurt Masur, including the piano concerto played by one B. Rigutto.

**Kleiber.** A word of clarification concerning our November report on Carlos Kleiber's EMI contract: If the report gave the impression, without precisely saying so, that the contract is exclusive, that's because our information did the same. In fact, though, the EMI contract covers only the complete *Wozzeck* and one or two orchestral recordings. EMI certainly hopes for a great deal more, but Kleiber continues to make his recordings on an individual basis. DG, which already has his highly successful *Freischütz* and Beethoven Fifth in its catalogue, remains very much in the picture.

**Great Hits from Yesteryear.** That's the series name of the first records on the Realistic label, available from Radio Shack dealers for \$2.99 each (\$3.99 for cassettes and eight-track cartridges). Each of the first five records contains ten original recordings from its period. "Hits of the '40s," prepared for Radio Shack by Capitol Records, features such performers as the Andrews Sisters, Harry James, and Johnny Mercer. The other records were manufactured by Columbia Special Products, though not necessarily drawn from the Columbia catalogue: "Top Hits of the '50s" (the Everly Brothers, the Penguins, et al.); "Top Hits of the '60s," Vols. 1 and 2 (the Kingsmen, the Byrds, et al.); and "Top Hits of the '70s" (Santana, Mac Davis, et al.).

**Die verkaufte Braut.** Eurodisc has made a new quadriphonic recording of Smetana's *Bartered Bride*, with Czech conductor Jaroslav Krombholc conducting Bavarian Radio forces. Teresa Stratas, René Kollo, and Walter Berry sing Marie, Hans, and Kezal, respectively. (We haven't inadvertently substituted the German forms

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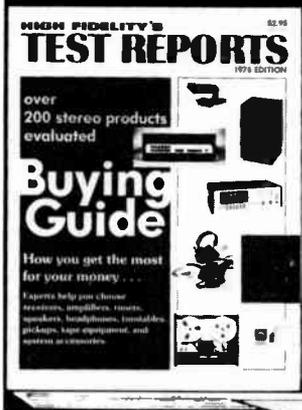
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for the Czech character names; the recording is in German.)

**Verdi's pirate.** "All in all, this *Masnadieri* sets a new standard for the 'Verdi revival' recordings." So Andrew Porter concluded his December review of Philips' recorded premiere of the work, and Verdi fans should be heartened to learn that Philips has re-enlisted Montserrat Caballé, the big gun of its *Masnadieri* maneuver, for the latest offensive in its early-Verdi campaign. For *Il Corsaro*, Caballé is joined by Jessye Norman, José Carreras, Gian Piero Mastromei, Clifford Grant, Alexander Oliver (singing two parts, a eunuch and a slave—sounds like one of those days when it just doesn't pay to get out of bed), and John Noble. The conductor, of course, is Philips' resident *Verdiano*, Lamberto Gardelli.

**Boulez.** Pierre Boulez and the New York Philharmonic returned from their European tour in time to open their 1975-76 season, the last in the Philharmonic/Fisher Hall we have come to know and . . . er, know. (At the end of the season the interior of the hall will be gutted and rebuilt from scratch.) Naturally that means periodic trips to the recording studio; this fall's first projects were Stravinsky's *Song of the Nightingale* (completion of a project begun last season), Bartók's *Wooden Prince*, and Wagner's *Liebesmahl der Apostel* (*The Last Supper*—a piece for men's chorus and orchestra written in 1843 as part of Wagner's official duties as *Hofkapellmeister* in Dresden), followed by Falla's *Three-Cornered Hat* (the complete ballet, with Jan DeGaetani) and Stravinsky's *Pulcinella Suite*.

**Berlin, 1908-9.** In February 1975, Andrew Porter reviewed Discophilia's release of the acoustical recording of *Carmen* (KS 1/3), with Emmy Destinn and Karl Jörn, made in Berlin in 1908. At the time Discophilia promised to issue the *Faust*, also in German, made the same year. Now German News Company, the U.S. distributor, informs us that the *Faust* is on its way. Destinn and Jörn are the Marguerite and Faust, with Paul Knüpfer (*Méphisto*), Desider Zador (*Valentin*), Marie Götze (*Siébel*), and Ida von Scheele-Müller (*Marthe*). The conductor is again Bruno Seidler-Winkler.

Another Berlin acoustical set is announced in Preiser's Court Opera Classics series: the 1909 *Tannhäuser* Act II with Fritz Vogelstrom (*Tannhäuser*), Anny Krull (*Elisabeth*), Hermann Weil (*Wolfram*), and Leon Rains (*Landgraf*). Preiser too is distributed by German News.

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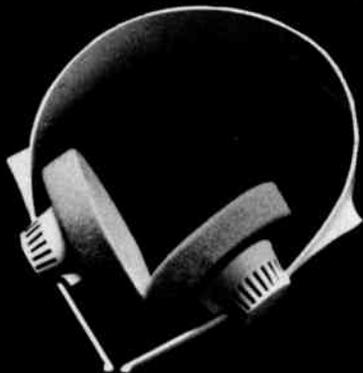
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Too Hot to  
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Some time back I think you ran an article saying that head wear with chromium dioxide cassettes is no worse than it is with ferric cassettes; yet I still hear warnings (from two dealers, among other people) about not using chromium dioxide if you want maximum head life. Should I be using chromium dioxide, or should I switch to a high-performance ferric brand like TDK SA or Scotch Classic?—Lloyd M. Davis, Brooklyn, N.Y.

The article you presumably are referring to actually said that wear with chromium dioxide is not nearly as horrendous as early reports had led some recordists to believe. Chrome is more abrasive than ferric oxide, however, and tests do show that it will wear heads faster. Many home machines have ferrite heads and are used relatively infrequently; in such a situation the transport may give up from sheer old age before the heads wear badly even with chrome tape. With heavy use and permalloy heads, on the other hand, you should be able to postpone head replacement somewhat by avoiding chrome.

TDK SA is a possible alternative. But, though it is intended for use with the same bias and equalization as chromium dioxide tapes, it is more sensitive than chromium dioxide and (assuming you use Dolby B noise reduction) would require some readjustment of your recorder for optimum Dolby tracking. Classic, unlike SA, is a ferrichrome—that is, it has a layer of ferric oxide under a surface layer of chromium dioxide—which obviously determines its wear properties.

For several years I have been using a "One-Wipe Dust Cloth" on my records, and it seems to remove dust and fingerprints well, without leaving harmful deposits. Will this hurt the records in any way? Sometimes I use a Watts Preener. How does this compare with other devices of this type? Is it best in using such a device to rotate the record by hand—or should it be rotated on the turntable at 33½ rpm? Lastly, are all brands of poly-lined sleeves equally good?—Mike White, Petaluma, Calif.

Without knowing exactly what chemicals are used in these dust cloths, it is impossible to say whether they are safe for records or not. It would seem prudent, therefore, to use only cleaning products that are specifically meant for records—and formulated by reputable manufacturers. The Watts Preener is among the most respected devices of its type. The manual for Watts record-care products gives no instructions as to whether the record is to be turned by hand or power on the turntable, though it may be a little awkward to use with the record placed on some turntables.

Poly-lined sleeves represent a dilemma: To be sure, they keep away dust, but—depending on their own chemistry and that of the record—they can cause plasticizers to migrate in or out of the disc, rendering the vinyl too soft in the one case or too brittle in the

other. Where the effect is extreme, therefore, it could contribute to premature record wear.

I came across an Audio-Technica ad, and I would like to know if the claim made about its Shibata-tipped cartridges is justified. Does the Shibata stylus make four times as much contact with the record groove as an elliptical stylus? Does this make record wear one-fourth as much?—Michael Mainiero, Lynnfield, Mass.

It is true that the Shibata stylus distributes its contact with the record groove over approximately four times the area that an elliptical stylus does—as does practically any stylus designed for CD-4 use. This means that the pressure exerted on the vinyl surface with a CD-4 pickup for any given tracking force. This is offset, wholly or in part, by the generally higher tracking forces that such cartridges require. So, though the pressures may be lower with a Shibata, don't expect them—let alone the record wear—to be one-fourth as much.

Your review of the Royal Sound Add-N-Stack cassette storage modules [test reports, August 1975] was very enthusiastic. But I use 8-track cartridges. Does the company make 8-track modules, and are they equally good?—A. Robert Walters, Detroit, Mich.

Yes, it does; no, they aren't. We found them an overly snug fit for some cartridges unless we discarded the cardboard covers. The 8-track storage unit therefore encourages discarding the covers, which sometimes have fuller notes than there's room for on the labels of the cartridges themselves and, in any event, add dust protection when the tapes aren't stowed in the storage module.

Switchcraft's new Model 622P1 de-emphasis compensator for Dolby FM seems to be the same as the one you reviewed [Model 621P1, test reports, April 1975] except that the new one has added inputs for tape playback, level controls for both sets of inputs, and an input selector switch. And it costs about twice as much [\$24.95]. I don't really see the advantage of the tape inputs. My dealer has some information from Switchcraft, but he couldn't figure it out either. How is the 622P1 to be used?—James B. Martin, New York, N.Y.

If your dealer has Switchcraft Bulletin 286, which "explains" the 622P1, we can understand the confusion. We have entertained a high opinion of Switchcraft in terms of product variety and reliability, but that opinion doesn't always extend to its literature. We must say about Bulletin 286 what we said about the instructions on the earlier unit: Ignore it and, instead, think very carefully about the required signal routings in your system. It appears to us that in most setups the new model will offer little if any practical advantage.



\*The value shown is for informational purposes only. The actual resale price will be set by the individual Sherwood dealer at his option. The cabinet shown is constructed of plywood with a simulated woodgrain vinyl cover.

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## Quadriphonic Radio and the Separation Blues

It's not how close to mono a stereo signal gets, it's how and where you make it that way. At least that seems to be the position taken by the Federal Communications Commission in a recent decision. Paradoxically enough, the issue involves the enhancement of stereo program material (that presumably will be heard through a quadriphonic decoder) by means of a quad encoder in the broadcast chain.

For some time now, the FCC has permitted broadcasting of SQ- and QS-encoded discs as well as any material that a station may have encoded onto two-channel tape via either of these methods. Apparently the commission believes that a matrix-encoded signal makes no additional demands on an FM broadcast channel and is compatible with stereo as far as the listener is concerned—and this seems to make sense. Some stations, in order to heighten the four-channel effect of regular stereo when passed through a quadriphonic decoder, have taken to "encoding" this material as well.

When Jack Schanker, chief engineer of WCMF in Rochester, New York, informed the FCC that he planned to install a Sansui QS-E5B encoder used in the "enhancement mode" into the chain between the audio control panel and the transmitter, and that, by his measurements, the resulting "enhancement" of a stereo signal would reduce its separation for anyone receiving in stereo to about 7.8 dB, the commission replied in a letter of September 2 that this is a no-no. Stereo channel separation, say the broadcast regulations, must be maintained at 29.7 dB minimum, so Schanker removed the encoder.

The situation would have been entirely different had the encoder been installed upstream of the control panel. Under those circumstances, admits the FCC, the matrix-enhanced stereo program—whatever its separation may be—is perfectly acceptable, and the capabilities of the broadcast chain remain intact.

Schanker points out that enhancement of this kind is really unnecessary since, as most people familiar with quadriphonics know, matrix decoders are capable of producing an approximation of four-channel sound from two stereo channels without any pre-encoding or enhancement. Stations are doing this, he says, for the promotional value—so they can advertise themselves as "going full-time quad." "Separation of 7 to 8 dB is not really bad," Schanker contends, adding that "most stereo listeners would not notice the difference, although a mono listener gets a small reduction in audio level. But it seems that matrix-system manufacturers are waiting for broadcasters to popularize the medium for them before they release enough encoded discs to support real full-time quad."

It seems to us that these manufacturers may be their own worst enemies in this case and that their promotional machinations and infighting may yet succeed in killing off what could be a great contribution to musical enjoyment in the home. Also, might not the FCC be more forthright in setting standards for signal processing? And why is it so fussy about 29.7 (not 30) dB minimum stereo separation while permitting program material that comes nowhere near that? Answers sometime—if one may hope.

## Modulus—A New Standard of Flexibility

In our October 1974 issue we commented that noise reduction, as well as quadriphonic circuitry, might well use plug-in boards so that equipment could both be tailored to the use at hand and be rendered largely obsolescence-proof. (It's much less expensive to change—or add—a board than to replace a whole component in order to get the latest circuit feature.) This, we said, might be an idea whose time has come.

Looking over the recently announced Heathkit Modulus series, we find that it represents just the sort of design we had in mind. The control center around which this concept revolves is a digital AM/FM stereo/quad tuner-preamplifier. The basic unit can be customized by the addition of plug-in modules for Dolby FM decoding, SQ matrix decoding (with sophisticated logic), and CD-4 demodulation.

Even without the optional plug-ins, the Modulus control center is an elaborate piece of work, including output meters and headphone amplifiers for all four channels among its many interesting features. Power amplifiers (either one or two stereo units are used) are housed in matching outboard modules, and a choice of output capabilities—60 watts or 35 watts per channel—is available. The system

will, of course, accept any power amplifier you choose. (For a true state-of-the-art quadriphonic system, Heath suggests a pair of its AA-1640 superamps, rated at 200 watts per channel.)

So here is a "universal" audio system—stereo, quadriphonic, whatever—that can be expanded or updated at any time. If a local FM station adopts Dolby only after you've built the AN-2016 control center, you can add the Dolby board. If, five years from now, Heath finds an SQ decoder circuit that will outperform its present full-logic-plus-variable-blend design, you can update. Nice going, Heath.

CIRCLE 158 ON READER-SERVICE CARD

## High-Bias Ferrics to Surface

For owners of the many cassette decks adjusted for Maxell UD or comparable tapes—tapes that have been hard to find in some areas—two major manufacturers have told us they will be releasing new formulations with similar properties (including bias requirements). By the time you read this, TDK should have announced its new Audia cassette, apparently the "super ED" that was mentioned in this column last July as under development. And the 3M Company is expected to introduce its entry later this month, though at this writing it has not yet decided on a name for the new formulation.

**HIGH FIDELITY** and

JANUARY 1976

# musical america

Copyright revision—  
a cop-out?

Haydnfest at JFK



Musician of the month:  
**Risé Stevens**

# new music

TOM JOHNSON

IT IS ALWAYS a challenge to write about Robert Ashley's work, because it comes in so many varieties. On one hand are big multimedia productions such as the *Wolfman Motorcity Revue*, which he put on at the University of Michigan in the 1960s. Then there are pieces like his exceptionally beautiful *String Quartet*, which involve manipulating live sound with specially designed electronic circuitry. Then there is that curious choral work in which the singers respond with eerie sounds while, over and over, a solo voice says "She Was a Visitor." There are also the dozens of scores Ashley has done for film makers George Manupelli and Phil Makanna, which involve dozens of approaches, from electronic collage to country music. And running through all of this is a long sequence of works which involve neither electronics nor instruments, but simply speech. "Conversation pieces," we might call them.

## A normal conversation?

I particularly remember a performance of one of these a couple of years ago. The event consisted of Ashley and two women simply sitting around a table in front of the audience, drinking and discussing various topics, mostly related to the arts. One of the participants, Anne Wehrer, had worked with Ashley before: indeed, Ashley once staged a

CORRECTION: In Mr. Johnson's article on Charles Dodge in October it was incorrectly stated that Dodge's *The Story of Our Lives* and *In Celebration* would be issued on Nonesuch Recordings. These works, along with *Speech Songs*, are scheduled for Winter 1976 release on Composers Recordings, Inc.

piece called *The Trial of Anne Opie Wehrer and Unknown Accomplices for Crimes Against Humanity*, in which Wehrer had responded to a barrage of unrehearsed and often personal questions in what turned out to be an intense, probing evening. On another occasion she went into an isolation chamber, where she could respond only indirectly to questions of observers. On the night two years ago of which I speak, however, she just talked informally with the other two participants, and the result was quite unlike anything else I have seen. Too casual to seem like a performance, and yet too remote to be accepted as any sort of normal cocktail party situation, the evening took on a strange reality and became provocative on many levels. What happens when we talk? Why is it so odd to listen to a normal conversation when one is not allowed to participate? Is it even possible to have a truly normal conversation in a performance situation? And how can we relate pieces of this sort to Ashley's other work? For example, is there any similarity at all between this and something like *In Memoriam Esteban Gomez*, a piece for four players in which the musicians make miniscule changes of a sustained, blended sound?

Not only are Ashley's pieces highly varied, but even particular works can sometimes be realized in a number of ways. Even the composer's own performances of a given work may take many different forms during the course of a few years. For that matter, his pieces can be quite different even on two consecutive nights, because they often rely on improvisatory elements which simply can't be repeated.

He is, I suppose, an eclectic, but an unusual new type of eclectic. He has never written art songs or piano concertos; for that matter, he has seldom written at all for traditional types of performers. Almost everything he has done is fairly radical, falling into what we might call Cage-derived forms and mediums. But that is a very broad range.

## The danger of image-making

Ashley's home base for the past six years has been in the San Francisco

Continued on page MA-12

# letters

## A question of discrimination

To the Editor:

I have read descriptions of Serge Koussevitzky's elegant dress, of Seiji Ozawa's love beads and embroidered shirts. Critics have remarked upon Leonard Bernstein's dancing on the podium, Michael Tilson Thomas' spontaneous leaps of excitement, of William Steinberg's minimal baton-work. Commentators have also noted the apparent health of Arthur Fiedler and the above-mentioned Steinberg, and the exuberant vitality of Mstislav Rostropovich.

But never do I recall writers commenting negatively on a conductor's figure until now. In the November issue, Andrew DeRhen's mention of Antonia Brico's "matronly figure" and "the rather unchic impression" it makes is an outrageous example of the kind of prejudice that has stifled Brico's career. I dare say he would never think to remark on a male conductor's imperfectly maintained or shaped body. He would understand implicitly that such things are immaterial to the business of music-making.

Women conductors have no more obligation to be chic, well-toned, slender, and attractively proportioned than men. Especially women of 73 years.

Ellen C. Pfeifer  
Music Critic

Boston Herald American  
Boston, Mass.

P.S. I'd like to know when the readers are going to wise up to the fact that MUSICAL AMERICA's editor is a woman and stop sending their letters to the Editor as "Sir."

*Mr. DeRhen replies: Ms. Pfeifer flatters me by her confident assertion that I "would never think to remark on a male conductor's imperfectly maintained or shaped body." Let me assure her that my characterization of Antonia Brico as a "matronly figure" was never meant as an insult. I would only hope that my indiscretion does not encourage reporters less gallant than I to apply strict critical standards to the physical flaws of male conductors.*

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Cover photo by Christian Steiner

## HIGH FIDELITY

# musical america

## highlights of january

- FRIDAY 9** Public Broadcasting Service, through Exxon's Great Performances series, televises first showing of the La Scala production of *The Barber of Seville*. Berganza, Alva, and Prey head the cast; Claudio Abbado conducts.
- TUESDAY 13** Sarah Calwell becomes the first woman to conduct at the Metropolitan Opera. She directs a performance of *La Traviata*, with Beverly Sills in the title role.
- SATURDAY 17** Kenneth Schermerhorn, conductor of the Milwaukee Symphony, leads the orchestra in the premiere of a work of his own, *Monodrama for Soprano and Orchestra*.
- WEDNESDAY 21** The Juilliard Quartet, in East Lansing, opens the first of three complete Beethoven cycles in the U.S. this season. Performances in New York and Chicago follow.
- The Baltimore Symphony, under Sergiu Commissiona, plays the premiere of a commissioned work by Lukas Foss: *Folksong*, for full orchestra.
- WEDNESDAY 28** Rudolf Serkin's concert at Carnegie Hall celebrates the fortieth anniversary of his debut there.
- SATURDAY 31** The Chamber Music Society of Lincoln Center presents the premiere of Sir Lennox Berkeley's *Quintet for Piano and Winds*. John Browning is the guest pianist.

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**O**N EAST SEVENTY-FOURTH STREET there is a white, wide, low-pillared Colonial-style building, once four adjacent New York brownstones. It is the site of the Mannes College of Music, a New York cultural landmark for over half a century. Last spring, however, the institution went through two traumatic experiences. Lack of funds threatened its existence. The death of its president left it without a head. Miraculously, Mannes survived both crises. Despite the times, a successful financial drive brought support from foundations and private sources; the College was saved for future music generations. The search for a new president led to an unexpected but brilliant choice, opera singer Risë Stevens.

We visited “Madam President” at Mannes shortly after she had taken over her new post. Walking up a short flight of narrow stairs we found in a small room Peggy Tueller, former secretary to Schuyler Chapin, now executive assistant to President Stevens. Promptly, the door beyond opened and Risë—an old friend—emerged. She led us into her office, explaining that it was not quite finished—the rug was still to come. It was a stormy day and she was trimly dressed in a blue wool, brass-buttoned slack suit with a golden R, a present from husband Walter Surovy, decorating the lapel of the jacket. Her ash blonde hair was rolled back over her forehead in a pompadour. She wore horn-rimmed glasses. She is slim and erect, warm and friendly. She could have been a *Vogue* model for her latest part.

The room was light and uncluttered, with a few personal touches—flowers on a table and on the bookshelves informal pictures of her family including son Nicolas who, following his father’s footsteps, has begun a career as an actor; a graduate of the Juilliard School of Drama he is now a member of The Acting Company of John Houseman. There were also photographs of two women who had greatly influenced Risë’s life: her teacher Anna Schoen-René (looking like Gertrude Stein) with whom she had studied at the Juilliard School of Music and the German mezzo Marie Gutheil-Schoder, the great Octavian, with whom she first coached the role in Salzburg. On the wall opposite the desk was an autographed picture of Richard Strauss, dated Garmisch 1940, a cherished possession. On another wall was the school’s charter, framed, and portraits of Mr. and Mrs. David Mannes. David Mannes had been a violinist, a concertmaster with the New York Symphony, a conductor, and a dedicated educator. His wife Clara, daughter of Leopold Damrosch and sister of Walter, was a pianist. Together they founded the David Mannes School of Music in 1916. Their son Leopold joined them in 1940 and eventually became the school’s president. A musician, he was also the co-inventor of the Kodachrome color process. During his regime he expanded the Mannes curriculum, including liberal arts courses. In 1953 the school obtained a charter from the University of the State of New York and became the Mannes College of Music.

Risë Stevens was, we thought, the first woman to become president of an important music conservatory. How had it all happened? “By accident,” she answered. “Last spring, when Mannes began its intensive search for a new president many names were suggested. But *not* mine. In fact, at that very time I signed a contract with Juilliard to join its voice faculty. One day early last summer I had a call from David Tcimpidis, dean of Mannes, asking me

## RISË STEVENS

### musician of the month

to lunch. When we sat down he came straight to the point. “We are looking for a president. We had never thought of you. Then one of our pupils said: ‘Why have you never approached Risë Stevens?’ I am here to ask you to become our president.”

What had made her accept? A great artist is traditionally not a great administrator! For years Risë Stevens had led the life of a glamorous prima donna, acclaimed at the Metropolitan and other major opera houses in such roles as Carmen, Octavian, Orfeo, Dalila, Orlofsky. She had toured in concert and made recordings, appeared in films and on television. She had been chosen to be the mistress of ceremonies at the Gala Bing Farewell. What had the groves of academe to offer compared to all this? Then we remembered that Risë Stevens—a Gemini—has two sides to her nature. She is also a practical person and a fighter for a good cause. As co-general manager of the Metropolitan Opera National Company she had developed a touring organization to provide young American singers with the experience she had had to go abroad to find, the chance to have training and exposure in their own country. At Mannes she will again have the opportunity to open new doors to American artists.

Risë Stevens said: “When the Mannes offer came I went home to talk with my husband, who has helped me with



so many decisions.” Married thirty-seven years this month, Risë first met Walter Surovy in Prague when she was an unknown young singer and he a successful young actor. Now a real estate executive, he was for many years his wife’s personal manager. “Walter said: ‘You must decide for yourself.’

“Do you know what decided me? It was the smell.” Risë laughed as she said it—her first name in Norwegian means “laughter” and her laugh is infectious. Then she turned to us and asked seriously: “Are you susceptible to smells?” We told her about a recurring spicy fragrance which used to tantalize us in Italy; every now and then, driving through the countryside we would catch a whiff of it. But we could never identify it. Then, summer before last, visiting critic Bill Weaver at his home in Tuscany, we found its source. It was a tiny yellow-flowered ground-covering plant. Nobody knew its name.

Risë nodded. “Then you will understand. When I first walked through Mannes there was a smell familiar to me, a smell I had known before—of old walls, used things, a kind of mustiness. I can’t describe it but I was completely aware of it. I am very conscious of the odors of buildings. I smell the glue onstage. Suddenly, at home—when Walter wouldn’t help me—it came to me. The smell was the smell of the Mozarteum in Salzburg where, as a young girl, I

went to coach with Gutheil-Schoder. I remember it was almost impossible to get a window open at the Mozarteum! Mannes and the Mozarteum—the same smell. It was a sign. Something said to me: ‘Risë, *do this!*’ I knew I must go to Mannes. It was a challenge I could not refuse. But first I had to get a release from Juilliard. Peter Menin was sorry about my decision, but understanding.

“I think it is the smallness of Mannes which attracts me. It is the right size, the size Juilliard was when I was a student. It is a school equipped to give the young musician a more individual kind of training. Besides, everyone connected with the school is so marvelous! When the school almost had to close for lack of funds everybody pitched in. The faculty didn’t take a cent of salary during the crisis. The students went out on Fifth Avenue and played and collected money.”

President Stevens ticked off some of her projects and plans. She was setting up strong public relations and development departments. “I am very much interested in fund raising.” She wants to build a much stronger vocal department. The school, though it has produced such singers as the Metropolitan’s Frederica von Stade, has always been better known for its instrumental and conducting teaching. Among well-known Mannes graduates on the podium and in the pit are conductors Julius Rudel,

Continued on page MA-39

# artist life

DORLE J. SORIA

**A**T A RESTAURANT ACROSS from Lincoln Center, Roberta Peters took time off between a Met *Ballo in Maschera* rehearsal and another at CBS for the *Captain Kangaroo* show (introducing opera to children) to lunch with us and talk about Presidents. In a becoming turquoise blue wool dress and matching felt hat she looked like a college girl dressed for a date. It was hard to believe that she was celebrating her silver anniversary at the Metropolitan. She had made her debut there November 17, 1950, as Zerlina in *Don Giovanni*, still one of her most delightful roles. She had come back the day before from Washington, where she had sung at the State Dinner given by President Ford for the President of Colombia. The soprano has been six times to the White House and has sung for four presidents—Kennedy, Johnson, Nixon and, now, Ford. Undoubtedly, come rain or shine, Republican or Democrat, she will be entertaining there again next year.

## Roberta Peters at the White House

We talked about her most recent experience. “They reached me at a motel in Flint where I was singing Noel Coward’s *Bittersweet*. The day before, a friend had telephoned and, for a joke, had himself announced as Clive Barnes. And so, when the operator said ‘The White House is calling,’ I said ‘stop, your kidding.’”

Roberta Peters enjoys the pomp and protocol of her White House visits. “Everything is arranged for you. You are met at the plane. You stay at the Hay-Adams across the way from the White House. An official car with a sergeant-chauffeur calls for you. This time, arriving at the White House, security was very tight—it was after the assassination attempt on the President. You meet at eight in the

East Room for cocktails; guests return there after dinner for the entertainment. When everyone has gathered, the doors open. Trumpets sound, a military band plays *Hail to the Chief*, four men of the different armed forces enter, followed by two men carrying flags, one the American flag and the other the flag of the country being honored. Vice-President and Mrs. Rockefeller entered, then the President and Mrs. Ford, followed by the President of Colombia and Mrs. Lopez. A reception line forms. Everybody files past the President to meet him.”

## Singing for Presidents

Of all the administrations she had observed, the atmosphere of the present one was the most informal, observed the singer. “For instance, there was no dais, no table of honor. I sat at the same table with Mrs. Ford, who was between the Colombian President and the Colombian Ambassador. I was next to the Ambassador.” And her husband? (In private life Roberta is Mrs. Bertram Fields.) “He was there, too, and—for the first time—my pianist John Wustman. Before this the accompanist was only invited *after* dinner.

“The tables were very pretty—a porcelain flower piece in the center of each one. The food was delicious but I had eaten beforehand and just pretended to eat. At the end of dinner the President speaks. I was relieved when I saw him take from his pocket only a few reference cards. I knew the speech would be short. It was, and it was good too. But when the President of Colombia stood up I saw him take out about twenty pages, which he proceeded to read. It is terrible to wait so long when you have to sing! Before coffee was served I managed to leave. The East Room, as usual, was now set up with gilt chairs. The small platform was banked with greenery.” What did she wear? “A rose-pink dress with no jewelry except the diamond earrings my husband gave me.”

What had she talked about with Mrs. Ford? “Our children. My older son Paul and her daughter Susan are the same age, eighteen. They both entered college this year. Paul is a freshman at Ithaca. Mrs. Ford said ‘Susan is just like her father. She has tremendous energy. In addition to ev-

everything else she is working at photography. A girl has to keep busy.’ Mrs. Ford said this with emphasis!”

Roberta took a little time out to drink a glass of orange juice and to start her chicken salad, then returned to her story. “The President always introduces you before you sing and President Ford had done his homework. He knew all about me and my career! Afterwards there was dancing and the President danced with me for almost half an hour—mostly fox-trots and things like that. He’s a good dancer. He didn’t leave until half past one. We talked about Vail, where he always goes for his vacation. I had been there last year with my two boys. Since it was right after the attempt on his life I told him we were all concerned about him. He said: ‘There are many kooks around. Don’t worry.’”

Did they mention music? “Not really. He says he leaves ‘such classical things’ to his wife. The song I sang which he liked best was *I’ll See You Again*; it was a song he knew. Mrs. Ford particularly liked *Mio babbino caro* and the Laughing Song from *Fledermaus*.” Roberta summed up her impression of the President in what she obviously meant as a compliment: “He’s Mr. Average Man.”

She had sung twice for President Nixon. “The first time was on the occasion of a State Dinner for British Prime Minister Wilson. The President was relaxed and talkative and Mrs. Nixon was most kind. I had had a long rehearsal and no time to get my hair done. When Mrs. Nixon heard this she offered me her own White House hairdresser. She is a lovely person. The second time was a dinner in honor of Prime Minister Tanaka of Japan. It was the beginning of Watergate and Nixon was very tense. But for me the evening was marvelous. When the marine who always escorts you to your place at the dinner table brought me to my seat I found myself next to Henry Kissinger. It was so exciting. With him you could talk music. He loves all the old romantic Viennese songs, like *Wien, Wien, nur du allein*. He said his favorite composer was Mozart.”

The chicken salad, nibbled at, was removed by the waiter. Over a cup of tea Roberta Peters informed us with mock seriousness. “I have a Nixon tape—his introduction to my concert.”

During the Johnson administra-



*Roberta Peters, with Jerome Hines, meets the Kennedys: "He was gorgeous!"*

tion Roberta Peters was invited twice. "The second time was the best because I didn't have to sing. It was a Christmas party. Van Cliburn was there, too. After dinner there was dancing and Johnson loved to dance. My first partner was Van. No sooner had we taken a few steps than I felt a tap on my shoulder; it was Vice-President Humphrey cutting in. A minute or two later there was another tap. This time it was Johnson. The next thing I knew the President was leading me upstairs to his library. He said he wanted me to see the view of the big Christmas tree on the lawn from their private quarters and to show me the Lincoln bedroom. My absence did not go unobserved. Next day I had a call from columnist Jack Anderson who asked: 'Where were you?' They are really vultures, those White House watchers!" We had also become a little curious. "Were you nervous, alone with the President?" "I tell you, I'm not talking," Roberta said demurely.

The very first time the soprano sang at the White House was in 1961, after a State Dinner that President Kennedy gave for the President of Peru. "It was much more formal in those days. Now it is black tie but then everybody wore white tie. I wore a strapless dress—that was the fashion then—and long white kid gloves.

When I met Kennedy I almost died. He was so gorgeous! He had light blue eyes and sandy hair and such charm. There I was, a little girl from the Bronx—it was like being in a fairy tale." And Mrs. Kennedy? "She was pleasant and cool. But she did have the most beautiful taste. The tables were set with exquisite china and the fresh flower arrangements were works of art." Roberta added regretfully, "I could have danced with President Kennedy all night. But I didn't have the chance. He didn't stay. He went upstairs as soon as the entertainment was over."

"Then that was your most memorable White House experience?" "No," said Roberta, "the time I enjoyed most was the time I sat next to Kissinger."

#### **Kissinger postscript**

That very night—it was Monday, September 29—we went to a concert. It was a special occasion. Eugene Ormandy and the Philadelphia Orchestra had returned to Carnegie Hall and the soloist was the hall's president and saviour, Isaac Stern. Boris Sokoloff, manager of the orchestra, had invited us into his box. Afterwards Julius Bloom, Carnegie's executive director, and Isaac Stern were hosts at a small, informal party in the

Carnegie Café. The violinist and his wife Vera sat at a table with old friends Marit Gentele Gruson and her husband, *New York Times* executive vice-president Sydney Gruson, and with a tall long-haired woman in black silk whom we recognized as Nancy Kissinger. We also noticed a number of men standing about, all wearing earphones. We realized they were secret service men. In fact, we left our coat on a bench next to one of them and asked him if he minded keeping an eye on it! When we picked it up later he told us he had heard the concert. He said, "I never heard Isaac Stern before. He's wonderful!"

Suddenly we noticed from across the room that Eugene and Gretel Ormandy, escaping from backstage admirers, had arrived and had joined the Sterns. Then Kissinger himself appeared. He had come directly from the U.N. We watched him talking animatedly with Isaac; both eating stuffed cabbage rolls. Eventually, when everybody got up from the table, we were introduced to Dr. Kissinger. We said: "I was talking about you just today with Roberta Peters." "A lovely girl," he said. "And she told me that your favorite composer is Mozart. Is that true?" For once Henry Kissinger had the freedom to give a simple answer to an important question. "It is true," he said. △

# on education

CHARLES B. FOWLER

**A** MERICANS, practical as they are, have never lavished the public schools with the arts. If you want a fine music education for your children, you might find it in the schools, but chances are, you will want to supplement what is offered there with opportunities available outside. One can study music at community schools of the arts, participate in classes and productions of community amateur and professional performing groups, enroll in preparatory departments in conservatories and colleges, study with a private teacher, or attend special programs sponsored by community organizations and institutions. Among the latter are arts education activities that are offered by museums.

Museum programs have expanded

greatly during the past five years as museum directors have become increasingly aware of serving the broad interests of their growing audiences. Perhaps the Smithsonian Institution in Washington, D.C., one of mankind's great storehouses of history, science, technology, and art, best exemplifies what museums can and are doing in out-of-school education in the arts. The museum's music programs, in particular, provide unique educational opportunities for people of all ages.

## A "living" museum

S. Dillon Ripley, Secretary of the Smithsonian, views the museum not as a repository of static objects but as a "living" record of culture that breathes life into the past and educates people's perceptions in the present. While the Smithsonian's collection of musical instruments is one of the world's largest, it took Ripley to make them sing. His idea of a museum is to restore the instruments to operating condition and play concerts with them. Each year, the Division of Musical Instruments produces concerts, demonstrations, and recordings of restored instruments that show how differently music sounds when it is played on the original in-

struments. During October 1975, for example, a Haydn Festival [see page MA-31] featured thirteen concerts performed on instruments of Haydn's time. In one of these Lili Kraus played the late sonatas on the Dulcken forte-piano (c. 1780). Through this approach, people participate rather than simply look in scholarly silence. The difference engages. And educates.

The Institution's Division of Performing Arts, operating with a mandate for cultural conservation, gives recognition to and preserves living cultural traditions. James R. Morris, Director of the Division, explains the approach this way: "Museums cannot tell the tale of America's cultural history using artifacts alone. To complete the record, living performances of creative human expression are necessary. It is that role we are dedicated to filling."

## Preserving jazz traditions

One way the Division attempts to accomplish this is through a series of concerts and demonstrations. The Jazz Heritage concerts, funded in part by the National Endowment for the Arts, bring to the public those artists who have been definitive leaders in various styles of jazz. This year's program includes an evening of jazz tap dancing, solo piano with Teddy Wilson, John Lewis, Hank Jones, and the music of Bix Beiderbecke performed by members of the New York Jazz Repertory Company. Another series, devoted to the Jazz Connoisseur, features The Countsmen (Basie alumni), the Heath Brothers (Jimmy, Percy, and Albert), and Sam Rivers. The concept behind these concerts is to bring to audiences a true picture of the importance of jazz in the American musical heritage.

According to Martin Williams, Jazz Program Director, "When you talk about Ellington, you're not speaking simply about a 'jazz' composer, or bandleader, or songwriter, you're talking about a man who is among the greatest composers America has produced. Jazz should not be thought of as an isolated form of music, but rather as part of the musical mainstream."

To help preserve jazz traditions, many of which are improvisatory, the Smithsonian in 1973 issued a Collection of Classic Jazz record-



*American-German band demonstrates Old Ways in the New World*

Smithsonian Institution photos by Jim Pickereil

## The Smithsonian: Teaching our musical heritage

ings. This collection of six LPs includes eighty-four original recordings from the archives of seventeen record companies. Included is a forty-eight-page booklet of jazz history, photographs, and a discography by Martin Williams. The music ranges from Scott Joplin's own rendition of his *Maple Leaf Rag*, through the work of John Coltrane and Ornette Coleman. These recordings are available only through the museum or by writing Smithsonian Collection, P.O. Box 5734, Terre Haute, Indiana 47802; \$24. Fall 1975 releases included the King Oliver Jazz Band (Louis Armstrong and his second wife were members), Louis Armstrong and Earl "fatha" Hines, and Classic Rags and Ragtime Songs conducted by T.J. Anderson. Through recordings, the concept of the jazz series is extended to the public at large.

### Mabel Mercer & others

Mabel Mercer, that grande dame of song styling, will headline the 1975-6 American Popular Song series. Whenever possible, the settings for these programs, like the jazz series, are informal and the artists are invited to share anecdotes, give demonstrations, provide explanations, and otherwise converse with the audience.

People and Their Culture, another concert series, is designed to bring to life, through music and dance, the folk instrument collections at the Museum of Natural History. This year there will be groups from Tibet, Japan, Czechoslovakia, and Burma. Other series are devoted to chamber music and music from Marlboro.

In addition to these concerts there is a concert of American Band Music from 1876, programs of American banjo music, and an evening of Music and Dance from the Age of Jefferson. The latter program has been carefully researched—the musical aspect by James Weaver, Associate Curator, Division of Musical Instruments, the dance by Shirley Wynne, Director of the Baroque Dance Ensemble, and member of the faculty at the University of California at Santa Cruz. They found that Jefferson and his daughters took dancing lessons, and that his music collection con-

tained minuets, country dances, reels, the Duke of York's march, waltzes, the Spanish Fandango, an "Almaine," a "Corant," and a quick step. This program of authentic music and dances of this period, with costumes, scenery, and lighting, was premiered in Washington on November 14 and then toured to four states. Again, the music is available on recording.

### Festival of American Folk Life

Undoubtedly the most educational of the Smithsonian's arts activities will be the 1976 Festival of American Folk Life. This tenth annual festival will be held on the fifty-acre Mall between the Lincoln Memorial and the Washington Monument from June 16 through September 7. Extended from two to twelve weeks on behalf of the Bicentennial, the festival will constitute the largest free public event in the United States and the major Bicentennial event in Washington. Over five thousand performers will appear on the ten stages. Thirty countries will be represented in addition to folk artists and artisans from throughout the United States.

The festival will present the music, dances, crafts, foods, and other folkways of ethnic populations in the United States in direct comparison to these folkways in the country of origin. The plurality of American culture is represented by the festival themes: Old Ways in the New World, Native Americans, Working Americans, African Diaspora, and Regional America. Through lullabies, songs of work and celebration, and other folkways, the public is invited to leaf through the many fabrics of American life to gain an understanding and appreciation of the multiple roots of American culture. For those who cannot attend any of the events in Washington, the foreign folk groups will tour to ninety cities throughout the country.

In perpetuating national and family folkways, the festival also gives recognition to them and thus helps to preserve these traditions. There is no question that the festival is, above all, educational. As James Morris states: "The living art that the American people make of their own experience



Utah Phillips sings railroad songs

is not taught in our educational institutions, performed in our concert halls or housed in our museums. Folk songs and dances may be taught in schools and interpreted by professionals in concerts; material culture appears in museum exhibitions and collections, but living folkways are drenched with rich, vital style which only the living tradition-bearers themselves can impart to the performance of a song, to the execution of a complex craft technique, to the telling of a tale. The Festival celebrates folk cultures as they persist in thousands of styles among millions of people who inherited folkways as part of their life styles."

Museums—and the Smithsonian is by no means alone in this kind of effort—are supplementing and extending the arts education available in schools. For a quick and engaging look at what other such institutions are doing, send for a free copy of the 112-page booklet, *Museums: Their New Audience*, published by the American Association of Museums, 2233 Wisconsin Avenue N.W., Washington, D.C. 20007. △

# the dance

JACQUELINE MASKEY

**T**HE BEST IS last in Gerald Arpino's *Drums, Dreams and Banjos*, his new ballet for the City Center Joffrey Ballet. Almost the entire company is on stage in the sort of organized explosion which in pieces like *Trinity* has become an Arpino signature. The dancers, all in white, charge the stage as though it were a territory to be taken, regardless of the cost to life and limb. They dash, leap, turn; they throw or are thrown and are miraculously caught. Regrouping into a compact little band they move in accelerating unison downstage with a kind of cheerful insolence, every swing of every hip accentuated by the smart rap of a tambourine. At the height of movement on stage and volume in the pit, both dancers and orchestra stop dead and a shower of red and blue ribbons descends from above to put the final period to the ballet. Needless to say, the audience goes wild.

## A theatrical stew

*Drums, Dreams and Banjos* is the Joffrey company's Bicentennial ballet

and like the events which so far have commemorated that national birthday it is entertaining, embarrassing, confused, lively, yawn-making, sentimental . . . a thorough theatrical stew in which somehow the company and the choreographer rise bubbling to the top.

One can admire Arpino's boldness in making a ballet with so wide a compass: the piece not only salutes the American composer Stephen Foster (1826-1864) but attempts to distill and contrast the peculiarly American vigor and vitality found in such songs as *Oh! Susanna*, *Camptown Races* and *Ring de Banjo* with the sickly, European-derived romanticism of *I Will Be True to Thee* and *Ah! May the Red Rose Live Always*. Arpino also makes his ballet a kind of survey of the social dances (high and low) of the period—the waltz, polka, jig, *et al.*—interpolating vignettes of the theatrical dancing styles as well. Unexpectedly, there are no portrayals of either slavery or the “brother-against-brother” aspect of the Civil War. There is, however, one delicate reference to the conflict when, at the end of a *pas de*

*deux* as a young officer leaves his betrothed, a mourning party strings itself out in silhouette across the back of the stage and a single female figure detaches herself from the group to lay flowers on what is presumably a grave.

To bring off his American cavalcade, Arpino throws in whatever comes to hand. Some of it works, like the minstrel-flavored finale, a sweeping company cotillon, and a rowdy *Oh! Susanna*, and some of it doesn't. I think particularly, in this context, of the jolting insertion for Paul Sutherland and Ann Marie DeAngelo in which neither the choreographer nor the dancers seem quite to have decided whether to play it straight or as a tongue-in-cheek comment upon the absurdities of the classical *pas de deux*. There is also rather too much made of Foster's languishing ballads, one of which supports a particularly silly trio for Erika Goodman, Kevin McKenzie, and an interfering third party who carries a violin and pointlessly pantomimes playing it.

The support which Arpino receives from his collaborators ranges from the adequate to the inspired. Peter Link's orchestration of his variations on Foster's songs is varied and well-paced and brings into the ballet theater some fresh sounds—banjo, harmonica, and tambourine—not usually associated with Terpsichore. Rouben Ter-Arutunian's contribution is a useful drop depicting foliage in full leaf which dissolves from fresh green to autumnal gold to vaudeville glitter as required. Stanley Simmons's costumes are a delight, particularly his bouncy-skirted ballgowns in delicate pastel shades and a rainbow-hued butterfly outfit for Starr Danias, complete with wings and antennae. The dancers, of course, give—and give—and give—with that combination of heart and energy which is a Joffrey hallmark. There are outstanding performances throughout by Pamela Nearhoof, Denise Jackson, Ann Marie DeAngelo, Russell Stulzbach, Chris Jensen, and Kevin McKenzie.

## “Offenbach” back

While the impetus for *Drums, Dreams and Banjos* is clearly the Bicentennial, it is hard to imagine what prompted the Joffrey management to revive *Offenbach in the Underworld*, or

even what prompted Antony Tudor to choreograph it. It is set in a Parisian café in the 1870s and it chiefly concerns romantic encounters in changing combinations between A Debutante (Starr Danias), A Painter (Burton Taylor), His Imperial Excellency (Paul Sutherland), Queen of the Carriage Trade (Denise Jackson), A Young Officer (Russell Sultzbach), and The Operetta Star (Francesca Corkle). Since it is basically *Gaité Parisienne* bereft of its comic center (the Peruvian) and set to another orchestration of that ballet's score, you spend most of your time regretting that it is not, indeed, *Gaité*. Tudor's choreography is smooth but bland and singularly uninventive in the *mélée* which is the climax of the ballet. The Can-Can is the only part of it which rises above the routine. Tudor's *Local Ladies*, led by Sara Yarborough, Alaine Haubert, and Miyoko Kato stripped down to their camisoles, are presented as a thoroughly disheveled lot. Unwashed and tousled, they look as if their underwear could not stand even the most cursory inspection. They come on like a DeMille parody—aggressive and knowing, with lots of pelvic thrust.

Besides its essential feebleness and a drab black-and-blue set by Kay Ambrose, there are examples of gross mis-casting in *Offenbach*. Francesca

Corkle—a cheery little body who was born to play a number of Dickens' minor female characters—is saddled with the part of The Operetta Star. Hair-do and make-up contrive to make her look on the ungrateful side of forty and although she is a marvelously talented dancer with a number of endearing qualities of her own, neither in personality, looks, or temperament does she display any of the characteristics of a belle. Russell Sultzbach as the Officer meets a similar Waterloo. The pity of it is that this is Tudor's only representation in the Joffrey repertoire; better a blank in the company catalogue, I say, than a lemon like this one.

### Why "Opus 1"?

Another imponderable highlighted during the season was the Joffrey's continued infatuation with John Cranko's ballets. The company already performs the best of his shorter ones, the gay Gilbert and Sullivan *Pineapple Poll*, and it has neither the resource, personnel, nor inclination to attempt his full-length pieces like *Eugene Onegin* or *Romeo and Juliet*. So why trivia like last season's *Jeu de Cartes* and this season's *Opus 1*? *Opus 1* is another of those ballets where Man (Burton Taylor) grapples with birth, existence, death, and Woman (Ingrid

Frale) while an anonymous *corps* looms up now and again to interfere gloomily with the principals. The piece is set to Webern's *Passacaglia*, Opus 1, which is about its only distinction.

### Nancy Hauser Dance Company

Among the modern dance concerts which took place during September, one—the Nancy Hauser Dance Company from Minneapolis at the Hunter Playhouse—seemed in its unfamiliarity to promise something rather out of the way. This, alas, was not the case, with the company presenting some warmed-over Humphrey in Hauser's *Partapartita* (Hauser, who does not dance herself any longer, was a student of Doris Humphrey and Hanya Holm) and a long, self-conscious and obscure essay by Heidi Jesmin called *Dal-A-Bye*. The most entertaining piece was from a guest choreographer, James Cunningham, whose droll consideration of human relationships in *Moose Lake* was loose in construction, puckish in humor, and suited to the varying capabilities of the small troupe. Miss Hauser did have one surprise in store in *Beginnings*, an evolutionary cavalcade which began in the Void and ended up, logically and without sensationalism, in the nude.



Offenbach in the Underworld: it prompts a wish for *Gaité Parisienne*

## NEW MUSIC

Continued from page MA-2

area, where he teaches at Mills College. But this year he has been on leave and has been spending much of his time in New York. I went to see him, hoping to be able to find some general attitudes which would help me to present a clearer picture of his work as a whole. It didn't help. The more I tried to pin him down, the more Ashley resisted any kind of categorization.

For Ashley this kind of labeling and image-making is not a natural or healthy thing for a composer, because it forces one to oversimplify his work and limit his scope. There are, of course, disadvantages in Ashley's attitude, career-wise. He spoke quite openly about the kind of public relations practiced by artists, and about how many composers want to become known as creators of a very specific type of music. Naturally it is much easier for a composer to make an impression on critics, foundation officials, and the public at large if his work presents a direct and relatively consistent image and an easily identifiable style.

"There is a lot of pressure on artists who take a double role or a multiple role," he said. "The way music is being produced is becoming more and more centralized around certain funding agencies, most of which have a vested interest in certain types of music. There should of course be support for the arts, but the danger of bureaucratic support is that it threatens diversity. That's particularly unfortunate for artists when they are at the beginnings of their careers and should be trying a lot of different things. I've always resisted the idea that composers should all have separate roles. I see myself in many roles. Even composing itself is not that important. I also teach, I talk to friends, and so on."

### A critical work-in-progress

Ashley's latest project lies in yet another area. For this he has selected eight composers: David Behrman, Philip Glass, Alvin Lucier, Gordon Mumma, Pauline Oliveros, Roger Reynolds, Terry Riley, and La Monte Young. All are Americans, all are about forty years old, and all have similar concerns, at least from Ash-



*Robert  
Ashley:  
not to be  
categorized*

ley's point of view. The plan is to interview each of them, collect essays about them by younger writers, and compile everything in a large volume, which will clarify many things about an important segment of new music. Primarily, then, the project is a critical work, but at the same time it will be a creative work, not terribly different from some of Ashley's compositions. As in many of his performance pieces, he is carefully laying the groundwork for the execution of the project, but once the interviews and essays start to come together, he plans

to let the chips fall where they will, with little editing or rewriting.

Also in preparation is a series of European performances, which he is giving this winter in collaboration with a few other composers, known collectively as the Sonic Arts Union. And meanwhile, he is forming a small record company in order to be able to issue some of his works without relying on the whimsies of larger, established companies.

And next year? Well, artists who play multiple roles are not predictable. We must wait and see. △

## General News

The **Saint Louis Symphony Youth Orchestra** will be the first American orchestra to be in residence at the Fifth International Youth and Music Festival in Vienna in July. . . . The Music Teachers National Association and the Texas Music Teachers Association commissioned composer **Karl Korte** of the University of Texas to write a new work in honor of MTNA's 100th anniversary. His Concerto for Piano and Winds will be premiered in March. . . . **James Drew's** string quartet, *Lux incognitus*, received its premiere by the Concord String Quartet on October 5 at the Albany Arts Center.

**Lewis Dalvit**, Jackson Symphony music director, served as conductor of the Ballet Repertory Company orchestra on its midwest tour in November. . . . The **Symphony for United Nations**, with Joseph Eger as music director, has been founded to "mobilize the energy of music for improving communications among the world's people in these crucial times." Co-chairpersons are Marta Casals Istomin and General Indarjit Rikhye, president of the International Peace Academy.

Duo-pianists **Richard and John Contiguglia**, along with **Jerome Rose**, participated in a Franz Liszt birthday celebration over National Television in Budapest last October. . . . Pianist **José Iturbi** turned eighty on November 28. . . . Baritone **Julian Patrick** recently sang John Proctor in Ward's *The Crucible* with the Pittsburgh Opera and appeared in Bernstein's *Trouble in Tahiti* on N.E.T.

Pianist **Byron Janis** has completed a television film on Chopin for world-wide distribution. . . . The **Chamber Orchestra of New England** made its debut performance in November under music director James Sinclair. The New Haven-based ensemble consists mostly of Yale University School of Music alumni.

### Appointments

**Nicolas Roussakis** succeeds **Charles Dodge** as president of the American Composers Alliance. Mr. Roussakis is assist-

ant professor of music at Columbia University and executive director of the Group for Contemporary Music. . . . Former principal conductor of the American Ballet Theatre **David Gilbert** is the new assistant conductor of the New York Philharmonic. Mr. Gilbert, who won the 1970 Dimitri Mitropoulos Competition, is also music director of the Greenwich (Conn.) Philharmonic.

**Walter Klauss**, organist and choir master at the Broadway United Church of Christ (N.Y.), is the new conductor of the Brooklyn Philharmonia Choral Society. . . . **James Edwin Ogle Jr.** has been appointed assistant conductor of the North Carolina Symphony. Mr. Ogle won the Symphony's 1974 Young Conductor's Competition. . . . The Barrington (R.I.) Boys' Choir has appointed **Charles C. Mello** musical director. . . . Violist **George Grossman** has been named musical director and president of the Chamber Music Conference at Bennington (Vt.) College, a workshop and performance center for professional and amateur musicians.

Harpist **Susan McDonald** succeeds the late **Marcel Grandjany** as head of the Juilliard School's harp department. . . . Composer/pianist **Malcolm Williamson** succeeds the late **Sir Arthur Bliss** to become the nineteenth Master of the Queen's Music in Great Britain.

### Awards

Twenty-five-year-old violinist **Elmar Oliveira** has won first prize in the Walter W. Naumburg Competition. . . . Kazuyoshi Akiyama, former conductor of the Tokyo Symphony and now conductor of the Vancouver Symphony, has won Japan's Torii music award for his contribution to the development and advancement of classical music in Japan.

At the 1975 International Music Competition in Geneva, New York pianist **William Westney** and cellist **Frederick Zlotkin** of the N.Y.C. Ballet Orchestra won top prizes in their categories. Twenty-five-year-old **Staffan Scheja** of Sweden has won Italy's Busoni Piano Competition. . . . The following were awarded top prizes at the

# here & there

International Singing Competition in 's-Hertogenbosch, Holland: soprano **Maria Venuti**, U.S.; mezzo-soprano **Patricia Price**, England; bass-baritone **Vladimir Pankratov**, U.S.S.R. There were no first prize winners in the tenor and counter-tenor categories.

Detroit Symphony music director **Aldo Ceccato** has received an honorary Doctor of Music degree from Eastern Michigan University. . . . Composers **Joe Ambrosio** and **Philip Hough**, both of New York City, won first and second prizes in the first annual national competition sponsored by New Music for Young Ensembles, Inc. The prize works will be performed at Mannes College.

### Competitions

U.S. citizens under thirty with conducting experience but no affiliation with a major orchestra are eligible to enter the Baltimore Symphony's **Young Conductor's Competition**. For information, write to Ann Goldberg at the BSO, 120 W. Mt. Royal Avenue, Baltimore, Md. 21201. Deadline is April 30. . . . For information concerning the Southeastern Composers' League **Arnold Salop Memorial Composition Contest**, write to Charles Knox, Music Department, Georgia State University, Atlanta, Ga. 30303. Deadline for entries is January 6.

Deadline for application to the **BMI Awards to Student Composers** is April 1. The competition is open to students

twenty-six and under. For information, write to Oliver Daniel, BMI Awards, Broadcast Music, Inc., 40 West 57th Street, New York, N.Y. 10019. . . . The **New Music for Young Ensembles** 1976 composition contest will close in April. Write to Claire Rosengarten at NMYE, 490 West End Avenue, New York, N.Y. 10024.

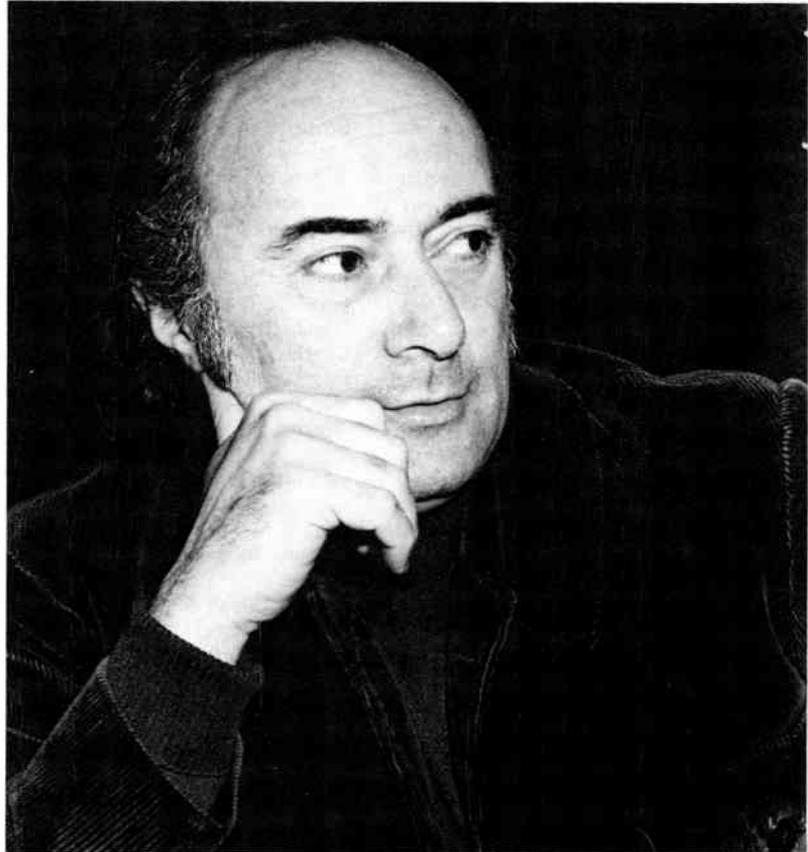
The 1976 Augusta Symphony **Young Artists Competition** for pianists will take place in June. Deadline for application is April 9. For information, write Mrs. Leland Stoddard, Augusta Symphony, 619 Bourne Place, Augusta, Ga. 30904. . . . Pianists twenty-nine and under are eligible to enter the University of Southern Colorado's **National Piano Ensemble Competition** (two pianos and one piano-four hands). Deadline is March 12. For information, write to Markowski and Cedrone, University of Southern California, Music Department, 220 Bonforte Blvd., Pueblo, Co. 81001.

### Obituaries

**Walter Felsenstein**, director of the East Berlin Komische Oper, died on October 8 at the age of seventy-four. (His last interview will appear in HIGH FIDELITY next month. . . . Timpanist **Karl Glassman**, formerly with the NBC Orchestra under Toscanini, died on October 11. He was ninety-two. . . . Soviet ballet master **Leonid Yakobson** died at the age of seventy-one in Moscow. His death was announced on October 21.

## THE MET: WHAT NEXT?

Louis Mélançon



*John Dexter*

**T**HE WORD THAT most accurately describes the status of the Metropolitan Opera as we go to press is “flux.” Flux as to finances, flux as to union contracts, and flux as to artistic policies. The new “-umvitate”—whether “mon-” of Anthony Bliss, “du-” of Bliss and conductor James Levine, or “tri-” of Bliss, Levine, and productions-head John Dexter—has simply not had time enough yet to establish a pattern. How long this pattern will take to emerge is unsure, for much of it depends upon the over-all financial situation, which in turn depends on the specifics of the contracts with the various unions involved in the Met.

The fact is that the contract situation, which was on a tightrope all summer, is still unresolved. Two of the major unions (the stagehands and the orchestra) extended their bargaining periods until December 31, 1975, but even

should they decide to extend further, the AGMA contract negotiated last summer expires in the summer of 1976, and it is thought that the other unions will not sign contracts for a term longer than the AGMA one. Thus, the whole bargaining process will begin again next summer.

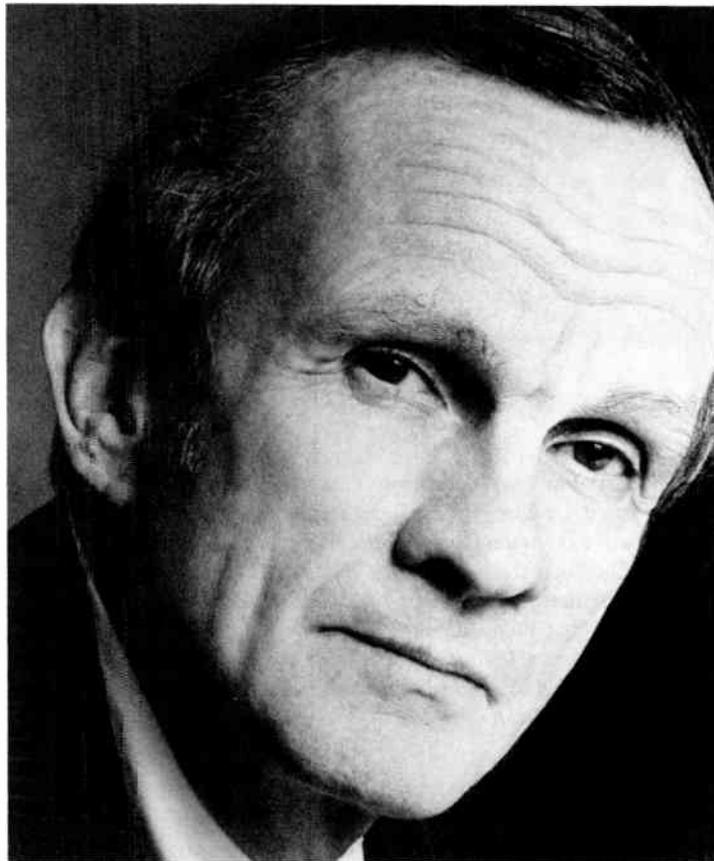
This situation puts pressure on management in two ways: it must divert time from long-range plans (both artistic and funding plans); and it prevents management from knowing the parameters of its financial burden, since it does not know the specifics of what it must spend in the coming years.

The addition of Richard Rodzinski on the artistic side and Edward Corn for special projects will doubtless aid both short-range and long-range planning, not only of artistic main-stage matters but in the area of what has come to be called “community out-reach,”—the mini-Met (now



James Levine

Christian Steiner



Anthony Bliss

dormant), the Met Studio concept (now defunct), as well as the hunting up of new sources of funding from private, business, and governmental sectors. The fact is that, unless ways are found to bridge the ever-widening gap between costs and the amount of contributions raised, the last monies the Met has (from the sale of the old opera house land) will be spent in two to three years' time (by current projections), and the Met will be as bankrupt as the City of New York.

It is known that a variety of plans are being actively studied—the moving-in of a ballet company, extended touring, etc. Just how radically the Met will change will depend upon financial figures, but there seems no doubt that the management has at last realized that the situation cannot be patched over indefinitely. It must be rethought from the ground up.

This thinking has extended to artistic main-stage activities as well. The current management has lost the Bing-years enchantment with lavish productions at lavish cost, and moreover is actively studying ways in which nonrepertory operas, which should be seen at the Met, could be staged for a limited number of performances at very low cost, either through cannibalization of existing sets or through ingenious use of lighting and other techniques. Smaller companies have set occasional examples in this area that the Met might do well to emulate.

But the whole picture is extremely cloudy. The thought is that by next summer, when the present management will have had a year to settle in and to plan, the outlines will be clearer, and given a settlement on a minimum two-year contract with the unions, the shape of the Met in the later Seventies will be evident.

# THE COPYRIGHT REVISION BILL:

## SOMEBODY'S LOSING

*For about twenty years now, various revision bills to the U.S. Copyright Act have been tossing around in Congress. The lengthy deliberation is not unusual, perhaps. What is unusual is that the present Copyright Act—that sacred epistle which allegedly “protects” intellectual property—was enacted in 1909. Xerox machines, cable TV, and multi-million-dollar recording companies did not exist at that time. Herewith, a brief description of the resultant pandemonium, and its effect on that sometimes-heralded but rarely-rewarded soul, the creator.*

**S**O MANY CHANGES in the economy and in technology have occurred since the U.S. Copyright Law was enacted that a revision is being sought by the creator/writers—composers and authors—and their publishers. As we go to press, action is being taken by the Senate Judiciary Committee, and it is hoped that a Revision Bill (Senate Bill No. 22—the McClellan Bill, and House Bill No. 2223—the Kastenmeier Bill) will be enacted before the spring of 1976.

The Bill has taken an inordinately long time to come to fruition. On several occasions when it seemed on the verge of getting through both houses, other legislation, more pressing and immediate (and perhaps more in the “public interest”) side-tracked the bill. More importantly, there has been fierce lobbying, particularly by the recording and jukebox industries and (hard to believe) by the National Education Association. All of these lobbies are working against the best interests of the creator.

### Reprography

Reprography (the Washington term for Xerography and the like) did not exist in 1909. The present widespread

*Mr. Sour, former president of BMI (Broadcast Music Inc.), currently serves as a consultant to that organization, as well as to AGAC. (the American Guild of Authors and Composers).*

practice of Xeroxing sheet music and scores, convenient and inexpensive, is *illegal* and eats into the composer's royalty substantially. Only the owner of the copyright (usually the author or composer and his publisher) has the right to copy or give permission to copy a work. Take, for example, the case of the Pulitzer Prize-winning composer whose work for orchestra and chorus of one hundred was programed by a highly regarded eastern university. He was invited to dinner before the concert by the dean. Before dinner he asked the dean over for cocktails. He discovered that the chorus had purchased one copy of the S.A.T.B. choral arrangement and had Xeroxed one hundred copies. The school's budget was spared, but the composer's royalties from that performance didn't even pay for the drinks. If this practice is allowed to continue, writers whose sole source of income is residuals (royalties) from educational works will continue to lose the small but justly-due payment for their efforts.

But the strong National Education Association lobby has won this one: the Senate Judiciary Committee has decided—in the Association's favor—that for classroom usage, *complete* musical works and *portions* of books may be copied. Libraries may copy items in their collection, but not “systematically.” But no practical means of policing schools, colleges, libraries, or individuals has been decided upon to prevent full-scale duplication, and the writer or

composer is sure to suffer a considerable loss of income therefrom.

### Mechanical royalties

By the Act of 1909, when a commercial recording is made, the author/composer/publisher gets a statutory fee (mechanical royalty) of 2¢ per side, maximum. Normally this fee is divided equally between the publisher and the writer. The publisher gets 1¢ and the composer gets the other penny. The Revision Bill, as first approved by the Senate Judiciary Committee, raised the rate to 3¢. (The creators had pressed for 4¢, but were forced to back down, defenseless against the powerful lobbies of the record companies.) In October, "liberal" Senator John Tunney (D.—California) proposed an amendment *reducing* the 3¢ to 2½¢. Marvin Hamlisch—composer of the Broadway musical *A Chorus Line* and an Academy and Grammy Award winner—testified at the time that the million-copy sales of Barbra Streisand's recording *The Way We Were* produced but five thousand dollars for himself. The record company grossed more than one million. In spite of this and other testimony, the Tunney amendment was adopted. The record companies won; the creators lost.

### Term of copyright

Aside from being out of date, there are factors of the 1909 Act which compare unfavorably with all other countries in the Western world. Every Western nation, save the United States, belongs to the Berne Copyright Convention, established in 1886. The term of copyright, as drawn by the Convention, runs for fifty years after the death of the longest-lived collaborator. The U.S. Act established a period of twenty-eight years with a right to renew the copyright for another twenty-eight years—a grand total of fifty-six. After that, the work falls into the Public Domain; it is, in essence, up for grabs. By a vote of one, at this time the term of copyright in the Revision Bill was made to conform to that in the Berne Convention. But if the interest groups prevail, this could change.

### The performing right

The 1909 Act called for the payment of fees for "public performance *for profit*." In other words, when a musical work is performed on a broadcasting station, at a hotel, night club, etc. the user must pay a fee to the owner of the copyright. Almost every user is licensed to perform the works by ASCAP, BMI or SESAC. Most users have licenses with both ASCAP and BMI.

The Berne Copyright Convention omits the words "for profit." Thus a performance at a college or a non-profit radio station must be paid for as well. And why not? The musicians, electricians, stagehands—everyone but the composer—is paid. The Revision Bill conforms to the Berne principle and omits "for profit" at this moment but that, unfortunately, doesn't mean that all is well. The National Education Association and educational television networks fought this section of the bill all the way and haven't finished yet. Their latest argument is that negotiating a fair fee would be impossible. Additionally, city-owned stations have already been exempted from paying by this Bill.

### The jukebox

In every country is the Western world but ours, jukebox operators have always paid a fee for the use of music. When the Act was written in 1909 the jukebox (in those days a phonograph with headphones in a penny arcade) was not considered a public performance for profit. So the jukebox owners have had a free ride for over sixty years. The revision stipulates a payment of \$8.00 per box per annum to be administered by a tribunal, which at ten-year intervals will determine whether the fee should be changed. The payment of any fee at all has been fought all along by the powerful jukebox lobby.

### Cable TV

Cable television, certainly a new form of broadcasting, as yet has made no payments for performance although the cable companies have been operating for years. The Revision Bill calls for the establishment of a government-appointed tribunal which, *three years after* the passage of the new Act, will set rates for payment. Thereafter the rate will be reviewed at ten year intervals.

The American Guild of Authors and Composers, long a defender of the rights of all authors and composers, has been fighting for a decent Revision Bill for twenty years. Now that a bill is almost sure to emerge, the Guild, together with the other music industry writer-organizations (National Music Publishers' Association, the Music Publishers' Association, BMI, ASCAP, and SESAC), continues to fight to improve it and to remove some of the restrictions mentioned above. How good it will be remains to be seen.

The lot of the composer has never been easy. We urge you to help by writing to your Congressman or Senators to make certain that the Copyright Revision Bill will not only be enacted, but will equally and justly serve the needs of both the creator and the music industry. As the Revision Bill stands now, the creators stand to be grossly short-shrifted for the following reasons:

1. **The practice of reprography** of creative works is not only sanctioned by Congress, but any limitations placed on it via the Bill have no effective means of enforcement.
2. **The Tunney amendment** gives a tremendous advantage to the recording companies. The creator/copyright owner is, in essence, still required by law to accept but token payment for the privilege of having his work recorded. The recording industry is one of the most financially powerful interest groups in this country. And this, of course, means that they are more influential, politically.
3. **The performing right** allows the composer's work to be publicly performed for no fee when there is no claimed profit motive by the broadcastee. Although this stands to be revised in the present bill, we fear that the National Education Association will be successful in reversing such a decision.
4. **No royalties whatsoever are paid to the composer when his works are played on a jukebox.** Jukebox owners are almost as powerful a group as the recording industry. There are more of them, and they are more widespread. They have organized, and exerted pressure on their local Congressmen. It has worked.
5. **No royalties whatsoever are paid to the composer when his works are performed over cable TV.** The Bill's plan for a tribunal to administer fee payments, low that they are, will not go into effect until three years after the Bill goes through.



Javore, Gayle, LaManna, De Paur, Greene, Bouck, Williams

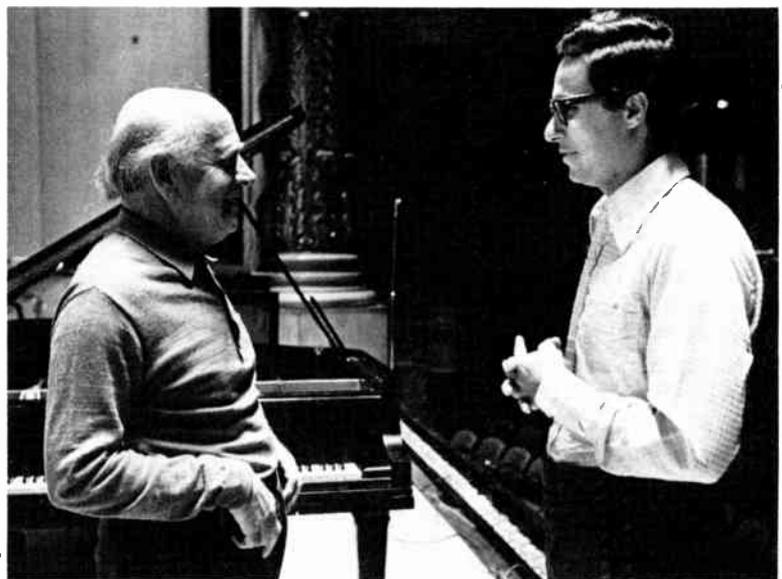


John Brooks

Hon. Barbara Jordan, Foster

# the musical whirl

Members of the **After Dinner Opera Company** surround **Leonard De Paur**, an official of Lincoln Center, after a performance there. . . . Congresswoman **Barbara Jordan** chats with Houston Symphony conductor **Lawrence Foster** after narrating Copland's *Lincoln Portrait* with the orchestra. . . . **Eugene Ormandy** discusses Philadelphia Orchestra Diamond Jubilee performance last November with piano soloist **Tedd Joselson**.



Adrian Siegel

Ormandy, Joselson

*Reviewing in this issue:*

ROBERT W. BAISLEY  
 MARK BLECHNER  
 FAUBION BOWERS  
 CARL CUNNINGHAM  
 ANDREW DERHEN  
 HARRIS GOLDSMITH  
 JOHN H. HARVEY  
 JOHN C. HASKINS  
 JACK HIEMENZ  
 BORIS NELSON  
 FRANK PETERS  
 ARTHUR SATZ  
 BRUCE SAYLOR  
 PATRICK J. SMITH  
 SUSAN T. SOMMER  
 JAMES WIERZBICKI

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 CINCINNATI
 

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**Cincinnati Sym.: Clementi premiere**

The name of Muzio Clementi (1752–1832) is unshakably connected with the piano. As a composer he produced volumes of sonatas and sonatinas for the instrument, as a virtuoso pianist he toured Europe and engaged in a notorious “play-off” competition with Mozart, and as a businessman he was involved with piano manufacturing in England. Although he is known to have written some twenty symphonies, his orchestral music, for most people, falls into the heard-of-but-never-actually-heard category. That situation is likely to change, due primarily to the musicological efforts of the young Italian pianist Piedro Spada. Clementi’s Symphony No. 4 in D, as edited by Spada, was featured on the opening concerts of the Cincinnati Symphony Orchestra’s 1975–76 season on September 19 and 20.

The performances, led by CSO music director Thomas Schippers, marked the first time the piece had been heard since Clementi himself conducted it in Leipzig in 1822. Not only did the U.S. premiere shed light on an all but unknown facet of this important classical composer, but it revealed a symphonic work of considerable stature. The forty-minute symphony is a mature piece of writing. It contains no padding, no repetitive accompanimental figures, no extended sequence patterns. Its melodic substance is rich and varied, its harmonic content—similar to that found in the later Beethoven symphonies—is

# debuts & reappearances

full of surprises. The most interesting movement is the third, a dark colored Scherzo that ironically sets skittish dance rhythms against a grim backdrop of minor chords.

The manuscripts of Symphony No. 4 and three other symphonies can be found in the Library of Congress (portions also are in the British Museum collection). The scattered pages were long thought to be disconnected fragments: the two Clementi symphonies which Alfredo Casella reconstructed in the 1930s (one of which was recorded by the Haifa Symphony in 1965), were actually patchwork composites of movements from all four works. But Spada’s research proved the fragments to be more unified than anyone had previously realized. Spada’s edition of the complete extant works of Clementi, the keyboard pieces as well as the symphonies, will be available from Edizioni Suvini-Zerboni of Milan by spring of 1976. J.W.

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 COLUMBUS
 

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**Columbus Sym.: Laderman prem.**

The Columbus Symphony Orchestra, under music director Evan Whalton, opened its twenty-fifth anniversary season October 10–11 at the Ohio Theatre with the world premiere of Ezra Laderman’s commissioned work, *Columbus*. Though an appropriate means by which to launch the orchestra’s Bicentennial season (and on the eve of Columbus day) the twenty-two-minute monologue for solo bass and full orchestra failed to do justice to its imaginative text. The scene, adapted from the play by the late Nicos Kazantzakis, deals with Columbus’ vision of a new voyage as confessed to an abbot, and with his subsequent request for help.

History is stretched by poetic license, and some of the lines—“I do



Ezra Laderman: a Columbus commission for Columbus

not shut my eyes to see God, I open them" or "Let me reach the islands that drift in my mind"—beg to be set to imaginatively soaring music. Laderman (1963 Prix de Rome, Guggenheim fellowship, multiple commissions, now composer-in-residence at the State University of New York in Binghamton) chose a rambling recitative style that was both angular for the soloist and too slavish in the orchestration for the programmatic nature of the text. The resultant patchwork abounded in repetitive vocal gyrations of over two and a half octaves, and a steady orchestral thrust which, though at times winning, could not sustain itself. There is no real climax, for there are many constant ones; the piece lacks a sense of dramatic curve and arch.

Under the strong baton of Whalton, the orchestra played for the most part with tight control. Bass Ara Berberian was outstanding in projecting the illusion of the somewhat bewildered and bewitched sailor pleading his case. He did superbly in giving life to the at-times semi-cantorial tessitura, and his enunciation was perfect. The reception by the full house was polite. Beethoven's Ninth, also on the program, received a fair if somewhat chopped up reading, with the Columbus Symphony Chorus (James Gallagher its conductor) emerging as the best part. The strings of the or-

chestra sounded weak and mushy, and there were some strange tempos—the Adagio much too slow—but on the whole a decent rendition. The audience was completely taken by it. B.N.

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## HOUSTON

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### Shepherd St. Qtet.: Haydn, Cooper

Four Houston Symphony principal string players made their debut as the Shepherd String Quartet on September 21 at Rice University's Hamman Hall. The quartet's premiere performance also marked the inauguration of its residency at the University's fledgling Shepherd School of Music.

Three of its members are already familiar to Houston audiences, having played with other professional string quartets for twenty years or more. Violist Wayne Crouse and cellist Shirley Trepel are performers with long experience as members of the Lyric Art Quartet, which has since re-formed with new personnel at Rice's sister institution, the University of Houston. Violinist Raphael Fliegel is a pioneer chamber musician in Houston as former leader of the now-inactive Music Guild Quartet.

Under their new director, symphony concertmaster Ronald Patter-

son, the Quartet offered rather brilliant performances of some very familiar music and some that was brand new. At this youthful point in its existence, the Quartet does not maintain the tonal unanimity one might expect to hear from it a year from now. Basically, the contrast lies between the pure, silvery tone of Patterson and the richer band of musical sound produced by a wider vibrato from the other three players.

