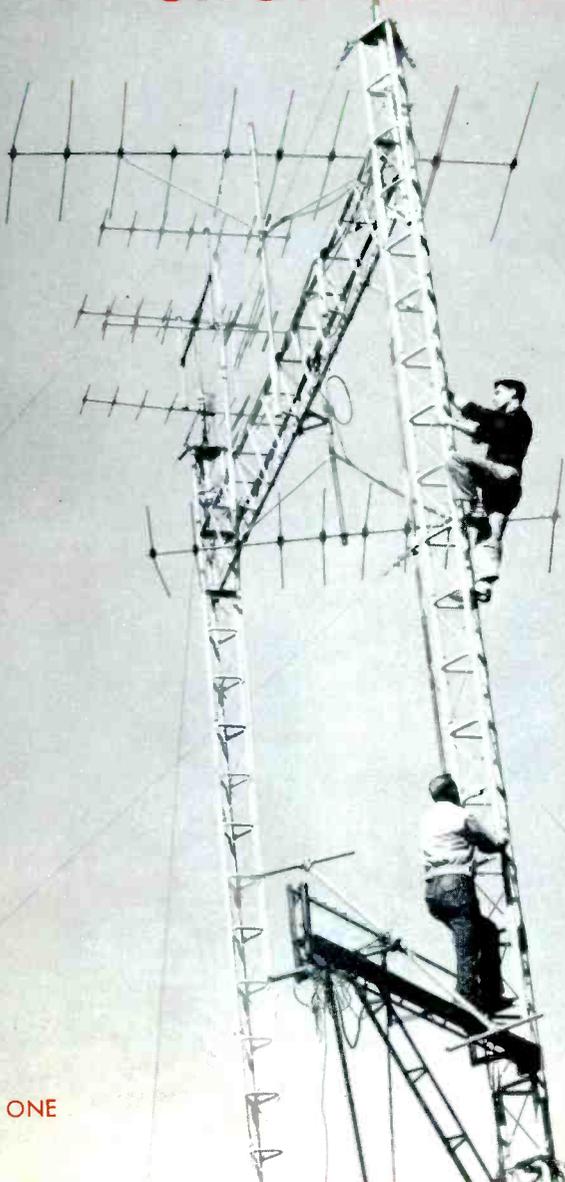


MAY 1960

40 CENTS

DXing HORIZONS

TV - SHORTWAVE - FM



VOLUME ONE

NUMBER FIVE

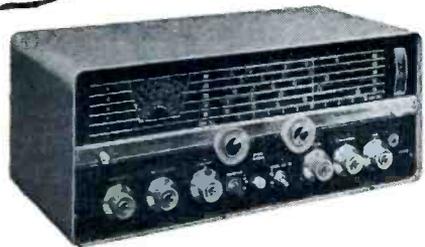
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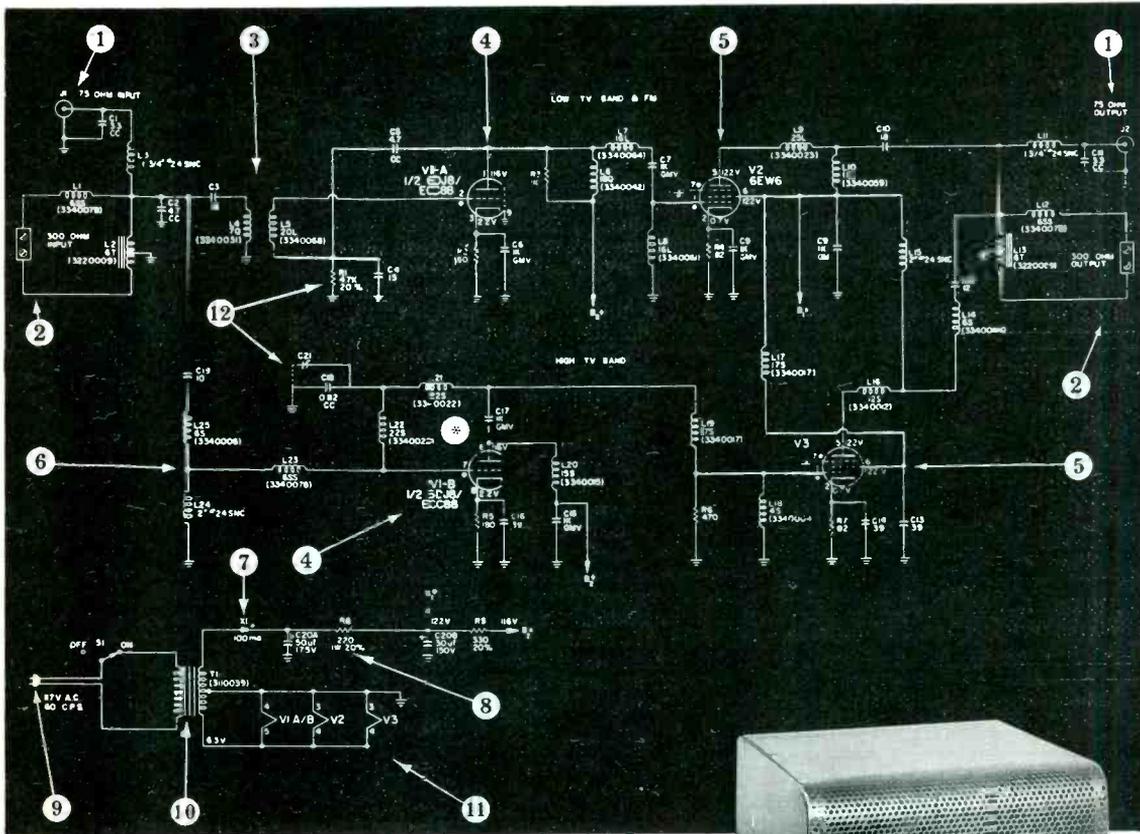
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DXing HORIZONS
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Modesto, California

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SUBSCRIPTION INFORMATION

Canadian-U.S.A. Rates:

One Year.....\$ 4.00
 Two Years..... 7.00
 Three Years..... 10.00

Airmail — One Year..... 7.00

Foreign Rates:

One Year..... 4.00
 Two Years..... 7.50

Printed by Gowans Printing Co.
 Modesto, Calif., USA

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At Sign Off

CATV BILL ACTION — BY MAY 13

A bulletin dated April 13 reached DXH from the Tri State TV Repeater Association. In part it reads as follows: "Senate Bill S2653, relating to CATV licensing regulations, is on the calendar to come before the Senate. Five U. S. Senators have requested immediate action on this bill. With any success whatsoever, action should be completed and this bill either killed, or forwarded to the house by May 13."

The same bulletin also notes that the future of the "VHF Booster Regulation Bill" is dim with no action expected even in the hearing stage before the latter part of May.

THE LARAMIE PLAN

During March and the first week in April, the Tri State Repeater groups held meetings at five different points in Montana to line up thoughts and procedures for the coming Spring-Summer "'60 Booster installation period." One of the surprising points of each meeting was the discovery that many new Boosters have come on the air even during the winter months.

One of the topics discussed was the "Laramie Plan." It concerns the duplication by a VHF Translator of network programming already available from a second station in the area being served by the Booster. It was noted that some TV broadcast stations in Montana and Wyoming (as well as other states) carry programming from more than one network. When it so happens that the off the air signal happens to carry the same program as the VHF Booster-Translator (from a second off the air station) there is no need to have the Booster in operation (assuming the off the air broadcast signal is receivable everywhere the Booster-Translator is receivable). The Laramie Plan has been set up by the Laramie (Wyo.) Booster Club installation, and it involves switching the local Booster from the Denver signal the Booster now repeats, to the local Cheyenne (KFBC) signal when there is duplication between the two. Details for the switching equipment (estimated at \$1,000) are available through the Laramie club.

Booster proponents hope such action will "win friends and influence TV broadcasting people," many of whom are currently undecided about the operation of VHF Booster-Translators (non-duplication has long been a prime issue even in the CATV vs TV station squabbles).

MICRO-WAVE CONTROL SOUGHT

Television Montana (licensee of KXLF, Butte, KXLJ, Helena) has jumped on the "control CATV bandwagon" with a petition filed with the FCC requesting that all microwave relays licensed to carry off the air signals to distant CATV systems for cable distribution be carefully scrutinized. TV Montana further asks the FCC to deny microwave applications for CATV systems where the microwave carried programming would "cause harmful competition to a local station" (see page 16, April 1960 DXH).

AND...

To round out an otherwise poor month for CATV operations, CBS, and then NBC, lashed out at CATV systems carrying their programs, without "their" permission. Both nets said they feel their property rights have been and are being infringed upon by CATV operations distributing NBC and CBS originating programs.

99 PERCENT — ONE STATION

In Chicago, at the NAB meeting, Ernest Jennings, Legal Council for the Association of Maximum Service Telecasters declared "99 percent of the people in the U.S.A. can now receive grade B service from one TV station, and 94 percent receive three or more stations."

He further stated, "Any proposal involving any deviation from the existing mileage separations, no matter how carefully planned, opens the door to deteriorating reception for many viewers." A-men.

FRESNO — ALL UHF

It's no secret now . . . Triangle Publications (owner of WFIL, WFVG, WBNF, WNHC, KFRE (all VHF) and WLYH (UHF) will allow KFRE (12—Fresno) to be moved to UHF Channel 30, to make Fresno and the San Joaquin Valley of California an all UHF market. The reason why Triangle gave up VHF for UHF, without a fight? They are negotiating to buy KFSD (10, San Diego) which would give them six "V's." Allowing KFRE to become UHF will give Triangle ownership of two UHF'ers, and five VHF'ers . . . or the maximum of both! Coverage? S'moverage! It's the economics!

750,000 WATTS OF AM!

The Clear Channel Broadcasters are reportedly toying with a plan to offer at least four grade A "night time" signals to every resident of the U.S.A. How to do it in the 540-1600 KC spectrum? Power . . . 750 kW of power! That is the modest limit the CCBS group has in mind for FCC consideration.

PAINT YOUR TOWERS BOYS!

Senate Bill S3343 hits pretty close to home. Senator Warren Magnuson (D—Washington) proposes to place FCC control on all Radio-TV Towers . . . receiving or transmitting! No specific height is mentioned in the preliminary stage of this bill, but the FCC is reported apprehensive of the monumental task involved in licensing every single radio and TV receiving tower in the country.

FM NETWORK FOR THE WEST

18 hours of "good music" per day is the objective of a new firm called International Good Music. IGM has announced plans to operate FM outlets in 25 western U.S.A. cities, using all taped programming made in one central studio, with "dubs" for the use of each outlet. Each station will have but one employee (a combination PR man and newsmen) and the stations will offer "network buys" to advertisers at what is termed "very low cost per thousand rates." First affiliation has been announced with KGMJ-FM (Bellingham, Wash.), KGMG (Portland), KGMJ (Seattle), KFMU (Los Angeles), KFMW (San Diego) and negotiations are underway to install stations in San Francisco and San Bernardino.



WEAK SIGNAL INDUSTRY

"Shadown, U.S.A."

No enthusiast associated with the "weak signal television industry" needs to be filled in on the problems confronting the industry today in the western states. *In areas where direct television reception is either non-existent or very poor (because of distance, terrain, or a combination of the two factors) three forms of reception systems have evolved as an answer to this "non-reception" problem.*

CABLE

The oldest, and therefore probably the largest, is the *cabled TV system*. A tall sensitive antenna positioned in a spot where direct station reception is possible, receives the distant station sending the signal to a series of amplifiers. The amplified signal is transported via coaxial cable to the nearby center of population where television reception is non-existent. The cable is run up one street, and down another, with tap offs provided to distribute the signal(s) to the homes of the area. *If a town council undertakes such an installation, the reception is paid for by the city (rare). If a private businessman undertakes the expensive antenna and cable installation, the viewer "rents the use of the antenna" from the businessman. The viewer is not paying for the television programming, but merely for the use of the antenna, which is receiving the programs. This is cabled television, with nearly 700 such systems operating in the United States. These 700 systems bring television to an estimated two and one-half million people in this country . . . approximately three percent of the total population in the nation.*

VHF BOOSTERS

In the states of Northern Idaho, Eastern Washington and Western Montana, a new form of electronic device appeared on mountain tops in the summer of 1953. High on peaks, *above towns shadowed from direct television reception*, townspeople and engineers began to erect sensitive receiving antennas, much like the large yagi arrays of community TV systems. The weak-distant signal was amplified with equipment on the moun-

tain peak, and then, unlike the cabled TV, the signal, having been amplified, was fed to a second antenna . . . this one beaming into the shadowed area . . . *the distant signal was being re-transmitted this time directly into the shadowed region.* Then residents in the valley were able to receive television by simply installing small receiving antennas at their homes, and directing these antennas at their nearby mountain top "*repeater station.*" The first repeater stations picked up the signals, amplified them, and retransmitted them on the same channel of original broadcast. Engineering wise, this system proved unstable. Soon more elaborate systems were produced and the received signals were converted from their original channel, amplified, and "then reradiated." Soon the FCC heard of these operations and took steps to close them down and in some cases confiscate the equipment. The FCC contended *repeater stations did not meet the electronic qualifications of a broadcast station*, in that they were unstable; subject to occasional harmful interference to other VHF services; were not in keeping with the FCC allocations table; and most of all, were not licensed. Moreover the FCC contended they had no existing laws whereby they could be licensed. But the people of the mountain states wanted their television reception, and were a determined group. First they fought the FCC by merely building a new repeater each time the FCC turned one off. Then the mountain and western states citizens went to their congressmen and asked that legislation be passed to make *VHF Boosters* legal. The FCC fought the proposed legislation tooth and nail, but finally consented to a modified form of "*retransmitting device.*" This was developed for FCC test by Benjamin Adler of Adler Electronics, New Rochelle, New York. They called it a *translator*.

THE UHF TRANSLATOR

The UHF Translator, like its cousin the VHF repeater, parks itself on a high peak above the shadowed area, uses large antenna arrays to scoop up the precious microvolts, and amplifies the signal. But here all similarity

stops. The UHF translator takes the VHF signal (or UHF in some cases in the New England states), converts it to one of the top 14 UHF channels (which the FCC set aside for translators) and then sends the new UHF signal beaming into the valley or shadowed area with a power output of 10 to 100 watts. (Most VHF Boosters operate with less than one watt output.) The people in the shadow area purchase receivers, with UHF tuners, install their small UHF antennas, and enjoy their first television reception. Exactly like "VHF Boosters," except for the frequency conversion to an UHF channel and the FCC licensed operation (with the resulting "quality control" of the equipment and signal involved).

CURRENT STATUS OF VHF BOOSTERS—UHF TRANSLATORS

The FCC hoped the establishment of the UHF Translator service would do away with the need for continued VHF Booster operation. It did not. Many western towns had invested several thousand dollars in their VHF Boosters, and were not willing to convert to UHF at a cost of an additional three to five thousand dollars. *Others just plain would not.* And still others had established "bare essential" VHF Booster operations at a cost of \$1,500-\$2,000, which was all the area served could afford, they claimed. In many cases this was, and is, apparently true. No one disputes that there are small dots not even on the map, of perhaps five to twenty-five families, receiving their only TV via a self financed VHF

Booster. To these people a UHF Translator, at a minimum cost of several thousand dollars, looks like a very expensive item indeed. And there is the question of service, and proper maintenance, as required by translator laws. Most small towns simply do not have licensed radio telephone operators.