The Shepherd Quartet achieved some of its warmest, boldest playing at the outset of the concert with an appealing performance of Haydn's *Sunrise Quartet* that was tinted with gorgeous suggestions of romantic feeling. Interest centered principally around the premiere of the Fifth String Quartet, subtitled *Umbræ*, by faculty composer Paul Cooper, a work that shared some thematic material with his new Fourth Symphony (premiered by the Houston Symphony at another inaugural concert two nights earlier). As its title implies, *Umbræ* is a work of shadowy musical expression, sometimes conveyed in muted string colors. Fleeting accompanimental patterns weave into a complex texture that suggests aleatoric rhythms, and melodic fragments unfold from initially tight chromatic formations into themes of more diatonic implication. Although emotional restraint was the keystone of Cooper's musical thought, the quartet that emerged is a lovely and deeply felt work.

Though Ravel's F major Quartet was to be the capstone of the concert, the Shepherd Quartet produced a rather lean tone with occasional abrasive attacks during the first two movements. However, this gave way to a warm tone in the Adagio and a Finale of surging exuberance. c.c.

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## IOWA CITY

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### Univ. of Iowa Sym.: Scriabin in color

A new experience has been added to the University of Iowa's collection of distinctions. On September 24 at the bright new Hancher Auditorium in Iowa City, the music department gave Alexander Scriabin's theosophical fifth symphony, *Prometheus, The Poem of Fire*, a splendid performance replete with multi-color light projections from a laser deflection system.

# "The Sony TC-756 set new records for performance of home tape decks!"

(Stereo Review, February, 1975)

Hirsch-Houck Laboratories further noted, "The dynamic range, distortion, flutter and frequency-response performance are so far beyond the limitations of conventional program material that its virtues can hardly be appreciated!"

The Sony TC-756-2 features a **closed loop dual capstan tape drive system** that reduces wow and flutter to a minimum of 0.03%, **logic controlled transport functions** that permit the feather-touch control buttons to be operated in any sequence, at any time without spilling or damaging tape; an **AC servo control capstan motor** and an eight-pole induction motor for

each of the two reels; a record equalization selector switch for maximum record and playback characteristics with either normal or special tapes; mic attenuators that eliminate distortion caused by overdriving the microphone pre-amplifier stage when using sensitive condenser mics; tape/source monitoring switches that allow instantaneous comparison of program source to the actual recording; a mechanical memory capability that allows the machine to turn itself on and off automatically for unattended recording.

In addition, the TC-756-2 offers 15 and 7½ ips tape speeds; Ferrite & Ferrite 2-track/2-channel stereo

three-head configuration; and symphase recording that allows you to record FM matrix or SQ\* 4-channel sources for playback through a decoder-equipped 4-channel amplifier with virtually non-existent phase differences between channels.

The Sony TC-756-2 is representative of the prestigious Sony 700 Series—the five best three-motor 10½-inch reel home tape decks that Sony has ever engineered. See the entire Sony 700 Series now at your nearest Superscope dealer starting at \$699.99.

**SONY** Brought to you by  
**SUPERSCOPE.**



\*SQ is a trademark of CBS, Inc. ©1975 Superscope, Inc., 8150 Vineland Ave., Sun Valley, CA 91352. Prices and models subject to change without notice. Consult the Yellow Pages for your nearest Superscope dealer.

# Ten years after the revolution.



1966

In 1966, Sony brought you the world's first commercially available turntable with a DC servo motor. This effectively slowed motor speeds from 1800 to 300 RPM, producing the lowest rumble figures measured till then. The servo system also drastically reduced wow and flutter, thus giving you a chance to hear what 33-1/3 records sound like at 33-1/3. Quite a revolution.

But we haven't been sitting on our laurels since then. Introducing the PS-4750.

Overlooking the fact that the PS-4750 is so pretty we could sell it through interior decorators, here are its technical innovations.

It has a direct drive servo motor that gives you incredibly low rumble, wow and flutter levels.

Plus total immunity from line voltage and frequency variations. That's because the PS-4750 has a unique system that, in essence,



1975

consists of a sensitive magnetic head (with eight gaps instead of the normal one) which monitors platter speed by picking up a magnetic coating on the outside of the platter. This speed data goes through a small computer connected to the motor, instantly compensating for variations.

The PS-4750 is also ultra insensitive to outside vibrations (which causes intermodulation distortion and acoustic feedback). Sensitivity to outside vibration shows as "Q." And the PS-4750 has a platter and case made of SBMC, a Sony developed compound which has one third the "Q" of aluminum or zinc.

We've even done something

about the resonance caused by warp in the record itself. Those round doohickies on the platter are rubber suction cups that actually provide greater contact surface, reducing the longitudinal vibration caused by warp. The end result is a cleaner sound.

So, all in all, our engineers think the PS-4750 is pretty nifty. But don't take our word for it. Just stop into your Sony dealer and show your independence by listening for yourself.

## SONY®

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## What Is a "Vertical FET"?

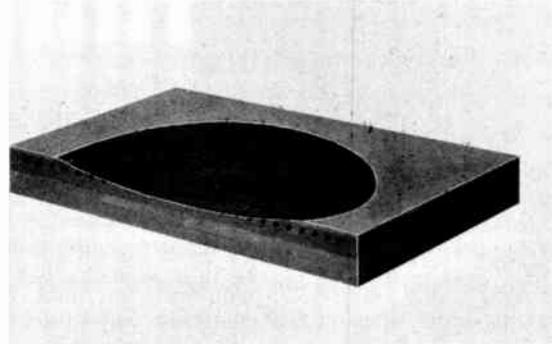
With the announcement of the Yamaha power amplifier (see "Equipment in the News," June '75) and previous Sony products using "vertical FETs," yet another new phrase has entered the high fidelity lexicon. Readers presumably know at least that FET stands for field-effect transistor and that these devices have certain technical advantages over the more common bipolar transistors; but what does that word "vertical" imply? Thereby hangs the story of the FET amplifier as a practical reality.

Field-effect transistors, like vacuum tubes, are the electrostatic field of an applied, fluctuating voltage as a valve to control the quantity of current flowing, on an instant-by-instant basis, through the device—from power supply to output. In conventional FETs the current path in the conductive film of the transistor passes between elements that hold the static "control" voltage, which alternately blocks off the current's passage or opens it up by means of the voltage's field effect within the conductive path.

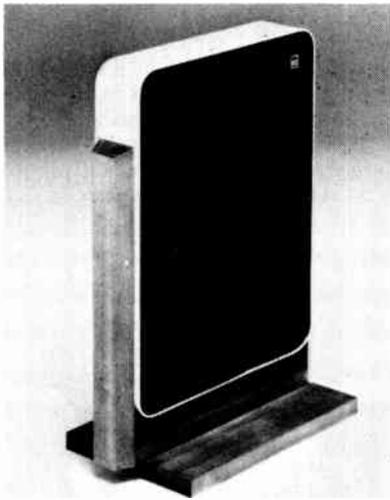
There are limits to the physical size of the conductive path if it is to be kept within the control voltage's field, however; and this severely limits the current—and hence power—conventional FETs can handle. That's why, until recently, there have been no amplifiers that made use of the FET's performance superiority in power stages.

In the vertical FET the current passes through the thickness of the conductive film—which therefore can be made as large in current-carrying cross section as it need be for the intended power capacity. The conductive film is

studded with control-voltage elements, spaced so that their electrostatic fields will cover the whole cross-section area. The current passing through the field now is moving vertically through the thickness of the film, rather than "horizontally" along the film; hence the name and its implied importance where current and power requirements are high.



*This model suggests construction of Yamaha vertical FET. Dark "screening," visible in center area and (in cross section) at the edges, is the control element. Current must thread its way through this grid in passing from one surface to the other of the main conductive element, the medium-gray upper layer. Lighter gray portion below represents nonconductive substrate to support working elements.*



## Equipment in the News

### B.E.S. shuns cones, pistons, and enclosures

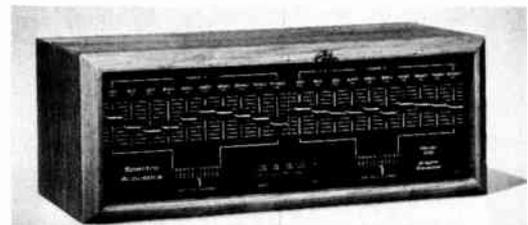
A line of loudspeakers operating on a novel principle and avoiding traditional types of cones, pistons, and enclosures is available from Bertagni Electroacoustic Systems, Inc., of California. Multiple drivers (two to four, depending on the system) activate separate regions of a "pulsating plane," a pre-tensioned diaphragm made of a proprietary material called Soniflex. The units, which are relatively compact, are claimed to produce a wide spectrum, flat frequency response, low distortion, and a virtually spherical radiation pattern. Known as Geostatic speaker systems, they range in price from \$129 to \$499.

CIRCLE 152 ON READER-SERVICE CARD

### Spectro Acoustic introduces graphic equalizer

The Model 210 equalizer divides each channel into 10 frequency bands and allows 15 dB of boost or cut in each of the audible octaves. The unit uses active filters that avoid passive inductors with their sensitivity to magnetic fields and current saturation. The equalization settings, according to Spectro Acoustics, do not affect signal to noise ratio or increase distortion, and each channel is provided with over-all gain controls. The S/N ratio of the Model 210 is claimed to be greater than 90 dB below 2 volts rms, and the dynamic range extends over 100 dB below full output. A high voltage output stage is said to eliminate the need for meters or LEDs for input-output adjustments. The suggested list price is \$275.

CIRCLE 151 ON READER-SERVICE CARD



← CIRCLE 42 ON READER-SERVICE CARD

## Dynamic range expander from Pioneer



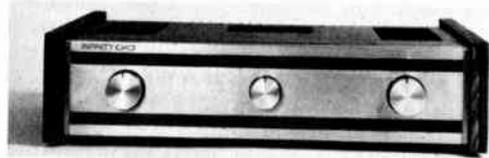
Pioneer High Fidelity has announced that its RG-1 dynamic range expander is ready for marketing. The unit, which restores transients and dynamic range to approximately those of the original program material, reduces the audibility of low-level noise at the same time. A switch allows the user to adjust the degree of expansion between 6 and 14 dB in 2-dB steps to tailor the expander for any program material. If uncompressed material is to be played, expansion can be shut off. The RG-1 can be connected to any high fidelity component system via the tape-out and tape-monitor jacks. An input control matches it to the components with which it is used. The cost is approximately \$175.

CIRCLE 153 ON READER-SERVICE CARD

## Class D output is Infinity's new switch

Infinity Systems, Inc., has announced that its DSP (digital signal processing) switching amplifier is finally available for the consumer market. This unit employs class D amplification, in which the output transistors operate as high-speed switches, spending most of the time fully on or off. In class D the output transistors develop virtually no heat except during the off-to-on and on-to-off transition times—and these are extremely short. Thus the DSP amplifier is very efficient and can operate with a smaller than usual power supply and less heat sinking. And non-linear behavior of the output transistors cannot cause distortion. The new model, compact and weighing a mere 35 pounds, is rated at 250 watts continuous power per channel and is credited with improved reliability. Its retail price is \$1,850.

CIRCLE 154 ON READER-SERVICE CARD



## Community Electronics' new tower speaker



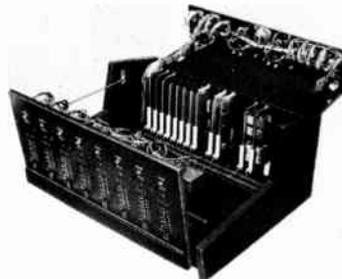
This four-way floor-standing speaker system features a ducted-port enclosure design. Its drivers, according to Community Electronics, reduce failure and distortion due to excessive power at the frequency extremes. The CEI 124's piezoelectric supertweeter is claimed to improve transient response as well. Also including a 12-inch woofer, 3½-inch mid-range, and 1-inch dome tweeter, the model can be used with amplifiers rated up to 400 watts continuous power per channel. It has an impedance rating of 4 ohms. The speaker, which comes in an oiled walnut veneer cabinet, carries a per-unit price of \$295.

CIRCLE 155 ON READER-SERVICE CARD

## Audio-processing components from Robins

The Integra 3 system from Robins-Fairchild consists of audio-processing components constructed on printed-circuit modules that can be interconnected so as to serve a wide variety of uses. The line includes filters, mixers, preamps with compressors or limiters, oscilloscopes, and remote gain controls. The Integra 3 modules can be purchased separately or as part of a factory-engineered console. Price differs according to the type of console, which may also be custom-designed. Separate modules can be used with standard mounting hardware.

CIRCLE 156 ON READER-SERVICE CARD



## 3M markets cassette storage system



The C-Box cassette storage system featuring stackable and interlocking boxes and pushbutton drawers for quick cassette access is available from the 3M Company. An index label is provided on the front of each box, and there is a drawer insert card for detailed recording identification. Also available are a wall bracket for permanent mounting and a handle for easy toting. Scotch Classic C-60 and C-90 cassettes can be bought prepackaged in the C-Box components (or, for 30 cents less apiece, in the traditional Philips box). Bought as accessories, the C-Boxes cost \$1.99 for a sleeve-pack of three empty units, and the wall bracket and carrying handle are 99 cents each.

CIRCLE 157 ON READER-SERVICE CARD



# BSR Silent Performers

**State-of-the-art belt-drive turntables  
at today's state-of-the-wallet prices.**

For years most expensive manual record-playing devices have used belt-drive as a smooth, trouble-free—and most important—*silent* method for transmission of power. Now, our engineers have succeeded in integrating a highly-refined belt-drive system into more affordably-priced turntables. They offer a combination of features and performance not yet available in even more expensive competitive models. We call them the Silent Performers.

Four models are available. The 200 BAX is the deluxe automatic belt-drive turntable. Full automatic capability is achieved with a gentle yet sophisticated 3-point umbrella spindle. It has a heavy die cast platter, high-torque multi-pole synchronous motor, tubular "S" shaped adjustable counterweighted tone

arm in gimbal mount, viscous cueing, quiet Delrin cam gear, automatic arm lock, dual-range anti-skate, stylus wear indicator and much more. Included are base, hinged tinted dustcover, and ADC VLM MKII cartridge.

The 20 BPX is an automated single-play belt-drive turntable. It has the "S" shaped tone arm and features of the deluxe automatic model with a precision machined platter and ADC K6E cartridge. It comes complete with base and dustcover. Model 20 BP is identical but without cartridge.

Model 100 BAX (not shown) automatic belt-drive turntable has a low mass aluminum tone arm with square cross section and a precision machined platter. It is packaged with base, hinged tinted dustcover, and ADC K6E cartridge.



Consumer Products Group  
BSR (USA) Ltd. • Blauvelt, N.Y. 10913



BSR 200 BAX—Deluxe automatic belt-drive turntable



BSR 20 BPX—Automated single-play belt-drive turntable

E 1	F 2	L 3		D 4	Z 5	B 6		H 7	A 8	W 9	O 10		X 11	N 12	I 13	
Y 14		U 15	S 16	F 17	E 18			ZZ 19	C 20	N 21		XX 22	K 23	R 24	A 25	H 26
	V 27	O 28		G 29	U 30	ZZ 31	A 32	K 33	P 34	V 35		S 36	X 37	N 38	J 39	
B 40		F 41	V 42	G 43		O 44	E 45	I 46	Z 47	XX 48		T 49	V 50	B 51	XX 52	
X 53		S 54	M 55		Y 56	A 57	D 58	C 59	N 60	F 61		X 62	G 63	S 64	R 65	
E 66	K 67		V 68	L 69		P 70	J 71	O 72		U 73	R 74	XX 75	T 76	A 77		
M 78	C 79	I 80	S 81	L 82		H 83	ZZ 84	R 85		G 86	T 87	Q 88	A 89		F 90	
Y 91		ZZ 92	T 93	D 94	Z 95	B 96		H 97	N 98	A 99	V 100	J 101		D 102	R 103	
P 104	W 105	XX 106	X 107		L 108	G 109	F 110	I 111	B 112	XX 113		G 114	A 115	H 116	X 117	
N 118	V 119	U 120	R 121	I 122	J 123		O 124	A 125	V 126		N 127	S 128	F 129	V 130	E 131	
H 132		W 133	D 134		Y 135	C 136	G 137	Q 138		V 139	A 140	R 141	X 142	L 143		
Z 144	M 145	B 146	A 147		R 148	Z 149		V 150	E 151	B 152	K 153	G 154		N 155	YY 156	
O 157	X 158		S 159	M 160	D 161	C 162		ZZ 163	B 164	V 165	XX 166	A 167	X 168	E 169		
O 170	I 171	U 172	G 173	T 174	X 175	XX 176	R 177	N 178	YY 179		E 180	F 181	V 182		U 183	
G 184	K 185	O 186		R 187	J 188	P 189	M 190	YY 191	W 192	A 193	H 194	C 195	B 196			

### DIRECTIONS

To solve these puzzles—and they aren't as tough as they first seem—supply as many of the Output words as you can in the numbered dashes following the Input. Unless otherwise specified in the Input, the Output consists of one English word "Comp." means compound, or hyphenated word.

Transfer each letter to the square in the diagram that bears the corresponding number. After only a few correct guesses you should begin to see words and phrases emerging in the diagram, which when filled in will contain a quotation related to music, recordings, or audio.

The words in the quotation are separated by darkened squares and do not necessarily end at the end of a row.

Try to guess at these words and transfer each newly decoded letter back to its appropriate dash in the Output. This will supply you with further clues.

A final clue: The source of the quotation—the author and his work—will be spelled out by the first letters in the Output, reading down.

The answer to HiFi-Croctic No. 8 will appear in next month's issue of *High Fidelity*.

### INPUT

- A. Fantastic opera by Rimsky-Korsakov (3 wds.)
- B. American songwriter (1879-1951) whose "Sweet Adeline" was suggested by an advertisement for soprano Adelina Patti
- C. A Beatle
- D. Rodgers and Hart wrote this song for the movie *Love Me Tonight* (1932)
- E. Variety of speaker baffle
- F. Popular musical of the 1920s, with music by Jerome Kern (2 wds.)
- G. Early blues singer, when she recorded "Crazy Blues" in the 1920s, bootleg copies sold for three times the list price (full name)
- H. Dutch province and city; site of famous university
- I. Scottish dancer, starred in the movie *The Red Shoes*
- J. French composer (1851-1931): *The Enchanted Forest*
- K. To sing in accordance with both musical and ecclesiastical rules
- L. Swiss composer (b. 1893): radio and film music, the ballet *L'île enchantée*
- M. Milhaud's 14th and 15th string quartets played together

### OUTPUT

- 167 125 147 8 99 57 140 193
- 77 32 89 25 115
- 51 164 146 40 196 6 112 96
- 152
- 79 59 162 20 136 195
- 94 134 58 161 102
- 131 18 180 45 169 151 1 66
- 110 2 181 41 129 90 17 61
- 137 63 29 109 173 43 86 114
- 154 184
- 7 83 26 194 132 97 116
- 171 111 39 80 13 122 46
- 71 188 123 101
- 33 153 185 67 23
- 108 82 69 3 143
- 145 78 55 160 190

### INPUT

- N. Percussion instrument used for special effects in Falla's *The Three-Cornered Hat* and Stravinsky's *Petrushka*
- O. See Word YY
- P. Irish music critic and dramatist (1856-1950)
- Q. Made to conform, as music to a text
- R. Largest member of the key-bugle family
- S. Noisy fight, as on a baseball field (slang)
- T. Of an organ, a small supplementary one with a sprightly tone
- U. Signal that emerges from an amp, preamp, etc.
- V. Donizetti opera (4 lt. wds.)
- W. Stringed instrument of Oriental origin, popular during the Renaissance
- X. Popular vocalist, sang regularly on Steve Allen's *Tonight* show in the 1950s (full name)
- Y. Followed by *d'attaque*, French for concertmaster
- Z. Massenet opera
- XX. Light, often farcical, musical drama
- YY. With Word O, a popular lyricist, wrote songs for Bob Hope, Bing Crosby, Nat "King" Cole
- ZZ. An obsolete woodwind

### OUTPUT

- 38 21 178 12 127 155 118 60
- 98
- 170 157 4 28 72
- 189 70 34 104
- 44 88 124 186 138 10
- 103 74 24 148 121 177 85 187
- 65 141
- 64 16 128 36 54 81 159
- 174 49 87 93 76
- 73 30 15 172 120 183
- 35 50 130 68 139 165 100 119
- 42 150 27 182 126
- 105 192 133 9
- 158 107 53 175 142 62 37 117
- 11 168
- 56 135 14 91
- 149 144 95 5 47
- 22 113 75 52 106 48 166 176
- 191 156 179
- 31 84 19 163 92

Solution to last month's HiFi-Croctic appears on page 4.

In the development of our \$4000 state-of-the-art Servo Statik 1A we came across new principles which we determined to incorporate into less expensive speakers — principles concerning crossovers, and particularly the phase relationships of component drivers in a system. By properly balancing the phase leads and lags of each driver, and by scrupulous design of the drivers themselves, we are able to reproduce recorded temporal information absolutely accurately in a speaker of modest size and price.

Stated simply — there's a depth perception about the Monitor Jr. that is much like being in an acoustically perfect concert hall.

Listen to other speakers — even

very expensive ones. In any one microsonic moment, generally the tweeter will speak first; then the midrange; then the woofer.

Listen to the Monitor Jr. It delivers the temporal information precisely *in* phase: first the transient attack, then the first echo, the second echo and the subsequent reverberation. You hear the natural, undistorted depth and ambience of the concert hall!

And note the spatial relationships of the instruments. If the tymps were on a riser to the left rear, they sound that way. If the clarinet soloist was in the second row just to the right of the podium, she sounds that way.

Our crossovers are greatly responsible for this dimensionality.

Each of the six drivers of the Monitor Jr. system — our two sets of 12" transmission line woofers, our 1½" dome midranges and 1" dome tweeters — speaks with a temporal integrity and an individual accuracy of depth-information in a way that can only be called startling.

And note the optional \$25 set of pedestals. They position the Monitor Jr. off of the floor for optimum reproduction; yet it functions beautifully on the bookshelf.

Our Monitor Jr. brings you the life-like warmth and accuracy of our Monitor II. And its price is roughly half — about \$225.

Not a bad investment — to own your own concert hall.

## Step into Infinity's little concert hall: The Monitor Jr.



 Infinity

We get you back to what it's all about. Music.

**Now  
you can have  
Dual precision  
any way  
you like.**

Every Dual, from the 1225 to the CS701, is designed to fulfill one basic concept: to provide more precision than you are ever likely to need.

Perhaps this is why more component owners—audio experts, hifi editors, record reviewers and readers of the music/equipment magazines—own Duals than any other turntable. These serious music lovers, whose investment in records typically exceeds their investment in equipment, prefer Dual for only one reason. Quality.

Until recently, Dual quality has been available only with fully automatic turntables with both single-play and multi-play facility. Now the choice is much broader. Of the seven Dual models, three are single-play only. Two of these are fully automatic: one is semi-automatic. Dual turntables also use all three types of drive systems: belt, rim and direct.

The way a tonearm is moved to and from the record is not critical. Nor is the type of drive system. What is critical is how faithfully the tonearm permits the stylus to follow the contours of the groove and how accurately and quietly the platter rotates.

If precision performance and reliability are of primary importance to you—as they should be—you'll find them in every Dual.



Dual 1225



Dual 1249



Dual CS701

Dual 1225. Fully automatic, single-play/multi-play. Viscous damped cue-control, pitch-control. 10 $\frac{1}{2}$ " platter. Less than \$140, less base. Dual 1226, with cast platter, rotating single-play spindle, less than \$170. Dual 1228, with gimballed tonearm, synchronous motor, illuminated strobe, variable tracking angle. Less than \$200.

Dual 1249. Fully automatic, single-play/multi-play. Belt drive. 12" dynamically-balanced platter. Less than \$280, less base. Full size belt-drive models include: Dual 510, semi-automatic, less than \$200. Dual 601, fully automatic, less than \$250. (Dual CS601, with base and cover, less than \$270.)

Dual CS701. Fully automatic, single-play. D.C. brushless, electronic direct drive motor; tuned anti-resonance filters. Less than \$400, including base and cover.

United Audio Products, 120 So. Columbus Ave., Mt. Vernon, N.Y. 10553  
Exclusive U.S. Distribution Agency for Dual



New  
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Reports



*Ampzilla as we built and tested it. As currently supplied it has a pushbutton on/off switch and a more restrained logo.*

## Ampzilla—A Monster with a Silken Touch

**The Equipment:** Ampzilla stereo power amplifier with output-level meters for both channels, in metal case. Dimensions: 17½ by 7 by 9 inches, plus clearance for connections. Price: \$799. Warranty: five years parts and labor. Manufacturer: The Great American Sound Co., Inc., 8780 Shoreham Dr., West Hollywood, Calif. 90069.

**Comment:** Some of us may have become just a bit jaded in dealing with the subject of superamps and their capabilities, so we will begin this report, perhaps naively, by noting that the rated power output of Ampzilla (400 watts total with both channels operating) is in excess of one-half horsepower, enough to run most washing machines. Of course, this is not an unusual power capability for a super-amp, but it is an awful lot of power, just the same.

The allusion to driving an electric motor with an amplifier is not really facetious, for loudspeakers are just that—motors. And they are not particularly efficient either. Add to this the fact that each doubling of the subjective level of a reproduced sound requires a tenfold (10-dB) increase in power, and it becomes clear that 200 watts per channel—far from being wasteful and ridiculous excess—at times may be indispensable.

Ampzilla surely cannot be described as your basic shy,

retiring stereo component, ready to fit smoothly into every decor. Frankly, it is not even discreet. The front panel virtually leaps forward, dominated by a pair of meters (calibrated for 0 dB at 200 watts and including both scales) with the aggressively stylized name inscription between them. Below these and at the left is a pushbutton (push on, push off) that controls the AC power to the amplifier and switches the cooling fan. Toward the center of the panel is a switch that increases the sensitivity of the meters for full-scale deflection at 0, -10, -20, or -30 dB (200, 20, 2, or 0.2 watts). The holders for the loudspeaker fuses (a necessity with an amplifier such as this) are stacked vertically just below the aforementioned switch and are flanked on the right by the manufacturer's logo.

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**REPORT POLICY** Equipment reports are based on laboratory measurements and controlled listening tests. Unless otherwise noted, test data and measurements are obtained by CBS Technology Center, Stamford, Connecticut, a division of Columbia Broadcasting System, Inc., one of the nation's leading research organizations. The choice of equipment to be tested rests with the editors of HIGH FIDELITY. Manufacturers are not permitted to read reports in advance of publication, and no report, or portion thereof, may be reproduced for any purpose or in any form without written permission of the publisher. All reports should be construed as applying to the specific samples tested; neither HIGH FIDELITY nor CBS Technology Center assumes responsibility for product performance or quality.

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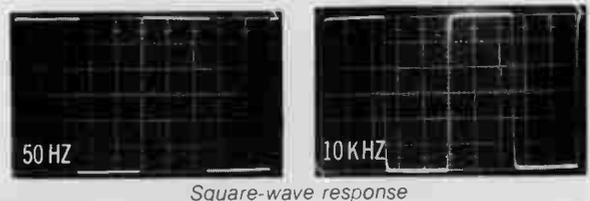
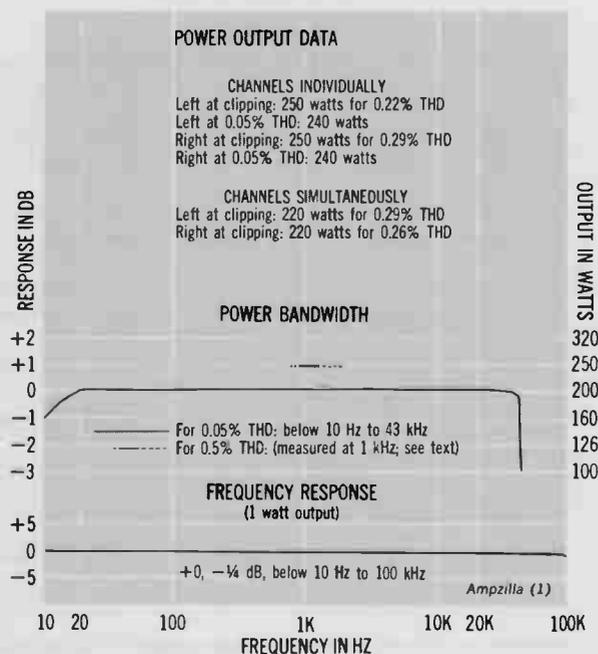
The back panel, by contrast, is simplicity itself, bearing only pin-jack input connections, binding posts (accepting bare wires or spade lugs) for loudspeaker connections, a power-line fuse, and a hefty AC-power cord of the three-prong grounding variety. This is a massive unit (it weighs about 45 pounds), and it gives an impression of great ruggedness. The ventilation chimney for the output-stage heat sinks is large and provided with a cooling fan designed to protect the unit when subject to severe use or high ambient temperatures.

The sample of Ampzilla that we had tested by the CBS Technology Center was built from a kit, a form in which—unfortunately for do-it-yourself enthusiasts—it is no longer made. (You may still find kits at some dealers if you hurry.) Though the kit was somewhat difficult to assemble, its performance sets a high standard for factory-assembled units.

Trying to drive this amplifier into audible distortion is simply a waste of time. Something always intervenes first—the protection circuitry, if the amp is driven grossly beyond its ratings or, more likely, distress signals from one's ears or the loudspeakers. Distortion specifications (which are unusually rigorous at 0.05% THD or IM for full power or below into 8 ohms, 20 Hz to 20 kHz) were met handily with two almost insignificant exceptions: THD for 2 watts (1% of full power) at 10 kHz and above (where 0.1% was the highest distortion recorded) and full-power IM at 8 ohms (where the excess is a minuscule 0.013%). Power bandwidth for 0.5% THD was checked only at 1 kHz as this is strictly an "abuse" condition that drives Ampzilla considerably beyond its clipping point.

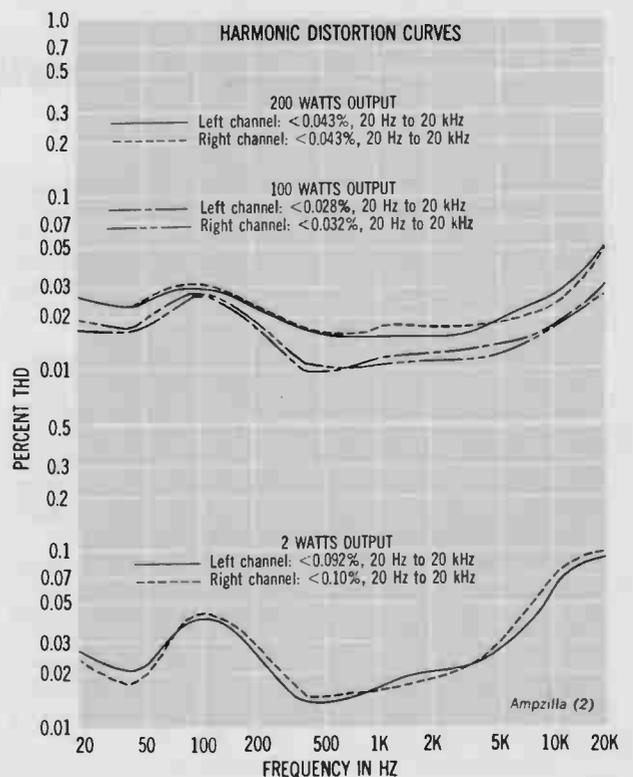
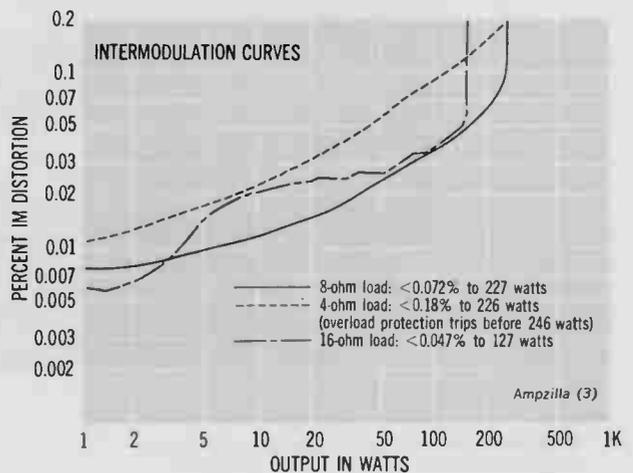
As far as our own listening tests are concerned, Ampzilla just isn't there—it seems to have no effect whatever on program material passing through it. While this cannot be literally true, the lab data insists that it very nearly is. Rather than waste time in trying to describe the indescribable, in trying to delineate near absence of coloration, we will let the lab data speak for itself. The unit is, of course, not cheap. But, considering its outstanding performance, its price seems very reasonable. If you are in the market for a monster power amplifier, you would do well to consider Ampzilla. It is, in a word, superb.

CIRCLE 149 ON READER-SERVICE CARD



**Ampzilla Additional Data**

Damping factor	100	
Input characteristics (for 200 watts output)		
Sensitivity	1.65 mV	S/N ratio
		110 dB





## Uher's Most Luxurious Cassette Deck

**The Equipment:** Uher Model CG-360, a front-loading stereo cassette deck with Dolby B noise reduction and bidirectional playback, in molded high-impact plastic case. Dimensions: 15¾ by 4 inches (front); 11½ inches deep plus clearance for controls and connections. Price: \$1,066.95; optional W-319 amplifier module, \$75.50; optional F-113 remote control, \$110. Warranty: 90 days parts and labor. Manufacturer: Uher Werke München, W. Germany; U.S. distributor: Uher of America, Inc., 621 S. Hindry Ave., Inglewood, Calif. 90301.

**Comment:** Uher has done it again—come up with a model that is signally unlike any other on the market. The CG-360's personality is luxurious, convenience-conscious, and extremely Continental. Hence it is not a personality that all American recordists will take to immediately, but any cassette-lover owes it to himself to explore it.

The Continental element makes itself known immediately, in the trilingual owner's manual and in the DIN-only connection jacks. The manual makes it quite clear that Uher has little patience with the pin jacks that U.S. audiophiles consider standard. (The unidiomatic English, unfortunately, doesn't make everything else equally clear.) But Uher supplies two DIN-to-pin stereo interconnect cables. One is used (for recording) from the output pin jacks on your receiver or preamp to the so-called PHONO input at the back of the deck. (This is a 5-pin jack that bears no relationship whatever to the low-level RIAA phono inputs on receivers and preamps.) The other is used (for playback) between the RADIO output (another 5-pin DIN jack, next to the PHONO jack) and the tape-monitor connections of your receiver or whatever. The RADIO connection actually is an input/output jack; the input section goes unused with American systems, because it is too sensitive for the voltages to be expected from them.

In addition, the back panel has a 6-pin DIN jack marked ACCESS that is intended for sync-pulse use with accessory equipment for slide-film work. (It puts the sync track on what otherwise would be Side B of the tape, leaving both stereo tracks of Side A free for audio.) And there is a multi-conductor contact strip for use with the optional F-113 remote control. Next to this strip is a removable panel covering the opening into which the owner can mount the optional W-319 power amp module, rated at 10 watts per channel into 4 ohms. We did not test either of these options. The power-line socket, fuse, and line-voltage switch complete the back-panel features.

There are three more DIN sockets, with varying pin configurations, at the left end of the front panel. One is for ear-

phones, one a RE-RECORDING jack for dubbing between the Uher and another deck, one the stereo microphone input. The microphone and RE-RECORDING inputs both override the RADIO input; either can be mixed with the PHONO input. The first two sliders beyond the tandem peak-reading meters are accordingly marked RADIO/MICRO and LINE (which corresponds to the PHONO input). Each of these sliders controls both channels of the stereo signal; a RECORDING BALANCE slider below the meters adjusts the channels with respect to each other.

Another group of sliders toward the middle control BASS, TREBLE, VOLUME, and BALANCE in the headphone and accessory amp circuits only—that is, they do not affect line feeds. Near these sliders is a three-position switch controlling the playback/auto-reversing feature. One position stops play at the end of the cassette side, one stops it only after the second side, one offers continuous repeat playback. At the right is the cassette slot. The cassette is fed in end-first with Side A up and the head opening facing to the left. A lever just below the slot lowers the cassette to playing position and releases it when you're finished. The mechanical design is quite complex and proved balky in one sample we tried, though in working with two samples of the CR-134 (HF test reports, January 1975), which has a similar design, we had no such problem.

The counter is next to the cassette LOWER/EJECT lever. When a cassette is inside, a light shines up through its window, which can be seen through a small window in the top of the deck above the tape slot. This allows you to check the remaining tape, which some slot-load designs don't. It is the only operating feature on the top panel.

Recessed along the bottom edge of the front panel are the transport controls: a series of concave square push-buttons, each with a small pilot lamp—red for recording and green for the remainder. Since this is a bidirectional unit, there are two PLAY buttons, only one of which can be used in recording, of course. The main ON/OFF button is to the right of these controls. Farther to the left, between the two balance sliders, are similar buttons for DOLBY and SENSITIVITY, the latter adding gain in the RADIO input circuit when it is engaged. These switches, too, have pilot lamps. That for the Dolby circuit is above the DOLBY button; that for the SENSITIVITY option is near the bottom of the meter window. Above it, along the right side of the meters, are similar pilots for FE<sub>2</sub>O<sub>3</sub> (ferric oxide) and CRO<sub>2</sub> (chromium dioxide)—referring to the bias and equalization needed for these tape types. The setting is made automatically by a sensor in the cassette slot (encountering, or not encountering, the extra "well" at the back of recent chrome cas-

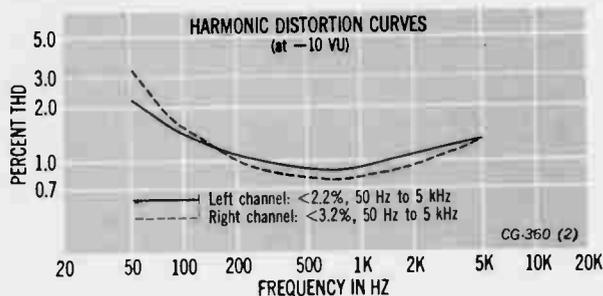
ettes); there is no manual override, so older chrome cassettes (without the well) can't be used successfully on the CG-360.

The unit was tested with Maxell UD as the ferric tape (Uher supplied some with the test sample, though the manual remains mum on the question of recommended tapes) and BASF Chromdioxid as the chrome. Response is quite flat with these tapes (as is the DIN playback response) and is notably free of "fringing" effects in the bass, but the range is not particularly extended at the top end. While some cassette decks we have tested will capture as much as an extra half-octave in the overtone range at the top of the spectrum, few are as smooth and linear between the frequency extremes—where, of course, most of the musical information lies.

Note that the Uher stays very close to the DIN 0-VU standard in its metering, but since it uses peak-reading meters this does not presuppose the severely overloaded peaks that normally would result from a combination of averaging ("true VU") meters and so high a 0-dB point. Noise and distortion figures are within the ranges represented by today's better cassette decks, with the harmonic distortion curves approaching the measurement limits imposed by noise. Channel separation figures (at about 20 dB) are much lower than those we've measured on any cassette unit in recent months except Uher's own CR-134; they are not poor enough, however, to threaten audible degradation of the stereo image. This is to say that most cassette decks these days have far more separation than they really need. Speed stability measurements all are very good; wow and flutter are only a hair short of the very best. All the printed specs, where they allow for direct comparison with the lab data, are met by the unit.

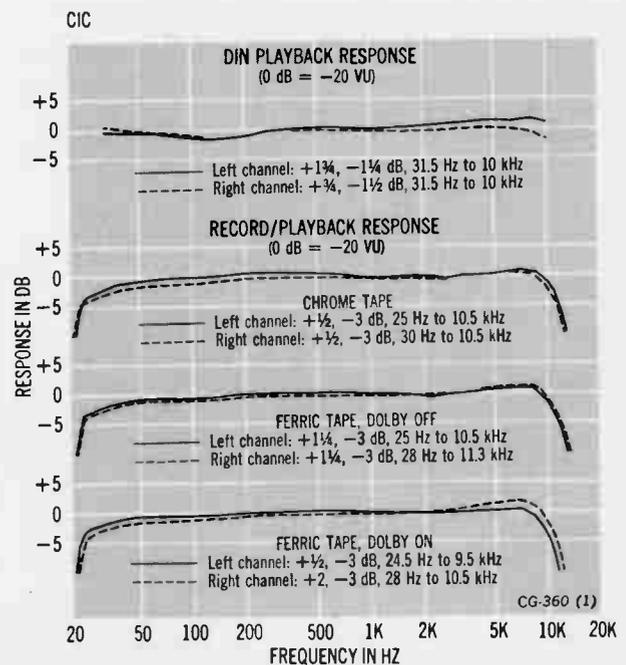
And the deck sounds very good. But in view of several of the CBS measurements on our sample of the CG-360 we wonder about Uher's claim that this is a "cassette tape recorder with the performance characteristics of high quality open-reel tape equipment." In our view it is, rather, a convenience-oriented deck that will ease the path to good-sounding recordings and automatic continuous playback for the user who doesn't want to fuss with equalization switches or cassette flippings. It is easiest to integrate into DIN-oriented systems, and American recordists may find themselves fussing with cable adapters—for the microphone and headphone circuits particularly—unless they spring for Uher accessories as well. But, within its unique concept of what a cassette deck should be, Uher has shown itself truly inventive. This model fairly bristles with distinctive touches, from the many interlock micro-switches of its ingenious transport to well-engineered feel and utility of its solenoid controls.

CIRCLE 144 ON READER-SERVICE CARD



## Uher CG-360 Additional Data

Speed accuracy	0.13% slow at 105, 120, & 127 VAC	
Wow and flutter	playback: 0.06% record/play: 0.08%	
Rewind time (C-60 cassette)	38 sec.	
Fast-forward time (same cassette)	38 sec.	
S/N ratio (re 0 VU, Dolby off)		
playback	L ch: 53 dB	R ch: 53½ dB
record/play	L ch: 49½ dB	R ch: 49½ dB
Erase (333 Hz at normal level)	71 dB	
Crosstalk (at 333 Hz)		
record left, play right	20 dB	
record right, play left	19 dB	
Sensitivity (re DIN 0 VU)		
PHONO input	L ch: 350 mV	R ch: 350 mV
mike input	L ch: 0.28 mV	R ch: 0.28 mV
RADIO input	L ch: 1.8 mV	R ch: 1.9 mV
RE-RECORD	L ch: 90 mV	R ch: 110 mV
Meter action (re DIN 0 VU)		
	L ch: 0 dB	R ch: ¼ dB low
IM distortion (record/play, -10 VU)		
	L ch: 6.0%	R ch: 7.5%
Maximum output (re DIN 0 VU)		
	L ch: 0.85 V	R ch: 0.80 V





## Yamaha CR-400: A Spartan Receiver with Class

**The Equipment:** Yamaha CR-400, a stereo FM/AM receiver in wood case. Dimensions: 17½ by 6 5/16 inches (front panel); 11¾ inches deep plus allowance for controls and connections. Price: \$330. Warranty: five years parts, three years labor; shipping paid one way. Manufacturer: Nippon Gakki Co., Ltd., Japan; U.S. distributor: Yamaha Audio Division, P.O. Box 6600, Buena Park, Calif. 90620.

**Comment:** At first glance the front panel of this receiver seems almost bare, partly because of the very clean styling and partly because of the contrast between its highly reflective brushed aluminum surface and the warm finish of the attractive wood case that houses the unit. But this appearance is deceptive, for a closer look shows that the CR-400 has a well-chosen (though not luxurious) array of controls and indicators, all of which do their jobs quite well.

Extending across the top half of the panel is a slide-rule tuning dial, flanked at the left by signal-strength and tuning meters and at the right by a hefty tuning knob. Slightly to the left of the knob are indicator lights for FM STEREO and POWER. The lower part of the panel holds (from left to right) a POWER on/off switch, a stereo headphone output jack, a SPEAKER selector switch (for either or both of two sets of 8-ohm speakers, or off), a phone-type microphone input jack (mono—feeding both channels), BASS and TREBLE controls, and a VOLUME control with separate, concentric friction-clutched elements for the two channels. Continuing to the right, one finds switches for LOUDNESS compensation, MODE (stereo/mono), and TAPE MONITOR, followed by a FUNCTION selector (for AUX, PHONO, FM [with] MUTE, FM, or AM). A HI filter might be a welcome addition; the TREBLE control can do stand-in duty here, of course, but its action is broader than one might like.

At the left side of the back panel are the antenna inputs for FM (both 300- and 75-ohm impedances are provided for) and AM. These connections are made via knurled plastic-capped screws that are easy to turn with the fingers. The eight loudspeaker outputs (for two 8-ohm stereo pairs) are spring-loaded and accept bared-wire leads. Below the antenna connectors are two neat rows of pin jacks for PHONO, AUX, and TAPE inputs and REC and PREAMP outputs. Two AC convenience outlets are provided (one of which is controlled by the front-panel POWER switch), each rated to handle 200 watts. In addition, there is a protective

fuse at the far right and a centrally mounted rod antenna for AM.

In our listening tests we tried everything short of downright abuse to embarrass the rather modestly rated (16 watts per channel at 8 ohms) amplifier section—to no avail. The power bandwidth curve suggests that, had Yamaha gone the route of many manufacturers, it might have claimed 20 watts per channel at 0.5% harmonic distortion (some of its ratings are for only 0.1%), from 40 Hz up, if not from 20 Hz. As it is, the amp section in our sample falls slightly short of Yamaha's more-rigorous 0.1% rating point at 20 Hz. This can hardly be accounted a failing since the rating point is so low, since the unit meets the 0.5% rating with room to spare, and since even at 40 Hz—at or below the approximate limit of response for many speakers appropriate for use with the CR-400—the unit is well within the spec. Intermodulation also narrowly fails to meet Yamaha's rigorous 0.1% spec (at 8 ohms), though it (like the THD figures) is well below the 0.5% or so more commonly specified for receivers in this price class. The upper end of the power bandwidth is a different story: The -3 dB point is simply beyond our test range; 0 dB is at 100 kHz!

The preamp section shows itself a worthy partner, with good sensitivity and excellent signal-to-noise ratios at all inputs. There is some droop in the RIAA equalization for the extreme bass (-4 dB at 20 Hz), but few records have program material at this frequency, and the error helps to counteract turntable rumble.

The FM section is, of course, no match for supertuners (like Yamaha's own CT-7000), but it is a creditable performer and an apt counterpart to the amplifier section. Mono quieting exceeds 50 dB for all signal levels above 10 microvolts; stereo quieting reaches 47 dB by 25 microvolts and falls off somewhat after that, reaching 53 dB only at very high levels. Capture ratio is respectable at 2 dB, while alternate-channel selectivity is an astonishing 82 dB. There is no stereo filter or blend control—which might have been nice, though weak stereo stations can be partially denoised by flipping the MODE switch to MONO of course. The 19-kHz pilot tone is not quite as well suppressed here as it is in some tuners and presumably contributes to the slightly high distortion readings at 10 kHz. This is a trouble spot for many tuners, and the CR-400 actually beats many costlier units in this respect. Frequency response is good in

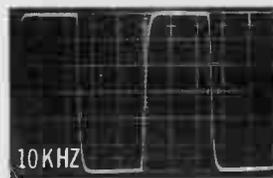
# Yamaha CR-400 Additional Data

Tuner Section			
Capture ratio	2 dB		
Alternate-channel selectivity	82 dB		
S/N ratio	67½ dB		
THD	Mono	L ch	R ch
80 Hz	0.32%	0.88%	0.87%
1 kHz	0.19%	0.44%	0.48%
10 kHz	0.40%	2.2%	2.1%
IM distortion	0.14%		
19-kHz pilot	-46 dB		
38-kHz subcarrier	-55 dB		
Frequency response			
mono	+ ½, -3 dB, 21 Hz to 15 kHz		
L ch	+ ¼, -2 dB, 20 Hz to 15 kHz		
R ch	+ ¼, -2½ dB, 20 Hz to 15 kHz		
Channel separation	>40 dB, 300 Hz to 3.4 kHz		
	>30 dB, 35 Hz to 7.7 kHz		
Amplifier Section			
Damping factor	74		
Input characteristics (for 16 watts output)			
	Sensitivity	S/N ratio	
phono	2.6 mV	72 dB	
mike	65 mV	65 dB	
aux	125 mV	85 dB	
tape	125 mV	86 dB	
RIAA equalization accuracy			
	± ½ dB, 40 Hz to 20 kHz		
	+ ½, -4 dB, 20 Hz to 20 kHz		

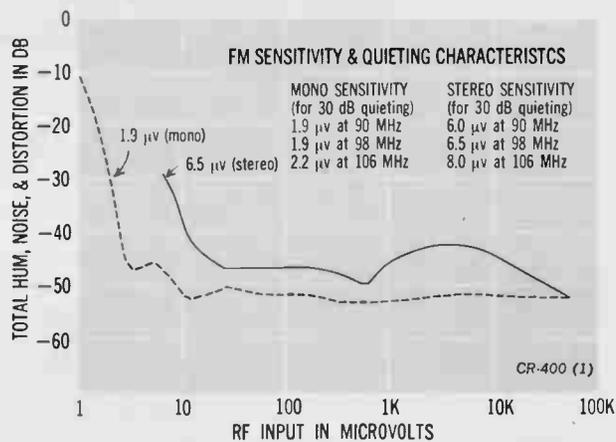


50 HZ

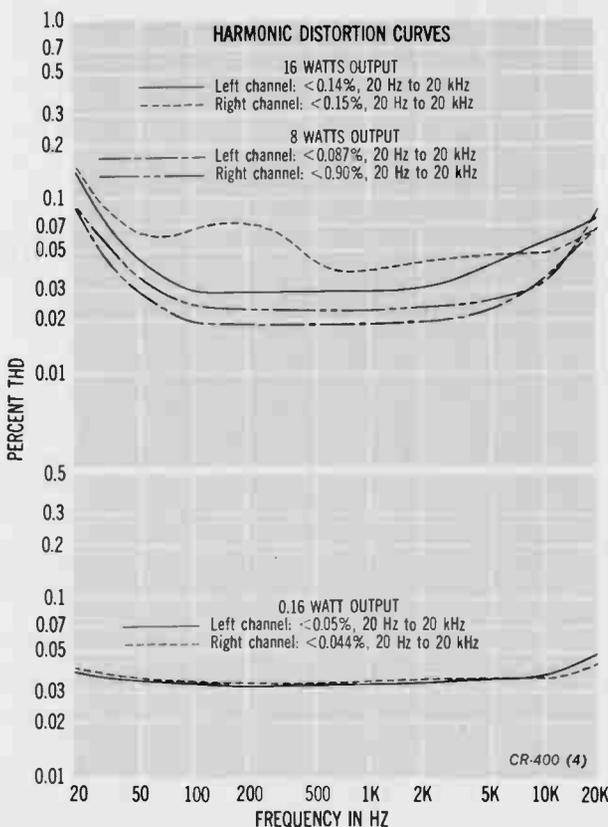
Square-wave response



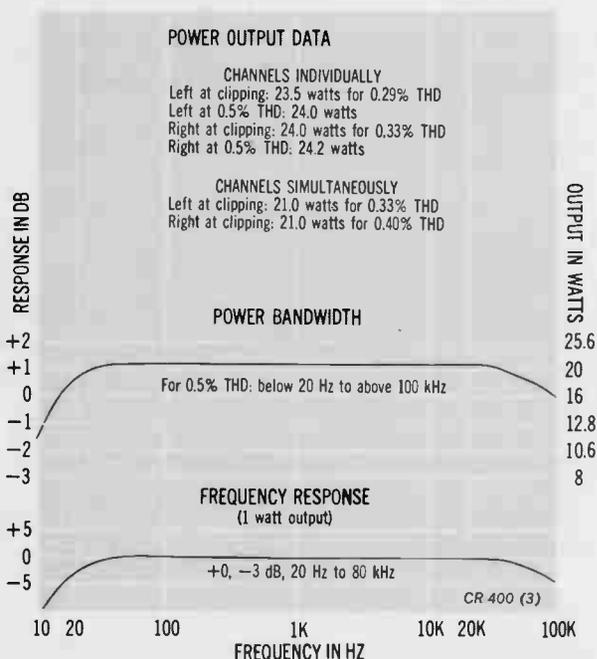
10 KHZ



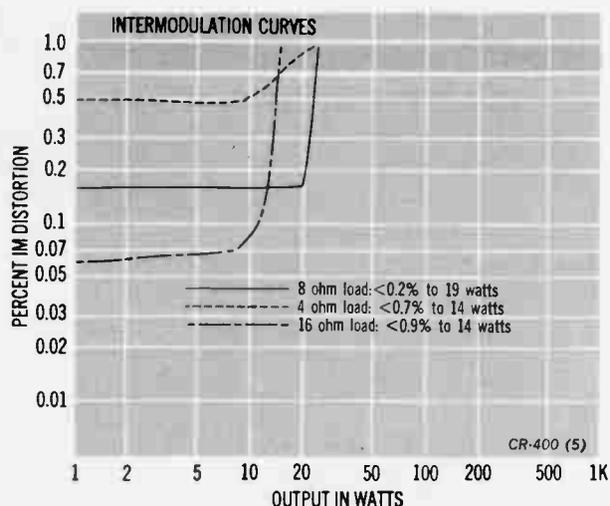
CR-400 (1)



CR-400 (4)



CR-400 (3)



both stereo and mono, and stereo separation is extraordinary for a relatively inexpensive receiver.

The CR-400 has tape outputs for disc dubbing and recording off the air, but, if you wish to add announcements via the microphone input, the audio must be taken from the output of the preamp. This is at a point after the tone controls, so these can be used to improve poorly balanced program material. The AM section, an afterthought in many receivers, is a good deal better than one might expect. It proves quite listenable—although it welcomes help from an outdoor antenna.

But a receiver, like any composite, is more than the sum of its parts, and the CR-400 is no exception. While it is bare of frills (except, perhaps, the mike input) and cosmetic features, the features that it does have complement each other and work very well. An attractive and fine sounding unit such as this is a challenge—and a fairly formidable one—to receivers in its price class.

CIRCLE 141 ON READER-SERVICE CARD



## Shure's New Second-Place Contender, the M-95ED

**The Equipment:** Shure M-95ED, a magnetic stereo phono cartridge with elliptical (0.5 by 0.7 mil) diamond stylus. Price: \$59.95. Warranty: one year parts and labor, stylus wear excluded. Manufacturer: Shure Brothers, Inc., 222 Hartrey Ave., Evanston, Ill. 60204.

**Comment:** Shure calls the M-95ED its new No. 2 cartridge, indicating thereby that it has been dropped into the line between the V-15 Type III and the old No. 2 M-91ED (HF test reports, July 1973 and October 1972, respectively), both of which still are available. Central to the design of the new cartridge is an improved pole piece that offers reduced magnetic losses and improved frequency response by comparison with the M-91ED. In addition, the stylus tip is a nude (that is, mounted directly on the cantilever without intervening "setting") diamond, which allows a significant reduction of effective tip mass and, consequently, better tracking.

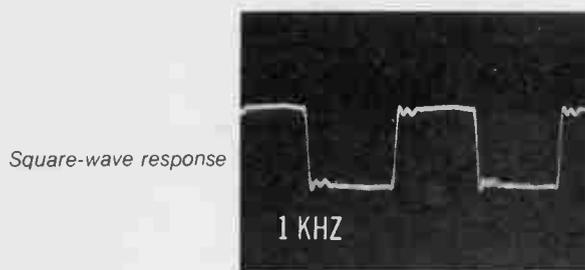
The tracking improvement was readily in evidence during tests at the CBS labs, for a vertical tracking force of

only 0.6 gram was needed to pass the "torture test." This compares with 0.8 gram for the M-91ED. With a VTF of 1 1/8 grams, which was used for the balance of the tests, the M-95ED exhibited no mistracking, even at the highest groove modulation levels used.

Channel separation is very good, remaining in excess of 20 dB from 20 Hz to well past 10 kHz. Frequency response is without dips and contains just a modest peak in the region of 16 to 17 kHz (confirmed by a slight overshoot and ringing seen atop the 1-kHz square wave), with the right channel a little flatter than the left. The output level of 5.3 millivolts from the left channel and 4.8 from the right should pose no problems for any phono preamp, and harmonic distortion is acceptably low. Lateral intermodulation distortion is somewhat lower than that of the M-91ED at 0.6%, while vertical IM is the same at 3.3%. Inspection of the stylus shows its tip to be well aligned, with good polish and geometry, and reveals a vertical tracking angle of 22 degrees—reasonably close to the nominal 15-degree standard.

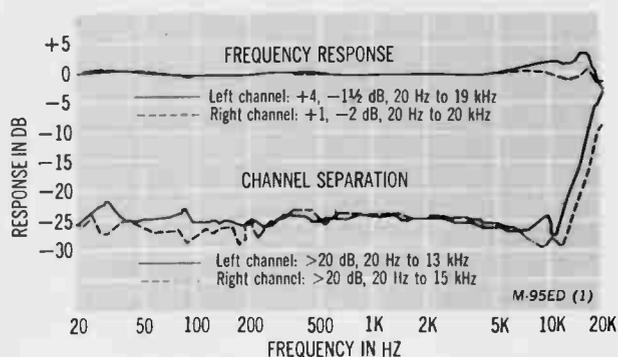
The M-95ED is simply a delight to hear; its sound is smooth, clean, and natural and has a solidly anchored stereo image. At high modulation levels there is just a trace of veiled quality that begins to obscure details, but this is noticed (and just barely) in contrast to the extraordinary clarity at lower levels. The retractable stylus guard is a welcome feature, as is the new body shape, which allows warped records to be played without making contact with the cartridge. Audiophiles, especially those who don't want to spend the extra \$15 for numero uno, will find Shure's new No. 2, a happy addition to the line.

CIRCLE 143 ON READER-SERVICE CARD



### Shure M-95ED Additional Data

Maximum tracking levels (1½ grams VTF; re RIAA 0 VU)	
300 Hz	> +12 dB
1 kHz	+15 dB
10-20 kHz	>-5 dB



## Audio-Technica's Excellent Electret Headset

**The Equipment:** Audio-Technica AT-706, an electret condenser stereo headset with impedance-matching/switching adapter unit in metal case. Dimensions: (adapter unit) 3½ by 3½ inches (front), 7¼ inches deep plus clearance for controls and connections, with 5-foot amplifier cable; headphones have 6-foot cable that plugs into adapter. Price: \$129.95. Warranty: one year parts and labor, shipping paid one way. Manufacturer: Audio-Technica, Japan; U.S. distributor: Audio-Technica U.S., Inc., 33 Shiawassee Ave., Fairlawn, Ohio 44313.

**Comment:** This design obviously is intended to rival electrostatic headsets, and as such it is a success. Its adapter box resembles those of typical electrostatics, as does its price; its performance in at least one respect outshines that of typical electrostatics.

The adapter box doesn't have quite the function of those used for electrostatics, which derive the necessary polarizing voltage from the audio signal itself (frequently

or from AC-line voltage (less frequently). Since the electret elements in the Audio-Technicas are permanently self-polarizing, the adapter box is required only for impedance-matching and switching. The leads connected to the adapter are attached to a stereo set of speaker terminals on your amplifier or receiver. We used the REMOTE terminals on most equipment, saving the MAIN terminals for our speakers; if you must pre-empt normally used speaker terminals, you can reconnect the speakers to spring-clip connections (appropriate for bared leads) at the back of the adapter.

The front of the adapter has two European-style sockets, so it will accommodate one or two AT-706 headsets, whose cords are terminated with the mating plug. Next to the sockets is a three-position lever: LOUDSPEAKERS, STEREOPHONES LOW, and STEREOPHONES HIGH. The first position obviously is used for the speakers connected to the back of

Continued on page 67

# New Times. The mouse that roars.



Superman we are not.

But that doesn't mean NEW TIMES isn't busting evil in the chops, fighting for the little guy, stripping the pants off phonies and generally shaking hell out of the establishment.

Like a mighty mouse, we are small but powerful feisty. Out of all proportion to size, we make waves. Strike fear in evil hearts. Give the tremble to fat cats. Shake the ratters. The Mouse that Roars, that's us.



### Some recent roars.

Every two weeks, NEW TIMES comes along with a stick or two of dynamite in its fist.

There was our story on "The Ten Dumbest Congressmen," with NEW TIMES' nomination for King of Dumb. You should have heard the screams on that one, including a well-attended press conference called by the King himself. There was "The CIA and the Mafia" concerning the inevitability with which gentlemen who wished to be killers gravitated to killers who wished to be gentlemen. There was our "Rendezvous with Abbie Hoffman"—a trip on the underground railroad that really caused an uproar.

In "The Greatest Cover-Up of All" we looked at the new evidence in the JFK assassination and concluded it was a conspiracy. In "Under Control," we got inside Silva Mind Control. Is it just the latest psycho-chic or can it really give you the power

to look inside other people's bodies? In "The Divine Recline of Miss M" we sought an answer to that heavy question—Has Bette Midler shot her bolt? In "The Prisons of Our Freedom," we visited a nightmare called Camp Pendleton where a lot of South Vietnamese were starting to ask, "When can we go home?"

"Women Who Murder" showed how male sexist attitudes can work to the benefit of women—especially if they shoot or stab somebody. "Not with a Bang but with a Pssst" asked what's being done about those killer aerosol cans. Answer? Absolutely nothing. "Selling the Black Vote" made a lot of blacks and whites mad with its unblinking look at some new ethnic hustlers. "Victims of a Desperate Age" examined evidence that the Rosenbergs could have been framed. "Prisoners of Psychotherapy" was the last word on escaping from your analyst.

### Is NEW TIMES mad all the time?

Golly, no. Don't get the idea we do nothing but dredge up embarrassing facts and tweak important noses. NEW TIMES is the magazine of what's happening and that's a spectrum that includes love and music and lifestyles and movies and all manner of rare



new ideas. For instance, we reported on Erhard Seminars Training (est), one of the most fascinating of the new life experiences. We got inside the world of bisexuality. We published our own medical research on pot—"Attention: Smoking Grass May Be Good for Your Health."

And of course we continue to report on the eternal battle of The Little Guys vs. The Big Guys. Like the story on Sam Lovejoy, who toppled the big bad nuclear tower. And the young hillbillies of Mendocino County who were damned if they'd let their houses

be torn down for lack of city plumbing.

Our bright, brash, talented writers and columnists—like Robert Sam Anson, Jesse Kornbluth, Marcia Seligson, Larry King, Amanda Spake, Jim Kunen, Mark Goodman, Frank Rich, Janet Maslin and Nina Totenberg—have one thing in common. They're unafraid. They'll plunge into anything, take chances and stands, crawl way out on limbs. Sure, NEW TIMES may fall on its face sometimes. But never on its knees!

### We're plugged into now.

Whether you like it or not, you're living in a time of shattering transitions. Nobody knows where the world is heading and if they claim to, they lie!

NEW TIMES—more than any other magazine on the American scene, we think—is plugged into this difficult, exhilarating age. Do we understand what's going on? Do we know The Answers? Hell, we consider ourselves lucky when we know The Questions.

But we don't lie. We don't pretend impossible knowledge. Our minds and eyes are open and our promise to you is firm: we'll pin as much of the truth to the page as we know how.

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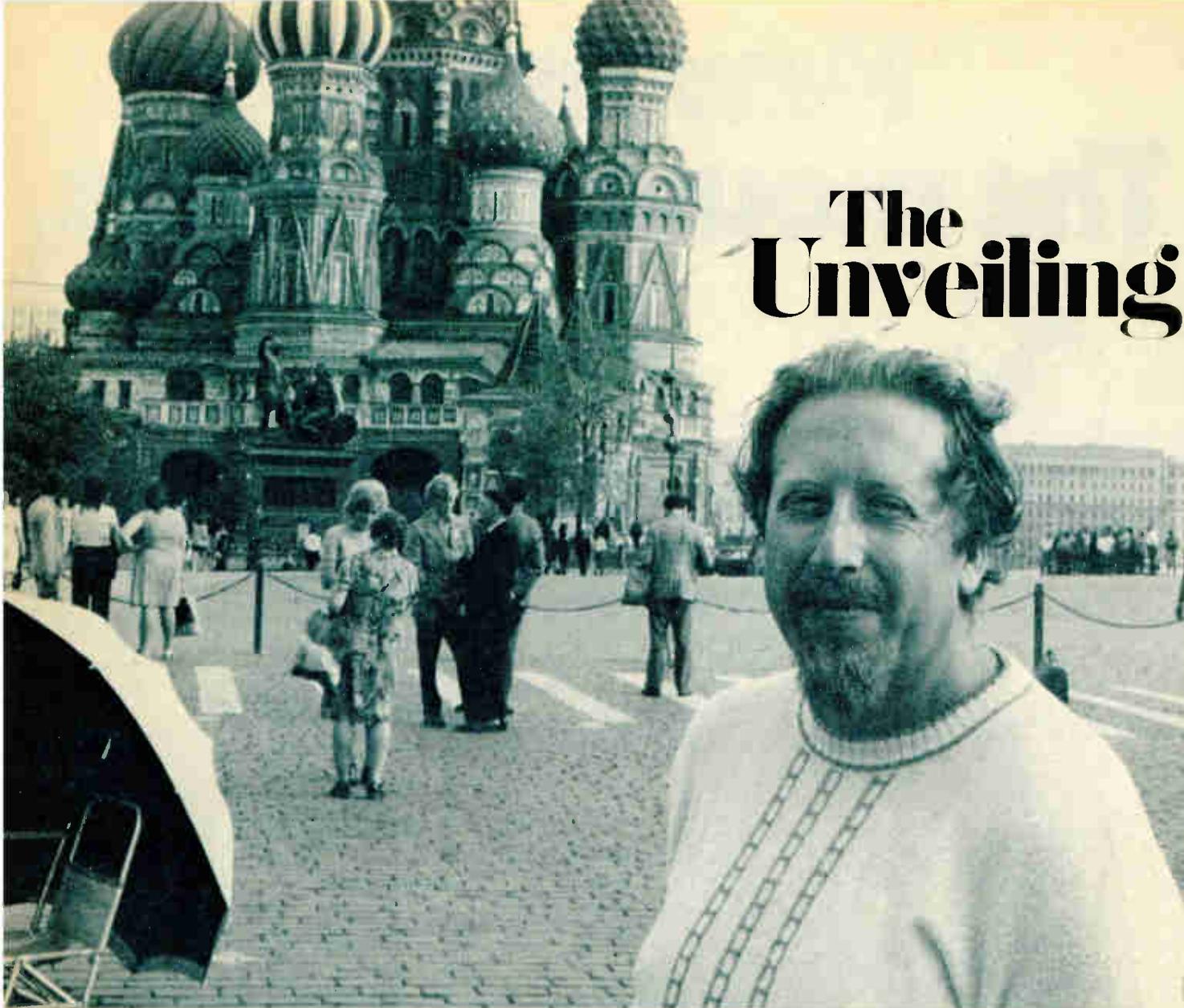
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# NewTimes

The Mouse that Roars



# The Unveiling

After twenty years of rumors concerning a mystery Soviet pianist of enormous power, Americans are finally about to hear him. Here is an exclusive HF interview with the Russian musician.

by Barry James and Vadim Yurchenkov

IN 1955, WHEN SOVIET PIANIST Emil Gilels first appeared in the U.S., he brought word of a young colleague who was capable of the most marvelous pianistic feats. Thus, sprouting from this august source and nurtured by a sparse handful of difficult-to-obtain recordings, the legend of Lazar Berman, pianist of the grand romantic style, took root in the West. But through the years Berman has remained an enigma, partly because of his meager

discography and partly because of the limited scope of his rare visits outside the Soviet Union. He has been to Italy several times, and enthusiastic reports of his appearances there filtering slowly to the U.S. have contributed to the sense of awe and expectancy that seems to surround him.

Beginning this month, American audiences will have the opportunity of hearing—and seeing—the legend unfold into reality: Lazar Berman, at age

# of Lazar Berman

forty-five, will tour this country for the first time. The shy and introspective pianist seems acutely aware of the importance of the occasion, calling it "a big unknown and perhaps a big changing point for my career."

Coincident with Berman's tour, several of his new recordings will become available here. CBS, through an arrangement with Melodiya, will release a two-disc reissue of the Liszt *Transcendental Etudes* (re-recorded in 1963 to replace a 1958 version) and a recently made recording of the Sonata in B minor, the *Mephisto Waltz*, and *Venezia e Napoli*, all by Liszt. Deutsche Grammophon will release new recordings of the Liszt Concerto No. 1 and of the Tchaikovsky Concerto No. 1 made with Herbert von Karajan and the Berlin Philharmonic.

Born in 1930 of a Jewish family with an artistic, intellectual mother and a working-class father, Berman was barely two years old when he began to study the piano. His teacher (who was his mother) entered him in his first talent competition in 1933. Leningrad cultural authorities, recognizing an unusual talent, assigned Prof. Samari Savshinsky as the boy's teacher. Shortly afterward Berman was placed in a special group of children who were to be trained in music under the aegis of the Leningrad Conservatory.

In 1937 he appeared in a festival of young talent at the Bolshoi Theater in Moscow and at just about that time made his first recording. (He still owns a copy of this rare 78-rpm disc: *Fantasy* by Mozart performed by "Lialik" [a diminutive] Berman and *Mazurka* by L. Berman—one of his few attempts at composition.) After the Bolshoi appearance, authorities insisted that the youngster and his family move to Moscow, where, at age nine, he was accepted into the Central Music School as a pupil of Alexander Goldenweiser. Goldenweiser, an arch-romantic who has been the largest single influence on Berman's playing, remained his mentor for the next two decades. In 1948, Berman entered the Moscow Conservatory, spending eight years in graduate and postgraduate studies, still under Goldenweiser. He then entered international competitions and won first prize in Berlin, third at

Budapest, and fifth at the Queen Elisabeth competition in Brussels—an experience that prompted him to become a founder of the U.S.S.R.-Belgium Friendship Society. He joined the Moscow Philharmonic [not the orchestra, but an agency that operates orchestras and other ensembles and represents artists] in 1958 and began making concert tours throughout the Soviet Union as well as occasional appearances in the countries of Eastern Europe.

Today, Lialik (some of his friends still call him that) is a large, portly man with a shock of sandy hair, penetrating gray eyes, and a Mephisto-type beard that makes him resemble a Russian Orthodox priest. He is quick to smile, with a flash of gold-capped teeth, and speaks easily with a mellifluous voice in Russian, French, and a little Italian, which he is now trying to learn. Despite the impression of passivity—or even laziness—that Berman makes on a casual observer, he is at times a virtual wellspring of energy (during his last tour of Italy he gave twenty-three concerts in thirty-two days). But as with many artists, these peaks of fiery temperament and passionate tension are temporary, set off and sustained by inspiration. Without this, his creativity and enthusiasm seem to flag.

Berman's private life (which he prefers to keep private) centers around Valentina, his second wife, his five-and-a-half-year-old son, Pavel, and their home. His hobbies include stamp- and coin-collecting. The small circle of friends that he and Valentina share consists mainly of conservatory teachers and people he has met through the U.S.S.R.-Belgium Friendship Society.

On tour, Berman likes to walk the streets and visit the museums of new towns. "I try to see as much as I can when traveling," he says, "new and exotic things, different people, different customs. Life is not music alone, and one should not be submerged completely in one's profession. Only by being an all-around person can one be a good musician."

These are the basic facts about Lazar Berman, but they do not tell enough. What kind of man is he—really? How does he approach music? What

music does he best like to play?

To dig deeper and explore questions such as these, we visited and interviewed Berman several times. This is a composite of those interviews:

**HIGH FIDELITY:** How did you get started playing the piano?

**Berman:** My mother began to teach me when I was a little past age two.

**HF:** Then your family was musical.

**B.:** My mother was. She had studied piano at the St. Petersburg Conservatory under Isabella Vengerova—at the same time Prokofiev did, by the way.

**HF:** When did you first play in public?

**B.:** It was in 1933, as I recall. I was about three and a half—still too young to read and write—and Mother entered me in a talent competition.

**HF:** How well did you play at that time?

**B.:** Oh, well enough that the authorities in Leningrad wanted me to have training. There was a special group for children at the Leningrad Conservatory, led by Prof. Samari Savshinsky, and they put me in that. I remember I played by ear; I couldn't read written music until I was eight. Incidentally, my son Pavel is just five, and he plays the violin and can already read music. Our group was much like a children's music school today, though it was quite a collection of prodigies. Daniel Shafran, the cellist, Yuri Levitin, the composer, and Mark Taimanov, who is a chess grand master besides being a pianist, were in the group too. Unfortunately we were all dispersed during the war. It was a hard time, and many of us gave up music.

**HF:** What happened then?

**B.:** In 1937 I played in a talent festival at the Bolshoi. After that my family moved to Moscow, and I went to the Central Music School. That's when I started studying with Prof. Goldenweiser.

**HF:** What happened to you during the war?

**B.:** Well, Moscow was very close to the front, so they moved us to Penza. I studied with Prof. [Theodore] Gutman there. Things were not so bad for us considering the circumstances—we were safe, and we ate decently, although I sometimes had to practice with no heat. But what else was there to do?

Anyway, they had moved some government offices, some embassies, some theaters temporarily to Kuibyshev, which isn't very far from Penza, so I got to play a performance there. I remember I played the Grieg concerto with the Bolshoi Theater Orchestra.

**HF:** Was that the first time you played with a symphony orchestra?

**B.:** No, that was a little earlier—in 1940. It was the Moscow Philharmonic under Grigori Stolyarov; we played Mozart's Concerto No. 25.

**HF:** And after Kuibyshev?

**B.:** I returned to Moscow in 1943, after the siege—again with Goldenweiser's class. From 1948 until 1953 I studied at the Moscow Conservatory as an undergraduate, then in postgraduate status until 1957. Since then I have been a soloist with the Moscow Philharmonic [the concert agency], touring the Soviet Union and sometimes Eastern Europe.

**HF:** When did you first play abroad?

**B.:** That was in 1951 at the International Youth Festival in East Germany, and I was fortunate enough to win first prize in the pianists' contest. Then I had a concert tour of Czechoslovakia and participated in competitions in Budapest and Brussels. I really enjoyed Brussels.

**HF:** What did you do during the 1960s? It seems that you were a good deal less active than before.

**B.:** Yes, that is true. The '60s were slack years for my artistic activities. I did not sign with Melodiya, I had no concert tours abroad, I didn't perform much at all in public. I was very much involved in contemplation and thought, and my artistic outlook changed.

**HF:** Your mention of Melodiya brings up another point: How is it that a pianist of your stature has recorded so little?

**B.:** I have mixed feelings about recording. A record is like a piece of paper—easy to fill, but difficult to fill well. I only want to record what I do best. Then again it's hard for me to retain concentration and interest when I'm recording. For example, in 1967 it was suggested to me that I record all the Rachmaninoff preludes. I went to Melodiya with the idea, and they approved. But somehow I just couldn't keep it going—I lost inspiration, I guess.

The playback is another hard thing. I cannot listen to myself playing. It's too strenuous—like hearing myself as a stranger. There is too much of my soul in it. It's easier just to play the music.

**HF:** Can you think of any music that you particularly want to record in the future?

**B.:** Well—yes, the Liszt concertos, Prokofiev's First, Rachmaninoff's Third, Beethoven's Fourth, and the Scriabin. I have never recorded with an orchestra, and if I could do all this I would be happy. [As of now Berman has recorded Liszt's Concerto No. 1 and Tchaikovsky's Concerto No. 1 with Karajan and the Berlin Philharmonic.]

**HF:** What about travel? Why haven't you performed more outside the Soviet Union?

**B.:** I wasn't invited. It is not usual for Soviet artists to travel abroad without a specific invitation.

**HF:** Is that how your trips to Italy came about?

**B.:** Yes, as far as I know. There was a group of music lovers in Milan who had heard some of my records and liked them, so they arranged for me to be invited.

**HF:** Were your performances in Italy successful?



Berman records the Liszt B minor Sonata before the organ pipes of the former Anglican church that is now Melodiya's main recording studio in Moscow.

## Berman Before the Mikes

When, on the hot evening of May 26, 1975, I entered the Melodiya recording studio on Stankevich Street in Moscow, Lazar Berman was already there, ready to record the Liszt B minor Sonata. Since the workday at Melodiya ends at 6 p.m. and the session was scheduled for 7, most of the staff had gone, leaving just recording engineer Valentin Skoblo and his assistant.

The building that houses Melodiya's main recording facility is an Anglican church that was built seventy years ago and converted for recording in 1960. In its 500-square-foot hall all sorts of recordings have been made—symphonic, chamber music, choral, and pop. Ray Conniff, incidentally, recorded here late in 1974 with a Russian chorus and band.

Skoblo, who is forty-three, has been in the business for over twenty years and is an old friend of Berman's, the two having worked together many times. The engineers attached to this studio are generalists, able to record practically all genres of music. Each, however, has his own predilections, and Skoblo is predominantly for classical music. He has handled most of the piano recording in Moscow in recent years.

As Berman was warming up, Skoblo and his assistant were arranging microphones around the Steinway grand—two Neumann mono M-269s and two stereo SM-69s. Then they began to surround the pianist with a "Chinese wall"

of panels. When questioned about this, Skoblo replied that high and low frequencies do not record very well in this studio and that, while this is acceptable for pop music, different circumstances are needed for classical. "Over the past fifteen years we've learned to compensate for it pretty well," he added.

With the pianist properly surrounded (it looked awful, but audio quality is the main thing, after all), Skoblo stopped for a last quick word with him: "Shall we record in segments?" No. Berman wanted to record the whole sonata in a single take.

I left Berman alone with the piano and made my way to the control room, which was equipped with a twenty-four-input Neve console and Swiss-made Studer C-37 recorders. He took the first three notes—and stopped. He seemed disturbed, as if he had heard some noise. Now we too could hear the noise, which seemed to come from a duplicating room underneath the studio, and the assistant went down to stop it. The time was 7:40.

Once again Berman put his hands to the keys: single initial notes—the B minor Sonata. Berman truly loves the music of Liszt, and he was playing it as only he can: quietly, yet seriously, with just the right tone, his grand piano singing. Passage followed passage. Then there were a few minor slips, an arpeggio missed in one place. But on the whole—good. It was 8:10. He had played the sonata in exactly thirty minutes.

Skoblo invited the pianist in to listen to the take, and Berman entered, his forehead shining with sweat. He joined Skoblo at the console, and the playback began with the two poring over the sheets of music before them. Skoblo pointed out each fault as it occurred, whether in playing or recording. Berman nodded his head and said, "You know, the second take is always the best; it is somewhat of a rule with me. Let's try the whole thing again." Then he added, "I'm glad there is no vocal of mine on the tape. Sometimes I get carried away and begin to croon."