CATV AND BOOSTERS

There have been repeated reports of instances where Boosters have created interference with CATV operations, when the booster signal "got into" the CATV system, causing severe co-channel interference and in some cases disrupting reception for hundreds of families on the CATV system. Some stories have been substantiated, others not. But they have, undoubtedly, added fuel to the battle of words between CATV operators and small town Booster operators.

LEGISLATION

In the three types of systems mentioned here, Cabled TV, UHF Translators, and VHF Boosters, only the UHF Translator has any form of government control. Legislation is now pending to control the operation of CATV systems (see April DXH, page 16) and the FCC has drafted laws to cover the operation of VHF boosters (see February DXH, page 3). Both of the latter are pending as we write.

NOW

All three systems . . . all three types, displayed for the first time in one issue of one publication, DXing Horizons. *The new leader in the weak signal industry.*

PRESS TIME WORD ON PENDING WEAK SIGNAL LEGISLATION

Our Washington correspondent informs DXH the two bills affecting the weak signal industry (S.2653, Re: CATV) (S.1886, Re: VHF Boosters) are still pending in late April. It now appears Senate Bill 2653 will receive the first action. S.2653 concerns the regulation of cable TV systems in areas where local television is already available (see DXH April 1960, page 16.) It proposes to license and control the installation of CATV systems with an eye towards insuring that "local CATV service" does not create undue economic pressure on "local television stations." S.2653 has been partially patterned after a ruling by the Canadian Department of Transport (again . . . see April DXH, page 16), and has the backing of more than 50 percent of the CATV industry.

S.1886, RE: VHF BOOSTERS

VHF Booster operators in the western states are breathing a bit easier again, as the FCC has once again extended the moratorium on their operation. The commission had extended the "execution date" three times in the past, and though the most recent

extension was due to run out March 31, no one appeared too worried. Now the extension has been re-extended until July 1, 1960. Once again VHF Boosters have received an 11th-hour reprieve . . . this time because the FCC is considering rules proposed to cover licensing of VHF Boosters not on the air now.

In the Senate meanwhile, irrespective of pending FCC docket 12116, which, if ok'ed by the FCC would legalize boosters, the U.S. Senate is giving thought to bill S.1886 which would do the same thing . . . on a broader scale. Because of the conflict of interest between the two groups (FCC and Senate) it is felt the FCC will not announce any decisions before the Senate acts on S.1886. If S.1886 fails to pass, then the FCC might well feel they could be stricter with their own docket. If the bill passes the Senate, then the FCC (mindful of recent Senate-FCC feuds) would be more likely to soft-peddle harsh booster action. Whatever the case any action apparently hinges on the Senate's attitude towards S.1886, which is expected to see action no earlier than the first week in May.

The Cable TV Industry, Scope and Practice

By A. J. MALIN
President, National Community
TV Association

Back in 1949, more than a decade ago, TV sets in fringe area America were first connected to community master antennas and television began to filter into the forgotten weak signal areas. Thus an industry was born.

The television industry has had a far-reaching affect upon the American scene. In the special, and sometimes forgotten field of fringe area television, community antenna television has been a helpful partner in the development of this important industry.

Few, if any, industries have as close and direct a relationship with the heart of American family life—its homes—as does the local CATV system operator throughout the nation. This relationship has colored the history of CATV and developed its present service.

"THE FREEZE"

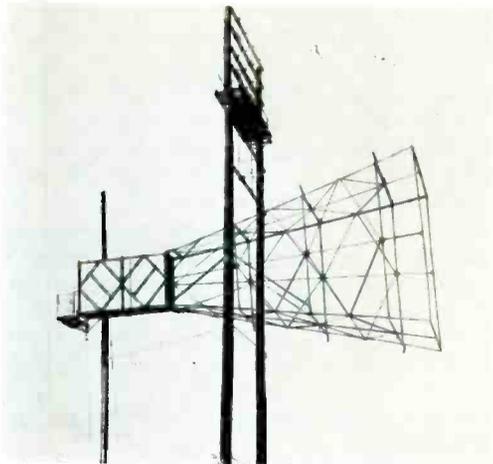
An action by the FCC in 1948 brought the construction of new TV stations to a halt while the FCC developed an Allocations Plan for the broadcast industry. *This halt, or "freeze," left many towns and cities with an awakened but frustrated desire to share in this new entertainment medium.*

Complicating the problem for millions of eager, but TV-less viewers, was the fact they lived too far from established stations or where reception was impaired. *This public eagerness for TV services triggered the development of TV reception by means of community antenna television systems.*

A CATV system is exactly what the name implies. TV signals are received by an antenna on a high tower or atop a nearby mountain peak and then carried by coaxial cable to receiving sets in the home. Because CATV systems use coaxial cable they have also become known as "cable systems."

The concept of supplying TV reception service to all the rooms in a hotel from a single, master antenna was not new—but the idea of applying this approach to a whole town was revolutionary.

Throughout the four years of the FCC "freeze," hundreds of communities were pleased to participate in the benefits of TV through CATV systems. People in Wyoming,



Experimental horn antenna during installation several years ago at the Muscle Shoals, Ala. CATV system. An early, and still operating, design to reject interfering signals.

for example, received the first TV in that state through CATV service.

Following the freeze, CATV systems were expected by many to wither when the FCC permitted new station construction. The validity of the service to the subscriber, however, had already been established. To extend the example, today one in every three TV homes in the State of Wyoming continues to receive its television by means of "master antenna systems."

NCTA

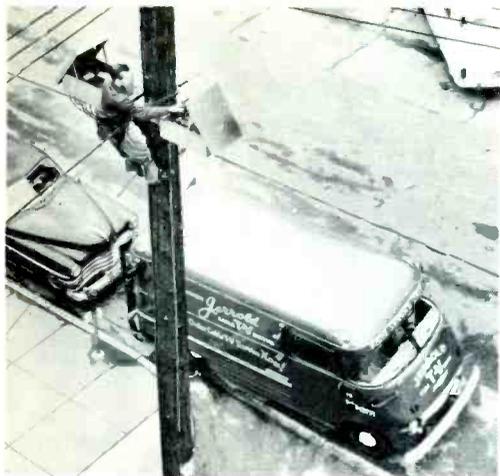
From its modest beginning in 1949, the industry has grown, until the *National Community Television Association*, a non-profit industry group, estimates there are more than 750 such CATV systems in the U.S.A. CATV serves approximately 700,000 TV sets in the United States, or an estimated two and-a-half million viewers.

The NCTA has recently completed a study of all systems in the U.S., and estimates the *average age* for all systems as *five years* and *average size* as *1,600 subscribers*. This study also shows about *500 of the more than 750 systems are operated in small towns with less than 10,000 population.*

Manufacturers and suppliers of CATV equipment estimate that over 100 million dollars have been invested by small businessmen and the public during the past ten years to provide television service to the smaller communities in 42 states.

CATV AND THE PUBLIC

The CATV system operator is in business as the result of one thing—the public desire for television. *Human nature is such that*



By-passing distribution amplifier with stand-by amplifier in truck permits complete on-pole test of working equipment. Equipped with two-way radio, full test bench, and an emergency power supply, this Dubuque (Iowa) Jerrold CATV system truck is ready for trouble calls anywhere.

people everywhere want the best TV reception they can get on as many channels as possible.

For the CATV system operator, striving to satisfy this demand, this has frequently meant expensive alterations in the equipment and design of his system.

The subscriber, on the other hand, is renting a reception service from the CATV system that replaces his own roof-top antenna, and usually is not interested in the technical complexities of weak signal reception. He knows he could no do as well himself without a prohibitive investment and lets it go at that. And this is as it should be.

TECHNICAL ADVANCES

Behind the scenes, however, in the technical phases of the CATV industry, constant activity and development is taking place. The subscriber usually does not know, for example, that many systems were re-built only to find—half way through the re-construction—that a newer development outmoded everything done to date. The only answer—to start re-building again.

The constant state of behind-the-scenes technical advancement is characteristic of CATV and goes un-noticed by most subscribers except where it counts most—in his home on his set.

Just as the modern CATV system bears almost no resemblance to the earliest systems, so the service offered today is more extensive. As many as 12 TV channels can be furnished by a CATV system today.

Residents of the quiet cross-roads New England town of Keene, New Hampshire, to cite one example, enjoy more TV channels than people in New York City, Chicago or San Francisco, unknown to the millions populating those huge metropolitan centers. There are several CATV systems furnishing eight TV channels, as does Keene, and a few that offer nine.

EVEN HI-FI!

Housewives in small CATV towns throughout the country have the opportunity to relax with the hi-fi background music offered by some advanced CATV systems. This additional service, frequently at no additional charge, is alone worth the use of a CATV system, many pleased homemakers report. Even the men take to this additional service. One system, offering FM background music on a 24-hour basis, reports swing shift workers at a local mill say it is the only way they can get uninterrupted FM music at home after their shift changes at 3 a.m.

The nature and variety of these services vary upon local conditions and no national pattern can be established as yet. One Pennsylvania system currently offers either a TV signal or FM music at every dial channel—7 TV and 6 FM in all!

SERVICE

More important to the CATV subscriber, however, is the reliability of the service and the clarity of his TV picture made possible through constant maintenance.

The peculiar technical problems of cable distributed TV signals will some day make the subject of a huge volume. The CATV system operator faces seasonal signal variations at his antenna site, the trapping problems of interfering signals and an elaborate balancing problem with varying inepances, loads and resistances. He faces these challenges daily with a cable system that may be as much as 300 miles in total length.

These problems, however, result in hidden-values to the subscriber. Constant maintenance requirements mean quick action when power is interrupted, service when the set appears to fail and many other forms of technical assistance normally difficult for the homeowner to supply.

In addition to the safety obtained from the absence of a high home tower, cable installation techniques save lives in other ways. After knocking over a telephone pole in a small CATV town in Oklahoma, the young lady-

(continued on page 17)

PRODUCT REVIEW

Eitel UHF-TR-10 TV Translator

In July of 1958 this writer had the opportunity to review in print^o the rapid rise of the UHF TV Translator as an answer to the deep fringe and shadow TV reception problem. In the nearly two year interim period TV Translators have gained immense popularity with nearly 250 on the air, or at least under construction. Because such units are usually located at mountain tops well above the snow line the installation or planning behind such a unit is usually a spring and summertime occupation.

WHAT IS A TRANSLATOR?

Quoting the Federal Communications Commission's own definition, "Television broadcast translator stations provide a means whereby the signals of a television broadcast station may be received by means of a receiving antenna, converted or translated to one of the upper 14 UHF television channels, amplified, and re-transmitted at comparatively low cost so as to provide acceptable reception over an average (size) small community where direct reception of the signals of the original TV broadcast station is unsatisfactory."

The FCC goes on to state that signals of the original station may not be altered in any way except as to frequency and amplitude. TV Translator Stations may not originate local programs or advertisements, or introduce any form of coding or scrambling which would require the viewer to have special devices or equipment to receive the translated signal.

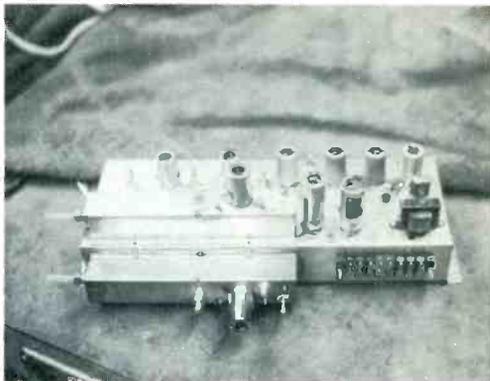
WHO MAY OPERATE . . .

Any qualified individual, group, or broadcast station may apply for a translator license, and construct and operate a translator station.

Most translators are operated by township groups, city councils, or groups organized in the towns to collect and solicit donations from townfolk to pay for the installation and operation.

WHAT IS NEEDED . . .

Basically, all translators are alike. A receiving antenna sufficiently large, directive and sensitive is required to pick up the originating station signals from the air. Usually an amplifier and AGC system, operating in the amplifier, is necessary to maintain a constant output from the receiving antenna to the Translator. The Translator consists of a frequency converter which mixes the incoming off the air



UHF-TR-10 Multiplier String

signal with a local oscillator signal, to arrive at a new channel . . . one of the top 14 UHF channels. The new signal is then amplified, and fed to a low power final amplifier delivering ten-twenty watts output peak video power. Usually this ten watt output is fed to a re-transmitting antenna, which beams the new UHF channel into the valley, or shadowed region. In some instances, the UHF ten watt signal drives a 100 watt power amplifier which in turn drives the antenna system. The 100 watt power authorization (as opposed to the regular ten watt authorization) is granted by the FCC in special cases where unusually large regions are to be served by the Translator station.

THE EITEL UHF-TR-10

The Eitel Translator unit is the "baby" of Electronics Engineer George Eitel, who admits he has been playing with radios, and more recently television, since the tender age of 14. In addition to the UHF Translators, Eitel Electronics also designs and manufactures a line of VHF Translators, in the .3 watt, 2 watt and 10 watt category.

The UHF-TR-10 has been designed with economy in mind. In a successful effort to hold the cost down the unit was designed, and redesigned, finally receiving "FCC Type Approval TR-55," in December of 1959.

According to the manufacturer, the UHF-TR-10 is a highly efficient transmitter with greater power output than competitive units. Using a Jones Directional Coupler (a 12 watt unit with a multiplying factor of 1.68 for a full scale reading) it appears the UHF-TR-10 actually has peak video power of 20 watts, although as George Eitel points out, there is

^oRadio Electronics Magazine — July, 1958 — "Translators—Television's Last Frontier"

no truly accurate method available in most field tests.

The basic tube lineup is shown in Block Diagram Number One. A Blonder Tongue MCS VHF amplifier provides the gain and AGC control over the received signal which may be as low as 100 microvolts for full ten watt output. The amplified and controlled output from the MCS unit in turn feeds a 6AN4 mixer. Tuned line cavities on the mixer plate circuit (output) feed the signal through another 6AN4 linear amplifier which in turn feeds the grid circuit of a 2C39A driver amplifier. A 2C39A final stage completes the non-plex picture, with 50 or 70 OHM output (or other impedance if necessary) to feed the new UHF signal to the re-transmitting antennas.

The oscillator-multiplier chain begins in 6AK5 series tubes and ends in 6AN4 series tubes. Loosely coupled circuitry and the use of non-critical circuit components has eliminated the necessity for re-tuning when tubes are changed, in most instances.

Complete metering facilities, and pot controls on such important voltages as the 2C39A filaments make the unit especially foolproof and relatively simple to service.

OTHER SPECS

A code wheel is used for the required identification purposes. The wheel is automatically set to identify the translator within 90 seconds of the time it turns itself on (it comes on automatically when the originating station does), every 30 minutes during the period it is on, and at sign off.

It is capable of remote control by either land line, or radio (with slight modifications).

1,000 microvolts of signal (or more) will provide better than 20 DB plus (or minus) control over fading signals.

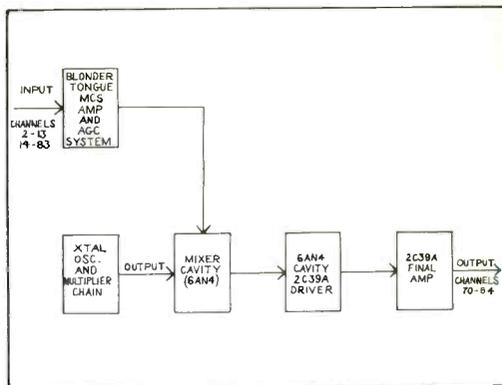
The multiplier string, and the cavities pre-heat sixty seconds before B plus voltage is applied, to insure no "shock tube loss."

The construction is basically simplified for easy maintenance, with standard replacement parts, repairable cavities and a total unit weight of 150 pounds. It may be either tower mounted in its weatherproof cabinet, or set on a slat floor, etc.

The cabinet size is but 22 inches wide, 15 inches deep, and 36 inches high. Power wise, it consumes 500 watts while running, and 70 watts on standby or idle position.

COMPLETE . . . \$2,500

The UHF-TR-10 sells as a complete package for \$2,500. This includes all tubes, crystals, complete alignment, power cords, a direc-



Eitel UHF-TR-10 Block Diagram

tional coupler power meter and a test meter. The user need only supply a license, location, and set of UHF transmitting antennas, and VHF receiving antennas. The UHF re-transmitting antennas can be supplied through an adjacent Prescott Electronics firm, "Thomas Antennas." The Thomas CY series of antennas has met with considerable success in mountainous areas of the west according to reports. The Thomas CY-5 array, with 12 DB gain, is a full wave one bay colinear antenna with four driven elements, four directors. Several combinations of antennas are available for varying coverage patterns.

CUMULATIVE VALUE

From the standpoint of "watts per dollar," the Eitel UHF-TR-10 Translator appears to be an excellent item in today's competitive weak signal market. Whether your areas has been using a VHF system, cabled system, or whatever, the Eitel UHF-TR-10 deserves your attention as a possible means for extending TV service, or replacing an already antiquated system. *The Eitel Electronics Company and small town TV should become synonymous in years to come.*

TRANSLATOR TOPICS

EITEL SHIPS UNIT

Eitel Electronics, Prescott, Arizona shipped a Model UHF-TR-10 April 11 to "Mid Columbia Community TV Corporation," The Dalles, Oregon.

ADLER APPOINTS

Hoffman Sales Corporation of California, 426 West College Street, Los Angeles 12, Calif. has been newly appointed sales rep. and field engineering organization for the Adler Company in Southern California and Southern Nevada.

In the West . . .

TV Booster-Repeaters

The Television Booster-Repeater is a strange breed of electronic animal, *no two alike, and you would be hard pressed to find two that even work alike.* Equipment suppliers in the field will tell you most areas served by repeaters have their own ideas about equipment. Few will use the same line of gear throughout, almost all have mixed brands stretching from the antenna receiving system, through the amplifiers, converters, back out through the low power transmitter to the re-radiating antenna. Companies such as Blonder Tongue, Benco, Jerrold, Entron, Mid America Relay Systems, to name a few, are actively engaged in the design of equipment you are likely to find in a typical booster installation. An electronics engineer DXing Horizons quizzed about the present booster situation, remarked dryly, "The people that establish VHF Boosters seem to want to experiment with their own concoctions of equipment rather than use one single good piece of gear. They connect one brand into another, and consequently develop a great deal of mismatch and problems which would not be present if they stuck with one brand of equipment throughout the entire installation."

Perhaps this desire to experiment is a form of pioneering spirit the western folks are exhibiting. One manufacturer claims amplifier "X" is the best and lists a few specs to prove it. Another manufacturer says his converter-mixer "Z" is best, and he lists a few more figures to prove his case. Soon the bewildered buyer, seldom acquainted with electronics before he began the booster installation, finds himself buying a little of this, and a little of that, hoping he will get the cream of each crop. Sadly, this is seldom so.

MUSHROOMING

James Beamer, Secretary of the Tri-State TV Repeater Association has said, "*The TV Booster Scene changes every year with the melting of the winter snows. Towns which put off installing boosters the preceding summer have gone all winter long, snowbound in their small high altitude towns on the plains of Montana, Wyoming, or a score of other rugged mountain states, wishing they hadn't put it off. And with the first melting of the snows on the peaks around the towns, the plans of long winter nights to bring TV to town swing into action. The summertime is*



Checkerboard, Montana Booster Area

relatively short in the higher ranges, and the mountain topping crews with portable field strength meters and portable antennas must move quickly to spot the best signal, and then proceed to install and erect the towers and equipment." Secretary Beamer says there are 107 boosters in the state of Montana this spring (see accompanying chart), another 25 in Wyoming, several dozen in Idaho, and others scattered throughout western North and South Dakota, Utah, Arizona, New Mexico and Colorado. Boosters perhaps total 200, and easily represent a combined investment in excess of one million dollars. No reliable totals have previously been accumulated of the number of people served by the *unlicensed VHF Booster-Repeaters*, but a DXing Horizons survey taken in early April, indicates there are at least 175,000 families (TV sets) served by the units, with a combined viewership near 800,000. Many western ranches receive their only TV via Boosters which the ranch owners have installed themselves. One rancher, appearing before a Senate Sub-Committee in Colorado testified he found it to be an economic necessity to install a Booster for his ranch area, to bring TV to the bunkhouse boys. He quipped, "*My ranch hands told me they would leave me to work for somebody else who had TV reception unless I got it for them . . . so I installed a Booster.*" Apparently you can't keep them down on the farm . . . unless they have TV!

ECONOMICS

As revolutionary as the TV Booster-Repeaters are, they brought the FCC face to face with a new breed of problem. In the past anyone who dared think of operating a radio frequency transmitter of any type always learned the FCC had to license both the transmitter and/or the operator. Suddenly, *actually*



Hogeland, Montana — a dot on the plains.

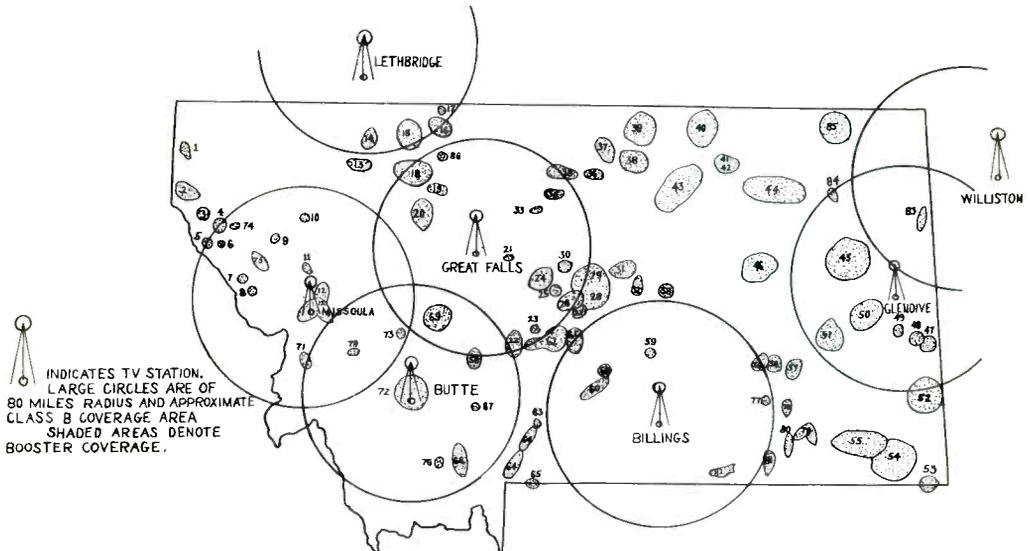
before the FCC knew what had happened, dozens, and then a hundred, and then more, seemingly on every tall mountain in the West. And no one had notified the FCC! At first the FCC was enraged, and they ordered their field crews to shut down the impudent repeaters. They did . . . but not for long. As fast as they were turned off the townspeople would turn them back on. As fast as they were confiscated, new equipment was installed. Finally the FCC said "Let's be realistic about this . . . these people want and deserve television. Let's see if we can't figure out some way of giving it to them." That "some way" was the UHF Translator. But less than half of the TV Booster operators installed UHF Translators. Many looked at the price of such a unit, shrugged their shoulders . . . and went back to watching

their VHF Booster. A more or less *Status Quo* existed between booster operators and the FCC until 1959, while the FCC watched the UHF Translator system grow to the 200 mark. Then the operators of CATV services, and other services in the mountain states, began to complain to the FCC that illegal (that is . . . unlicensed) VHF Boosters were causing interference to CATV systems. Then the FCC decided more stringent action was needed. Once again they threatened to close down all VHF Boosters. By this time however the booster operators had organized, and they flooded their Washington Representatives with letters and telegrams demanding that legislation be passed to force the FCC to legalize Boosters.

A SMALL ONE . . .

You won't find Checkerboard, Montana on the map. It has no post office, and its entire population is comprised of eight families. It does have a general store and a gasoline station. And it is isolated from just about everything, and everybody . . . to these eight families television is not just a form of entertainment to be taken lightly . . . it is their only real contact with the outside world, through their repeater and through the TV cameras of KFBB (5—Great Falls).

Six of the eight families in Checkerboard have contributed the \$1,500 necessary for a *very minimum level* repeater station. As the accompanying photo shows, the repeater is on a small knoll overlooking town. It is line of



VHF TV BOOSTER STATIONS IN MONTANA

Shaded areas denote Booster coverage. Details available from DXH on each system — inquire by number.

site to the entire eight homes in the area. For a rare bit of luck, one of the residents holds a Second Class Radio-Telephone License.

Checkerboard receives Channel 5, KFBB, with a two stack Channel 5 yagi. The yagi output drives a Benco Pre Amp, a Channel 5 to Channel 11 Jerrold Converter, through two Blonder-Tongue Channel 11 line amplifier-boosters, and then re-broadcast through a Channel 11 yagi beamed at the town. The signal into the yagi is estimated at one-fiftieth watt. The KFBB signal at the receiving antenna is only 100 microvolts.

AND A BIG ONE . . .

In Missoula, Montana, Channel 13, KMSO serves the area with programs from all three networks. However serving the same Greater Missoula region is KXLF-TV, from Butte. Except KXLF comes via a repeater. From a Booster located five miles north of Missoula, KXLF-TV, on Channel 4 is received, converted and re-broadcast on Channel 7, over a 200 square mile area!

AND ON AND ON AND ON . . .

Or survey the odd situation in Choteau, Montana, in the northern portion of the state. Served by off the air signals from KRTV (3), KFBB (5) Great Falls, the citizens of Choteau

have banned together to form a Repeater Association under the direction of the local Chamber of Commerce. The re-broadcast channel started out on Channel 7 (CJLH) in Lethbridge, Alberta, Canada. To the north, in Shelby, Montana, the citizens have erected a UHF Translator to pick up, amplify and then re-broadcast the CJLH signal on Channel 76. The channel 76 signal from Shelby is picked up on a peak three miles south of Choteau, re-converted back to Channel 7, and then re-broadcast over the Choteau region on its original channel!

CONCLUDING . . .

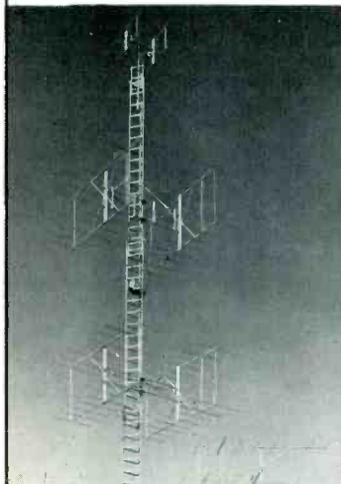
You would be hard pressed to find an opponent of Booster TV in the towns served in the mountain states by their signals. A *low cost answer to a TV reception problem . . . still with many bugs which must be, and will be solved . . . but 800,000 people (like the French) can't be wrong!*

BOOSTER STANDARDS PROPOSED

The Benco Co. of Toronto, Canada, has proposed industry wide standards for VHF Repeater-Boosters. An industry wide board may consider the topic soon.

SITCO

Heavy Duty Quads and Yagis

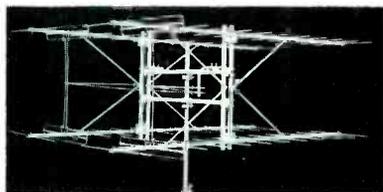


A Typical SITCO Installation

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Model No. 94-HD 32-element Quad

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TECH NOTES

6CM4 as a High Band Amp

New data on Amperex Company Frame Grid Tubes makes mention of the 6CM4 type, which is described as a "UHF amplifier and self-oscillating mixer." The words "UHF amplifier caught our eye so we asked for engineering samples from Amperex to find out just what this tube will do. It appears the 6CM4 may make a much lower cost low noise triode than the better known 417A. The 6CM4/EC 86 specifications list its transconductance at 14,000 micro MHOS. This is a long shot from the 25,000 micro MHO value claimed by the 417A, but the "used condition of most 417As" and the low cost of the 6CM4 (plus its new condition) may make it a more practical tube for low noise high band (7-13) applications. "What this tube will do as a possible low cost grounded grid" UHF amplifier is pure conjecture . . . but we are hoping. Specifications follow.

typical characteristics		base connections	
$V_f = 6.3 \text{ V}$	$I_f = 200 \text{ mA}$		
$V_a = 175 \text{ V}$	$S = 14,000 \mu\text{mhos}$		
$V_g = -1.5 \text{ V}$	$\mu = 68$		
$I_a = 12 \text{ mA}$			

INFORMATION SOUGHT

Jack Wright, Edmonds, Washington, asks about the General Electric "Wonder Tube" announced some years ago . . . the 6BY4 Ceramic. When announced, the 6BY4 promised to be a possible answer to the problem of an RF amplifier tube for UHF TV use. But the tube disappeared soon after it was made public. Wright lists some of its specifications as follows: Power gain at 900 megacycles, 15 DB, noise figure at 900 megacycles, 8 DB and corresponding lower noise, and higher gain at lower frequencies in the UHF range. Amplification factor, 100. Plate voltage 200 volts, plate current 5 MA.

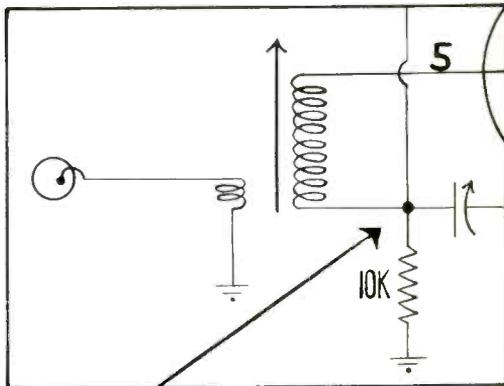
Through a little cross checking, consulting engineer for DXH, Cliff Price, tells us the "Missile Boys" are buying all of the 6BY4's GE can produce. Any that remain are diverted to Weather Bureau use in some of the newer UHF receivers for balloon tracking. In either case the supply is limited and much lower than the demand.