Recording resumed, and surprisingly enough it went a trifle differently. But that trifle was worth a lot: touch became freer and more natural; inaccuracies disappeared; things became easier and more human.

Another playback session. Skoblo, more enthusiastic now, asked him to play the middle of the sonata again, just to be sure. Berman returned to the keyboard and started to play, but he could not stop and so played right to the end. He looked tired and sweaty. But, satisfied with his playing, he was laughing and joking. The time was 10:30; in just one three-hour session, Berman had recorded the entire thirty-minute sonata.

V.D.Y.

B.: Very. They liked me, and the invitations kept coming. In 1971 my usual concert audiences in Italy numbered 300, perhaps 400 people. Three years later, I was getting about 2,500 at every concert. Italy has become almost like a second home. HF: And what of your tour to the United States—was it arranged the same way?

B.: Just about. Jacques Leiser [the New York concert manager who is handling Berman's U.S. tour] somehow got hold of a record of mine [a recital album of works by Chopin, Debussy, Ravel, Rachmaninoff, and Scriabin, reviewed by HIGH FIDELITY, August 1962]. Then he came here to Moscow and arranged for the tour. I am delighted about the whole thing, of course—and a little apprehensive too. It's a big undertaking and a big unknown, perhaps also a big changing point for me. One thing that worries me is that Steinway pianos [of European manufacture, slightly different from those made in the U.S.] may not be available everywhere in the U.S., and I am not familiar with U.S. and Japanese pianos. I worry a lot about pianos.

HF: Let's talk more directly about you and your music. What about your career—are you happy with it?

B.: Well, my artistic way is quite uneven. I am a nineteenth-century man, a virtuoso, so to speak. For many years I was carried away with virtuosity, with naked technique, particularly while at the conservatory. My speed became a legend, and I really could play the coda of Chopin's B minor Sonata in fifty seconds. My friends checked it with a stopwatch. It was unfortunate, but we really set up contests, made bets, etc. The only excuse for this was our youth—we thought music was like soccer or something. I thought little about sound, only fingers, speed, perfect notes. The harder a passage was, the more it appealed to me. Of course, after a while, the machinery began to vanish. Then I began to learn and practice sound. I studied recordings of pianists and even singers. I wanted to approach the cantilena as closely as possible; I wanted melodiousness of phrase. By now I can do a great deal of this. When an Italian critic said my piano was better than my forte, I was happy. I was overjoyed when my playing was compared to bel canto. I had been working for that for ten years.

HF: Would you say that you have one favorite composer?

B.: No—no single favorite. But I do have a favorite style of interpretation. For me, the best style is the one with the most heart and the least possible academism. As a rule I love contrasting music—the interplay of soft and loud. For these reasons I am more than anything a lover of the Romantics, particularly Liszt, Schumann, Rachmaninoff, early Scriabin, Prokofiev. And of course there is Beethoven. To my way of thinking he is usually interpreted far too academically, too smoothly. Every-

one stresses Beethoven's classicism. I try to show him as a man of passions. After all, Beethoven and Mozart loved, suffered, enjoyed, became depressed, joked. Why is their music to be interpreted in a framework? And why go crazy when playing Liszt or Chopin? All in all, I try to interpret the Romantics more sternly and the Vienna classics less so. And what is classical, anyway? When I read the old authors, I see that fashions have changed—hairdos, dresses. But people are the same.

HF: And what about modern music?

B.: Well, for me modern music ended with Prokofiev. I don't say that other new music is bad, but frankly it is not my métier. Perhaps it all depends on the music one was brought up on. My background was Bach, Mozart, Chopin, and Tchaikovsky, Rachmaninoff, and other Russians. Today seven-year-olds play music that seems awfully complex to my ears—Prokofiev, Kabalevsky, Bartók. Personally, I prefer finding new things in old music to playing new music.

HF: All right. What did you discover in Liszt, for example?

B.: Once, thirty years ago, I was a slave of my hands. They could do anything, so I played Liszt much too fast. Audiences got caught up in the avalanche of sound and would forgive other shortcomings. Liszt wrote real virtuoso music. Now I try to spiritualize this element; I am the master of my hands. There is even some reserve in my tempos. I try to leave time for the work to be heard, for its contents be digested.

Likewise I've changed my views about Tchaikovsky. I've dropped the bravura interpretation of the First Concerto. I've read a lot of his writings, and I think I understand his soul. Tchaikovsky was not a pompous composer, but a lyricist. So that's how I perform his First Concerto. He didn't put all that grandeur there—it was Bülow. Tchaikovsky devised a modest beginning, with the sound growing from there. In the original autograph score the opening is to be played lyrically and heartily, and that is the way I try to play it. The usual interpretation of the middle of the second movement also, to my mind, goes against the composer's wishes. It becomes a phantasmagoria, with a lot of [E.T.A.] Hoffmann in it. But it is first of all a waltz—pretty and cozy, easy, sincere and hearty. Liszt might have perceived that piece in a fantastic way, but not Tchaikovsky.

HF: Do you have any idols in the world of the piano?

B.: Of course. Every musician has. I could name many, but keeping it short—Sofronitsky, Michelangeli. And by her devotion to art (so unattainable for me), Maria Yudina. I do not seek to become like them. I simply know that there have been such phenomena—that it is possible for human beings to play that well. ●



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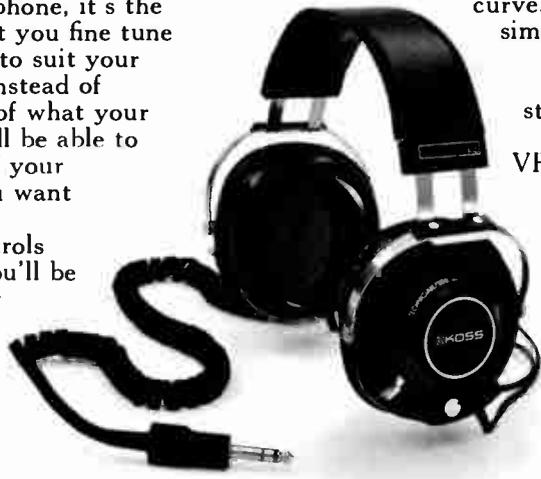
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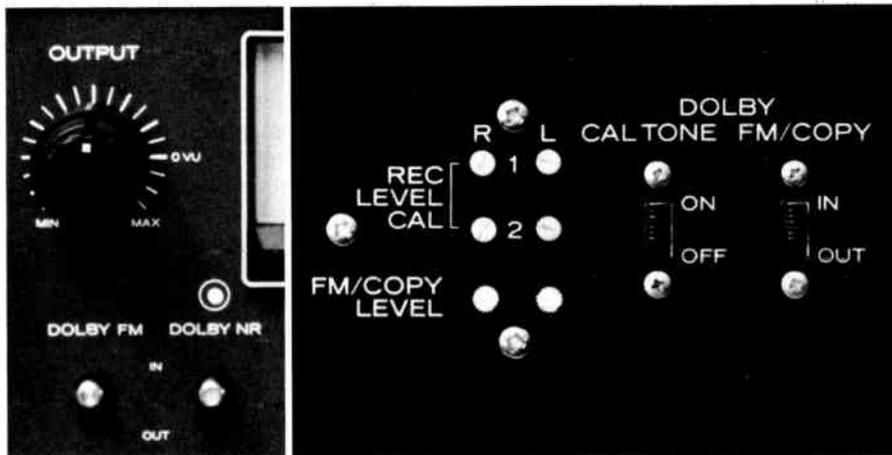
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the quill pen) did not deter the Ludwigomaniacs from overdramatizing the event.

But there are other indications that Beethoven kept sound respect for his great contemporary. (Napoleon was born a year before he was.) In a letter to his publishers several months after the proclamation of the Empire, Beethoven referred to the *Eroica* as "eigentlich Buonaparte genannt" (really called Buonaparte). Some fifteen years later, when Napoleon was in exile on the island of St. Helena, the publisher Peters paid a visit to Beethoven and mentioned the fact that the Vienna composer Eybler was commissioned to write a Mass for Napoleon to be performed at his chapel in St. Helena and added that the work should have been commissioned to Beethoven. Thanks to the composer's providential deafness, all communications with him had to be in writing, so this conversation has been preserved in the *Konversationshefte*. That such a proposition could have been made at all, and that Beethoven countenanced it, shows that in his heart he never ceased to admire the fallen emperor.

Triskaidecaphobia is a morbid fear of the number 13. Rossini had it, and like so many Italians he also regarded Friday as a bad-luck day. Indeed, the chronology of his life would provide a numerologist with a lot of intriguing speculation. Rossini was born on leap-year day, February 29, 1792. In the year of his death, 1868, he joked that he was only nineteen, for he had celebrated only that many birthdays in his life. He approached every 13th of the month that fell on Friday with superstitious apprehension. He died on November 13, 1868, which was a Friday!

Casals was proud of having in his possession the original manuscript of Brahms's String Quartet in B flat, Op. 67, a gift from a Vienna admirer. He called it "my personal quartet," for, he said, Brahms began its composition on the exact day Casals was conceived and finished it nine months later, on the day Casals was born. Alas, the chronology does not support this affinity. Brahms completed the quartet in 1875, and Casals was not born until more than a year after its public performances. And besides, the date of conception has never been scientifically verified.

In 1899 W. J. Henderson listened to a performance of *Till Eulenspiegel* and wrote in disgust: "No gentleman would have written that thing. There are places for such music, but surely not before musical assemblages of ladies and gentlemen."

Major Higginson, the founder of the Boston Symphony Orchestra, an amateur musician, and a successful banker, held it as an article of faith that only Germany produced good musicians and that no conductor could lead an orchestra competently

except a German. Since he was the main financial supporter of the Boston Symphony, the orchestra had a succession of German conductors from its founding in 1881 to the time of the American entry into World War I, when, as a result of an agitation among superpatriotic New England women, the dignified and socially impeccable Karl Muck, conductor of the Boston Symphony for several years, was placed in a detention camp as an unregenerate Hun and a self-confessed friend of the kaiser.

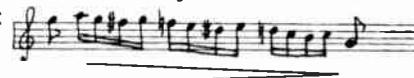
The first conductor of the Boston Symphony, Georg Henschel, was actually of Polish-Jewish extraction, but Major Higginson was not concerned about racial origin as long as the incumbent was born and educated in Germany. The concerts of the embryonic Boston Symphony were *gemütlich* affairs. At one concert, on November 9, 1882, Henschel, who began his musical career as a singer, performed with his wife, a duet, "Oh that we two were Maying," of his own composition, "for the benefit of the widow and four children of a German musician and composer of merit who succumbed to fever in Texas in the thirty-fifth year of his age." The identity of the beneficiary remained nameless.

Turgenev, who spent long years in Paris, was periodically in love with young actresses, while living on a fairly permanent basis with the French singer Pauline Viardot. He wrote to one of his loves: "My passion for you is like a chromatic scale mounting in crescendo."

In a similar vein, so the story goes, Haydn became friendly in his youth with a charming lady of the Viennese aristocracy. Years passed, and he met her again. "Do you remember me?" she asked him. "You wrote this for me," and she sang:



"Oh, yes. Unfortunately, now the tune is," Haydn croaked:



In Haydn's oratorio *The Creation*, there is a passage in pizzicato that precedes the sentence, "And there was light!" According to a plausible report, attributed to Haydn himself, this pizzicato represents God striking a piece of sharp flint against whetstone, producing a spark that illuminated the primeval darkness.

The key of C major has for centuries represented the exaltation of the soul and triumph of man. Beethoven expressed this quality in the finale of the Fifth Symphony, and Scriabin in the orgiastic joy of the concluding pages of his *Poem of Ecstasy*, in which he holds on to the deep pedal point on C for fifty-three bars. But the modernists of the Viennese school of composition renounced C major as

the petit-bourgeois product of Biedermeier culture. Alban Berg used the C major triad in his opera *Wozzeck* to illustrate the lines, "Da ist wieder Geld, Marie" (Here is money again, Marie), with the obvious intent to emphasize the vulgarity of money.

Dissonance is the mustard of music. "Discords mingled with concords not onlie are tollerable, but make the descant more pleasing if they be well taken," Thomas Morley declares sententiously in his famous treatise, *A Plaine and Easie Introduction to Practicall Musicke*. Alexander Pope said, "All discord, harmony not understood." And Jean Cocteau extolled the aesthetical value of ugliness: "*La laideur est toujours la forme le plus récente de la beauté*" (Ugliness is always the most recent form of beauty). It is probably possible to train a child to react favorably to a series of unmitigated discords, and to be repelled by triadic harmonies. The experiment is worth trying in kindergarten.

An apparently nonapocryphal story concerns Paderewski's last years of life. After the destruction of Poland during the Nazi invasion of 1939 and the fall of France, he came to the U.S. and lived in Westchester County. Still vigorous in his eighties, he used to take daily walks. Once he passed by a modest cottage from which there emanated a familiar tune, his classical Minuet in G. But, oh horror, the player neglected the essential F sharp. Paderewski approached the cottage and saw a shingle: "Helen Springle, Teacher of Piano." He knocked at the door, and Miss Springle—it must have been she, for the music stopped—appeared at the door.

"My name is Paderewski," the great man declared. "May I ask a favor of you?"

Overwhelmed by this unexpected honor, Miss Springle muttered, "Why, Maestro Paderewski, anything, anything at all!"

"Will you please play F sharp in my minuet?" Paderewski requested.

A few days later he happened to pass by the same cottage, and once more the familiar strains of his minuet resounded from the music room. But this time F sharp was firmly in place. There was also a new shingle on the door, which read: "Helen Springle, Teacher of Piano, Only American Pupil of Paderewski."

Reading the same words in the wrong language may convert a sincere sentiment into a gross insult. During his professorship at Columbia University, MacDowell received a testimonial from his students with the inscription in large letters: "O *singe fort*" (O sing forth), quoting from the line of Flosshilde, one of the nymphs of the Rhine, in the first act of *Das Rheingold*. MacDowell was momentarily shocked, for in French the words mean "O powerful ape!"

Isaac Stern was asked his opinion about his own position among the world's violin virtuosos. "I am the second best violinist in the world," he said.

"And who is the first?" he was asked.

"I can't tell," Stern replied. "They are all friends of mine."

An orchestral librarian asked the conductor for the exact duration of a work he had on his program. "With feeling," the conductor replied, "twenty minutes. Without feeling, fifteen minutes."

Max Reger used to take his students to the nearest *Bierstube* for pork sausages and beer after his classes at the Leipzig Conservatory. "Pigs and composers have one thing in common," he remarked. "They are appreciated only after they are dead."

A lady admirer of Reger complained that she could not see his face when he conducted an orchestra. Reger reassured her that he looked exactly the same from the front and back, just like his name, which is a palindrome.

A sampler from college examination papers:

Lieder are leading German composers.

Arpeggio is faster than allegro.

Classical music is sonatas, cantatas, and traviatas.

Boris Godunov was a modern composer who wrote the opera *Faust*.

Rimsky-Korsky wrote *The Golden Cockerle*.

The real name of the *Moonlight Sonata* is Beethoven's Ninth.

Basso ostinato is a mechanical device used by the Italian castrati.

Rossini used to address his letters to his mother as follows: "To Signora Rossini, mother of the celebrated Maestro."

Moritz Rosenthal boasted that he could identify any Chopin piece from only two bars. Another Chopin specialist stumped him by sitting down at the piano and playing nothing for three seconds. The quotation was two bars of rests in Chopin's *Scherzo* in B flat minor.

From an old advertising column:

Piano for sale, the property of a lady leaving the country in a remarkably elegant walnut case.

Piano wanted for a young lady, a beginner with carved legs.

Piatigorsky helped Stravinsky to fix the details of the cello part in his *Suite italienne*. He advised that in one spot a pizzicato should be followed by a staccato. Stravinsky made the corresponding notation, murmuring, "One belch, one fart." ●

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Continued from page 48

the adapter; the other two positions drive the headset at different levels, with finer level adjustments made at the main system's volume control.

The headset itself is light (9 oz.) and has more possible adjustments than most—even the spacing of the two headbands can be varied. It may take you a little longer than usual to adjust the headset to your head, but you should get a better fit when you're done. Even so, we judged the comfort of the unit only average to good (opinions vary). The vinyl ear cushions are quite soft, but they are not as efficient at distributing their pressure as the larger, fluid-filled ear cushions on some models, and some users complain of perspiring ears—a common complaint with headphones.

The seal they offer may be called moderate. Room sounds are attenuated but not severely muffled. The wearer doesn't experience the sense of isolation that some complain of with high-seal sets, but by the same token he can't "shut out" a really noisy environment. He should have a lot to distract him from that environment, however, since the sound quality the AT-706 presents him with is exceptional: very wide-range and smooth. Fundamental tones stand up very well indeed, with minimum doubling and no audible rolloff, to the neighborhood of 30 Hz. From there up the response is extremely flat to about 8 kHz, where some minor roughness occurs. Response seems to slope off a bit above 10 kHz but holds up well to beyond audibility.

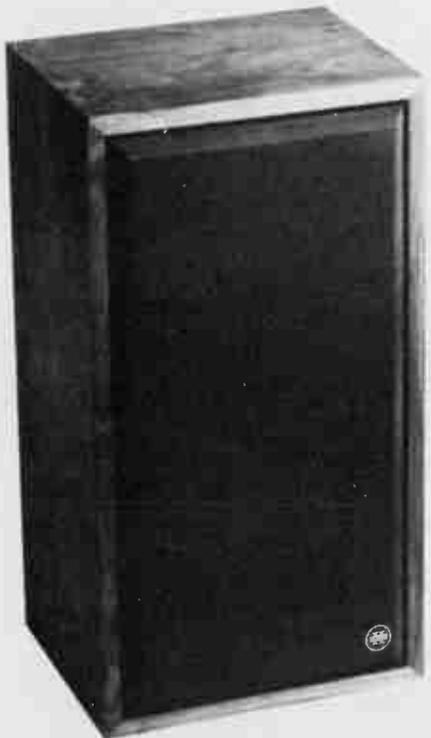
Within this excellent operating range the sound is exceedingly clean and open, with an unforced quality that

has none of the "sizzle" or other symptoms of strain that can creep into electrostatics at high levels. When the AT-706 is overdriven (which happens only at very high sound levels—higher than for typical electrostatics, particularly in the bass) the sound acquires what might be described as a mellow buzz that is distinctly less objectionable than the raspy quality we've encountered (again, at lower output levels) with some electrostatics.

If all this interests you but, for practical reasons, you don't want to bother with the adapter-box setup of the AT-706, Audio-Technica offers basically the same transducers and physical design in the less expensive (\$79.95) AT-707, which has the matching transformer right in the headset and is driven—via a coiled cord and conventional stereo phone plug—from a normal headphone jack. The straight 6-foot cord between the AT-706 and the adapter does restrict the wearer's movement somewhat, but the practical advantages of the AT-707 (which we did not test) appear to exact a price. Since the matching transformer system built into it must be tinier than that in the AT-706's adapter, dynamic range and bass response are somewhat restricted by comparison, according to the manufacturer.

In a sense, then, the electret condenser design offers a good deal of the best of two worlds: the extreme frequency range and flatness of electrostatics combined with the dynamic range of good dynamic headsets. Add to this the AT-706's freedom from distortion, and you have an extremely fine stereo headset—one that (like other extremely fine reproducers) may at times afford disconcertingly clear perception of the shortcomings of your system and your recordings, as well as their virtues.

CIRCLE 146 ON READER-SERVICE CARD



**The Equipment:** KLH Research Ten CL-4, a three-way compact loudspeaker system in enclosure. Dimensions: 26 13/16 by 14 1/4 inches (front; can be used vertically or horizontally), 12 13/16 inches deep. Price: \$189. Warranty: five years parts and labor. Manufacturer: KLH Research & Development Corp., 30 Cross St., Cambridge, Mass. 02139.

## CL-4—Top of KLH's Research Ten Group

**Comment:** The KLH CL-4 is the top member of a new line of loudspeakers built with newly designed drivers, crossovers, and enclosure—in short, freshly engineered from the ground up. And, as a ducted-port system, it runs counter to the acoustic-suspension designs that many readers may think of as traditional with KLH.

The 10-inch bass driver (given the proprietary name Megaflux Woofer) has a configuration meant to minimize stray fields, to the benefit of both efficiency and linearity. This crosses over in the region of 500 Hz to a midrange driver housed in a separate aluminum enclosure and designed to bring forward musical material in its portion of the spectrum. At about 5 kHz the 1-inch dome tweeter takes over, handling the balance of the audio range out to a claimed 22 kHz.

The CL-4 is housed in an enclosure of dense 3/4-inch particleboard faced with an attractive walnut veneer. The brown jersey grille cloth is stretched over a removable frame that is secured to the driver panel with Velcro fasteners. A recess at the back of the enclosure holds a pair of binding posts (accepting bared wires or spade lugs) for the attachment of leads plus a pair of three-position switches that adjust the levels of the midrange and tweeter, respectively up or down by about 1 dB from their FLAT positions.

Measurements made at the CBS Technology Center in-

dicate that this is a loudspeaker of creditably wide bandwidth. High-end on-axis output is quite flat to about 15 kHz. The woofer response (measured in an anechoic chamber) holds up well; between the extremes the computer-generated curve is flatter than average. The CL-4 handles power impressively as well. A sound pressure level of 100 dB is reached at 80 Hz with only moderate distortion for this output at so low a frequency. At 300 Hz the unit accepts 100 watts, for almost 108 dB of output, before distortion becomes excessive. Pulses to 168 watts average (336 watts peak), the limit of the test amplifier with this speaker, produce an output level of almost 113 dB without excessive distortion.

This bespeaks excellent dynamic range. KLH recommends amplifiers of 25 watts or more, which the tests show will drive the system to upward of 100 dB. The lab found 3.2 watts necessary to drive it to our standard test level of 94 dB (at 1 meter on axis), which represents moderate efficiency. KLH rates power handling at 200 watts continuous, and impedance at 8 ohms. Actually the impedance, as measured at the lab, never drops below about 9 ohms. Its rating point (the minimum just above bass resonance—at about 55 Hz) is 10.7 ohms in the neighborhood of 100 Hz. It rises to a little beyond 16 ohms in the midrange, then gently falls again. Obviously this is not a speaker with which one need worry about parallel hookups across typical transistor amplifiers.

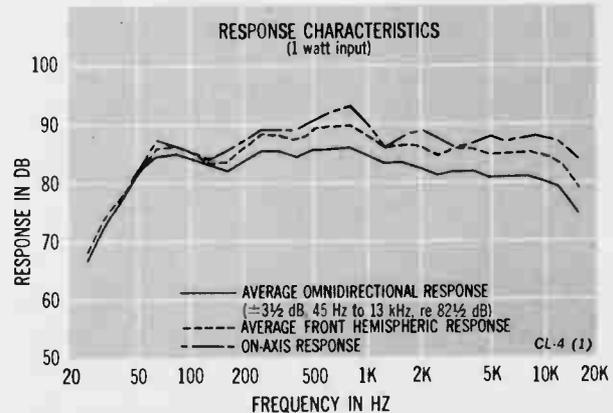
In listening tests we found the bass to hold up very well, with little doubling, to about 35 Hz. Highs are excellently dispersed; the first hint of beaming can be detected at about 13 kHz, but test tones are readily audible off axis to about 15 kHz. White-noise reproduction has a little less body than that of some speakers, perhaps, and is brighter than average. But we found that the speaker is somewhat more sensitive than average to the type of room in which it is used.

It produces a rather forward sound—presumably what KLH is referring to when it says in the advertising folder: "Much of the music that is lost, 'laid back,' or muffled in other speakers is brought forward and into proper musical focus by the CL-4's cone midrange." The sound seems to come from just in front of the speaker when only one is used (in mono) for A/B comparison with other models. This makes for a tight stereo image with, perhaps, less depth than might be injected into it. It is more of a close-up perspective than one usually encounters. In smaller listening rooms, in fact, some listeners may prefer a more "laid back" sound. Certainly the balance and over-all sound strike us as more attractive when the system has a reasonably large space to work into.

There was a time when a truism of loudspeaker design—

accepted at KLH no less than elsewhere—was that nobody can stand a flat loudspeaker. The contention was that a flat high end puts the listener as "unnaturally" close to the musicians as the microphones are during the recording session. This is an oversimplification of the argument, of course; the point is that the CL-4 turns its back on that argument as do many other recent speakers that are designed for a relatively flat high end. This is a more significant break with KLH tradition than the use of a ported bass enclosure (which the company has used in past models) and documents KLH's awareness that, as it says in a Research Ten brochure, "times and technology do change."

CIRCLE 147 ON READER-SERVICE CARD



#### KLH CL-4 Harmonic Distortion\*

Output Level (dB)	Frequency			
	80 Hz		300 Hz	
	% 2nd	% 3rd	% 2nd	% 3rd
70	0.27	0.27	0.38	0.35
75	0.27	0.27	0.35	0.24
80	0.27	0.22	0.33	0.24
85	0.34	0.27	0.38	0.22
90	0.43	1.8	0.48	0.32
95	0.65	2.3	0.90	1.6
100	1.8	5.0	1.8	1.2
105			1.4	2.9
107.8			3.5	1.9

\*Distortion data are taken on all tested speakers until distortion exceeds the 10% level or the speaker produces the spurious output known as buzzing, whichever occurs first.

## TEST REPORTS IN PROGRESS

- Sansui SC-3000 Dolby cassette deck
- Pioneer TX-9500 stereo FM/AM tuner
- Dual 1249 automatic record changer
- Luxman C-1000 stereo preamplifier
- B&O M-70 minimum-phase-distortion loudspeaker



## Thorens Goes (Semi)Automatic

**The Equipment:** Thorens Model TD-145C, an automated single-play two-speed (33 and 45) turntable with integrated tone arm, wood base, and dust cover. Dimensions: 17 by 13½ inches (base); 7¾ inches high with dust cover closed, 15½ inches fully open. Price: \$299.95. Warranty: one year parts and labor. Manufacturer: Thorens, Switzerland; U.S. distributor: Elpa Marketing Industries, Inc., Thorens & Atlantic Aves., New Hyde Park, N.Y. 11040.

**Comment:** Thorens has, perhaps, the longest history of any company in the home music-reproduction field, stretching back to music-box days and including some of the finest early spring-wind disc turntables. Over the past twenty years or so, it has produced what must be reckoned the world's most consistently prestigious line of manual single-play turntables. And now it has gone automatic with a single-play unit that is distinctly individual yet distinctly Thorens.

The obvious automatic feature of the TD-145C is in its arm liftoff. It is activated electronically by any relatively rapid motion of the tone arm—whether because it has reached the leadout groove or because a fumble-fingered owner has let the fingerhold slip from his grasp. It will not be tripped by the spiral between cuts on an LP, but it will be tripped by the attempt to skip manually to a cut near the end of an LP. And herein lies our only complaint about the turntable. Having to restart it repeatedly can get to you when you're hunting about for a specific passage in the music. An automation-defeat option for this purpose would have been nice.

This consideration aside, the operation is silky smooth. A positive press of the left-hand "knob" toward either 33 or 45 starts the platter; moving the right-hand knob to the right lowers the arm gently and begins play. This latter knob can be used for cueing at any point. If arm travel speeds up or, for any reason, the power is cut off, the platter stops (though the left-hand knob does not flip back to its center STOP position), the arm raises, and the right-hand knob moves to the left (arm up) position. To recommence play, you just nudge the left knob toward its extreme position once again and switch the cueing knob. The cue feature operates with no side drift.

The dynamically balanced nonmagnetic die-cast platter weighs in at 4½ pounds. (Actually the entire "flywheel" includes the large metal pulley on which the platter rests; Elpa rates the assembly at 7 pounds.) Its rubber surface mat has a special "indented" treatment intended to prevent trapped air pockets beneath the disc from creating resonance effects during play. In the center is a reversible spindle; when you switch from LPs to large-hole 45s you simply flip over this insert.

The motor is a 16-pole synchronous design coupled to the pulley beneath the platter by a belt. The system comes up to speed very rapidly (1½ seconds is Thorens' spec) and is very rumble-free: -59 dB was measured by the lab using the ARLL method. There is no speed "tuning" control. At 33 rpm the unit checks out 0.2% fast at all test line voltages; at 45 it is 0.14% fast and again does not vary with line voltage. Weighted average peak flutter measures 0.07% with maximum instantaneous values of 0.14%. These figures all are squarely within the ballpark for today's top turntables and represent essentially undetectable departures from "perfect" performance.

The integrated TP-16 tone arm has an interchangeable low-mass head shell at the end of a straight tubular arm. Balance and VTF are adjusted at the counterweight system at the back of the arm. (The accuracy of the VTF settings is shown in the Additional Data table.) To the right of the pivot is the adjustment for antiskating: A knob with two scales (for spherical and elliptical styli, respectively) controls a magnetic biasing system. Both scales produce antiskating forces slightly below those typically encountered but well within the range that theory predicts as desirable. Arm friction is negligible both horizontally and vertically. Thorens claims less than 20 milligrams, and the lab found it too low for useful measurement. With the Shure V-15 Type III cartridge, arm resonance measures a moderate 4 dB at 8.5 Hz. The arm lift system introduces no drag, of course, because it involves no physical coupling to the arm.

The arm mount and platter bearing are isolated from both external vibration sources (shock and feedback) and motor vibration by the mounting system. The controls are mounted on the same assembly as the motor so that their operation does not transmit motion to the arm and platter. This system, we find, works very well indeed and contributes to the surefooted precision with which the TD-145C fulfills its appointed functions. This is what the unit is about; automation or no, it is every inch a Thorens.

CIRCLE 150 ON READER-SERVICE CARD

### Thorens TD-145C Additional Data

Tracking-force gauge accuracy (grams)	
Set	Measured
0.5	0.4
1.0	0.8
1.5	1.4
2.0	1.8
3.0	2.8



## Radio Shack's Top 4/2-Channel Receiver

**The Equipment:** Realistic Model QTA-770, an AM/FM receiver with four-channel amplifier and optional higher power two-channel mode, CD-4 demodulator, and SQ matrix decoder; in wood case. Dimensions: 19 $\frac{3}{8}$  by 6 inches (front panel); 13 $\frac{3}{4}$  inches deep plus clearance for controls and connections. Price: \$599.95. Warranty: one year parts and labor. Manufacturer: Radio Shack, 2617 Seventh St., Fort Worth, Tex. 76107.

**Comment:** The Realistic QTA-770 is equipped with an almost dazzling array of controls and conveniences, at least one of which (the AUDIOROTOR, which shifts the four-channel sound field so that center front is midway between any adjacent pair of speakers) is rarely seen. The neatly styled front panel features a slide-rule FM dial with a pointer that glows red when the receiver is tuned to a station transmitting in stereo. To the right of the dial are a signal-strength meter and a large tuning knob. Slider controls—arranged so that both can be operated with one finger—that adjust the volume of the front and back channels, respectively, lie at the extreme right of the panel.

Below the dial is a row of pushbuttons. First come POWER and MAIN and REMOTE speakers, allowing selection of either, both, or neither of two sets. (The manufacturer cautions that, while the receiver can drive 4-ohm speakers, two sets of these should not be connected at once, nor should STEREO MAX or QUATRAVOX be engaged with 4-ohm speakers connected.) The six remaining buttons control high- and low-cut filters, loudness compensation, FM muting, AUTOMAGIC (AFC), and tape monitor.

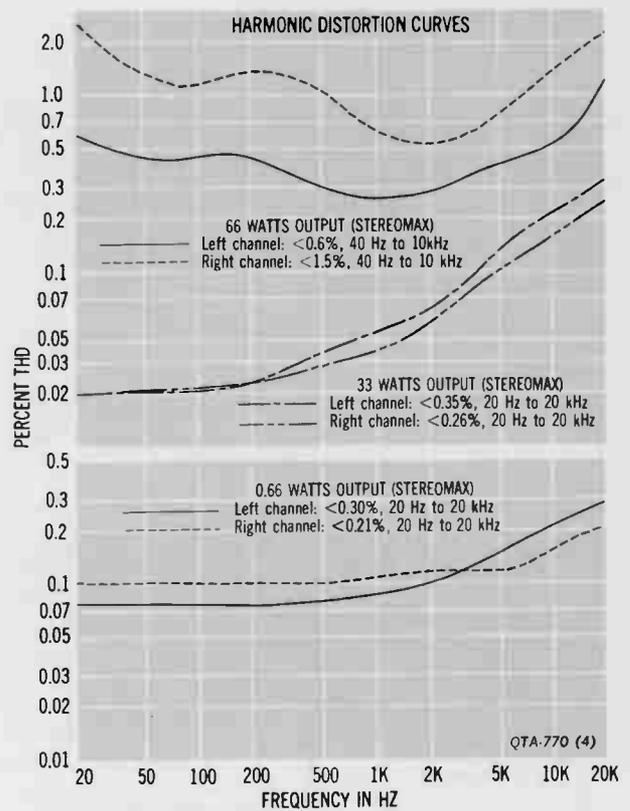
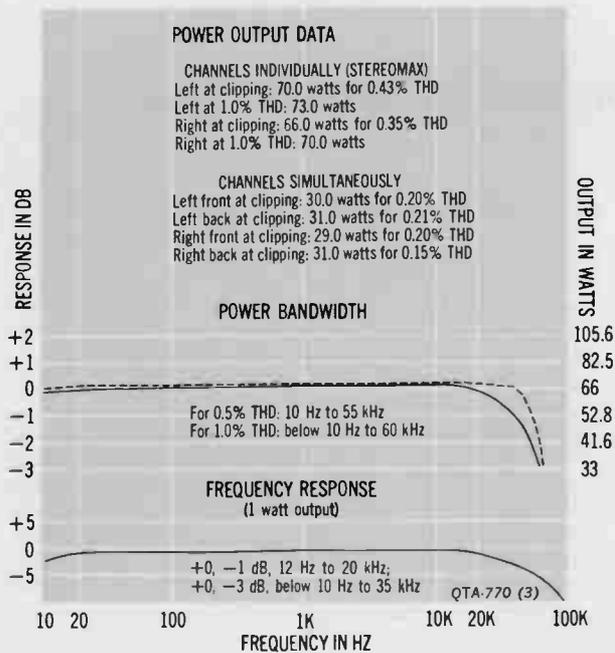
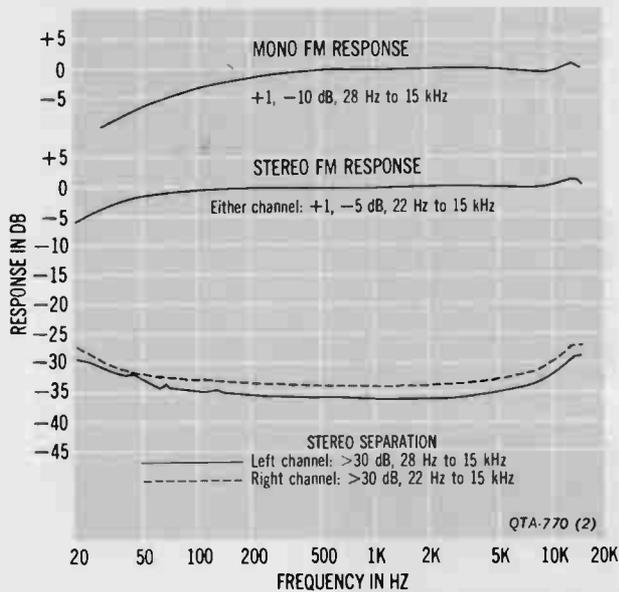
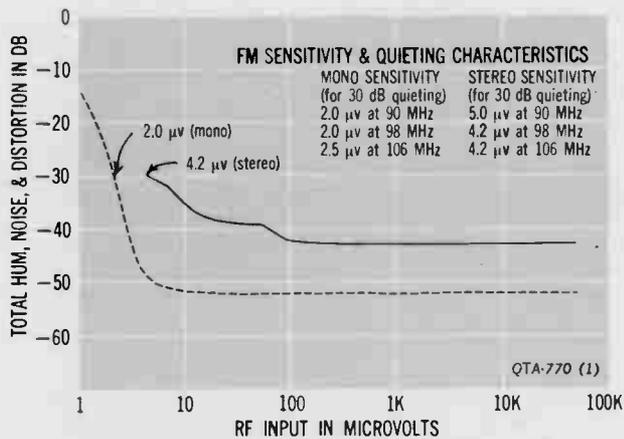
The bottom of the front panel has stereo headphone jacks for both front and back channels; tone controls for bass, midrange, and treble; the AUDIOROTOR control; a mode switch that chooses among DISCRETE 4, MATRIX SQ, QUATRAVOX (a synthesizer that derives four channels from ordinary two-channel material), STEREO, STEREO MAX (a strapped mode with power fed to the front channels only), and MONO; and a selector for AM, FM, PHONO/CD-4, or AUX. Knobs at the extreme right adjust the left-right balance of the front and back channels.

A pair of convenience outlets (200 watts unswitched, 100 watts switched), a fuse, and the AC power-line cord are in the far left section of the back panel. The center portion holds binding posts for two sets of loudspeakers, with pin-jack outputs provided for the main set as well. To the

right is an array of pin jacks: one quadriphonic set for tape output, one for detector output (allowing for a future adapter for discrete four-channel broadcasts), quadriphonic sets for tape input and for aux input, and a two-channel set for magnetic phono input. The sensitivity of the phono input (0.8 or 1.6 millivolts) can be raised or lowered via a switch below the jacks, and nearby are the separation controls for the CD-4 demodulator. At the lower right corner are a binding post for phono ground and screw terminals for an AM antenna and a 300- or 75-ohm FM antenna. A rod antenna for AM is also provided.

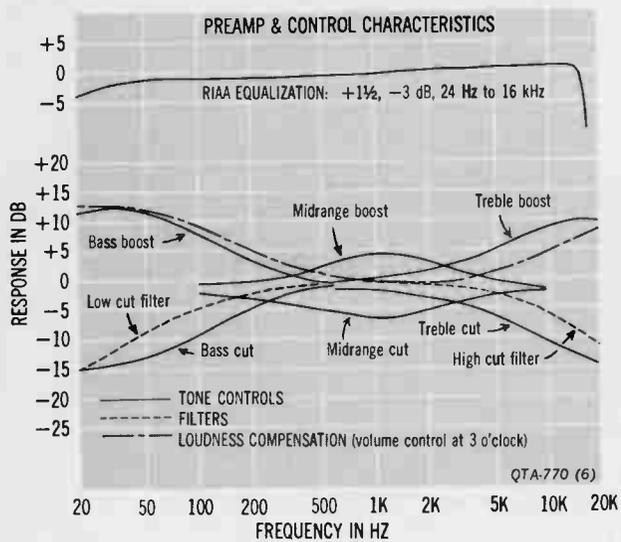
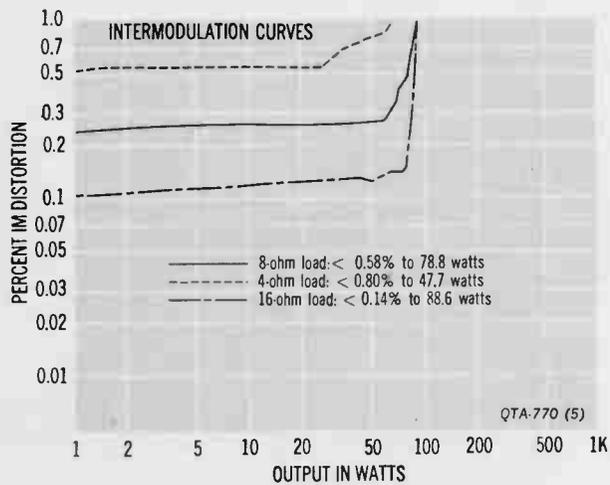
CBS Technology Center tested the amplifier section in the strapped mode (STEREO MAX) at the 66-watt-per-channel rating given in the instruction manual. This specification is met at midband (1 to 4 kHz), but there is a considerable rise in harmonic distortion toward the frequency extremes—particularly in the right channel. In a more recent catalogue Radio Shack has chosen a more conservative rating (perhaps to comply with FTC rating rules) of 60 watts per channel, and the lab data suggest that the unit in fact meets this at less than 1% THD across the audio spectrum. No untoward amplifier behavior was detected in listening. In the four-channel mode (rated at 25 watts per channel for less than 1% THD, 20 Hz to 20 kHz), which we used for most listening tests, the audio from the loudspeakers seemed crisp and clean.

The preamp is, by and large, a fitting complement for the amplifier section. The SQ decoder—of the simple matrix type without logic—provides surprisingly good localization. There is a perceptible rolloff toward the bass region, attributable in part to the droop visible in the RIAA response curve (we were listening to discs), but here the flexibility provided by the three-way tone controls came nicely to the rescue. The midrange control in particular keeps soloists, especially in pops, out of the general vicinity of one's lap. The CD-4 demodulator has the same frequency-response imbalance (and the same remedy applies) and is somewhat sensitive to disturbances caused by less than perfect record surfaces. Contrary to the implications of the manual setup instructions, it is possible for a CD-4 pickup to overload the phono input; we suggest setting the phono sensitivity switch for best sound. The QUATRAVOX works well in synthesizing quadriphonic sound from two-channel sources, but, as the instructions suggest, the SQ decoder may produce a better quadriphonic



### Realistic QTA-770 Additional Data

Tuner Section			
Capture ratio	1.2 dB		
Alternate-channel selectivity	62 dB		
S/N ratio	72 dB		
THD	Mono	L ch	R ch
80 Hz	0.29%	0.79%	1.0%
1 kHz	0.26%	0.51%	0.52%
10 kHz	0.28%	0.90%	0.90%
IM distortion	0.22%		
19-kHz pilot	-47½ dB		
38-kHz subcarrier	-63 dB		
Amplifier Section			
Damping factor	25		
Input characteristics (for 66 watts output)			
	Sensitivity	S/N ratio	
phono (low)	0.8 mV	60 dB	
phono (high)	1.6 mV	65 dB	
aux	200 mV	87 dB	
tape	200 mV	87 dB	



effect with some stereo program material.

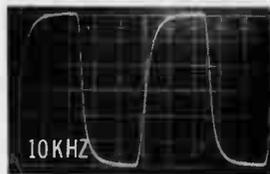
The FM section of the QTA-770 performs quite adequately except under the most difficult reception conditions. The ultimate mono quieting figure of 52½ dB is reached at only 15 microvolts' input. Ultimate stereo quieting, 43 dB, is reached at 250 microvolts, which is still a rather modest signal level. Tuning is assisted only by a signal-strength meter. To prevent drift (which is more difficult to compensate for without a channel-center meter, of course) you can switch in the AUTOMAGIC, which disengages automatically when the tuning knob is touched and re-engages upon its release. The signal meter lights up green whenever this AFC switch is on; otherwise it is white. Once again, the tone controls are of benefit in improving frequency response of both stereo and mono FM.

Considering the QTA-770 as a whole, one finds that the sections are well matched, with no one part materially outperforming or underperforming the others. When its cornucopia of controls and devices is taken into account, its price seems quite modest. It is not a super-spec job by any standards, and some readers surely would prefer to trade some of the front-panel features for a little more in the way of pure performance. But without the QTA-770's "extras" the unit would be much less fun to work with.

CIRCLE 145 ON READER-SERVICE CARD



Square-wave response



## Hitachi Offers a Monitor-Head Cassette Deck



**The Equipment:** Hitachi Model D-3500, a stereo cassette deck with monitoring capability, in wood case. Dimensions: 16¾ by 10¾ (plus clearance for cables) by 5½ inches. Price: \$399.95. Warranty: three years parts and labor except on motor, heads, and rubber belts; five years on transistors. Manufacturer: Hitachi, Japan; U.S. distributor: Hitachi Sales Corp. of America, 48-50 34th St., Long Island City, N.Y. 11101.

**Comment:** Hitachi uses the phrase "three-head system" in much the way that Wollensak has—to indicate the functional head complement rather than the number of head housings. There are, in fact, only two in the cassette well of the D-3500: the erase head (which fits into the tiny opening between the left "window" where most erase heads are placed and the center one where the record/play head goes) and a record and play head that actually is two heads (and sets of headgaps) within a single housing.

This is an important point in the design, we believe. Most companies offering monitoring-head units (Hitachi included) point to the greater high-frequency response available with this sort of design as opposed to combination record/play heads. Technics, on the other hand, has recommended that its separate cassette play-only head (as offered in the RS-279US, HF test reports, February 1974) be used just for monitoring purposes; its recording head is used for normal playback. Why give up the extra response? For one thing, because of tape skew.

Cassette tapes are both thin and narrow. They can easily twist as they wind their way from one head to another, putting a premium on the way they are supported between heads if the gap-to-tape alignment recorded at one is to be reproduced correctly at the other and hence the full frequency range is to be realized with correct phase relationships between channels. With a single record/play head the tape may skew, but it tends to skew the same way each time it passes the head, reproducing what it records within close tolerances. The Hitachi dual-purpose head, by getting recording and playback gaps very close together, offers something of the best of both designs.

The cassette well has one particularly nice touch: A spring-loaded panel in the near edge swings up for easy access in cleaning and head-demagnetization. In front of the well are the usual control levers, which allow you to go directly from play (or recording) into a fast-wind mode or back and forth between fast-wind modes, but not back to play, without first pressing STOP. The latter button also is the EJECT. When the transport is in operation, this button will only stop it; when it is stopped, a second press will eject the cassette. PLAY and RECORD buttons are side by side. The transport can be put into the recording mode—accidentally if you're very careless—with a single finger. There is automatic shutoff of the transport at the end of the tape.

To the left, in front of the meters, is a series of large pushbuttons. Their settings are hard to "read" at a glance, so Hitachi has provided each with a pilot light. There are buttons for MONITOR (SOURCE/TAPE), INPUT (LINE/MIX, the latter combining line feed with mike inputs via their respective sliders), DOLBY, TAPE (CRO./NORMAL), MEMORY (for automatic stop at the counter's 000 setting in rewind), and METER action (PEAK/averaging VU). The latter option is welcome. Frankly, we prefer peak-reading meters, but the switch will satisfy users on both sides of this ideological fence. The tape switching can be overridden by an automatic chrome sensor in the tape well; if it finds the chrome keyway (a little well next to the recording tab), it will switch the deck to CHROME even if you have it manually switched to NORMAL—which, of course, is the ferric bias/equalization position.

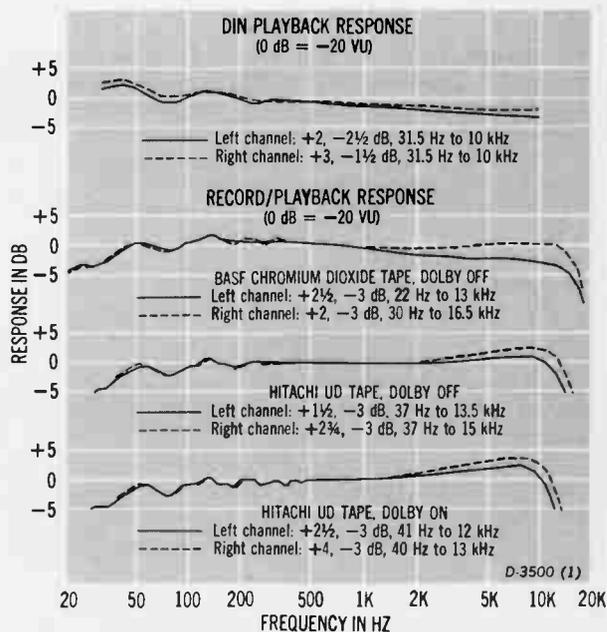
In front of these switches are three pairs (one per channel) of sliders for controlling level in the MIC/DIN input, the LINE input, and the output. LINE IN and LINE OUT connections are pin-jack pairs on the back panel; on the same panel are the DIN input/output socket and an on/off pushbutton for the output (killing it to prevent feedback when you are recording with mikes). The mike inputs are phone jacks in a recessed panel at the front of the deck. If you insert a mike plug into the left-channel jack only, it feeds both channels; adding one in the right-channel jack automatically converts to stereo. This is a useful wiring scheme that, while not unique, is less common than we would either like or expect.

To the left of these jacks are an MPX (filter) on/off button (to prevent the FM pilot from upsetting Dolby behavior), a spring-loaded TEST button (an oscillator for use in adjusting Dolby levels to the sensitivity of your tape), and

two small knobs for the same purpose. For the careful recordist this, too, is a welcome feature. And note that the monitor head obviates the cumbersome cut-and-try adjustment necessary with a combination record/play head.

### Hitachi D-3500 Additional Data

Speed accuracy	0.5% fast at 105, 120, & 127 VAC	
Wow and flutter	playback: 0.07% record/play: 0.09%	
Rewind time (C-60 cassette)	83 sec.	
Fast-forward time (same cassette)	75 sec.	
S/N ratio (re 0 VU, Dolby off)		
playback	L ch: 50½ dB	R ch: 52½ dB
record/play	L ch: 50 dB	R ch: 51½ dB
Erase (333 Hz at normal level)	71 dB	
Crosstalk (at 333 Hz)		
record left, play right	35 dB	
record right, play left	34 dB	
Sensitivity (re DIN 0 VU)		
line input	L ch: 78 mV	R ch: 79 mV
mike input	L ch: 0.58 mV	R ch: 0.60 mV
Meter action (re DIN 0 VU)	L ch: 3 dB high R ch: 3 dB high	
Total harmonic distortion (at -10 VU)		
L ch	<1.8%, 50 Hz to 5 kHz	
R ch	<1.8%, 50 Hz to 5 kHz	
IM distortion (record/play -10 VU)		
L ch	3.8%	
R ch	3.5%	
Maximum output (re DIN 0 VU)		
L ch	1.5 V	
R ch	1.5 V	



In measuring the unit, CBS used UD tape supplied by Hitachi as the ferric, BASF Chromdioxid as the chrome. The response curves do not extend as high as those of some (very expensive) monitor-head cassette decks; they resemble, rather, those we might expect in a \$400 deck with a combination head. The curves made with UD have a rise toward the high end, suggesting underbiasing. And when we tried the deck with a tape requiring slightly lower bias (Memorex MRX<sub>2</sub>) we found an excellent match between source and recorded sound. That is, we could hear no loss of highs attributable to the high-end rolloff (nor would we really expect to), and we could hear an improvement by comparison with the slight treble emphasis with UD. The sound is, in fact, excellent.

So is motional stability: As the lab data show, there is no change in speed with varied line voltage and very low wow and flutter. This speaks of good mechanical design in the drive system. (Our only real complaint was occasioned by the automatic bias/equalization microswitch. On our sample, it has excessive clearance and consequently switches to CHROME when it should stay in NORMAL. We would rather see the automatic feature omitted than risk

this. And a minor inconvenience: a latch on the cassette-well lid that seats poorly on our sample, causing wear and an increasing tendency to pop open or not to latch at all. Both malfunctions could easily be prevented by minor redesign, and Hitachi—to whose attention we brought them—says it plans to do so for the first full-scale production run, which had not begun when our tests were conducted. The deck basically is far too good to be compromised by such details.)

Over-all, the deck offers a heck of a lot for \$400. We particularly like its ability to monitor the quality of recordings right off the tapes while you're making them. The accessibility of the Dolby adjustments and the availability of peak metering also are important points for serious recordists, as are the mixing feature and the simplicity of using a single mono mike (particularly when mixing its output with stereo on the line feed). Dual ferric tape switching, to provide a closer match to the "hotter" tapes like UD as well as a good match to the Memorex and similar formulations, might have been nice. But even without it the D-3500 is an unusually versatile and useful deck.

CIRCLE 148 ON READER-SERVICE CARD



## SAE's Glamorous Mk. VI-B Tuner

**The Equipment:** SAE Mk. VI-B, a stereo FM tuner with digital readout. Dimensions: 17 by 5¾ inches (front panel); 10½ inches deep plus allowance for controls and connections. Price: \$1,250; optional Model WC-1 wood case, \$44. Warranty: 90 days parts and labor; free five-year service contract. Manufacturer: Scientific Audio Electronics, Inc., P.O. Box 60271, Terminal Annex, Los Angeles, Calif. 90060.

**Comment:** This is SAE's supertuner, and we originally had planned to include it in last month's multimodel roundup. The vagaries of transcontinental carriers prevented that, but the unit should be understood in that context. As we said of other models at that time, it is so good that comparative criticisms are, to a considerable extent, a question of nit-picking.

The front panel of the SAE Mk. VI-B, with its gold anodized surface and knobs, is impressive indeed. The upper section is dominated by a long, rectangular smoked plastic window that embraces a large tuning knob toward its right

flank and a cluster of four small plastic knobs (to control position, brightness, and focus of the oscilloscope display) to the left. When the power is first turned on the digital readout lights up almost magically (because it is virtually invisible with the power off) in the center of the window. This is followed in a few seconds by a scope display at the extreme left of the window.

Just to the right of the digit display (which, reflecting FCC channel assignments, shows only odd numbers after the decimal point) there are red and yellow lights stacked vertically—red for stereo reception, yellow for mono. Across the lower part of the panel are more knobs and pushbutton switches, plus a stereo phone jack for output to a tape recorder. The first knob on the left (SELECTOR) chooses among MONO, AUTO, and STEREO; the second (DISPLAY) switches the oscilloscope among FM, AUDIO, and EXTERNAL. The first pushbutton, marked EXTERNAL, controls the sensitivity (HIGH or LOW) of those inputs to the scope. The next, the POWER switch, turns the unit on or off, and the last is MUTING (ON/OFF). The next knob is a contin-

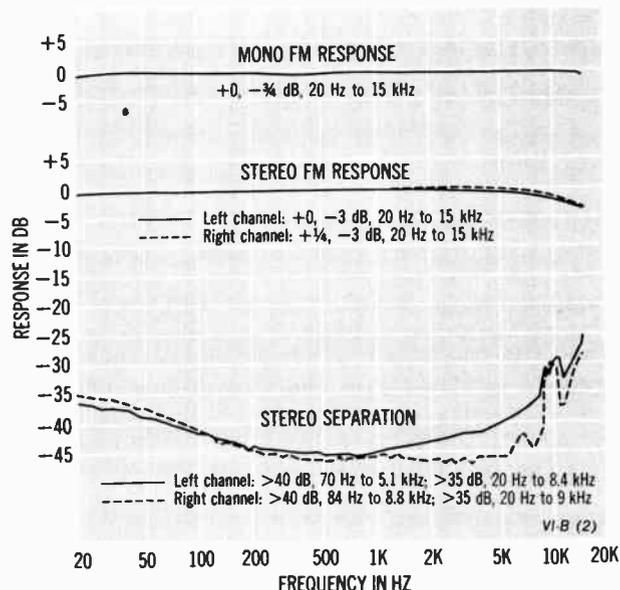
uously variable muting-threshold control; the last is a five-position stepped audio-output level control designed for 6-dB differences between adjoining steps.

In contrast to the front panel, the back panel is stark in its simplicity, containing screw-knob inputs for bared or spade-lug 300-ohm and 75-ohm antennas, two stereo output pin-jack pairs (one of which bypasses the front-panel output level control), input pin jacks (the external oscilloscope input), and a detector output jack (to allow use of an adapter if and when a four-channel broadcast standard is approved). Further to the right are a fuse and the AC line cord.

Tuning is continuous and by means of a knob; only the channel readout is digital. In this respect, the Mk. VI-B compares with such tuners as the Sequerra Model 1, rather than models that (like the Heath AF-1510A) use essentially digital frequency-synthesis techniques for the tuning itself. The readout does not indicate accuracy of tuning; the scope display is meant to do this—as well as to identify multipath and to indicate signal strength and modulation level.

We didn't find this tuning scope as easy to use as some we've worked with, however. In our sample the tuning display is offset somewhat to the right in relation to the audio displays (the Lissajous or X-Y display of left and right channel program content—which is a particularly useful feature of any scope-equipped unit). Consequently, when the display is centered according to the manual's instructions (using the external-audio mode with no input to get a stationary trace) the tuning display does not line up with the calibration marks. This makes tuning of a station whose modulation level is low at the moment of tuning rather problematical. Though our tuning expertise in this situation improved with familiarity, it did not equal that possible with a channel-center meter. But the scope does yield much more information (peculiarities of multipath, station modulation levels, and so on—to say nothing of the audio display) than meters, so the comparison is not entirely apt.

There is one particularly intriguing operating feature: a capacitance switch that flips the scope display from AUDIO (if the DISPLAY selector is set there) to FM (that is, the tuning-multipath display) when the tuning knob is touched, thus saving a step in tuning. A moment after your hand



leaves the knob, the scope automatically reverts to audio display. Other nice touches include the heavier spring load on the POWER button (which helps you avoid turning the unit off by mistake) and the fact that the scope trace dims when it is stationary for more than an instant (to avoid burning the phosphor screen).

The astounding alternate-channel selectivity figure (better than 120 dB) measured by the CBS lab is the best we have seen. It suggests that tuning might also be exceptionally easy with stations on adjacent channels, but in practice this is not the case. Other tuners we have tested do as well or better in this respect—though adjacent-channel spacings are encountered less often than alternate-channel in today's typical (i.e., urban or suburban) life style.

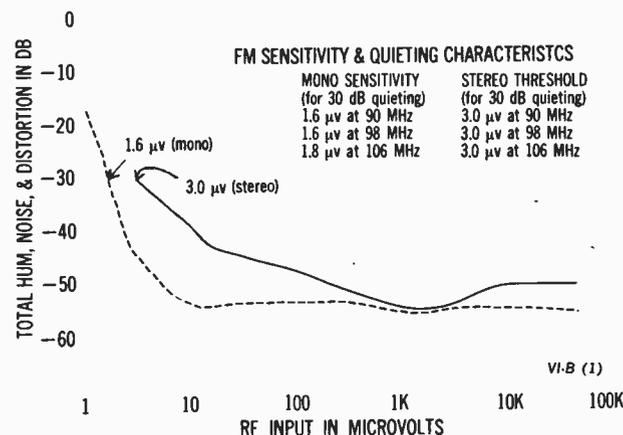
Mono quieting reaches a very good 54½ dB at only 15 microvolts' input, but the best attained by our sample at any signal level is 56 dB. Stereo quieting reaches a highly respectable 55 dB, but that performance level requires 1,000 microvolts or more at the antenna terminals. Frequency response is superb in mono but falls off slightly at the top end in stereo, reaching -3 dB at 15 kHz. The unit measures—and listens—well in terms of both channel separation and distortion.

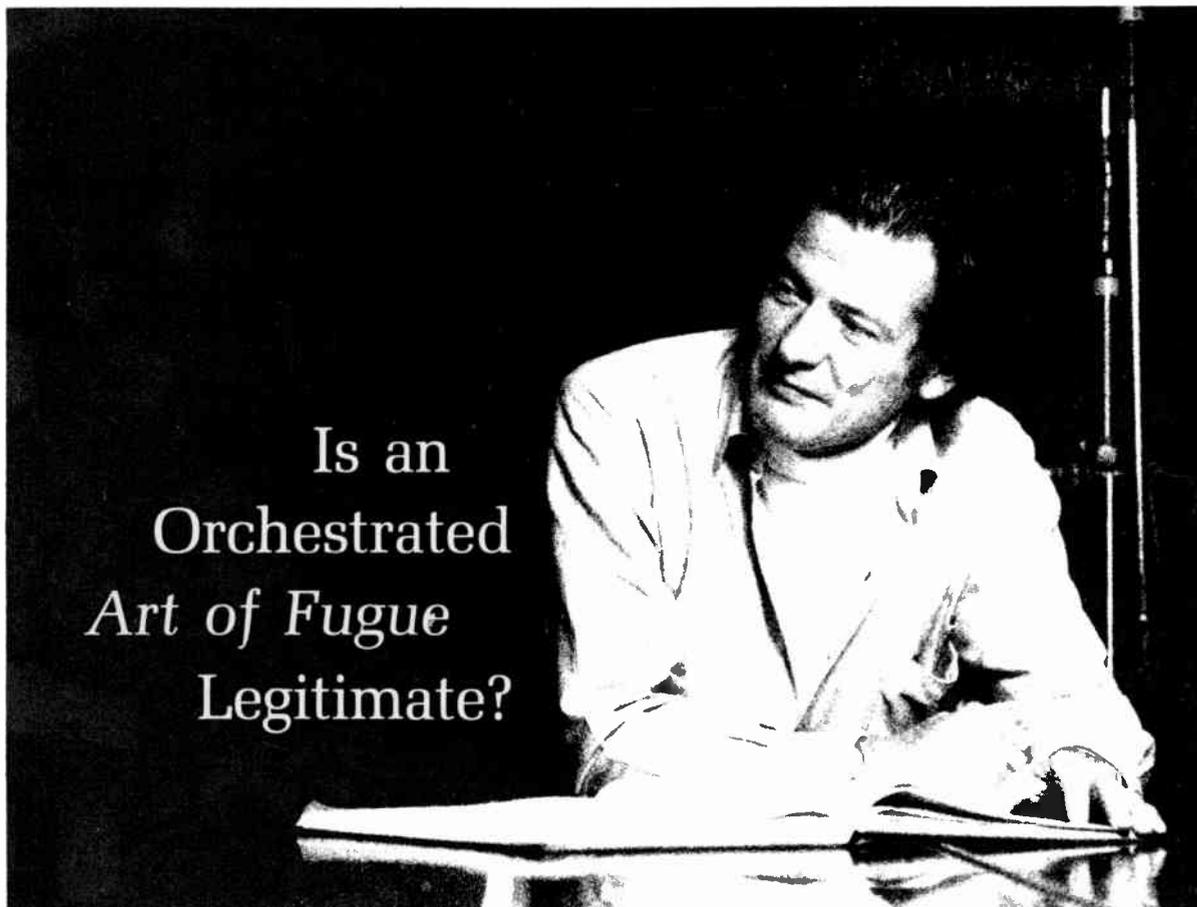
We must repeat that our reservations about the Mk. VI-B must be understood in the light of exacting comparisons among supertuners. It is a fine unit and an exceptionally handsome one.

CIRCLE 142 ON READER-SERVICE CARD

#### SAE Mk. VI-B Additional Data

Capture ratio	2.0 dB		
Alternate-channel selectivity	>120 dB		
S/N ratio	70 dB		
THD	Mono	L ch	R ch
80 Hz	0.11%	0.21%	0.18%
1 kHz	0.11%	0.11%	0.11%
10 kHz	0.29%	1.0%	1.2%
IM distortion	0.27%		
19-kHz pilot	-65½ dB		
38-kHz subcarrier	-69 dB		





Is an  
Orchestrated  
*Art of Fugue*  
Legitimate?

Neville Marriner

Mike Evans

*Neville Marriner's new Philips recording is delightful to listen to, but how much does it have to do with Bach's musical intentions?*

by Paul Henry Lang

PHILIPS' NEW *Art of Fugue* is an excellent recording: The instrumentalists are able and responsible, the ensemble is tidy, and the sound is very good. Yet one wonders whether what they play so well is artistically legitimate.

It is well known that throughout the baroque era the practice of making transcriptions and arrangements was part of everyday musical life; Bach himself employed it frequently, and at times in surprisingly disparate media. Thus Neville Marriner and Andrew Davis can claim innumerable precedents for their arrangement of *The Art of Fugue*. They can also invoke the fact that nowhere did Bach indicate

for what instrument or instruments it was intended. However, this work calls for very special considerations.

In the baroque era, a few distinguished composers, arrived at the height of their profession, were motivated to summarize their knowledge and experience in a work they called a *Kunstbuch*. *The Art of Fugue* is such a *summa* of all instrumental contrapuntal techniques known to Bach. A *Kunstbuch* (literally "art book," but the term cannot be properly translated) not only was a personal monument, but also served didactic purposes: accordingly, while *The Art of Fugue* explores the limits of tonal polyphony, it is

also a deliberate demonstration of contrapuntal techniques, a fugue tutor.

First of all, we must dismiss the still prevalent idea that fugue is a "form" and that it is "strict," following rigid principles of construction, for these notions were born in the minds of nineteenth-century theoreticians like Ebenezer Prout who actually warned their students to stay away from Bach's fugues because they are not correctly written and allow too many exceptions. Actually, the fugue fulfills itself in a freely developing texture; the strictness is neither in the heeding of some imaginary rules nor in the observance of a specific external form, but in the logical and imaginative deployment of its musical substance. Fugal writing was the essential mode of Bach's and of other baroque composers' musical thinking. It informed most of their music—even their arias and ritornels could be "fugues." Thus the fugue was neither a form nor a type. As a matter of fact, Bach calls the fugues in this work simply "counterpoints" ("Contrapunctus" 1, 2, and so forth).

The *Art of Fugue* (1749) reverts to an age already vanishing, when the mastery of canon and fugue was the emblem of professional rank and standing among musicians. It is the supreme study of contrapuntal procedure based on tonal harmony, the unsurpassed peak of the *musica combinatoria*. The devices Bach uses are mind-boggling. There are fugues with one, with two, with three subjects and a final unfinished and possibly projected quadruple fugue; a counter-fugue in which the answering voice-part is the inversion of the first voice; all manner of canons—straight, inverted, cancrizans (backward motion), and mirror canons; and so forth. And when several of these devices are combined and are, in addition, augmented or diminished in rhythmic values, the resultant polyphonic web defies the imagination. Indeed, a good deal of this music is addressed to the eye as well as to the ear, because certain forms of imitation, like the cancrizans, are difficult if not impossible to hear as such without the visual aid of the score. Incidentally, the chorale prelude usually tacked to the end of *The Art of Fugue* does not belong there and is not recorded here.

This *Kunstbuch* was not intended to be listened to in one sitting; these fugues and canons must be studied, one by one, and only long familiarity with them will enable us to comprehend their unparalleled polyphonic architecture. Finally, we must realize that this music also embodies a symbolism that goes beyond the musical substance.

As mentioned above, Bach did not stipulate any particular instrument for this score, but there can be no question that it was composed for the keyboard. Good part-writing always takes into consideration idiomatic requirements, as Glenn Gould's recording of the first half of this work on the organ (Columbia MS 6338) confirms. Also, by far the most satisfactory performances in the new Philips recording are those using the harpsichord and the organ by themselves; almost half of the work is played on claviers—then why not all of it?

There are weighty reasons why either the harpsichord or the organ is preferable to any orchestration. The notes speak of a "great degree of emotional exal-

tion" expressed in this anthology, but surely we are dealing here with a very special kind of expressiveness, quite different from the warm outpouring we so often find in Bach's other works. Expression, the conveying of emotional exaltation, is directed at something; it is, to quote Rousseau, "the language of the heart"—i.e., egopsychic projection. But this music is largely self-motivated. It is nonreferential, without any programmatic or poetic impulse—nothing comes from without. In a way, it is severe self-discipline, almost a sacrifice, because to a considerable degree the composer shuts out his personal feelings. To be sure, modulation, chromaticism, the minor mode itself do have affective connotations in the sense we are accustomed to them, but what gives these fugues and canons their unique "expressiveness" is their progenitive contrapuntal intensity, the ever new combinations, the magnificent linear design.

The arrangers of this version, using an ensemble consisting of strings, two oboes, English horn, and bassoon, added a dimension and a gratuitous opulence not at all envisaged by Bach. The claim that "texture and structure are revealed in [their] score with particular clarity" and that the orchestrators "produced enough variety to avoid any semblance of monotony" by alternating various sonorities must be disputed. On the contrary, by calling on color, and injecting the inevitable dynamic and expressive shadings without which neither strings nor woodwinds can play, they dulcify and dramatize and therefore siphon away attention from the magical linear unfolding of the counterpoint. The baroque composer did not orchestrate in the manner Messrs. Marriner and Davis do with their little orchestra.

Furthermore, it was a mistake to sandwich organ and harpsichord, with their unencumbered rendering of the part-writing, between the orchestrated numbers, which create a totally different aural atmosphere. Concerning the avoidance of "monotony" (which must be the reason why there are so many orchestrated versions of *The Art of Fugue*), this should not be an issue at all. No attentive listener could take in an integral performance of *The Art of Fugue* even with the fanciest orchestration without soon relaxing his alertness. One simply cannot concentrate beyond four or five of the fugues, and surely this work is not suitable for mere hedonistic listening. This is not one work, but a compendium, a collection of contrapuntal essays to be studied and savored, an anthology to be sampled in small doses. Listen to two or three fugues, score in hand, and repeat each several times; then next day proceed to another batch.

Though everyone plays well in this performance, I must single out Andrew Davis and Christopher Hogwood at the harpsichord(s) and/or organ. They are impeccably stylish and sure-fingered, and take the fast movements with impressive clarity. Also their embellishments are judicious and discreet, employed only where they are really needed, and the organ registration is tasteful.

**BACH:** *The Art of Fugue*, S. 1080 (ed. Marriner and Davis). Andrew Davis and Christopher Hogwood, harpsichord and organ; Academy of St. Martin-in-the-Fields, Neville Marriner, cond. PHILIPS 6747 172, \$13.96 (two discs, manual sequence).



Luigi Dallapiccola (1904-1975)

by Patrick J. Smith

## Il Prigioniero: Opera as Mind Projection

*Despite imperfections, London's premiere recording offers a powerful example of Luigi Dallapiccola's personal brand of pessimistic humanism.*

LUIGI DALLAPICCOLA'S two one-act operas, *Volo di notte* (1940) and *Il Prigioniero* (written 1944-48; premiere, 1950), remain grievously underperformed works. To me, they are two of the strongest operas of the past several decades, not least because they are works very much of this time. *Volo di notte* is taken from Saint Exupéry's *Vol de nuit*, about flying the mail in South America in the Twenties; *Il Prigioniero* is about a political prisoner. Although the latter's setting is the Spain of the Inquisition and King Philip, and although it talks of the revolt in Flanders, the opera is worlds apart from the grand-opera treatment of Verdi's *Don Carlos* and is wholly contemporary in spirit.

The strength of both scores, moreover, lies in good measure in the fact that Dallapiccola himself fashioned the librettos and that the music and the libretto go beyond the mere re-creation of a story to reflect his own mind, his attitudes, and, most important, his humanistic philosophy.

The operas have suffered because of this identity of composer and work—that is, both are perhaps short on stage-conscious “drama” and can be considered static. I, however, find ample “drama” in both works and feel that this philosophic projection is the source of their lasting value. The kind of monodrama, or externalization of interior processes, that *Il Prigioniero* (and, to a lesser extent, *Volo di notte*) represents grew out of *Tristan und Isolde* and can be evidenced most clearly in the stage works of Arnold Schoenberg, especially *Erwartung*. Though it is true that *Il Prigioniero* employs more than one character on-stage, its entire focus is on the prisoner, and his almost total lack of stage interaction with the others leads one inevitably to view the whole of the work as a fantasy taking place in the prisoner's mind—a mind driven to the brink through deprivation and torture. It is as if Florestan's *scena* at the beginning of Act II of *Fidelio* were to become the opera itself.

*Il Prigioniero* is—understandably, given the time of its composition (and its gestation goes back to 1939)—the most pessimistic of Dallapiccola's stage works, yet it is not unredeemably bleak. The composer intends a large measure of ambiguity in his telling of the story (an ambiguity that extends from the words

themselves to the use of the music), so that a question mark is ever present, even after the end-in-death.

The story itself is briefly told: The prisoner's mother acts as prologue, leading us through her anguish and anxiety to the dungeon in which her son has been imprisoned and tortured by the Inquisition. Dallapiccola employs an off-stage chorus, chanting church litanies, as the immanent reminder of the Church's power. He likewise uses the Jailer much as T. S. Eliot used the tempters in his play *Murder in the Cathedral*. This man, who calls the prisoner his “brother” (“*fratello*”—a key word in the score), gives the poor man hope by telling him of the Flemish revolt against Philip, which will bring him freedom. The prisoner, desperate, responds, rising out of his lethargy, and begins to grope his way out of the endless dungeon. Eventually he finds himself in the spring air, under a starry sky. In a moment of ecstatic transport he thinks he has escaped—but precisely then the chorus intervenes, signaling his doom. The Grand Inquisitor appears (sung by the same person who has been the Jailer), calling the prisoner “brother.” The prisoner realizes that he has been tricked into hope and allows himself to be led unprotesting to the auto-da-fè, mumbling “*la libertà*.”

On the face of it, bleak. Yet not so, as Dallapiccola himself is at pains to make clear in his notes (contained in the recording), for even though hope, the “ultimate deception,” has been used to accentuate the prisoner's agony, it has led to his temporary restoration to energy and life, to hearing of an attempt to gain freedom (he never knows that the revolt failed), and to his own attempt. And thus the importance of the final “*la libertà*”—so different from that sung by Don Giovanni! Not for the prisoner (except in the large sense of release from pain), yet there are in his actions a promise to others and an evidence of man's continuing will to break free (and thus, so like Don Giovanni after all). We have here a conscious avoidance of the nihilism of so many contemporary writers and playwrights.

It must be added that this reading is influenced through knowledge of Dallapiccola's works, in which this very theme—that of man continuing, despite, *in spite*—is central. In *Volo di notte* it is evi-

denced both in the scene (one of the most powerful in contemporary opera) where we hear the report of the doomed pilot, lost in a storm, his gas tank empty, using the last drops to rise above the buffeting clouds and wind to see the stars a final time, and, most directly, in the final scene in which the anguished plane-dispatcher Rivière (himself an ex-pilot) orders the flights to go on, without interruption, because they must. Similarly, the final scene of his last opera, *Ulisse*, is not the reunion with Penelope, but the Eternal Wanderer back on the sea, under a starry sky, questing still.

Dallapiccola's music is cohesively intertwined with his story. Much was once made of the fact that *Il Prigioniero* employs "rows" in the Schoenberg manner. Dallapiccola was an admirer of Schoenberg's music and studied with Berg. He uses organizational techniques of the latter, derived from *Wozzeck*, in the opera. But the influences remain only technical, for Dallapiccola's music is wholly personal. Although there is of course a good measure of harsh and brutal music, as befits the subject, there is a constant emphasis on cantilena throughout. Texture is to the fore—a spare and subtle use of his large orchestra allied with a sure sense of vocal writing. Dallapiccola everywhere wishes to bring out the flexible expressiveness of the music, not only through constant attention to phrasing, but through dynamic changes, shadings between song and speech, and orchestral coloristic effects. It is a bit simplistic to call this "Italian" or to set it up as the Mediterranean answer to Schoenberg (much as Nietzsche set up Bizet against Wagner), but there is no doubt that this strong lyric influence serves to soften the contours of the opera and that this in turn deepens and enriches the work. The rows themselves, when broken down, are seen to be very close to diatonic chord patterns and progressions, and although there is no "key center" Dallapiccola's reliance on intervals that imply a yearning toward a central note of repose provides the musical-emotional equivalent to the yearnings contained in the story.

One must congratulate London Records and Antal Dorati for putting this very important work onto records (at last). By and large it is an effective performance and makes a good case for the merits of the opera. Maurizio Mazzieri conveys the emotions of the title character with force and clarity. Yet I feel that Dorati and his singers have overemphasized the harshness of the score at the direct loss of the lyric. There is all too much disjunct, mezzo forte hammering at the notes, particularly from Giulia Barrera as the Mother, as if "this is how one sings this type of music." But if you sacrifice phrasing and shading and the countless examples of soft singing required by the score, the performance tends to monotony. I would also prefer a less overtly "oratorio" approach, with the singers a little farther from the microphones, to give a greater sense of the stage (and of the interrelation of voice and instrument).

The gravest miscalculation, though, is made with the final choral entry (which "awakens" the prisoner from his rosy dream). Dallapiccola specifies that this entry must be "formidable: Every spectator must be literally bowled over and submerged in the immensity of the sound." In order to achieve this, he directed that loudspeakers be used—quite unusual for its time. One can imagine what a John Culshaw would have devised—entirely consistent with the composer's intentions—for the phonograph at this culminating point, but Dorati and the record producer here have settled for just another *ff* entry, and thus most of the punch is lost.

Nonetheless, this is a recording worth having in your library. Let us hope that soon *Volo di notte* will join it there.

**DALLAPICCOLA: *Il Prigioniero*.**

The Prisoner  
The Mother  
The Jailer; The Grand Inquisitor  
Two Priests

Maurizio Mazzieri (bs)  
Giulia Barrera (s)  
Romano Emili (t)  
Gabor Carelli (t), Ray Harrell (b)

University of Maryland Chorus; National Symphony Orchestra, Antal Dorati, cond. [James Mallinson, prod.] LONDON OSA 1166, \$6.98.

## A Remarkable New New-Music Group

*Boston Musica Viva debuts with two Delos discs that rank "among the finest expositions of modern (mostly) American music on records."*

by Alfred Frankenstein

BOSTON MUSICA VIVA, a remarkable ensemble devoted to the performance of contemporary music, very ably led by Richard Pittman of the New England Conservatory, makes its discographic bow with a pair of records—one given over to four works by three women, the other containing six pieces by five men.

The *Two Movements for Chamber Orchestra* by the late Ruth Crawford Seeger were composed in 1926, when the music of Ives, by which they were strongly influenced, was the property only of a secret cult. Miss Crawford (she did not marry Charles Seeger until 1931) was close to Henry Cowell, who had published a few pieces by Ives in his *New Music Edi-*



Ruth Crawford Seeger

tion and had access to much more in manuscript; it was through her that I first came in contact with Ives and his world.

The two pieces, one slow and one fast, are Ivesian in their thoroughgoing polytonality. They are un-Ivesian in that the tonality in each line of the dissonant web is completely perceptible. The slightly folksy thematic material is also in the Ives tradition. The whole work stands up; it is beautifully made and admirably expressive, and it has been given a superb performance.

On the same side of the record is a dully academic chamber concerto by Thea Musgrave, a modernist kind of academia that seems to me lifeless and uninteresting. The second side is given over to two works by a real find, the Boston composer Joyce Mekeel. *Planh* (Provencal for plaint), a lament for solo violin, is played with somewhat acid tone by Nancy Cirillo and is easily skippable. But *Corridors of Dream*, which follows, is a masterpiece.

*Corridors of Dream* is a kind of cantata for mezzo (Jan Curtis) and small orchestra based on texts by four different German poets, some of them sung in German, some in English. Miss Mekeel uses an incredible variety of vocal effects in the course of this work, including Schoenbergian *Sprechstimme* and declamation in the manner of the Japanese Noh drama. Furthermore the soloist is not the only one who utters vocal sounds; she is assisted at times by the conductor and the flutist—the latter singing through his flute, and that you have to hear. The orchestra is handled as a blazing tissue of color. The whole thing is one of the most dramatic American concert pieces of recent years.

The find on the second record is Joseph Schwantner, who is new and very good. [Schwantner's *Modus Caelestis*, on Composers Recordings SD 340, made a strong impression last month on Royal S. Brown.] His two pieces here, *Consortium* and *In Aeternam*, are brilliant, vigorous, and commanding. They are gut-breakingly difficult virtuoso pieces ordered by a robust and inventive mind.

Ives's good old *Largo*, which everybody plays and



Sheila Schultz

Mario Davidovsky



Luciano Berio

records (Schwann lists four other current versions of this short trio for violin, clarinet, and piano), serves a rather surprising purpose here. In this context, it sounds as traditional as Beethoven (and as mighty in musical creativity), and it provides a spot of contrast to the modernisms with which it is surrounded.

Luciano Berio is represented by O King, a lament for Martin Luther King using only the vowels of his name in a soprano voice (Elsa Charlston) supported in unison by instruments varying the monotony with their different timbres and special effects—mutes, ponticello, flutter tongue, and so on. A marvelous piece, one of Berio's finest.

Mario Davidovsky's *Synchronisms No. 3* for solo cello (Jay Humeston) and tape is an utterly absorbing study in color, rhythm, and musical space. Unfortunately it is only four and a half minutes long. Donald Harris' *Ludus II* ends the set rather lamely, to my taste, in another example of academic modernism.

But the vividness of all the rest makes this disc extremely important. Both of these discs are, in fact, among the finest expositions of modern American (and other) music on records.

**BOSTON MUSICA VIVA:** Twentieth-Century Chamber Works. Boston Musica Viva, Richard Pittman, dir. [Amelia Haygood, prod.] DELOS DEL 25405 and 25406, \$6.98 each.

DEL 25405: CRAWFORD SEEGER: Two Movements for Chamber Orchestra. MEKEEL: *Planh*; *Corridors of Dream*. MUSGRAVE: *Concerto*.

DEL 25406: BERIO: O King. DAVIDOVSKY: *Synchronisms No. 3*. D. HARRIS: *Ludus II*. IVES: *Largo*. SCHWANTNER: *Consortium*; *In Aeternam*.

reviewed by  
 ROYAL S. BROWN  
 ABRAM CHIPMAN  
 R. D. DARRELL  
 PETER G. DAVIS  
 SHIRLEY FLEMING  
 ALFRED FRANKENSTEIN  
 KENNETH FURIE  
 CLIFFORD F. GILMORE  
 HARRIS GOLDSMITH  
 DAVID HAMILTON  
 DALE S. HARRIS  
 PHILIP HART  
 PAUL HENRY LANG  
 ROBERT LONG  
 ROBERT C. MARSH  
 ROBERT P. MORGAN  
 CONRAD L. OSBORNE  
 ANDREW PORTER  
 H. C. ROBBINS LONDON  
 JOHN ROCKWELL  
 PATRICK J. SMITH  
 SUSAN THIEMANN SOMMER



Nathan Milstein—the Bach sonatas and partitas colossally done.

**AUBER:** Marco Spada. London Symphony Orchestra, Richard Bonyngue, cond. [Michael Woolcock, prod.] LONDON CS 6923, \$6.98.

Marco Spada is another in the long line of mid-nineteenth-century ballets that, important in their time, have long since vanished from the scene, leaving behind merely a name and a shadowy reputation. By rescuing the scores of works like this from oblivion, Richard Bonyngue has enriched our knowledge of ballet history, while at the same time restoring to currency a lot of unpretentious, delightful music.

Marco Spada, a three-act work produced in 1857 at the Paris Opéra, is remembered today chiefly because with it Joseph Mazilier, the choreographer, provided a showcase for two distinguished ballerinas, Carolina Rosati and Amalia Ferraris—the former an expressive actress, the latter a brilliant technician. The complicated story deals with the difficulties in the path of true love and the part played by Marco Spada, a bandit chief, in smoothing them out.

Though Auber had composed an *opéra-comique* on the same subject five years before, his score for the ballet is a pastiche derived from several of his own works. It is unfortunate that no act-by-act synopsis has been provided with the recording. Listeners who don't own Cyril Beaumont's *Complete Book of Ballets* will have a hard time relating the music to the scanty story given in Ivor Guest's liner notes, though there are some self-evident pointers—like the allusion to Marco Spada's profession by means of an arrangement for trumpet of "Voyez sur cette roche" from *Fra Diavolo*.

Auber's music is lively and varied in mood. Both the tunes, which are plentiful and often irresistible, and the orchestration, which is wonderfully deft, betray the unmistakable influence of Rossini. At the same time, one can see what Offenbach took by way of vivacity, wit, and clarity from French *opéra-comique*. (Balletomanes might be interested to learn that the music

for Victor Gsovsky's *Grand Pas Classique*, currently in the repertoire of the American Ballet Theater, is derived from Marco Spada.)

Bonyngue, at his best in nineteenth-century ballet music, obtains a spirited performance from the excellent London Symphony. Good, spacious recorded sound, though each side contains more than thirty minutes of music.

One puzzling detail about this issue: The jacket shows, without any identification, Lucille Grahn and Jules Perrot in a scene from the latter's ballet *Catarina*, produced in London in 1846, with music by Cesare Pugni. To my knowledge, the only thing it has in common with Marco Spada is that both ballets feature a bandit. D.S.H.

**BACH:** Art of Fugue. For a feature review, see page 76.

**BACH:** Sonatas and Partitas for Solo Violin (6), S. 1001–6. Nathan Milstein, violin. [Werner Mayer, prod.] DEUTSCHE GRAMMOPHON 2709 047, \$23.94 (three discs, manual sequence).

Sonatas: No. 1, in G minor, S. 1001; No. 2, in A minor, S. 1003; No. 3, in C, S. 1005. Partitas: No. 1, in B minor, S. 1002; No. 2, in D minor, S. 1004; No. 3, in E, S. 1006.

Comparisons: Szeryng Odys. 32 36 0013; DG 2709 028  
 Novotny Supr. 1 11 1101/3

In a July 1974 *MUSICAL AMERICA* interview Nathan Milstein talked about recording the Bach solo sonatas and partitas for the second time, in his seventies: "I last recorded them twenty years ago. This time I must make them as good as I can. I will never do them again." He has done them colossally.

They were wonderful the first time: brilliantly lucid, warm, and musically penetrating. They always stood, among the gathering throng of fresh versions by various artists, as pillars of sanity and good taste, and they were marked by that sheen of so-

phistication characteristic of Milstein and paralleled, in my opinion, only by Henryk Szeryng. The new performances are even better than the old, having shed, like unwanted fat, the occasional juicy portamento and having grown just perceptibly more cohesive and tighter in line. The cohesiveness has nothing to do with tempo—the Preludio of Partita No. 3, for example, is a bit slower in the new version than the old, but it breathes more, and the faultlessly terraced dynamics keep every phrase precisely in place. In his handling of dynamics alone, Milstein reaches what must be a new plateau in this literature. (The Allemande of Partita No. 2 is another case in point, but there are many.)

In considering any version of the sonatas and partitas one is always reminded that the faster movements present one set of performance problems and the slow movements quite another. In the doubles, allegros, preludes, and even the Gigue of Partita No. 2—all those movements that run along in unceasing eighth- and sixteenth-note patterns—any artist of stature is able to lean with the right amount of stress on the pivotal note of the phrase without breaking the pulse or distorting the written time value too severely. (Szeryng achieves this emphasis more by accent than by rhythmic stress; Milstein achieves it by

#### Explanation of symbols

##### Classical:

- B** Budget
- H** Historical
- R** Reissue

##### Recorded tape:

- Open Reel
- 8-Track Cartridge
- Cassette

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## Critics' Choice

### The best classical records reviewed in recent months

**ADAM:** Cello Concerto. **BARBER:** Die Natali. Lou. LS 745, Dec.  
**ASHFORTH:** Byzantia. Bossert. ORI. ORS 74164, Oct.  
**BEETHOVEN:** Symphony No. 5. C. Kleiber. DG 2530 516, Nov.  
**BIRTWHISTLE:** Verses for Ensemble et al. HEAD 7, Nov.  
**CHERUBINI:** Requiem in D minor. Muti. ANG. S 37096, Dec.  
**CHOPIN:** Preludes. Arrau. PHI. 6500 622, Oct.  
**CRUMB:** Music for a Summer Evening. NONE. H 71311, Oct.  
**ENESCO, ROUSSEL:** Songs. Marcoulescou. ORI. ORS 75184, Oct.  
**ORFF:** Der Mond. Kegel. PHI. 6700 083 (2), Nov.  
**RACHMANINOFF:** Symphony No. 1. Previn. ANG. S 37120, Dec.  
**RAVEL:** Piano Works. Argerich. DG 2530 540, Dec.  
**RAVEL:** Trio; Violin-Cello Sonata. J. Laredo et al. COL. M 33529, Oct.  
**SCHUBERT, SCHUMANN:** Songs. Ameling. PHI. 6500 706, Dec.  
**SCHUMANN:** Songs. Fischer-Dieskau. DG 2530 543, Dec.  
**SIBELIUS:** Symphonies Nos. 5, 7. Davis. PHI. 6500 959, Dec.  
**WEILL:** Symphonies (2). De Waart. PHI. 6500 642, Sept.  
**CLASSICAL BOHEMIAN PIANO MUSIC.** Firkusny. CAN. CE 31086, Oct.  
**19TH-CENTURY AMERICAN BALLROOM MUSIC.** NONE. H 71313, Nov.  
**20TH-CENTURY FLUTE MUSIC.** Sollberger. NONE. HB 73028 (2), Sept.

holding onto the note a hairsbreadth past its allotted time.) The slow movements and the fugues, so incredibly complex in their subdivisions of the beat, are something else again. If one wanted to pick a quarrel with Milstein, one might point to the Largo of Sonata No. 3, in which he departs with utter aplomb quite radically from the time values as written, giving to sets of even sixteenths a lilt that makes them sound almost like sets of triplets. Or, in the Adagio of the same sonata, where the texture suddenly thins out at measure 34, he allots breathing space between phrases that some violinists might link more closely. But it is hard to object strenuously to such small liberties, for they are fruits of wisdom and of an enormous and justified self-confidence. The music pulses with life, and only once—in the Fugue of Sonata No. 3—does Milstein seem to me to lose the underlying beat.

The Chaconne is monumental—less silken than Szeryng's and absolutely fire-breathing in such passages as the first section in thirty-second notes. The piece as a whole will leave you limp. I found myself surprised, though I probably shouldn't have been, at the amount of passion Milstein can summon, for all his social graces; the old Chaconne showed this aplenty, and the new edition hasn't lost a single volt.

When I last had occasion here to review new releases of these sonatas I was much impressed with the Supraphon set by Břetislav Novotný (March 1975). It is poles apart from Milstein's: craggy, deliberate, granitic. Novotný's severe viewpoint leads him to chisel every note out of stone. Sometimes, in his austere intellectualism, he lets a long lyric line break up a bit in order to do justice to an individual note group within it. Milstein views the whole fabric at longer perspective. In his balance of cerebration

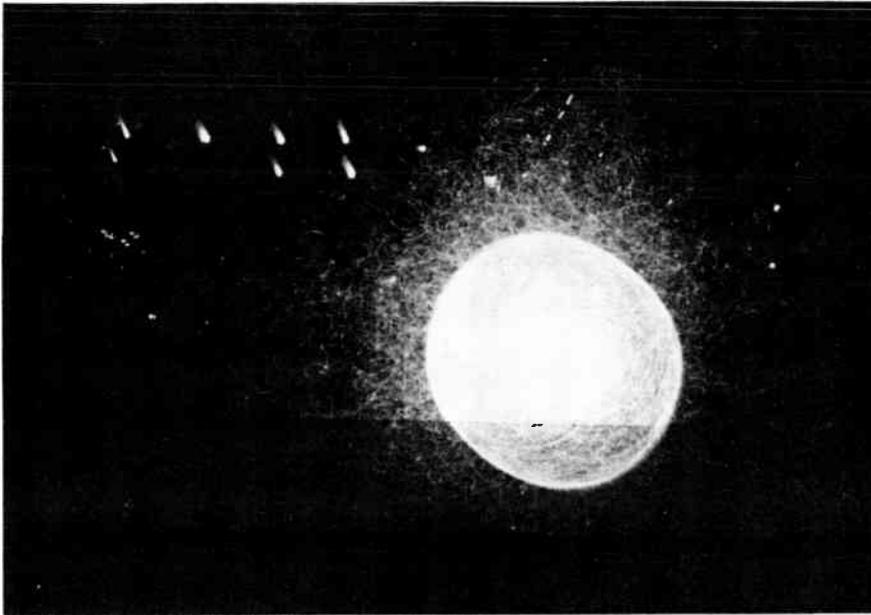
and sensuousness, he manages to get the best of both worlds. S.F.

**BEETHOVEN:** King Stephen (incidental music), Op. 117; Choral Works. Ambrosian Opera Chorus; London Symphony Orchestra, Michael Tilson Thomas, cond. [Paul Myers, prod.] COLUMBIA M 33509, \$6.98. Quadriphonic: MQ 33509 (SQ-encoded disc), \$7.98.

Choral Works: Meeresstille und glückliche Fahrt, Op. 112; Elegiac Song, Op. 118; Opferlied, Op. 121b (with Lorna Haywood, soprano); Bundeslied, Op. 122.

Like most great composers, Beethoven wanted to write operas, and the period 1810-14 is when the Beethoven operas that we might have had—*Macbeth*, *Bradamante*, *The Ruins of Babylon*, *Attila*, *The Return of Ulysses*, *Romulus* and *Remus*—were considered. This is also the time of the revised *Fidelio* and of the theater music for *Egmont*, *King Stephen*, and *The Ruins of Athens*.

Beethoven's flair for theater music is apparent in the *Egmont* score, even when the music is detached (or semidetached) from Goethe's play. It is apparent, too, in *King Stephen*. We still lack a complete recording, but Michael Tilson Thomas gives us more of the music than figured in the Schönzeler/Turnabout and Oberfrank/Hungaroton discs. His omissions are of No. 5, a brief melodrama during which Stephen seats his bride Gisela on the throne beside him, and twelve pages of melodrama in No. 8, before the final chorus. The text of Kotzebue's *King Stephen* is so short—it is a celebratory tableau with music rather than a play—that it might perhaps have been possible to include it without running over the side (which, as it is, lasts 23½ minutes). Even if the speeches between numbers



*Scriabin in color by the University of Iowa*

To the authorities' surprise, the hall which seats 2,300 was jam-packed long before curtain time, and the scant supply of program notes exhausted. Bus loads of students and visitors, some coming from as far away as one hundred miles, continued to arrive until the police began to block off all further traffic. A hopeful crowd of 1,500 people milled about outside, until finally the announcement came that an unprecedented second performance would be given later in the night. Word spread quickly, the lines grew, and programs to the first performance were black-marketed at a quarter apiece.

Lowell Cross, professor of music and resident genius of electronics at the University, conceived, realized, and operated the "light shows." Setting up his elaborate equipment in the balcony—an electronic keyboard to control the colors and a circuitry panel of knobs, mirrors, prisms, scanners, and "choppers"—Cross flashed his spectrum of krypton-argon laser beams in giddy patterns on a huge scrim screen which translucently hid the one hundred-member orchestra on stage. At either side of the screen sat a thirty-two-member chorus robed in white, onto which the play of lights spilled and even, at times, enveloped the walls of the auditorium, expanding and diminishing with the music's intensity.

For the first time outside the U.S.S.R. Scriabin's color scheme was loyally followed: C = red; F sharp = intense blue; E flat = the glint of

steel, B flat = the shine of moonlight, etc. *Prometheus*, written in 1909, was the world's first multi-media composition. It demands not only colors (which Scriabin specified) but kinetic images and designs, about which Scriabin was vague. Cross, studiously obeying the composer's programmatic annotations, made the "gift of fire" a ball of saturated red which blazed, twisted, turned, gnarled, and unraveled like a skein of astral ectoplasm. The long organ point of "yellow" became a whirling sun which spun and ricocheted over the screen.

At both performances the audience yelled, cheered, whistled, and stamped their feet in appreciation of the experience of listening to music with their eyes. Certainly, in Cross's expert hands, *Prometheus* manifested Scriabin's now sixty-five-year-old vision, and proved that lights and colors accompanying music need not be a distraction but rather what Scriabin always said, "a complementary and mutual enhancement."

Professor James Dixon, a Mitropoulos disciple, conducted obligingly, and Professor James Avery obediently performed the solo piano part of this concerto-symphony. F.B.

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## KANSAS CITY

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### Lyric Theater: Beeson premiere

The Kansas City Lyric Theater opened its eighteenth season on September 20 with the world premiere of Jack Beeson's opera, *Captain Jinks of the Horse Marines*, set to a libretto by Sheldon Harnick, based on a turn of the century play of the same name by Clyde Fitch. Aided by grants from the National Opera Institute and the Missouri State Council on the Arts, the Lyric spared no pains in mounting a good production. Patton Campbell designed sets and costumes, Jack Eddleman staged and



*Shepherd String Quartet—an auspicious debut*



Mmes. Wilcox and James in *Captain Jinks*: an eclectic score with witty touches

choreographed the work, and Russell Patterson, the Lyric's general director and principal conductor, was in the pit. The opera was a hit, with the first and second of a scheduled five performances sold out.

*Captain Jinks* deals with the arrival of opera singer Aurelia Trentoni in New York during the 1870s to make her American debut singing the role of Violetta in *La Traviata*. Jonathan Jinks, rising young lawyer and man about town, makes a bet with his cronies that he can make a successful pass at the European diva, but falls in love with her when he meets her. His friends will not permit him to cancel the bet, so he signs an I.O.U. for the amount. The romance between Jinks and Aurelia is going well when Colonel Mapleson, the impresario, and Papa Belliarti, her singing coach and mentor find out about the bet, and inform her. She drives her lover away, scores a triumph in *Traviata*, and in the end is reunited with Jinks when all is explained to her satisfaction.

There are many nice, witty touches in *Captain Jinks*. The eclectic score abounds in operatic allusions to such an extent that designer Patton Campbell called it "A valentine to opera." With that in mind he devised a portal for the proscenium, reproducing lacy paper doily designs, with names of famous opera composers running along the borders, and a fanciful portrait of Orpheus dominating the arch. Act I is set on a Cu-

nard pier, with a backdrop view of Welfare Island. Act II opens on a dark stage, set for rehearsal of *Traviata*, and a little opera-within-an-opera is worked out as the mother of Jinks implores Aurelia to give up her son for the sake of his political career. Act III is set in a sumptuous reconstruction of a suite in the old Brevoort Hotel, with a little balcony overlooking the August Belmont mansion.

Carol Wilcox was cast in the soprano role of Aurelia Trentoni (born Aurelia Johnson in Trenton, N.J.), and her husband, Robert Owen Jones, in the tenor role of Jonathan Jinks. Colonel Mapleson was sung by Eugene Green, bass-baritone, and baritone Walter Hook sang Papa Belliarti. Aurelia's companion, Mrs. Greenborough, was sung by Carolyn James, contralto, and mezzo Karen Yarmat sang the role of Mrs. Jinks. All sang and acted creditably. A New York press corps, prominent in Acts I and III, was cast in descending order of voice types, from the *Times* (an Irish tenor) to the *Clipper* (bass). It was an amusing whim. At one point in Act I, the *Sun* man asks the *Times* man: "Harold, how do you spell Khe-dive?" (the notes in German spelling out S-C-H).

The Kansas City Lyric Theater was established in 1957 to present opera in English as "theater with the added dimension of music," played in repertory. For the last ten years it has presented a contemporary opera

each season, but *Jinks* is its first premiere. There is now a five-week season in its own twelve-thousand-seat former movie house in downtown Kansas City. This season the repertoire, besides *Jinks*, consists of *The Flying Dutchman*, *The Marriage of Figaro*, *La Perichole*, and *La Bohème*. *Dutchman*, and *Perichole* are revivals from recent seasons; the other two are entirely new productions. J.C.H.

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## NEW YORK

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### A.P.A.: "The 200th Year"

Many a stone on the landscape of American musical history will be turned during the Bicentennial celebration, and it's reasonable to assume that there will be at least as many worms under some as hidden treasures under others.

There were both worms and treasures at Alice Tully Hall on the evening of September 18. Four members of a group called the American Performing Artists, Inc., curiously described in the program as "a new organization . . . come together as a result of mutual respect for each other's talent," offered a program of eighteenth-, nineteenth-, and twentieth-century American music which swung haphazardly from amateurism, to charm, to excellence, to mediocrity. Most of the mediocrity involved the twentieth-century contributions—Ned Rorem's skillful but totally unmemorable *Alleluia*; an excerpt from Dominick Argento's opera *Colonel Jonathan the Saint*, which bowed low in the direction of Benjamin Britten; and a dreadfully routine setting of seven poems of Edna St. Vincent Millay titled *The Amorous Line* by Joseph Frank Pouhe.

It was a post-intermission relief to listen to David Amram's Violin Sonata, less for the work itself—which is in a style if not precisely discredited then certainly dead-ended many years ago—than for the elegant performance provided by violinist Guy Lumia and pianist Herbert Rogers. No amateurism here; they are both first-rate musicians. The same, unfortunately, cannot be said for Ira Nicolai, a soprano of striking good looks and decent enough voice whose dexterity with a fan far outstripped her ability to project the words she was

singing. For an evening of American song it was appalling how little of the language was comprehensible. In four *Colonial Love Songs* by Francis Hopkinson (a signer of the Declaration of Independence) the charmingly derivative musical style—alberti basses and the like—came through, but not the words. So too for Mrs. H. H. A. Beach's *Mirage*, a brief work for soprano, piano, and violin which in its simple, delicate, impressionistic way emerged as the best piece on the program.

A group of popular songs from the turn of the century (*After the Ball is Over*, *O Genevieve*, etc.) was a relief after much of the earlier part of the evening. Miss Nicolai, on sure footing, splendidly supported by pianist Margaret Singer, Mr. Lumia, and that fan, managed to suggest at program's end that it may not be necessary to leave the country after all during the Bicentennial. A.S.

### Carlos Barbosa-Lima, guitar

Given the perennial flood of folk/pop/rock music presently being churned out for the guitar, it is easy to overlook the contributions that classical composers are making to that instrument's repertory. Carlos Barbosa-Lima, a young Brazilian currently serving as artist-in-residence at Pittsburgh's Carnegie-Mellon Institute, gave a Tully Hall concert on October 18 which significantly broke with the

stereotypical programming of Bach transcriptions and Spanish tidbits, and kept largely to music of this century.

Easily the evening's revelation was the first piece—Guido Santorsola's *Suite in Ancient Style*—composed in 1945 but published only recently, and not heard in this country until this evening. Santorsola utilizes the standard Baroque terminology for each movement (Prelude, Menuet, Musette, Sarabande, Gigue) and composes some of them—with only a faint gloss of later harmonic thinking—in the manner of Bach. That he succeeds so gloriously made the piece somewhat a hard act for Barbosa-Lima to follow: The performer's own transcription of a Handel Suite in D came as a distinct anticlimax.

In the second half of the program, a Partita by English composer John W. Duarte, written in 1974, received its U.S. premiere and offered a more intellectual appeal. All four movements employ the same theme, yet Duarte is adroit enough to avoid monotony: the *Con bravura* first movement is a virtuoso display piece, the slow second movement goes off in an impressionistic direction, the Scherzo employs an intriguing staccato dialogue between bass and treble strings, and some unconventional uses of polyphony turn up in the Finale.

Barbosa-Lima chose four out of a series of twelve Etudes by the Brazilian composer Francisco Mignone

to close his concert. These were in a nationalistic romantic style, somewhat more complex technically than the Etudes by Mirnone's contemporary, Villa Lobos. They were played with the polished musicianship brought to the evening's previous offerings. In all, a fine concert, though not without some dull patches, which may be due to the limitations of the instrument itself. That notwithstanding, I shall always remain grateful to Carlos Barbosa-Lima for his intimation—if not proof positive—that Bach is alive and well and living in South America. J.H.

### Ensemble for Early Music: "Roman de Fauvel"

The Ensemble for Early Music gave a sparkling theatrical rendition of selections from the *Roman de Fauvel*, a fourteenth-century allegory starring a donkey. The musical drama was presented at Hunter Playhouse on Friday evening October 17. An enthusiastic audience braved bad weather to fill the house and applaud the four-scene social and political satire whose wit and jaunty style have not lost their effectiveness over six and a half centuries. Fauvel, the genial ass (played by Doug Day), is in reality the sum of all vices; his name spells out falsehood and sham. Crowned emperor by Dame Fortune (Nancy Lee Torchia), he celebrates the triumph of corruption in the church and secular life in a series of tableaux illuminated by mime, masks, and contemporary music.

The production, conceived by the Ensemble's director Frederick Renz, utilized a simple set, suggesting a popular festival, on a shallow, ad hoc medieval stage. A vigorous translation by Frank Diedisheim of the original French provided the text which Joe Marzano declaimed with flair from the side, while Fauvel and Fortune, the chief characters, mimed and moved among the musicians who alternately played or sang and participated in the action. The splendid masks designed and executed by Ralph Lee were particularly arresting; the double face of Fortune, one side blankly beautiful, the other seamed with the experience of evil, was unforgettable.

The music, drawn from an original *Fauvel* manuscript, was as diverse as the world it depicted. Chant, simple



Christian Steiner

Carlos  
Barbosa-Lima:  
U.S. Premieres  
played  
with polish

polyphony, and cheerful conductus melodies alternated with elaborately stylized motets in the isorhythmic style of the Ars Nova and monophonic medieval *lais*. The performers played with their hearts as well as their heads and hands. Singers Dan Collins and Nancy Long were outstanding, tossing off the complicated rhythmic melismas of the motets as though they were casual improvisations. Instrumentalists Wendy Gillespie, David Hart, and Jean Lamon, along with Renz, gave spirited support. S.T.S.

### Joseph Fennimore: new works

Joseph Fennimore presented a concert of his recent music at Carnegie Recital Hall on October 1. It was an impressive evening from several points of view. The pieces were attractive and skillfully wrought, ap-



Mieczyslaw Horszowski

pealing to the large and friendly audience, and the performances were absolutely first rate. Fennimore's music is an amalgam of conservative idioms recalling Prokofiev's spunky wit and Poulenc's suavity. Clearly, French styles of the early twentieth century are the dominant influences. Music like this written today is not heard in new-music circles. But Fennimore has gone his own way, avoiding associations with colleges, universities, or avant-garde cliques. Instead he has functioned as a superb pianist and as an organizer of his own concert series—"Hear America First"—devoted to American music.

The composer seemed always to have his audience acutely in mind. Most entertaining were his Sonata for Clarinet and Piano, and *Party Songs*—a kind of sophisticated salon-cocktail music set to Fennimore's own texts.

Two short chamber operas each lasting about twenty minutes were the focus of the evening. The composer fashioned his own librettos from stories by James Purdy. *Eventide* was lush and lyrical, and had a certain dramatic sweep. Though its sentiments seemed Menotti-ish (family situation with a dead child somewhere in the background), the work was moving without ever being cheap or maudlin. In *Don't Call Me By My Right Name*, a parody of bar styles formed the musical background. This technique the composer perhaps owes to *The Stronger* by Hugo Weisgall, with whom Fennimore studied at Juilliard. But the music here is too flimsy to last very long. Parody, in fact, seemed to my taste an all-too-important ingredient throughout the evening.

If Joseph Fennimore has little "new" to say in terms of style and tonal material, he certainly is as skillful and imaginative as anybody around today who writes in this well-tried, and for its time courageous, musical idiom. B.S.

### Mieczyslaw Horszowski, piano

Mieczyslaw Horszowski made one of his all-too-infrequent solo appearances on September 27 at Hunter College. The event marked the seventy-fifth anniversary of the Polish-born musician's concert career, which began at the age of nine in Vienna. Horszowski lost no time in making it plain that he still has an alive, quest-



Joseph Fennimore

ing musical mind. Most artists of his generation pay homage to Baroque or Classical heritage by way of a few standard, mullied works. Not Horszowski. He offered delight to his audience in Giustini di Pistoia's 1732 *Suonata VII* in G major. (Giustini is said to have been the first composer to write for the fortepiano rather than for the harpsichord.) Horszowski presented the music with firm, caressing lines, clean architecture, and splendid shading. It is always a pleasure (and a growingly infrequent one) to hear "old" music brought to life with such a mixture of straightforwardness and subtle personal involvement.

Beethoven's *Eroica* Variations, Op. 35, are a monumental undertaking technically and probably beyond the complete grasp of almost any octogenarian executant. There were a few passages which required more rhythmic attack and textural clarity than Horszowski supplied, but his wonderfully alive interpretation nevertheless provided instances of grand clarification. Haunting *pianissimos*, combined with an ability to spin a memorable poetic mood, displayed a delicacy and sheer feeling for beauty that exceeded even his own performances of a decade or more ago.

After intermission, Horszowski introduced to his New York audience *Five Bagatelles* written in 1968-69 by the Finnish composer Joonas Kokkonen. The pieces are particularly

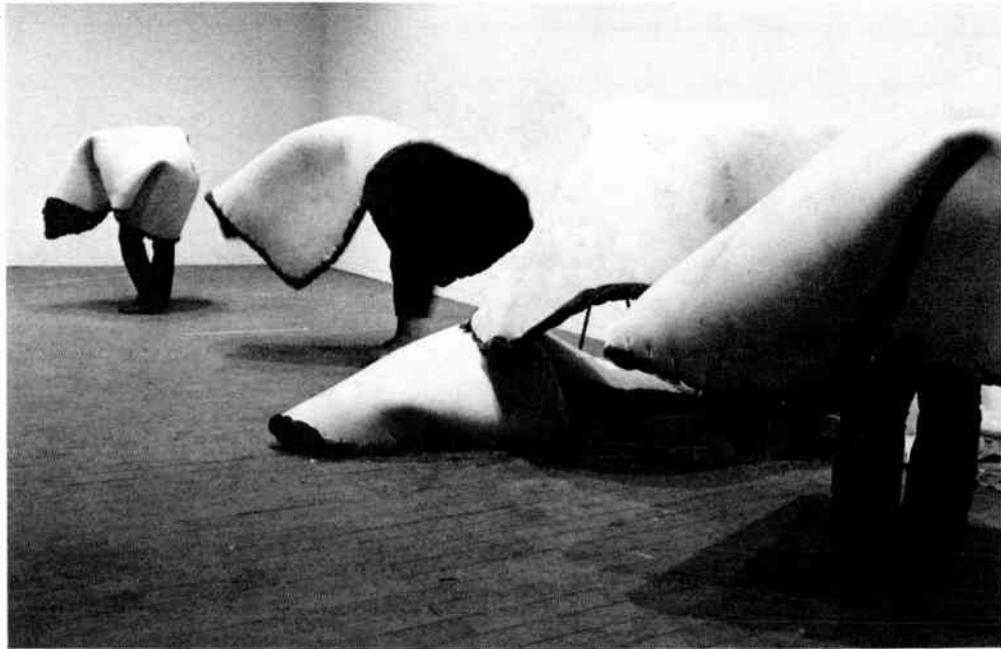
evocative of nature, and two of them—*Aves* (Birds) and *Arbores* (Trees)—make the kinship explicit. Horszowski made the music quiver with all sorts of subtle stresses and colors. The crescendo in *Arbores* may have been even more spectacular when I last heard Horszowski perform the Bagatelles in the more intimate auditorium of Curtis Institute in Philadelphia, but all told, my initially favorable impression of Kokkonen's music (and Horszowski's inspired playing of it) was heightened by this rehearsing.

Schubert's poetic G major Sonata, D. 894, and his popular Impromptu in E flat, D. 899 No. 2, got well-nigh ideal expositions. Horszowski's minute gradations and elongations of shape (without ever veering to eccentricity) produced indescribable mutations of mood and color. This was magical, heroic Schubert interpretation on a par with that heard from Artur Schnabel in past generations. It is unthinkable that such interpretive art should be allowed to perish: Mr. Horszowski's absence from the recording studio should be terminated at once. H.G.

### Tom Johnson: "Masque" premiere

Tom Johnson's *The Masque of Clouds*, premiered at the Kitchen in mid-October, bears little resemblance to the luxuriant operatic entertainment popular during the seventeenth century known as the masque. Whereas the original masque required elaborate stage devices and costumes and a sizable corps of musicians and dancers, Johnson's version (with libretto and designs by Robert Kushner) makes do with a dozen stage performers, three accompanying musicians, and minimal props. This kind of road-show technique might have worked out neatly had Messrs. Johnson and Kushner not made the mistake of allowing simplicity to lapse into sheer simple-mindedness. The plot, in itself simple-minded, concerns six clouds and their one-day's adventures with the sun, a lake, and a forest. The score consists of a theme and 132 variations written in seventeenth-century counterpoint. Admirable as Johnson's technical discipline may be, his style is too severe and the results too predictable to support a three-act, ninety-minute drama of such modest

K. Landman



*A setting for The Masque of Clouds—a simpleminded plot?*

aspirations. Perhaps the gaudy adornments of the baroque-era masque would have helped to conceal similar musical short-comings.

The best work came from the non-vocal performers. These included the composer at the piano in ensemble with flute and cello, and a quartet of dancing clouds who had to prance about hunchbacked the entire evening. There was a certain leisurely charm to the melismatic vocal writing, although none of the singers had much idea of how to exploit it. The sopranos and tenor warrant dispensation, however, handicapped as they were by tessituras which stranded them at the top of their respective ranges. A.DER.

### Pavel Kogan, violin

On October 19th at Hunter College, New York audiences had the chance to assess not only a second-generation Kogan (twenty-two-year-old Pavel is the son of the renowned Leonid) but a second generation duo as well: assisting young Kogan at the piano was the attractive, intense-looking Elisavita Ginsburg—daughter of Soviet pianist Grigory Ginsburg, long a distinguished sonata partner of Leonid. Pedigrees aside, both Pavel Kogan and Miss Ginsburg gave a decidedly thoroughbred account of themselves. From the start of the program, Schubert's rather Mozartean G minor Sonata,

D. 408, the two artists displayed a patrician sense of line, clean-cut and stylistically sagacious phrasing, and a gratifying ensemble spirit. The violinist accompanied as much as the pianist—which is, as goes without saying, just as things should be. Attacking the first of the program's modern essays, the Shostakovich Violin/Piano Sonata, Op. 134 (composed for David Oistrakh and Sviatoslav Richter), both artists appropriately expanded their tonal and expressive range. The control and exemplary care for detail continued, but the attacks—clean in the Schubert—became more vehement and impassioned. Kogan is one of those distinguished violinists who vibrates on every note yet avoids obscuring the phrase outlines. The sonata itself, a work rather commensurate with Prokofiev's F minor, Op. 80, was moving both in content and spirit. Stravinsky's *Suite Italienne* got a tartly humorous statement and Paganini's *Cantabile* was truly "sung" with an artistry and temperament akin to Callas at her best. It was top quality Italianate musicmaking which proved, once more, that stylistic assimilation is a product of sensitivity and taste rather than of mere geography. A similar contention must be made for the incisive, folksy rendition of Bartók's First Rhapsody. Encores included a Rachmaninoff song transcription, Kreisler's *La Gitana* and a Bazzini *La Ronde des Lutins*, in which the left-handed pizzicatos



*Thea Musgrave—to be reckoned with*

and central repeated notes (all on different strings!) were uncannily well handled. I almost thought I was rehearsing the 1937 Heifetz recording of the Bazzini. An exciting virtuoso debut.

H.G.

#### L. C. Ch. Mus. Soc.: "Space Play"

The Lincoln Center Chamber Music Society began its new season on October 17 at Alice Tully Hall, presenting the American premiere of *Space Play* by British composer Thea Musgrave. This imaginative concerto for nine instruments left no question that Musgrave is a composer to be reckoned with. It is interesting that she and other contemporary female composers (such as Barbara Kolb) have succeeded eminently where many men have failed, in producing compositions that are beautiful without resorting to a reactionary musical language.

The title, *Space Play*, refers to the arrangement of the instruments. The four strings are located in the center, with the French horn directly behind them, and the woodwinds distributed in the four corners of the stage. Although by no means revolutionary, this spatial arrangement greatly enhances the interplay of melodies and the music's enchanting sonorities. The theatrical element in *Space Play* is less successful. The score instructs the players when to stand and sit, how to signal one another with hand motions, and sometimes even in which

direction to look. The intended drama and comedy, however, fall flat as weak jokes or disturbing and superfluous gestures.

The composer could hardly have asked for a more competent, sensitive group of interpreters. Although each member of the Chamber Music Society is a luminary of his own instrument, the players are extraordinary for their totally selfless cooperation. True, Paula Robison played like a goddess of the flute, while Charles Wadsworth's organ technique in two Mozart Church Sonatas left something to be desired. But over-all, one left this concert remembering the Dvorak A major Piano Quintet, Bach's C major Trio Sonata, and *Space Play*. In other words, one recalls the music rather than individual displays of virtuosity or the grandeur of Tully Hall's new organ. This was ideal chamber music.

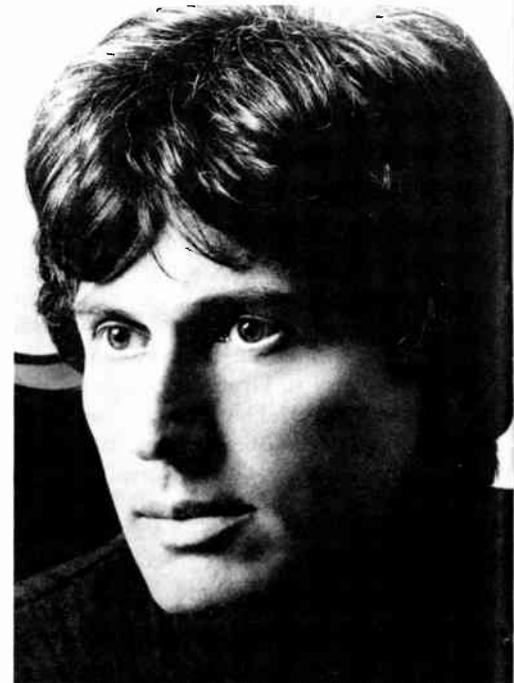
M.B.

#### Donald McCall, cello

Donald McCall's September 21st recital of Brahms Sonatas at Tully Hall generated more than a modicum of curiosity. Although McCall has very adequately proved his worth during his stint with the Lenox Quartet, the Brahms program demonstrated anew the differences that separate an outstanding soloist from an even-above-average chamber musician. Brahms' E minor Sonata, Op. 38, is not very imaginatively composed for the cello. The instrumental

writing tends to use only the lower, somber register, and it takes a sovereign virtuoso to employ sufficient color, contrast, and mobility to keep the otherwise memorable music afloat. McCall opened his evening with this problematical score, showing a sound instinct for tempo relationship and phrasing, but leaving quite a bit to be desired from a purely cellistic standpoint. His vibrato tended to be wide and uneven, his fingers often failed to make ideal contact with the fingerboard, and bowing was often jagged and inelegant. This gave McCall's tone a raw, edgy sonority and his phrasing a distinct shortness of breath. Moreover, a recurrent tendency to rush created momentary ensemble problems between the cellist and his superb pianist Walter Ponce (whose feats on behalf of Brahms verged on heroism).

The next work, and the evening's novelty, was the adaptation for cello of the G major *Regan* Sonata, Op. 78. Janos Starker "rediscovered" this arrangement which is said to have been undertaken by Brahms himself in 1897 at the behest of his friend Hausmann. Even if the claim is true (which I seriously doubt: it is more probably the handiwork of Paul Klengle), the music stubbornly resists the transplant. The transposition downward to D major and the resultant bass-heaviness brought to mind



*Donald McCall*

the analogy of a ship listing badly to the left. McCall tried to steer clear of the uncellistic demands of the arrangement which, combined with his own technical problems, produced a constricted, often wobbly sound.

The F major Sonata, Op. 99, by contrast, is emphatically and brilliantly written for the cello. Here, Brahms uses the entire spectrum available to the instrument, creating a superb dramatic edifice that changes textures and registers in an almost orchestral manner. This most demanding of Brahms's cello sonatas received by far the most confident and successful performance of the evening. A few rough spots notwithstanding, the cellist's playing here was mostly fluent and tonally agreeable while Ponce's accompaniment, gorgeously colored and rhythmically elastic and structural from the start, took on added drama. H.G.

### N.Y.C. Opera: Madam Butterfly

Povera Butterfly! It takes a heart of stone not to be moved by the plight of this delicate, trusting young girl, seduced at 15; abandoned at 18, so constant in her love, so tragic in her death. A mediocre performance of *Madam Butterfly* can diminish but not destroy one's sympathy for this pathetic mistreated creature; a superb performance can move an audience beyond all reasonable measure.

The audience at the October 19 evening performance of the New York City Opera was so moved. There was, first of all, Sung Sook Lee, making her debut with the company. Miss Lee is a young soprano of Korean ancestry who recently sang *Butterfly* at Covent Garden to great critical acclaim, and who, during the last few years has been heard in several important roles with the American Opera Center at Juilliard. Her City Opera debut was a success both musically and dramatically, an interpretation of Cio-Cio-San in which musical inflection reinforced theatrical gesture to create a characterization vastly superior to the mincing, witless *Butterfly* one too often encounters. It is no small achievement to elevate *Butterfly's* sacrifice to this degree, and the deep attention of the audience, which rose to its feet in acclaim at the opera's conclusion,



Sung Sook Lee, a superior *Butterfly*

was a true measure of Miss Lee's dramatic ability.

The voice is also of high quality. What the soprano lacks—that extra reserve of power for those special moments and an absolute security in her top notes—will surely come as the voice matures. What is there now—a developed middle register with an attractive darker coloration, a sense of phrasing and legato which produces a melodic line free of scoops and slides, and an appealing sweetness of voice which is her greatest natural gift—these together with her theatrical self-assurance make Sung Sook Lee a singer to whom attention must be turned.

Frank Corsaro's production still works. Most of the stage business reinforces the action, providing either pathos or humor without being unnecessarily distracting. Gaetano Scano's Pinkerton added little beyond an attractive stage presence and a voice of modest proportions and

limited penetration. The orchestra played execrably; the strings' intonation was unworthy of even an amateur organization. Initially, there was little excitement generated by conductor Luigi Martelli. Sluggish tempos and an inflexible beat threatened, in the first act, to undermine Miss Lee's performance. But by the third act, Mr. Martelli, perhaps himself impressed with the soprano's efforts, was giving more than one anticipated earlier on. A.S.

### N.Y. Phil: Druckman premiere

The New York Philharmonic seems to like the compositions of Jacob Druckman: in the last two years they have presented two of his recent works. On October 17, Pierre Boulez introduced Druckman's cycle *Lamia*, for soprano and orchestra, premiered in Albany in 1974, but with a new section added for these performances. *Lamia* was a Greek mythological sorceress, and the work is a glossolalia of conjurations (in Latin, French, Italian, German, and Maylasiian), set against the playing of two orchestral groups, one large and one small (the smaller one conducted by David Gilbert). Druckman's sure sense of shape and his easy grasp of shifting coloristic patterns (depending on the text) drew together what could have been a heterogeneous farrago (which includes musical quotes from Cavalli's *Giasone* and textual quotations of Isolde's raging outburst in Act I) into a cohesive and lambent whole. The music remained subservient, in the best sense, to the texts and to the singing. And rightly so, for the cycle was written especially for the talents of Jan DeGaetani, and her command of languages and of vocal art is worth any dozen sorceresses (some of whom practice their craft on the opera stage). DeGaetani's voice seems to be growing continually richer and stronger, and her vocal projection is unequaled: her final *ppp* came through clear as a bell in the spaces of Avery Fisher Hall. Why hasn't some impresario grabbed her for opera?

Boulez framed the Druckman piece with two Diaghilev-inspired works, the *Pulcinella* Suite of Stravinsky and the *Three-Cornered Hat* of de Falla. The latter was played in the full ballet version, a practice Boulez seems to prefer to the playing of "orchestra excerpts." Here the

strength and variety of the music made the case for completeness better than his traversal the week before of the full ballet for Bartók's early work, *The Wooden Prince*. Any complete ballet score contains a lot of bits and pieces, written for specific visual events, that sound particularly empty when lifted to the symphony stage. I very much doubt that Boulez' discerning mind would put up with such noodlings contained in symphonic works. Nonetheless, *The Three-Cornered Hat* is a capital example of de Falla's art (would that Boulez would program some of his lesser-known works!), and was played with the

requisite effervescence and rhythmic panache, if with something less than the suavity it should have. P.J.S.

### Jens Nygaard: Schubert

I should have been warned when I saw the program headed "Music with Jens Nygaard," rather than a listing of orchestra (the Westchester Chamber), soloists, and works to be presented. In sum, a good chamber group, some very capable soloists to sing and play (with Arturo Delmoni's violin playing and Judith Raskin's singing ranking even higher), and some out-of-the-way Schubert,

mostly written in 1815 (when he was eighteen). The Third Symphony (not exactly unfamiliar), the *Concertstück* for violin and orchestra (1816), written for Schubert's brother, and the one-act *Singspiel Fernando*, plus two pieces Schubert wrote in 1821 for a Vienna Production of a Hérold opera. Of the vocal works, the *Singspiel* was pleasant, if inconsequential, music set to an addeleated libretto, and was made more palatable by the urbane interspersed commentary of George Jellinek, in the Goldovsky manner. The only real "discovery" was the difficult tenor *scena* for the Hérold: definitely an attempt out of all proportion to the rest of the music heard. Its modulatory daring and quasi-fantasia layout point to those "fair hopes" that were buried long before Schubert ever achieved operatic fruition of any sort. Unfortunately, it was far too heavy a piece for the light tenor of Grayson Hirst.

But the evening was dominated less by Schubert than by the bizarre figure of Jens Nygaard, an Arkansas-born impresario - conductor - pianist who created the Westchester Chamber Orchestra, who (according to the program notes) has presented various concerts of arcane music (e.g., music written by Tovey, Szell, and Mitropoulos), who is in the midst of several grand cycles (Mozart piano concertos, Schubert operas), and who is president of the international Hugo Wolf Society. His podium technique is frankly hilarious—a dead-on parody of those conductors who elaborately signal the obvious. The fatal writer's temptation is to describe (I succumb): the tiger-pacings back and forth on the podium, the swan-dive flutterings on a descending scale, the darting in and plucking a note from the flute, the delicate sculpting with wayward hand of an upward run on the clarinets, the startled backward leap for *fortepianos*, the hands supplicating to God for final *fermatas*—and now and then an abstracted turning around to count the house and seek out friends in the audience (comfortably filled with supporters down from Westchester).

All of these shenanigans might be excusable if some sort of musical point of view were being expressed, but apart from a buck-sergeant drilling of his orchestra (almost enough in *Fernando*) in which the woodwinds rightly predominate, and some weird

## At the movies: Schoenberg's "Moses und Aron"



French film director Jean-Marie Straub has made a film of Schoenberg's *Moses und Aron* for the purpose, he claims, of providing an introduction to Schoenberg. That Straub has failed so abysmally has a particular irony, considering that the presiding theme of this philosophical opera is the impossibility of reconciling idea and image. "My idea is impotent when expressed in Aron's word," laments Moses. By the same token, Schoenberg's opera, in Straub's visualization, becomes every bit as ineffectual. The film, shown last October at the New York Film Festival, is getting some distribution in this country. When Academy Awards night comes around, I hope Straub wins the golden calf.

Musically, the production is hamstrung from the start. The performance is a good one: it is, in fact, the same one heard on the Phillips recording, conducted by Michael Gielen. But the music's very dimension and oceanic sonorities—all those huge choruses in particular—don't have a chance when piped through the muddy monophonic setups of an ordinary movie theater.

Cinematically, the film is a disaster. Though plausible stagings of *Moses* have been effected in the opera house, Straub opted for mundane naturalism. His film is shot in a real desert under midday sun. Within this natural context, we get stylized formations, with the chorus looking like pieces on a chessboard devoid of any characterization. This is not a chorus of downtrodden slaves, but simply a group of actors waiting for somebody to come along and make a movie out of them. Elementary distinctions are eschewed: there's little difference between the chorus of elders who remain faithful to Moses and the chorus that embarks on the orgy, and the conflict between the two groups goes by almost unnoticed. Straub's ironing out of drama extends even to the soloists—so little difference is there between the actors playing Moses and Aron that at times it's difficult to tell them apart. Consistently, Straub either plays down or disregards the possibilities for action. An instance is the killing of the young man who protests against the orgy. According to the libretto, the high priest throws him to the ground and the crowd then tears him apart. But only the first part of the action is rendered in the film, so that we're not aware that a killing has happened.

A movie that doesn't move is asking for trouble. Straub keeps his actors immobile, he has declared, because he's striving for a dialectical contradiction between the film and the *real* action (which is in the music). Asked why his film remains so emotionally detached and without attitude, Straub replies that he wants to leave a "space" around the action so that the audience can make its own decision, can react as it will. But this is a cop-out. Without some kind of attitude, even an ambiguous or tentative one, the film is just too bare and dull. Straub isn't striving for a genuine ambiguity—he's simply giving us a film without content. I doubt if any home movie has ever been so studiously unexpressive as *Moses und Aron*.

J.H.

notions as to *luftpauses* in Schubert—nothing. No sense of Schubert color and phrasing, no sense of variety in repeats, no sense of juxtaposition of key and modulation, no grasp of the shape of movements (such as the striking perpetual motion *presto* Finale of the Third). Above all, no sense of Schubert's unique musical personality. Music with Jens Nygaard it was, all the way. P.J.S.

### Joel Shapiro, piano

It takes a great deal of courage and as much musicianship to present a recital of all-American piano music. Joel Shapiro showed he had both at Carnegie Recital Hall on October 16. The concert featured the New York premiere of a Piano Sonata written twenty years ago by Gordon Binkerd, who is Shapiro's colleague at the University of Illinois.

Binkerd's Sonata sets no new trends, but it is a substantial piece of music. For all the discordance, the composer's thinking is unquestionably tonal, and the form of the work is similarly rooted in tradition. The opening Allegro carries the most weight, while each of the following movements is successively less concentrated and less carefully crafted. The plaintive theme of the first movement is subtly recalled and transformed throughout the work, skillfully uniting the music.

Binkerd is a romantic, and Shapiro's pianistic style is clearly in sympathy. His performance was filled with passion and tunefulness, downplaying the motoric repetitiveness of the Stravinsky-inspired Finale. Shapiro's lyrical bent, however, occasionally became excessive. His free rubato style, for example, pushed the plush sentimentality of the slow movement into a world of melodrama that might have offended even Rachmaninoff fans.

The first half of the concert was devoted to works by Aaron Copland, his jazzy Four Piano Blues and the formidable Piano Fantasy. The latter is a single movement that lasts almost as long as Beethoven's entire *Hammerklavier* Sonata and requires about as much concentration and technique. Shapiro had no trouble negotiating the notes, and his careful attention to the stark dynamic contrasts and the craggy texture of the music was admirable. The prob-

lem, as in the Binkerd work, was with rhythm. Certainly any work entitled "Fantasy" does not call for a rigid beat, but Shapiro's vague tempo teetered into simple inaccuracy too often. Had he paid as much attention to note values as to tonal shading, the performance would have been far more respectable. M.B.

## ST. LOUIS

### St. Louis Sym. (Semkow)

Georg Semkow's music directorship of the St. Louis Symphony has begun auspiciously. The opening program of September 18 was of sober, substantial character—the Mahler First, Beethoven's Piano Concerto in C, the overture to Mozart's *Seraglio*—but seven thousand people heard it in three concerts, a record for the Powell Hall subscription series, and their response was fervent. Semkow makes unusual demands on the orchestra for precision, dynamic restraint, and alertness to each other's sound. The means is musical discipline, yet the end is a sensitivity by which the musicians participate in their ensemble as string quartet players participate in chamber music.

Partly for this reason Semkow's

tempos, and changes of tempo, have a spontaneous, organic feeling. He took the first movement of the Mahler work at a deliberate pace, and played the repeat. The Scherzo was buoyant, with clean lower-string attacks and an airy rubato in the springing rhythm of the Trio section. Omission of the Scherzo repeat tended to accelerate the progress of the music toward the slow movement that became, in Semkow's interpretation, the heart of the Mahler First. Here the transparent texture was perfectly regulated. The slowness of tempo magnified details and intensified Mahler's spell; the movement spun itself out in a hush. The public, it seemed, was hearing Mahler as a personal communication rather than as a display of orchestral sonorities and color.

Etsuko Tazaki was the pianist for the Beethoven concerto. In several St. Louis concerts (she is based at Washington University) Tazaki has backed up her brilliant technical accomplishment with a reliable sense of what the music is about, and how it is meant to fall on the ear. Her performance fulfilled all high expectations. It was solid but propulsive and spirited, the fast passages brightly articulated, the cadenzas shaped to cohere with the rest of the concerto. At twenty-

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nine, Tazaki is getting known in wider circles. She has been chosen to open the Chicago Symphony's 1976-77 season, playing Bartók's Second Concerto under Georg Solti.

The rather cavernous acoustical behavior of Powell Hall (reverberation period 2.2 seconds) is of concern to Semkow. In response to his and the musicians' complaints, the Symphony has bought a rehearsal curtain, carpeted the back half of the shell, and applied sound-absorbing material to part of the back wall. The treatment has helped temper the old brass-heavy sound of the orchestra, but more work is needed. F.P.

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## ST. PAUL

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### St. Paul Ch. Orch.: Bolcom prem.

The October 18 performance of William Bolcom's new work by the St. Paul Chamber Orchestra under Dennis Russell Davies was both a premiere and a christening. Only during final rehearsal did the composer decide on a title, *Open House*, after the first of the seven Theodore Roethke poems which are the work's texts. The cycle was commissioned by the American Choral Society. A near-capacity audience in O'Shaughnessy Auditorium gave the work, the composer, tenor Paul Sperry, and the orchestra a prolonged, cheering ovation.

A one-time student of Roethke, Bolcom chose his texts, in chronological order, from various points in the American poet's life and stylistic development from 1941 to his death in 1963. In response to the wide range of the texts, the music is eclectic, drawing on numerous styles—including the popular—according to expressive needs. Extreme dissonance and jagged vocal line rising to a falsetto fortissimo mark the agonized title song which opens the cycle. *The Right Thing*, a serene villanelle which concludes the work, is set to a chorale-like melody with richly-simple harmonization.

Roethke's wit and humor find apt response from the composer in the waltz-time tale of *The Serpent*, who tries to express his soul in song with disastrous results, and in the easygoing ragtime bounce of *I Knew A Woman*. *The Waking* has a distinct Mahlerian feel to it as it builds in in-



*The Alard String Quartet: Shostakovich's No. 14 premiered*

tensity from the initial drowsy, sleepwalking atmosphere evoked at the beginning.

The vocal part is by turns disjunct, undulant, rhythmic, and gracefully flowing, and it also uses *Sprechstimme* and straight speech on occasion. The orchestral setting, multifarious in textures and colors, effectively evokes the moods and vivid imagery of the poetry. Sperry gave a masterly account of the musical and stylistic complexities of his part and had well-matched support from Davies and the orchestra. The tenor was no less admirable in his singing of four well-contrasted arias from Handel opera and oratorio. J.H.H.

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## UNIVERSITY PARK

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### Alard Quartet: Shostakovich

Dmitri Shostakovich's Fourteenth String Quartet, Opus 142, was given its first American performance by The Alard String Quartet (Joan Zagst and Donald Hopkins, violins, Raymond Page, viola, and Leonard Feldman, cello) on October 1 in the Recital Hall on the University Park Campus of The Pennsylvania State University. Composed in 1973, the work is a welcome addition to quartet literature. Shostakovich has always portrayed intense feeling, partic-

ularly in those works written during and immediately after the war years. There is no extreme harshness or inconsolable sorrow reflected here, however. The quartet is moderate in length with a strong tonal orientation. The first movement, marked *Allegretto*, opens with a pedal point in the viola and the cello states the cheerful, lyrical theme. There is nothing lugubrious here; it is rather Haydn-esque with a solid rhythmic drive. The middle movement, *Adagio*, is romantic and very straightforward with long singing passages. It is lucid and tender, and proceeds without pause into the last movement—a sparkling *Allegretto* with a rhythmic bite. The melodies, mixed with scintillating pizzicato passages, are light and airy, leaving the listener in an atmosphere of contentment.

The Alard Quartet, in residence at the University, is known for introducing new works—they have premiered quartets by Overton, Persichetti, Penderecki, Washburn, and others. On this occasion they played superbly and I look forward to their first American performance of Shostakovich's Fifteenth Quartet in the near future. This program opened with the Haydn Quartet in C, Opus 33, and concluded with a deeply moving rendition of Schubert's Quartet in D minor, *Death and the Maiden*. R.W.B.

# HAYDNFEST AT KENNEDY CENTER

## Wide-ranging programs explore the master's genius

**H**AYDNFEST" may not be the most elegant moniker ever slapped on an arts festival (artsfest?), but consider the alternative: the Kennedy Center programs gave the full name of the three-week (September 22–October 11) shindig as "The Haydn Festival of a Lifetime and Musicological Conference." (We can presumably look forward to better Haydn musicological conferences in our lifetime.)

The idea of Haydnfest is a sensible, important, even noble one: a large-scale mobilization of musical resources to attack a single subject in breadth, if not depth. The three weeks of the festival included not only ten concerts by the National Symphony (whose music director, Antal Dorati, served as Haydnfest music director), but several dozen programs by other major orchestras, university groups, smaller ensembles, and soloists. Each week culminated in a Dorati/National Symphony performance of one of the oratorios: *The Return of Tobias* (September 27) [see Robert Parris' review here], *The Seasons* (October 4), and *The Creation* (October 11).

There was an event of some sort nearly every night in the Concert Hall of the Kennedy Center, and most nights—not to mention some afternoons—there was something happening elsewhere as well, from recitals in the Smithsonian Institution's auditoriums to a fully staged opera (the Indiana University Opera Theatre's production of *Il Mondo della luna*), in the Kennedy Center's Opera House. There was also a pre-concert series of free performances of nearly

all the Masses in the Grand Foyer, done by various local and university choruses and orchestras.

The conference part of Haydnfest may be of limited interest to general music lovers, but in fact the emergence of the new breed of Haydn scholar in the last quarter-century has a lot to do with our belated recognition of the full measure of his genius. Under the directorship of "musicologist in residence" Jens Peter Larsen, an imposing array of the world's foremost Haydn scholars assembled from October 4 to 11, mostly to read papers to (or at) each other.

### Haydnfeasting

With so much to do, I faced my week-plus of Haydnfeasting (Haydnfeasting?) with some trepidation; in addition to the heavy concert

schedule, there were several days of two-a-day sessions of a "critics' institute," part of the Music Critics' Association's energetic education program, which is based on the perhaps overly optimistic notion that critics are educable. However, two evenings were suddenly cleared when an orchestra strike wiped out the October 1 and 2 concerts by the Pittsburgh Symphony Chamber Orchestra under Donald Johanos. And in truth the other concerts proved less interesting than they looked on paper—largely, I suspect, because the planners worried more about quantity than about quality.

The National Symphony itself, for example, seems to me to have been seriously overcommitted. Three large-scale oratorios and seven concert programs in three weeks, with virtually

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### "Il Ritorno di Tobia"

On the evening of September 27, the National Symphony Orchestra under Antal Dorati, the Oratorio Society of Washington beautifully prepared by its conductor, Robert Shafer, and five solo singers tried for over three hours to breathe some life into a music for which Haydn had little affinity: Italian music-drama. True, there is little that is dramatic in the oratorio *Il Ritorno di Tobia*. Rather reminiscent of a Victorian Sunday in moral tone, its style derives nevertheless from the same by-then threadbare Italian tradition that Mozart appropriated and revived so as-

tonishingly. The da capo arias, which comprise most of the piece, are all *very* long—little sonatas really—and largely unmemorable. This is second-hand, foreign music by a composer who was perhaps more thoroughly Germanic than he himself realized.

The NSO sounded ragged, fagged out and lusterless; the singing was uneven. Elizabeth Hynes and Linda Zoghby, both sopranos, sang beautifully, but Ara Berberian was in bad voice; Rockwell Blake, a tenor with a good top including a high D, sang with neither style nor enthusiasm; and Evelyn Petros, a mezzo, has a bit of a problem with a thin and unprojectable bottom octave. ROBERT PARRIS

**T**HOUGH George Frideric Handel made a somewhat belated Houston debut as an opera composer, the October 16 American stage premiere of *Rinaldo* seemed to delight audiences in Jones Hall as thoroughly as Haymarket theatergoers must have been charmed at its London premiere in 1711. In reviving the opera that introduced Handel to English audiences, Houston Opera drew upon the agile vocal talent of Marilyn Horne to sing the title role and asked her long-time accompanist, Martin Katz, to provide a new performing edition for the occasion. The score Katz produced is largely taken from the original 1711 version of *Rinaldo*, with a few arias chosen from the composer's 1731 revision, and one aria borrowed from a later opera, *Partenope*. Katz also dropped one character (Eustazio) and excised enough recitative to shorten the opera's length from four to about three hours.

### Rinaldo to the rescue

*Rinaldo* is based on an episode from Tasso's *Gerusalemme liberata*, telling how the crusading Christian general, Rinaldo, rescued his beloved Almirena from the clutches of the wily and beautiful sorceress, Armida. If the Frank Corsaro-Franco Colavecchia production lacked the mechanical complexity of a Baroque staging, it respected the static attitudes of Baroque opera with dignity and had considerable visual magic of its own, thanks to a sizable challenge grant from the Corbett Foundation of Cincinnati.

Colavecchia designed several huge war machines: a chariot drawn by two supernumerary "horses," a ladle-shaped catapult, and an eighteen-foot battering-ram which served as Horne's battle platform during her brilliant singing of the final, "*Or la tromba*." Colavecchia also filled the stage with delightful little winged dragons, sea creatures, and great birdmen. He costumed his Christians in tones of silver and blue, his Sara-

*Mr. Cunningham is music editor of the Houston Post.*

Walt Ferreck



Evelyn Mandac kneels to Marilyn Horne in a production of "visual magic"

## HANDEL HITS HOUSTON

### Horne in "Rinaldo" conquers all

cens in rich red and gold.

But Handel opera is primarily a vocal spectacle and *Rinaldo* provided ample opportunity for singing that was alternately beautiful and formidable. First credit should go to soprano Evelyn Mandac, who sang the largely unornamented vocal part of Almirena with consistently beautiful tone, admirable phrasing, and wonderfully expressive poignance. She was seconded by bass Samuel Ramey, who made the role of the Saracen general Argante into a powerful and vibrant musico-dramatic experience, needing only a little more attention to subtle tone color and shading.

#### For Horne, the lion's share

The lion's share of the singing and most of the vocal feats naturally be-

longed to Horne. She carried off the title role with a great deal of bravura, once past some first-act difficulties in meshing Katz's heavily (perhaps too heavily) ornamented melodies with Lawrence Foster's brisk and alert conducting of the orchestral score. A nobly sung "*Cara sposa*" and some intensely beautiful arioso passages provided Horne welcome relief from her vocal acrobatics elsewhere in the opera.

Noelle Rogers displayed a big, dark-hued soprano, able to reach the high notes of Armida's role, but her pitch sometimes went astray and her tone sometimes splayed out of focus. Tenor John Walker sang attractively as the Christian king, Goffredo, although his voice was relatively small in volume and tended to tighten on high tones. △

KAREN MONSON  
Chicago

**L**YRIC OPERA of Chicago began its twenty-first season by cultivating music and drama, but never the two together. A pair of Verdi productions, *Otello* and *La Traviata*, set off the autumn's proceedings with healthy doses of worthy singing and slipshod staging. Then, for its first stab at Richard Strauss's *Elektra*, the company turned 180 degrees, concentrating on the theatrical issues and slighting the music.

### "Otello"

The opening-night *Otello* (September 19) was better heard than seen. Designer Pier-Luigi Pizzi and director Giorgio de Lullo, Lyric's favorite production team, gave their new scheme a tone of functional noncommitment, with heavy-columned interiors which proved imposing but did nothing to further the cause of Verdi's high-tension masterpiece. De Lullo put the chorus into tight, stationary blocks, and left the principals to fend for themselves. None of the three leads bothered particularly with the drama. But the men, especially, poured forth some glorious sounds.

Looking hulky and appropriately ominous in the Moor's sweeping robes, Carlo Cossutta sang the title role with a burly tenor which became fraught with emotion as his character's rage replaced love and reason. As the devilish prime-mover Iago, Piero Cappuccilli sang with both elegance and command. And the two men got together to bring the second act to a thunderous conclusion. Making her first appearance in Chicago, soprano Gilda Cruz-Romo came through in Desdemona's Willow Song, but elsewhere her singing lacked sweetness, and sounded uneven and stretched out of shape. Unfortunately, conductor and orchestra assumed antagonistic roles in both *Otello* and *Traviata*. Bruno Bartoletti, Lyric's artistic director, wielded his baton with little sense of the music's force or line, and the instrumentalists tossed out more than their share of wrong notes.

With the two Verdi operas simultaneously in the repertory, Bartoletti and Cappuccilli were overtaxed. The baritone alternated the assignments  
*Karen Monson is music critic of the Chicago Daily News.*



David H. Fishman

Carlo Cossutta:  
an *Otello*  
fraught with emotion

## LYRIC LIMPS INTO 21ST SEASON

### First three productions fall short of expectations

of Iago and the elder Germont for five weeks, apparently decided that it was more important to sound villainous than paternal, and thereby slighted Germont though his Act II duet with Violetta—Ileana Cotrubas—proved the high point of the night. Miss Cotrubas slighted nothing. She dominated the stage as a prima donna in the first act, and went on from there to develop an utterly

heartrending portrayal of the dying courtesan. She coated the melodies with silk and satin, and used superb musicianship in the rough technical spots. Much less sensitive was Alfredo Kraus as Alfredo, who took a sledgehammer approach to his assignment, banging out lines with virtually no dynamic shading but with plenty of tasteless, mannered sobs. Typically,

Continued on page MA-38

**T**HE ECONOMIC uncertainties of the past few years have had no discernible effect on Salzburg, and the 1975 festival was marked by as much opulence and self-assurance as ever. The fact that for opera the best seats in the orchestra at both the large and small houses cost 1,500 Austrian Schillings (roughly \$90) simply ensured that the invariably packed house was full of glamorous people.

So, indeed, was the stage. Salzburg must be the last bastion of all-star casting, the only place left where as a matter of course one can expect to find the sort of line-up that Rudolf Bing offered regularly in his heyday at the Met. In addition, Salzburg can afford to let us see a great deal of conductors as eminent as Karl Böhm and Herbert von Karajan. But, above all, because it commands the services of the Vienna Philharmonic it can supply audiences with orchestral playing of a quality the Met has never been able to command.

## STILL AN ALL-STAR FESTIVAL

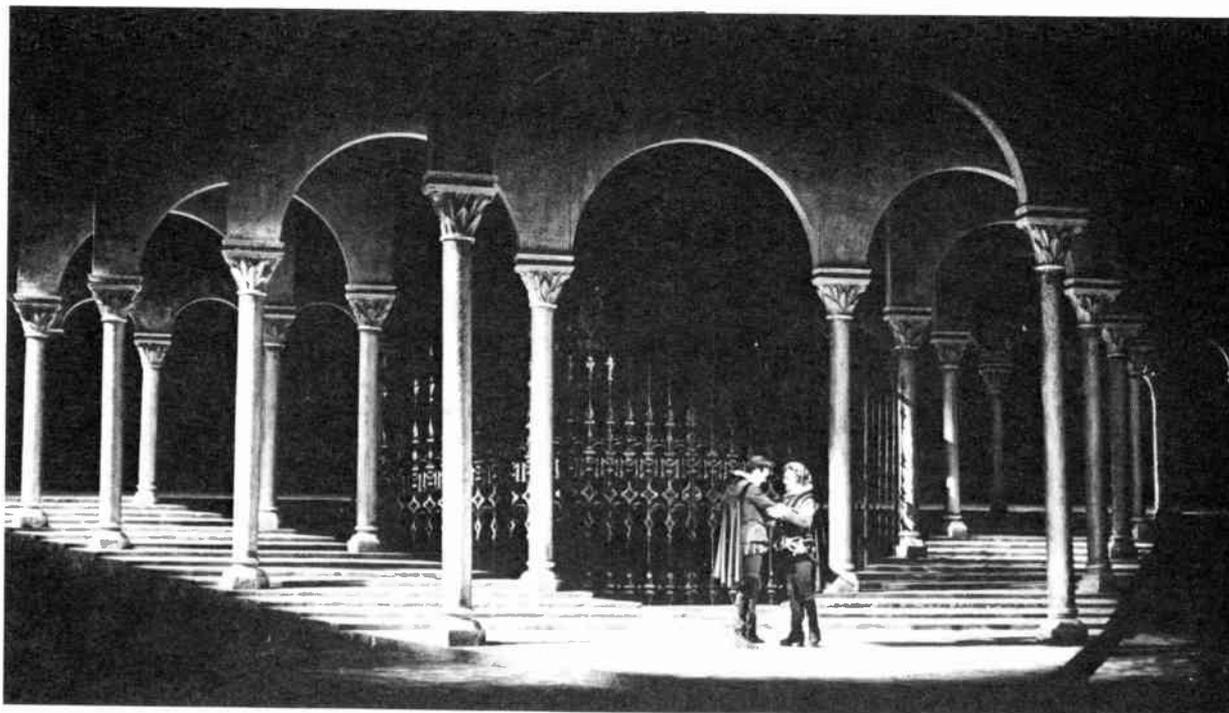
“Frau” and “Don Carlos” set the tone

### Böhm’s “Frau”

The contribution made by this great orchestra was particularly noticeable in the revival of the 1974 *Frau ohne Schatten*, since so many other elements of the Salzburg performance were the same as at the Met a few years back: Leonie Rysanek as the Empress, James King as the Emperor, Walter Berry as Barak, even Loretta di Franco as the Temple Guardian and Lorenzo Alvaró as the One-Armed Brother. Despite the vir-

tues of these familiar assumptions the greatest thrills of the evening were provided by the orchestra, whose tonal beauty was no less astonishing than its virtuosity. Robert Scheiwein’s playing of the cello solo with which the Emperor’s visit to the Falkenhaus begins, and Gerhard Hetzel’s violin solo before the Empress’s climactic scene at the fountain should have been rewarded with solo curtain calls.

All in all, the singers were an accomplished team. Rysanek’s Empress



*Karajan’s Don Carlos: human relations were only of minor importance*



*Ghiaurov and Freni—both contributing distinguished singing*

is now more notable for its emotional fervor than its vocalism and her notes above the staff—the glory of her voice for some twenty-five years—begin to show decided signs of wear. Walter Berry, though sounding vocally tired, was otherwise his usual disarmingly bluff self, and James King was still, at the very least, adequate in a role that most tenors bungle completely. Neither Ruth Hesse's Amme nor Ursula Schröder-Feinen's Färberin has been seen at the Met. The first was effective, the second left one regretting the absence from the cast of Christa Ludwig, who had sung the Färberin at Salzburg last year. Schröder-Feinen has a middle register as rich and secure as any to be heard today and she flings herself with a will into the part of the discontented wife. But she lacks an easy top, and in the heartfelt cantilena of the Act 3 duet she failed to soar, as Ludwig used so memorably to do, with the proper Straussian ecstasy.

Böhm, on the other hand, was inspired. He has always shown a great affinity for this score and the older he grows the more splendor he finds in it. Even the final tawdry quartet for the very first time in my experience

sounded like good music.

Salzburg is lucky to have Böhm's services. Officially Karajan is the greater star. Certainly, his celebrity is more widely diffused. Yet though his talent is prodigious, his actual conducting during the past fifteen years has hardly ever done that talent real justice. More Karajan interpretations today are like dream-visions: remote and emotionally uncommitted. They are marked by orchestral textures of unparalleled smoothness and though the performances gleam they do not warm.

### Karajan's "Don Carlos"

In *Don Carlos*, a new production this year, Karajan did, it's true, allow the brass surprising prominence, yet as a whole he sought to achieve a state of luminous calm that nullified all of Verdi's drama. Such qualities as drama, conflict, passion, heartbreak or patriotism were clearly of little interest to him. Serving as director as well as conductor Karajan devised a lavish pageant—the court in Act I included a pack of enormous Dalmatians and a dwarf—in which human

Continued on page MA-39

This report on an American presence in Salzburg was also received by MA.

### Bernstein thrice over

The normally restrained audience here clasped Leonard Bernstein to its musical breast as he brought his three selves to Salzburg. Conductor Bernstein led the London Symphony Orchestra in a touching personal tribute to Dmitri Shostakovich, the Largo from his Fifth Symphony which Bernstein had performed in its entirety during his only other appearance here sixteen years ago.

Composer Bernstein whirled, twirled, and danced through his own *Chichester Psalms*, beautifully sung by the Vienna Jeunesse-Chor and an anonymous Vienna Choir boy. And pianist Bernstein proved that there is more than one way to play Mozart, as he also directed the G major Piano Concerto, K. 453, from the stool by peering at the rearranged orchestra from under the uplifted piano wing. But even he could not help the audience span the bleak planes of Sibelius's Fifth Symphony, which had a spare, sweeping reading from the orchestra.

During one of his rare press conferences, Bernstein was asked about rumors that he wanted his old job at the New York Philharmonic back. Denying the gossip and saying that he hoped to do more touring, recording, and filming with them, Bernstein insisted, "I only said that I wanted to come back *more*, but not as music director." He concluded, "I never want to be music director of anything ever again . . . even the Philharmonic."

Bernstein is a hard act to follow, but that did not faze James Levine, the Metropolitan Opera's new music director. Seemingly uncomfortable with Alexis Weissenberg's too-rapid reading of Beethoven's G major Piano Concerto, Op. 58, Levine regained his usual ebulliance to give a gutsy performance of Berlioz's *Symphonie fantastique*.

Later, he revealed that the Met will enter into a long-term relationship with director Jean-Pierre Ponnelle, hoping he will develop "a certain level of style" for Met productions. If the deal goes through, Ponnelle will design and direct one new production per year, beginning in 1977-78, probably with *Don Carlo*.

SUSAN H. ANDERSON

# book reviews

Patrick J. Smith, Editor

WILLIAM BILLINGS OF BOSTON: EIGHTEENTH-CENTURY COMPOSER. By David P. McKay and Richard Crawford. 303 pages, Illus. Princeton University Press, \$16.

Reviewed by Gilbert Chase

BILL BILLINGS of Boston—the alliteration is irresistible—is on the way to becoming an American legend, like Billy the Kid or Buffalo Bill. But at this incipient stage his “legend” is not yet in need of “debunking.” On the contrary, it is probably being fed—not deliberately, but inevitably—by the work of historical scholars such as McKay and Crawford, as they bring to light more facts about this astonishing personality. We see him not only as the famous, enthusiastically dedicated pioneer singing-school master and tune-book publisher, as composer and choir leader, but also as patriot, poet, author, editor; friend and abettor of the fiery seditionist Samuel Adams; also (to keep the legend down to earth), as holder of sundry, less than exalted, municipal jobs, such as coal inspector, scavenger, and “hogreave”—“charged with keeping stray swine off the streets.”

These were, after all, the largesse of political patronage, culminating in his appointment as official tanner to the city of Boston. He needed whatever he could get to keep above the poverty line—and barely above it at that. A tanner by trade, such he remained in the official records to the day of his death—though he held, indeed, the imposing title of “Sealer of Leather.”

But no one was deceived by these petty vicissitudes of his mundane existence as a *pater familias* of humble origins and of many responsibilities. He himself—and most of those around him—always knew that his first and greatest responsibility was to the Muse that had smiled on him from birth and never deserted him

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*Mr. Chase, scholar and critic, is the author of America's Music.*

through all his trials and struggles. “Great art thou O Music!”—he exclaimed with typical enthusiasm, “and with thee there is no competitor.”

Not merely as a compiler of tune-books, but as *composer* of their contents, Billings was “fustest with the mostest.” His first collection, *The New-England Psalm-Singer: or, American Chorister* “. . . Composed by William Billings, a native of Boston, in New England (1770),” was not only “the first published compilation of entirely American music,” but also “the first tunebook produced by a single American composer.” It is significant too, that by the wording of the title-page Billings “advertised his music as made in America by an American.” Thus, he was not only our first composer of importance but likewise our first forthright musical Americanist.

Billings did eventually have his competitors, and his bright particular star was at least partially eclipsed as his life ended with the end of the eighteenth century. In the words of his most perceptive contemporary, William Bentley of Salem, written after the death of Billings: “Many who have imitated him have excelled him, but none of them had better original powers.” It is because of these original powers that Billings was not only the first of our native pioneer composers to be “rediscovered” in the twentieth century, but also the one whose fame has most rapidly increased and whose music has achieved the widest publication and performance (his *Complete Works* are in process of republication under the sponsorship of the American Musicological Society).

It is therefore altogether fitting—particularly at this time of our Bicentennial celebration—that William Billings should be the subject of an excellent biography and critical study by two highly qualified authors. Richard Crawford is a musicologist now generally recognized as the leading authority on early American psalmody (the name embraces all kinds of Protestant religious vocal

music of that period), whose earlier biography of Andrew Law was a worthy precursor of the present work. David McKay is a choral director, composer, and scholar in American music, residing in Massachusetts, where in the early 1960s he began the archival research on Billings that provided the extraordinarily comprehensive documentation—including much new material—that makes the present work definitive.

The character of this biography is indicated in a sentence from the Prefatory Note: “The book seeks at every point to describe Billings’ life and musical career from the perspective of the musical tradition in which he worked.” It thus falls within the scope of cultural history, which appears to be the wave of the future for the study and interpretation of American music. Not strictly confined to the chronology of its subject, the book begins with a Prologue describing “Eighteenth-Century Sacred Music in New England,” and concludes with an Epilogue on “The Reputation of Billings and his Music, 1800-1970.” The Appendix on “Performance of William Billings’ Music” will be of particular interest and value to choral directors.