Robert Grimm, DXing Horizons new technical editor, tells us about an East Coast U.S.A. firm (EFI, Inc.) which manufactures a very similar tube for UHF use. It nets (reportedly) for around \$25.00. A lot of cash, but if it would do the job of a 6BY4 it should be worth the cost. Engineer Grimm promises more data on the 6BY4 substitute in his first column, next month.

MORE 417A

We goofed . . . to coin a phrase, in drawing the schematic of the "North Bay 417A" Amplifier for the April issue. We are indebted to numerous DXers for bringing it to our attention. The dia-

gram below shows the proper connectic grid tuning circuit of the 417A input. Tl points out a point of connection. The diagram showed no connection.



CONNECT MODIFICATIONS OF THE 417A

With respect to the "Wright 417A" circuit on page 4, April DXH, designer Jack Wright adds these words about low band operation. "I changed the input and output coils for Channed Two. I removed the 3.5 uuf condenser from the plate to the bottom side of the input coil (neutralizing condenser). My original circuit used an 'un-bypassed' Cathode Resistor (50 OHMS) from pin six to ground. On the Channel Two model I have inserted a .01 MFD from cathode to ground. Without the cathode by-pass the circuit retained a slight amount of negative feedback, and had a broadening effect. On Channel Two the input coil (L1 on original diagram) is now 4 turns clockwise, four turns counter clockwise with the center grounded. L2, the grid circuit coil, is 24 turns. Both are one-quarter inch air core. The output coils (L3, L4) are exactly the same as L1 and L2 (i.e. L1 and L4 same, L2 and L3 the same specs.). The grid circuit tuning capacitor is now 3-15 MMFD while the plate circuit is a 1 to 5 MMFD.

"Of course there is not the noticeable improvement in the signal to noise ratio on Channel Two as the high channels, but it does improve the signal noticeably and that is the result we are after."

6922-6DJ8

Several weak signal enthusiasts have written to inquire about other models of this tube. For instance, Motorola issues a "similar tube" as the 6ES8, Raytheon has a special tube of similar design, etc. While not pretending to know any details of the various brands other than Amperex . . . (except that they exist) we believe Amperex is the sole manufacturer of "PQ" 6922 series tubes. "PQ" denotes Premium Quality, and we do know that scientific laboratories throughout the West have switched over to complete use of the "Amperex 6922" in cascode and other twin triode applications. They have told DXH they buy Amperex because it is built for 10,000 hour tube life. Whether the others are or not we do not pretend to know. But we assume the scientific labs do . . . and what is good enough for the scientific labs is good enough for the VHF DX and weak signal TV fan.

International DXing Horizons



Television in the South Pacific

With the inception of television in Australia and more recently New Zealand comes a new field of DX enthusiasts who have cut their teeth on the broadcast and shortwave frequencies in the magical land of DX and sunshine. New Zealand broadcast band twirlers have long been known to possess one of the really top-notch geographical locations on this earth for truly fantastic broadcast band reception.

It is not strange, then, to learn that the world's long distance television reception record (reception of both identifiable audio and video) is held by an Australian... 10,800 miles. George Palmer is his name and his DXing antenna array was shown in the January ('60) IDX section of *DXing Horizons*. Nor is it strange to learn the longest verified distance for reception on the high band television channels (above 130 megacycles can be considered "high band") is possibly held by a New Zealand DXer.

NEW ZEALAND REPORT

DXH reporter Bob Morse reports from Auckland: "As far as TV in N.Z. is concerned there is a lot of talk but not much do at the moment. The government runs the radio and wants to run TV, but the public seems to prefer private enterprise, or a public corporation with the government holding fifty-one percent of the shares. At the moment there are two stations in New Zealand, both here in Auckland, both experimental. "NZBS-TV" is government run and is only on two hours per week at present. They transmit news, travel films and educational materials. By May of this year they plan to be on three nights per week with some entertainment material. As far as I know they have not been seen more than 100 miles away, but then the present transmitting antenna is only 80 feet high. At present they are carrying on tests to determine where the best transmitter and antenna site is in the area.

"The second Auckland TV station is privately owned by a large radio firm and we expect their license to be revoked any day. Their call is ZL1XQ and they cannot be seen in many parts of the city.

"The government is apparently holding back on the introduction of television for economic reasons. Picture tubes must be imported, and the government has set an import quota maximum of 16,000 tubes for this year. Three local radio manufacturing companies are reported tooled up and ready for TV receiver production. So far receivers are priced from \$300 to \$650, American."

DX RECEPTION FROM AUSTRALIA

DX enthusiast Morse has logged three Australian TV stations well enough for verification, and two more with copyable signals.

On New Year's Day (1960) reception was clear from ABS (Australian Channel 2, Adelaide) and ABQ (A.2, Brisbane) between 0200 and 0300 Auckland time. Australian Channel 2 roughly corresponds to the western hemisphere Channel 3, lying between 61 and 68 megacycles. The distance to Brisbane is 1,450 miles (remember this shortly) while the hop to Adelaide is 2,050 miles (Double hop E Skip?).



250 watt experimental NZBS-TV, Auckland, Morse, N.Z.

A RECORD?

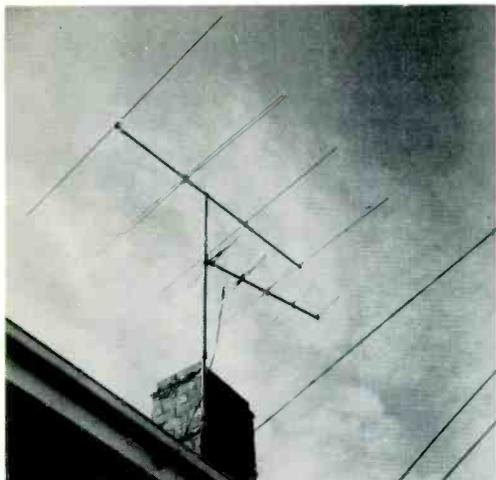
Morse reports he is proudest of his reception over the all-water path between Auckland and Brisbane of BTQ7, operating on a frequency of 182-188 megacycles (with 100 kW video, 20 kW audio.) BTQ7 was seen for nearly forty minutes, from 2050 Auckland time to 2130 Auckland time, including a weather forecast, spot commercials and the American syndicated film "Tugboat Annie!" During the peak of the reception five minutes of audio (no video) was heard from QTQ9 on 209-216 megacycles, also in Brisbane. BTQ7 reception has been verified by the station, and a Brisbane newspaper carried a story of the reception.

MORSE'S EQUIPMENT

Yagi antennas seem to be the thing in New Zealand, or so the photo of Morse's antenna system would indicate. A five-element "high band yagi" is stacked below a four-element Channel Two (New Zealand Channel 2, 54-61 megacycles) array. The receiver is home built using a 90-degree 17-inch tube. Receiver design and antenna stacking, design, etc. are in their infancy yet in the South Pacific. With no regular programs, or even any regular stations, viewers have not yet flocked to purchase receivers... and fringe area is still an evil American term!

FROM AUSTRALIA

George Palmer is no newcomer to the long distance TV world, even though his country has had TV for less than three years. Palmer's interest in long distance television reception was a natural outgrowth of his keen interest in long distance VHF reception, sparked in the early 1950's. A long time shortwave enthusiast, Palmer, of Williamstown, Victoria, began his VHF work by eavesdropping on the five-meter Australian amateurs (56-60 megacycles) in the mid 50's. Then it occurred to him that European and North American TV stations operated on these frequencies also. This seemed like an obvious set of TV DX targets,



Single stack low and high band yagis—South Pacific style. Morse, N.Z.

especially as he had been experimenting with Closed Circuit TV for several years. Importing antennas and receivers from both Europe and the U.S.A., Palmer found little in the way of video signals until the 41 megacycle transmission from London was received during peak F2 skip conditions between England and Eastern Australia, in 1957-58. It was Palmer's logging of this "English Channel One" that established what is now recognized as the longest TV reception on record.



E Skip in Australia—ABQ—64.25 mc/s—Brisbane 1,000 miles. Palmer, Australia.

MOST RECENTLY

South of the Equator the summer time E Skip season occurs during the months of December-February. Some of the recent DX reception by Palmer was enjoyed by the entire neighborhood, projected on his 90-inch screen... some six feet by four feet!! Palmer has recently perfected a large home wall projector for the TV viewer which he hopes to market soon in Australia. Recent DX skip reception has come from ABQ-2, Brisbane, 1,000 miles, and ABS-2, Adelaide, 450 miles.

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FM Reporting

Edited and Prepared by BRUCE ELVING
920 Laramie Street, Manhattan, Kansas

With the month of May upon us, the FM skip season should be here—if has not begun already in April. As of this April writing, however, no FM skip reception reports have been received at the DXing HORIZONS FM desk.

Although skip reception (usually realized from stations at distances of from 500 to 1500 miles) is a highly desirable and exciting form of DX, the numerous other means of long-distance FM reception figure most prominently in the annals of FM DXing. The reports this month run the gamut of such conditions, ranging from reception of near-locals to suspected diffraction reception and auroral propagation.

James Hughes, for example, reports reception in the Saginaw, Mich. area on his mobile FM equipment of tropospheric signals from two relatively new stations in Michigan—WBBQ-FM Jackson and WQRS 105.1 in Detroit. Hughes says that “mobile FM listening is great—though a handicap, at times, when it comes to trying to keep an accurate log. After all, you can’t stop in the middle of busy downtown traffic when you pull in some fine-business DX!”

W. C. “Scotty” Brooke, Jr., Blairstown, N.J., is considering stacking another FM/Q *Super Special Antenna* for added DX. Reception in the 260-mile range has improved considerably the last three weeks with reliability at that distance increasing from zero to 15 percent of the time. Brooke’s FM log stands at 108 stations from nine states and the District of Columbia. WERS 88.9 Boston, Mass. was heard April 1 by what might have been auroral DX, since the signal was “poor,” until “I got an ‘intelligible’ station break at about 2:15 a.m.” This reception was all the more unusual, since the point of best reception was with the antenna directed to the northwest, while all other Boston contacts have been made from the northeast.

California’s Dennis Smith feels that the phenomenon of *diffraction*, discussed in the January D-H (Weak Signal Industry), could have been responsible for Eric Norberg’s 60-mile reception over a mountainous path of the 10-watt KFJC Mountain View, Calif. (April FM Reporting). This belief is based on personal experience with a Silvertone table radio used

at a vacation campsite between Watsonville and Salinas, Calif. With a five-foot wire serving as an antenna, reception from the Fresno stations was considerably better at that 110-mile distance than was normally possible at his home in Wasco, only 85 miles from Fresno, where he also had the benefit of an external FM dipole antenna. Since the signal path from Fresno to the Sunset Beach state park campsite was highly mountainous, while that to Wasco was across the Central Valley, Smith thinks “I have reason to believe that signal diffraction is involved here; at least it might be an explanation as to why good signals are (often) received well under mountainous conditions” in comparison with signals from the same stations that don’t go such distances over flat ground.

TIDBITS

Thomas “Riley” Sundstrom reports that WPRB Princeton, N.J. is now on 103.5 with 17000 watts, and can be heard in Connecticut when WGLI-FM Babylon, N.Y. is off the air. Sundstrom was listening for FM DX during an Auroral display March 15, but heard nothing unusual. Sundstrom uses a Bogen FM tuner at his Stockton, N.J. location.

WKAR-FM 90.5 East Lansing, Mich. was received in Milwaukee, Wis. April 1 by Tom Mann. This station recently began broadcasting from a 1,000-foot tower with increased power. Also from the Michigan front, Jim Hughes reports that WBSM-FM 96.1 Bay City should be back on the air this June. And the University of Michigan will be making some field intensity measurements of the 91.7 megacycle signal of WUOM Ann Arbor, since complaints of a drop in signal strength have been received from the Midland area. WFBE 95.1 Flint, incidentally, is a board of education station, operating school hours only and not during the summer—a difficult catch indeed for most of us.

Your editor has just returned from a week-long trip to Duluth, Minn., where two more additions have been made to the Duluth log. KNOF 95.3 a new 250-watter in St. Paul, Minn., 140 miles, and WCOW-FM a new full-timer on 97.1, 210 miles, were added, bringing the heard total to 348. DXing conditions in the far north, however, continue to be below average.

John Owen Broomall, Augusta, Ga., reports an interest in joining the legion of FM DXers—as is probably the case with many other D-H readers—and mentions that the world FM record apparently involves the reception of HJKA-FM Seoul, Korea by Gordon E. Simkin, who was DXing from Loma Linda, Calif., Nov. 4, 1958, from 1600-1800, on 46.3 megacycles. This F2 skip reception was at a distance of approximately 6,000 miles, albeit on the old 42-megacycle band. FM broadcasting in the United States and Canada is now exclusively between 88 and 108 megacycles, and it is in the 100 mc. region in most of the rest of the world.

Even though you most likely won’t be hearing FM stations at 6,000 miles, listen for the heightened FM DX activity that this time of year brings. Send your reports to Manhattan in time for the June deadline: May 14.

THE CABLE TV INDUSTRY

(continued from page 7)

driver, calmly removed the broken high-voltage power lines from the hood of her car and drove off. The grounded CATV system cable, contacting the high-voltage line in falling, had grounded the power line and, unknown to the driver, saved her from immediate electrocution.

THE UNUSUAL

This is not to say that the CATV business does not also have its lighter moments. Cheerful editors are always writing "man bites dog" articles when adventuresome squirrels or rodents chew through a cable or enter an amplifier to short out part of a system.

Buzzards even attacked the cable insulation of amplifying equipment at the top of a 700 foot CATV antenna. Life was miserable for the maintenance men until loadspeakers broadcasting music frightened off the short-circuit artists.

Cooperation between the broadcasting industry and CATV systems has been a most important factor in the orderly development of fringe area TV.

This cooperation takes many forms. A Portland, Oregon TV station helps the hundred or so CATV systems receiving its signal when signal trouble originates at the station. A sign placed on the air indicates to CATV subscribers that signal trouble is originating at the station so that CATV subscribers will not flood the system offices with trouble calls.

A Pennsylvania UHF station, which is viewed in 90,000 CATV homes, offers frequent televised explanations of CATV service to non-subscribers.

Such has been the development of the CATV industry's service in terms of multi-channel, reliable reception eked-out through boot-strap technical advances that would make the DXer's heart warm.

For an interesting DXing field trip write *DXing Horizons*, or the *National Community Television Association*, 612 Perpetual Building, 1111 E Street, N.W., Washington, D.C., for the location of the CATV system nearest you.

TELEPROMPTER . . . BIG!

The CATV empire of the Teleprompter Corp. grows. Now owners of four systems, Tele. is negotiating for four more such systems, and reportedly has options on 11 more!

USE OF THE 24-HOUR CLOCK

On a 24-hour clock basis, midnight is 2400 (or 0000); 3 a.m. is 0300; 10:00 a.m. is 1000, and noon is 1200. For example: Instead of starting again at 1 p.m., as the 12-hour system does, the 24-hour system continues to increase the number of each hour until 2359 (11:59 p.m.) is reached—thus, 1 p.m. is 1300; 5 p.m. is 1700, and 10 p.m. is 2200.