Without being in the least pedantic, this work deploys the full resources and skills of academic scholarship as regards thorough documentation of sources, command and clarification of technical details, comprehensive bibliographical data, and an admirably complete and well-organized general index. There are few musical examples—which I believe is just as well in a biography: why discourage potential readers who are not musicians? The illustrations consist of facsimile reproductions of contemporary documents, including a map of Billings’ area of Boston from 1769. His tanning shop was said to be on Frog Lane; his home was on Newbury Street. Boston may well be proud of its musical tanner; but the rest of us can also say, in the words of one his anthems, “Be glad then America”—that we had such a musician amongst us, and that his music and his spirit are still very much alive two hundred years after the birth of our nation.

WAGNER: A DOCUMENTARY STUDY. Compiled and edited by Herbert Barth, Dietrich Mack, and Egon Voss.

*Preface by Pierre Boulez. 256 pages. Oxford University Press, \$29.95 to December 31, 1975; \$37.50 thereafter.*

1976 IS GOING TO BE a cardinal year for the Wagnerophile, not because it is related to his years of birth or death, but because it is the centenary of the *Ring* cycle's first performance (at Bayreuth), and will see at least two major restagings of the works (one at Bayreuth, conducted by Boulez, and one at the Paris Opéra, conducted by Solti and staged by Ingmar Bergman). Added to this, 1976 will see the beginning of publication of Cosima Wagner's extensive diaries, which are bound to shed a good deal of light on the last years of Wagner's life. It is also hoped that this publication will represent the unlocking of the treasures contained in Bayreuth and Wahnfried, which have heretofore been largely unavailable. (One such project should be the publication of Wagner's detailed "prose sketches" of his operas, as well as of operas Wagner considered but never set—such as *Die Sieger*, the Buddha-opera Wagner wanted to begin after *Parsifal*, and *Jesus of Nazareth*, the first page of which [1849] is reproduced in this book.)

As a picture book and as an introduction, *Wagner* is worth the price asked. It is said that Wagner's music and theories have generated more books than that of any other composer, and any acquaintance with second-hand bookstores here or abroad will bear out that contention. Of the (about one hundred and thirty pages of illustrations in this book (many in color), I have seen most of them elsewhere, but cannot remember them ever gathered together in such a striking way: set designs, watercolors, prose sketches, playbills, photographs—all with clear explanation. The rest of the book is taken up with excerpts from correspondence, writings, critical reviews, and the like, and include many known to Wagnerians (Schumann and Berlioz on Wagner, Hanslick's opinions, the letters from Ludwig II, and the loopy, idolatrous letter from Bruckner, recounting how Wagner accepted the dedication of his Third Symphony). Also included are several tantalizing foretastes from the Cosima Wagner diaries, and the whole is prefaced by a long study, written in mock-Wagner-prose, by Pierre Boulez, and by Wag-

ner's own autobiographical sketch, written in 1842. A tasty *Vorspeise* to what promises to be a refulgent feast.

P.J.S.

**MIND MODELS. NEW FORMS OF MUSICAL EXPERIENCE.** By Roger Reynolds. 230 pages. Praeger \$13.50.

*Reviewed by Robert P. Morgan*

ALTHOUGH RECENT "experimental" music continues to perplex most listeners, there can be little doubt that it is intimately related to more general manifestations of contemporary life. Indeed, the degree to which such music is framed by new modes of thought, themselves conditioned by the complex social and technological factors that shape present-day existence, is sufficient to suggest that fruitful discussion of the current music scene can occur only if encompassed by these larger issues—by consideration of how contemporary musical developments reflect the broader "sets-of-mind" fashioned by our rapidly changing physical and psychological environments.

This is the position taken by Roger Reynolds in *Mind Models*, the intent of which is "to provide a provocative introduction to the new dimensions of musical experience." Reynolds is interested in the "human capacity to view experience from a variety of perspectives and hence to achieve the unexpected association." Thus he regards new mental models as agents of liberation: they enlarge "our categories of art and our range of receptivity" and enable composers "to imagine unprecedented sounds." Underlying this is the assumption that "any increase in materials and awareness, any accumulation of values and alteration of attitudes" is the concern of art, that "there is no substance too rare or too common to be transformed by art, no idea or set of circumstances too ordinary to be set in a newly revealing light."

Given these provocative and ambitious aims, and the fact that the author is himself a talented composer, one approaches *Mind Models* with unusual expectations. The degree of disappointment at its failure is corre-

spondingly intensified. For if *Mind Models* has the right intentions, it fails to meet its objectives on even the most basic levels of factual information.

The opening three chapters, entitled "Rates of Change," "The States of Art," and "The Public and Private Realms," propose to "illuminate the background out of which the present expansions of materials and means has evolved." What unfolds is a rambling, extremely repetitive Sunday-Supplement exposition of conditions affecting present-day art: decreasing permanence in human activities, proliferation of distinct cultural subgroups, fragmentation, the absence of a shared cultural framework, the impact of commercialization, expanded technical possibilities, abnormal states of consciousness (drug-induced and otherwise), alterations in perception, etc. Reynolds is of course no expert in these climes and has borrowed liberally, in his own words, from "the provocative materials I had come across." (One thinks of a bright undergraduate's account to his adviser of the fruits of a semester consumed by social science electives.) Surely one is justified, given the book's subtitle and purported focus (i.e., "the text is primarily focused upon music"), to expect some discussion of the musical significance of it all. Yet inexplicably, virtually nothing along these lines is offered anywhere.

With the fourth chapter ("Sound") hopes again rise, as the opening section is headed "Sounds and Their Use in Music." But this too turns out to be misleading: after some basic introductory materials on psychoacoustics, we are given only a brief, superficial survey of the "emancipation of sound" in earlier twentieth-century music (Debussy and Cage alone are mentioned!). Succeeding sections deal with such extended resources as multiphonic instrumental sounds, electronic and computer synthesis, and space as a musical parameter—only the last, finally (on p. 121 of a 230-page book), with consideration of a concrete example: Jōji Yuasa's *Icon*.

The next two chapters, "Time" and "Notation," prove to be equally devoid of musical comment. The treatment of time is directed toward problems of experimental psychology in testing and measuring human tem-

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*Mr. Morgan is a member of the music faculty of Temple University.*

poral experience. (There is one short paragraph on Steve Reich, with one- and three-sentence descriptions of, respectively, his *Piano Phase* and *Come Out*.) And notation is considered mainly within the broad context of general communication systems—how information is processed, stored, transmitted, etc.

Only in the last chapter, “Morphology in Music,” does Reynolds finally address himself to particular instances. Several compositions are discussed, and a last-gasp effort is made—unfortunately too late, too haphazard, and too selective—to illuminate some of the musical implications of the ocean of scattered material previously encountered. But even here score descriptions are too brief and general to provide insight into specifically musical questions. Symptomatically, the most detailed—and interesting—discussion concerns the treatment of a text: Salvatore Martirano’s manipulation of Lincoln’s Gettysburg Address in *L’S GA*.

Moreover, when Reynolds does occasionally touch upon musical matters, as happens in a section on Penderecki’s *Threnody for the Victims of Hiroshima*, the results are vague and occasionally misleading. His view of the *Threnody* as “representative of an essentially monophonic, texturally dense yet noncontrapuntal approach to music,” for example, is simply misinformed: a perusal of the score reveals that virtually every page is characterized by imitative and/or canonic processes. (Indeed, these constitute the principal means for establishing musical continuity in the work.) And although one does not deny Reynolds’ right to dislike the piece, what is the point of such gratuitous comparisons as: “The importance of this work is limited compared, for example, with the more dimensional ‘noise’ world of Michael von Biel’s (b. 1937) *String Quartet No. 2*”? (Neither Biel nor his quartet is mentioned outside of this one sentence.)

Later, when Penderecki’s “monophonic” approach is contrasted with Bach’s, the results become embarrassing all around. The relevant passage warrants quoting at length, for it typifies Reynolds’ talent for reducing all commentary to the level of jargon:

What is essentially a single succession of events can suggest

several ‘lines’ by means of timbric and pitch range separations that characterize several discriminable classes. Archetypal examples here might be the solo violin and cello sonatas of J. S. Bach. Physically, our perceptual capacities tend to support the effectiveness of such multidimensional illusions. We are disposed, for example, to separate pitch sequences that cover a sufficiently wide pitch range into several separate continuities, and our ability to discriminate order and timings in one or the other tends toward exclusiveness. If a listener attempts to track the upper components of a fairly rapid sequence, for example, he will lose the ability to report timing and even sequence properties of the lower pitches. In its simplest form, an alternation of two pitches, the point at which what has been heard as an alternation separates into two independent streams of repeated notes is called the *thrill* [sic] *threshold*.

What concerns Reynolds, then, is not the polyphonic character of Bach’s one-voiced music (pointed out in any case by Ernst Kurth a half century ago) but the physiological and psychological mechanisms that make its perception possible. That the author is apparently unaware that there *are* no Bach sonatas for solo cello, but only suites, gives one pause. But more importantly, what purpose is served by this passage (and countless similar ones) in a book of this sort?

*Mind Models* is yet another sad reminder of how difficult it is to write about music and the musical experience in specifically musical terms. From one point of view it simply represents a stylish, up-dated version of that long and hallowed practice of retreating from musical substance to, on the one hand, programmatic descriptions of its effects and, on the other, technical descriptions of the compositional systems from which it is derived. Only here the level of abstraction is carried considerably further. As for the reader, I suspect he will be left with a feeling rather like that of someone who, after eating an uncommonly large and oppressively rich meal, finds himself hungrier than before he began. △

designer Pizzi took inconsistent aim at splendiferousness, when merely splendid sets would have sufficed. Director de Lullo managed very little beyond getting the singers on and off the stage.

### “Elektra”

After a surfeit of this kind of direction, Chicago was ready to have director Nikolaus Lenhoff and designer Rudolf Heinrich go to town on the Lyric’s first *Elektra*. The team came through with a plan that sucked every last iota of decadence and despair from Hofmannsthal and Sophocles, and even added a few extra sexy bits to the old tale. The set which Heinrich designed for La Scala has a series of steps and platforms leading into a huge stone palace façade. Lenhoff tried with no small amount of success to get the singers to slide about in a highly stylized, all-arms manner. Unfortunately, he then cluttered the stage with squiggly, body-stockinged folks who crawled around on their bellies and got under the singers’ feet—and the viewer’s skin.

Lyric came up with an interesting production of *Elektra*, but what good is that when you have no *Elektra*? Brenda Roberts, an Indiana-born graduate of Northwestern University, barely made it through the role; throughout the 110 minute performance it was impossible to experience anything but sympathy for her predicament. No amount of distinguished conducting by debutante Berislav Klobucar, no number of impressive contributions from the secondary characters could chase away that awful feeling of disaster. Ursula Boese as Clytemnestra and Thomas Stewart as Orestes contributed memorable, albeit fleeting, moments of professionalism. Carol Neblett, making her first appearance with the company, sang the role of Chrysothemis vigorously, topping the music with a characterization which was uncomfortably oversexed.

The hope for Lyric’s *Elektra* lies in Ursula Schroeder-Feinen’s scheduled take-over of the title role for four December performances, with Mignon Dunn as the new-team Clytemnestra, and, somewhat less fortuitously, Bartoletti moving onto the podium. △

relations were of only minor importance. How much of the emotional emptiness one saw on stage was due to Karajan's conscious intentions and how much to his unmistakable lack of directional skill must remain unanswered, but certainly it was a frigid evening.

The singing, however, was distinguished. Placido Domingo in the title role was warm and unstinting. Piero Cappuccilli as Posa was properly fervent and though he was rather rough and ready in matters of detail his tone was beautiful. Nicolai Ghiaurov as Phillip was as silken as ever. Mirella Freni in a part that is too grand in scale both for her vocal equipment and her stage personality was a model of taste. By never once trying to step beyond her limits she achieved moments of exquisite pathos. Eva Randova, deputizing at short notice for the indisposed Christa Ludwig, looked handsome, acted well and sounded, if promising, immature, especially in so far as her Italian diction was concerned. Though Martti Talvela had been announced as the Grand Inquisitor the role was eventually sung by the Roumanian bass Gheorghe Crasnăru, unmemorably, I'm afraid. But Salzburg's luxuriousness in casting allowed for Robert Kerns as the Herald and the remarkable José van Dam as the Friar.

### The Manzoni Requiem

The same kind of casting—Freni, Cossotto, Domingo, and Ghiaurov—marked Karajan's solitary performance of the *Manzoni* Requiem. So did the dispassion. This Requiem was no drama of salvation and retribution, in which the participants alternate between fear, supplication, and unquenchable faith, but a soothingly peaceful meditation on events long since resolved. Karajan's *Dies Irae* did not attempt to shake the heavens, nor his *Sanctus* to set them resounding. The final *Libera Me* contained none of Verdi's holy terror, nothing to jolt the elegant audience out of its festival mood. That at the end they departed without applauding seemed less an indication of their spiritual exaltation than of the tranquility induced in them by Karajan's reassuring interpretation. △

none of the music in the orchestra's repertory, is too much to prepare adequately. Dorati played all six *Paris* symphonies on September 30 and October 1 (with other works as well), by dividing the orchestra in half, though he acknowledged that these works were written for quite a large orchestra. Those I heard were competent but bland: generalized run-throughs, with none of the attention to detail and precise balancing that would reveal the music's stature. Age-old question: are six mediocre performances better than three, two, or even one really good one(s)?

### The private and public composer

Haydn's genius is concentrated in the fanatical subtlety of his detail. Precisely that intimacy of conception led to his ludicrous undervaluation in the nineteenth century and the first half of the twentieth. Alongside the unmistakably dramatic utterances of Mozart and Beethoven, Haydn was relegated posthumously to the role of primitive forerunner: a modestly talented man who laid the groundwork, and was quickly surpassed by, his pupil-successors. That's nonsense, of course. Gradually we have come to recognize the profound range and depth of the whole of Haydn's staggering mature output. But he remained to the end a "private" composer, whose works require every effort of concentration and study a performer and listener can bring (I suspect that that's why the LP has benefited him so enormously); all too often a merely "adequate" performance will make a great piece sound ordinary. For example, the New Hungarian Quartet's smoothly polished, stylistically undifferentiated September 28 program of early quartets rendered Op. 17, No. 4, as lightweight as Op. 1, No. 3.

Even as Haydn became an ostensibly more "public" composer, writing increasingly for public performance and in more extroverted forms (the larger-scaled later symphonies, the last half-dozen Masses, *The Creation* and *The Seasons*), the heart of the music—the intricacy of formal technique, harmony, and rhythm—remained as involved, even involuted, as ever.

### "The Seasons"

Again the performance of *The Seasons*, while decent enough (much better than that of *Tobias*), wasn't really satisfying. For one thing, the capable soloists were badly matched: Heather Harper's gratifyingly large soprano (in radiant form, far plusher in tone than her September 30 account of two cantatas) alongside a tiny-voiced and narrow-ranged, though tonally ingratiating, tenor (Claes-Haakan Ahnsjö, a young Swede); the always pleasurable Donald Gramm fell somewhere in between. The Choral Arts Society of Washington sang well, whether loud or soft, and articulated surprisingly well considering its size, but again it was awfully generalized.

The best program I heard was the Theater Chamber Players' October 3 miscellany, highlighted by Phyllis Bryn-Julson's sensitive delivery of three groups of songs and by pianist Dina Koston's quiet but admirably taut performance of the fascinating late F minor Variations.

The associated trappings of Haydnfest were decently managed. The Kennedy Center prepared a splendid souvenir booklet, with top-notch, serious essays on each of the Haydn genres—a great buy at \$2. It seems to me that more attention might have been paid to practical matters for nonspecialists: music editions, books, recordings. There was also some community involvement: Haydn programming on the radio and special sales on Dorati symphony recordings.

Whatever the flaws in execution, Haydnfest represents an idea whose time is long overdue. The idea is hardly original, but it remains to be applied on a broader scale—from the smallest community upward. △

### RISE STEVENS

Continued from page MA-5

Maurice Peress, Thomas Scherman, and Eve Queler. "I want to provide more operatic training. I want to make Mannes a more performing institution. It is by performing that an artist acquires confidence and gains recognition. I want to find a theater—and the money to pay for it. I am looking for a place in the neighborhood, a church or a garage or a store which could be converted. We need a Mannes theater, a workshop and showcase for Mannes students."

Talk became personal when we remarked that Richard Strauss had the place of honor in the room. Sitting at her desk, she faced his signed picture on the opposite wall. "We were born on the same day, June 11," she said. "When I told Strauss this he said he never knew anyone who had been born on his birthday and who could also sing the Rosenkavalier! After the war I wrote to him. I told him I would like so much to sing Salome and wanted to *punktier* it." *Punktier?* Risë explained: "*Punktieren* means to write another line above or below the line as it is written; in other words, to raise or lower the part, to substitute alternate notes to make it more singable. Strauss wrote back that he liked the

idea. He was going soon to Paris to conduct *Rosenkavalier*. He suggested we meet there and discuss it. But he died soon after."

The picture of Gutheil-Schoder, and the talk of Strauss, brought the conversation around to one of Stevens' famous roles, her Octavian. "I almost didn't do it," she recalled. "While I was still at Juilliard I sang in Honegger's *Roi David* under Fritz Reiner—a marvelous man, a great conductor. But even he could make a mistake in judgment. He had offered me a second engagement and I had to refuse. I told him that, on the advice of Mme. Schoen-René, my teacher, I was going to Salzburg to learn Octavian from its greatest interpreter, Gutheil-Schoder. Reiner said: 'You mean you're going just to study Octavian!' He told me not to waste my time. 'I admire and love the opera. But it has *no* chance of being a real success in this country!' He lived to eat his words. How many *Rosenkavaliers* I sang with him later!"

Had she ever wanted to sing the Marschallin? Many mezzos had graduated from Octavian to the Princess. "No. The only time I ever sang the music was at a party in Paris after the war. Germaine Lubin was there. She had suffered greatly. She had been accused of having been a collaborator during the war. Later she was cleared, but she was touchy and aloof. She had created the title role of *Rosenkavalier* in Paris and we persuaded her to sing. We sang together. First she sang the Marschallin and I did Octavian. Then she said 'let's switch parts' and we did. But it isn't for me. The Trio would have been much too difficult. There are some roles which are dramatically tempting but which are vocally beyond your reach, like Salome—as it is written. And I always wanted to do Evchen in *Meistersinger*, and Tosca!

"It is hard to learn to know what you can do and what you can't do, and to accept it. It is even unusual to find a conductor who knows what a singer should sing and shouldn't sing. Toscanini was perhaps the exception.

"Take Bruno Walter . . . One day at the beginning of my career—I was twenty-six or twenty-seven—I was living in California and Lotte Lehmann called me from her home at Hope Ranch in Santa Barbara. She asked me to lunch. 'Risë,' she said. 'Such a surprise for you. Please come over.

Bruno Walter will be here. We will have lunch and we'll swim. You'll be thrilled!' Of course I went and I was. Bruno Walter and his wife were there and Thomas Mann and his wife. After lunch Lotte said: 'Shall we go inside?' On the piano was a score. Bruno Walter sat down and opened it. It was *Fidelio*. Lotte, with Walter, had decided that I should be the next Leonora! Of course, it was impossible. The tessitura was too high.

"Also, if I had listened to Bruno Walter I would never have sung Carmen," said Risë who seemed made for the role in which she became famous. "Before I ever did Carmen at the Met Edward Johnson—I think it was he—said to me: 'Risë, speak to Bruno Walter. He will see you any time. He would like to hear you sing Carmen.' I went. Bruno Walter was at the piano. I jumped from one thing to another, recitative, the Habañera, the Séguedille. Then, in his gentle way, Bruno Walter stopped me. He closed the score and said: 'Risë, I do not think you will ever be a Carmen.'"

The telephone rang. It was about another of Risë's many activities, this time about the December Auction and Bazaar for the benefit of the Metropolitan, of which she was chairman. Contributions were pouring in. She herself was giving the worn leather riding crop she had always carried as the Rosenkavalier. "The last thing I would check before a performance at the Met were my sword and gloves and especially my riding crop. I was very superstitious about it. If I didn't find it at once I would have a fit. Jenny—she was the wardrobe mistress—would go crraazzy!"

A long working day over, President Stevens goes home and becomes Mrs. Surovy. If there are no social engagements (she tries to keep them to a minimum) she likes nothing better than a quiet evening with her husband. "I make dinner. I love to cook and I love to dream things up." She gave us a recipe for chicken breasts. "I love chicken," she said. It sounded mouth-watering and simple to do. But Risë Stevens makes everything she talks about sound interesting.

In this election year, when inarticulate, faceless candidates are floundering about trying to establish positive and persuasive images, we suggest they all go to school at Mannes and study the very model of a modern president, Risë Stevens. △

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were abbreviated, it would be good to have the speeches with music—and, at the least, a full libretto, which would tell us, for example, that the *andante maestoso* crescendo of No. 7 accompanies a tableau of a fine mist dispersing to reveal the town of Pesth.

The performance is first-rate: bold, arresting, and theatrical, from the first clarion calls to attention from the trumpets and the horns. Thomas seems to have got exactly the right timbres from the LSO, which plays in a very direct, candid, and "classical" way—plenty of punch, but no forcing of the tone and no Romantic fatness. The pretty "bridesmaids' chorus" *all'ongarese* goes with great charm; the graphic and picturesque qualities of the music are vividly presented. My only quibble is at the mannered *détaché* of some of the choral singing, when, in an effort to ensure clean articulation, the Ambrosians seem to be imitating the pizzicato of their accompaniment.

King Stephen is a score to value. So is *The Ruins of Athens*, which fills the other side on the Turnabout and Hungaroton discs. The choral works on the other side of the new Columbia are less remarkable, but at any rate three of them fill a gap in the catalogue. The *Elegiac Song*—which should surely be done by four voices, not a chorus—needs more *sostenuto*, more *legato* singing than it receives here. The *Opferlied* is somewhat in the vein of Elisabeth's prayer in *Tannhäuser*. The *Bundeslied* is rather a bore—four square identical verses, with wind accompaniment, and then a fifth with protracted cadences that the first clarinet festoons with arpeggios.

*Becalmed Sea and Prosperous Voyage* is also available in a Boulez performance (Columbia M 30085), as a filler to the Fifth Symphony; another, by Leitner, was until recently available in one of DG's Beethoven Edition boxes. (I amend the customary English translation of the title because, as Tovey put it: "*Calm Sea* misses the point and suggests the poor landlubber's *sine qua non* for a prosperous voyage.") The "becalmed" section comes off none too well, because the Ambrosian sopranos' high A's are rather scrawny and the choral chording is not always precisely tuned. But Thomas is very good at raising the wind—first freshening little zephyrs and then a good, stiff blow that brings the vessel and its crew bounding exultantly into port.

Texts and translations are provided, but not in parallel columns. Three Kalmus pocket scores, Nos. 433, 439, and 1019, contain all the music. A.P.

**In quad:** The sound is reasonably spacious without being obtrusively (or memorably) quadriphonic. R.L.

**Blow:** Coronation Anthems; Symphony Anthems. Soloists: King's College Choir, Cambridge; Academy of St. Martin-in-the-Fields, David Willcocks, cond. ARGO ZRG 767, \$6.98.

If Handel's magnificent but peculiarly English anthems are somewhat removed from us, even when performed by a good mixed choir, how much more so the Restoration anthem, with its boys, countertenors, and falsettists. John Blow (1649-1708) was an in-



Columbia Records

Michael Tilson Thomas  
A Beethoven score to value.

fluent composer of modest and very uneven talent. Among his many routine and lifeless works there are some fine songs and motets, a nice masque, and the first English opera, *Venus and Adonis*. The anthems recorded here are not outstanding works; Blow being basically a lyricist, the large form and the ostentatious splendor of the coronation anthem, so congenial to Handel, did not suit him. Though there are interesting moments, on the whole one's attention is soon exhausted.

The performances, however, must share the blame. The ensemble of boys, countertenors, and tenors, with lesser roles for the basses, is not a ravishing one, but I hasten to say that the boys of the King's College Choir turn in by far the best performances. Boy trebles and altos are often glassy and innocently expressionless, but how glorious the youngsters sound here compared to the voices, lacking both color and resonance, of the countertenors and the cautious tenors. Caution (or is it a tradition unknown to us?) characterizes the whole production. The lovers of "historical accuracy" à outrance will have a field day, but we commoners are left longing for a little substance, color, and bite. P.H.L.

**B** BRAHMS: Concerto for Violin, Cello, and Orchestra, in A minor, Op. 102.\*  
SCHUMANN: Fantasy for Violin and Orchestra, in C, Op. 131.\* Ruggiero Ricci, violin; George Ricci, cello\*; New Philharmonia Orchestra\* and Leipzig Gewandhaus Orchestra\*, Kurt Masur, cond. [Robert Auger, prod.] TURNABOUT TV-S 34593, \$3.98.

Comparison—Brahms:  
Ferras, Tortelier, Kletzki

Sera. S 60048

The major attraction here is the filler work, Schumann's rarely heard fantasy for violin and orchestra, a late-period composition full of brooding intensity but offset by enough airy brightness and humor to keep it memorably afloat. Those with an aversion to late Schumann are advised that the writing is at times quirky, that developmental passages are typically cryptic (some will say "disjunct"), and that Schumann's scoring frequently favors somber mass over detail. Still, the fantasy is a stronger work than the D minor Violin Concerto, and the solo line cuts through the thick symphonic

backdrop with more effectiveness than is sometimes the case with the two *Konzertstücke* for piano and orchestra. Ruggiero Ricci's clear, rather acerbic, knife-edged style helps in that respect, and his unsentimental phrasing is just what the piece needs. Kurt Masur and his distinguished Leipzig Gewandhaus Orchestra provide memorable, granitelike solidity in the best "traditional" manner. (The fantasy is most often heard in an edition by Fritz Kreisler; in the absence of any indication from Turnabout to the contrary, I assume that Ricci uses the original version.)

There is nothing actively wrong with the Brahms double concerto, though the soloists are a bit wiry and, in the slow movement, a shade sentimentally hairpin-prone. The tempos, slow to begin with, are not ideally sustained; phrasing tends to chopiness. The New Philharmonia plays well but doesn't match the solidity that Masur gets from his own orchestra in the Schumann. The more sonorous Seraphim version by Ferras, Tortelier, and Kletzki, taken at similarly deliberate tempos, is more of a piece interpretively, and indeed it holds its own against the full-priced versions.

Get this well-recorded disc for the Schumann, though; you will find the fantasy well worth knowing. H.G.

**BRAHMS:** Sonata for Piano, No. 3, in F minor, Op. 5; Rhapsody in G minor, Op. 79, No. 2. Bruno Leonardo Gelber, piano. CONNOISSEUR SOCIETY CSQ 2084, \$6.98 (SQ-encoded disc).

There is little evidence here of the affinity for Brahms that the Argentine-born Gelber showed in his Odeon recording of the First Concerto. The structure of the sonata is constantly weakened by spasmodic little agitations and holdbacks. The line usually goes limp at lyrical second-theme groups, and the commanding material of the opening sounds thin and percussive. There are occasional hints of imaginative voicing, but for the most part this is a petulant, fidgety reading of music that must be big and freewheeling.

I see no point in recommending this disc with superlative accounts of the sonata readily available from Arrau (Philips 6500 377), Rubinstein (RCA LSC 2459), and Curzon (Stereo Treasury STS 15272). At budget price, the latter is an outstanding bargain. H.G.

**B** CHOPIN: Waltzes (18). Aldo Ciccolini, piano. SERAPHIM S 60252, \$3.98.

This edition of the waltzes would be outstanding even at full price. Ciccolini, a superbly aristocratic artist, strikes an almost perfect balance between metric regularity and caressing leeway. He commands a fastidious, silken *legato* and is capable of a ravishing *pianissimo*, which he uses here appropriately and often. His fingerwork glistens, and the difficult passagework has a brilliant, slightly dry, sparkling quality. Most of the tempos tend toward briskness. As a result, the music sounds airborne but never rushed. Along with the elegance and facility go many sparks of drama and memorable individual turns of phrase:

note, for instance, the wide dynamic range and incisive little spurts in the E minor Waltz, No. 14 of the standard set.

Ciccolini plays four of the five posthumously discovered pieces included in the excellent Henle edition (omitting only No. 17) and follows the Henle sequence, which places two of the added pieces before No. 14. Like Abbey Simon (who recorded all nineteen waltzes on Turnabout TV-S 34580, November 1975), Ciccolini sticks basically to the Fontana text in those waltzes for which Henle gives both Fontana and the substantially different manuscript version.

The sound is bright and glistening. Altogether, a wonderful record, and one to set alongside those of Lipatti (*Odyssey* 32 16 0058), Haas (Epic and Mercury Wing, deleted), and Rubinstein (RCA LSC 2726). Simon, while not quite in this class, is a worthy contender if you desire all nineteen waltzes.

H.G.

**DALLAPICCOLA:** *Il Prigioniero*. For a feature review, see page 78.

**DEBUSSY:** *Orchestral Works, Album 6: La Boîte à joujoux; Printemps*. Orchestre National de l'ORTF, Jean Martinon, cond. [René Chalian, prod.] ANGEL S 37124, \$6.98 (SQ-encoded disc).

**Comparisons:**

Ansermet (same coupling)  
Boulez (*Printemps* only)

St. Tr. STS 15042  
Col. M 30483

This final disc in Angel's successful traversal of "The Orchestral Music of Debussy" is not strictly "orchestral Debussy," but then nobody has come up with a satisfactory definition of just what does constitute Debussy's "orchestral works." The symphonic suite *Printemps* was originally a choral piece by the then twenty-five-year-old composer, which won a Prix de Rome but was subsequently destroyed by fire; it came into its present form in 1913 through the ministrations of Henri Busser. In that same year, Debussy finished the two-piano sketches of his children's ballet *La Boîte à joujoux* but somehow left the orchestration to be completed by André Caplet.

No matter such quibbling. All's well that ends well, and Martinon's series certainly does, with a worthy rival for Ansermet's disc of these charming and effectively scored works. The latter now costs only about half as much as the new record, but the 1958 sonics, though perfectly clear, are in truth a bit dry and boxy. Angel's sound is brilliant and spacious, with quite impactful bass transients.

Martinon presents *La Boîte à joujoux* with a vividness of characterization wanting in Ansermet's more reserved and steadily controlled interpretation. Yet the latter has a jeweled subtlety, a lilting reticence that is enduringly magical, and the *Suisse Romande* oboes are more plaintive than their Parisian counterparts.

In *Printemps*, however, Martinon is decisively most successful in capturing the frequent shifts of motion and thus expression. Boulez (coupled with the *Nocturnes* and the clarinet rhapsody) is even more rigidly metronomic than Ansermet, though he does bring a degree of point and swagger to the final dance tune that neither Ansermet nor

Martinon matches. Also, the Columbia version is played with the most sensitive ensemble discipline and balance of the three; note, for example, the doubled flute and piano of the opening. On Angel, some of the more climactic textures are a bit blurred in the live ambience of the Salle Wagram. You may not, in short, find any of the three the perfect realization of the music, but neither can you go far wrong.

A.C.

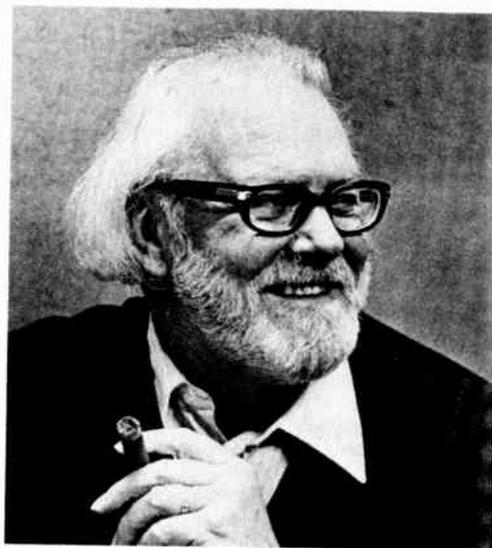
**DELIUS:** *North Country Sketches; Life's Dance; A Song of Summer*. Royal Philharmonic Orchestra, Charles Groves, cond. [John Willan, prod.] ANGEL S 37140, \$6.98 (SQ-encoded disc).

*North Country Sketches* is a de facto *Four Seasons*, conveying to this hearer the individual ambience of the times of year even more vividly than the corresponding works of Vivaldi, Haydn, Milhaud, Glazunov, et al. The first section, "Autumn—the wind sighs in the trees," is set for the darker colors of the orchestra and keeps modulating downward, with outbursts of sobbing and wispy melodic disembodiments. The second section, "Winter Landscape," is a series of bleak pronouncements in icy, blocklike harmonies against a mockingly simple four-in-a-bar accompaniment. "Dance" may not explicitly mention summer, but its bright and delicate pastel shades and the lazy mazurkalike rhythm leave little doubt of the warm indolence in the air. The finale, "The March of Spring," travels incognito as a typically Delian, rhapsodic stream of consciousness but is actually a skillfully tailored set of variations, the theme of which—a majestically swaggering outburst of British chauvinism—unfurls itself only at the end.

Charles Groves, conducting the same orchestra that made the previous recording of the *North Country Sketches*, under Beecham (now on *Odyssey* Y 33283, with *Appalachia*), provides a meaningful alternative to that two-dozen-year-old classic. The differences in approach are threefold: Groves maintains great metrical constancy rather than Sir Thomas' more flamboyant rubato; Sir Charles builds climaxes sparingly while Beecham allowed a headier dynamic range; and the engineers or performers on the new recording have balanced choirs more evenhandedly, in contrast to the prevalent upper-voice leading of their predecessors, thus laying bare more of the harmonic values. I find both ways effective and suited to the piece.

The second side of this Angel issue offers two scores for which there is no competition from Beecham. Though Sir Thomas never recorded *A Song of Summer*, Barbirolli did—twice (most recently in a Delius-Bax-Ireland collection on Angel S 36415). Groves's gentle, carefully sustained molding of the idyllic still-life scene is, however, as perfect a rendition as I could care to imagine.

For some reason, nobody has ever before recorded the 1912 *Life's Dance*—even though most books and articles on Delius mention it as an important composition and one that he twice revised before being finally content. The original title was *The Dance Goes On*, and the work has a whirling and obsessive propulsiveness (mixed



Barda

Charles Groves

A major addition to Delius' discography.

with more reflective interludes) that will remind some of the Liszt *Mephisto Waltz*, except that Delius' music always has an inner intensity I rarely find in Liszt. The orchestration is bold and incisive, and Sir Charles and the RPO have a fine time with it.

This major addition to the Delius discography is well recorded and pressed. The jacket features excellent notes by Eric Fenby (who else?) and a beguiling color photo of the Yorkshire countryside. If I can't go there in fact, at least Delius' music takes me there in spirit.

A.C.

**In quad:** This is the kind of sound one has grown used to in basic quadriphonic. Instruments are well defined at the front, and there's lots and lots of hall ambience at the back. If any music thrives on such lush, sensuous sound, it is that of Delius. Delightful.

R.L.

**DVOŘÁK:** *Symphonies: No. 7, in D minor, Op. 70\*; No. 9, in E minor, Op. 95 (From the New World)\**. Czech Philharmonic Orchestra, Václav Neumann, cond. VANGUARD/SUPRAPHON SU 7\* and SU 8\*, \$3.98 each.

Supraphon's new cycle of the Dvořák symphonies under the admirable direction of Václav Neumann has appeared in its entirety abroad; now Nos. 7 and 9 join No. 8 (SU 2, February 1974 and May 1975) in the domestic catalogue.

No. 7 gets a particularly impressive reading, which combines the brooding light and shade of the "traditional" approach (e.g., Talich's 78s and Sejna's early LP) with the taut discipline and precision of interpretations like Szell's (in Columbia D3S 814) and Rowicki's (Philips 6500 287). Neumann secures clear, precise execution and a great deal of balanced clarity—no small feat in this thickly scored work. But for all the punctiliousness (especially welcome is the straightforward phrasing of the last movement's second theme, which so many conductors heave and haul with lavish rubato) the over-all impression is one of rustic geniality. The wind playing is particularly poetic and memorable.

The *New World* follows a similar path but doesn't generate sufficient vitality on the one hand or burnished lyricism on the other. Again the lines are smooth and long, the orchestral playing both precise and tonally attractive, yet somehow I miss the exciting crack of the whip almost from the outset—for instance, in the introduction's low-strings-and-percussion answering motif. Nor is the famous Largo as eloquently rendered as in the wayward but very special Kubelik/Berlin performance (DG 2530 415). For the record, Neumann does not take the first-movement repeat, which does not bother me.

As usual with Supraphon's best orchestral work, the engineering is long on ambience without sacrificing detail; all the instruments sing out with just enough air around the choirs. Vanguard's pressings are altogether smoother than the Czech original of No. 8 (the only one of these I have heard), and Lois Gertsman's balanced, succinct notes unearth some interesting details concerning Dvořák's appointment at New York's National Conservatory of Music. I hadn't known, for example, that it charged only what students could pay and provided many scholarships to blacks. H.G.

**HANDEL:** Chandos Anthems: No. 2, In the Lord put I my trust; No. 5, I will magnify Thee. Caroline Friend, soprano; Philip Langridge, tenor; King's College Choir, Cambridge; Academy of St. Martin-in-the-Fields, David Willcocks, cond. [Chris Hazell, prod.] ARGO ZRG 766, \$6.98.

Though some writers, especially the Germans, consider Handel's *Chandos* Anthems an Anglicized version of the German cantata style that Zachow taught to his young pupil in Halle, they are anything but the Lutheran cantor's art. In fact, these works, undoubtedly influenced by some of Blow's and Purcell's anthems, represent a unique, thoroughly English species of church music, dynastic and ceremonial, here pastoral, there dramatic, but without the profound Christian commitment we associate with Bach's cantatas. The Established Church was at this period a worldly, political organization, and the eighteenth-century Englishman was partial to the Old Testament, because he regarded the English as another chosen people, with the Lord invariably and victoriously on their side.

The *Chandos* Anthems express this spirit to perfection and are firmly part of the English tradition, for which reason they are little understood and appreciated elsewhere, even in the other English-speaking countries. It follows that the comparisons with Bach must be severely limited, for both the spirit and the techniques employed are worlds apart. These anthems are somewhat uneven, a number of the arias not quite reaching the high level of the choruses, and at times there is a dutiful but not very exciting choral fugue, but all of them contain great music, and some, like the eighth anthem, belong to the glories of the literature. And, of course, it was in these compositions that Handel laid the foundation for the grandeur of the choral style better known from the oratorios.

The texts of the anthems recorded here, Nos. 2 and 5, are culled from several psalms.

Handel was no mean Biblical student and usually selected his passages from the Bible or the Book of Common Prayer himself. But the selections were made on a dramatic, not a theological, basis; Handel wanted contrast and a variety susceptible to musical exploitation.

Both works have borrowed music, mainly from Handel's earlier—or later—music; at times it is difficult to ascertain which version comes first. But it does not matter; Handel's transplanting technique is phenomenal. When he borrows anything, from a cadence to a whole piece, from his own or from another composer's music, the transplant as a rule appears natural and particularly suitable to its new surroundings. Nineteenth-century historians and critics were terribly embarrassed by what they considered plagiarism on the part of England's national musical hero, some angrily declaring that a theft is a theft whatever the name applied to it. They did not yet know that the sainted Bach borrowed just as much as Handel—or any other baroque composer. After all, both Handel and Bach (who, by the way, purloined a bit from the sixth *Chandos* Anthem for his *St. Matthew Passion*) could compose "new" music at the drop of a hat; but, in accordance with baroque musical aesthetics, if some existing music was just right for the occasion, they made use of it no matter where it came from.

This recording is disappointing. A pall of emotional restraint, almost neutrality, hangs over what should be healthy, warm, and extroverted music. Everything is done diligently and conscientiously; why, the performers even sing Handel's misspellings rather than make the obvious changes (but the text is printed correctly!). Willcocks also retains the aria "Happy are the people," which scarcely belongs in the fifth anthem; it is markedly inferior to the rest, and there are no reliable sources for it. The boy trebles, though good, are by nature colorless, and they cannot muster enough volume when singing in low positions; whenever this happens there is imbalance in the choral sound. The pace and the dynamics are monotonous. There is no excitement and little drama, only a performance that is correct and competent (words whose import in critical vocabulary differs from their meaning in ordinary parlance).

Of the soloists, tenor Philip Langridge is a valiant singer, but his voice has a limited sensuous appeal; these arias are Italianate and require bel canto warmth. The soprano, Caroline Friend, is timid and wobbles a little; even a gentle aria calls for a round and colorful voice, and she shows little individuality. The orchestra is good, and the sound better than average.

All concerned, beginning with the conductor, misread the tone and quality of this marvelous music, which is quite surprising coming from an all-English ensemble. They usually know from long-embedded tradition that, unlike the German Lutheran, who beseeches the Lord, the Anglican informs Him of the situation, asking for ratification. And no one embodied this confident and proud spirit more convincingly than the naturalized Briton from Halle. P.H.L.

**HONEGGER:** Symphonies: No. 1; No. 4 (*De-*

*liciae basiliensis*). Czech Philharmonic Orchestra, Serge Baudo, cond. [Eduard Herzog, prod.] SUPRAPHON 1 10 1536, \$6.98.

Comparison—Symphony No. 1: Inédits ORTF 995 042  
Tabachnik/Orch. National Comparisons—Symphony No. 4: Mus. Her. MHS 981  
Munch/Orch. National Ansermet/Suisse Romande Lon. CS 6616

Although the Swiss-born Honegger had much stronger ties to the Germanic tradition than did his cronies of Les Six, he did not begin his First Symphony until 1929 (his first catalogued work dates from 1910). Commissioned by Koussevitzky and the Boston Symphony and completed in 1930, Honegger's first effort at "absolute music" for full orchestra has been overshadowed by his four later symphonies; its premiere recordings appeared only recently.

True, the First Symphony lacks the expressive depth of its successors. And its musical language hardly makes for "easy" listening. Particularly in the first movement, Honegger applied to a wholly abstract context the "futuristic" writing familiar from *Pacific 231* (1923): the marcato rhythms, harsh dissonances, marked instrumental contrasts, and thick-textured contrapuntal writing (including, in the middle of the first movement, a fugue hidden amidst other goings-on). But any deficiencies are largely offset by the pure energy of the first and third movements, the rhythmic and instrumental inventiveness and the wistful lyricism of the second, and the occasionally jazzy exuberance of the fourth.

The Fourth Symphony, one of Honegger's most warmly lyrical creations, contrasts strikingly not only with the First, but with the bleakly pessimistic Second (1941) and Third (1945-46) as well. Inspired by the "delights of Basel" and dedicated to Paul Sacher and the Basel Chamber Orchestra, the Fourth moves between a feeling of calm, pastoral nostalgia and a folk-inspired jocularity that can be heard especially in the third movement. The orchestral ambience is also much more placid and chamberlike than that of the First, though individual instruments like the piano are used to good effect.

This Supraphon disc belatedly completes Baudo's traversal of the Honegger symphonies. (Nos. 2, 3, and 5, along with *Pastorale d'été*, *Chant de joie*, and *Pacific 231*, were released domestically some years back on two Crossroads discs. All three discs have been boxed in a German set, Eurodisc/Supraphon 87 601 XK.) In both works, Baudo gives very good performances that do not quite measure up to the competition. Tabachnik's First Symphony for Inédits ORTF features fuller, deeper recorded sound and a better orchestra with a larger string section, a vital element in all of Honegger's orchestral works. Furthermore, the Tabachnik disc offers the only recordings of the marvelously dynamic "mimed symphony" *Horace victorieux* (1920-21) and the rarely heard *Mouvement symphonique* No. 3. In fact, though, neither recording of the First does the work full justice; especially in the final two movements, my standard remains a concert performance by Munch and the Boston Symphony.

Munch did record the Fourth, and his account, with the indispensable Dutilleux *Cinq Métaboles*, is one of the gems of the Musi-

cal Heritage Society catalogue. Ansermet's Fourth has the best sound, and its coupling is a searing performance of the Third Symphony. The Supraphon disc, however, performs an invaluable service by providing relatively convenient access to the First Symphony, in a quite satisfying interpretation. Unfortunately the Czech-pressed disc serves the efforts of Baudo and the Czech Philharmonic markedly less well than the German-pressed set noted above.

R.S.B.

**KORNGOLD: Die tote Stadt, Op. 12.**

Marietta; Marie  
Juliette  
Lucienne  
Brigita  
Paul  
Gaston; Victorin  
Count Albert  
Frank  
Fritz

Carol Neblett (s)  
Gabriele Fuchs (s)  
Patricia Clark (s)  
Rose Wagemann (ms)  
René Kollo (l)  
Anton de Ridder (l)  
Willi Brokmeier (l)  
Benjamin Luxon (b)  
Hermann Prey (b)

Tölz Boys' Choir; Bavarian Radio Chorus and Orchestra, Erich Leinsdorf, cond. [Charles Gerhardt, prod.] RCA RED SEAL ARL 3-1199, \$20.98 (three discs, automatic sequence). Quadriphonic: ARD 3-1199, \$23.98 (three Quadradiscs).

As a great fan of Erich Wolfgang Korngold's film music, as well as what concert music I have heard (including the violin concerto and the powerfully dramatic symphony), I must confess to great disappointment in his first large-scale opera *Die tote Stadt* (*The Dead City*), completed in 1920 when he was twenty-three. Not that the music is all that bad, although little of it has the appeal of many of the composer's other works, but it is by and large bad music drama.

Based on *Bruges la Morte* by the nineteenth-century Belgian symbolist Georges Rodenbach, the libretto concerns itself, in classic symbolist fashion, with death and absence, here in the form of an obsession with a dead woman and her reincarnation in an earthly double. Typically—and essentially, for the metaphysics involved—the tale ends in the triumph of the nonflesh, of nonpresence, of death.

Yet this "reworking" of *Bruges la Morte* represents a classic case of pre-Hollywood Pollyanna-ism. By using the gimmick of putting the "negative" part of the story into a dream, the libretto is able to justify the final conversion of the hero to the forces of life. Christopher Palmer, in his long apologia in RCA's extensive booklet, states that the librettists were trying to avoid the "exclusivity," whatever that means, of the symbolist aesthetic (which is hardly "exclusive" to France). But either you work within the limits of a certain domain envisaged by an author or you turn to a different writer; by tacking a happy ending onto Rodenbach's lugubrious vision, and by applying a nicely Germanic, logical distinction between "real" life and dream to a work that assumes an ambiguity between the two, the libretto very simply emasculates the work's narrative as well as its thematic impact.

Unfortunately, the operatic style seconds almost every step of the way the librettists' nonconception of the story. Perhaps the tale does not need a Debussy (who knew and admired Rodenbach), although the possibility, suggested by Palmer, is intriguing.



S. Hurok

Carol Neblett  
*A skillful, dynamic Marietta/Marie.*

But I was constantly dumbfounded by how badly Korngold's swirling flourishes and fortissimo emphases capture the mood indicated by the stage directions or even by the words that are being sung. Indeed, Korngold time and again has his singers pompously declaiming lines that seem to call for startled understatement, his orchestra thumping away with histrionic punctuation where one would want a *misterioso* feeling.

It is all rather like Richard Strauss *manqué* (notwithstanding producer Charles Gerhardt's protestations to the contrary in the booklet), with all the Straussian grandiloquence but none of the mood (and I am not one of Strauss's greatest fans). Perhaps the greatest problem is the writing for the main character, Paul, who carries at least 60% of the burden. Korngold's strategy for communicating the torment of an obsessed, death-oriented soul is a series of exclamations at roughly the volume level of a New York subway. Perhaps I am overreacting to René Kollo's grating performance—colorless, strained, wobbly, and, to make matters worse, too closely miked. But surely some of Kollo's difficulties relate to the writing itself, both verbal and musical.

The other singers and the orchestra make an excellent impression. Soprano Carol Neblett's diction may not be perfect, but I would rather hear her rich, fluid voice singing nonsense syllables than hear Kollo bleating perfect German. Beyond the ingratiating ease of Neblett's vocalism, there is a skillful and dramatic use of dynamic and timbral contrast, the voice subtly changing hue as it moves from range to range. Fortunately Marietta/Marie has much of the opera's best vocal writing, including the Act I "Lute Song."

It is, however, the orchestra that proves the opera's most interesting character—not in a dramatic way, but in the manner of a talented acrobat performing skillful, even graceful, feats above the stage to distract the audience from a boring melodrama. Although here and there I note a certain stodginess characteristic of Leinsdorf performances, in general he elicits crisp and sonorous playing from the orchestra, and most of the opera's best moments (concentrated in Act II) belong to the instrumental-

ists. With respect to orchestral idiom, though in no other respect, I can agree with Gerhardt that Korngold's thoroughly original style has nothing to do with Strauss's (or, for that matter, with Puccini's, another often suggested influence).

As producer of this recording, Gerhardt is the nearest thing it has to a hero (despite the overmiking of Kollo). The orchestral playing is reproduced with that special luster familiar from the recordings he and his frequent collaborator George Korngold have made for RCA. At least the most attractive aspects of *Die tote Stadt* have been done full justice.

R.S.B.

**LISZT: Hungarian Rhapsodies (5).** Claudio Arrau, piano. DESMAR DSM 1003, \$6.98 (mono) [from COLUMBIA originals recorded 1951-52, previously unreleased].

No. 8, in F sharp minor; No. 9, in E flat; No. 10, in E; No. 11, in A minor; No. 13, in A minor.

One of the most inspired repertory adventures of the brand-new Desmar company was obtaining from the International Piano Archives the rights to issue for the first time these recordings, made in 1951-52 for Columbia but inexplicably never released by that company.

If you're already an Arrau fan, you'll remember that he studied with one of Liszt's own last pupils, Martin Krause, that he first won the prestigious Liszt prize at the age of only sixteen, and that at least three of his current Philips releases are devoted to Liszt originals (802 906 and 6500 043) and transcriptions (6500 368). A hasty check of his earlier discography doesn't turn up any other *Hungarian Rhapsodies*, which enhances the value of the five present examples. They become well-nigh invaluable, however, for both the gusto and the magisterial bravura with which the Arrau of nearly twenty-five years ago endows these pianistic showpieces. And, what is far more unexpected, the recording itself not only does full justice to Arrau's robustly ringing tonal qualities, but also achieves (despite its rather dry acoustical ambience) a truly remarkable presence.

If there are more such gems as this in the International Piano Archives, Desmar (or IPA itself) can do keyboard connoisseurs an incalculable service by prying them from the vault.

R.D.D.

**MAHLER: Symphony No. 5, in C sharp minor; Kindertotenlieder\*.** Christa Ludwig, mezzo-soprano\*; Berlin Philharmonic Orchestra, Herbert von Karajan, cond. [Hans Hirsch and Hans Weber, prod.] DEUTSCHE GRAMMOPHON 2707 081, \$15.96 (two discs, manual sequence).

*Comparisons—symphony:*

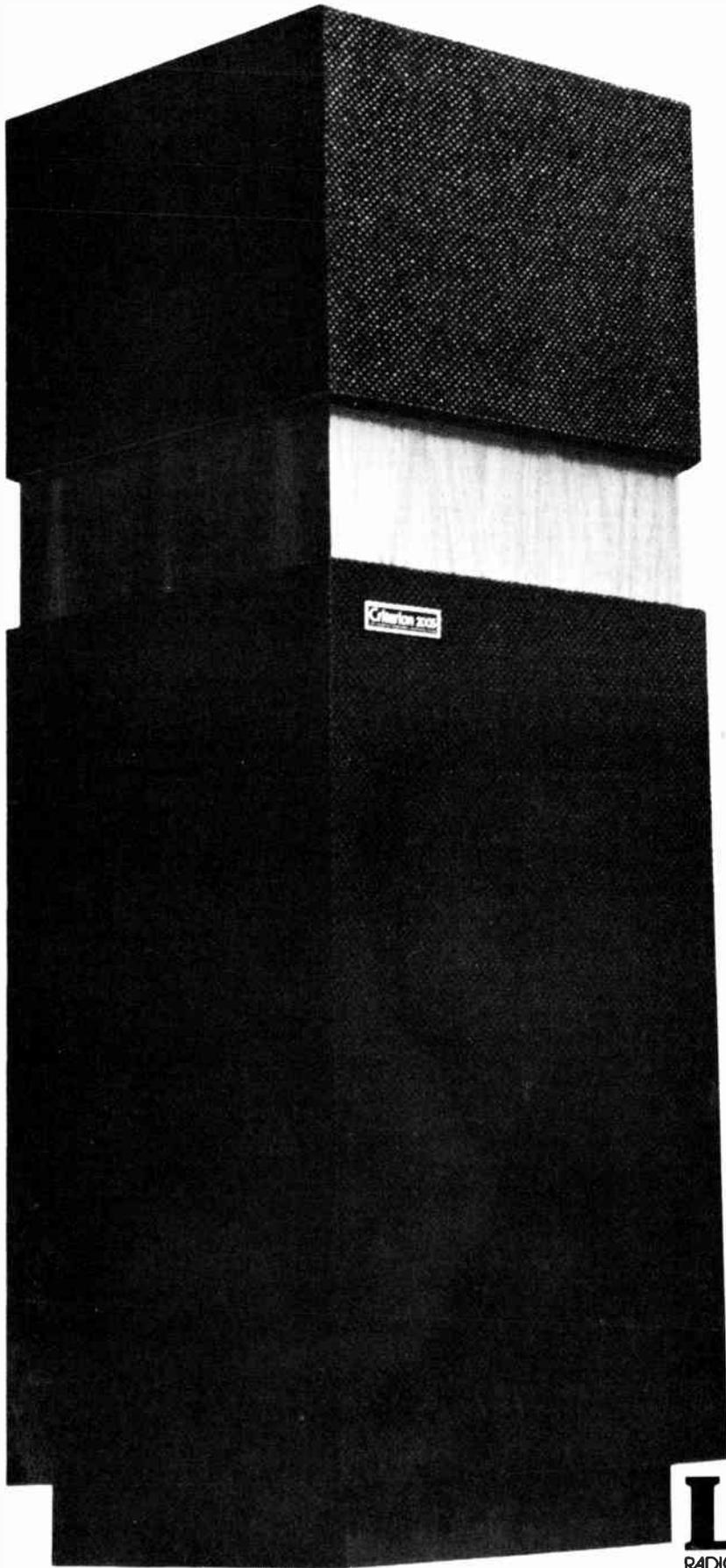
Solti/Chicago Sym. Lon. CSA 2228  
Walter/N.Y. Phil. Odys. 32 26 0016  
Bernstein/N.Y. Phil. Col. M25 698  
Haitink/Concertgebouw Phi. 6700 048

*Comparisons—Kindertotenlieder:*

Ludwig, Vandernoot/Philharmonia Sera. S 60026  
Baker, Bernstein/Israel Phil. Col. M33532  
Ferrier, Walter/Vienna Phil.

Odys. 32 26 0016 or Sera. 60203  
Prey, Haitink/Concertgebouw Phi. 6500 100

The belated Karajan-Mahler matchup (this is likely the beginning of an eventual cycle; due shortly is *Das Lied* with Ludwig and Kollo, with the Rückert-Lieder on Side 4) is



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JANUARY 1976

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an incongruous one. Could any conductor be more removed—stylistically and temperamentally—from the world of the Bohemian Jew and his barbed ironies?

This Fifth does sound like an external conception, rather than one evolved through long and intimate involvement with the music and its ambience. The reading is often fanatically literal-minded, yet without apparent comprehension of the composer's intent. The ending of the first movement is marked with a progressive diminuendo; the final *ppp* stroke of the bass drum is virtually inaudible. Conversely, when the Adagietto reaches *fff*, the Berlin strings scream wildly. The marking "somewhat more restfully" for the triolike section of the Scherzo brings violin playing that is oily and effete. Tempo relationships are exaggerated, notably in the Scherchen-like contrast of the three basic pulses of the opening funeral march. Mahler's piano roll of this movement (and Solti's set, among modern recordings) attests that the point can be made more discreetly.

There is much, too, that Karajan misses altogether in this performance. In the second movement, tempo indications from No. 13 through the end are ignored or distorted, so that the basic structure is pulled out of recognizable shape. (It is, though, a series of grand and hyperbolic dramatic gestures.) Karajan fails to join the Adagietto and finale, as indicated by the score's *attacca*, and in the finale he falls into the frequent trap of anticipating by several pages the *pesante* slowdown actually called for six bars after No. 33: The instrument used in the Scherzo sounds like no woodblock I've ever heard, but something more metallic. There are also minor blemishes in playing and balance.

In fairness, there are exciting and intense things in Karajan's Fifth including much brilliant playing, and no recording is perfect. (There is indeed such interpretive latitude in the piece that over-all timings range from Karajan's 74 minutes to Abravanel's 61.) Yet Solti's has for me the most legitimate and vivid drama and virtuosity, along with spectacular engineering. Both New York performances, Walter's and Bernstein's, contain more humanity and warmth, with a genuinely Viennese lilt in the Scherzo. Haitink best explicates the contrapuntal rigors and orchestral shading of this most "absolute" of Mahler's scores.

Christa Ludwig's earlier *Kindertotenlieder* is still available and at the Seraphim price easily constitutes the best coupling by a female singer of this and the *Wayfarer Songs*. Still admirable are the warmth and urgency, the superb projection of the text, and the driving and haunted intensity of the rapidly moving final song ("In diesem Wetter"). But time has taken some of the bloom from her vocal equipment: some hardening of the tone, a biting off of consonants at phrase ends, a shade less finely spun legato. For many, DG's more transparent and open sonics will compensate, and Karajan steers the ship more confidently than Ludwig's earlier conductor, Vandernoort. On the other hand, some of the Berliners' playing strikes me as less idiomatic than the Philharmonia's—the oboes, for example.

There is a rich choice of first-rate recordings of this intimate and heartbreaking cycle. The recent Baker/Bernstein (October

1975) is a grand, flowing, darkly passionate performance, but both Ludwig and Baker must still be judged by the standard of Kathleen Ferrier, whose eloquent presentation of this music with Walter and the Vienna Philharmonic is available on Odyssey as the filler for Walter's Fifth Symphony and on Seraphim in a Ferrier miscellany (to mention only current domestic issues). One copy may be enough, but don't settle for less than that!

Still, I would suggest that one's first *Kindertotenlieder* should be a man's recording; the cycle is about a father's grief, and both poet and composer were fathers. As I find both of Fischer-Dieskau's recordings too calculated and self-admiring, my choice would be Prey/Haitink, for the simple and unpretentious clarity and ease of the singing, the ideal pacing, the plangently expressive first-desk work of the Concertgebouw, and the technical splendor of the recording. A.C.

**MEYERBEER: Songs.** Dietrich Fischer-Dieskau, baritone; Karl Engel, piano. [Andreas Holschneider and Cord Garben, prod.] ARCHIV 2533 295, \$7.98.

*Menschenfeindlich; Hör' ich das Liedchen klingen; Die Rose, die Lilie, die Taube, die Sonne; Komm; Der Garten des Herzens; Sie und ich; Sicilienne; Ständchen; Die Rosenblätter; Le Chant du dimanche; Le Poète mourant; Cantique du Trappiste; Scirocco; Mina.*

Our long-standing gratitude to Dietrich Fischer-Dieskau for his unceasing efforts to enlarge the boundaries of song literature falters in the face of the present record. Meyerbeer's songs prove banal in the extreme, and Fischer-Dieskau's performances seem calculated to underline their weaknesses.

All fourteen titles come from the collection of *Forty Songs* (French and German), published in Paris in 1849, and fall into two categories: lyric pieces (a sicilienne, a serenade, a gondolier's ditty, and various nature pieces, including settings of Heine's "Hör' ich das Liedchen klingen" and "Die Rose, die Lilie") and more dramatic effusions, like the long "Cantique du Trappiste" and the even longer—indeed, endless-seeming—"Le Poète mourant," which is really a pictorial scena. All are essentially strophic in form, even "Le Poète mourant," which makes use of a contrastingly freer introduction and conclusion. To the danger of boredom inherent in melodic repetition Meyerbeer was by no means deaf. To accommodate changes in mood and verbal sense he is quick to vary both the vocal line and the piano accompaniment, and in search of dramatic expressivity he is not afraid to employ some surprisingly bold modulations.

These songs, in other words, are by no means the products of an insensitive hack. Meyerbeer was indeed a hack, but an acutely sensitive one. He meant well enough, but he simply lacked the requisite inspiration. One hardly needs to invoke the genius of Schumann in the case of the two Heine poems referred to above to realize how vapid and contrived Meyerbeer's lyric talents were. His lack of melodic inspiration is immediately and equally apparent from such pieces as the quick and playful "Scirocco" and the lugubriously sanctimonious "Le Chant du dimanche."

Fischer-Dieskau takes up the composer's cause as if performing a painful duty. All the recent mannerisms that have proved so disconcerting to his old admirers are present here: violent dynamic shifts, sudden bursts of vehemence, the arbitrary emphasis of a single word, long stretches of singing under the note. New to my ears and equally unbearable is Fischer-Dieskau's tendency in legato singing to omit troublesome consonants and to swallow unaccented syllables.

Karl Engel plays well, though the recording unduly minimizes his share in these proceedings.

Disconcertingly enough, the texts—all given in English, French, and German—are printed in an order different from that in which they are sung. In the two cases where Meyerbeer used French versions of German poems Archiv offers English translations of the German originals rather than translations of what the composer actually set, though the differences, especially in the case of "Le Chant du dimanche," are considerable. D.S.H.

**MOZART:** Piano Works. Michael Cave, piano-forte. ORION ORS 75185, \$6.98.

Adagio in B minor, K. 540. Sonatas: in D, K. 311; in B flat, K. 333. Variations on Paisiello's "Salve tu, Domine," K. 398.

The period pianoforte in these performances has a mellow, resonant sound below and the characteristic harpsichordlike twang in the higher reaches. Michael Cave's performances are facile and musically, achieving most admirable results in the impassioned B minor Adagio. Sometimes, especially in the development section of K. 333's slow movement, he bears down rather heavily and squarely on the writing, possibly to suit the instrument.

For both playing and listening to this music, I much prefer a conventional concert grand. For starters, try Gieseeking (Sera- phim) or Kraus (Odyssey). H.G.

**MOZART:** Thamos, König in Aegypten (incidental music), K. 345 (with Symphony No. 26, in E flat, K. 184). Karin Eickstaedt, soprano; Gisela Pohl, alto; Eberhard Büchner, tenor; Theo Adam and Hermann Christian Polster, basses; Berlin Radio Chorus; Staatskapelle Berlin, Bernhard Klee, cond. PHILIPS 6500 840, \$7.98.

Thamos, King of Egypt was Mozart's first excursion into the field of incidental music. In such a work, popular in Germany in the latter part of the eighteenth century and the first of the nineteenth, the overture prepares the audience for the drama to follow, the other instrumental pieces are descriptive of mood and action, and the choruses add their comments and summarize the moral lessons; there is very little solo singing. Thamos does not have an overture, but Mozart sanctioned the use of his K. 184 symphony for this purpose. The first version of the incidental music dates from 1773, but what is recorded here is the second, of 1779, an immense improvement, in which Mozart added what turned out to be the finest piece, the concluding chorus.

Baron Gebler, the author of the play, was

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a high-ranking civil servant who dabbled in letters. His play is atrocious, but one aspect of it commands our attention: It has Masonic ramifications that appealed to Mozart, and there is an unmistakable kinship to *The Magic Flute* in this music. Since it is most unlikely—indeed impossible—that this miserable play will ever be revived, how can we rescue the great music Mozart associated with it?

This recording, a coproduction of Philips and East Germany's Deutsche Schallplatten, does the right thing in giving us the complete score, but I am thinking of concert performances enabling the public to enjoy music that Mozart himself regarded highly. Of the five orchestral interludes, the third, in G minor, and especially the fifth, in an agitated D minor, are good pieces that prefigure the music of the *Queen of the Night*. The others, taken out of context, are of modest interest and probably expendable.

It is quite another matter when we come to the choruses. The first of these, a hymn to the rising sun, is an attractive composition in sonata rondo form, in which little duets serve as episodes. The latter somewhat diminish the value of the piece, but it remains thoroughly viable. The second chorus (No. 6 in the score) is one of the best choral pieces in Mozart's canon, and the final chorus (No. 7b) is simply tremendous. It opens with a bass solo that immediately recalls the Commendatore in the final scene of *Don Giovanni*; it is stunningly dramatic and very well sung by Theo Adam. This is really a large-scale operatic finale that could grace any of Mozart's great operas. The jubilant end once more points to the joyous close of *The Magic Flute*. It seems to me that the two good entr'acte symphonies and the three choruses would be eminently suitable for concert performance.

Mozart uses a rich orchestra including three trombones, which do not play *colla parte* but have a powerfully dramatic role. The elaborate orchestral accompaniment is beautifully coordinated with the choral setting; the faithful musical declamation of the text is nowhere disturbed. The Philips soloists are good, the orchestra mobile and accurate, and the chorus first-class. The conductor, Bernhard Klee, must be a good operatic hand: He does not miss the dramatic implications and has a good sense for a flexible tempo. The sound is excellent.

P.H.L.

**PENDERECKI:** *Magnificat*. Peter Lager, bass; soloists and boys' choir of the Cracow Philharmonic Chorus; Polish Radio Chorus, Cracow; Polish Radio Symphony Orchestra, Krzysztof Penderecki, cond. ANGEL S 37141, \$6.98 (SQ-encoded disc).

Few composers today are writing religious music as deeply moving and radiant in spirit as Penderecki.

In his *Magnificat* (1973-74), he praises God in the manner of one who lives in darkness; it is a glorification that rises de profundis, from the depths, as the chorus, tentatively, with more hope than joy, sends its words heavenward. The technique is distinctively that of this composer, but in this music he has become more conservative and traditional. Older forms such as passacaglia and fugue are employed; meters are



Jan Zegalski

Krzysztof Penderecki leads his forces in recording his *Magnificat*.

comparatively simple and regular, yet the writing for choruses, soloist, and orchestra is clearly in the Penderecki style, a style that is (obviously) fully grasped by Penderecki the composer but (less obviously) also fully realized by the composer as conductor.

The atmosphere of the recording is one of great spaciousness, and I found that SQ decoding and four speakers enhanced this effect. A recording as fine as this should stimulate concert performances of the *Magnificat*. This is important religious music, rising from the matrix of our own times, and it is something we must hear to understand our world and ourselves. R.C.M.

**PROKOFIEV:** *Symphony No. 5 in B flat, Op. 100*. London Symphony Orchestra, André Previn, cond. [Christopher Bishop, prod.] ANGEL S 37100, \$6.98 (SQ-encoded disc).

**Comparisons:**  
Bernstein/N.Y. Phil Col. MS 7005  
Ansermet/Suisse Romande Lon. CS 6406  
Martinon/Paris Conservatory St. Tr. STS 15195

The Fifth is the most popular of Prokofiev's "contemporary"-style symphonies (in other words, excluding the *Classical*) and arguably the greatest. In presenting his view of it against the heavy recorded competition, André Previn scores a qualified but respectable success.

My reservations are primarily structural. Though the opening Andante can by itself thrive on Previn's spacious handling, and the Adagio third movement on the kind of swift pacing heard here, the combination in one performance tends to shift the center of gravity. Within the first movement, moreover, each return to *tempo primo* should restate a basic pulse, but this reading doesn't quite gauge that precisely enough—what is heard at No. 8 of the MCA score seems faster than what comes at No. 23. The sinister brass ostinato starting at No. 48 in the scherzo, though marked *l'istesso tempo*, is taken with the rather popular grotesque deliberation of so many conductors. In the slow movement, the string tone at No. 59 is tentative rather than lushly passionate, which may result from faulty rhythmic control (two-against-three between first and second violins).

So much for reservations. On the credit side, the over-all phrasing of the work has a flow and dignity that emphasize its serenity rather than its frenetic motor energy. (Prokofiev regarded this as a "symphony about the spirit of man.") Thus, attacks may not have the bite and fierceness found in other performances, but there is no want of polished nuance, of careful attention to expressive meaning and to the blends of timbre among winds, low strings, and the obbligato piano.

The humaneness and restraint of Previn's approach and the fine sound will undoubtedly win many adherents for this edition. Those seeking something more heatedly emotional are directed to Bernstein's sweeping treatment: enormous in scale, seething with drama, and also quite rich in texture. I lean especially to Ansermet's wryly pointillistic and swaggering interpretation, which is very vividly recorded. For the budget-conscious, Martinon's taut and febrile first recording (now on Stereo Treasury) is recommendable, at least until *Odyssey* reissues the Szell. Of the others, Sargent (Everest) and Ormandy (*Odyssey*) are passable; Oistrakh (*Melodiya*/Angel), Horenstein (*Vox*), and Karajan (DG) forgettable. The Fifties of both Prokofiev symphony cyclists, Martinon (*Vox*) and Rozhdestvensky (*Melodiya*/Angel), are compromised by raucous playing and recording. A.C.

**PURCELL:** *The Fairy Queen*. Honor Sheppard, Jean Knibbs, and Christina Clarke, sopranos; Alfred Deller and Mark Deller, countertenors; John Buttrey and Neil Jenkins, tenors; Maurice Bevan and Norman Platt, baritones; Stour Music Festival Chorus and Orchestra, Alfred Deller, cond. VANGUARD EVERYMAN SRV 311/2 SD, \$7.96 (two discs, automatic sequence).

**Comparison:**  
Britten/English Chamber Orch. Lon. OSA 1290

Unlike Benjamin Britten's recent recording of Purcell's *Fairy Queen* (July 1973), for which the score was edited with great skill and taste, this version by Alfred Deller and his Stour Music Festival forces (recorded by Harmonia Mundi) follows the original

manuscript of 1692, thus providing an inevitable and instructive comparison.

The original manuscript is incomplete, most of it not in Purcell's hand and patently a hastily put-together affair. As I listened to Deller's recording, it became clear why Britten felt it necessary to edit the score. While the "original" version still offers magnificent music, there are thin spots, incomplete measures, and obviously sketchy orchestration. Notably, the continuo had to be supplied; its absence in Deller's version is particularly noticeable.

This recording has many admirable qualities. The chorus is superb and marvelously in tune, as is the orchestra (the recorders and trumpets especially are brilliant), and the sound is first-class. The singers are good, and their airs are attractively sung. Unfortunately there are flaws, chief among them a somewhat enforced daintiness that hurts the music. And while the solo ensembles are remarkably well done when the tempo is slow or moderate, they become a bit chaotic when fast coloraturas or parlendas are sung with that come-come-trip-it-trip-it buoyancy. The tempo in such ensembles should always be governed by the ability of the singers to maintain clarity of enunciation and part-writing, something that Britten always does. I also have some reservations concerning such naturalistic effects as the tongue-tied singing of the inebriated Poet; without visual support, the device of off-key singing can be merely irritating.

In sum, this is a commendable and generally very attractive presentation, but Britten's version seems to me preferable because of its uniformly controlled observance of the musical values and the absence of any period mannerisms. P.H.L.

#### RACHMANINOFF: Aleko.

Aleko	Nicola Ghiuselev (bs)
The Old Gypsy	Dimitir Petkov (bs)
Zemfira	Blagovesta Karnobalova (s)
The Young Gypsy	Pavel Kourshoumov (t)
The Old Gypsy Woman	Tony Christova (a)

Chorus of the Sofia TVR Ensemble; Plovdiv Symphony Orchestra, Rouslan Raychev, cond. MONITOR HS 90102/3, \$7.96 (two discs, automatic sequence).

Aside from an aborted setting of Maeterlinck's *Monna Vanna* (don't confuse it with F evrier's completed, and once voguish, piece on the same subject), Rachmaninoff's operatic output is restricted to three one-act works. Of these, *Aleko* is the best-known by name, for the simple reason that its baritone cavatina once received an eloquent recording by Chaliapin, and has been turned to ever since by low-voiced Slavs in search of some unhackneyed lyric heartbreak. It is also the first of the composer's operas to receive more than a single complete recording. (*The Covetous Knight* is currently available on Melodiya/Angel SRBL 4121; *Francesca da Rimini* has yet to be recorded.)

*Aleko* is a student work, dating from Rachmaninoff's twentieth year. It sounds it, too, though in saying this I don't mean to dismiss it. The score contains a number of nice melodic ideas and a firm, if conventional, grasp of vocal and instrumental effect. It is laid out in a traditional series of closed-form numbers, and the ones that

carry the expressive burden—the payoff numbers—find the composer responding with a modest but real inspiration.

The weakness lies in the tougher compositorial challenge of actually "making" the score—providing solutions of reasonable interest for all the moments that are not lyrically or dramatically obvious, creating developments and transitions that have some leading force. And in these respects the work is altogether too predictable. It sounds as if Rachmaninoff had his heart in the bigger moments but didn't get his head sufficiently into the rest.

The opera is drawn from a Pushkin poem called *The Gypsies*. These Bohemians are, as we might expect, romanticized figments whose overriding concern in life is avoid-

ance of any means for regulating the rebellious sexuality of their women. Each generation, the work seems to say, sees the same pattern of faithlessness repeated, and each responds by saying, "Well, there you are, what can you do . . . ?" Aleko himself, presumably because he was raised among the uptight settled folk, does not share quite so resigned an attitude with respect to his young wife Zemfira and, in fact, finishes off both her and her lover. It is a sort of *Tabarro* of the steppes, if we allow for the melancholy irony of Aleko's final condition: Having fled the constraints of lawful society, he finds himself acting out the role of vengeful enforcer and now is truly alone on the lone prairie. Though the libretto is by none other than Nemirovich-Dan-

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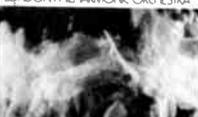
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chenko, very highly regarded as a director and teacher, it is rather like the score—conventionally effective and unambitious, content with setting forth situation and incident without much care or sense to the psychology behind them.

The new recording does not make the most powerful imaginable case for Aleko. The orchestra makes a decent enough basic sound, but there is no real delicacy or sharpness in the playing, and, whenever rhythmic precision and unanimity are important, ensemble and conductor are in trouble. This music, with its secondhand Tchaikovsky and Rimsky-ized Borodin (particularly the *Polovtsian Dances*, heard distinctly in the opening chorus), and with much reliance on harps glissing through strings tremolando, needs all the nuance and care it can get, and this is only adequate.

Nicola Ghiuselev's voice sounds as darkly beautiful here as it does on the Bulgarian *Khovanshchina* recording. The tessitura hangs a trace high for him (the role does call for dramatic baritone, and Ghiuselev is a bass), but he manages with only one or two clumsy moments, and he brings a general kind of emotional vitality to the part without ever kindling much of an imaginative flame. The second bass part contains the most persuasive sustained passage apart from Aleko's cavatina—another male complaint, involving Zemfira's mother. Dimiter Petkov sings its more subdued moments quite beautifully, the fuller ones with a kind of encirclement technique.

The Zemfira, Karnobatlova, does a solid, basic, sing-the-notes job with a ditto medium-weight soprano; the tenor Kourshoumov, who has a listenable lyric tenor with some of that Slavic alloy up top, spends too much of his time six or eight hertz below pitch.

The recording is reminiscent of some of the good early stereo work: full-bodied, full-ranged sound, with overly distinct channel separation. The packaging provides a quick synopsis, glosses of the more important passages, and a complete Russian libretto without translation or transliteration. I think it is legitimate to note that there is just an hour of music spread over the four sides; surely one side could have been devoted to another piece, or possibly some Ghiuselev bass arias. This is short measure, "budget" price or no.

The previous recording, now about twenty years old, should also have at least a discographic note. It was Concert Hall CHS 1309, Bolshoi under Golovanov, with Nina Pokrovskaya, Ivan Petrov, Alexander Ognivtsev, and Anatole Orfenov. Complete on a single disc, it was also a better performance from the conductor and all the male soloists. (It is especially good to hear Ognivtsev as the Old Gypsy, sounding noticeably better than he has on more recent releases.) Its sound, however, was far worse than Monitor's, and in any event it is unobtainable except perhaps in rarity shops.

C.L.O.

**B SAINT-SAËNS:** *Orchestral Works, Vol. 1.* Ruggiero Ricci, violin\*; Laszlo Varga, cello\*; various orchestras. Vox QSVBX 5134, \$10.98 (three QS-encoded discs, manual sequence).

**Works for Violin and Orchestra\*:** *Concertos: No. 1, in A minor, Op. 20; No. 2, in C, Op. 58; No. 3, in B minor, Op. 61; Introduction and Rondo capriccioso, Op. 28; Havanaise, Op. 83 (with Luxemburg Radio Orchestra, Pierre Cao, cond.); Romance, Op. 48; Morceau de concert, Op. 62; Caprice andalou, Op. 122 (with Philharmonia, Reinhard Peters, cond.). Works for Cello and Orchestra\*: *Concerto No. 1, in A minor, Op. 33; Allegro appassionato, Op. 43 (with Luxemburg Radio Orchestra, Louis de Froment, cond.); Concerto No. 2, in D minor, Op. 119 (with Westphalian Symphony Orchestra, Siegfried Landau, cond.).**

**Comparison—cello works:**  
Walevska, Inbal / Monte Carlo

Phi. 6500 459

Since the Saint-Saëns cello works here (plus an inconsequential suite) have been anticipated by Walevska and Inbal for Philips (September 1975), it's in the violin-and-orchestra domain that Vox's enterprise proves most valuable.

Ricci, long notable in this repertory, is an apt choice for soloist, and he naturally begins by replacing his older versions of the familiar Third Concerto (for Vox in 1948), and *Havanaise* and *Introduction and Rondo capriccioso* (for London in 1960). He goes on not only to replace his pioneering First Concerto (for Decca in 1965), but also to provide the first recording ever of the long-obscure Second Concerto, plus what well may be firsts (in this country at least) of three rarely heard shorter concerted pieces.

All the novelties prove to be markedly more effective than one would assume from the fact that they long have been almost completely unknown to nonspecialist listeners. The so-called Second Concerto, Op. 58, was actually the first, composed in 1858, some nine years before Op. 20, but inexplicably not performed in public until 1880. I say "inexplicably," because it proves to be a decidedly characteristic product of the composer's elegant craftsmanship. While it not unreasonably sounds a bit old-fashioned at times, it has genuine dramatic moments and, in particular, an excitingly joyous windup guaranteed to bring the house down in concert performances. All three shorter pieces also are distinctive display cases for a bravura soloist like Ricci: a prodigally episodic *Morceau de concert*, a romantically rhapsodic *Caprice andalou*, and a lighter-weight but gracefully engaging *Romance*.