For the convenience of SWLs who live in the United States (and in the major portions of Canada), the TIME CONVERSION CHART follows—to show the conversion of GMT (GREENWICH MEAN TIME) to the STANDARD TIME of the various TIME ZONES of those areas. The table shows the adjustment necessary to convert GMT to EASTERN STANDARD TIME, CENTRAL STANDARD TIME, MOUNTAIN STANDARD TIME, and PACIFIC STANDARD TIME. In summer, in the USA-CANADA, of course, allowance should be made in local time where DAYLIGHT SAVING TIME is in effect.

24-HOUR SYSTEM					
GMT	EST	CST	MST	PST	
0000	1900	1800	1700	1600	
(or 2400)					
0100	2000	1900	1800	1700	
0200	2100	2000	1900	1800	
0300	2200	2100	2000	1900	
0400	2300	2200	2100	2000	
0500	0000	2300	2200	2100	
	(or 2400)				
0600	0100	0000	2300	2200	
		(or 2400)			
0700	0200	0100	0000	2300	
			(or 2400)		
0800	0300	0200	0100	0000	
				(or 2400)	
0900	0400	0300	0200	0100	
1000	0500	0400	0300	0200	
1100	0600	0500	0400	0300	
1200	0700	0600	0500	0400	
1300	0800	0700	0600	0500	
1400	0900	0800	0700	0600	
1500	1000	0900	0800	0700	
1600	1100	1000	0900	0800	
1700	1200	1100	1000	0900	
1800	1300	1200	1100	1000	
1900	1400	1300	1200	1100	
2000	1500	1400	1300	1200	
2100	1600	1500	1400	1300	
2200	1700	1600	1500	1400	
2300	1800	1700	1600	1500	

TV Reporting

CONDITIONS LOOK GOOD FOR '60!

An early starting sporadic E season, and better than average springtime tropes in the Mid-West substantiate early predictions that this summer will be a hot one for E skip and ground wave in all quarters.

AURORAL-ES... AT LAST

The most violent magnetic storm to affect the earth's ionosphere since the mid 40's took its toll in the E layer, sending Aurora displays as far into the southland as Jacksonville, Florida and Charleston, S.C., the night of March 31. DXer John Broomall, Augusta, Ga., saw the first Aurora DX signals of his life on Channels 2-4 from 1900 to 2050 EST. Broomall described his observations, "very strong horizontal interference on 2, 3 and 4 from the north, while little audio noted. I suspected Aurora DX though I had never seen it before because it matched perfectly the description of Aurora given in the special article in the March DXH."

Along the Great Lakes numerous DXers report Auroral signal interference from 1740-2400 EST on the 31st. Frank Wheeler, Erie, Pa. saw the Auroral form into distorted E skip (Auroral-Es, see IDX section, page 13, April) at 2245 EST on the 31st of March. But not identification was possible.

Roger Brown, E. Lansing, Michigan had better luck with the Auroral-Es session however. Brown watched as Channel Two formed into rapid fading E skip at the end of the heavy aurora of the 31st, and from 2245-2305 EST he watched KOOK-2, Billings, Montana, 1195 miles.

Strangely enough, the Aurora session of the 31st was so heavy it did not affect DXers in Canada. C. E. Stephens, Revelstoke, B.C. noted no Aurora the night of the 31st, but did have some on Channels 2, 3 and 4 April 11, from 1730 PST—1830 PST.

DXer Dean Charles, Gunnar, Sask., 300 miles north and east of Edmonton, Alberta, found DX popping the evening of the first of April. E skip signals began to appear on Channels 2 and 3 at 1900 MST and KID-3, Idaho Falls, Idaho, and KOOK-2, Billings, Montana were logged as late as 2315 MST. Charles saw more E skip (unidentified) on Channel 2 from 2000-1100 MST on the 2nd of April, 2000-2130 MST on the 4th.

The same April 1 evening, Stephens in Revelstoke, B.C., had E skip from 2220-2235 PST on Channels 2, 3 and 4, from California.

APRIL 13

This appears to have been the first general E skip date for the 1960 season. On the East Coast Franklin Brown, Easley, S.C. logged E skip first on Channel 2 at 1930 EST, identifying KMID-2, Midland, Texas at 200. Es died out at 2245 EST in S.C.

Roger Brown, E. Lansing, Michigan first had E skip at 1217 EST when KMID-2 Midland appeared over a 1240 mile path. Between 1530 and 1705 Brown logged KCKT-2 (Kansas—870 miles), KGNC-4 (Texas—1,070 miles) and KOA-4 (Denver—1,090 miles).

Minutes later on the 13th Eric Norberg, Carmel, California, logged CBUT-2 (Vancouver—940 miles) from 2050-2055 PST.

Also here in California, at DXH, we logged un-



135 Stations, 30 States for Carlon Howington, Ohio DXer

identified E skip from Canada between 1915 and 1930 EST on April 17, and KMID-2 (1,100 miles) and KBST-4 (1,120 miles) from 2231-2310 EST.

MID-WEST TROPS

It has been observed to happen before... but no one has ever offered a valid explanation. Good tropes over the Mid-West, "just prior to a heavy Aurora session."

On the evening of March 30th, Jim Pirch, Richmond, Mo. logged KELO-11 (Sioux Falls, S.D.) at 350 miles. The A.M. of the 31st was good for tropes from Illinois west to the Missouri River Basin. Pirch saw KELO again, WMT-2 (250 miles), KOTV-6 (250 miles), KWWL-7 (275 miles), and others.

Thomas Hidley, Chicago, saw KELO (480 miles), KOLN-10 (480 miles), KOMU-8 (330 miles), WHO-13 (310 miles) between 0623 and 0750 CST, and then followed this with 340 mile rare UHF catch KQTV-21 (Fort Dodge, Iowa) at 1804 CST.

Bill Pagel, Glen Ellyn, Illinois missed the morning session on the 31st, but caught stations on VHF in Iowa, Missouri in the 250 mile range, and UHF'ers from Ft. Wayne, Ind. at 1830 EST on Channels 14, 21, and 33.

Mike Navarre, Detroit, Michigan finds ground wave getting tough for new catches, and he is looking forward to improved E skip conditions. He did catch WANE-15, and WKJG-33, Fort Wayne, 130 miles, at 2245 EST on April 1 however.

Bill Eckberg, Walnut, Illinois saw the fringe area push back March 31 and April 1 when KELO (388 miles), KTHV-11 (0900 EST, 3-31, Little Rock) 506 miles, KQTV-9 (0125 EST, 4-1, 350 miles) were logged.

SMATTERINGS OF DX ELSEWHERE

Don Ruland, Holly Hill, Florida installed a new antenna March 24 and logged Cuba on Channels 4, 5, 6, 7, 8, 11 and 13 the evening of March 27th.

Jim Himes, Joes, Colorado continues to log DX by Meteor Scatter, adding KSL-5, Salt Lake City at



XEFB-3, Monterrey, Mexico — Logged in Walnut, Ill., 6-18-59, 1,272 miles.



CFRN-3, Edmonton, Alberta — Logged in Walnut, Ill., 6-18-59, 1,375 miles (Bill Eckberg).

a short 470 miles on March 22, for station No. 235. Himes continued success with stations in the 450-1,200 mile range via "meteor burst" DX has sparked interest in others and an early article on this unusual form of DX is planned.

PRESS TIME REPORTS
(Modesto, April 25)

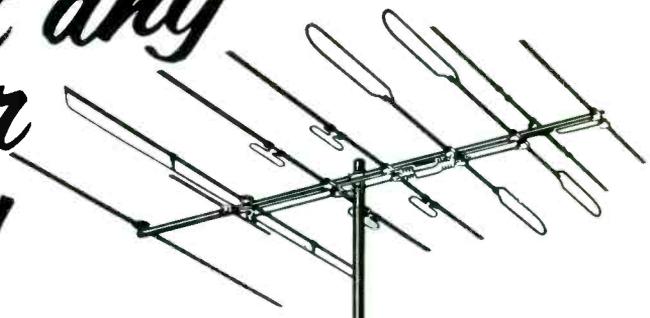
Billy Drach, Kewaunee, Wisconsin notes he also observed E skip on April 13 when he logged KMID-2 (1180 miles), KFDX-3 (960 miles), KBTX-3 (1,059 miles), KRLD-4 (1,000 miles), WBAP-5 (1,020 miles) and KSYD-6 (960 miles).

James Gould, Kokomo, Indiana (see special announcement, page 38) notes the excellent tropo of

March 31 extended into central Indiana while the Auroral Display was making mincemeat of Channels 2-6. Ground wave on Channels 7-13 peaked when he logged KELO-11, a haul of 600 miles at 0110 CST on April 1. Gould attributes his long haul (and many closer in the 300-500 mile range) to his "Gould Modified Receiver," newly stacked antenna, and lastly, but not least, a telephone call to Bill Eckberg, Walnut, Illinois, who was closer to the DX area than he. From our vantage point it does appear Gould and central Indiana were a little bit too far east to be within the confines of the DX area affected. Chalk one up for the "Gould Modified Receiver."

(continued on page 38)

*best at any
site for
DXing*



TANCO *Topliner*

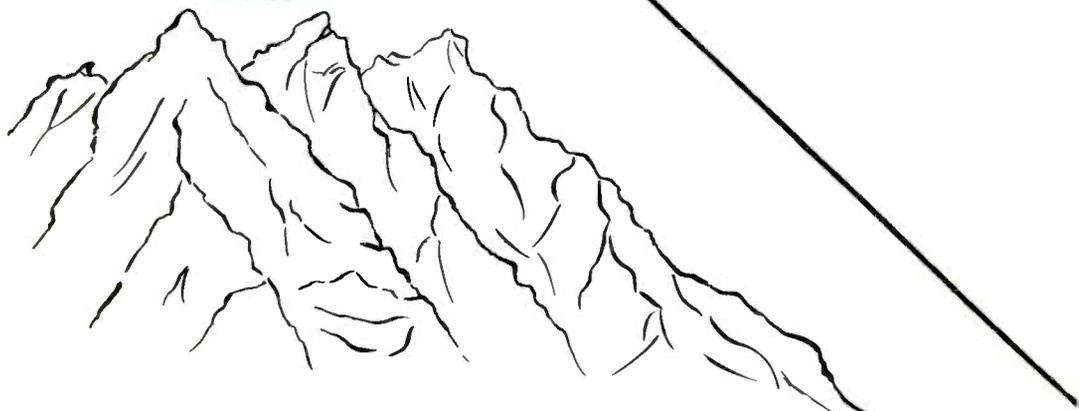
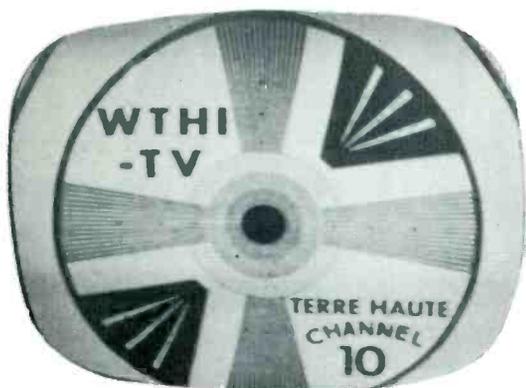
TELEVISION ANTENNAS

Outperforms them all — by far !

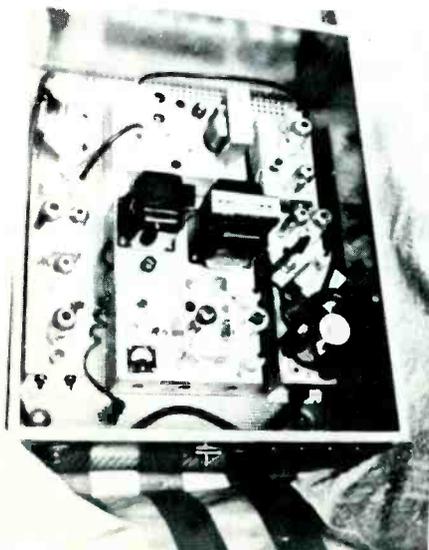
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COMPLETE DETAILS

TECHNICAL APPLIANCE CORPORATION
SHERBURNE, NEW YORK

BRING THIS SIGNAL



M.A.R.S. ONE WATT (Plus) AMPLIFIER SYSTEMS



Complete — aligned and assembled. Ready to install on your new system or as a replacement for older systems. A complete high output amplifying system with conversion. The RX-17 uses two BT proven quality MCS amplifiers with M.A.R.S. Converter CX-30 and Metered Final (F-17).

The system is capable of one watt PLUS output with as little as 50 microvolts input.

The unusual range of automatic gain control enables complete pre-adjustment to accommodate ANY useable signal level.

Metered output eliminates guesswork for fast — efficient operation.

AVERAGE VALUE SPECIFICATIONS:

Gain: 110-120 DB.

Conversion Accuracy: .005%

AGC: 40 DB.

Input Range: 50 Microvolts to 5000 Microvolts

Output: One Watt Plus

Power: 115 Volts AC 60 Cycle (140 Watts)

Cables: Low loss input and output cables and baluns to match 300 OHM line are included.

Installation: Can be done by anyone in a short day.

Price: \$957.00

M.A.R.S. CRYSTAL CONTROLLED CONVERTER CX-30



RELIABILITY . . .
The world's most reliable converter-amplifier units, with 10,000 hours tube life in premium quality Amperex 6922 Tubes. The CX-30 is the heart of any amplifier system

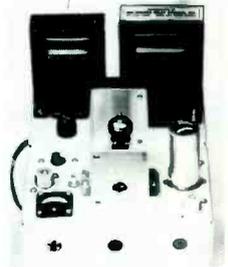
which requires the highest accuracy in conversion, and maximum reliability. Input may vary from 1,000 Mu to 100,000 Mu at 75 OHMS. One-half of the second 6922 is reserved for possible use with a coding on-off system.

AVERAGE VALUE SPECIFICATIONS:

Gain: 15 DB on Low Channels
10 DB on High Channels
Conversion Accuracy: .005%
Power: 115 VAC, 60 Cycle — 17 Watts
Input: 1000 to 100,000 Mu at 75 OHM.
Tubes: Premium Quality Amperex 10,000 Hour 6922's.
Price: \$195.00

M.A.R.S. ONE WATT FINAL TV AMP. F-17

Mountain top locations require the very best in equipment . . . and when you need 10,000 hour reliability, high output, and broadcast quality amplification . . . M.A.R.S. equipment is for you. Maintenance calls are held at the lowest rate in the industry with M.A.R.S. equipment . . . and the F-17 amplifier.



AVERAGE VALUE SPECIFICATIONS:

Gain: 26 DB over Each Input
Band Width: 6 MC (Plus-Minus) One DB.
Power Requirements: 115 VAC, 60 Cycles, 70 Watts.
Output: One Watt Plus
9 Volts at 75 OHM
18 Volts at 300 OHM (Through Balun)
80 DB above One Millivolt.