Unexpectedly though, the popular Third Concerto comes off less satisfactorily than any of the other violin works. Ricci himself permits his occasional moments of over-intensity elsewhere to get out of hand here, while the orchestral playing, routine at best throughout the entire set (regardless of which organizations are involved), is at its roughest and most heavy-handed. But perhaps a considerable part of the blame should be assigned to the engineers for this particular 1973 session. Most of the other recordings, made on various dates in 1974, sound better, although even they—at least when reproduced in stereo only—are rather lightweight sonically and overdry in acoustical ambience. Quite possibly they may achieve fuller tonal body in quadraphonic playback.

The cello works are generally somewhat more successfully recorded, yet even in this respect they are surpassed by the greater warmth and richness of the competing Philips versions. And while it's good to hear Laszlo Varga (for some years principal cellist with the New York Philharmonic) given such ample stardom, his admirably skillful

playing here seems relatively small-toned and lacking in personality projection in comparison with the more flamboyant but far more exciting Walevska performances. What is perhaps most valuable is the added weight of Varga's testimony, so different from Walevska's yet carrying no less conviction, to the musical as well as display-vehicle significance of the long-neglected Second Cello Concerto. With each rehearsing I'm more impressed by it, finding it ever harder to understand why so effective a work hasn't yet achieved the concert hall triumphs it is so masterfully designed to win. R.D.D.

**SHOSTAKOVICH: Symphony No. 5, Op. 47.** Philadelphia Orchestra, Eugene Ormandy, cond. [Jay David Saks, prod.] RCA RED SEAL ARL 1-1149, \$6.98. Tape: ●● ARK 1-1149, \$7.95; ●● ARS 1-1149, \$7.95. Quadriphonic: ARD 1-1149 (Quadradisc), \$7.98; ART 1-1149 (Q-8 cartridge), \$7.95.

**Comparisons:**

Ormandy/Philadelphia	Col. MS 7279
Previn/London Sym.	RCA LSC 2866
M. Shostakovich/U.S.S.R. Sym.	Mel./Ang. SR 40163

There is something about the Shostakovich Fifth, surely the most played and recorded symphony of the past half-century, that renders it performer-proof; it never fails to have a stirring effect. Not that all performances are equal. For example, most conductors (including the composer's son Maxim), in responding to the "natural" contours of the music, gloss over the fact that the tempo speedups in the first movement actually are marked later than one would assume from the character of the passages. And there is no textual sanction for opening the finale at the breakneck (if irresistible) speeds employed by Bernstein, Previn, Rodzinski, Silvestri, and others.

Ormandy's Columbia recording found him at his unhydraulic, dignified, and musicianly best, and the new version is if anything even better. In many of his recent recordings—such as the Tchaikovsky Fourth (ARL 1-0665, July 1975) and the Rachmaninoff Second (ARL 1-1150, December 1975)—I have been alarmed by the phlegmatic and mannered qualities creeping into his typical straightforwardness, but here he achieves an almost Klemperer-like massiveness and intensity. Ormandy/RCA times out some three minutes longer than Ormandy/Columbia, and the extra breadth reflects a taut, craggy sense of concentration, a sustained inwardness and grandeur—all immensely affecting. Note, for example, in the first movement the finely graded adjustments at the *poco stringendo* (No. 31), the *largamente* climax, and the return to the basic *moderato* pulse of the movement. The hairpins in the string-bass introduction to the scherzo are neatly pointed, and the percussion details in the coda of the finale have never been so meticulously clear.

The playing of the Philadelphians is among the best they've done lately for discs. The recorded sound, in contrast to the dry, steely, gimmicked Rachmaninoff Second, has all the depth, smoothness, and bloom one could ask for.

The fine liner notes are by HF's regular Shostakovich reviewer, Royal S. Brown, which incidentally is why he isn't review-

ing this record. That said, I must add that I can't second his July 1972 recommendation of the Maxim Shostakovich account, for I am more bothered by its occasional looseness of discipline and the shrill and coarse sonics. Previn's RCA recording is sweeping and reckless but finer-grained and more effective over-all. He will doubtless surpass that decade-old effort when he gets around to an EMI remake, but even then the new Ormandy will offer severe competition. My personal favorite, though, is the Skrowaczewski/Minneapolis, whose lithe energy, structural insights, vital tension, and crisp and biting sonics are quite special indeed; I hope it returns soon as a Mercury Golden Import. A.C.

**In quad:** At the opening of the first movement the canon between the violins (at the

left front) and the cellos and basses (at the right back) makes plain what sort of recording this is to be: very quadriphonic. During much of the two movements on Side 1, I have the feeling that the orchestra is being picked apart before my very ears and isolated in well-defined compartments all about me. The remaining two movements fare much better, particularly in the passages for massed strings, and are in fact very exciting. But the over-all impression for most listeners will, I fear, be one of discreteness rather than discretion. R.L.

B	<b>SIBELIUS: Symphony No. 1, in E minor, Op. 39*</b> ; Belshazzar's Feast, Op. 51*. Orchestra* and London Symphony Orchestra*, Robert Ka-
H	



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janus, cond. TURNABOUT THS 65045, \$3 98 (mono) [from English COLUMBIA and HMV originals, recorded 1930\* and 1932\*].

The Finnish conductor Robert Kajanus was reportedly his great compatriot's favorite interpreter of his music, and he recorded much Sibelius for English Columbia and HMV in the early electrical era. All of those recordings have been reissued in England in World Records' pair of "Great Sibelius Interpreters" sets (SH 173/4 and SH 191/2), from which this Turnabout Historical Series disc is drawn.

In the 1970s, the anonymous English orchestra heard in Kajanus' First Symphony sounds ragged and underrehearsed. Motifs passed from one instrumental line to another cannot be followed clearly in the fog of casual articulation and balance. The tubby and constricted recording is no help either. The performance itself is characterized by a constantly undulating, "old-fashioned" rubato, which doesn't help convey a clear idea of the symphony's structure. However, the reading does generate a sense of grand passion and spontaneous excitement and conviction. Often the instrumental sounds are impressive, with full and singing cellos and bold and snarling brasses. Worth hearing certainly, but as an over-all statement of the score no challenge to such modern accounts as those of Barbirolli (Angel S 36489) and Bernstein (Columbia M 30232).

Kajanus' reputation is better served in the lightweight but atmospheric *Belshazzar's Feast* incidental music, which benefits greatly from two years of recording progress and the presence of a real orchestra, the London Symphony. The *con amore* string playing in the second section and the plangent oboe finale are old and dear friends to anyone who has grown up with the shellac originals.

I do hope that Turnabout will give us more of Kajanus' best Sibelius, notably the Third and Fifth Symphonies and the most powerful of all recorded *Tapiolas*. A.C.

**STOCKHAUSEN:** Kurzwellen; Setz die Segel zur Sonne. The Negative Band. [Carl Stone, prod.] FINNADAR SR 9009, \$6.98. Tape: ● CS 9009, \$7.97; ● TP 9009, \$7.97.

*Short Wave* is a longish work (36:40), here played on percussion, piano, saxophone, and various electronic instruments by a group of six young men recently students at Walt Disney's California Institute of the Arts. As is the case with many works of Stockhausen, the score consists of signs telling the performers what to do rather than notation of any kind, but among these signs there are so many bypasses and exceptions that they almost cease to exist. The work sounds like a cross between the rasp-and-squeal routine characteristic of electronic music fifteen years ago and the dense, free clotted improvisation practiced by Ornette Coleman and some other jazzmen five years before that.

*Set Sail for the Sun* is a much shorter (13:26) and, for me, much finer piece, thanks largely to its continuous, hypnotic use of the tam-tam. One of the best pieces of music I ever heard was a composition by La-Monte Young consisting of nothing but

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forty-five evenly spaced and evenly shaded strokes on the tam-tam. Until we get a record of that, *Set Sail for the Sun* will have to do. A.F.

**STRAUSS, R.:** A German Motet, Op. 62; Two Songs, Op. 34. Soloists; Heinrich Schütz Choir of London, Roger Norrington, cond. [Michael Bremner, prod.] ARGO ZRG 803, \$6.98.

A paradox: Here are no less than three rarely heard works by a major composer brought to disc for what must be the very first time in well-nigh ideal recordings of performances that cope nobly with the scores' impossible demands—yet the record can be safely recommended only to institutional libraries and perhaps fanatical Straussians and ambitious choir-trainers.

The plain fact is that the choral writing here, in as many as sixteen parts (and in the German Motet calling for soloists in addition) is just too thickly complex for aural-only comprehension, let alone immediate enjoyment. There are genuinely beautiful, deeply moving passages in these intricate settings of poems by Rückert and Schiller, and Norrington's fine British choir gives

manuscript. I hear no textual differences between this version and those recordings that use Tchaikovsky's own text in its presumably "revised" form, and the liner notes' credibility is not enhanced by their numerous surprising revelations concerning the relationship between Tchaikovsky and the Rubinstein brothers—for example, the assertion that the 1889 revision of the First Piano Concerto was "played everywhere" by Nicholas Rubinstein, who died in 1881. However, if the edition we know is indeed itself a revision, it is obvious that the face-lifting fell far short of what was needed to turn this sporadically inspired score into an unequivocal masterpiece.

If you want the work untouched by Siloti, Sylvia Kersenbaum's account is more sensitively played than Zhukov's (*Melodiya*/Angel SR 40097), unbearably percussive, or Ponti's (in Vox SVBX 5460), rushed and, particularly in the finale, wooden and inelegant in its phrasing. Kersenbaum is an admirable soloist. She doesn't command the blockbuster sonorities, the relentless rhythm, the every-note-in-place organization of Gilels, in his superb recording of the Siloti edition (in Angel SB 3798), but her pianism is both accomplished and tonally expressive. She seems to have a natural instinct for the singing line and an intuitive feeling for Romantic nuance.

Jean Martinon gets forthright execution from the Orchestre National, but the SQ-encoded engineering tends to over-reverberance, even murkiness, in the tuttis, at least in two-channel playback. The piano and concertante violin and cello are clear enough, yet I found a basic lack of biting articulation in the (very good) orchestral string playing. The rotten surfaces of two production copies (not test pressings) were no help.

An interesting textual compromise, by the way, is that of Graffman and Ormandy (Columbia MS 6755 or MG 30838): Tchaikovsky's text in the outer movements, Siloti's where it really matters, in the second. The performance is sober, even virtuosic, but lacking the astonishing flair of the Gilels/Maazel. H.G.

**In quad:** By opening up the sound somewhat, decoded playback casts some light into the murk complained of above. But the recording remains unspecific about spatial values—whether of instrumental placements or of the "hall" in which they are heard. The quadriphonics are, at best, a subtle, graceful setting for the music; at worst, they're simply vague. R.L.

## Recitals and Miscellany

**BAROQUE CHAMBER WORKS.** Gerard Schwarz, trumpet; Ronald Roseman, Susan Weiner, and Virginia Brewer, oboes; Ronald MacCourt and William Scribner, bassoons; Edward Brewer, harpsichord. DESTO DC 6438, \$6.98.

**HERTEL, J.C.:** Concerto à cinq for trumpet, two oboes, and two bassoons, in D. **ALBINONI:** Concerto for trumpet,



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Less defensible is the furtive decision to expunge all of the meandering central development—a cut designed to make the music more concise but instead rendering it formless. Though Siloti was an excellent musician and a fine editor, the material patiently needs the kind of creative overhauling that only a composer has the moral right to perform on his own handiwork.

As a matter of fact, Connoisseur Society's liner notes claim that Tchaikovsky *did* revise the concerto and that this is possibly the first time that the work has been recorded in his "original" version, from a 1955 Moscow reconstruction of the

three oboes, bassoon, and continuo, in C. **TELEMANN:** Concerto for trumpet, two oboes, and continuo, in D.

The significance of this seemingly highly specialized release is that it usefully illustrates wind-ensemble examples of the "Baroque Chamber Music" of its over-all title rather than concertos for solo(s) with orchestra or even small string bands. The music itself is not only fine stuff, but refreshingly novel. The deft performances and gleamingly clean recording warrant high praise for everything save their incomplete restraint of Gerard Schwarz's tendency to dominate both tonally and in personality projection.

The labeling and jacket notes are disgracefully unsatisfactory. Ronald Roseman

is a fine oboist, but doubling as an annotator he has failed to do even his basic homework of properly identifying the music played. I complain with some personal bitterness since I was driven to do what should have been his chores of filling out the almost meaningless label titles: "concerto à cinque," "concerto in C," and "concerto in D" only.

More specificity is particularly needed here, since it turns out that the Albinoni and Telemann concertos are not those listed in Schwann as "in C for Trumpet" and "in D for Trumpet, 2 Oboes, and Continuo," respectively. The proud-spirited Albinoni work, not even listed in Giazotto's thematic catalogue, is edited from a manuscript orchestral concerto à 6 by Johann

Wojciechowski and Gottfried Müller for a 1966 publication—recorded here probably for the first time. Telemann's more easy-going and engagingly jaunty four movements are Largo-Vivace-Siciliano-Vivace (as distinct from the better-known trumpet/oboes work's Allegro-Grave-Aria-Vivace), published in a 1957 modern edition by Grebe based on manuscript parts in the Saxon State Library. It was first recorded back in 1960 by Voisin for Kapp but has been long out of print.

The major work is not by the Johann Wilhelm Hertel represented earlier by trumpet concertos, but by his father Johann Christian (1699-1754), represented here for the first time on records, to the best of my knowledge. His Concerto à cinque for wind instruments points toward the classical era in its abandonment of a continuo part and its more expansive structure. But the exuberant third-movement *Plaisanterie* surely is rococo, while there is a genuinely timeless poetic eloquence to the Cantabile slow movement and timeless humor to the third movement's trio, a contrapuntal duetto for unaccompanied bassoons. This alone is worth the price of the whole disc. Its gruff-toned sportiveness irresistibly suggests a pair of venerable friars in springtime who, thinking themselves unobserved on their return from field work, have hiked up their heavy robes to engage in a clumsy last-one-in-pays-a-penance footrace back to the monastery. R.D.D.

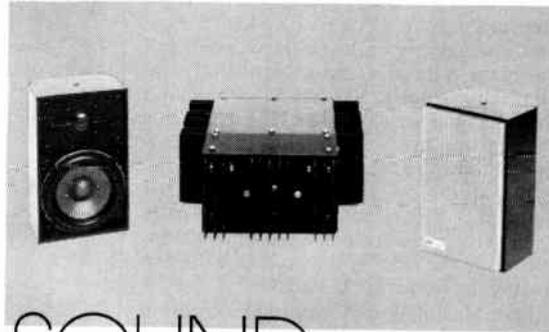
**BOSTON MUSICA VIVA:** Twentieth-Century Chamber Works. For a feature review, see page 79.

**MONTSERRAT CABALLÉ:** Operatic Arias. Montserrat Caballé, soprano; Barcelona Symphony Orchestra, Gianfranco Masini, cond. LONDON OS 26424, \$6.98.

**BELLINI:** *La Sonnambula:* Ah! Se una volta sola . . . Ah! non credea mirarti . . . Ah! non giunge. **CILEA:** *Adriana Lecouvreur:* Io sono l'umile ancella. **PUCCINI:** *Suor Angelica:* Senza mamma. **VERDI:** *Rigoletto:* Caro nome. *Il Trovatore:* D'amor sull'ali rosee. *I Vespri siciliani:* Arrigo! Ah, parli a un core; Mercè, dilette amiche. *Un Ballo in maschera:* Morrò, ma prima in grazia.

This recital, recorded in 1974 in Barcelona, finds Caballé in full, shining voice and is perhaps notable above all for the rounded, brilliant coloratura—powerful and precise, never shrill or edgy—that sounds both in the *Vêpres siciliennes* bolero and in Gilda's "Caro nome." There is also much tender, gentle singing to be heard; Leonora's "D'amor sull'ali rosee" and Sister Angelica's "Senza mamma" are movingly breathed, and at the end of each there is an exquisite high note beautifully sustained. "Morrò, ma prima in grazia" is poignantly and passionately sung—a soft, touching appeal that rises at last to a full-throated climax in which there is no strain or harshness of sound. Adriana's modest disclaimer is uttered in rapt, softly glowing tones. There is much use of fine-drawn portamento.

As a record of Caballé's voice, this recital can be highly commended. Nevertheless, it does not represent the soprano at her very best, for the performances lack energy—not of tone, but of rhythm. Gentleness and tenderness are indulged to a point at which



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they can be deemed sluggishness. True, the timbre itself never becomes droopy (as Joan Sutherland's can, when she is in her sluggish vein), but the rhythmic pulse flags and the impetus of the arias is lost.

Gianfranco Masini proves too permissive an accompanist. The best Caballé performances (such as her Amalia in *I Masnadieri*, Philips 6703 064, December 1975) result from teaming her splendid instincts for caressing and molding a phrase with a conductor whose basic pulse remains perceptible through the necessary expressive freedoms. In this recital, "Ah! non credea," despite all the beautiful detail in the individual lines, falls apart. (The scena is done in a long, fourteen-minute version, with all the introductory recitative.) "Ah! non giunge" is oddly disappointing, for Caballé does not bounce through it; she scampers.

In the traditional Barcelona manner, familiar from Conchita Supervia onward, the recorded sound is strong, forward, bright, and so close that it catches not only the details of the voice, but also noisy intakes of breath that, in the opening lines of "Caro nome," divide "mio" from "cor" and "palpi-" from "-tar." (The trill at the end of this aria is not a true one, but a vague oscillation.) The level, however, is rather low, and so the disc needs to be played at a setting that turns any surface imperfections into minor explosions.

Texts and translations are provided. The cover is a deplorable "pastel" of the soprano in the style of a sidewalk artist's "instant portrait." A.P.

**LUCIANO PAVAROTTI:** World's Favorite Tenor Arias. Luciano Pavarotti, tenor; various orchestras, Richard Bonyngé, Herbert von Karajan, Leone Magiera, Zubin Mehta, and Nicola Rescigno, cond. LONDON OS 26384, \$6.98.

**BIZET:** Carmen: La fleur que tu m'avais jetée. **FLÓTOW:** Martha: Ach, so fromm (in Italian). **LEONCAVALLO:** I Pagliacci: Recitar! . . . Vesti la giubba. **GOUNOD:** Faust: Quel trouble inconnu . . . Salut, demeure. **PUCCINI:** La Bohème: Che gelida manina [from OSA 1299, 1973]. Tosca: E lucevan le stelle. Turandot: Nessun dorma [from OSA 13108, 1973]. **VERDI:** Rigoletto: La donna è mobile [from OSA 13105, 1973]. Il Trovatore: Di quella pira [from OS 26192, 1971]. Aida: Se quel guerrier . . . Celeste Aida.

Not all of this material is new. The Rigoletto and Bohème arias come from London's current full-length recordings (the latter complete with Mimi's sudden exhalation of breath as Rodolfo takes her hand). So, according to the jacket, does the Turandot aria, though I presume that this has been re-edited to include a concert ending. The Trovatore is already available on the "Primo Tenore" recital. All of these are estimable performances, even if to my ears "La donna è mobile" wants lightness of touch and "Di quella pira"—for all the full-throated splendor of its concluding high C—the proper declamatory ease.

The other arias are without exception very good. The sensuousness and warmth of Pavarotti's timbre are hard to resist, and this recital, unlike some recent ones, finds him in confident voice. But there is more than vocal prowess to be heard here: Pavarotti has taken pains to characterize these arias, to give expression to mood and situation, to make the text lively. Both the Flower Song from Carmen and "Salut, demeure" from Faust are marked by real ver-

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Jeffrey Solow  
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bal sensitivity—no mean achievement for so Italianate a tenor. Pavarotti's French is, in fact, highly commendable. Like all his operatic compatriots he seems unable to deal with the mute "e" or to distinguish among nasalized vowels, but he nevertheless does very well. The recitative that opens the Gounod excerpt is both tender and ardent. For once a Faust actually convinces one that his whole being is possessed by love.

But even more impressive is Pavarotti's ability to combine textual subtlety with a nearly impeccable musical line. Apart from an odd moment or two when he uses falsetto instead of attacking a high note softly, he sings with impressive musicality; the Martha aria, for example, is as fine a demonstration of legato singing as any present-day tenor is capable of.

The conducting is variable. One may or may not like what Karajan or Mehta do respectively with *Bohème* or *Turandot*, but there is no ignoring the fact that alone of the conductors represented here they have distinctive personalities. As one might imagine from the disparate origins of these selections, there is a lot of variation in recorded quality. Texts and translations. D.S.H.

**B** **JEFFREY SOLOW:** The Romantic Cello. Jeffrey Solow, cello; Doris Stevenson, piano. [Kathryn King, prod.] COMMAND COMS 9006, \$3.49.

**DEBUSSY:** Il pleure dans mon coeur (arr. Hartmann). **FAURÉ:** *Élégie*, Op. 24; *Papillon*, Op. 77; *Sicilienne*, Op. 78. **RACHMANINOFF:** *Vocalise*, Op. 34, No. 14. **TCHAIKOVSKY:** *Nocturne*, Op. 19, No. 4; *Pezzo capriccioso*, Op. 62. **TOCH:** *Impromptu*, Op. 90c (arr. Solow). **WEBER:** *Sonata for Violin, No. 5, in A* (arr. Piatigorsky).

An impressive recital. Jeffrey Solow has already made a stunning impression in the Marlboro performance of the Ravel piano trio with the Laredos (Columbia M 33529, October 1975), and the present miscellany confirms the impression of a dynamic and surging temperament, a dark and intensely luminescent sound, and a technique that brooks no compromises.

The meatiest fare here is the Weber violin sonata (arranged by one of Solow's teachers, Gregor Piatigorsky) that ends the record. The two-movement piece—a *Sicilienne* and a set of variations on a theme from Weber's opera *Silvana* (the latter also

exists in a clarinet version)—is fresh and mirthful, and this performance gives off sparks.

Tchaikovsky's *Pezzo capriccioso* is unpretentious fluff. Its fast concluding section contains some high-flying passagework, and Solow's rendition is in the caviar-and-vodka class. (Compare Maurice Gendron's staid performance, formerly available on World Series.) The Fauré *Élégie* is one of the great members of the cello-encore family. Solow doesn't do much more than Lillian Rehberg Goodman (Orion ORS 75181, October 1975) with tonal variation in the low-register sustained passages, but his pianist, Doris Stevenson, accompanies with more imagination than Goodman's Harold Bogin. (For the orchestral version, I would recommend Munroe and Ormandy, in a collection of Philadelphia "First Chair Encores," Columbia MS 6791.) Fauré's *Sicilienne* (later recast as the third movement of the *Pelléas et Mélisande Suite*) is played with caressing warmth and the kind of meltingly effective rubato that Munch used in the symphonic version (though I should add that his currently listed Philadelphia recording on *Odyssey* is possibly the least effective performance of it I have heard from him). Among the various other tidbits, the inevitable favorite must be Rachmaninoff's *Vocalise*, which Solow delivers with sustained dignity and beauty.

The recorded balance is everything it should be. The cello has warmth and presence without enveloping the listener in an unnatural way. A.C.

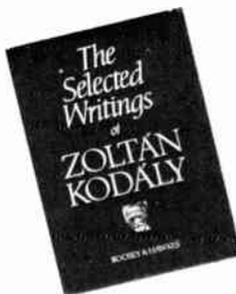
**In quad:** The effect is quite pretty, though it doesn't add much that needs adding. Piano is left front, cello is right front—except in the unaccompanied Toch and, curiously, the Weber, where the cello is in front center. Neither musician is isolated in the "multichannel mono" effect that destroys the sense of real space in so many four-channel recordings. The cello does have some tendency to weave either toward the left or toward the back at times (a failing somewhat less noticeable with an inexpensive RM decoder than with a more elaborate QS model that delivers, subjectively, greater separation), but otherwise there is little to undermine the impression that the two musicians are close by in a fairly reverberant room. R.L.



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**\* BILL BLACK'S COMBO FEATURING BOB TUCKER:** *The World's Greatest Honky-Tonk Band. Orange Blossom Special; I Can Help; Jump Back Joe; Back Up and Push; Carroll County Blues; five more.* [Larry Rogers and Bob Tucker, prod.] Hi/LONDON SHL 32093, \$6.98. Tape: ●● O 532093, \$7.97; ●● O 832093, \$7.97.

From reading the notations on the record sleeve and staring at the picture of a quintet, I don't know who Bill Black is, what he plays, or even if there is a Bill Black. The title reads "... featuring Bob Tucker," but nowhere does it say who *he* is, either, or what he does. The notes do mention that the fiddle solos are by Gil Michael, so one must assume that the gentleman playing fiddle in the picture is he.

Well, enough of this. The music is excellent—jumping old-time instrumental country music with bluegrass and soul overtones. Fiddler Michael and the saxophonist, whoever he is, play very well indeed, and the guitar picker gets in some fine old licks. Despite the ineptness of the man at Hi Rec-

ords assigned to write liner notes, this LP is a solid winner. M.J.

**\* LABELLE:** *Phoenix.* Patti LaBelle, Sarah Dash, and Nona Hendryx, vocals; keyboards, rhythm, strings, and horns accompaniment. *Phoenix; The Amazing Flight of a Lone Star; Slow Burn;* eight more. [Allen Toussaint, arr. and prod.] Epic PE 33579, \$6.98. Tape: ●● PET 33579, \$7.98; ●● PEA 33579, \$7.98.

The brash and bountiful Labelle threesome here expands on the themes that brought it mass acceptance with "Nightbirds" (Epic KE 33075, reviewed in HIGH FIDELITY just a year ago).

The hell these thrushes raise with their voices could spark a disco full of dancers even if they were backed by a string quartet rather than the sassy backup troupe that appears on this album. They remain one of the few acts that can translate their luminous stage show onto vinyl, especially on a song like "For as We Felt Like Goin'..." a

tune in the same vein as their smash single "Lady Marmalade."

There's something on "Phoenix" for everybody, which is a prerequisite for any album that this group produces, since its audience is one of the most multifaceted in pop. As favorites of the disco crowd, Labelle builds many of its numbers ("Slow Burn" and "Messin' with My Mind") on a frantic foot-shuffling beat, while its more r&b-oriented fans would have no problem getting behind a song like the soul-flavored "Good Intentions."

As he did on "Nightbirds," Allen Toussaint arranges and produces Labelle's unique sound with restraint and taste. H.E.

**MAMA'S PRIDE.** Pat Liston, vocals, guitars, slide, and organ; Danny Liston and Max Baker, vocals and guitars; Kevin Saunders, drums, percussion, and vocals; Joe Turek, bass and vocals; Frank Gagliano, keyboards and synthesizer. *In the Morning; Who Do You Think You're Fooling; Blue Mist;* six more.

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With every band from Waikiki to Wyoming to Washington, D.C., buying denim work shirts and gargling with nitric acid in attempts to cash in on the voguish Southern sound, Mama's Pride took its best elements and went on from there.

Although Pat Liston shares the all too familiar Allman-Tucker-Daniels bluesy drawl, the other members could hail from parts much farther north. Probably the biggest standout from the Southern mold is bassist Joe Turek, whose forceful and inventive bass lines could easily drive far heavier British bands like Deep Purple and U.F.O. The band's three guitarists aren't content just to play the blues either, and their funky riffs attest to a multitude of influences beyond Southern blues.

Unfortunately Mama's Pride chose to understate its musicianship in favor of providing a solid base for the vocals, which are the most ordinary part of the band's sound. The solos (especially Liston's enthralling slide work) are few and far between, and they leave me yearning for more. Given more room to breathe on their next disc, Mama's Pride could easily give the more established Southern rockers a run for their grits. H.E.



**BLOSSOM DEARIE 1975.**

Blossom Dearie, vocals and keyboards; Jim Hughart, bass; John Morrell, guitar; Colin Bailey, drums. *I'm Shadowing You; Isn't That the Thing to Do; Sweet Georgie Fame*; eight more. DAFFODIL BMD 102, \$6.98 (distributed by Columbia Special Products; also available from Daffodil Records, Box 312, Winchester, Va. 22601).

Blossom Dearie puts me in a spell. "From the meticulous to the sublime," Rogers Whitaker said of her in *The New Yorker*. Blossom's voice, like the lady herself, is rather small and perfect. They love her in London and sometimes in New York. It is necessary to pay attention or you miss her—you don't see what she's doing. To the extent that sophisticated people can listen in the land of future shock, Blossom can charm.

I must point to a new song titled "A Face Like Yours," music by Victor Feldman and lyric by Tommy Wolf (yes, the Tommy Wolf who wrote "Ballad of the Sad Young Men" with Fran Landesburg). The song is impeccably structured, both words and music. Feldman wrote the piano arrangement for Blossom.

Several songs were written by Miss Dearie with various lyricists, including Johnny Mercer and Len Saltzberg. There is a pure version of Stephen Sondheim's "Send in the Clowns," piano and voice only. I have been waiting for years for this lady to hit a wrong note. I'll get back to you.

Blossom Dearie puts out albums on her own label, on her own terms, and I recommend her as a study in taste and guts. M.A.



**NEIL SEDAKA: The Hungry Years.**

Neil Sedaka, vocals, piano, songs, and rhythm arrangements; strings arranged



**Blossom Dearie**  
*Like her voice, small and perfect.*

by Artie Butler; vocal and instrumental accompaniment. [Neil Sedaka and Robert Appere, prod.] ROCKET PIG 2157, \$6.98. Tape: ●● PIGC 2157, \$7.98; ●● PIGT 2157, \$7.98.

Currently Neil Sedaka is having the record business for breakfast every morning. I saw him on television wearing a checked sports coat such as hasn't been seen since 1956 in the restaurant after the prom, and he was fabulous. He presents himself whole: strong, self-accepting, highly musical, and dead on the money.

This is Sedaka's second time around in America. In between he has been in Europe a lot. The truth is I've had trouble getting a real line on this man's career. He had hits as both writer and singer in the Fatuous Fifties. I don't know where he came from, why

he left, or what yellow brick road brought him back. (That last tricky phrase has to do with the fact that Sedaka's comeback occurred on Rocket Records. Elton John's label for MCA.)

He has the presence of a man who has done everything wrong, faced it, and then turned it around. He is somebody and knows it. His talent has kept step. He was always a vital player with a clear, warm, high voice. He is so tuned in to hit songs at this printing that he rarely writes anything else. His newest hit, included in this album, is "Bad Blood," with prominent "background" vocals by Elton John. My favorite track is an old Sedaka-Greenfield tune called "Breaking Up Is Hard to Do," done smoother than silk, with strings arranged by Richard Carpenter. "When You Were Lovin' Me" doesn't work for me; it sounds forced, particularly the background voices. "The Hungry Years" is the story of how much cuter life was before we became millionaires. Shut my mouth. On the brighter side, all of us can relate to the heartfelt "New York City Blues" (imagine the nerve actually to write a song with that title), the spunky "Tit for Tat," and the ironic "Your Favorite Entertainer."

Neil Sedaka may not be the deepest singer/songwriter on the scene today, but when you're this real it doesn't matter. He covers himself well: Nigel Olsson on drums, Leland Sklar on bass, Dean Parks and Steve Cropper on guitars, David Foster on additional keyboards, and strings written by Artie Butler. The album is smoothly coproduced by Sedaka and his engineer, Robert Appere. M.A.



**JERRY JEFF WALKER: Ridin' High.**

Jerry Jeff Walker, vocals and guitar; vocal and instrumental accompaniment. *Public Domain; Pick Up the Tempo; Like a Coat from the Cold; I Love You; Night Rider's Lament; Goodbye Easy Street; Jaded Lover:*

Critics' Choice

The best pop records reviewed in recent months

- CLAUDE BOLLING: Suite for Flute and Jazz Piano. COLUMBIA M 33233. Dec.
- CHICK COREA: Inner Space. ATLANTIC SD 2-305. Oct.
- A CHORUS LINE. COLUMBIA PS 33581. Nov.
- ROGER DALTRY: Ride a Rock Horse. MCA 2147. Nov.
- EAGLES: One of These Nights. ASYLUM 7E 1039. Oct.
- EARL HINES AND HIS ORCHESTRA: The Father Jumps. RCA BLUEBIRD AXM 2-5508. Oct.
- JACKIE MCLEAN: Jackknife. BLUE NOTE LA 457H2. Nov.
- CECIL TAYLOR: In Transition. BLUE NOTE LA 458H2. Nov.
- TINA TURNER: Acid Queen. UNITED ARTISTS LA 495G. Dec.
- TIM WEISBERG: Listen to the City. A&M SP 4545. Dec.
- LESTER YOUNG: The Aladdin Sessions. BLUE NOTE LA 456H2. Nov.

*Mississippi, You're on My Mind; Pot Can't Call the Kettle Black; Pissin' in the Wind.* [Michael Brovsky, prod.] MCA 2156, \$6.98. Tape: ● C 2156, \$7.98; ● T 2156, \$7.98.

Jerry Jeff Walker seems to improve markedly with each release. This latest offering is chock-full of finely wrought country music, written both by Walker and by others.

The material is so good, and is played and sung so well by Walker and an assortment of adept Nashville backup musicians, that it's very hard to pick out highlights. So let's mention the one disappointment, Walker's "Pissin' in the Wind." As the title suggests, the lyric smacks of frat-house humor. As for the difficult-to-pinpoint highlights, there are Jesse Winchester's "Mississippi, You're on My Mind," Chuck Pyle's "Jaded Lover," and Guy Clark's "Like a Coat from the Cold." M.J.

✳ **MIKE POST:** *Railhead Overture.* Mike Post, keyboards; instrumental accompaniment. *Railhead Overture; Georgia on My Mind; The Rockford Files; Will the Circle Be Unbroken; Wouldn't It Be Nice;* five more. [Mike Post, prod.] MGM M3G 5005, \$6.98. Tape: ● M8H 5005, \$7.98.

Rock is in essence a creature that thrives on sparsity and tension, both of which are attributes antithetical to big-band rock. Yet Mike Post, who does a lot of work arranging rock songs for big band, has come up with a winner that is both sparse and tense. And he has done it with a rock combo augmented by an enlarged brass ensemble, quite a feat in all.

Best on this MGM disc is Post's original composition, the theme from TV's *The Rockford Files*, a hit in the 45-rpm version last summer. Post's lead on Moog synthesizer is followed nicely by Tommy Morgan's harmonica. Among the other outstanding tracks are the folksong "Will the Circle Be Unbroken," and the mournful "Georgia on My Mind." M.J.

✳ **LUCY SIMON.** Lucy Simon, vocals; reeds, strings, rhythm, keyboards, and vocal accompaniment. *Pavane; My Father Died; From Time to Time (Version 1);* seven more. [Joel Dorn, prod.] RCA APL 1-1074, \$6.98. Tape: ● APK 1-1074, \$7.95; ● APS 1-1074, \$7.95.

While little sister Carly is filling up volumes of saccharine sludge with her espoused partner James Taylor, Lucy Simon has put together a refreshing album of Top Forty-oriented tunes that looks like the beginning of a career as fruitful as Carly's.

Lucy Simon possesses a vocal quality so appealing that one could get a rush just from hearing her sing a phone book. As a bonus, she is capable of writing songs that show off her engaging vocal abilities to good advantage. When given a classic like "Dream," that great Everly Brothers song of over a decade ago, Simon transforms it into a touching ballad, devoid of any of the sappiness that many other pop singers would feel compelled to include. Likewise with Peter Allen's "Harbour," where she accom-



Lucy Simon—a well-deserved shot at making a mark on the charts.

panies herself on the piano for a stunning effect.

An uncluttered backing sound courtesy of producer Joel Dorn gives Simon's first album a well-deserved shot at making a prominent mark in the country-music charts as well. H.E.

✳ **HARRY CHAPIN:** *Portrait Gallery.* Harry Chapin, vocals, guitar, and songs. *Dreams Go By; Bummer; Dirt Gets Under the Fingernails;* seven more. [Paul Leka, arr. and prod.] ELEKTRA 7E 1041, \$6.98. Tape: ● TC5 1041, \$7.97; ● ET8 1041, \$7.97.

The thing to be admired about Harry Chapin is the fact that he keeps on doing what he does best. First he writes his little jewel-like songs, and then he records them. This he does, not in the fancy big-time studios, but rather in a studio in Bridgeport, Connecticut. I would not be surprised to learn that this is the area where he lives with his wife and five kids.

Sometimes when I look around it seems nearly impossible for people who are very successful to maintain the perspective that got them there. They get crazy, they get to feeling thin doing what they do well, they want to experiment with what someone else does or what no one else does. This curious phenomenon seems to occur like a virus, with or without warning, with or without flu shots. Also like a virus, it can pass. The craziness clears. Sometimes it's too late, and sometimes not. At any rate, Harry Chapin does not suffer notably from this virus, nor does his career. Maybe those five kids are a ballast.

He is more a storyteller than anything else. How he gets his extraordinary tales into small-song form, I'll never quite know. "Bummer" begins: "His mama was a mid-night woman; his Daddy was a drifter drummer. One night they put it together; nine months later came the little black bummer." Chapin goes from jail to Vietnam and a Medal of Honor for killing, ending in a pool of blood after a grocery-store rob-

bery. Nothing new here, but brilliantly drawn. "Someone Keeps Calling My Name" says: "My name is Jenny, and I am four fingers old."

Paul Leka's sweetening support is spare and appropriate. The credits say, "Album mixed by Paul Leka." Hard to say whether Leka is an engineer or he just supervised the mix, which is the task of the producer. Anyway, it's fine.

This album, like Chapin's other current work, is already hot in the charts. Record buyers have a mysterious way of pinning the real goods among the bull. M.A.

✳ **LINDA RONSTADT:** *Prisoner in Disguise.* Linda Ronstadt, vocals; vocal and instrumental accompaniment, David Campbell, arr. and cond. *Love Is a Rose; Roll Um Easy; Many Rivers to Cross;* eight more. [Peter Asher, prod.] ASYLUM 7E 1045, \$6.98. Tape: ● TC5 1045, \$7.97; ● ET8 1045, \$7.97.

I first heard this record at a party at sublimating level and mood. Even on half a hearing, the talk cleared. (What's that? Turn it up.) I swear, sometimes you can tell a hit without even listening to it. People just feel a hot one. Ronstadt's new album hit the Top Ten in two weeks, long before word of mouth can do much. The singles ("Heat Wave" and "Love Is a Rose") shot up in the same fashion.

It has taken Linda Ronstadt some time to come to this. I first saw her front-lining the Stone Ponies in their debut in New York eight years ago. (She looks exactly the same now, incidentally, with that frank, wide-eyed gaze.) It is a pleasure to see an artist come into her own best definition. One wonders how many influences came along to confuse the years of development, how many were thrown over, which were integrated into self.

I suspect that by the time Ronstadt and producer Peter Asher got together for this project, much of the homework had already been done, so that directions revealed themselves with fair calm. They have an

unerring eye for suitable material. One way or another, nearly all the tracks get in the pocket.

Ronstadt surrounds herself with perfect-for-her players. The dazzling backup vocals are performed by band members: Kenny Edwards (bass), Andrew Gold (keyboards), and Herb Pedersen (banjo). They get a pure, almost bluegrass-pure, sound with a contemporary feel, first-rate all the way. Additional guest players and singers include Maria Muldaur, James Taylor, and Emmy Lou Harris. John David Souther joins Ronstadt on the plaintive title tune (which he also wrote).

In the ten or so years that Ronstadt has been a professional singer, hundreds of others have blazed into our hearts only to fade without a trace. The sprinters can learn a lesson from this steady lady. M.A.

**\* JACK JONES:** What I Did for Love. Jack Jones, vocals; vocal and instrumental accompaniment. *After the Lovin'*; *What I Did for Love*; *If That's the Way You Want It*; *Over to You Now*; eight more. [Mike Berniker and Jack Jones, prod.] RCA APL 1-1111, \$6.98. Tape: ● ARK 1-1111, \$7.95; ● ARS 1-1111, \$7.95.

Jack Jones has an endearingly boyish voice and a knack for developing tasteful arrangements of pop ballads. This new album is blessed with gentle, understated arrangements that accent the dignity of the songs.

Jones's version of "What I Did for Love," the first of what certainly will be many versions of that fine piece of material from *A Chorus Line*, is especially adept. So too is his reading of "After the Lovin'," which initiates and ends the recording. "If That's the Way You Want It" is a fine up-tempo song with slight traces of soul music blended in. M.I.

**\* THE TONY BENNETT-BILL EVANS ALBUM.** Tony Bennett, vocals; Bill Evans, piano. *Young and Foolish*; *We'll Be Together Again*; *My Foolish Heart*; six more. [Helen Keane, prod.] FANTASY F 9489, \$6.98. Tape: ● H 8160-9489, \$7.95.

I'm not much for trips down memory lane, no matter how much I enjoyed the original. Here is the exception we all wait for.

The first thing to get over is the new look of Bill Evans: hale, hearty, huge. No more the ailing poet. Tony Bennett looks his regular warm self, just a couple of years later.

For those chronic complainers who ask why nobody makes this kind of album any more, let this music be an answer: Nothing is harder to do. There is no crutch, no support, no comfort. There are no grooves involved, no group atmosphere to fall in with and ride, no strings to soften moods, no horns to punch up energy. There are only these two personalities, their skills, and their personal needs. The recording was well planned and sensitively piloted by producer Helen Keane, who is Evans' long-time associate. The songs are impeccable, the best of the American song-writing tradition.

It has always interested me how Evans

can play in such a right-handed fashion with a rhythm section and in such a left-handed fashion on his own. Indeed, I don't know another pianist, with the possible exception of Roger Kellaway, who hears the left hand anything like the way Evans does. He plays implied time, often leaving holes where main pulses should be. This is a further pressure on any singer and surely a joy to conquer. Bill does as much soloing as he does accompanying here. I don't know or care which I like better.

As for Bennett, he meets us and himself straight on. His voice sounds a little funny at times, a bit rough. But never more vulnerable. Who can resist him? He shows everything. If a phrase comes up that looks scary, Tony may take too big a breath; the note will come out a little blustery but shape itself out as it goes. It is not perfect. It is wonderful. Nobody else could do this project; nobody else would be fool enough to try.

This is a personal, intimate, timeless album. Such work is not supposed to happen too often. If your grandmother crocheted brilliant heirloom afghans, chances are she didn't do more than five or six in her lifetime.

Deep thanks to Bill Evans, Tony Bennett, and Helen Keane. Already your new album is an old friend. M.A.

## Theater and Film

**\* MOSES, THE LAWGIVER.** Original film soundtrack recording. Composed by Ennio Morricone. Bruno Nicolai, cond. [Vincenzo Labella, prod.] RCA TBL 1-1106, \$6.98. Tape: ● TBK 1-1106, \$7.95; ● TBS 1-1106, \$7.95.

I usually hate music for Biblical films. The genre seems to bring out the saccharine worst in most composers. But Ennio Morricone's score for the film *Moses, the Lawgiver* (shown here as a serialized TV program) has a genuine feeling for the breadth, dignity, tragedy, and pageant of the subject.

Not that this is altogether surprising. One of the composer's chief stylistic signatures is created through long, choralelike progressions of sustained chords, and it is a sound that easily and effectively lends itself to heavier subject matters. In this score, Morricone uses the device both in the strings and in the wordless "Moses" theme for chorus, which he treats very much like an instrument of the orchestra.

He also creates a decidedly different musical vista for the eternal "Battle and Red Sea" part by using some deliberately grating, ultramodern effects in the strings—clusters, glissandos, microtonal sostenuto progressions—that, combined with some obsessive rhythmic ostinatos, give a much more grotesque and brutal color to the proceedings than can be found in any other treatments of the saga. Startling, too, are

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the sustained, nonsung cluster effects in the "In God's Voice" choral sequence, which evokes an uncanny feeling of omnipresence.

There is, in fact, an immense variety to the cuts on this disc. Each could merit lengthy discussion for originality and emotional impact, whether the hypnotically captivating chant of "Israel" (although I must say that the style seems more African than Israeli!) or the hair-raising, ultra-divisi pizzicato string writing in "Insects." The latter musical segment, unlike anything I have ever heard, presents a truly unique solution to the musical depiction of a "natural" phenomenon that has given rise to almost as many artistic clichés as those myriad wide-eyed street urchins that haunt the emporiums of shlock art.

But this well-recorded (with rotten surfaces), well-performed (rumor has it that "Bruno Nicolai" is the composer himself) recording is definitely better heard than described. It is a gripping and novel film-music experience, a perfect example of Morricone's seemingly inexhaustible inventiveness. R.S.B.

**\* MIKLÓS RÓZSA CONDUCTS HIS GREAT FILM MUSIC.** Royal Philharmonic Orchestra, Miklós Rózsa, cond. [Brian Culverhouse, prod.] POLYDOR SUPER 2383 327, \$7.98 (distributed by HNH Distributors, Box 222, Evanston, Ill. 60204).

The Thief of Baghdad; A Double Life; Lost Weekend; A Time to Love and a Time to Die; The Naked City; Knights of the Round Table; Diane; The Story of Three Loves; Young Bess.

Of the recent albums devoted to the efforts of the first- and second-generation film composers, this is certainly one of the finest. The selections give an excellent composite impression of the breadth and diversity of which this most symphonic of screen composers was capable. And even the shorter cuts—such as the one devoted to Billy Wilder's *Lost Weekend*, with its out-of-sync, synthesizer-accompanied "alcoholic" theme followed by a typically warm, achingly emotive love theme—re-create the affective substance of their films in far greater depth than most of the extracts on the RCA Classic Film Scores recording of Rózsa's music (ARL 1-0911).

Furthermore, the dynamism of Rózsa's vision as a composer is apparent in his conceptions of the music as a conductor. These are thrillingly taut, present performances that bring out all the scores' emotional vitality—reaching a high point in the "pursuit" music from Jules Dassin's *Naked City*. His idiom, with its decidedly modern dissonances and its diverse, nervous asymmetries and syncopations, was especially effective in communicating a bleaker, more contemporary view of existence, and Rózsa was therefore very much the man for a film noir such as *Naked City*. And although he has recorded the sequence on a much earlier Decca release, the outstandingly sharp sound reproduction, which features excellent stereo separation and delineation, helps bring the music and its performances to a point of incredible excitement and tension.

There is nothing on this disc that disappears, and if the soon-to-appear Vol. 2 is

anything like Vol. 1, you can expect another rave in these columns. Perhaps, too, the composer will give us new recordings of comparable quality of his important, non-film symphonic scores. (A complete Double Concerto should be a top priority.)

N.B.: Unbelievably this recording has not been picked up by any American company, and its availability on these shores is due mainly to the foresight of HNH Distributors, a small but invaluable outfit. R.S.B.



**\* STÉPHANE GRAPPELLI.** Stéphane Grappelli, violin and piano; piano, bass, and drums accompaniment. *Just a Gigolo*; *Three Little Words*; *The Birth of the Blues*; nine more. PYE 12115, \$6.98.

There are times when Stéphane Grappelli, now in his mid-sixties, seems to be single-handedly carrying on the memory of Django Reinhardt and the Quintet of the Hot Club of France and, at the same time, belatedly revealing the talents of his own that were overshadowed in the Quintet by the genius of Reinhardt.

This collection, recorded in 1973 when Grappelli was appearing at Ronnie Scott's in London, is an excellent mixture of both aspects of his latter-day career. There are some pieces that are played in such a pre-eminently Hot Club Quintet fashion ("It Don't Mean a Thing," "Crazy Rhythm," "Avalon") that they all but imply the presence of Reinhardt, even though there is no guitar in Grappelli's anonymous accompanying trio. Along with this are warm, richly harmonized explorations of ballads ("What Are You Doing the Rest of Your Life," "Didn't We") that bring out a side of the violinist that was rarely heard with the Quintet. And beyond this, we get Grappelli as composer and pianist—composer alone on "Opportunity," which has a lively, 1920s show-tune charm; composer/pianist on "Emotion," which blends shades of Bix Beiderbecke's piano pieces with an elegantly Continental melodic feeling.

Whether he is being jaunty or romantic, swinging or soulful, Grappelli is always in command, the polished, perceptive, complete performer. One can't say as much for the packaging of this disc, which omits any mention of his pianist, bassist, and drummer, even though the pianist takes a number of solos (of no great distinction, it is true) and the bassist makes an interesting solo appearance on "I've Got the World on a String." J.S.W.

**\* BARRY HARRIS:** Plays Tadd Dameron. Barry Harris, piano; Gene Taylor, bass; Leroy Williams, drums. *Hot House*; *Soultrane*; *Casbah*; five more. XANADU 113, \$6.98.

Neither Tadd Dameron nor Barry Harris has ever received the recognition he de-

serves—Dameron as composer, Harris as pianist.

Dameron has been dead for more than ten years, so his reputation now depends on the work he left behind him, which includes some of the more notable jazz compositions of a period when "composition" often identified nothing more than soloists' improvisations. Dameron was a highly creative writer—"bebop's finest composer," as Mark Gardner identifies him in his notes for this album—who not only wrote to fit the bebop ethos on "Our Delight" or "Hot House," but also composed a gorgeous ballad, "If You Could See Me Now," which stretches out beyond the usual confines of pop song with lines that seem to carry their own inner singing voice.

Harris, for his part, has maintained a strangely low profile over the years for a pianist of his subtle skills and high polish. Even his triumphs seem to occur quietly and unobtrusively—as when he provided one of the few moments of quality in an evening of solo piano at last summer's Newport Jazz Festival, a fact that was largely overlooked in the general disappointment of the over-all program.

This record serves to give Dameron's work the kind of showcase it deserves and to allow Harris to apply his finely honed musical sensitivity and technical mastery to material that provides the challenge and incentive that bring out his best work. The accompaniment he gets from Leroy Williams and Gene Taylor is right in the same groove—supportive and strong. J.S.W.

**\* BARNEY KESSEL AND FRIENDS:** Kessel Plays Kessel. Barney Kessel, guitar; Herbie Steward, reeds and flute; Vic Feldman, vibes; Jimmy Rowles, piano; Chuck Domanico, bass; Milt Holland, percussion; Jake Hanna, drums. *Sea Miner; For My Love; Brazilian Beat*; six more. CONCORD JAZZ 9, \$6.98 (Concord Jazz, Box 845, Concord, Calif. 94522).

This disc is a cornucopia of pleasant surprises. For starters, it removes Barney Kessel from the guitar-oriented settings in which he has been heard almost exclusively in recent years. There is plenty of guitar here—after all, Kessel is the leader—but it is heard in some fascinating ensemble contexts as well as the usual solos.

But even more interesting, insofar as Kessel is concerned, is the fact that all nine of the pieces in the set are his own compositions. When an instrumentalist undertakes to fill a record with that many original compositions, the prospect—unless the composer/performer is Duke Ellington—is usually ominous. But in this case the results are delightful. Kessel has eschewed the easy way—"composing" a blues or building a riff on pop song changes. Instead, he has created a set of unusually melodic and highly rhythmic pieces, which are presented in ensembles with intriguing voicings.

In these voicings lie more of the pleasant surprises, for this record marks the return, after a long absence, of Herbie Steward. One of the Four Brothers in Woody Herman's band in 1947, he now is playing soprano saxophone and flute in addition to

his customary alto. On both of his new instruments, Steward has a very distinctive, personal style: a lean, slightly rough tone on soprano and a similarly rough but surprisingly dark tone on flute. Victor Feldman, who has been buried in studio work for a long time, adds some light and airy vibes to the group, while Jimmy Rowles, that sly prober of the keyboard, completely justifies the use of the normally dire electric piano by finding brilliant bits of color and shading in that instrument's odd sounds to blend with ensembles, to accent a solo, or to flutter along on some ideas of his own.

The all-important rhythmic support comes from Chuck Domanico, who uses both electric and acoustic bass with a perception that parallels that of Rowles; from Milt Holland's atmospheric Latin percussion; and particularly from Jake Hanna's jaunty, joyful drumming. It is an imaginative, beautifully played collection from start to finish. J.S.W.

**DAVID MATTHEWS:** Big Band Recorded Live at the Five Spot. Joe Shepley and Burt Collins, trumpets and flügelhorns; Michael Gibson, trombone; Fred Griffen, French horn; Tony Price, tuba; Dave Tofani, Frank Vicari, and Kenny Berger, saxophones; Dave Matthews, piano; Sam Brown, guitar; Harvie Swartz, bass; Jimmy Madison, drums. *Three on the Stairs; Prayer; Nardis*; four more. MUSE 5073, \$6.98.

Dave Matthews' twelve-piece band made its debut on a Monday night last February at the Five Spot in New York, hoping to follow in the footsteps of the Thad Jones-Mel Lewis band that began playing on Monday nights at the Village Vanguard in 1966 and has used these gigs as the base for its successful career since then. And Matthews may do just that; as this first record shows, he has managed to get away from the stereotyped big-band sound of the past twenty years (which even the Jones-Lewis group has perpetuated) and at the same time has brought an electrified rock feeling into a big-band context much more successfully than such groups as Blood, Sweat, & Tears and Chicago.

His writing is strongly influenced by the Gil Evans-Miles Davis approach for Davis' 1948 octet: tight saxophone ensembles, with a deep background from tuba, French horn, trombone, and baritone saxophone, a style that provides a superb setting for Dave Tofani's strong, colorful alto-saxophone solo on "Round Midnight." Matthews uses much the same technique with his electrical instruments—bass, guitar, keyboard—to create an exciting, tough, tight, jumping ensemble attack on "Penny Arcade," which could be the contemporary equivalent of the pieces played by the Harlem jump bands in the '30s and '40s. There is more writing in these arrangements, less loose solo space, than in most big-band charts. And with only two trumpets and one trombone, there is none of the screaming brass that afflicts other big bands. The emphasis, instead, is on the three-man saxophone section, for which Matthews writes with imagination and insight. And the two key soloists also come from that section: Tofani, a brilliantly full-bodied alto player,

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and Frank Vicari, who has a hard-toned attack on tenor.

The record is not consistent—in fact, the first side is half gone before the band's individuality begins to emerge. But on "Joyce from the Bronx," "Round Midnight," "Dance of the Wind Chimes," and "Penny Arcade," Matthews shows the fresh qualities that he has brought to big-band jazz.

J.S.W.



### NEW BLACK EAGLE JAZZ BAND: In

Concert. Tony Pringle, cornet; Stan Vincent, trombone; Stan McDonald, clarinet and soprano saxophone; Bob Pilsbury, piano; Peter Bullis, banjo; Eli Newberger, tuba; Cee Hans Pameijer, drums. *Wild Man Blues; Skid-Dat-De-Dat; Snag It*; five more. BLACK EAGLE 2, \$6.50 (New Black Eagle Jazz Band, 128 Front St., Marblehead, Mass. 01945).

The Black Eagles keep getting better with every release. They are so far ahead of most of the other traditional bands around the country that there is scarcely any basis for comparison. It is not simply that the band as a whole is excellent or that it can balance standard, familiar material with pieces that can be identified only with it. ("I'm Travelin'," a gospel-type tune, and a wild rewriting of "I'm Dancing with Tears in My Eyes" called "Black Eagle Skuffle" are both in this set.) Three very strong musical personalities bring their own style and sound to everything the group plays and, in doing this, set the New Black Eagle apart from all the others.

Few trombonists since J. C. Higginbotham have played with the raw, lusty, full-bodied bray that Stan Vincent achieves. Stan McDonald is a marvelously exuberant clarinetist and soprano saxophonist who can be as solidly broad-toned as Sidney Bechet at times, plaintive or bubbling at other times, but is always the strong core around which the ensembles revolve. And Bob Pilsbury is a pianist with a unique slapdash attack who may go stomping through great swoops and sweeps or pick his way curiously through single-note breaks. When it is in full cry, the band develops a tremendously powerful drive-note "I Found a New Baby" and "Wildcat Blues"—with a rhythm section that rises to great heights of garrumphing joy when Eli Newberger cuts loose on tuba.

This collection is taken from sessions in Boston and New Orleans, beautifully recorded except for the one piece from New Orleans ("Black Eagle Skuffle"), on which both piano and cornet are lost in the balance. J.S.W.

### VICTORY PARADE OF SPOTLIGHT BANDS:

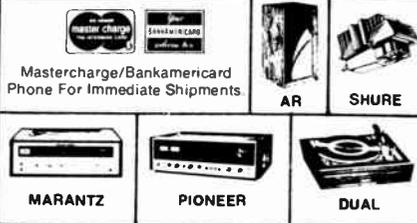
Jimmy Joy and His Orchestra; Charlie Spivak and His Orchestra. *Everytime We Say Goodbye; Right as Rain; Shine On, Harvest Moon; Green Eyes*; eleven more. AIRCHECK 6, \$6.00 (Kiner Distributing Co., Box 724, Redmond, Wash. 98052).

This is one of four discs that the Aircheck label has drawn from the *Victory Parade of Spotlight Bands*, the big-band radio series heard during World War II. Although the music tends to be more pop than jazz this

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particular disc is of special interest for its evidence of the jazz-directed aspects of two bands rarely considered part of the Swing Era.

In fact, to the extent that Jimmy Joy is known at all beyond the Southwest, where he led bands from the 1920s through '40s, his were usually categorized as sweet bands. But here he is in 1945 with a band that not only swings, but has some tantalizingly unidentified soloists who can make you think you are listening to well-known jazzmen. There is a tenor saxophonist, for example, who gets into a driving Vido Musso attack on "The Savoy Is Jumping"; a big, open, swaggering trombonist; a trumpeter who has the crisp, cutting edge of early Harry James; and a bassist, Jimmy Boone (the only musician identified on the broadcast), who plays a solo on "Dark Eyes" that is pure Milt Hinton, backed by perceptive cymbal work.

The Spivak side, also a 1945 broadcast, puts more emphasis on sweet sounds (and Spivak's open trumpet is brilliant). But there are two samples of the way this band could swing, something rarely apparent on its commercial records: a ballad with a beat, "Into Each Life Some Rain Must Fall"; and a swinging riff number that shows off the tight ensemble playing, good tenor saxophone and trombone soloists (Herbie Harper on trombone?), and a flag-waver drum solo for Alvin Stoller.

Simply as nostalgia, these two sides are tremendously evocative: The broadcasts are complete with the extolling of the defense plants where the bands were playing, Coca Cola commercials, and the melodic theme that Coca Cola used then, a tune that could stand reviving on its own merits. In addition, the sound is exceptionally good, with none of the constricted feeling usually associated with air checks. J.S.W.

## In Brief

**MORRIS ALBERT:** Feelings. RCA APL 1-1018, \$6.98. Tape: ●● APK 1-1018, \$7.95; ●● APS 1-1018, \$7.95.

Morris Albert is currently riding a hit single called "Feelings," preceded by the successful "Gonna Love You More" (also on this disc). He is new to America but already established in his native Brazil, where this album was recorded. Albert is a troubadour in the classic sense. He can sit down and write a ballad that everyone can relate to—simple, real, without trend, like "Where Is the Love of the World." Albert is not fancy, but he's real and he could be a stayer. M.A.

**NIGEL OLSSON.** ROCKET PIG 2158, \$6.98. Tape: ●● PIGC 2158, \$7.98; ●● PIGT 2158, \$7.98.

Nigel Olsson is out on his own, and while his new album is nice, even more impressive is the fact that in Hollywood some producers are paying him \$800 a session to play drums on their dates—four times double scale. He plays well, that's for sure; Mick Jagger always thought so. But at that price, it seems to me that the best thing that could

happen to Olsson would be to bomb out as a singing, drumming solo, so he can concentrate on studio work. M.A.

**AZTEC TWO-STEP:** Second Step. RCA APL 1-1161, \$6.98. Tape: ●● APS 1-1161, \$7.95. Wit abounds and sensibilities are sharp on Aztec's first RCA disc. Its cutting stage show and a new label might just lead it beyond New York cultdom. H.E.

**SAM AND DAVE:** Back at 'Cha! UNITED ARTISTS UA-LA 524G, \$6.98. "Hold On, I'm Coming, I'm Coming" has kept me hanging since the mid-Sixties, and this disc will keep me hanging a little longer. Sam and Dave may be back, but some better material would have made their return that much better. H.E.

**CARAVAN:** Cunning Stunts. BTM 5000, \$6.98.

Caravan's mellifluous progressive rock, while pleasant enough, lacks the spark that guarantees instant success. The group has been trying for a long time to create excitement; it is becoming more proficient, but professionalism in the place of flash has never been a sure route to rock triumph. H.E.

**OHIO PLAYERS:** Honey. MERCURY SRM 1-1038, \$6.98. Tape: ●● MCR4 1-1038, \$7.95; ●● MCR8 1-1038, \$7.95.

This superstar septet plays a brand of progressive rock that is heavily laced with both jazz and rhythm and blues. All of these influences come together to create a musical product that is attractive enough to offset the repetitions that keep popping up on this disc. H.E.

**FRANKIE VALLI:** Closeup. PRIVATE STOCK PS 2000, \$6.98. Tape: ●● H 5300-2000, \$7.95; ●● H 8300-2000, \$7.95.

"Closeup" contains the monstrously successful hot singles "My Eyes Adored You" and the disco-oriented "Swearin' to God." Middle-of-the-road artists by the score are making comebacks; Valli's is one of the biggest. Obviously, many people out there want to be coaxed rather than challenged. H.E.

**MARCIA WALDORF:** Memoranda. CAPRICORN GP 0159, \$6.98.

The first album by this singer/songwriter shows much promise: a clear, rich, expressive voice of wide emotional range, and some well-made songs as good as anything you're likely to hear in contemporary music. Highlights: "Why Can't We Both Try at the Same Time?"; "Born Again," and "Love Is In," which features exceptional guitar playing by Davis Cousey. An outstanding classically trained musician herself, Waldorf plays cello, piano, and celeste on various tracks. J.G.

**QUINCY JONES:** Mellow Madness. A&M SP 4526, \$6.98. Tape: ●● CS 4526, \$7.98; ●● BT 4526, \$7.98.

Not exactly mad, but mellow nonetheless. Sweet-talking soul that has some of Isaac Hayes's inventiveness, but none of his pretentiousness. H.E.

**Rolls-Royce reels . . .** As every audiophile now sadly knows, the great early expectations of recorded tape's becoming the ne plus ultra medium for home listening were never realized. From the first, manufacturers have been unimaginatively content to accept disc quantity and quality limitations. A pioneering attempt to exploit at least the full technical potentials of open-reel taping wasn't made until last year in a superb quadriphonic test tape and several brief piano recitals from Ambiphon Records, 1 Riverdale Avenue, Bronx, New York 10463.

Now Ambiphon is back with the first of a series of more musically rewarding releases, this one starring the astonishingly magisterial seventeen-year-old guitarist Michael Newman. On the Q-reel I've heard (QR 7502A) the youngster has the guts—and the skill—to challenge even the great Julian Bream in Britten's Op. 70 Nocturnal Variations, the Villa-Lobos Prelude No. 2, and a Dowland fantasia. This 23-minute recital is preceded by those invaluable 4½-minute test and alignment materials, as is the companion recording of works by Narvaez, Mudarra, Frescobaldi, Sor, and Villa-Lobos (QR 7502). The programs are combined on the 10½-inch metal Q-reel QR 10-7502 and on the normal-size stereo-only reel SR 7502. All are deluxe processings, duplicated at one-to-one rather than high speed (which does make a tremendous technical difference). The prices are correspondingly impressive: \$19.95 for each of the shorter Q-reels and the stereo reel; \$34.95 for the big professional-size Q-reel. But apparently there are both pro demonstrators and audiophile perfectionists who are confident of getting their money's worth here!

**. . . And economy cassette packaging.** Manufacturers seem more economy-conscious—for themselves, of course, rather than their customers. Although it wasn't so long ago that RCA raised the price of its cassettes, it now begins to abandon the standard plastic "jewel box" packaging in favor of a thinner, paper-hinged, cardboard box. Well, at least it looks attractive, saves space, and has none of the disadvantages of Ampex's unsatisfactory plastic slipcases.

The first newly boxed RCA Red Seal cassette I've played is ARK 1-1155, \$7.95, the anticipated debut recording of Avery Fisher award-winning cellist Lynn Harrell, backed by the London Symphony under James Levine in the Dvořák cello concerto. Both solo and orchestral playing are authoritatively adept, and the richly substantial recording matches that of

by R. D. Darrell

## The Tape Deck

Levine's recent Mahler First Symphony. But the interpretative approach is self-consciously neo-Romantic in its exaggerated tempo and dynamic contrasts and often heart-on-sleeve expressiveness.

The rather disconcerting nature of this reading by such young virtuosos is heightened by comparison with the simultaneously released reading by the Canadian-born Zara Nelsova, famous back in the early Fifties as Ernest Bloch's choice as soloist in his own London recording of Schelomo and for an earlier version of the Dvořák concerto with Krips. Here, some twenty-five years later, she is playing (with the St. Louis Symphony under Susskind) with more verve and irresistible relish than ever, projecting a personal warmth that makes Harrell seem lacking in conviction. In this incomparable music the Casals/Szell (Seraphim mono) and Fournier/Szell (DG) disc-only versions remain supreme, but for both glowing enthusiasm and exultant songfulness Nelsova wins a place all her own (SMG-Vox 8T/CT 152, eight-track cartridge/Dolby-B cassette, \$5.98 each).

**Sunny childhood/Celtic twilight evocations.** Good as the whole Boulez/Columbia Ravel series has been and will be, Vol. 3 has outstanding, markedly contrasting appeals. Its complete *Ma Mère l'Oye* ballet is a paradigm of Gallic elegance and lucidity, while its dramatically different *La Valse* is one of the most exciting I've ever heard. This may not be the most tenderly magical *Mother Goose*, and last month's Skrowaczewski *Valse* for SMG-Vox is more sensuously impressionistic, but these Boulez versions are both extraordinarily revelatory performances and—in gleaming, airborne, unexaggeratedly panoramic quadriphony—truly representative of today's state of the audio art: Columbia MAQ 32838, Dolby-B Q-8 cartridge, \$7.98.

Sir Arnold Bax may not be even a recognizable name to young American listeners, but veteran discophiles fondly remember his evocative tone

poems *Tintagel* and *The Garden of Fand*. Dated and eclectic as they may be, they remain fascinating examples of romantic impressionism with a British accent. These two works, plus a more Delian/Sibelian Northern Ballad No. 1 and the catchy proms/pops encore piece *Mediterranean*, are most welcome to the tape repertory, especially in the fine 1972 Lyrita recording of Sir Adrian Boult's loving performances with the London Philharmonic: Musical Heritage MHC 2120, Dolby-B cassette, \$6.95 (from the Musical Heritage Society, 1991 Broadway, New York, New York 10023).

**Zarathustra in St. Louis.** What Walter Susskind has made of the St. Louis Symphony, evident in the Dvořák cello concerto with Nelsova, is overwhelmingly demonstrated in their powerfully, expansively played and recorded Strauss *Also sprach Zarathustra*: SMG-Vox CT/8T 145, Dolby-B cassette/eight-track cartridge, \$5.98 each. This is a more conservative Germanic, darkly portentous, weightily dramatic treatment than Haitink's more poetically eloquent 1974 Philips version (my personal favorite), but for many listeners Susskind's well may seem more satisfactorily "Straussian." Sonically it is first-rate even in stereo only. (The disc edition is QS-encoded.)

**Beethoven piano-concerto cornucopias.** As knowledgeable collectors might expect, there's no real challenge to the pre-eminence of the Ashkenazy/Solti Beethoven Five on London—or even to the no-longer-on-tape Fleisher/Szell Columbia (formerly Epic) series—by either the Prestige Box set from Wilhelm Kempff with the Berlin Philharmonic under Leitner (DG 3371 010, three Dolby-B cassettes, \$23.94) or from Alfred Brendel with various nondescript orchestras conducted by Böttcher, Wallberg, and Mehta (Classical Cassette Club CCC 17 and 4, two Dolby-B double-play cassettes, \$5.95 each). But these sets should magnetically attract their soloists' aficionados, and each represents distinctively individual appeals: Kempff's in older, Romantic, North German traditions; Brendel's in more genially engaging Viennese vein. The robustly weighty 1962 DG recordings are admirably processed; yet the CCC processings are even more noteworthy both in doing better justice to the 1962-67 Vox/Turnabout master tapes than the original disc editions and in getting onto only two cassettes—running over 103 and 95 minutes, respectively—all five concertos plus three Beethovenian fillers.

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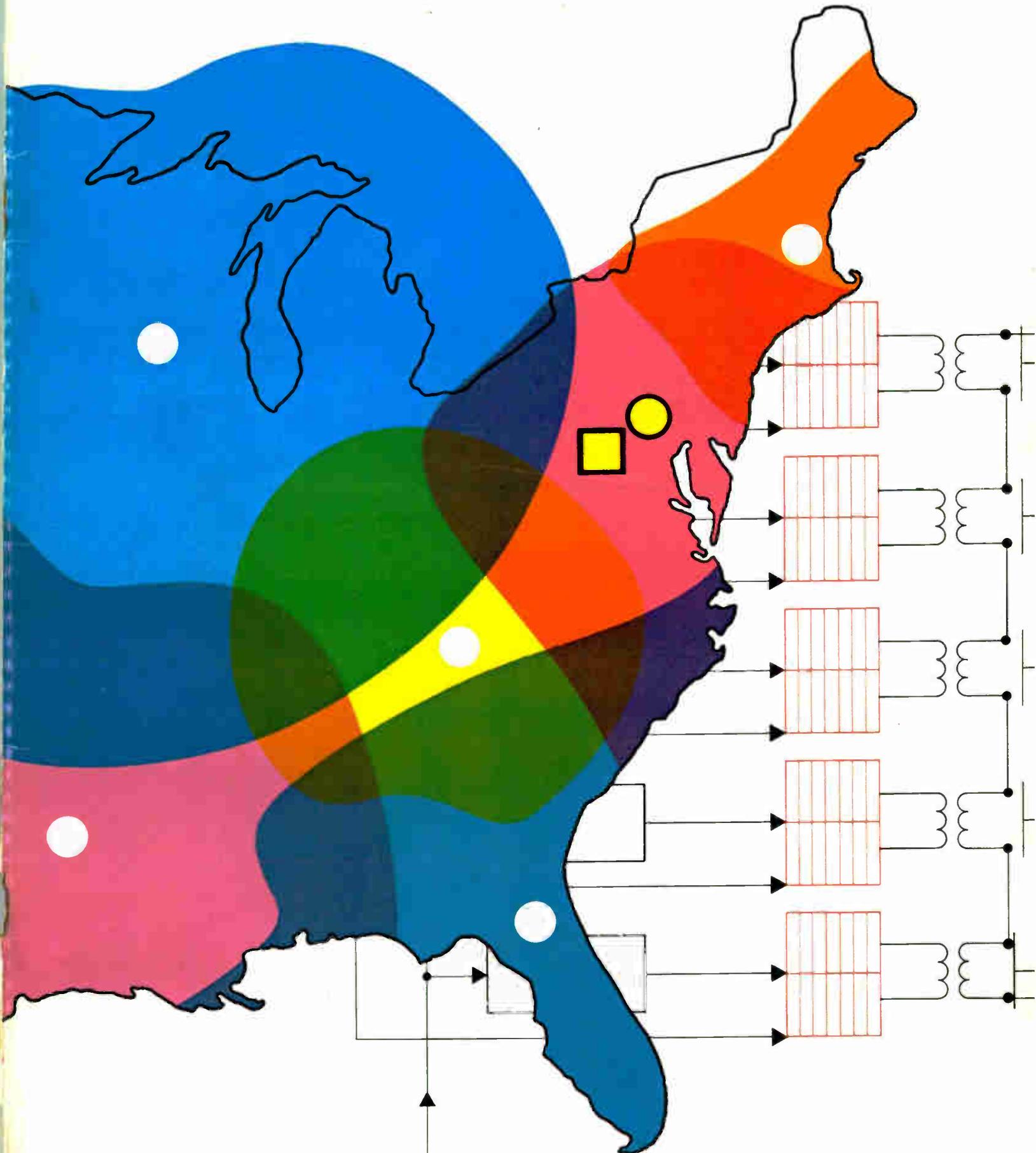
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### Axial Fans Have Adjustable Blades for Efficiency at Various Air Flows

A new line of axial fans has been brought out by the Westinghouse Sturtevant Division for boilers in electric generating plants and for industrial processes. They are a joint development of that Division and the Westinghouse Product Transition Laboratory, with assistance from the Fluid Dynamics Laboratory of the Westinghouse Research Laboratories. A prototype fan has been under test at the Sturtevant Division for the past year.

The axial fans have blades whose pitch can be changed, while the fans are rotating at constant speed, to enable them to operate efficiently at various air flows. Centrifugal fans, which the Sturtevant Division also produces, are highly developed, but peak efficiency can be obtained economically with them only at one or two specified air flows; present methods of varying their air flow, such as use of dampers, variable-speed fluid drives, magnetic couplings, and turbine drives, cause energy losses that impair efficiency.

The axial fans are expected to be used primarily for boilers that furnish steam in swing-loaded electric generating plants, in which electrical output can fluctuate substantially to meet changing demands. Uses also are foreseen in some industrial applications where the flow of air or other process gas needs to be varied.

The rotor is supported by two sleeve bearings and a thrust bearing. Sleeve bearings have longer operating life than antifriction bearings in this application because there is no metal-to-metal contact, since the fan shaft rides on oil films.

Lever arms connect each blade to a hydraulically actuated piston in the fan hub. (See photograph at lower left.) When hydraulic pressure is varied, the pitch of the blades changes. The hydraulic blade adjustment is practically free of hysteresis, an important feature for stable boiler regulation. Blade position remains unchanged if the hydraulic system fails, permitting the generating unit to continue operating until it is convenient to service the fan.

The axial fans are being made initially as single-stage forced-draft units with air-moving capacities ranging from 200,000 to 2,000,000 cubic feet per minute at gauge pressure of 30 inches of water. Rotors measure 45 to 200 inches in diameter, and the drive motors needed range from 250 to 15,000 horsepower. The Sturtevant Division expects to complete development of the product line later this year by introducing a single-stage induced-draft fan and two-stage forced- and induced-draft fans. The complete line will handle mechanical draft requirements for fossil-fuel generating units with electrical outputs up to 1200 MW and more.

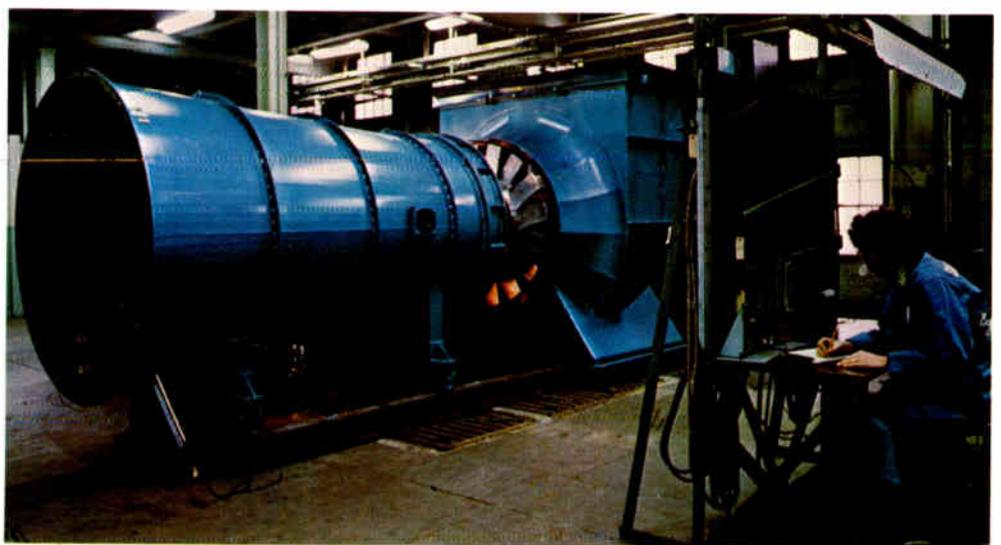
The two-stage fans will have two wheels mounted in series on the same shaft and within

the same casing. The required pressure rise is divided between the two wheels, so tip speeds are lower than with a single-stage fan. Two-stage fans will be applied when high pressures are needed and when low tip speeds will reduce the rate of blade erosion caused by particulates in the gas stream.

Besides the advantage of higher efficiency at changing air flows, axial fans are lighter than centrifugal fans. They generally require simpler ductwork, so erection costs are usually lower. Axial fans run at higher speed than centrifugal fans, so they use higher-speed motors that usually cost less than low-speed motors of comparable horsepower rating. Moreover, an axial fan's lower rotor inertia shortens the duration of inrush current during starting.

The axial fan also should be easier to repair and maintain. Main bearings and blades can be serviced through access openings, and all blades can be replaced within a few hours. If major overhaul of wheel parts is required, the housing can be separated to make the wheel completely accessible as shown in the photographs.

The hydraulic blade-pitch mechanism with its rotating seal has been subjected to severe life-cycle tests. Wheel stresses are being calculated by a computer program utilizing the latest analytical methods, and the program will be verified by strain-gauge tests. Critical and resonant speeds are also calculated by computer.



# Westinghouse ENGINEER

## January 1975

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*Front Cover:* Recent developments in technology have made possible an automated radio transmitting facility for the Decision Information Distribution System (DIDS). The developments include a reliable minicomputer to provide control, monitoring, and alarm functions and a solid-state low-frequency transmitter. A portion of the DIDS network that includes the prototype installation discussed in this issue and a symbolic representation of the solid-state transmitter were used by artist Tom Ruddy for this month's cover design.

# An Automated Transmitting Facility for a National Warning Network

Nelson B. Tharp

*An automated high-power low-frequency radio transmitting facility for the Decision Information Distribution System has been developed under sponsorship of the Defense Civil Preparedness Agency. All-solid-state modular design of the transmitter provides the required reliability for unattended computer-controlled operation in this crucial warning system. The facility is probably the first such high-power communication installation to be implemented for unattended operation, and its economic advantages promise to make such installations an accepted practice in the near future.*

The purpose of the Decision Information Distribution System (DIDS) is to warn federal, military, and civilian authorities, state officials, and the civilian population of natural disasters or other extreme emergencies. The system was designed by the Defense Civil Preparedness Agency of the U.S. Department of Defense to augment and improve the present system on which the nation now depends for warning of enemy attack. It will provide a much more versatile communications network for disseminating all forms of emergency information.

When completed, DIDS will have ten regional transmit facilities to provide coverage to the 48 contiguous states (Fig. 1).

Nelson B. Tharp is Manager, Program Development Engineering, Command and Control Division, Westinghouse Defense and Electronic Systems Center, Baltimore, Maryland.

Additional coverage to Hawaii and Alaska is planned for the future.

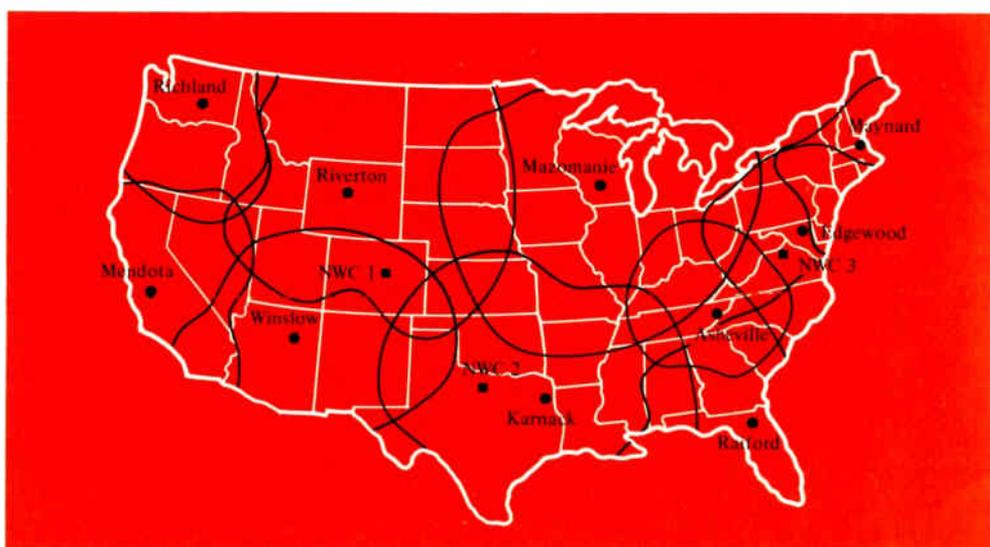
Warning information will be inserted into the DIDS transmitting network from one of three alternate National Warning Centers located in Colorado, Texas, and near Washington, D.C. The warning signal from a National Warning Center is carried by Autovon and private dedicated lines to the regional transmitters, where it is re-broadcast on low-frequency radio. Low frequency (163 to 197 kHz) was chosen for the DIDS network because the ground-wave type of propagation in that frequency range provides very consistent signals over a large area and is relatively unaffected by time of day or ionospheric disturbances,

both of which degrade radio broadcast signals of higher frequency.

Construction on the first element of the DIDS network began in the spring of 1972. This prototype installation, now completed, consists of a control equipment at the National Warning Center at Olney, Maryland (near Washington, D.C.), and a regional transmit facility near Edgewood, Maryland (Fig. 2).

Acceptance tests for both the control and transmit facilities have recently been completed successfully. The entire system could be completed by 1978.

The prototype system was designed and built by the Command and Control Division, Westinghouse Electric Corporation.



1—(Above) The DIDS network will cover the contiguous United States with ten regional transmit facilities, identified here by black dots. The regional transmit facilities will use ten frequencies ranging from 163 to 197 kHz. They will be controlled from three National Warning Centers, identified by black squares.

2—(Left) This prototype regional transmit facility is located near Edgewood, Maryland. Its equipment building is semiburied to protect it from overpressure and other environmental disturbances.

3—(Right) Major components and functions of the prototype regional transmit facility are illustrated by this functional diagram.



### Regional Transmit Facility

The regional transmit facilities will be constructed to survive very severe environmental conditions, as demonstrated by the prototype regional transmit facility at Edgewood (Fig. 3). The equipment building is partially below ground and constructed of heavily reinforced concrete to withstand overpressure, tornado-level winds, and severe air and ground shocks. The heavily guyed antenna tower, the strongest of its type in the northern hemisphere, is designed to survive 150-knot winds even when covered with a heavy layer of ice.

The wire lines for carrying command and message signals from the National Warning Centers will eventually be paralleled with VLF radio links to increase reliability. Wire lines also connect the transmit facility to monitoring equipment at a remote maintenance center and to alarm indicators at area police and fire stations.

The facility is capable of operating without personnel or any outside resources for

two weeks. The only outside inputs required are the command and message signals from one of the National Warning Centers.

Remote monitoring allows maintenance and engineering service to the facility to be done by a central maintenance group that can also service other government communications systems in the area. This provides for maximum use of the regional maintenance resources.

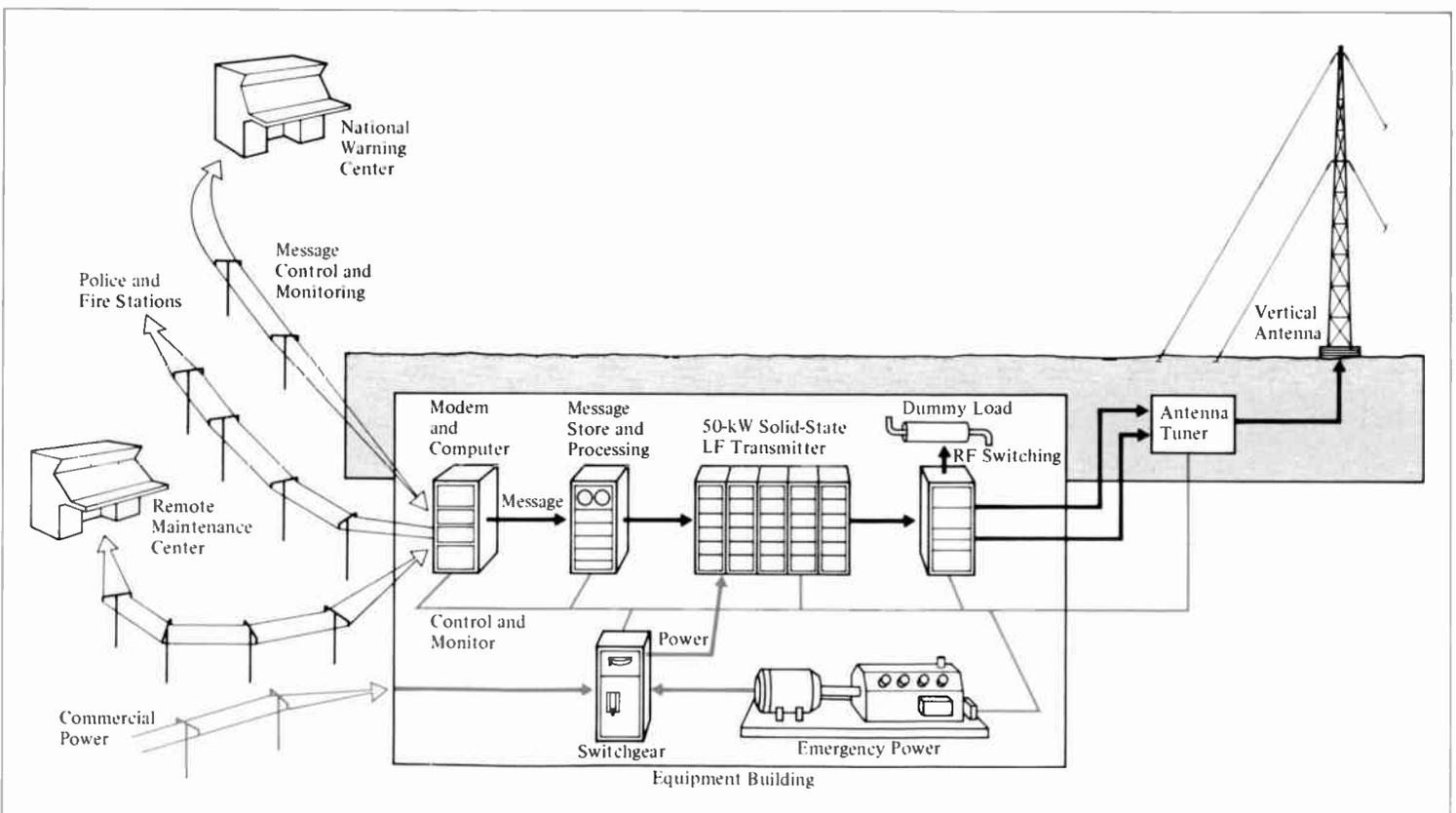
The amplitude-modulated transmitter provides 55 kW to a vertical 700-foot top-loaded antenna. Dual transmission lines run between the transmitter and the antenna tuner at the base of the antenna tower. The low-frequency transmitter provides highly reliable transmission to voice, teletype, and siren-activation receivers over a 400-mile radius from the regional transmit facility.

The facility normally operates on commercial power but is switched to an internal emergency engine-generator, which is automatically started if commercial power is lost or whenever a general alert trans-

mission is made. This procedure is followed to assure transmitter power in the event of commercial power failure, which could occur during catastrophic environmental situations. The control equipment and transmitter installed at the Edgewood prototype site are shown in Fig. 4. The shock-mounted emergency engine-generator sets are shown in Fig. 5.

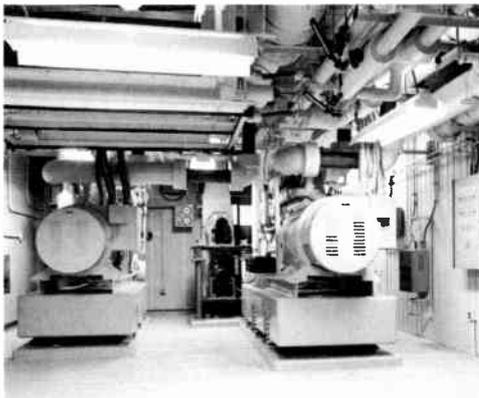
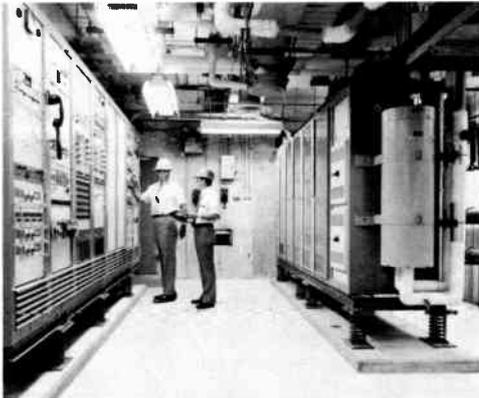
### Design Approach to Automation

The benefits to be gained from automating a radio transmitting facility have been apparent for some time. However, several difficulties have impeded its feasibility until recent developments in technology provided practical solutions to the problems. First, unattended operation of a major transmitting facility essentially requires a computer to provide all the memory, evaluation, decision, and enabling functions necessary to direct the complex control, monitoring, test, and administrative operations required. The recent availability of a reliable minicomputer at a reasonable cost has made the use of a



computer practical in this application.

The DIDS facility design combines such a computer with appropriate hard-wired logic to provide rapid and accurate, yet flexible, automatic station control. The computer used is a Westinghouse Type CP-1138 Millicomputer with an 8192-word magnetic core memory (Fig. 6). This



4—(Top) Transmitter and control equipment at the regional transmit facility are spring mounted to protect them from ground shock. The 55-kW transmitter and dummy (tune-up) load are housed in the cabinets on the right; the station computer, control equipment, and tape-storage equipment are in the cabinets on the left.

5—(Bottom) Two 150-kW engine-generator sets at the regional transmit facility provide a backup power source.

computer was originally developed for use with the U. S. Navy's Harpoon missile and would also be used with the Navy's Condor missile system. Since the Millicomputer was originally designed to meet the rigorous requirements of a military airborne application, it is well suited to the DIDS application where the requirement for reliable operation is paramount.

Another basic requirement for successful unattended operation, particularly for a high-power installation, is equipment reliability. This requirement is met in the DIDS transmitter design by employing solid-state active devices, which are inherently reliable components, and by utilizing modular redundancy with automatic stand-by switching. The control computer is programmed to continually evaluate equipment status and implement switching to select the optimum modular configuration for the existing set of operating (or failure) conditions. Computer control provides almost instantaneous selection and is not subject to the panic errors that sometimes occur with manual operation. Rapid and accurate reconfiguration of redundant modules is a major contributor to realizing the extremely high reliability required.

#### Solid-State High-Power Transmitter

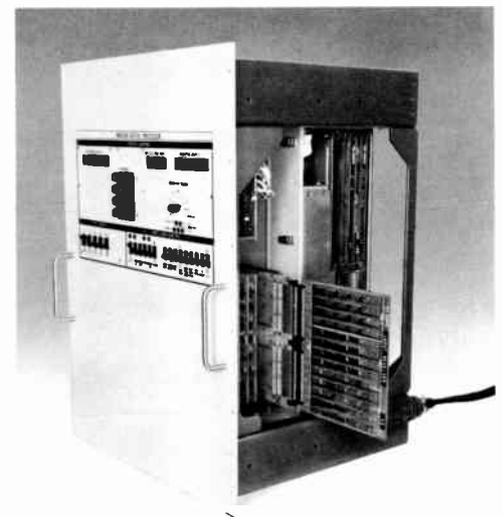
The use of all-solid-state design in the 55-kW DIDS transmitter is particularly effective in producing high reliability because power transistors do not have the fragility and wear-out problems associated with vacuum tubes. Reliable operation is enhanced by modularizing the power amplifier into four 14-kW amplifier modules plus a switchable spare. The switching arrangement is shown in Fig. 7. Substitution takes place automatically upon failure of a power-amplifier module and is completed within 2 seconds. This approach of switched redundancy was developed by Westinghouse in the design of the Air Force 487-L Transmitter.<sup>1</sup>

The modular configuration of one of the five 14-kW power-amplifier units is shown in Fig. 8. Each amplifier unit includes a driver, seven modulator trays, and 14 amplifier trays containing a total of 1120 power transistors, which provides a 20-

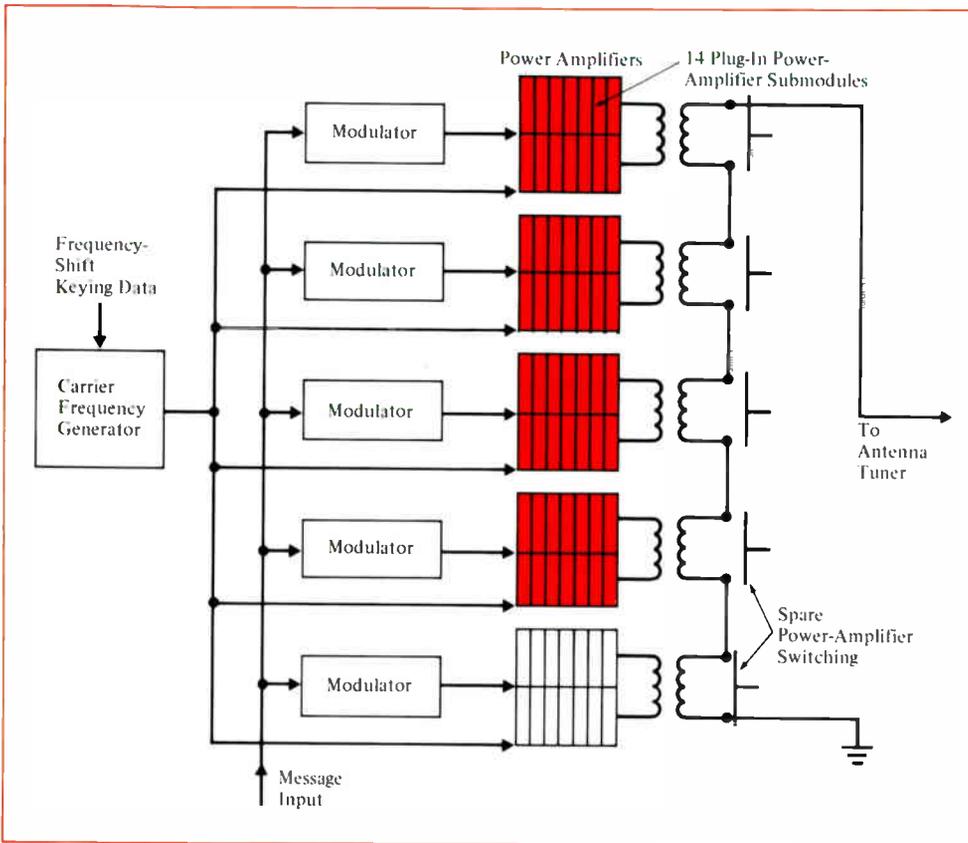
percent built-in redundancy of transistors. Each power-amplifier tray contains 64 power transistors and is capable of generating a kilowatt of radio-frequency power.

Use of multiple transistors in parallel, arranged to be fail-safe, essentially eliminates the transistor as a cause of transmitter failure. A malfunctioning transistor is removed from the output bus by a series fuse. Transistor redundancy combined with the switchable spare power-amplifier module has provided a transmitter mean time between failures of more than 2500 hours.

The power transistors (2N 3902) are operated in a switching (saturated) mode to provide very high efficiency. The power amplifier runs at more than 90 percent efficiency rf/dc (ratio of radio-frequency power into the antenna to dc power input to the final amplifier). The overall transmitter has an rf/ac efficiency of approximately 80 percent. The high efficiency of the solid-state transmitter is a vital factor in minimizing the amount of power required, which in turn minimizes the amount of engine-generator fuel that must be stored

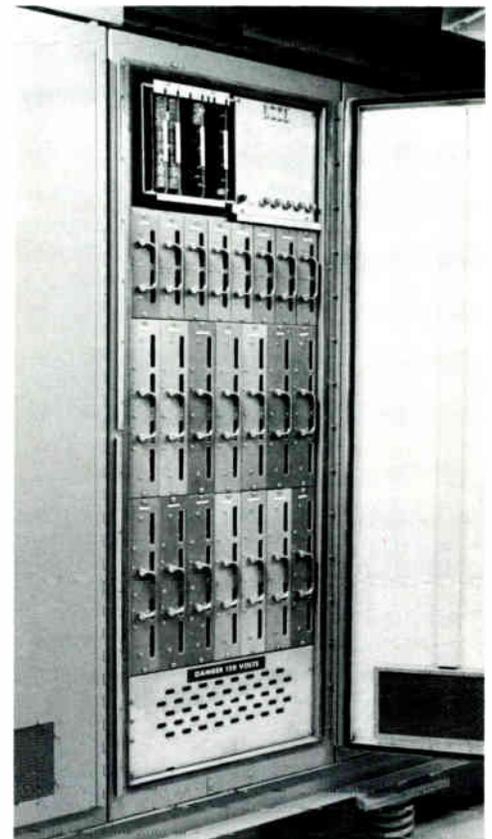


6—A Westinghouse CP-1138 Millicomputer supervises station operation so that the regional transmit facility can operate unattended.



7—(Left) The 55-kW solid-state transmitter is of modular design, with four 14-kW power-amplifier modules operating (color) and a fifth held in reserve as a spare.

8—(Below) Each 14-kW power-amplifier module consists of a driver, seven modulator trays, and 14 amplifier trays.



in the underground building.

Another major benefit of high conversion efficiency in the transmitter is the reduced requirement for heat loss dissipation. Transmitter losses raise the temperature of the cooling air, and an air-to-water heat exchanger is used to transfer this heat to cooling water drawn from wells. After passing through the heat exchanger, the water is cooled and discharged into the nearby river.

To illustrate the savings in fuel and cooling water, the difference in heat dissipation required for the solid-state 55-kW transmitter and a conventional tube transmitter of the same output is approximately 60 kW, which would require an additional 5.2 gallons of fuel and 2450 gallons of cooling water per hour.

Sensors at the transmitter site constantly measure critical operating parameters of the equipment and transmit them by a 100-word-per-minute teletype circuit to the remote maintenance center where they are printed out for record. When the measured quantities are out of tolerance, or other

abnormal conditions are sensed at the unattended transmit site, an alarm is sounded and displayed on the console at the remote maintenance center (Fig. 9).

#### Automatic Control

The control equipment in the regional transmit facility includes teletype and digital signaling terminals for receiving computer commands from the National Warning Center, a minicomputer used as the station processor, storage and control for tape-recorded teletype and voice messages, and a transmitter control and monitor. A simplified diagram of the computer control of major transmit station elements is shown in Fig. 10.

Primary operating commands originate at the National Warning Center and are implemented by transmitting teletype signaling codes over lines to the computer at the regional transmit facility. To eliminate the possibility of broadcasting alert messages containing ambiguities or inaccuracies, standard procedure is to carefully word the warning messages and pre-

record them on cassette tapes, which are stored in the control unit at the transmit site. However, in the event that no pre-recorded message is appropriate, live voice and teletype messages can also be transmitted to the regional transmit facility for broadcasting.

Confirmation of the messages received from the National Warning Center and the response and status of the equipment at the regional transmit facility are returned to the National Warning Centers over the wire lines by digital signals. Operational data and alarms monitored at the regional transmit facility are transmitted to the remote maintenance center by teletype signals over wire lines.

Commands from the National Warning Center contain an address-selection code to operate transmitters at all or selected transmit sites. Also, the command message contains instructions for selecting the address format of the broadcasts. The digital address format is transmitted by digitized audio tones. The address format of the broadcast operates all or only selected groups of receivers within the area covered by the activated transmitters.

User groups can be structured into organizational, political, or geographical categories, giving a wide flexibility of uses for the DIDS network. For example, an address format might activate receivers at state police facilities, or at civil defense agencies along a coast in the path of a hurricane, or at local authorities located along a river valley subject to flooding. More than 2000 discrete addresses are available for programming desired user groupings.

#### Computer Functions

The operating functions performed by the computer at the regional transmit facility can be grouped into three major categories: control, monitoring, and alarms.

**Control**—Upon command from a National Warning Center, the computer sets up the transmitter to operate. For an alert message, it starts the two engine-generator sets and selects the first to stabilize. For routine and test operations, the facility is operated on commercial power but, if commercial power fails, the engine-generator set can be quickly started automatically.

The computer selects the antenna or dummy load as directed by the National Warning Center; if the dummy load is selected, it also starts the flow of cooling water. The dummy load is a water-cooled device that simulates the antenna and is used for tune-up and test of the transmitter without radiating a signal. If signal radiation is desired, the computer ungrounds the antenna and selects the better of the two rf transmission lines (minimum-voltage standing-wave ratio). If a transmission line fails, the computer switches to the alternate line. At the end of a broadcast, the computer shuts down the transmitter and

ancillaries and grounds the antenna.

Message control performed by the computer includes the selection of alert or general user coverage or specific addressees from computer storage as instructed by the National Warning Center. Then a pre-recorded voice or teletype message (or both) is selected from the tape storage for transmission, or the transmitter is set up to retransmit live or taped voice and/or teletype messages from the Center.

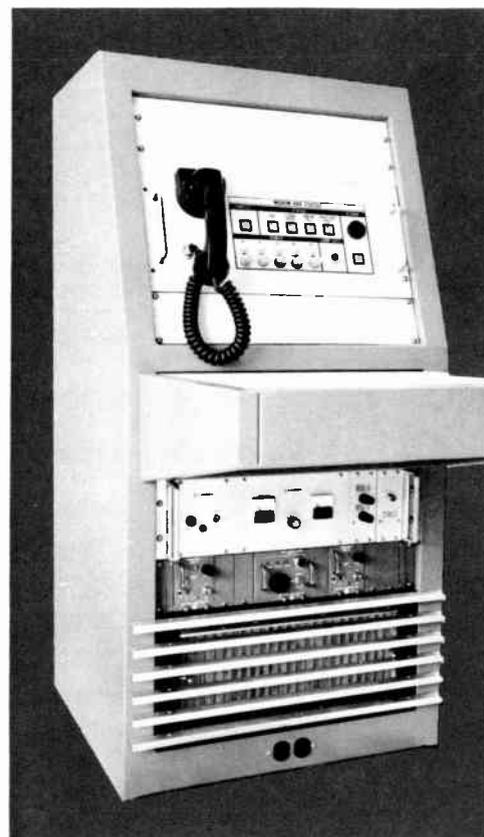
When the computer has recognized a command received from the National Warning Center, it causes a confirmation to be returned to the Center by digital signals. Upon completion of the broadcast, a confirmation and status report is returned to the National Warning Center, again by digital signals.

The transmitter facilities are periodically exercised by the National Warning Center to assure maximum system availability. Upon receipt of an exercise command, the computer sets up the transmitter to operate into the dummy load (or antenna), selects the test message, runs the message through the transmitter, monitors the test, and reports pertinent test results to the Center and the maintenance center.

**Monitoring**—The computer monitors transmitter frequency and keeps a log of operating periods, transmitter configuration, and dummy load current. It monitors specific operational measurements including transistor collector voltage and saturation level for the transmitter power amplifier and modulator. Radiation system monitoring includes transmission line forward current, reflected current, and voltage standing-wave ratio; the antenna is monitored for current and output power.

The commercial power source is monitored by the computer for line voltage and frequency, and the engine-generator supply is monitored for voltage, frequency, water temperature, oil pressure, battery charge, and fuel level.

**Alarms**—As it monitors, the computer also determines if any of the key operational indicators are out of allowable tolerance. Some of the quantities that can operate alarms are: transmitter output power, digital modem and computer malfunction,



9—(Above) The monitor and alarm console at the remote maintenance center receives and displays warnings of any out-of-tolerance quantities at the regional transmit facility.

10—(Right) The station processor provides the memory evaluation, decision, and enabling functions necessary to operate the regional transmit facility.

rf transmission-line pressure, carrier oscillator output level and frequency, and engine failure. Any out-of-tolerance quantities cause an alarm to be displayed at the remote maintenance center. The computer also supervises building overtemperature (fire) and illegal-entry detectors and, if activated, relays these alarms to local fire and police stations as well as to the central maintenance center.

Additional memory modules can be added to the computer to extend its control and processing functions. Examples of other functions that could be added in the future include station diagnostics (e.g., cause of abnormal operation other than those related to alarm monitor) and error

detection and correction coding for improving accuracy of transmission from the National Warning Centers to the regional transmit facilities.

**Economic Advantages**

While many of the control functions described have been done in the past by means of hard-wire logic, the computer becomes the economic choice when the required functions are sufficiently complex as in the case of the DIDS facility. Further, the computer provides a much more economical way of accommodating changes, as reprogramming is less costly than making major modifications to hard-wire logic and control equipment.

In addition to operational benefits, an unmanned transmit facility provides a significant advantage in operational cost savings. A high-power radio transmitter of this type would normally require three 8-hour shifts of at least two skilled operators, seven days a week. The DIDS regional transmit facility has been designed to permit safe and efficient operation of the facility without any site-based operating personnel. It is not anticipated that maintenance visits will be required more than once a week, and probably much less often as operating experience is accumulated. Although the initial cost of procuring an automatic facility is somewhat higher than for a conventional design, the overall re-

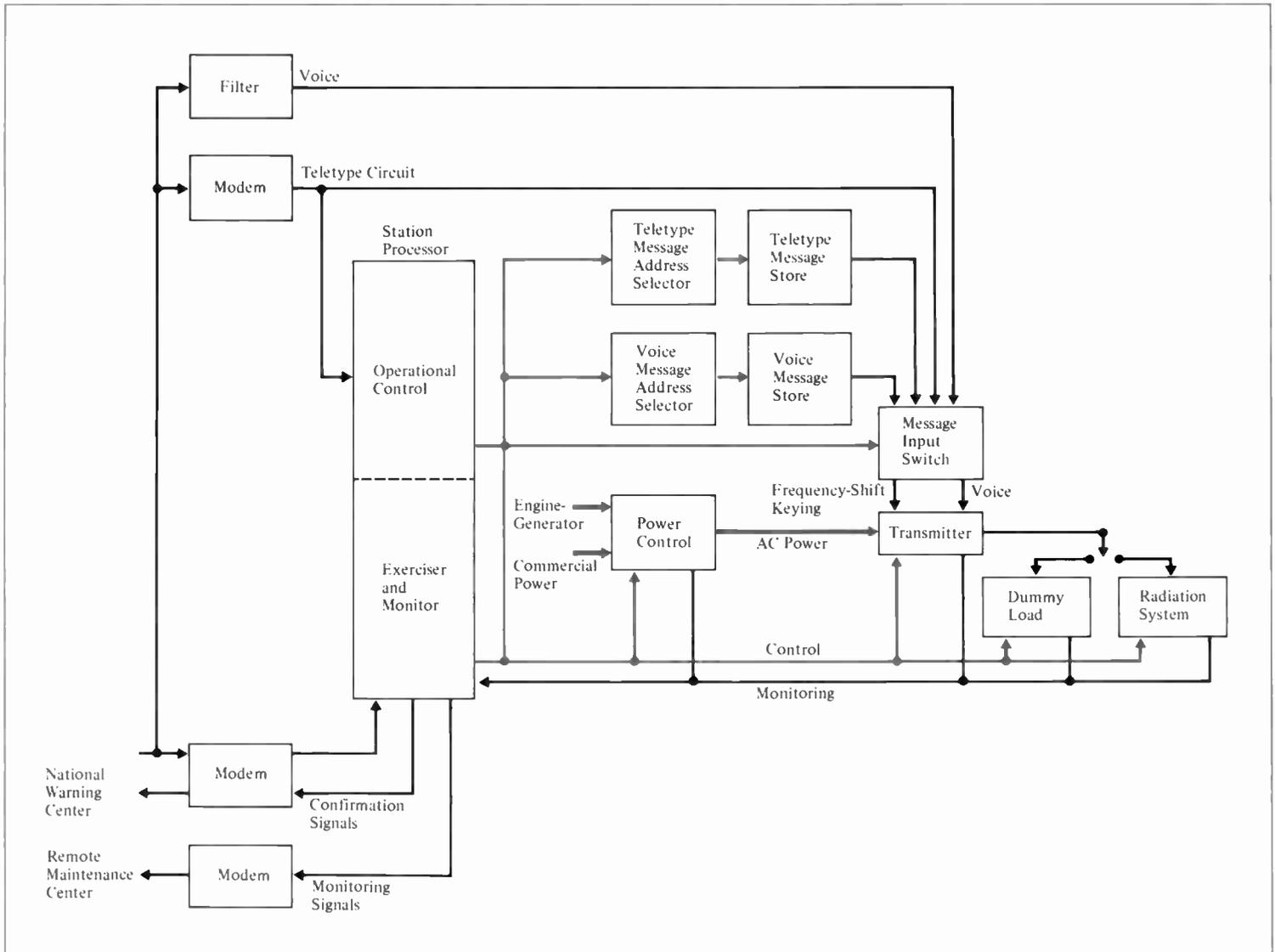
duction in operating cost makes automation very economic over a 20-year period, which is generally the equipment life objective designed into a major communication facility. There is little doubt that unattended operation of major electronic facilities will become of increasing interest to both military and industrial system planners. In fact, the economics involved will probably make that approach almost mandatory in many situations.

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Westinghouse ENGINEER

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# Motors for High-Speed Aerators and Cooling Modules

L. J. Taylor

*High-speed direct-drive aerators and cooling modules are efficient devices for aerating or cooling bodies of water. Their electric motors are carefully designed and built to withstand the rigorous environments in which the devices must operate.*

The bacteria that break down organic materials in wastewater frequently require more oxygen for sufficiently rapid action than is available naturally. Consequently, biological oxidation is often aided by various water treatments. One of the most effective and most frequently used is the

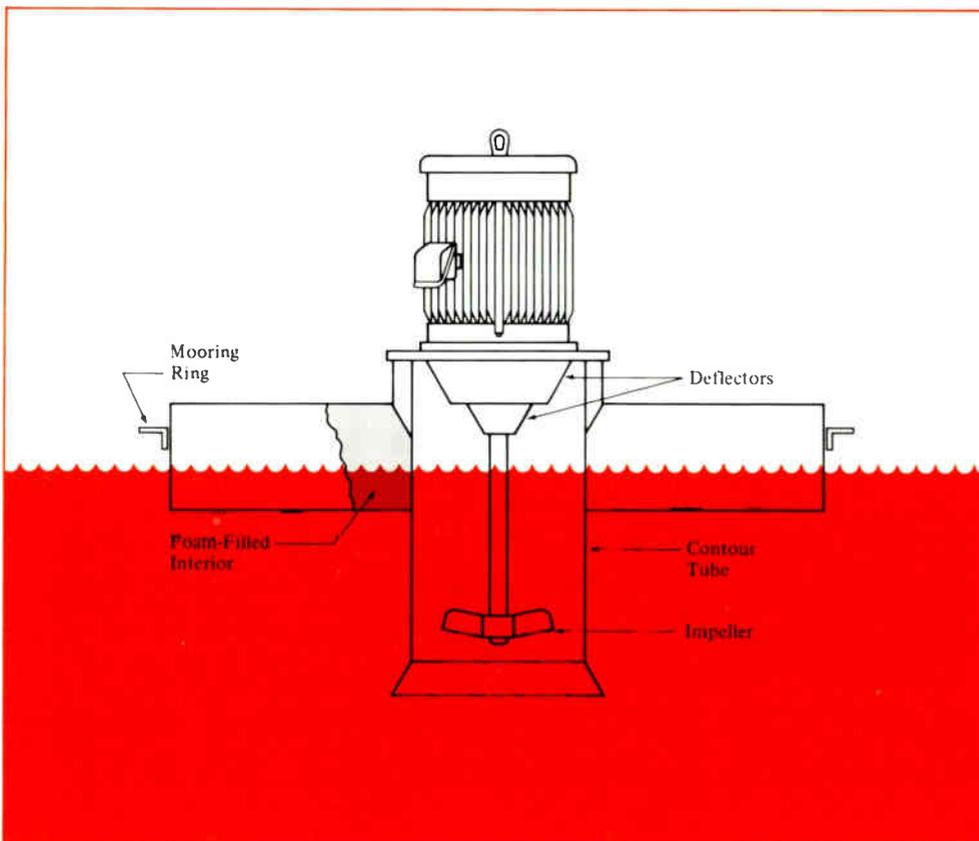
activated-sludge process, in which wastewater and sediment are agitated and aerated by mechanical aerators to increase the rate of oxygen uptake.

A popular type of aerator is the high-speed surface-entrainment type, in which an electric motor directly drives a propeller-type impeller at motor shaft speed. Impeller and motor are mounted on a flotation module, which maintains the impeller at an optimum depth regardless of variations in the water level in the aeration basin (Fig. 1). The unit functions as a high-volume axial-flow pump producing flow rates of 3000 to 30,000 gal/min with oxygen input capacities up to 4 lb/hp-hr. It is well suited to aeration because it effectively

translates the theory of oxygen transfer into practice. (See *Mechanisms of Oxygen Transfer and Heat Transfer*, facing page.)

Besides oxygen transfer, spraying and mixing cause a certain amount of heat transfer from water to air and consequent cooling of the water. The spray can be optimized for maximum heat transfer by modifying the impeller and nozzle (Fig. 2). The resulting device looks much like an aerator but is called a cooling module. It provides an economical alternative to cooling towers for reducing the temperature of water used for cooling in electric-utility generating stations. Besides being lower in cost, the device has the advantage of localizing fogging and drift because water droplets are introduced into the air at low altitude in contrast to the high-altitude plume from a wet cooling tower.

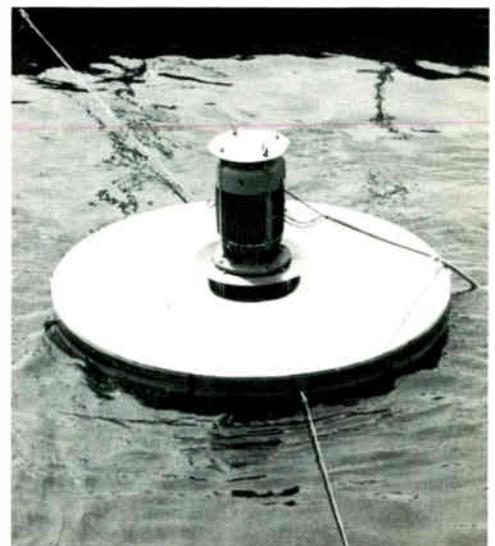
L. J. Taylor is a design engineer in Special Products Engineering, Medium Motor and Gearing Division, Westinghouse Electric Corporation, Buffalo, New York.



1—A high-speed aerator consists of a motor mounted on a float and coupled directly to an impeller as shown in the partial section view. The aerator in the photographs has a 30-hp motor; its approximate spray diameter is 24 feet and its flow rate 11,000 gal/min. These photographs and Fig. 2 show an aerator and a cooling module made by Richards of Rockford, Inc., Rockford, Illinois.

## Motor Design

Westinghouse motors for these applications are three-phase squirrel-cage machines of the totally enclosed fan-cooled type, built for vertical P-flange mounting (Fig. 3).



They range in size from 5 to 100 hp; shaft speeds are 1800 r/min through 40 hp and 1200 r/min for 50 hp and larger. Design considerations are similar for both applications because, in both, the motors are exposed to windblown spray. In the cooling application, the spray frequently has considerable salt content. Special features enable the motors to withstand their difficult environment.

**Aerator Motors**—All exposed parts on motors for high-speed aerators are corrosion resistant. Frame, end brackets, fan hood, and conduit box are of heavy-walled cast iron, and only noncorrosive plated hardware is used. The drip cover is of sheet steel on motors through 30 horsepower

and, on larger ratings, of a fiberglass composition that is unaffected by chemicals in the water. The cooling fan also is of fiberglass. All external surfaces are protected by a full-gloss epoxy enamel applied over a chromated red oxide primer that is rich in zinc.

Deep register fits between the motor frame and the end brackets help minimize the entrance of moisture into the motor enclosure (Fig. 4). An external neoprene shaft flinger protects the lower bearing against water impinging against the base of the motor, and the upper bearing is protected by the cooling fan. A premium moisture-resistant grease is used in the bearings to inhibit corrosion even if mois-

ture finds its way into the bearing cavities. Potting of the motor leads where they pass through the frame excludes moisture at that point. The conduit box has a gasket between its cover and base and between its base and the motor frame. In addition, a stainless-steel one-way pressure condensate drain is included at the lowest point.

In spite of these efforts, some moisture gets into the motor in service because the motor "breathes." Aerators and cooling units are usually operated only as required rather than continuously; consequently, the motor draws in moist air when it is turned off and the winding is cooling, and then drives the moisture off when it is turned on and the winding gets warm.

#### Mechanisms of Oxygen Transfer and Heat Transfer

**Oxygen Transfer**—The process occurs in three distinct phases. Oxygen molecules are first brought in contact with the liquid surface, saturating the interface. During the second phase, the oxygen molecules pass through the liquid interface by molecular diffusion. In the final phase, oxygen is mixed in the body of liquid by diffusion and convection. The following equation describes the process:

$$\frac{dC}{dt} = K_L a (C_s - C_t),$$

where  $C$  is oxygen concentration per unit volume,  $t$  is time,  $dC$  and  $dt$  are differentials of those two parameters, and  $K_L a$  is the overall oxygen transfer coefficient for the unit process. The process rate is a function of the difference between the oxygen saturation concentration,  $C_s$ , and the initial oxygen concentration,  $C_t$ .  $K_L$  is the oxygen diffusion coefficient at the air/water interface, and  $a = A/V$  where  $A$  is the exposed air/water interface and  $V$  is the aerated liquid volume.

The equation applies to clean water conditions at 20 degrees C and 1 atmosphere pressure. Additional parameters can be integrated into the equation for evaluation of aerator performance for various wastewater conditions.

The nature of the process, then, dictates the performance features of a properly designed aerator:

1) The largest practicable interfacial area should be generated between the water and the air. Mechanical aerators produce a water spray consisting of discrete droplets, maximizing the interfacial area.

2) The air/water interface should be continually broken down to keep the transfer coefficient high. Turbulence generated by the pumping and mixing action of mechanical aerators, as well as by impingement of the droplets on the water

surface, keeps the surface film disrupted.

3) The highest possible oxygen concentration differential should be maintained. It is achieved by the strong mixing action produced in the parent body of liquid by mechanical aerators.

Aerator units are designed to produce a spray pattern of low profile (1 to 2 feet), perpendicular to the shaft axis and nearly parallel to the water surface. That pattern provides maximum impingement and air-water interface, minimizes blowoff, and helps prevent ice formation on the unit during winter operation.

**Heat Transfer**—Spray cooling is essentially a vaporization process involving simultaneous heat and mass transfer, and it is controlled by the temperature and moisture content of the contacting air. The minimum theoretically attainable water temperature is the wet-bulb temperature of the air, the temperature at which water can be evaporated into the air to bring it into saturation at the same temperature. It can be thought of as the equilibrium temperature at the air/water interface existing when the convective heat transfer rate to the interface equals the mass transfer rate away from it. Performance is optimized by producing as small a droplet size as possible at as high a rate as possible.

Practical considerations limit the extent to which droplet size and formation rate can be optimized. Horsepower requirements for droplet production increase as the mean droplet size becomes smaller; therefore, minimizing droplet size for a given input horsepower would leave little capacity for developing a sufficient flow rate. In addition, the finer the droplet size, the more severe the fogging and the associated drift and ice accumulation.

A practical solution in terms of temperatures, mass flow, and pumping cost is achieved with a vertical axial-flow propeller pump discharging through a slot nozzle. It is characteristically a high-volume low-head device. Mean droplet size

produced is  $\frac{3}{8}$  to  $\frac{1}{2}$  inch, and the height of the spray is approximately 15 feet. The time constants for cooling are in the neighborhood of the descent time for that spray height. Thermal efficiency is acceptable, and fogging and drift are minimized.

System performance is also affected by the degree of mixing provided with the parent body of water. Locating the pump intake several feet below the water surface eliminates the possibility of respraying cooled water. A complete cooling installation consists of a large number of spray modules appropriately arranged in a cooling pond to minimize shadowing and to utilize the prevailing winds. Ideally, the pond is long, narrow, and oriented perpendicular to the prevailing summer winds.



2—A cooling module is similar to an aerator except that its spray pattern is optimized for heat transfer instead of oxygen transfer. This one has a 75-hp motor, and its spray cone is about 15 feet high.

Therefore, the stator bore, end turns, and die-cast aluminum rotor are coated with a premium moisture-resistant (PMR) corrosion-inhibiting epoxy insulation system. Accumulation of water within the motor is prevented by a stainless-steel one-way pressure condensate drain located at the low point of the bottom bracket. Optional moisture protection includes sealing of bracket-to-frame fits and addition of a flinger above the upper bearing.

Carbon-steel shafts with extensions suitable for coupling to impeller shafts are standard, but longer shafts can be provided for direct mounting of the impeller. Stainless-steel shafts are supplied when necessary.

The motor bearings have to carry the impeller thrust, static weight of the rotating parts, and shock loads that might be caused by debris striking the impeller. That is one of the major differences between high-speed aerators and low-speed (geared) aerators, in which the gear unit is the design challenge.\*

\*In low-speed aerators, the loads are all restrained within the gear unit; the motor is coupled to the input shaft of the gear unit and sees no significant mechanical load other than torque.<sup>1</sup> Also, drive motors for low-speed aerators are less susceptible to water spray problems because they are mounted above the gear unit, which is generally on a fixed platform that prevents water from coming directly in contact with the drive. Near-standard motors are used.

Double-shielded regreasable ball bearings made of vacuum-degassed steel are used in the high-speed aerator motors. The lower bearing is so constructed as to permit the motor to handle up or down thrust continuously. Bearing load ratings are based on a one-year minimum B-10 life (the life that 90 percent of a group of identically loaded bearings will achieve before the first evidence of fatigue appears), which is five years average life. If expected loads exceed these standard bearing capabilities, or if longer life is desired, a double-row angular-contact thrust bearing is used.

*Cooling-Module Motors*—Utility companies impose special requirements for equipment reliability and long life. In addition, the spray cone of a cooling module is much higher than that of an aerator, resulting in the motor getting much wetter. Consequently, the motors have additional features.

Bracket-to-frame fits are sealed with a silicone cement, as are bearing cap bolts and mating surfaces of the conduit box. The castings are those normally used in explosion-proof motors; their wall thicknesses exceed those required for fan-cooled motors. The lower thrust bearing is a high-capacity single-row angular-contact ball bearing, and both bearings are protected by stainless-steel revolving seals of labyrinth type. Waterproof grease applied between the lower bracket and seal protects against admission of water and provides additional

corrosion protection for the machined surface of the bracket.

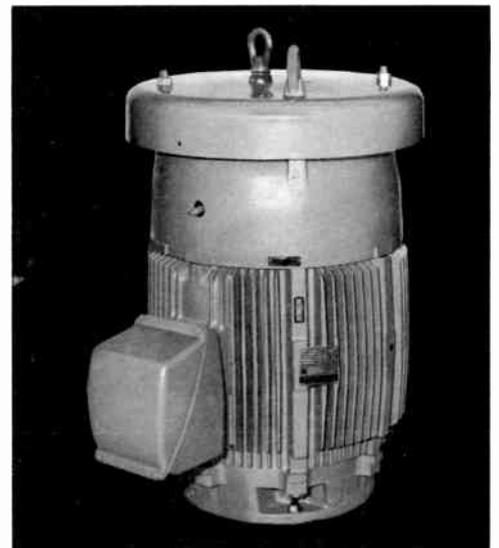
No condensate drains are provided in the conduit box. Instead, the box is filled by the user with a potting compound after the power connections are made, encapsulating the connections to make them impervious to moisture.

A long stainless-steel shaft is provided for direct mounting of the impeller.

### Application Analysis

The motors and impellers for a particular application undergo a complete mechanical analysis by computer simulation to insure their adequacy for that application. In addition to a review of the thrust-bearing capability, a resonance-frequency study is performed for both the rotating and the stationary parts.

The resonance frequency for a rotating system is that at which a natural frequency of the system coincides with the frequency of an exciting force. The latter is determined by rotational speed and the number of blades in the impeller, so all rotor and shaft



3—(Above) Drive motors are totally enclosed fan-cooled types with special features that enable them to withstand the wet environment in which they operate. The one shown is a 100-hp aerator motor with a short shaft extension for coupling to the impeller shaft.

4—(Right) The main elements of an aerator motor are seen in this section view.

assemblies are checked to make sure that their natural frequencies are far enough removed from the operating speed of the motor to prevent resonance. The stationary motor parts (frame, stator, brackets, etc.) are also characterized by a resonance frequency; with a vertical flange-mounted motor, this vibration response is called reed resonance because the motor tends to vibrate much like a reed on its mounting base.

Operation of the aerator or cooling unit at a speed too near (within 25 percent) any of these resonance frequencies would result in undesirable amplification of any inherent imbalance in the system. Therefore, the lowest resonance frequency is

made greater than the operating frequency so that the system does not have to pass through any resonance points in accelerating to operating speed. The natural frequency of a component is increased, when necessary, by stiffening the component; increasing the diameter of the motor shaft, for example, can prevent resonance of the rotor and shaft assembly.

### Space Heating

If a motor winding becomes moist with condensation from moisture-laden air breathed in during shutdown, the insulation may break down when the winding is reenergized. To increase motor reliability and service life, some form of space heating

is strongly recommended. Heating maintains the motor winding approximately 5 to 10 degrees C higher than ambient temperature, thus preventing condensation of moisture on the winding. The two most common methods are use of space heaters and low-voltage heating.

A space heater consists of a resistance element embedded in silicone rubber. It is wrapped around (and laced to) the stator coil extensions when the motor is manufactured; the winding is then dipped in thermosetting varnish and baked, making the space heater an integral part of the winding. Two leads are provided for applying single-phase power.

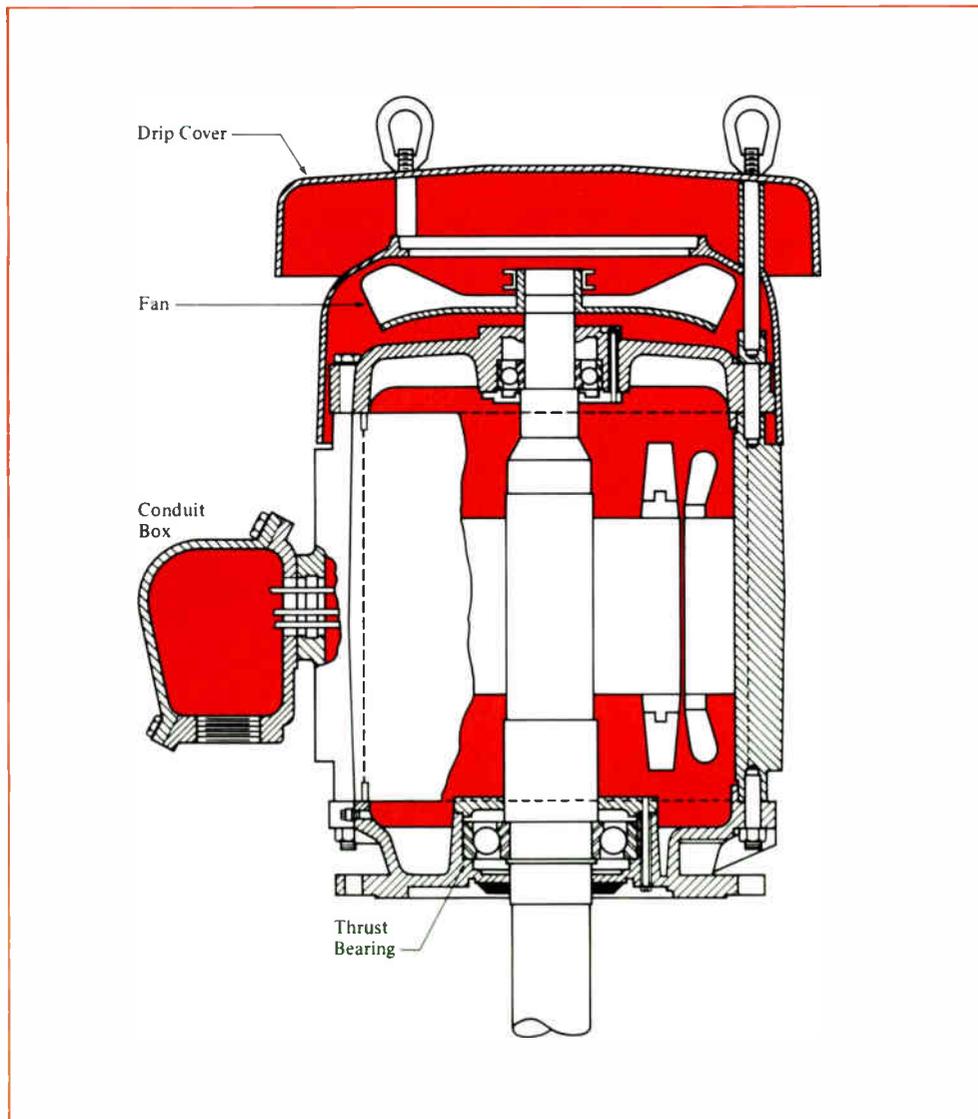
Low-voltage heating requires no auxiliary devices within the motor. When the motor is not running, single-phase power is connected across two of the three phases of the motor through suitable control. Applied voltage is 7 to 9 percent of the motor's normal operating voltage. The torque produced is insufficient to cause motor rotation, but the electrical losses heat the winding enough to keep it dry.

### Conclusion

High-speed aerators and cooling modules require a special breed of motor for reliability and long life. Careful design and construction are necessary, followed by analysis to make sure that the aerator or cooling module will not operate at a resonance frequency.

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# Developing a Communication System for Automated Distribution

R. F. Cook  
R. V. Adams  
I. A. Whyte

*Automation of feeder and residential functions in electrical distribution systems depends on capable and economical communications in both directions. Distribution-line carrier is the best type of communication link, and the required equipment and techniques are now being developed.*

For several years, electric utilities have expressed interest in automated systems that would monitor and control the supply of electricity to various points on their distribution circuits. The cost of providing these automated services has been greater than their worth so far, but the present trends of rising labor and fuel costs and the need to maintain acceptable service reliability at higher distribution voltages are improving the economic attractiveness of automated distribution systems. In response to this narrowing gap between cost

and worth, the Westinghouse Meter Division, Research Laboratories, and Headquarters Distribution Systems Department have been working to develop a communication system for use in automated distribution.

The major automated distribution services can be classified in two categories: residential automation and feeder automation. Residential automation includes functions performed at the home, such as automatic meter reading, selective load control for system peak load reduction, voltage continuity monitoring, and remote service connect/disconnect. Feeder automation includes functions performed on the high-voltage part of a distribution circuit, such as remote monitoring and control of circuit breakers, switches, reclosers, fuses, line sectionalizers, and shunt capacitors. Those functions can be used to reduce outage times in the event of a line fault and to provide information that can be used to perform switching operations to balance the loading on feeder circuits. In addition, auxiliary services such as industrial demand

metering and distribution-transformer load/temperature monitoring are also foreseeable.

## Communication Links

Several alternative communication links have been considered for providing the above services. They are commercial telephone, radio, pilot wire, coaxial cable, and distribution-line carrier.

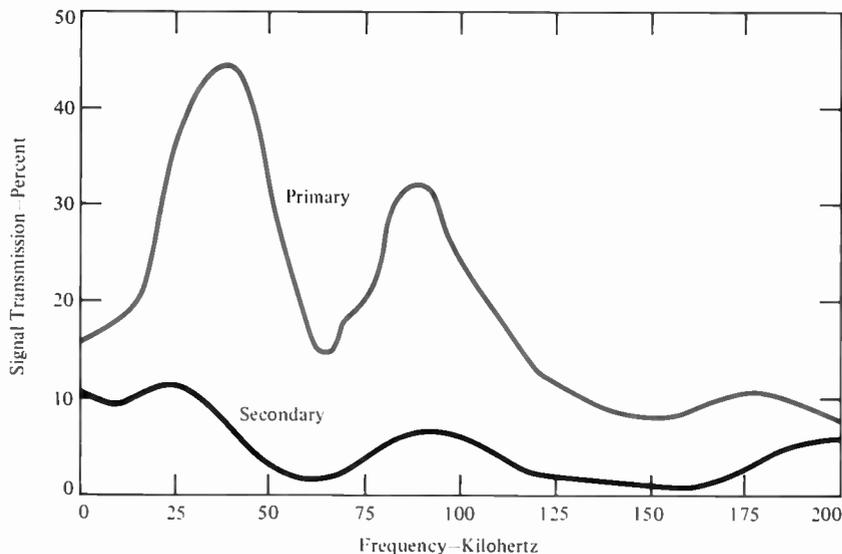
Field trials conducted by AT&T in Chicago and Houston have demonstrated the technical feasibility of commercial telephone as a communication link for automatic meter reading. However, it has several drawbacks. First, administrative cooperation between the electric utility and the telephone company would be necessary. Second, AT&T and its subsidiaries have not quoted tariffs for the use of their lines for residential automation services. (However, tariffs have been established by some subsidiaries of AT&T for feeder automation, and several utilities are using telephone for such services.) Third, the mass-addressing capability necessary for the highly desirable home service of selective load control is lacking.

Radio communication links have also been shown to be technically feasible and could be completely administered by an electric utility. Radio systems are presently being used in limited applications for selective load control, but bidirectional applications of radio for automatic meter reading and service restoration appear uneconomical.

Pilot wire and coaxial cable are also technically feasible, but they lack the necessary system coverage to be attractive communication links for large-scale use. The cost of retroactively installing large amounts of pilot wire or coaxial cable appears prohibitively high for most automated distribution functions.

Due to the limitations of the above communication links, Westinghouse has undertaken a major program to develop the necessary technology for a distribution-line carrier (DLC) communication system. The advantages of using DLC are: it has the potential to provide all the functions of automated distribution, each function can be performed by use of existing elec-

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1—The amount of carrier-signal transmission varies with the frequency of the carrier signal. These curves are drawn from values measured on one mile of a representative active overhead distribution line, with the measurements made at the primary and secondary of a distribution transformer.

trical networks, expansion to provide additional automated distribution functions should be relatively simple and inexpensive, and the entire communication system would be owned and maintained by the electric utility.

Although *transmission* lines have been used for decades as a communication medium, the use of *distribution* lines for communication purposes has not been very successful in the past. New equipment and new system concepts are required.

#### Suitability of Distribution Network as Communication Medium

To determine how to use the distribution network as a communication medium and



2—This prototype home transmitter/receiver for distribution-line carrier communications, shown here installed on the residence of a Carolina Power & Light Company customer, is part of the equipment used for field trials. It performs such functions as automatic meter reading, selective load control, voltage continuity monitoring, and remote service connect/disconnect.

to choose a frequency for communication, designers have had to consider such basic factors as signal attenuation caused by the power lines that form the distribution network, signal attenuation caused by distribution equipment, and noise and interference present on the distribution system. It was assumed initially that some information on the communication capability of distribution lines could be obtained from information about transmission-line carrier ripple-control systems. However, little data is available on either system that is pertinent to distribution-line carrier, so the first part of the development program consisted of field measurements to obtain the required basic information.

*Attenuation by Lines*—Signal attenuation between points on an electrical distribution system depends mainly on frequency and load (Fig. 1). Although the exact shape of the transmission characteristic varies according to load conditions and line configuration, some interesting generalizations can be made. In the frequency band from 10 to 30 kHz, attenuation is often quite low. At frequencies between 50 and 100 kHz, it appears to increase in proportion to frequency. There is often a “dead band” between 100 and 200 kHz in which signal attenuation is very high and in which it would be difficult to communicate. At frequencies above 200 kHz, attenuation is too high for long-distance communication. However, 200 to 300 kHz appears suitable for short- and medium-distance communication.

*Attenuation by Distribution Equipment*—The distribution transformers and shunt capacitor banks of a distribution network are major sources of attenuation. At frequencies above 10 kHz, the effect of shunt capacitors is to short-circuit the communication signal. To overcome that effect, it is necessary to install a distribution carrier trap, typically a parallel tuned LC circuit, at the capacitor bank. The required inductance is in the range of a few hundred microhenries. That inductance, when tuned to the communication frequency, provides a suitably high impedance while otherwise not altering the performance of the capacitor bank.

Distribution transformers are a problem because of the large numbers and wide variety of types installed in a typical distribution network. Although it is difficult to characterize the high-frequency parameters of distribution transformers, some generalizations can be made. Input impedance measured at the primary at high frequencies is usually capacitive, and the magnitude of the input impedance may be in the range of 50 ohms to several hundred ohms. Signal voltage attenuation between primary and secondary varies with frequency and is in the range of 10 to 70 dB in the 30- to 100-kHz band. Signal voltage attenuation from secondary to primary is less than in the opposite direction, with a reasonable value of approximately 30 dB at frequencies of interest.

At frequencies above 50 kHz, neither the primary nor the secondary input impedance is particularly sensitive to load changes. However, at frequencies below 20 kHz, load changes can result in significant changes in impedance. The secondary input impedance of transformers can be in the



3—A prototype transmitter/receiver for use in feeder automation is also installed on the Carolina Power & Light Company system. It performs much the same functions as the home unit, but it performs them on the high-voltage part of the distribution system.

range of five ohms to several hundred ohms depending on frequency and load. Signal attenuation caused by distribution transformers causes no major problem for the primary-to-primary communication required for feeder automation. On the other hand, residential automation requires communication from primary to secondary and, in some cases, return communication from secondary to primary. Due to the wide ranges of impedance presented by distribution transformers, it was necessary to develop a means of coupling the carrier signal around the transformers.

**Noise and Interference**—Noise and interference from local radio stations, transmission-line communications, and low-frequency radio navigation aids present problems. The signal levels due to radio stations can be of several volts amplitude, whereas those from other sources rarely exceed a few hundred millivolts. Noise and 60-Hz harmonic interference vary roughly as  $1/f$  and  $1/f^2$  respectively, where  $f$  is frequency. Typical values lie between 300 and 400  $\mu\text{V}$  rms noise per kilohertz at 100 kHz, and between 1.0 and 20 mV rms noise per kilohertz at 20 kHz.

Considering the effects of noise, unwanted signals, and signal attenuation, three bands—20 to 30 kHz, 50 to 100 kHz, and 200 to 300 kHz—appear most suitable for DLC communications.

#### Modulation and Bandwidth

Two modulation methods are particularly suitable for power-line communications: frequency-shift keying (FSK) and two-tone frequency modulation (FM). The former has the advantage of making maximum use of available signal power. However, it requires relatively complicated circuitry, is prone to interference from continuous adjacent signals, and frequency drift at either the transmitter or receiver can result in a change of the level of the detected signal.

Two-tone FM is less efficient in use of signal power, but the receiver requirements for frequency drift are less stringent and the receiver can be made less prone to interference from continuous adjacent signals. Both FSK and two-tone FM have

certain advantages, and each is susceptible to performance and cost compromises. Practical considerations indicate that both systems have a signal-to-noise ratio of about 15 dB to provide an error rate of slightly better than one part in  $10^5$ .

FSK has been used in most of the field tests. Typically, the frequency shift has been 2 kHz and the receiver bandwidth approximately 5 kHz. Thus, several channels could be accommodated in the selected frequency bands of 20 to 30 kHz, 50 to 100 kHz, and 200 to 300 kHz.

#### Equipment Development

In addition to the field measurement programs, prototype equipment has been developed. The equipment has been installed and tested at Consumers Power Company, Carolina Power & Light Company, and West Penn Power Company. The installations include substation transmitter/receivers, repeaters, distribution carrier traps, home transmitter/receivers, and feeder-automation remote transmitter/receivers.

The substation transmitter/receiver is capacitively coupled onto a substation bus, and it communicates with the remote equipment for either feeder automation or residential automation. It is linked to a central control station by conventional communication links such as radio or telephone.

A repeater unit is required at points on the distribution network where line or equipment attenuation makes signal amplification necessary. For example, a step-down autotransformer bank on the West Penn Power System severely attenuated the DLC signal. To solve the problem, a repeater was used to bypass the autotransformer bank and provide an amplified DLC signal for remote equipment farther down the line.

Two versions of a distribution carrier trap have been developed. One is an air-core unit (presently under test on the Carolina Power & Light Company system) and one a combination air-core/iron-core unit. Both appear as a short circuit at 60 Hz and as a high impedance at DLC frequencies. A 14-ampere distribution carrier trap has been used at a 150-kVAR 12-kV capacitor bank on the West Penn Power System, and

traps ranging up to 150 amperes in rating are being designed.

Prototype home transmitter/receiver units have been demonstrated (Fig. 2). They contain the necessary logic circuitry for the various residential automation functions.

A remote transmitter/receiver unit for use in feeder automation is shown in Fig. 3. It is connected to the high-voltage part of a distribution circuit to monitor and control devices such as circuit breakers, sectionalizers, and capacitors. This unit performs basically the same function as the home transmitter/receiver, although the logic requirements are greater.

#### Conclusions

Feeder automation can be implemented immediately by conventional communication methods such as radio and telephone. However, distribution-line carrier will be needed to make widespread use of complete automated distribution practical. The necessary equipment is being developed.

Experimental equipment using narrow-band FSK modulation has been built. The results of initial test programs show that DLC communications at satisfactory error rates can be achieved with low-cost low-power equipment.

# Reliable Oxygen Measurement Reduces Process Costs

Edmond D. Neuberger

*Combustion and many other industrial processes requiring controlled atmospheres need a good means for measuring the content of free oxygen in a gas stream. A probe-type Oxygen Analyzer now provides that capability so rapidly, accurately, and reliably that the signal is used as a primary control value, with dramatic savings in fuel and reductions in air pollution.*

Effective automated process control depends on rapid, accurate, and reliable primary measuring instruments that report what is happening in the process. Such instruments for measuring oxygen content of gases have been lacking, preventing full automation of combustion and other processes that require controlled atmospheres. Now, however, the required instrument is available in the Hagan probe-type Oxygen Analyzer. It effectively closes the control loop in the combustion process and other gas processes.

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For brevity, this article discusses application of the Oxygen Analyzer in the combustion process. However, the basic principles of its operation and application apply to many processes involving mixtures of oxygen with other gases.

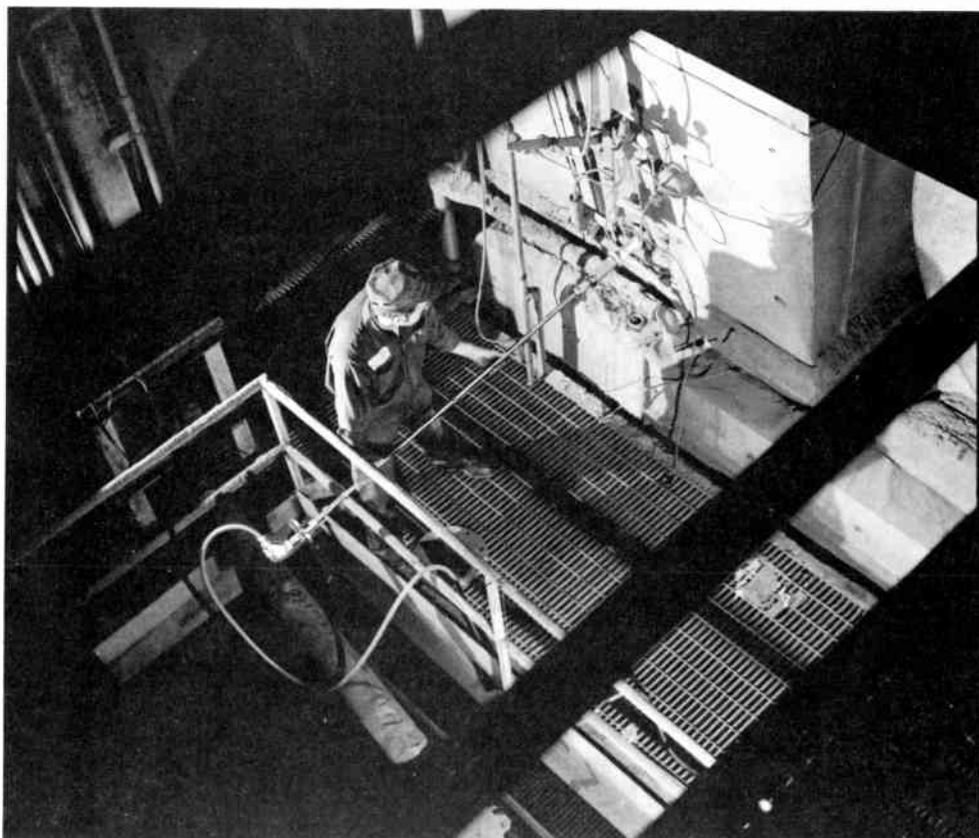
To optimize the combustion process, fuels must be mixed with the proper amount of air. Too much air wastes fuel in the form of heat up the stack, and too little wastes fuel in the form of unburned combustibles up the stack. The key to determination of the proper fuel/air ratio is the content of available oxygen in the stack gases.

Earlier equipment for oxygen analysis has major drawbacks. It is costly to install and maintain, it is slow because it requires removal of a sample of process gas that often must be cooled, dried, cleaned, and analyzed chemically, and it analyzes an artificial dry sample rather than the actual gas flow with its variable content of water vapor formed by combustion. Moreover, the sampling systems require much maintenance and are not very reliable; an estimated 90 percent of the maintenance prob-

lems with sampling-type oxygen analyzers occur in the sampling systems.<sup>1</sup>

The Hagan probe-type Oxygen Analyzer is inserted right in the flue (Fig. 1). It needs no sampling system, costs only about a tenth as much to install as a sampling-type analyzer, is accurate, indicates virtually instantaneously, can be used with any fuel, and is so reliable that it is used extensively for closed-loop control. It measures the free oxygen in the total gas stream (including water vapor) that is available for combination with combustibles. It can analyze even the dirtiest flue gases, such as those in boilers fired with pulverized coal, without frequent maintenance. It is suitable for process temperatures up to 760 degrees C. It has all-solid-state electronics, and continuous operation for two years is common. In large flues, several probes are often used in parallel and their signals averaged.

Typically, the instrument's signal is used as a feedback signal to optimize the fuel/air ratio in the combustion process. It can also be displayed on an indicator, recorder, data logger, or computer.



*1—The Oxygen Analyzer measures oxygen content of a process gas without requiring a sampling system. It is inserted right in the gas and stays there, providing its measurement signal continuously. Here it is shown being inserted in the flue of a large utility boiler. Its output can be used as a feedback signal in a closed-loop combustion control system and also to show oxygen content on a recorder or indicator.*

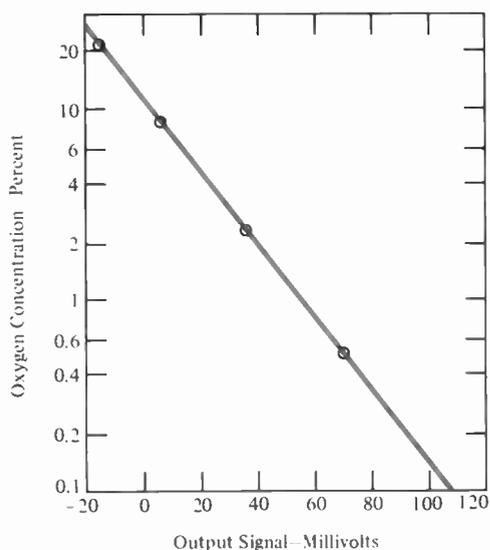
### Oxygen Analyzer

This completely new approach to oxygen measurement came out of basic research with fuel cells at the Westinghouse Research Laboratories. It was found that when gases bearing different amounts of oxygen are separated by a barrier of zirconium oxide, oxygen ions migrate through the barrier and leave an electron imbalance across it. Coating the two sides of the zirconium barrier with a lattice of platinum forms two electrodes, and a voltage is produced across the electrodes. Such a cell is used for measuring oxygen content in gases by providing a reference gas of known oxygen content on one side and the process gas to be measured on the other.

The cell's output in volts is given by the Nernst equation:

$$V = RT/4F \times \ln \left[ P_1(O_2)/P_2(O_2) \right] + C,$$

where  $R$  is the gas constant,  $T$  is absolute temperature of the cell,  $F$  is Faraday's constant,  $P_1(O_2)$  is partial pressure of oxygen in the reference gas,  $P_2(O_2)$  is partial pressure of oxygen in the process gas, and



2—The output of the Oxygen Analyzer is a voltage signal that is an inverse logarithmic function of the oxygen concentration in the gas mixture being analyzed. The instrument thus is most sensitive at low oxygen concentrations, a characteristic that suits it for flue-gas analysis and many other industrial processes.

$C$  is the cell constant (which is determined at the time of manufacture and remains constant throughout the cell's life). Cell temperature is held constant at about 843 degrees C, which eliminates temperature as a variable. Thus, the voltage developed across the cell is due solely to the ratio of the partial pressures of oxygen across the cell. Ambient air is used as the reference gas because its oxygen content is constant. Clean, dry, instrument-quality air is all that is required.

The remaining term in the equation, the variable  $P_2(O_2)$ , is in the denominator of the  $\ln$  expression in the Nernst equation, so the voltage signal is an inverse logarithmic function of it. As a result, the sensitivity and voltage output of the cell actually increase as the oxygen concentration decreases (Fig. 2). That characteristic is important for combustion control, where the amount of oxygen being measured is small—around 2 percent.

The area of the cell does not appear in the equation because it does not affect the cell's operation. Therefore, the instrument's functioning is not impaired even if part of the cell surface becomes covered with foreign material.

The first commercial instrument employing the zirconium-oxide cell was the Hagan Model 209 Oxygen Monitor (Fig. 3). It is an extremely accurate and sensitive laboratory instrument of industrial quality, and it is used to detect oxygen levels in inert gas mixtures from less than a part per million to 100 percent. Typical applications include certification analysis of oxygen mixtures in nitrogen, argon, or helium; control of inert-gas blankets in food processing and semiconductor production; and control of the inert atmosphere above welding processes. However, the Model 209 Oxygen Monitor is not appropriate for measuring



3—(Top) A forerunner of the Oxygen Analyzer is this Oxygen Monitor. Although it is an accurate and sensitive instrument, it requires a sampling system and therefore is not appropriate for measuring oxygen in flue gases or for other process applications.

4—(Bottom) The heart of the Oxygen Analyzer is a zirconium-oxide cell that produces a voltage when gases with different oxygen concentrations are applied to its two sides. Here a cell is being placed in a holder, which is then attached to the end of a probe that will be inserted into the gas to be analyzed.

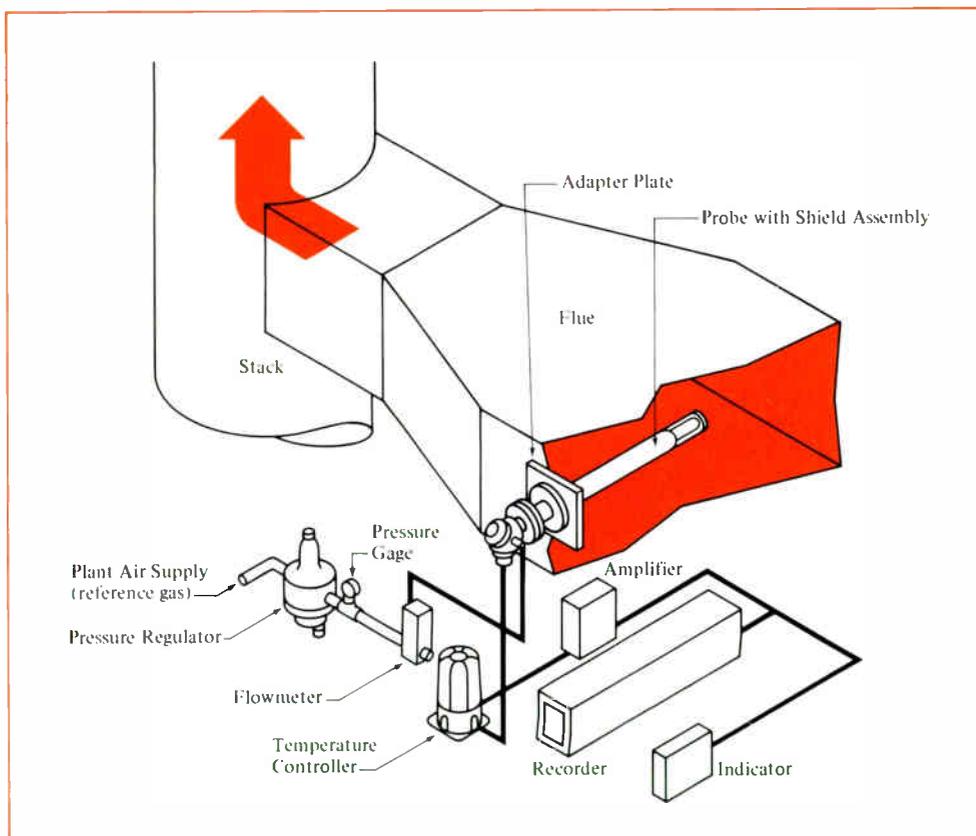
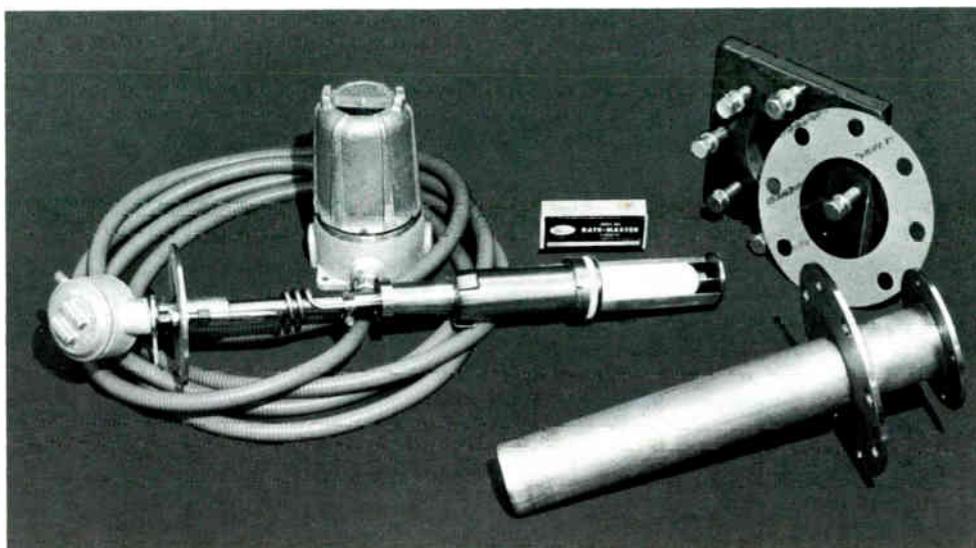
oxygen in flue gases and similar process applications because it requires a sampling system.

That problem is solved in the probe-type Oxygen Analyzer by putting the cell in direct contact with the process gas stream, eliminating the need for a sampling system.

The cell is about the size of a nickel (Fig. 4). It is secured near the end of a probe that is inserted into the gas stream (Fig. 5). The cell's temperature is kept constant by an electrical heater and thermocouple. A 5-micron filter at the end of the probe keeps the probe's internal components clean. A V-shaped deflector upstream from the filter directs flue gases and particulates tangentially past the filter, keeping the sides of the filter clean and yet virtually free from erosion.

Standard probe lengths are 18 inches, 3 feet, and 6 feet. Electrical connections are made in the temperature controller, which is located at the end of a 20-foot length of factory-wired flexible armored cable.

The instrument is extremely stable, typically operating for months without recalibration. It and the associated electronics are calibrated at the factory. However, that is a static calibration, so an optional provision is made for checking calibration in place—that is, without removing the instrument from the process. A tube is provided, running from a fitting on the flange of the probe to the measurement side of the cell; certified gases can be injected through the fitting directly to the cell to verify the calibration virtually instantaneously (Fig. 6). The procedure is more accurate than static calibration because it takes into account such factors as velocity of the process gas, process temperatures, and pressure. The tube can also be used for withdrawing samples of flue gas for laboratory analysis.



5—The complete Oxygen Analyzer (top) consists of the assembled probe, a cable connecting the probe to a temperature controller that keeps the cell at the right temperature, a probe shield that supports the probe, an adapter plate for connecting the instrument to the flue, and accessories for controlling the flow of reference air to the cell. The cell is just behind the white filter at the end of the probe. In a typical installation (bottom), an opening is made in the flue and

the adapter plate is attached there. The shield is bolted to the adapter plate, and the probe is inserted in and bolted to the shield.

Another device supplied for recalibration is a calibration chamber, which is simply a cylindrical tank in which the probe is placed and supplied with a gas mixture of known composition. The indication from the Oxygen Analyzer is compared with the oxygen content of the calibration mixture.

The standard measurement range is 0.1 to 10.0 percent, but any logarithmic range or any two-decade linear range can be supplied. The choice depends on the process. Most installations for determining excess oxygen in the combustion process are best served by the standard range. Windboxes with oxygen enrichment need 0.3 to 30 percent linear range or 20 to 25

percent logarithmic range, while analysis of an inert-gas blanket needs a parts-per-million range.