Meter: Switch and Meter to Monitor Plate Voltage and Relative RF Voltage.
Tubes: Premium quality Amperex 6922's and 6360's (10,000 Hour Rating)
Price: \$395.00

IF AND WHEN VHF BOOSTERS BECOME LICENSED, THIS F-17 UNIT WILL PROVIDE A QUALITY PICTURE UP TO 40 MILES.

The following chart shows channel conversions available. The shaded areas should be avoided if possible.

HERE

with

M.A.R.S. Amplifier Systems

		CHANNELS						
		7	8	9	10	11	12	13
CHANNELS	2	126	132	138	144	150	156	
	3	114	120	126	132	138	144	150
	4	108	114	120	126	132	138	144
	5	98	104	110	116	122	128	134
	6	92	98	104	110	116	122	128
	Trap							



"Vallytown
USA"

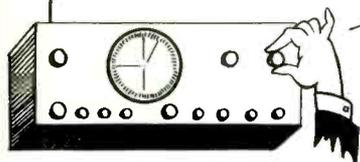


MID AMERICA RELAY SYSTEMS, INC.

601 Main Street

Rapid City, South Dakota

THE WORLD



AT A TWIRL

Edited by DXing Horizons Shortwave Editor
Ken Boord
948 Stewartstown Road
Morgantown, West Virginia, U.S.A.

The highly favorable reaction to the SW Dept. has been most gratifying to both your SW Editor and the Publisher of DXH. Already, it has been acclaimed in all corners of the earth—by SW DXers, SW broadcasters, radio clubs, DX editors, and others.

Cooperation has been superb! However, I must remind you ALL of my DXH duties must be carried out in my "spare" (?) time. I have a full-time job as Associate Agricultural Extension Editor at West Virginia University; I am official monitor (ECNA) for *Radio Australia*; I am a church organist, and I am taking a three-hour course at WVU each semester. Hence, it is utterly impossible for me to engage in lengthy correspondence with anyone—much as I would like to do so.

As its name implies, *DXing HORIZONS* is a "DX" magazine. Kindly LIMIT your reports to true DX items—plus NEW stations, NEW schedules, and CHANGES of various kinds.

To achieve uniformity and—especially—to assist me in the compilation of the SW Dept. READILY and ACCURATELY, these "SEVEN GUIDEPOSTS" for the preparation of your reports are suggested:

1. Send me ONLY DX ITEMS (as described above); OMIT all ROUTINE loggings.

2. Use ONLY GMT.

3. The DATE OF RECEPTION should be listed with EACH ITEM; SW radio changes from day to day—and an undated report is practically USELESS to me.

4. List ALL items BY COUNTRY—not by frequency.

5. Give ONLY ESSENTIAL information; make each item COMPLETE but CONCISE.

6. To facilitate my handling of your reports, it will be GREATLY APPRECIATED if you will submit your contributions in LOG FORM—similar to the following SAMPLE—which was adapted from a report submitted by *DXH Monitor Sam R. Rowell*, Minneapolis, Minn. (If you desire more space for the last column in the report, feel free to set up your report "lengthwise" of the sheet.)

DXING HORIZONS MONITORING REPORT

DATE: March 21, 1960

FROM: Sam R. Rowell, 1400 Eleisdel Avenue, Minneapolis 9, Minnesota

EQUIPMENT USED: HAMMARLIND HQ-145 (also ZENITH Trans-Oceanic, at bedside w/phones)

COUNTRY	STATION	FREQ. (MC)	DATE (GMT)	TIME (GMT)	PROGRAM CONTENT; ID; SID; ETC.
CANADA	CBUE, Vancouver, B. C.	6.160	3-21	0620	Commentary (15 min.)
CHINA	R. Peking	15.250	3-21	0510	E-N by man; S-b
CZECHOSLOVAKIA	R. Prague	7.300A	3-21	0210	Slovak mx, annot.; 20 dbx over S-7
GHANA	Ghana R/C Serv., Accra	4.915	3-21	0530	Prgrm preview for xxan (ENG.)
HOLLAND	R. Nederland, Hilversum	6.025 11.755	3-21	0230- 0330	Annncd NEM fq of 11.755 to N. Am.; mx, lively tunes; multi-lingual annuncs
INDONESIA	"Voice of Ind.," Jakarta	9.595A	3-21	1400- 1530	Mx; E-N 1447
JAPAN	R. Japan, Tokyo	11.705	3-21	0500- 0545	S-on 0500 w-SNG, annncd by woman; annncd for 11.705, 15.325, 17.825
LUXEMBOURG	R. Luxembourg	6.090	3-21	0512- 0555	Dev. Serv. in Ger.; ID 0544, then went into Pr.
NIGERIA	Lagos	4.990	3-21	0455- 0645	S-on w-"talking" drum; prgrm preview and S-b; 0640 Moslem chanting
TOKIO	R. Loma	5.036	3-21	0635	Pr. annncd; native mx; ID, "Ici Loma"
TUNISIA	R. Tunis	9.630	3-21	0550	Pr. annncd; Ar. mx; annncd by VOA (WDSI, 7-435)

7. PLEASE OBSERVE DEADLINES. Reports can NOT be held over from one month to the next. Get YOURS in on time! DEADLINE for reports for "THE WORLD AT A TWIRL" Section is the LAST DAY OF THE MONTH (APRIL 30 for JUNE issue); EXTRA-SPECIAL FLASHES can be used—AS SPACE PERMITS—up to and including the

10th of the *FOLLOWING MONTH* for the *LAST-MINUTE TIPS SECTION* — “*AT FADE-OUT*” — (MAY 10 for JUNE issue). These deadlines refer to *RECEIPT* of your report at 948 Stewartstown Road, Morgantown, West Virginia, U.S.A.

YOUR SW EDITOR RESERVES THE RIGHT TO EDIT REPORTS; TO CORRECT OBVIOUS ERRORS, AND TO ELIMINATE ROUTINE OR “STALE” ITEMS.

Let's continue to make *YOUR SW Dept. “TOPS” IN ITS FIELD!* I'm countin' on *YOU . . . and YOU . . . and YOU!*

CLUB NOTES

BRAZIL—The Brazilian DX Club is making plans for an ENG. prgm soon over PRN9, 9.295, “R. Difusora do Departamento Federal de Seguranc-a Publica,” Rio de Janeiro; 5 kW. The BDXC's secretary is E. Tavares Filho, Lopes Trovao, 118-Ap. 303, Niteroi, Rio de Janeiro, Brasil. The club issues a bi-monthly Bulletin called “Brazilian DX News.” It cooperates closely with other clubs around the world—particularly those in Scandinavia.

FRANCE—Current QRA of “Le Club des Auditeurs de la Radio Mondiale” (CARM) is 79, Avenue Paul Vaillant-Couturier, Vitry-sur-Seine (Seine), France; its house organ is “La Radio Mondiale.” (CARM)

U.S.A.—Requests for sample bulletins from the Newark News Radio Club, 215 Market St., Newark, New Jersey, U.S.A., will not be filled or acknowledged unless the request is accompanied by 25c; it is no longer the policy of NNRC to send out FREE sample bulletins. (West, N.J.)

BROADCASTING STATIONS OF THE WORLD

The Foreign Broadcast Information Service, Washington, D.C., publishes a set of four (4) books covering the world's broadcasting stations (INCLUDES USA SW but EXCLUDES USA MW stations other than those OUTSIDE THE CONTINENTAL USA) as follows: PART I—By COUNTRY and CITY, \$2. PART II—By FREQUENCY (I consider this on a “must” for the “serious” SWL—Ed.), \$2. PART III—By CALL LETTERS and STATION NAME or SLOGAN, \$1.50. PART IV—FM TV stations, \$1.25. Order from Supt. of Documents, Gov't Printing Office, Washington 25, D.C.—NOT from FBIS. (NNRC)

PLEASE SEND YOUR QUESTIONS ON SW EQUIPMENT DIRECT TO SWBC TECHNICAL CONSULTANT

DXing HORIZONS is pleased to announce the appointment of veteran SW DXer A. R. (Al) Niblack, 420 Shelby St., Vincennes, Indiana, U.S.A., as Technical Consultant to your SW Dept. Editor. ALL QUESTIONS CONCERNING SW EQUIPMENT OF ANY KIND should be addressed DIRECT to Mr. Niblack. Thanks!—Ed.



The Transmitter Hall of the British Broadcasting Corporation (BBC) shortwave station at Rampisham. The Hall contains 4 high-powered transmitters and was divided into two by a wall as a precaution during World War II.

(Reports are listed in GMT—subtract 5 hours for EST, 6 hours for CST, 7 hours for MST, and 8 hours for PST. Let's go!

ADEN—Aden B-C Serv., Box 1264, Aden, 7.170, hrd in UK frn 1730; QSL's w-cd that shows drawings of camels (in corner of cd). (ISWC)

AFGHANISTAN—R. Kabul, 9.705A, hrd in Sweden 1900 w-ENG. (MALMO DX-aren) QSL'd by cd frn Ministere des Communications, Division des Telecommunications, Kabul. (CARM) Hrd on 4.750 in ENG. 1530-1600, QSA3-4 in Sweden. (SRK)

ALBANIA—ZAA, R. Tirana, 7.848A, hrd w-lingo 2130 tune-in in hvy QRM. (Saylor, Va.)

ALGERIA—R. Algeria, 11.835, hrd in Britain 0807 w-Fr. (ISWL)

ANDORRA—R. Andorra, 5.979AW, hrd w-Fr. prgm of mx when tuned 0745; strg. (Saylor, Va.) Logged 2255 at S-5 level w-Sp. mx, woman anncr; s-off 2300. (Rowell, Minn.)

ANGOLA—CR6RD, 4.851, hrd 1815; ID, “Aqui Nova Lisboa, R. Clube do Huambo”; SINPO 32343 in England. (Young) CR6RL, 9.629, Luanda, noted 0640 w-Pt. vocals, man anncr in Pt.; CR6RF, 9.502, Benguela, weak-fair 0638 w-woman in Pt. (Cox, Dela.)

ARGENTINA—LRA32, 9.690, Buenos Aires, hrd 2235 w-concud; Sp. ID for “R. Nacional” by man 2247; fairly gud level in Dela. (Cox) LRA33, 15.345, hrd to Eu. 2300-2400 w-fair-gud sig; current sked red frn stm lsts to Central Eu. 1900 Sp., 2000 Ger., 2100 It., 2200 Fr., 2300 ENG., 0000-0100 (s-off) Pt. on 15.345; to E. U.S.A. 0200 Sp., 0300 ENG., and to W. U.S.A. and Pacific Coast countries 0402 Sp., 0502 ENG. on 9.690. (Sundstrom, N.J.)

AUSTRALIA—Finally “caught” positive ID of VLY25, 25.735, R. Australia's NEW 10-kW experimental xmtr, 0135 w-pop U.S. dance tunes; sig varied frn “unreadable” to “fair” on peaks. (Cox, Dela.) “Winter” (“Down Under”) skeds just effected by R. Australia are: To SO., SE., SW. Asia (ENG. unless otherwise stated)—2214-1400, 25.735; 2214-0915 (Indonesia 0600-0730), 21.540; 0230-0730 (SAT. ONLY; Sporting Serv.), 21.600; 2214-0730 (Indonesian 2214-2315; Fr. 2315-0015; Indonesian 0600-0730), 17.840; 2214-0015, 15.210; 2214-0030 (Indonesian 2214-2315; Fr. 2315-0015), 15.320; 0700-0945, 15.160; 0929-1730 (Indonesian

0945-1100; Chinese 1100-1300; Thai 1330-1430), 11.740; 1329-1500, 11.760; 09591730, 9.580; 0929-1730 (Indonesian 0929-1100; Chinese 1100-1300; Thai 1330-1430), 7.220. TO E. ASIA and N. PACIFIC IS.—2059-2300, 15.240; 0744-1200, 11.760; 0959-1400, 9.630 (NEW FQ.) TO MID-PACIFIC IS.—2000-2200, 15.315; 0030-0130 (Fr.), 17.710, 15.160; 0600-0935 (EXCEPT SAT.; SAT. 0744-0935), 11.810. TO S. PACIFIC IS.—2000-2200, 11.840; 2315-0015 (Fr. to Tahiti), 21.680; 0600-0915, 11.710. TO ECNA—1214-1315, 11.710. TO WCNA—1514-1615, 11.810. TO BRT. ISLES and EU. (NEW TIME)—0600-0730, 11.710. TO AF.—0449-0545, 21.680.

AUSTRIA—OEI38, 25.615, Vienna, hrd 0900 anncg in Ger., Sp., Fr., ENG.; asked for rpts to Box 337, Vienna 3. (ISWL)

AZORES—Ponta Delgada, 4.865, hrd in France 2100 w-dance-type mx. (CARM)

BELGIAN CONGO—OTM1, 6.296, Leopoldville, hrd 2152 w-“Sweet Lelani” and other “old” tunes; fair w-some QSB. (Cox, Dela.) OTH, 9.210, Leopoldville, R. Congo Belge, hrd s-on 0350 and hrd as lat as 0545; at times vy lvy QRM. (Howard, Mo.) OPD2, 5.992, Coquilhatville, fair s-on 0458 w-native instru IS; ID 0500 by man in Fr., then lovely organ and accordion mx, w-woman anncr. (Cox)

BORNEO (N.—BRT.)—R. Sabah, 7.185, Jesselton, rptd hrd 1122 w-BBC nx. (ASWLC)

BRAZIL—NEW is R. Sirena w-experimental xmsns 1000-1200, 1400-1600, 2300-0100, 1 kW, 2.410 (and FM 106.5 mc); has cultural and educational prgms; owner, Ministerio de Educacao e Cultura; QRA is Box 6, Leopoldina, Minas Gerais, Brasil. (Tavares Filho, Brazil) PRAS, Recife, hrd frm 2115 w-man in Pt., on 6.013 lately INSTEAD of LISTED 6.015 (Moscow is on latter). (Cox, Dela.) ZYZ32, “Radio Rural Brasileira,” 15.105, Rio de Janeiro, strg frm opening 2000 to close 2200; “R. Marajoara,” 15.245, Belem, fairly consistent sig in UK frm 1000-1200 and AFTER 2100; ZYR206, “Radio Clube Ribeirao Preto,” 15.415, 2200-0330, gud sign at opening. (Brown, Scotland, via ISWC) R. Club Bahia, 15.125, gud sig in N.Z. when closed 0330. (Cushen)

BRT. GUIANA—ZFY, R. Demerara, 3.255, Georgetown, noted w-N-E 0045. (Saylor, Va.)

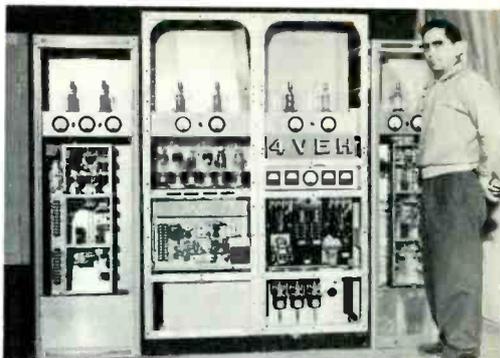
BRT. HONDURAS—BHBS, 3.300, Belize, hrd in Sweden 0030-0145 w-N-E and weather rpt. (SRK)

BULGARIA—R. Sofia, 9.700, hrd 0120 w-sportscast, ID, Bulgarian dance mx. (Hovey, Wisc.) Hrd w-LETTERBOX 0115 Thur., Sun. (Whitaker, Ind.)