Accuracy of the Oxygen Analyzer is  $\pm 5$  percent of the actual reading—for example,  $\pm 0.1$  percent at 2-percent oxygen concentration. The analyzer can operate in any gas having a temperature up to 760 degrees C.

Because of the direct contact of the cell with the process gas, the cell responds in less than 200 milliseconds. The time constant of the entire system, including the filter, is about 3 seconds. Thus, the control signal is based on what conditions in the process are, not on what they were some time ago.

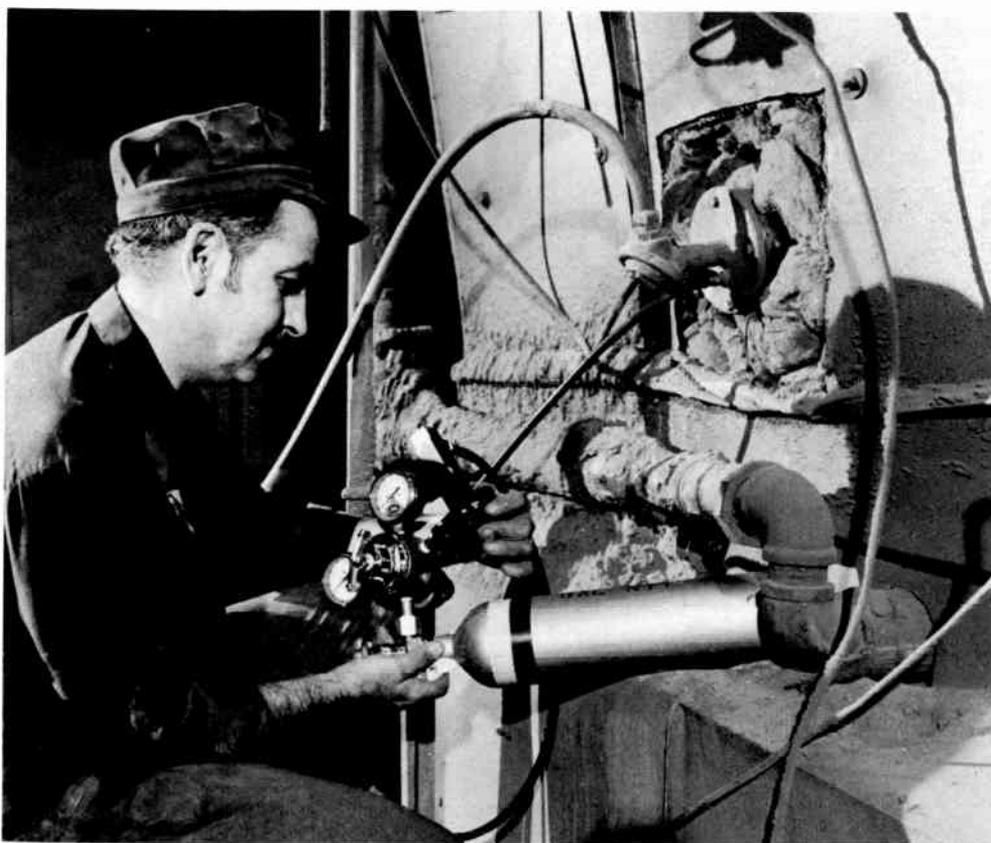
### Combustion Optimizing

Combustion efficiency can be significantly improved by optimizing the fuel/air ratio. The best known index for optimizing that ratio is the amount of oxygen in the flue gas available for combination with combustibles. The amount of this oxygen in the flue gas can be determined with the probe-type Oxygen Analyzer far faster than it can with analyzers that employ sampling techniques and far more accurately than by inferential techniques such as measuring air flow. The Oxygen Analyzer continuously reports the amount of available oxygen regardless of what other changes occur.

In the higher ranges of excess oxygen, say 5 percent, a 1-percent reduction in oxygen concentration yields a 1-percent gain in combustion efficiency. In the lower ranges (1 to 2 percent), a 2-percent reduction in oxygen concentration yields a 1-percent gain in combustion efficiency.

Improved combustion efficiency reduces fuel costs. For example, if a boiler operates at 80 percent efficiency rather than 79 percent, and if it is used 48 weeks a year, generates an average of 100,000 pounds of steam per hour, and burns fuel costing \$1.76 per million Btu, a genuine saving of \$17,695 is realized in fuel costs. Such a saving returns the investment in an Oxygen Analyzer in just a few months. With energy costs rising, oxygen trim control for the fuel/air ratio is increasingly important.

Oxygen trim control is a closed-loop control method that employs the Oxygen Analyzer to introduce an automatic response to changed conditions for the purpose of keeping the fuel/air ratio at an optimum value. It is especially valuable in applications in which frequent control adjustments are made necessary by changes in air humidity, load, and type and quality of fuel. Examples of such applications are



6—The Oxygen Analyzer can be supplied with provisions for recalibrating it without removing it. A gas mixture with a known percentage of oxygen is passed through a tube to the cell, and the resulting output is compared with the known oxygen percentage in the mixture.

7—A typical boiler control system is diagrammed in simplified form to illustrate how the Oxygen Analyzer provides a feedback signal for closed-loop trim control of the ratio of fuel to air supplied to the boiler. Any change in conditions that results in a change in the amount of oxygen in the combustion gas is sensed by the Oxygen Analyzer, and the resulting signal is used to control the fuel/air ratio at an optimum value.

multifueled utility boilers and refinery boilers fired by waste gas supplemented by natural gas and oil.

A typical oxygen trim control system has the Oxygen Analyzer located in the economizer inlet, where process time lags are at a minimum (Fig. 7).<sup>2</sup> The system maintains the net free oxygen content in the flue gas by automatically trimming the fuel/air ratio as the oxygen concentration deviates from the setpoint. The fast response of the Oxygen Analyzer permits automatic trimming on the basis of what conditions are, not what they were.

The rapid return on investment in an Oxygen Analyzer is augmented by savings in maintenance. An Oxygen Analyzer re-

quires much less maintenance than do instruments that require sampling, typically running maintenance-free for from six months to a year.

Reduction of NO<sub>x</sub> emissions is another benefit realized by reducing excess oxygen to an optimum value.

**Applications**

Applications to date are extremely diverse. They include control of combustion in conventional power boilers, refinery process heaters, boilers fired by blast-furnace gas, chemical recovery boilers, windboxes for NO<sub>x</sub> control from exhaust stacks, kilns (lime, phosphate, cement), marine boilers, incinerators, catalytic crackers, bark boilers

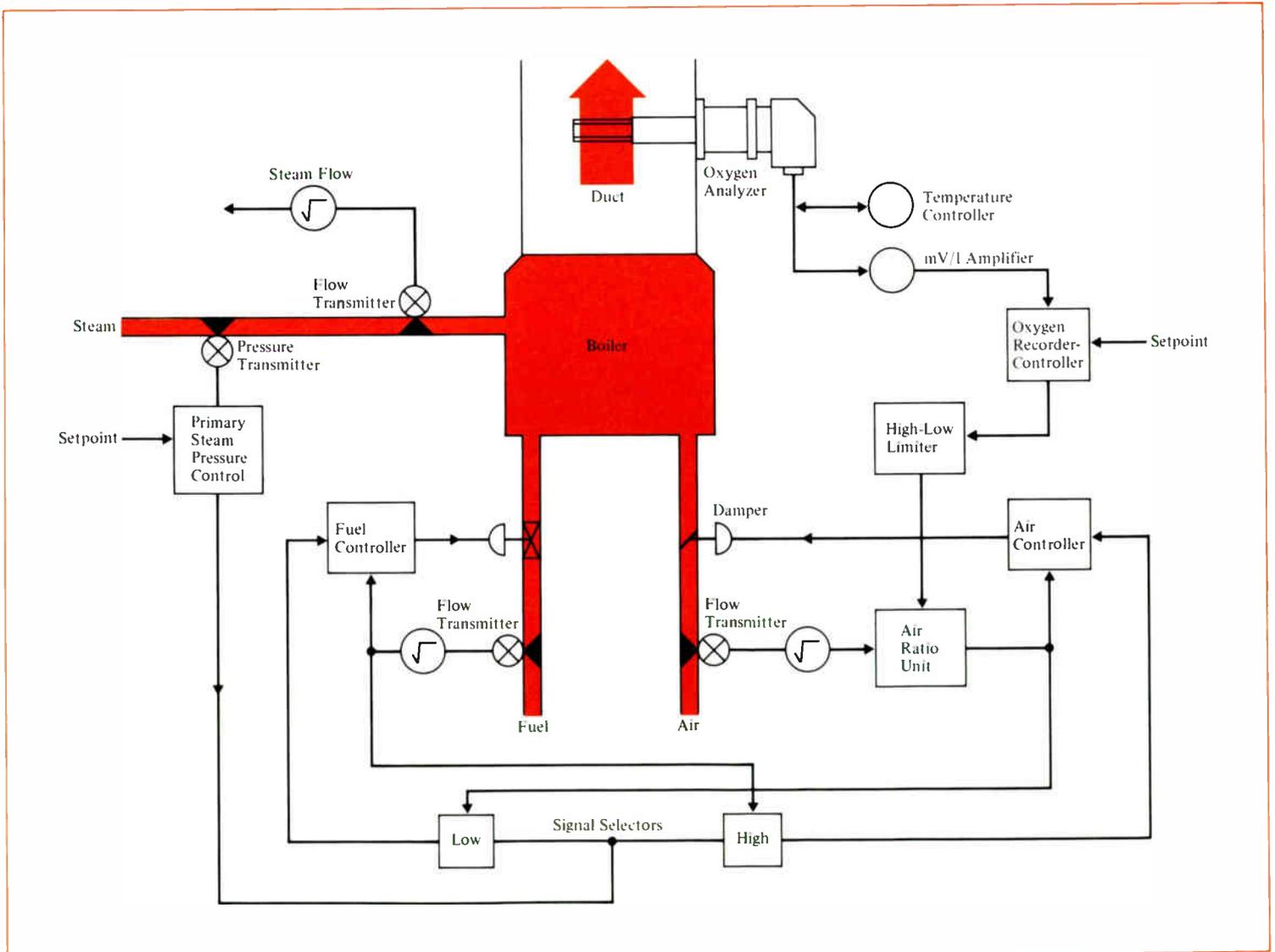
in the pulp and paper industry, and oxygen enrichment systems.

**Conclusion**

The Oxygen Analyzer combines high reliability, low maintenance requirements, and high accuracy. In combustion processes, it is an effective means of optimizing fuel use because it provides a reliable input for closed-loop control of the fuel/air ratio.

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# Light Sources—the Types Available and the Factors in Choosing

C. F. Jensen  
W. A. Murray  
W. S. Till

*As new lamps are developed and older ones improved, more and more factors must be weighed in choosing a type for a given application. However, the greater number of choices available increases the opportunities for effective and economical lighting.*

Three general types of electrical light sources are in use today: incandescent, fluorescent, and high-intensity-discharge (HID) lamps. Moreover, HID lamps encompass several subtypes. Both they and the fluorescent lamps are available with “white” light outputs of different colors, that is, different mixes of wavelengths that are perceived as white light but have different color-rendering ability.

The various lamp types also differ considerably in efficiency (more properly called “efficacy” in lighting parlance: the amount of light output for a given amount of elec-

trical power input). The result is considerable difference in the amount of heat output for a given light output, which is an important consideration in designing a building’s cooling, heating, and ventilating systems. Efficacy also is increasingly important on its own merits in this day of rising energy costs.

Until fairly recently, HID lamps were in limited use except for industrial and outdoor applications because of their relatively poor color. However, such great improvements have been made in their color that they now compete with the other types for many indoor applications where color rendition is important.

Thus, a wide choice of lamps is now available, and that makes choosing more difficult than it was a few years ago. On the positive side, however, it increases the opportunities available for users to improve the color-rendering ability of their lighting, increase the light level for a given energy expenditure, and/or reduce energy expenditure (and heat output) for a given light level.

Characteristics of the basic lamp types are summarized in the following sections and in Table 1.

## Incandescent Lamps

For many years, improvements in incandescent lamps consisted mainly of steady increases in efficacy made by improving the configuration of the filament. Recent improvements, however, are due primarily to changes in the atmosphere inside the glass bulb that encloses the filament.

Lamps were first made with evacuated bulbs to keep the filament from burning up. Later, it was discovered that pressure exerted on the filament by an inert gas introduced into the bulb retarded evaporation of the filament, thus making it possible to design lamps for higher filament temperatures and therefore higher efficacies. Consequently, nearly all incandescent lamps used for area lighting are gas filled, with the most common fill being a mixture of argon and nitrogen. Krypton is used in some lamps. Because it has a higher atomic weight than argon and nitrogen, krypton slows heat loss from the filament



*Different light sources are often used in combination to obtain the advantages of each, as when fluorescent fixtures are used for the main area lighting in a building and incandescent or HID lamps for decorative effect or to increase the light level in selected areas. An example is the Learning Resources Center at Benedict College, Columbia, South Carolina.*

by conduction and convection; the result is a lamp with greater efficacy and/or longer life.

**Light Output vs. Life**—The life of a lamp and its efficacy are generally interdependent and are determined mainly by filament temperature: the higher the temperature, the greater the efficacy and the shorter the life. A lamp can be designed for long life at the expense of efficacy or for high efficacy at the expense of life. In practice, the life for which a lamp is designed is an economic balance between the two factors, determined by the purpose of the lamp.

Thus, the quality or value of a lamp cannot be judged by its life alone. Lamp life may be as long as 12,000 hours for street lighting, where the high cost of replacing

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*The inherent linear nature of fluorescent lamps suits them well for many industrial lighting applications. In this TRW Equipment plant in Euclid, Ohio, the lighting provides 100 to 125 footcandles at the working level.*

lamps justifies lower efficacy. For general-service lamps, where efficacy is more important than long life because replacement is comparatively easy, a life of approximately 1000 hours has become accepted as a practical compromise. (Published data on lamp life refer to the *average* life of a group of lamps under specified test conditions and are not intended as a guarantee of the performance of any individual lamp.)

As a general rule, incandescent lamps should be burned at rated voltage. Over-voltage operation results in higher efficacy but shorter life and higher power consumption; undervoltage operation has the opposite effects.

*Lumen Maintenance*—An ordinary incandescent lamp's filament gradually sublimates in service, causing a slow but continuous reduction in light output until the filament breaks or burns through at its thinnest spot. Light output is reduced by absorption of light by the sublimed tungsten that collects as a black deposit on the inner surface of the bulb.

In the relatively new tungsten halogen

lamps, however, a halogen additive in the bulb reacts chemically with tungsten, continually removing deposited tungsten from the bulb and redepositing it on the filament. The result is a lumen maintenance factor of almost 100 percent.

*Varieties*—The most commonly used incandescent lamps are *general-service lamps*, which range from the 15-watt A-15 to the 1500-watt PS-52 and are designed for 120-, 125-, and 130-volt circuits. All wattages are manufactured with either clear or inside-frosted bulbs; inside-frosted bulbs are the more popular in wattages of 200 and below. White lamps (Eye Saving T-Bulb and Soft White) have a coating of silica powder on the inside of the bulb for maximum diffusion of light from the filament without glare or harsh shadows. Super Bulbs, another white family, are filled with krypton to provide long life at relatively high efficacy.

*Extended-service lamps* provide longer life than do general-service lamps (2500 hours compared with 1000 hours). Longer life is achieved by use of a filament of

different design, which is stronger at a slight cost in efficacy. They are for use where replacement costs are relatively high. A complete set of wattages paralleling those in the general-service line is available.

*Industrial-service lamps* have a filament of still stronger design and a life of 3500 hours, again at some sacrifice of efficacy. Rated initial outputs of three sizes of extended-service and industrial-service lamps are compared in Table 3, although that table is primarily for comparison of conventional lamps with the Econ-o-watt lamps discussed later.

*Vibration-service and rough-service lamps* have added support for the filament to provide lasting service in areas where high vibration frequencies, shock, or rough handling are encountered. The supports conduct some heat from the filament, lowering efficacy somewhat.

*Reflectorized lamps* provide controlled lighting for a wide range of indoor and outdoor applications. They have a built-in dust-free reflecting surface, so they do not require a fixture to direct the light. How-

Table 1—Characteristics of Basic Westinghouse Lamp Types

Characteristics	Incandescent (including tungsten halogen)	Fluorescent	High-Intensity Discharge (HID)		
			Lifeguard Mercury-Vapor	Metal-Halide	Ceramalux High-Pressure Sodium
Wattages (lamp only)	15 to 1500	40 to 219	40 to 1000	400, 1000, 1500	150, 250, 400, 1000
Life (hours)	750 to 12,000	9000 to 30,000	16,000 to 24,000	1500 to 15,000	10,000 to 20,000
Efficacy (lumens per watt, lamp only)	15 to 25	55 to 88	20 to 63	80 to 100	100 to 130
Color Rendition	Very good to excellent	Good to excellent	Poor to very good	Good to very good	Fair
Light Direction Control	Very good to excellent	Fair	Very good	Very good	Very good
Source Size	Compact	Extended	Compact	Compact	Compact
Relight Time	Immediate	Immediate	3 to 5 minutes	10 to 20 minutes	Less than 1 minute
Comparative Fixture Cost	Low because of simple fixtures	Moderate	Higher than incandescent, generally higher than fluorescent	Generally higher than mercury-vapor	Highest
Comparative Operating Cost	High because of relatively short life and low efficacy	Lower than incandescent; replacement costs higher than HID because of greater number of lamps needed; energy costs generally lower than mercury-vapor	Lower than incandescent; replacement costs rela- tively low because of relatively few fixtures and long lamp life	Generally lower than mercury-vapor; fewer fixtures required, but lamp life is shorter and lumen mainte- nance not quite as good	Generally lowest; fewest fixtures required

ever, a fixture or shield may be desirable to reduce brightness at certain viewing angles. Reflectorized lamps are available in both wide and narrow distribution patterns, and their wattages range from 30 to 1000. The primary types are the PAR for outdoor service and the R for indoor service.

*Tungsten halogen lamps* (formerly called quartz-iodine lamps) are used for general lighting as well as for various specialty applications. They are superior to other incandescent lamps in thermal shock resistance, combined high efficacy and life, lumen maintenance (as previously discussed), and compact size. They are available in a wide range of wattages and designs.

*Application Considerations*—Incandescent lamps form a necessary part of the lamp family because of their lower cost, greater versatility, and operating advantages, even though the newer lamp types have higher efficacy. The lamps themselves are lower in cost, and their fixtures are simpler and easier to install. They are more versatile in meeting specific lighting requirements because of the interchangeability of many types and ratings in the same socket. Also, they can be dimmed easily and economically. Versatility and easy dimming give them the best decorative qualities of the three types; imaginative

use of the many kinds and shapes of lamps available can set the desired mood for an area.

Incandescent lamps have the operating advantage of continuing to provide light if the supply voltage falls below normal; fluorescent and HID lamps may fail to start or, if operating, may be extinguished. Moreover, the light output of incandescent lamps is not diminished by high and low ambient temperatures as is the output of fluorescent lamps.

#### Fluorescent Lamps

A fluorescent lamp must have an auxiliary, commonly known as a ballast, to limit current and provide the necessary starting voltage. It cannot be operated directly from the electric lighting circuit because the arc discharge probably would not be established and, if it were, current would rise until the lamp was destroyed. Each type of lamp requires a ballast specifically designed for its characteristics and cannot be interchanged with another type. The kinds of ballast generally used are preheat, instant start, and rapid start.

The electron-emitting material on the electrodes of a fluorescent lamp erodes during the normal starting and burning cycle. To maximize life of lamps operated in instant-start and preheat circuits, the

lamps should be turned on and off as infrequently as possible. However, lamps operated in rapid-start circuits (where the cathodes are constantly preheated) show little change in life due to being turned on and off if they are operated for three or more hours per start. Thus, they can be turned off at lunch time, for example, and started after lunch with no loss in rated life. That is an important power-saving feature of rapid-start circuits. Failed lamps in all systems (and starters if required) should be replaced promptly so that abnormal operating conditions will not damage the ballast, starter, or remaining operable lamps.

*Application Considerations*—Fluorescent lamps have higher efficacy than incandescent lamps, so their total heat output for a given light level is less. In addition, a smaller proportion of their heat output is in the form of radiant ("sensible") heat. Conducted and convected heat, which account for the balance, are chiefly dissipated upward and contribute less to the sensation of heat derived from the lighting installation. However, where total heat is a consideration, as in computing air-conditioning load, the quantity that is important is the total lamp wattage rather than just the radiant heat. It is also necessary to add to the lamp wattage the watts consumed by

Table 2—Color Guide for White Fluorescent Lamps

Lamp Description	Atmosphere	Efficacy (lumens per watt)	Color- Rendering Index	Coordinated Color Temperature (degrees K)	Lighted Appearance (ICI color coordinates)	
					X	Y
Cool White	Cool	78	66	4100	0.372	0.375
Cool White Deluxe	Cool	56	87	4200	0.369	0.363
White	Warm	80	58	3500	0.409	0.394
Warm White	Warm	80	53	3000	0.435	0.402
Warm White Deluxe	Warm	54	71	3000	0.430	0.389
Daylight	Cool	65	73	6500	0.313	0.337
Living White	Cool	60	93	4300	0.369	0.363
Natural	Warm	52	77	3650	0.388	0.361
Supermarket White	Cool	58	85	4500	0.362	0.375
Merchandising White	Warm	60	80	3450	0.409	0.396



*Modern HID lamps were first applied outdoors, and that is still a large application area because of their long life and high efficacy. Metal-halide lamps were chosen to illuminate loading areas at Minneapolis/St. Paul International Airport.*

any ballast located within the area in question.

The starting of fluorescent lamps is affected by ambient temperature: low temperatures require higher voltages for reliable starting. Most ballasts provide voltages that start lamps down to 50 degrees F, and ballasts are available to start certain lamp types down to  $-20$  degrees F.

Light output, also, is affected by ambient temperature. Rated lumen output is obtained when measured at 77 degrees F, and output may be less at higher or lower temperature. Therefore, it is important to select the proper lamp and fixture for the application temperature range.

Total performance depends on the voltage supplied to the ballast. In general, it is satisfactory when voltage remains within  $\pm 10$  percent of rated voltage.

Another consideration that enters into selection of a lamp is its color appearance, or atmosphere (Table 2). A "warm" atmosphere has a connotation of friendliness, relaxation, or coziness, while a "cool" atmosphere connotes efficiency, alertness, and neatness.

Among the white lamps, cool white, warm white, and white have the highest

efficacies and are normally used in industry, general office areas, and other places where economical light production is required. Where a high degree of color rendering is desired, however, the lamps with high color-rendering index should be used.

Color-preference ability is the ability of a lamp to make colors appear not as they actually are but as people prefer to see them. It is an important consideration in merchandising and other commercial applications, and it prompted development of the Living White lamp. The Living White lamp is particularly flattering to human complexions and also reveals the full beauty of house furnishings, merchandise, and other colored objects.

#### **High-Intensity-Discharge Lamps**

These are usually called HID lamps, and the term applies to any enclosed intense light source of the arc-discharge type. Light is produced in an arc tube by current passing through a vapor at relatively high pressure compared with the low pressure in fluorescent lamps. Arc-tube pressures for popular HID lamps range from about one-third to eight atmospheres. The arc tube is usually enclosed in an outer glass bulb. The HID family includes mercury-vapor, self-ballasted mercury-vapor, metal-halide, and high-pressure sodium lamps.

In mercury-vapor lamps, mercury forms the light-producing vapor. Metal-halide

lamps contain not only mercury but also compounds of sodium and scandium with iodine. Phosphors are coated on the inside of the outer bulb of some mercury-vapor and metal-halide lamps to improve color, increase light output, and/or reduce surface brightness. High-pressure sodium lamps contain sodium and mercury; their name is perhaps misleading because pressures in the arc tube are always less than atmospheric, and the outer bulb encloses a vacuum.

All HID lamps require a few minutes starting time to develop full light output and characteristic color. Like fluorescent lamps, all except self-ballasted mercury-vapor lamps require an auxiliary control device generally called a ballast. Ambient temperature generally has little effect on mercury-vapor lamps, but it may influence the color and light output of metal-halide and sodium lamps.

*Light Color*—The mercury arc produces strong line spectra in the ultraviolet and visible region of the spectrum, with the visible output mainly in the violet, blue, green, and yellow areas. Phosphor-coated mercury-vapor lamps emit, in addition, some continuous energy provided by the fluorescent radiation of the particular phosphor used. Those lamps have gone far toward overcoming objections to the colors previously available in mercury-vapor lamps. For example, the Beauty Lite lamp produces light that is cool looking but flattering, and the Style-Tone lamp produces a warm-looking light that resembles incandescent light.

In metal-halide lamps, the basic mercury spectrum is modified or supplanted by radiations characteristic of the halides used in the lamp, improving the color. Color varies with the types of materials added and the quantities of each vaporized in the arc stream; the latter is a function not only of lamp design but also of auxiliary equipment and operating conditions, so some color difference among metal-halide lamps is normal.

High-pressure sodium lamps emit light mainly in the yellow and orange portions of the visible spectrum, with additional output in all other portions. They produce

little ultraviolet radiation, so phosphors are not useful for color improvement.

High-pressure sodium lamps must not be confused with low-pressure sodium lamps, which emit a monochromatic yellow light. The latter are used to some extent in a few European countries, mainly for street lighting. They have found little use in this country, and Westinghouse does not make them, mainly because of their extremely poor color rendition. It is virtually impos-

sible to distinguish the colors of vehicles illuminated by them, so they are objectionable to most police departments. Moreover, they are much bulkier than HID lamps of comparable light output.

*Application Considerations*—The popularity of HID lamps for outdoor use is the result of many advantages, including low operating cost per footcandle because of high efficacy and long lamp life, which minimizes relamping costs. Their light can

cover wide areas because their fixtures can provide good optical control, especially with clear lamps. They have peak performance at all outdoor temperatures when operated with a suitable ballast. An appropriate color is available for almost any outdoor application.

High-pressure sodium lamps are the most widely used outdoors because they have high efficacy, optical control is excellent because of their small size, and their warm uniform golden-white color is suitable for such applications as streets, highways, building floodlighting, parking lots, and parks. Deluxe White or Beauty Lite mercury-vapor lamps are recommended for roadways where superior color rendition and good color uniformity are desired or to make people, buildings, poster-boards, or surroundings look natural. Style-Tone mercury-vapor lamps are recommended for similar applications where a warm tone, similar to that of incandescent lamps, is desired. Metal-halide lamps are recommended particularly for outdoor and indoor sports lighting, parking lots, building floodlighting, and other applications where their good color rendition is useful.

A wide selection of ornamental, compact, and efficient luminaires is available. Floodlights are available with various beam spreads for lighting ground areas, sports fields, buildings, and advertising posters.

For the interiors of industrial buildings, high-pressure sodium lamps are increasingly specified because their high efficacy makes them more economical than other light sources for most areas. Metal-halide lamps, although somewhat lower in efficacy, are also becoming more popular for industrial use, and Deluxe White mercury-vapor lamps continue to be used widely.

For the interiors of commercial buildings, both metal-halide and the best phosphor-coated mercury lamps (Style-Tone and Beauty Lite) are increasingly used. Examples are supermarkets, shopping malls, banks, department and discount stores, gymnasiums, libraries, auditoriums, and transportation terminals. Advantages are low operating cost because of high efficacy, low maintenance cost because of the relatively small number of lamps to be

Table 3—Performance and Economic Comparison of Conventional and Econ-o-watt Lamps

Lamp	Power Consumption (lamp watts)	Rated Initial Output (lumens)	Rated Average Life (hours)	Power Cost Saving* (dollars)
<b>Incandescent, Extended Service</b>				
Conventional	60	740	2500	0.45
Econ-o-watt	54	645	2500	
Conventional	100	1480	2500	0.75
Econ-o-watt	90	1230	2500	
Conventional	150	2350	2500	1.14
Econ-o-watt	135	1990	2500	
<b>Incandescent, Industrial Service</b>				
Conventional	60	670	3500	0.63
Econ-o-watt	54	590	3500	
Conventional	100	1280	3500	1.05
Econ-o-watt	90	1090	3500	
Conventional	150	2150	3500	1.59
Econ-o-watt	135	1790	3500	
<b>Fluorescent, 48-Inch Rapid-Start Cool White</b>				
Conventional	40	3150	20,000+	3.60
Econ-o-watt	34	2800	20,000	
<b>Fluorescent, 48-Inch Rapid-Start Warm White</b>				
Conventional	40	3200	20,000+	3.60
Econ-o-watt	34	2900	20,000	
<b>Fluorescent, 96-Inch Cool White</b>				
Conventional	75	6300	12,000	3.60
Econ-o-watt	60	5220	12,000	
<b>Fluorescent, 96-Inch Warm White</b>				
Conventional	75	6400	12,000	3.60
Econ-o-watt	60	5340	12,000	
<b>Mercury-Vapor, Clear</b>				
Conventional	400	21,000	24,000+	48.00
Econ-o-watt	300	14,000	16,000+	
<b>Mercury-Vapor, Deluxe White†</b>				
Conventional	400	23,000	24,000+	48.00
Econ-o-watt	300	15,700	16,000+	

\*Approximate saving from use of Econ-o-watt lamps in place of conventional lamps. Based on rated average life of Econ-o-watt lamps and on power cost of \$0.03 per kilowatt-hour.  
†Phosphor coated.



*Steady improvement in the color of light from HID lamps has made them advantageous in many indoor applications. For example, Style-Tone mercury-vapor lamps are used at American Federal Savings and Loan Association, Des Moines, Iowa, to provide a bright yet comfortable environment for work.*

serviced and the ease of replacing them (often with a stick changer), more attractive ceiling appearance as compared with some fluorescent fixtures, and, for stores, more vertical footcandles, making objects easier to see on lower shelves.

#### **Adequate Lighting versus Costs**

Lighting is one expense that is amenable to control because the various lighting systems have different first costs and operating costs, and because lighting levels can be controlled. In addition to the general desirability of controlling expenses, avoiding wasteful use of electric power is in the national interest in this era of energy shortage. Operating costs depend partly on power requirements, which can be controlled in several ways involving use of the

more efficient lamp types and control of lighting levels.

*Using More Efficient Lamps*—When it is feasible to change the lighting system itself, electrical energy can be saved and/or lighting upgraded by substituting more efficient lamp types for less efficient types. If new fixtures with high-pressure sodium lamps are substituted for those with conventional mercury-vapor lamps, for example, the power saving can be as high as 40 percent while at the same time light output is increased 23 percent.

*Controlling Lighting Levels*—The lighting industry has, for many years, studied lighting requirements by laboratory measurements and also in real work situations. On the basis of the studies, the Illuminating Engineering Society has recommended minimum lighting levels for a wide variety of representative industrial operations and other visual tasks<sup>1</sup>. Many of the recommendations have been approved as standards by the American National Standards Institute (ANSI)<sup>2</sup>. The recommendations should be followed because lighting makes

an important contribution to health, safety, productivity, sales, and security. Outdoor lighting is as important as indoor; high lighting levels on roadways, for example, reduce the “surprise factor” by making moving objects more visible. Any changes in lighting levels should be carefully planned with the help of a qualified lighting engineer.

However, if the lighting level in an area is higher than the recommended level, several options for reducing it are open to the user. By far the most efficient way is to keep lamps in all fixtures but replace existing lamps with lower-wattage lamps. Three new lines of lamps have been designed specifically for this period of energy shortage. These Econ-o-watt lamps include incandescent, fluorescent, and mercury-vapor varieties (Table 3).

Besides directly reducing the amount of electrical energy consumed by the lighting system, using Econ-o-watt lamps instead of just turning lights off can lower the cost of power by helping maintain adequate power factor. Most lighting equipment is a load with high power factor, which helps offset the low power factor of some machinery. If power factor is not maintained, extra charges may be imposed by the electric company, and those charges may far exceed the dollar savings that had been anticipated by turning lights off. For example, a large automobile manufacturer recently found that turning off a considerable number of lights in one plant lowered the overall plant power factor; the minimum power factor requirement was not met, explaining in part why monthly bills jumped 25 percent.

Use of Econ-o-watt lamps for reducing energy expenditure has the further advantage of preserving the general appearance and light distribution of the lighting system. It helps prevent creation of unsafe dark areas that can result from an improvised lamp-removal sweep through a facility.

Another acceptable way to control light levels is to connect individual or small groups of fixtures to convenient switches. Selected fixtures can then be turned off when not needed, and switched on again when a temporarily higher light level is required. Care must be taken to prevent

dangerously dark areas. Switches should be prominently identified as to their purpose; for example, normally off switches can be labeled "For Temporary High-Level Lighting Only." Timers or photoelectric devices can be used to turn lights off when personnel are not available to do it.

Removing fluorescent lamps from some fixtures, or allowing burned-out lamps to stay in the fixtures, disrupts the lighting pattern. Besides, it does not necessarily save the full wattage of the lamps removed or burned out. For instance, when both 40-watt fluorescent lamps are removed from alternate two-lamp fixtures in a multi-lamp installation, the series ballast in those fixtures continues to consume 8 to 9 watts. Removing only one lamp in the modern starterless system (series-sequence) is not recommended because it can cause improper operation that could damage the other lamp and/or the ballast. If lamps must be removed, both lamps served by a two-lamp starterless ballast should be taken out. The ballast continues to use power, however, in an amount that depends on the type of ballast.

When a 400-watt mercury-vapor or metal-halide lamp in a multilamp system is removed from a fixture containing or connected to a regulated autotransformer ballast (common in such systems), the fixture continues to consume approximately 23 watts. If the lamp is a high-pressure sodium lamp, the power consumed by the ballast (with the lamp removed) may be as much as 88 watts; moreover, the starting circuit may be damaged and the ballast life shortened.

Lamps and ballasts may be important contributors to the heating of a building in winter months, so a substantial reduction in existing lighting could require use of considerably more energy to heat the building. The savings in lighting cost then are reduced by increased costs for heating. Moreover, the electric energy used by the lighting system is generated largely by fuel types that are not ordinarily suitable for heating buildings, so a reduction in lighting could increase the rate at which fuels in relatively short supply, such as gas and heating oil, are used up.

The light reduction caused by wattage-reduction measures can be minimized by some simple steps, which can also improve the output of an existing system. First, fixtures should be cleaned regularly. Dirt buildup on reflecting surfaces and lenses can reduce light output as much as 50 percent.

Second, the walls and ceilings of the facility can be cleaned and/or painted. Dirty or dark-colored surfaces greatly diminish the amount of light reaching the task area.

Third, lamps can be replaced more frequently than was done in the past. Light output drops as a lamp ages. The problem is especially severe with long-lived light sources such as fluorescent and HID lamps, because the light produced near the end of life may be less than 50 percent of the original value, although the lamp continues to use the same amount of energy. If relamping in incandescent systems is done more frequently than normal, lamps with greater light output but shorter life can be used. There is no single best time or way for all users to relamp, so the computer has been brought in to help solve the problem. An example is the Westinghouse computerized Lighting Cost Reduction Service. After human study and computer analysis, this service tells the user the most economical time for him to change his lamps. In addition, it suggests interchangeable lamps that may be more economical for his particular installation.

#### Conclusion

Lighting systems serve a wide range of applications that require specific designs for specific tasks. Incandescent, fluorescent, and HID lamps are made because all three are needed. Before changing the type of lamp or removing lamps in an existing system, or designing a new system, the lighting task should be carefully evaluated. A qualified lighting engineer can be of invaluable assistance.

The computer is instrumental in helping designers to determine the most economical and efficient lighting system and in scheduling group relamping. Its use is being continually expanded to compare lighting

maintenance practices and to tailor lighting systems.

And technical advances continue. There will be more shades of white light available in both HID and fluorescent lamps, more use of HID lamps in stores and other commercial facilities, more specialized lamps of all types, and still more efficient light sources.

Incandescent lamps will be improved in versatility, resistance to breakage, and decorative quality.

The most significant development in fluorescent lamps will be a combination of phosphors that will provide light with efficiency comparable to that of existing cool white or warm white lamps but with the color rendition of deluxe lamps. That will drastically reduce the initial cost of a fluorescent system utilizing lamps of excellent color quality.

A greater variety of HID whites with high efficacy and improved color-rendering ability will become available, similar to the range of fluorescent whites now in use. HID indoor lighting costs, already favorable in high-ceiling locations, will become more comparable to those of fluorescent in stores and other relatively low-ceiling locations. Useful as metal-halide lamps are now, their most significant feature is their potential. They offer the greatest opportunities for developing higher efficacy and highly acceptable color rendition. Improvements also will be made in color uniformity, lumen maintenance, and life.

All in all, two things seem certain for the future: a user's lighting options will increase and, therefore, the task of picking the right lighting for his particular situation will become even more difficult. It will require even more careful consideration and expert help than it does now.

#### REFERENCES:

<sup>1</sup>IES Lighting Handbook, Fifth Edition, Illuminating Engineering Society, New York, N.Y.

<sup>2</sup>American National Standards Institute, New York, N.Y.

## Half-Hour Weather Updating Provided by Satellite and Recorder System

Ground stations located anywhere in the western hemisphere can now receive pictures showing the hemisphere's cloud cover every 30 minutes. The stations record the changing cloud patterns day and night by monitoring signals being returned by the first synchronous meteorological satellite (SMS-1).

Small receiving stations (18- to 25-foot antenna dish) suffice to receive the weather data, which is then recorded on 22- by 22-inch dry film by means of a laser-beam recorder developed by the Westinghouse Defense and Electronic Systems Center. The recorder can produce a ready-to-use image of the hemisphere every 30 minutes with high resolution (half-mile square).

Using a laser beam to expose film has the advantages of high recording power, high signal-to-noise ratio, and ability to handle large amounts of data quickly. More than 10 billion bits of data must be handled in a 20-minute period to produce the high-resolution visible-light images of

the earth. The laser film recorder has a rotating drum that is automatically loaded with 22-inch by 22-inch dry-process film from a supply cassette. A vacuum system holds the film to the drum during recording. The beam intensity of the helium-neon laser is modulated by the incoming video signal while the film drum rotates, and the scan lines are advanced by an incrementally driven lens carriage. When recording is complete, the film is unloaded from the drum into a heat processor for quick developing.

The SMS-1 satellite is positioned over the equator just off the coast of Brazil. It was launched by NASA for the National Oceanic and Atmospheric Administration (NOAA). Weather information from it is received at a very high data rate during a small portion of the satellite spin—when the sensor is pointed at the earth. Large antennas and complex ground equipment are required to receive this data at NOAA's Command and Data Acquisition Station, Wallops Island, Virginia. During the remainder of the satellite spin—when the

weather sensors are pointed away from the earth—the Wallops Island station "stretches" the weather data and sends it back to the satellite at a slower data rate. The satellite acts as a transponder and retransmits the stretched weather data to smaller and simpler satellite stations that can be located anywhere in the western hemisphere. Westinghouse integrated the components of the SMS ground stations and built the ground-synchronizer and data-stretcher systems used at Wallops Island.

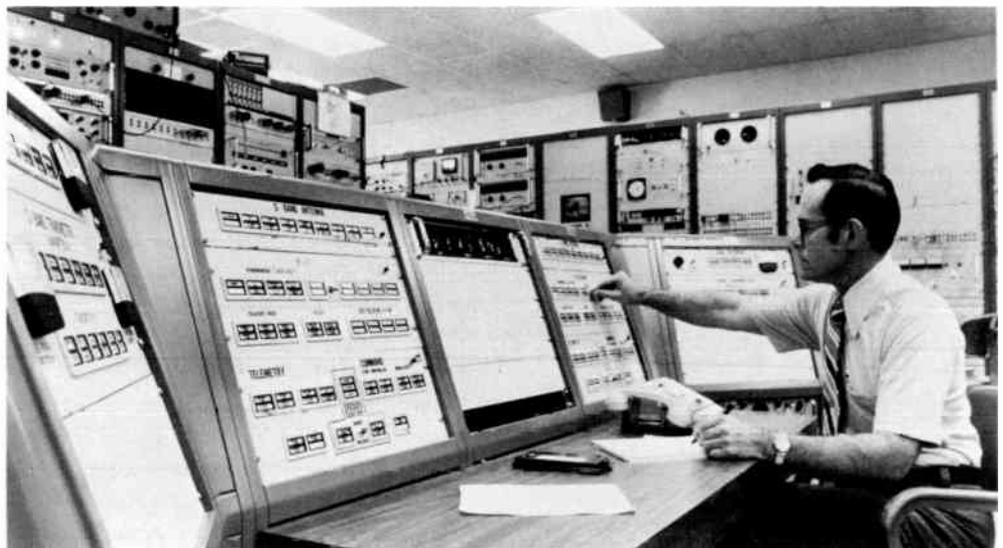
## Production-Design AWACS Antenna Tested

Range testing and electromagnetic interference testing have been successfully completed on the production-design radar antenna for the Airborne Warning and Control System (AWACS).\* The AWACS system can detect and track aircraft, even those flying at low altitude, in a large volume of air space. The Boeing Company

\*R. E. Hendrix, "Overland Downlook Radar Is Key Element of AWACS," *Westinghouse ENGINEER*, July 1973, pp. 98-105.



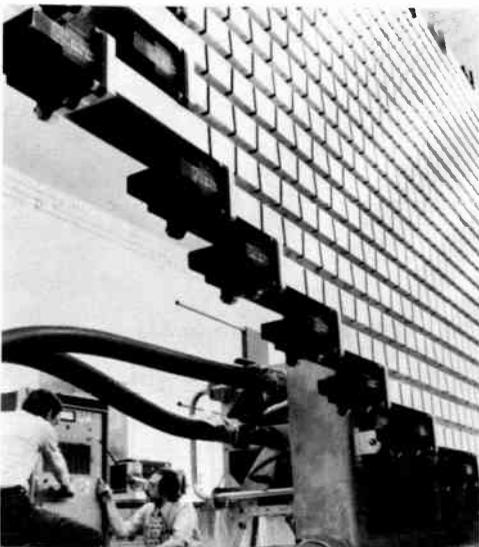
Views of the western hemisphere with its weather patterns are transmitted from the SMS-1 satellite and recorded at ground stations by laser-beam recorders. A picture can be made every half hour for close monitoring of weather movements.



This equipment provides the means for controlling SMS satellites and for acquiring, synchronizing, and stretching the data received from them. It is located at NOAA's Command and Data Acquisition Station.

is prime contractor to the U. S. Air Force for the AWACS program, and the Westinghouse Defense and Electronic Systems Center is building the production-design surveillance radars for it. The radar is very difficult to jam with either airborne or ground-based countermeasures equipment because the latest counter-countermeasures techniques are built into it.

The production-design radar antenna is highly reproducible and requires no tuning after assembly and installation. It is essentially identical to the antenna produced for the brassboard competition phase of the AWACS program. The differences between the production-design and brassboard antennas are mainly repackaging and relocation of the phase shifters and electronics. The phase shifters, which provide electronic vertical scanning, were located at one end of the antenna for easy access during maintenance and for improved weight distribution. The electronics packages, which provide phase control and the first stages of signal amplification, were located at the other end of the antenna.



The production-design AWACS radar antenna is shown during preparation for electromagnetic interference testing.

Repackaging and relocation reduced antenna weight from 2800 to 2150 pounds.

#### Power Circuit Breakers Tested in New Laboratory

A new laboratory facility for mechanical testing of power circuit breakers and components expands the Westinghouse Power Circuit Breaker Division's testing capability by providing more space and sophisticated equipment. Tests that can be performed include static and dynamic strain-gage measurements, acceleration testing, static and dynamic pressure measurements, timing history and synchronization, life testing, high-speed photography, and seismic testing.

The 4200-square-foot facility has a roll-up door 15 feet wide by 18 feet high, which provides easy movement of circuit breakers and other large equipment in and out of the test area. A 15-ton portable hydraulic crane is used to lift and move heavy equipment and material. Ceiling height is 33 feet.

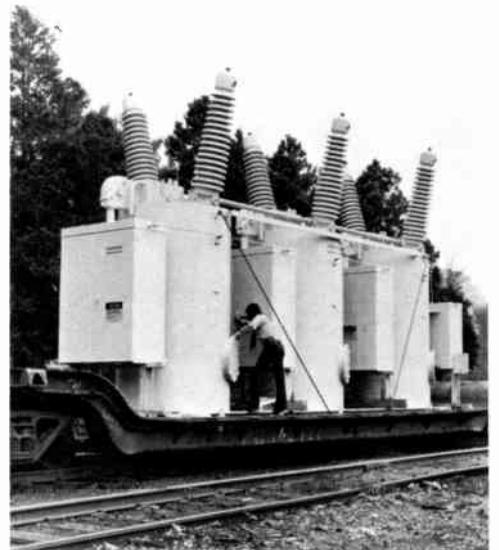
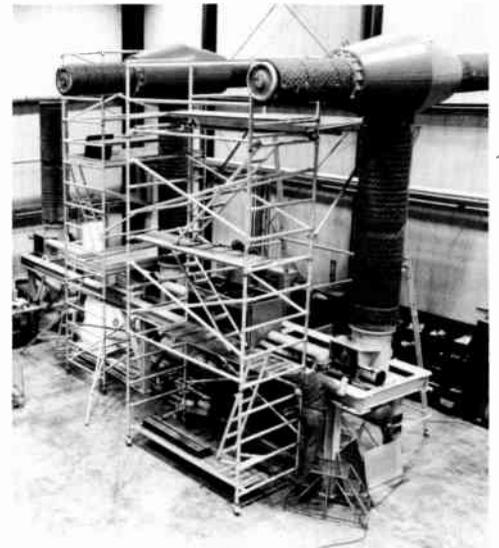
Besides serving the Division, the laboratory's facilities are available on a contract basis to other organizations.

#### Independent Pole Operation Provided in Power Circuit Breaker

The first 242-kV Trim-Tank power circuit breaker equipped with independent pole operation (IPO) has been shipped by the Westinghouse Power Circuit Breaker Division. It went to Louisiana Power and Light Company's Motor Switch Siding substation near Metairie, Louisiana.

The new option of independent pole operation improves system stability by eliminating the possibility of all three breaker poles being stuck in the closed position during a three-phase system fault.\* Each breaker phase unit is equipped with a separate pneumatic operating mechanism. If one or more mechanisms fail to operate during a system fault, the remaining mechanisms continue to operate.

The Trim-Tank IPO power circuit breaker is available in interrupting ratings from 40,000 to 63,000 amperes, with up to



Top—Mechanical testing laboratory is shown with tests in progress on an EHV power circuit breaker.

Bottom—This Trim-Tank power circuit breaker is equipped with the optional independent pole operation.

Right—The stator for a generator rated at 1,305,000 kW squeezes its way out of the yard at the Westinghouse East Pittsburgh plant. It was shipped to Duke Power Company's McGuire No. 1 nuclear power station on a special Schnabel car.

\*C. L. Wagner, H. E. Lokay, "Independent-Pole Circuit Breakers Improve System Stability Performance," *Westinghouse ENGINEER*, Sept. 1973, pp. 130-137.

3000 amperes continuous current. It can be shipped completely assembled to most locations.

### Massive Generator Shipped to Duke Power Company

The largest generator designed and manufactured by the Westinghouse Large Rotating Apparatus Division has been shipped to Duke Power Company's McGuire No. 1 nuclear station, located about 25 miles north of Charlotte, North Carolina. The generator is rated at 1,305,000 kW—enough to meet the electric needs of more than 600,000 people when it goes into operation early in 1977. Assembled, the unit is nearly 50 feet long and weighs more than 900 tons. Its stator alone weighs more than 500 tons.

The stator was designed for shipment on Westinghouse's largest railroad car, a 22-axle Schnabel car. (See photograph.) A suitable route had to be mapped out with the railroads, and Duke Power Company built a special railroad track into its plant site for the final leg of the trip.

Thorough engineering tests performed before shipment included, in addition to normal engineering verification tests, high-speed movies made during sudden short circuits. Other special tests analyzed the vibration characteristics of the unit's winding and bracing components.

A duplicate generator for Duke Power Company's McGuire No. 2 nuclear station will be shipped next year.

### Flat Display Panels Employ Matrix of Thin-Film Transistors

Flat electroluminescent panels for information display have been developed by combining a large thin-film integrated circuit with a phosphor, all deposited on a sheet of glass. Prototype units demonstrated recently are 6 by 6 inches square and consist of 12,000 light-emitting elements. (See photographs on back cover.)

Potential applications include alphanumeric displays, vectorgraphic displays (such as radar screens), and video displays. The display panels are being developed at the Westinghouse Research Laboratories.

The work is partly supported by the U. S. Army Electronics Command, which sees potential application in lightweight portable field message units.

The integrated circuit for a 12,000-element screen consists of a matrix of 24,000 thin-film field-effect transistors and 12,000 capacitors vacuum-deposited on the glass substrate. It is composed of one basic circuit repeated at each element location (see diagram). That basic circuit consists of an X-Y-addressed logic transistor ( $T_1$ ), a power transistor ( $T_2$ ), and a storage capacitor ( $C_S$ ) interconnected by source, power, and gate bus bars. The completed integrated circuit is covered with an organic insulating film, which is opened at each element location to expose the drain pad of the power transistor. The circuit next is coated with a phosphor material, and then a front electrode is formed by depositing a translucent conducting layer onto the surface of the phosphor; those two steps form an electroluminescent cell at each element location. Finally, the panel is sealed with a glass cover plate.



For operation, the power bus bars are connected to a source of ac power, and the source and gate bus bars are connected to the outputs of a conventional display signal generator. A signal on a gate bus bar gates that entire row of logic transistors. Then, when a signal appears on a source bus bar, the logic transistor at the intersection ( $T_1$ ) conducts power and thereby gates the power transistor ( $T_2$ ). That transistor conducts, and the resulting voltage across the electroluminescent cell causes the phosphor to glow.

The brightness of the electroluminescent cell is determined by the voltage on the gate of the power transistor and across the capacitor. That voltage is controlled by

controlling the voltage on the source bus bar, and brightness information is stored for a frame period on the storage capacitor. Brightness control can be used to provide shades of gray in the display.

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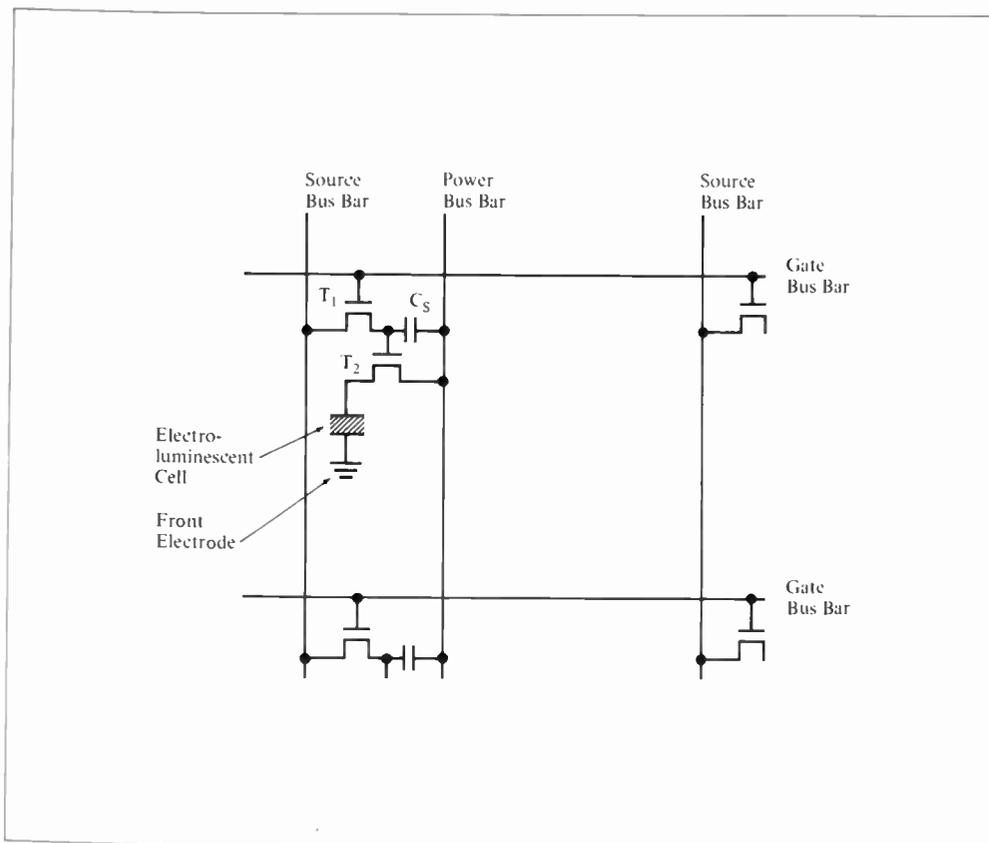
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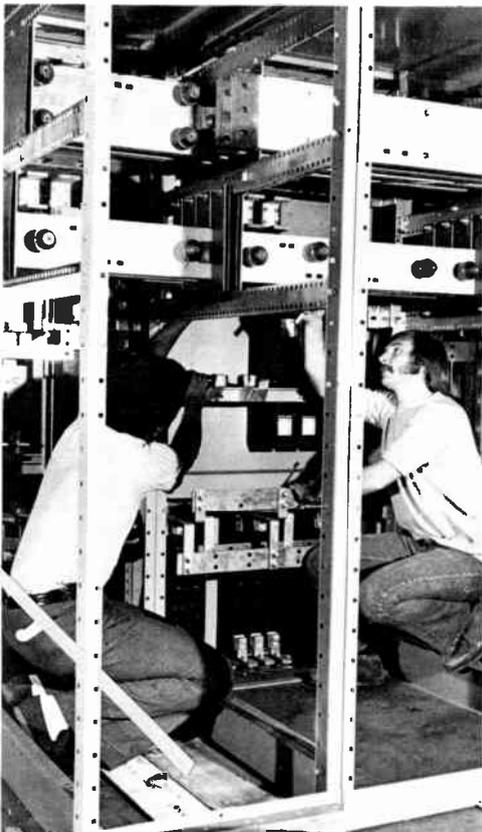
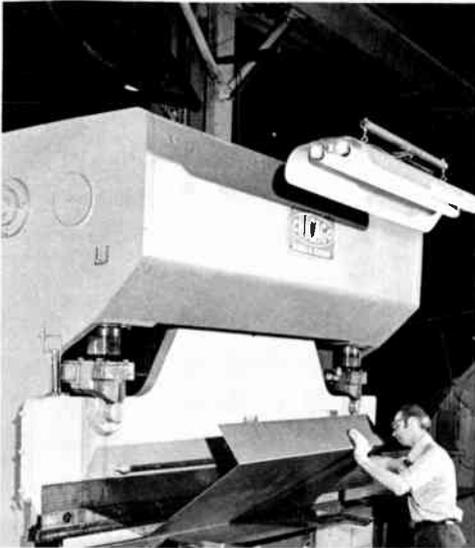
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power transistor ( $T_2$ ) and thereby causes the electroluminescent cell to glow.



Switchboards, power assemblies, and panelboards are manufactured in a new plant of the Distribution Equipment Division. At top, sheet steel is being bent to form a panelboard box; at bottom, buswork and electrical connections are being installed.

reading or has a language barrier. Questions can be asked in a foreign language and the responses printed in English. An option permits the patient to telephone his history from home, office, or hospital bed.

Although the DataQuest I system is not computerized, it can be linked to any computerized information system. Also, it can be applied without hardware modification to applications other than medical history taking, such as personnel interviews or counseling.

#### Reactor Guard Vessel Installed at Fast Flux Test Facility

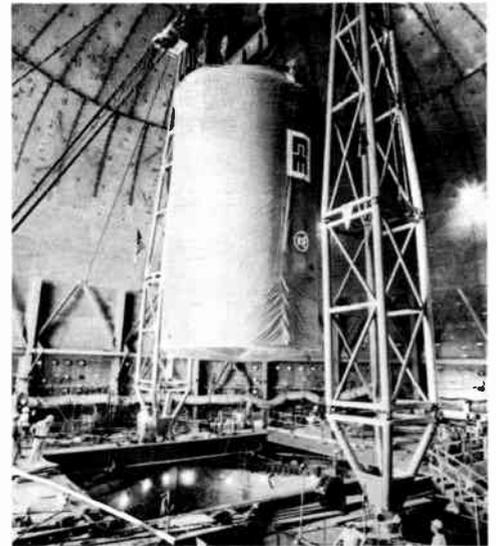
The reactor guard vessel has now been installed in the Fast Flux Test Facility (FFTF) at Richland, Washington. Scheduled for completion in late 1977, the FFTF will be used to test fuels and components for liquid-metal fast breeder reactors.

The guard vessel weighs 122 tons, is 38 feet long, and is 23 feet in diameter—the largest diameter of any stainless-steel vessel ever manufactured in the United States. It was lowered into the reactor cavity, and then workers did the welding and other work necessary for installation of the 350-ton reactor vessel inside the guard vessel.

The guard vessel was built to the standards of the U.S. Atomic Energy Commission by Combustion Engineering, Inc., under contract to the Westinghouse Advanced Reactors Division. It is one of many safety features being built into the FFTF, providing a backup to the reactor vessel and assuring that coolant will always be available to the reactor core.

While work on the FFTF progresses, testing is under way in connection with the liquid-metal fast breeder reactor program at separate facilities of the Richland site. At the High Temperature Sodium Facility, scientists and engineers are testing a prototype of the FFTF's instrument tree, which will monitor temperature and flow characteristics of liquid sodium in the reactor vessel. Testing of a prototype of the in-vessel fuel handling machine is scheduled to begin this month. The machine will be used to move fuel assemblies in the FFTF by remote control.

Westinghouse Hanford Company, a subsidiary of Westinghouse Electric Corporation, is responsible for development, construction, and operation of the FFTF and operates test facilities at the Richland site for the Atomic Energy Commission.



Workmen lower the Fast Flux Test Facility's guard vessel into the reactor cavity. The guard vessel is one of many safety features built into the FFTF, which will be used to test fuels and components for the nation's liquid-metal fast breeder reactors.

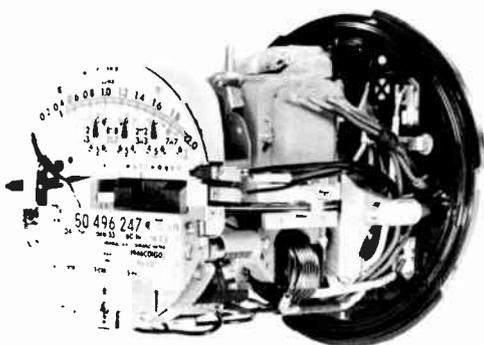
# Products and Services

**Postforming plastic laminate**, called superform, can be formed more reliably over a broader range of temperatures and to smaller radii than other such laminates can. It forms easily to a half-inch outside radius over a temperature range of 300 to 350 degrees F; with properly adjusted equipment and skilled personnel, it has been formed successfully over even broader temperature ranges and to tighter radii. *Westinghouse Decorative Micarta Division, Hampton, South Carolina 29924.*

**Polyphase thermal demand meters**, Type D4S-H, are available in two-stator socket types for use with three-phase three-wire, three-phase four-wire delta, or three-phase four-wire wye connections, Class 100 or Class 200 self-contained and Class 20 transformer rated. Dual scale ranges of 10/20, 50/100, and 100/200 amperes as well as 120-, 240-, 277-, and 480-volt ratings are also available. The new meter series retains important features of the D4 polyphase family including a flat load curve for extended current load ranges, valve-type



*Postforming Plastic Laminate*



*Polyphase Thermal Demand Meter*

arresters for surge protection, magnetic bearing system, and filter-seal system for proper air flow and drainage. Other features are a simplified adjuster system on both the kilowatt demand and kilowatt-hour meter, interlocked dual scales with easily reversible ranges, bayonet-mounted thermal unit for simplified maintenance, color-coded leads for easy reassembly, improved design of the thermal heater assembly with sapphire ring jewels to reduce friction, and a combination potential coil and thermal unit voltage source. *Westinghouse Meter Division, 2728 North Boulevard, P.O. Box 9533, Raleigh, North Carolina 27611.*

**Smoke detector**, Model 100, is a self-contained unit that senses smoke in the early stages of a fire and immediately sounds an alarm. It is activated when smoke enters a chamber and scatters light into the view of a photoconductive cell. The cell triggers a solid-state circuit, which energizes a built-in horn that sounds a steady raucous signal. The system is continuously self-supervised electrically; if a lamp fails, the horn generates a distinctive pulsating trouble call. Available in two styles for plug-in or permanent connection, the smoke detector meets the requirements of National Fire Protective Association Code 74 and Underwriters' Laboratory listing 168 for photoelectric smoke detectors. As many as five smoke detectors can be interconnected so that an alarm or trouble signal in one detector sounds a similar signal in all of them. *Westinghouse Security Systems, Inc., 200 Beta Drive, Pittsburgh, Pennsylvania 15238.*

**Checkout simulator** is programmed to simulate operation of the Westinghouse electrohydraulic control system for steam turbine-generators. The analog-computer device is interfaced with the control system for complete checkout of the electronic and hydraulic portions of the system. It generates outputs for turbine speed, impulse-chamber pressure, intermediate pressure, and load. In addition, it performs contact closing, duplicating the main circuit breaker. Besides its use for checking out

control systems, the simulator is useful as a training device for power-plant operators. *Westinghouse Power Generation Service Division, 1974 Sproul Road, Broomall, Pennsylvania 19008.*

**Ampgard high-voltage starter** is now available for 7200-volt applications, making it particularly well suited for draglines, dredging equipment, and other mining machinery. The type 72L2 starter is rated at 200 amperes and can be applied to motors up to 2500 horsepower. Line and load terminal connections are made from the front, and all components are front accessible for fast inspection or parts replacement. Drawout construction allows simple removal of the complete contactor, current-limiting fuses, and isolating switch. For maximum protection and safety, the isolating switch completely grounds the starter and isolates it from the line, leaving no high voltage exposed. The door of the high-voltage section is locked closed with the isolating-switch handle, and the low-voltage control section is completely segregated from the high-voltage section. *Westinghouse General Control Division, 4454 Genesee Street, P.O. Box 225, Buffalo, New York 14240.*

**"Catalog of Courses and Seminars"** lists a wide range of management and professional training and development courses available to business, industry, and government organizations. The courses use the latest techniques in instructional technology to provide up-to-date managerial concepts and methods. More than 90 courses are included under six categories: conceptual development, management process, rational process, finance and computer, individual skill development, and local implementation. *Training and Development Division, Westinghouse Learning Corporation, Westinghouse Building, Gateway Center, Pittsburgh, Pennsylvania 15222.*

3000 amperes continuous current. It can be shipped completely assembled to most locations.

### Massive Generator Shipped to Duke Power Company

The largest generator designed and manufactured by the Westinghouse Large Rotating Apparatus Division has been shipped to Duke Power Company's McGuire No. 1 nuclear station, located about 25 miles north of Charlotte, North Carolina. The generator is rated at 1,305,000 kW—enough to meet the electric needs of more than 600,000 people when it goes into operation early in 1977. Assembled, the unit is nearly 50 feet long and weighs more than 900 tons. Its stator alone weighs more than 500 tons.

The stator was designed for shipment on Westinghouse's largest railroad car, a 22-axle Schnabel car. (See photograph.) A suitable route had to be mapped out with the railroads, and Duke Power Company built a special railroad track into its plant site for the final leg of the trip.

Thorough engineering tests performed before shipment included, in addition to normal engineering verification tests, high-speed movies made during sudden short circuits. Other special tests analyzed the vibration characteristics of the unit's winding and bracing components.

A duplicate generator for Duke Power Company's McGuire No. 2 nuclear station will be shipped next year.

### Flat Display Panels Employ Matrix of Thin-Film Transistors

Flat electroluminescent panels for information display have been developed by combining a large thin-film integrated circuit with a phosphor, all deposited on a sheet of glass. Prototype units demonstrated recently are 6 by 6 inches square and consist of 12,000 light-emitting elements. (See photographs on back cover.)

Potential applications include alphanumeric displays, vectorgraphic displays (such as radar screens), and video displays. The display panels are being developed at the Westinghouse Research Laboratories.

The work is partly supported by the U. S. Army Electronics Command, which sees potential application in lightweight portable field message units.

The integrated circuit for a 12,000-element screen consists of a matrix of 24,000 thin-film field-effect transistors and 12,000 capacitors vacuum-deposited on the glass substrate. It is composed of one basic circuit repeated at each element location (see diagram). That basic circuit consists of an X-Y-addressed logic transistor ( $T_1$ ), a power transistor ( $T_2$ ), and a storage capacitor ( $C_S$ ) interconnected by source, power, and gate bus bars. The completed integrated circuit is covered with an organic insulating film, which is opened at each element location to expose the drain pad of the power transistor. The circuit next is coated with a phosphor material, and then a front electrode is formed by depositing a translucent conducting layer onto the surface of the phosphor; those two steps form an electroluminescent cell at each element location. Finally, the panel is sealed with a glass cover plate.



For operation, the power bus bars are connected to a source of ac power, and the source and gate bus bars are connected to the outputs of a conventional display signal generator. A signal on a gate bus bar gates that entire row of logic transistors. Then, when a signal appears on a source bus bar, the logic transistor at the intersection ( $T_1$ ) conducts power and thereby gates the power transistor ( $T_2$ ). That transistor conducts, and the resulting voltage across the electroluminescent cell causes the phosphor to glow.

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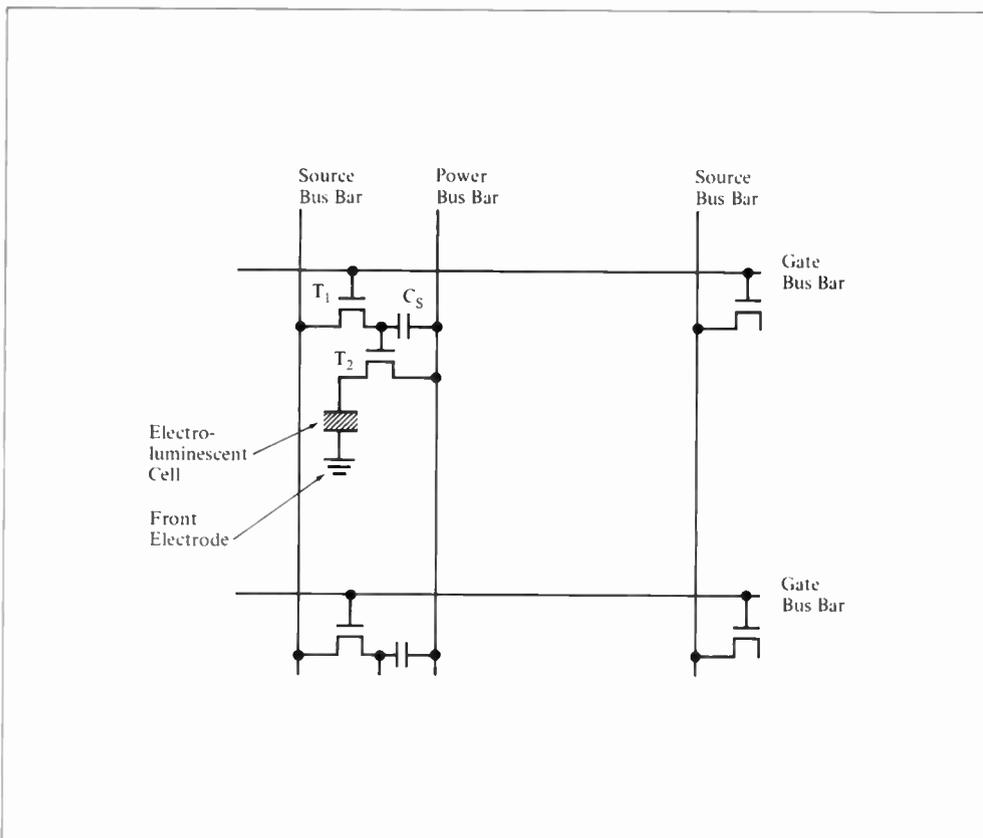
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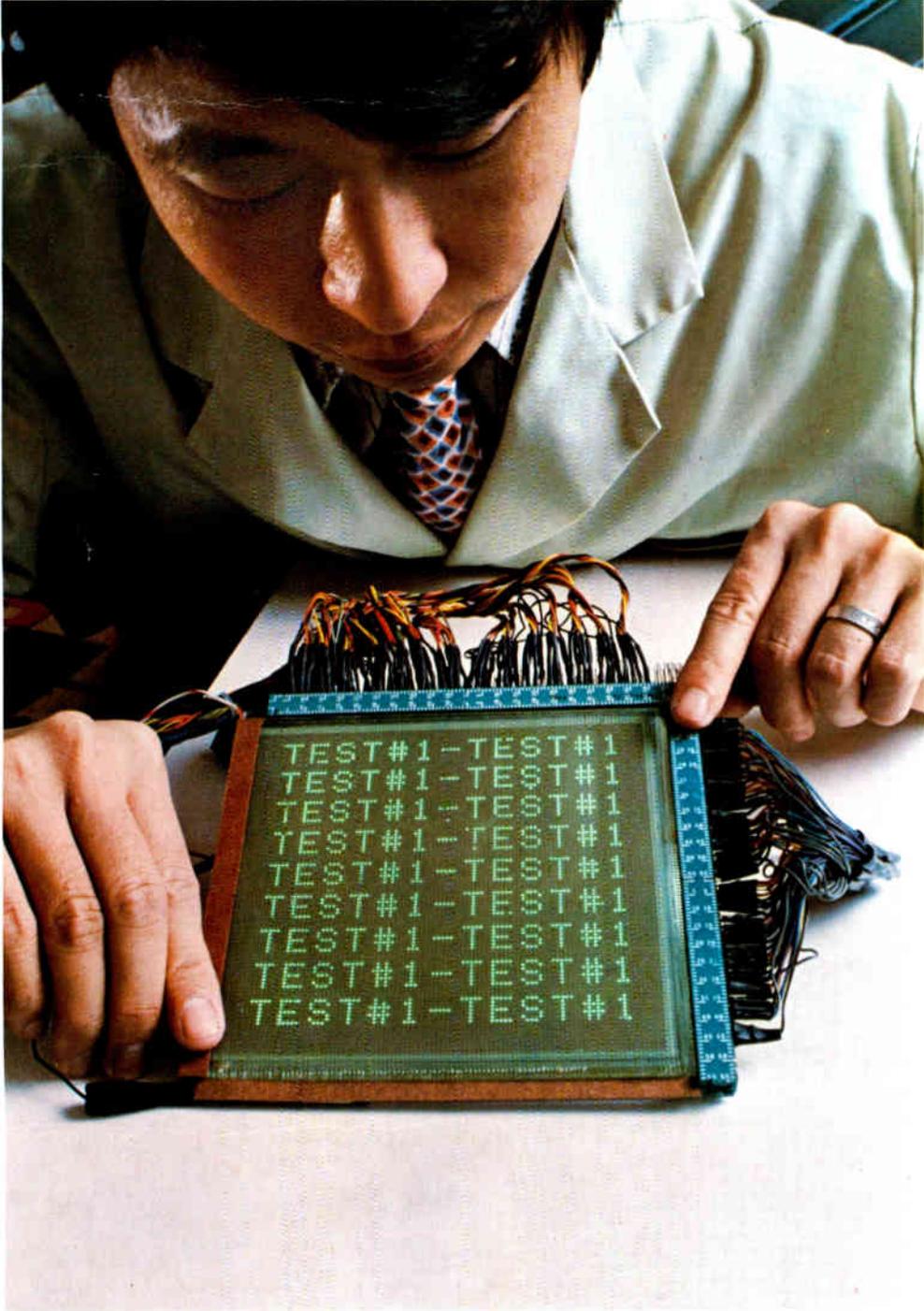
power transistor ( $T_2$ ) and thereby causes the electroluminescent cell to glow.

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...s only  
...rical leads  
...x of thin-film  
...luminescent  
... of the rows and columns.  
For more information, see *Flat Display Panels  
Employ Matrix of Thin-Film Transistors*, page 29.



*Above*—Each electroluminescent cell can be energized without activating other cells in the same row or column.



# About the Authors

**Nelson B. Tharp** returns to these pages for the fourth time, again to discuss his favorite subject—communications. He takes up where he left off last time with a solid-state low-frequency transmitter and adds the command and control function to provide the automated transmitting facility described in this issue.

Tharp came to Westinghouse on the graduate student training program after graduation from Northwestern University (BSEE) in 1941. He has since had assignments all over the radio-frequency spectrum, from 10 kilocycles to 8000 megacycles. He is presently Manager of Program Development in the Command and Control Division at the Defense and Electronic Systems Center.

Off the job, Tharp's interest in communications moves up in frequency to the ham radio bands, where he operates W3EUN, sometimes to communicate with his wife who is W3GQR.

**L. J. Taylor** is a design engineer in the special product engineering section of the Medium Motor and Gearing Division. He has engineering design responsibility for motors for air handling applications and nuclear power plants, and he also is responsible for studies of mechanical systems that contain motors, disc or shoe brakes, pulleys, shafting, couplings, bedplates, etc.

Taylor graduated from Cornell University with a BSME degree in 1968. He joined Sylvania Electric Products, Inc., where he worked in the research laboratory on automated methods of printed-circuit manufacture. He joined Westinghouse in 1969, and his initial responsibilities included stress, vibration, and heat-transfer analyses of various motors and seismic qualification of motors. He has developed a procedure for seismic qualification of motors for nuclear power plants, and he earned an MSME degree in 1974 from the State University of New York at Buffalo.

**Richard F. Cook** came to Westinghouse on the graduate student training program after graduating from the University of Cincinnati with a BSEE in 1956. He obtained his MSEE degree from the University of Pittsburgh in 1960 and attended Harvard's Program for Management Development in 1971.

Cook spent eight years as a distribution system engineer, one year as an advanced development engineer, two years as a marketing consultant, and five years as manager of the distribution systems and application section of Electric Utility Headquarters Department. In January 1972, he was named Manager of Distribution Systems for the T&D Group.

Cook is a Registered Professional Engineer Ohio, and he has been active in IEEE, EEI, and NEMA committee work.

**Rodney V. Adams** graduated from the Newark College of Engineering with a BSEE in 1939. He joined the Westinghouse Meter Division (Newark, N.J.) in 1940, where his first assign-

ment was on thermal demand meters. Other engineering assignments have included work on the Mark Series of mechanical demand registers, "D" line thermal watt demand and ampere demand meters, and automatic meter reading by telephone and by distribution line carrier.

Adams has served as Engineering Section Manager of demand meter engineering and of automatic meter reading. He is now Engineering Department Section Manager responsible for Long Range Development. He is an amateur radio operator (WA4AGN) and a private pilot.

**Ian A. Whyte** obtained his Diploma in Technology (Telecommunications) from the Polytechnic Regent St. (London) in 1954. Before coming to Westinghouse, Whyte's experience included postgraduate training at Mullard Research Laboratories (Redhill, England), senior engineer at the K. B. Division of IT&T (Footscray, England), and Chief Engineer of Perdie Electronics, Ltd. (London).

Whyte joined the Westinghouse Research Laboratories in May 1963, where his responsibilities have been in the design of various communications systems and equipments. His first project was Phonovid, a system for recording television pictures and sound on long-play records. Later assignments included development of several nonstandard and unconventional monochrome and color CCTV systems.

He is presently Principal Investigator for the Distribution Line Carrier Communications Development Program at the Research Laboratories.

**Edmond D. Neuberger** graduated from Stevens Institute of Technology in 1959 with an ME degree. He worked first for Foxboro Company, becoming a senior project engineer, and then served in project management in Fisher Scientific Company and Calgon Corporation. He joined the Westinghouse Computer and Instrumentation Division in 1972, where his first responsibilities were in development, application, and marketing of digital/analog process control systems. He is now a senior application engineer, responsible for application and marketing of the oxygen analyzer described in his article.

Engineering developments that Neuberger has contributed to or been responsible for include automatic chromatographic systems, an on-stream automatic titrating analyzer, an analyzer for determining carbon, hydrogen, and nitrogen content of organic samples, an on-stream differential conductivity analyzer for determining alkaline concentration in kraft pulp digesters, an on-stream analyzer for determining the concentration of chlorine and chloride in stack gas, and an on-stream analyzer for determining concentration of low-level sodium in high-purity water.

**Carl F. Jensen** joined Westinghouse in 1926 as a technical trainee and has served in practically every phase of the lamp business. From 1945 to

1957, he was house Midwest consultant to architect lighting installations and was made field lamp engineer for the division. He was active in the Chicago Lighting Institute during that time, serving in many capacities including chairman of the Technical Committee and instructor in specialized courses in illumination.

Jensen became Marketing Manager of Rayescent lighting for the Lamp Division in 1957. He served in the Central Region (Pittsburgh) as field sales engineer from 1962 to 1966, and then he became Manager, Fluorescent Sales Engineering. He retained that post in the new Fluorescent and Vapor Lamp Division when the former Lamp Division divided into three divisions in 1969. He was responsible for dissemination of technical information on fluorescent and ultraviolet light sources until his retirement last November.

Jensen has been active in the affairs of the Illuminating Engineering Society, serving on many local and national committees. He was a member of the board of directors of the Chicago section and served as president of the IES Study Club, secretary of the Chicago section, and chairman of the Pittsburgh section. Last year he was one of four recipients of the IES distinguished service award.

**W. A. Murray** joined the Westinghouse Lamp Division in 1957 as a junior commercial engineer. He moved into application and sales engineering for incandescent lamps, and in 1972 he became Product Planning Manager for the Incandescent Lamp Division. He advises the Division in product planning and coordinates the flow of information to customers via sales engineers. He graduated from Columbia University in 1957 with an AB degree in liberal arts.

**William S. Tilt** is Manager, Vapor Lamp Sales Engineering, Fluorescent and Vapor Lamp Division. He is responsible for technical literature, applications, product design guidance, and engineering assistance to customers and to the marketing staff. Tilt joined Westinghouse in 1942 as an engineering assistant, expediting manufacture of radar tubes. He went into sales engineering for high-intensity-discharge (HID) lamps in 1948, and that has remained his field of major interest. He assumed his present position in 1958.

Tilt has contributed to development of phosphor-coated mercury lamps and to standardization of HID lamps through the American National Standards Institute. He has published a number of technical papers and lectured widely on lighting. He is a Fellow of the Illuminating Engineering Society and past regional vice-president. After receiving a BA degree in geology at Princeton University, he went on to earn an associate certificate in electrical engineering at Newark College of Engineering in 1950.