BURMA—Hrd on 6.015 in ENG. frm 1415; E-N 1500-1516A s-off. (Balbi, Gibsons, Calif.) BBS, Rangoon, sked 9.540, 50 kW, 0100-0230 REGULARLY, 0430-0530 ADDITIONALLY; 0530-0730 REGULARLY; 6.035, 50 kW, 1100-1515 REGULARLY; 4.795, 50 kW, 1200-1500 ADDITIONALLY. (WRHB)

CAMEROON—R. Cameroon II, 6.184, Douala, weak 2050 w-dance instru, woman in Fr.; usual s-off 2100. (Cox, Dela.) R. Cameroon I has MOVED frm 4.975 to 4.972.5 and frm 9.657 to 9.663. (Buettner, Germany, via ISWC) R. Garoua, 5.010, logged 1900 and hrd to 2104 s-off. (ISWL)

CANADA—VFG, Gander Aeradio, 3.001, usually rcd well “after” dark; frequently hrd w-N. Atlantic wx info; also hrd on 5.559, 8.825 same



This “proud gentleman” is M. E. (Mardy) Picazo, Station Manager and Chief Engineer, 4VEH, “The Evangelical Voice of the West Indies,” Cap Haitien, Haiti. He is shown in Elkhart, Indiana, with the TWO new 2.5-kW transmitters of 4VEH which were built in the shop of the International Radio and Electronics Corporation. By now one of the NEW transmitters should be operating as 4VEH on 6.100. Reception reports are desired.

time. CHU, Ottawa, Ont., with time sigs on 3.330, 7.335, 14.670, sends attractive QSL cd; QRA is Dominion Observatory, Ottawa, Ont., Canada. (Holbrook, Md.) Xmts voice-anncd time sig each min; during first min of each hr call “CHU, Canada, CHU” is sent in CW; voice anncmts are introduced between 50th-60th second of each min—gives EST (hrs, min). (Cadzow, Australia via ISWC) CHNX, 6.130, Halifax, Nova Scotia, hrd in Finland w-E-N 2045; QSA-4, QRK-4. (Tor-Henrik Ekblom) CBNX, 5.970, St. Johns, Nfld., hrd in England 0055 w-church service. (ISWL)

CANARY IS.—EA8AB, 7.295, Tenerife, noted 2310 w-lively accordion mx; man, woman anncrs in Sp.; 2319 jazz mx; ID by man in Sp.; fair sig for 250 w., but readable only for brief periods (between ham xmsns) using sharp selectivity; gud modulation; first time hrd in a couple of yrs! (Cox, Dela.) Noted in Sweden 2305-2235 s-off. (Magnusson via GDXC) R. Atlantico, Las Palmas, has CEASD OPERATIONS on SW. (Jones, England, via SCDXers)

CAPE VERDE IS.—R. Barlavento, CR4AC, 3.960, S. Vicente, hrd in Sweden s-off 2400 44444. (MALMO DX-aren)

CEYLON—R. Ceylon, 9.520, Colombo, hrd w-Commercial Serv., featuring birthday greetings 1600. (ISWL) Operates to Asia on 11.770 at 1100-1730, parallel 7.190. (Legge, Va., via WRHB)

CHATHAM IS.—Of much interest to low-band enthusiasts, Cushen, N.Z., rpts news service to islanders has been hrd on 2.196 at 2100; Chatham Is. Time is 12¾ hrs ahead of GMT. (SCDXers)

CHILE—The Sp-spkr rptd to R. Australia w-QRM from R. Prague on 11.740 and later “suggested” to be COCY, CUBA, is more likely CE1140, Santiago, CHILE, as is ONLY Sp-spkr noted on this spot; COCY has been OFF THE AIR for a yr or so, and CE1140 MOVED back to 11.740 several months ago after using 11.755 for a while. (Niblack, Ind.)

CHINA—Stn logged 1215 in oriental lingo on 11.300 (V to 11.330) is probably R. Peking. (Black, Pa.) R. Peking, 15.095A, hrd w-ENG. 1200-1300; s-off 1330; gud level in Mo. (Boggs) Parallel 11.820 also hrd in W. Va. (Sisler) Hrd on 15.250



Listening to a special program in Swedish from ORU, Brussels, Belgium and dedicated to the GOTHENBURG DX-CLUB, of which he is secretary and editor, (at left) is Ture Olsson. Formerly a fireman on Swedish ships (1925-1944), Ture is now a railway official of the Swedish State Railway. Many special SWDX broadcasts have been arranged by the GDXC and special QSL cards have been furnished.

at 0510 w-E-N by man; S-4. (Rowell, Minn.) Noted on 6.125 arnd 2230-2258 s-off w-march. (Boice, Berg, Conn.)

COLOMBIA—NEW Colombian, 6.118A, hrd 0330 w-ID for "Radio El Sol, Cali"; QRM mess—includes R. Nacional, Quezaltenango, GUATEMALA (s-off 0400); HILZ, C. Trujillo, DOMINICAN REP. (s-off 0430); also QRM'd at times by a Brazilian! Colombian hrd c-d 0500A. (Stark, Texas; Niblack, Ind.; others) Hrd in Britain s-off 0600A. (ISWL)

CONGO REP.—Brazzaville, 9.545, hrd ending ENG. 2000. (ISWL) R. Congo, Brazzaville is now ON THE AIR w-EXPERIMENTAL xmsns DAILY 1700-2100 (SAT.-SUN. 2200) on 4.843, 3 kW. R. Brazzaville, 21.500, parallel 17.720, both vy strg w-E-N 1430; N-Fr. 1500; again audible on 15.445 channel 0830 w-E-N to Pacific. (Balbi, Calif.)

CUBA—R. Rebelde, 9.200, hrd 0442-0500. (Cardwell, Texas, via AMSWLC)

CZECHOSLOVAKIA—R. Prague, 9.550, noted 0522 w-ENG. talk; OLR3A. (Whitaker, Ind.) Hrd on 7.338A before 2400 in Czech; 0000 resumes Sp. "Para America Latina": gud sig but had light QRM frm CHU. (Mast, N.Y.) Noted 1930 w-N-E, mx. (Crago, Pa.)

DAHOMY — R. Cotonou, 4.870, hrd s-on (SAT.) 0530 w-Fr., native prgms. (Saylor, Va.) Observed in Minn. 2240, S-4, mx, Fr. and dialects. (Rowell)

DOMINICAN REP.—R. Santiago, 6.300, on recent TUE. hrd 0000-0030 w"Hit Parade" of U.S. pop dance numbers w-annmnts in ENG. and Sp.; regular feature? (Boice, Conn.)

DUTCH NEW GUINEA—R.O.N.G., Bosnek, Biak, recently was "down" to 6.071 at 1030 w-clock session; ID in Dutch by man; fair sig but better later; drifted "up" to 6.072.5. (Cox, Dela.) Noted in Va. 0930-1000 w-island-type mx. (Saylor) Hrd w-religious release SUN. 0930A, directly after s-on. (KBLP) Hrd parallel on 3.375 frm 0900 to s-off 1330 in Dutch, Indonesia. (Cushen, N.Z. via SCDXers)

ECUADOR—R. Catolico, 5.010, hrd 1035-1058 w-mx. (Metro, Pa., via AMSWLC) Rdf. Ondas de

Volante, LISTED at Azogues, 6.138, s-off 0300V. (Stark, Texas)

EGYPT (UAR)—R. Cairo, 17.690, hrd w-Hausa 1700-1800, ENG. 1800-1830, then native-type mx. (Rowell, Minn.) Powerful level on 15.430 to 0300 s-off, beamed to Algiers in Ar. recentlv: normal s-off 2330A. (Balbi, Calif.)

EIRE—EIP, Shannon Aeradio, occasionally hrd well frm abt 0400-0800 on 3.001; also parallel on 5.559, 8.828.5; shares channel w-N.Y. Aeradio and Gander (Canada) Aeradio; these stns operate in sequence, "taking turns." (Holbrook, Md.)

EL SALVADOR—YSS, 9.555, San Salvador, noted in Sp. 0154-0203. (Cardwell, Texas, via AMSWLC)

ENGLAND—MSF, 2.500, Std, Fq and Time Sig Stn at Teddington, logged 0347 during hrly break by WWV. (Stanbury, Ont., Canada)

FINLAND—ENG. prgms arranged by Finlands DX-Club are now on SUMMER sked to N. Am.—DX Prgm ("Around the World"), 2030-2100 FIRST and THIRD FRI.; all other FRI. features "Musical Mailbag"; "Finlandia Mixture" is aired each MON. 2230-2300; fqs are 15.190, 17.800; Eu. xmsn remains UNCHANGED. (Tor-Henrik Ekblom, DX Editor) OIX4, 15.190, Helsinki, hrd w-lang 1345; two QSLs rcd recently. (Backus, Va.) Noted s-off 1830 on a SUN. after session of pop mx. (Niblack, Ind.)

FRANCE—Paris-Inter has LEFT 6.200, probably to avoid QRM frm Scandinavian xmsns of R. Moscow there, in favor of 6.175A; xmsns in Ar. frm Paris 1300-1600 have been MOVED frm 6.175 to 6.200. DAILY prgms to L. Am. are radiated in Pt. 2245-2300, Sp. 0030-0100, 11.700, 77.845. (Murnby, Ohio, and RTF, via SCDXers) NEW RTF sked includes ENG. 0745-0800, Fr. Lessons on 7.160 DAILY EXCEPT SUN.; 1400-1500 SAT., SUN. on 7.240. (SCDXers) Paris hrd recently on 20.760 at 1800 w-NBC nx; anned as French Telecommunications System. (Freeland, Kans., via AMSWLC)

FR. GUIANA—R. Cayenne, 6.170, is sked 1015-1115 (SUN. 1100-1400), 1645-1745 (SAT., SUN. 1639-1800), 2230-0100. (Brown, Scotland, via ISWC)

GABON—R. Gabon, 4.775, Libreville, hrd in Finland to 2100 s-off wkdays (2200 SAT.). (Finlands DX-Club) Hrd on 5.040 at 2300 w-mx, Fr.; s-off similar to Brazzaville; S-5 in Minn. (Rowell)

GERMANY (EAST—G.D.R.)—R. Berlin-International, 9.730, hrd DAILY w-ENG. 2200; asks for rpts. (Backus, Va.) Hrd in Sweden 1705. (MALMO DX-aren) Hrd on 11.765 in Ar. 0430-0500 fair-gud sig. (John, Margie Gibson, Calif.)

GERMANY (WEST—FED. REP.)—DW, Cologne, provides excellent rptn on 11.795, 9.640 arnd 2330, starting w-nx-Ger., followed by mx, discussion on politics, newspaper opinion, and so on; N-E 0030; off 0245 w-Ger. Nat. Anth.; also excellent on 11.795, 11.945 at 0300-0615 w-similar b-c; on 21.650, 15.275, 11.795 at 0700-1015, and on 15.405, 11.795 at 1600-1915. (Schwarz, N.Y.) DW as greatly expanded its xmsns; TEST b-c are listed to Japan 0800-0930, 17.815, 21.735; Far East 1000-1130. 15.405, 17.845, 21.650; Near East 1345-1515, 15.405, 17.815; Af. 1530-1700, 15.375, 17.845; W. Af. 1730-1900, 15.275, 17.875; S. Am. 2030-2200, 11.795, 15.375; ECNA 2215-2345, 11.795, 15.375; Middle Am. 0000-0130, 11.905, 9.607; WCNA 0500-0630, 11.945, 9.735; includes

N-E (also N-Fr. in some xmsns); Ger. Lesson. (Balbi, Calif., DW, others)

GREECE—FBS, 7.950, Kozani, hrd in Sweden 1830 w-rcdgs. (MALMO DX-aren) FBS, 7.090, Jannina, hrd in Greek mx when tuned 0530-0600. (Saylor, Va.) R. Athens, 11.718, opens 1815 w-Greek beamed to Cyprus. (ISWL) Has ENG. DAILY 1730-1740 on 15.345, 17.778. (Plunkett, Ireland, via ISWC) The 17.778 outlet has been quite readable lately during this xmsn. (Niblack, Ind.)

GREENLAND—Angmagasalik, 5.570, hrd in Sweden 1415, QSA-2-3. (SRK)

GUATEMALA—TGNA, 5.952A, dual TGNB, 9.668, hrd 0300-0400 w-religious release in ENG. (Hovey, Wisc.) R. Nuevo Mundo, 5.990, noted in Oklahoma 0345-0530 w-football game, followed by mx. (Stephenson) Hrd 0030 w-clear ID after commercials for "Coca Cola," "Blue Spark." (Young, England)

GUINEA REP.—R. Nacional, 4.910, Conakr—s on 0700 w-Fr., native prgms; N-Fr. 0730. (Saylor, Va.)

HAITI—NEW SPRING and SUMMER sked for 4VEC, 6.002, 4VWI, 9.773, 4VEH, 6.100 (the NEW 2.5-kW xmtr which should be on regular sked by now or soon), Box 1, Cap Haitien, Haiti, as given on "Bulletin Board" recently includes "morning" prgm 0930-1100 ENG.; 1100-1130 Fr.; 1130-1230 Sp.; 1230-1400 (SAT. to 1430) ENG. "Noon" b-c remain unchanged. "Evening" DAILY b-c has MANY CHANGES—SUN. 1800-1900 Sp., 1900-2100 Fr., 2100-2400 ENG.; 0000-0100 (MON.) Fr. and Creole; 0100-0200 Sp.; 0200-0230 organ mx; 0230-0300 Russian; 0300-0430 (c-d) ENG. WEEKDAY "evening" b-c 2245-2400 ENG. (EXCEPT WED., THUR.); 0000-0100 Fr. and Creole (WED., MON. will continue 0100-0200 w-Sp.); 0200-0300 Russian; 0300-0430 (TUE., SUN. ONLY) ENG. THUR. is "SILENT DAY" and WED. is "SILENT EVENING" at 4VEH. Many changes in programming have been made; PRINTED SKED WILL BE MAILED TO LISTENERS ON REQUEST, acdgd to M.E. (Mardy) Picazo, Stn Mgr and Chief Engineer. WANTS DETAILED RECEPTION RPTS, ESPECIALLY ON 4VEH, 6.100. West, N.J., says 4VEH will observe its 10th Anniversary come June. Its weekly DX program ("DX-er's Corner") is the ONLY SWL DX information program b-c frm a stn in the Western Hemisphere! At latest check, DX prgm was sked TUE. 0245, WED. 1045. H. Haiti, 6.200, Port-au-Prince, hrd by John, Margie Gibson, Calif., w-Fr. to 0400 s-off.

HONDURAS—HRB9, Tegucigalpa, hrd on abt 2.782 w-CW; sometimes sends marker xmsn—repeating call over and over; 2.5 kW; veries thru Tropical Radio Telegraph Co., La Lima. (Holbrook, Mo.)

HONG KONG—R. Hong Kong has been hrd in Sweden TESTING 2300 on 3.940. (Akerback via SCDXers)

HUNGARY—R. Budapest, 9.833, hrd in N. Am. Serv. 0345-0430, gud sig first 30 min with some CWQRM; sig weakens after that in Wash. State. (Oestreich) Hrd on 9.833, 11.910 at 0000 w-N-E followed by various features, including "Calling Radio Amateurs" 0045. (Hovey, Wisc.) Hrd open on 11.910 at 0515 in Ar. session; ID, "Huna Budapest." (Rowell, Minn.)

ICELAND—Iceland State Broadcasting Service, Reykjavik, informs: "Our 7-kW SW stn TFJ broadcasts in ICELANDIC every day on 12.175 frm 2100-2200, and on Sun. also frm 1315 to 1415. These broadcasts are intended for Icelanders abroad, and can usually be heard in most of N. Europe. Reception reports (accompanied by an IRC, please) are verified with a QSL-card." QRA: Ríkisutvarpid, Iceland State Radio, Reykjavik, Iceland. (Roth, Conn.)

INDIA—Direct to DXH from AIR, New Delhi, come these current skeds for the External Services (effective to 5-28-60): SE ASIA — 2315-0015, 9.530, 15.300, 17.725; 0015-0115, 15.300, 17.705, 21.700; 1115-1130, 17.815, 21.600; 1330-1430, 17.705, 21.605. BURMA, MALAYA—0030-0050, 15.280, 17.820; 1115-1215, 17.705, 21.650. AUSTRALIA, N.Z.—1000-1100, 17.785, 21.690. INDONESIA — 2245-2300, 11.710, 15.105; 1215-1315, 17.785, 21.650. CHINA — 1000-1100, 15.105, 17.705, 21.605; 1145-1315, 11.760, 15.320. NE ASIA (KOREA, JAPAN) — 1000-1100, 15.105, 17.705, 21.605. E. AF.—0300-0415, 17.810, 21.620; 1745-1845, 11.770, 17.795, 21.620; 0415-0430, 17.810, 21.700; 0430-0440, 17.810, 21.620; 1545-1555, 15.255, 17.840; 1555-1630, 15.225, 17.840; 1630-1715, 15.270, 17.840; 1715-1800, 15.270. W. AF.—1945-2045, 15.180, 17.790. UK and W. EU.—1945-2045, 9.590, 11.710. PORTUGAL and W. EU.—1900-1930, 11.710, 15.225. W. ASIA—1845-1930, 11.890, 15.105; 0500-0530, 17.705, 21.710; 1730-1830, 11.890, 15.105. PERSIA—0315-0400, 15.105, 17.735; 1015-1115 (EXCEPT SAT.). 11.710, 15.260. AFGHANISTAN — 0245-0300, 7.185, 9.555; 1445-1530, 7.245. SIKKIM, BHUTAN, and TIBETAN-SPEAKING AREAS IN INDIA—1245-1315, 15.105; 1230-1315, 12.020. EXPERIMENTAL SERV. TO SE ASIA — 1130-1230, 15.285. (S. M. Muzumdar, AIR) AIR, 21.570, Delhi, hrd w-ENG. 1315, then went into lang. (Backus, Va.) AIR, 6.150, Bombay, hrd in England 0100. (ISWL) Bombay, 9.550, hrd in Wash. State 1510-1550 in native dialect. (Palmer) VUM, 4.920, Madras, hrd w-ENG. 1430. (SRK) Gauhati, 4.775, Rauchi, 4.850, Lucknow, 4.880, all noted in Sweden averaging QSA2-3 arnd 1600. (SRK) Simla, 4.860, noted in Finland 1530 w-N-E. (Ekblom)

INDONESIA—YDR2, 7.139, Ambon, fair, clear sig 0955 w-Indonesian instru and choral mx; native ID 1000. (Cox, Dela.) YDF8, 9.865, hrd in ENG. 1900-2000. (ISWL) Hrd on 9.595A at 1400-1530, mx, E-N 1447. (Rowell, Minn.) YDO2, 5.970, Bandjarmasin, hrd in Indonesia 1335, fair level; YDS2, 5.993, Menado, Celebes, hrd in native 1330-1400 fade-out. (Saylor, Va.)

INNER MONGOLIA—Oriental stn noted lately frm 2300 on 6.975 may be LISTED Huehot outlet. (Cox, Dela.)

IRAN—During Ramadan, R. Tamriz was noted frm before 0030 to arnd 0400 in Ar. on 6.152. (Berg, Conn.)

IRAQ—R. Baghdad, 3.297, hrd in Sweden 1715 w-Ar. mx. (MALMO GDx-aren) Hrd w-Eastern mx to 1300, then nx-Persian. (SRK)

ISRAEL—Tel Aviv, 9.009, noted in Yiddish 2000. (Saylor, Va.; Sanderson, Australia)

ITALY—RAI, 3.995, Rome, gud sig 2215 w-operatic mx, usual ham QRM. (Cox, Dela.) RAI noted to WCNA 0305-0325, 9.575, 11.905A; rpts to Italian Broadcasting & Television System, Box

320, Rome. (McGloin, Calif., via ISWC) Hrd to ECNA opening 0030 on 11.905A w-ID. then N-E; goes into mx b-c in Fr. 0050. (Hovey, Wisc.)

IVORY COAST—R. Abidjan, 4.940, s-on w-“L. M.” 0630, Fr. prgm; N-Fr. 0700. (Saylor, Va.) Hrd to 2330 s-off. (ISWL) Closes w-“L. M.” (Young, England)

JAPAN—FEN, 3.800, Tokyo, AFRTS, hrd 1045 and also noted s-off 1805. (Cushen, N.Z.) Hrd in Indiana on 15.257 w-pop rcdgs and frequent time checks frm 2245; gud level. (Niblack) R. Japan has just increased its transmissions and programming; sked reads: S. ASIAN SERV.—1500-1630, 11.965, 15.325. M. EAST SERV. — 1645-1845, 11.705, 15.325, 9.675. EU. SERV. II—1900-2100, 11.705, 15.325, 9.675. N. AM. SERV. (ECNA)—0030-0130, 17.855, 15.325. L. AM. SERV. I—0300-0400, 17.855, 15.325. N. AM. (WCNA) and HAWAIIAN SERV.—0500-0700, 11.705, 15.325, 17.825. EU. SERV. I—0730-0830, 17.855, 21.620. L. AM. SERV. II—0900-1030, 11.705, 9.525. AUSTRALIAN and N.Z. SERV.—0930-1030, 11.800, 15.235. E. ASIAN SERV.—1000-1230, 11.940. ASIAN CONTINENT SERV.—1045-1245, 11.705, 9.525. PHILIPPINE and INDONESIAN SERV.—1130-1300, 17.855, 15.325. KOREAN SERV.—1300-1400, 9.525. SE ASIAN SERV.—1300-1600, 11.705, 9.675. GENERAL ASIAN SERV.—0000-0030, 0200-0230, 0400-0430, 0600-0700, 0800-0830, 0900-0930, 1000-1030, 1100-1130, 1200-1230, 1300-1400, 15.135. (R. Japan via Boice, Conn., others)

JORDAN—Amman, 6.020, hrd 1740-1745 w-“River Kwai March” and Ar.-type folk mx; QSA4-2; ID, “Huna Amman.” (SRK) Hrd s-on in Ar. 0700 at fair level but in hvy QRM. (Saylor, Va.) Will soon be b-c w-100 kW xmtr on 9.530. (Parker, England, via SCDXers)

KASHMIR—R. Kashmir, 4.760, Srinagar, hrd in Finland relaying N-E frm AIR 1530.

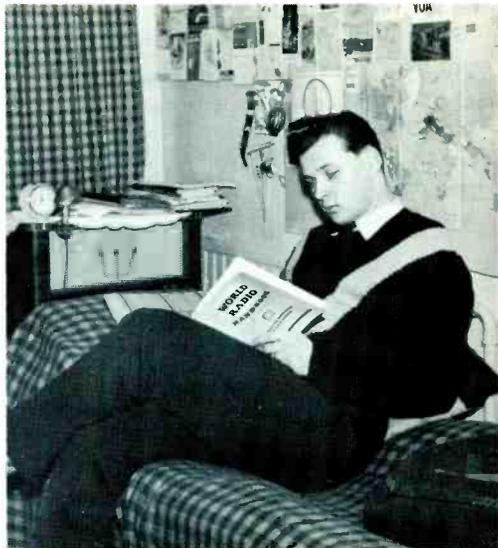
KENYA—Kisumu, 4.804, hrd in Dela. frm 0350 w-native vocal and instru mx; “out” by 0410. (Cox) Noted in Sweden QSA-3 at 1800. (SRK) Nairobi, 4.885, audible on a MON. 0330-0350 when Ondas Populares s-off 0330. (Roth, Conn.)

KOREA (N.)—R. Pyongyang, 6.249, fair 0943 w-oriental instru mx; woman in lingo; 6.195 outlet strg them, but w-separate prgm in lang. The 6.249 outlet noted str w-E-N and commentary 1100-1130 MON., FRI. ONLY; series of chimes 1100; thanks to Phil Finkle, Taiwan, for tip! (Balbi, Calif.) Sent rpt to Pyongyang via R. Prague—but reply came direct. (Berg, Conn.)

KOREA (S.)—KBS, Seoul, hrd 1400-1500 w-ENG. to SE Asia on 15.410, parallel 9.640; fair level. (Boggs, Mo.) KBS has REPLACED 11.740 w-HLK6, 11.925, at 1600-1700; fair sig in Calif., some QRM. (Balbi)

KUWAIT—R. Kuwait, 4.967, hrd in Sweden arnd 1700. (MALMO GDX-aren)

LIBERIA—More recently, ELWA was hrd on 15.180M (INSTEAD of 15.200A) at 2345 tuning in WEEKLY N. Am. b-c on a TUE.; religious-type programming. (Niblack, Ind.) The 13-m. band outlet is now 21.535 rather than LISTED 21.515; parallels the 19-m. outlet in N. Am. WEEKLY beam TUE. 2300-0045, and (WED.) 0100-0245 parallels 11.986. (Balbi, Calif.) Has been “holding” to 11.825 lately to 1932 s-off. (Niblack, Ind.) The 4.770 channel s-on 0640 w-devotional prgm; 0700 BBC N-3; 0715 Home News, then religious release 0720. (Saylor, Va.)



Consulting the WORLD RADIO HANDBOOK, this young man is Tor-Henrik Ekblom, DX-Editor, FINLANDS DX-CLUB, Helsinki, Finland. The FDXC arranges all ENGLISH broadcasts over the Helsinki SW station (see “THE WORLD AT A TWIRL” Section for schedules), and also sends out QSL-cards for the station.

LIBYA—FBS, 3.304, Benghazi, hrd s-on 0500-0600 s-off w-all-Ar. prgm. Hrd on 9.895 w-Ar. 2100, fair level. (Saylor, Va.)

LUXEMBOURG—R. Luxembourg, 6.090, hrd 0542-0555, devotional services in Ger., ID 0544, then went into Fr. (Rowell, Minn.) Good sig in Calif. frm arnd 0630 w-pop mx. (John, Margie Gibson)

MARTINIQUE—R. Martinique hrd on 2.420A w-gud sig, s-off arnd 0215. (Holbrook, Md.)

MEXICO—XEWWW, Mexico City, noted MOVED frm 6.165 to 6.200A; hrd 0400. (Niblack, Ind.) Permanent location?

MONACO—Trans-World Radio (former “Voice of Tangier,” Morocco) will GO ON THE AIR IN JUNE over new missionary stn (projected at 100 kW—Ed.) in Monte Carlo; 12 languages planned. (Buettner, Germany, via ISWC) R. Monte Carlo, 6.037A, hrd w-pop tunes frm 0645 tune-in. (John, Margie Gibson, Calif.)

MOROCCO—Network II, 7.226M, Rabat, fair 2240 w-pop and Fr. tunes; some JAMMING—QRM frm 7.225; 2250 woman read N.Fr.; after interval of piano mx 2258-2300, went into Sp., starting w-nx by man; power probably is AT LEAST 25 kW. (Cox, Dela.) Hrd s-on 0645 in ENG., Fr., strg but severly QRM'd by hams most of time. (Balbi, Calif.) “Huna Rabat, R. Maro-caine,” 7.115, hrd s-on 2100, off 0300; all-Ar. (Boice, Berg, Conn.) (That sked may have been an “extended” one during Ramadan.—Ed.) CNR, 5.968, Eebaa-Aioun (Rabat), hrd in France w-Fr. annmcs, classical mx 0730. (CARM) NHY, 2.220A, Port Lyautey, logged on CW 0429-0045 w-marker; fair sig in Md. (Holbrook)

MOZAMBIQUE—R. Clube de Mocambique, Lourenco Marques, has Fr. TUE., FRI. 1800-1900 on 15.152A; other days Pt. (Plunkett, Ireland, via ISWC) CR7BU, 4.924, hrd 2015 w-Bible Hour,

mx, and commercials. (Sanderson, Australia) Pt. network noted on this outlet frn 1800 w-dance mx. (ISWL)

NEW ZEALAND—ZL4, 15.280, Wellington, nice sig 0230 w-pop rcdgs. (Backus, Va.)

NICARAGUA—Radiobeam PZA, 1.662, Puerto Cabezas, 250 w., rcd well most "evenings" and "mornings" (EST); send rpts to Chief Operator, Nicaraguan Airlines, Puerto Cabezas Aerodrome, Puerto Cabezas. (Holbrook, Md.)

NIGER—R. Niger, 5.020, Niamey, s-on 0500-01615 w-Fr. and native prgms; native mx 0530; n-Fr. 0600 (Saylor, Va.)

NIGERIA—The NEW stn at Ibadan is now on FULL SKED—MON.-FRI. 0530-2200, SAT. 0530-2230, SUN. 0630-2200 on 6.050, 6.100, 3.380; ENG. (Taylor, England, via ISWC) Lagos, 9.535, hrd 0700 w-N-E (TRY AFTER BERNE, SWITZERLAND, LEAVES CHANNEL). (Saylor, Va.) Hrd 0600-0645 w-N-E, dance mx. (ISWL) Noted s-on over 4.990 outlet 0455 w-"talking" drums; prgm preview, N-E; 0640 Moslem chanting. (Rowell, Minn.) Kaduna, 3.326, s-on 0510 w-trumpet IS, ENG. anncnt, then native; E-N 0600, 0700. (Saylor, Va.) QSL frn Kaduna was accompanied by note: "We do not accept IRCs as we arrange to post cards on our own account." (Berg, Conn.)

NORWAY—The University Students' Radio, UKE, Trondheim, in 1959 rcd 47 rpts frn Sweden (one of them for 1,484 kc MW outlet), 9 rpts from Norway, 4 frn Finland, 2 frn Holland, and 1 frn Denmark, England, Brazil, Japan, New Zealand. Due to illness of K. Roiseng, QSL-cds were not sent out until the end of Jan. STUDENT WEEK 1960 (NOV.) will be frn Oslo and will be frn Trondheim again in 1961. Xmtr was built last autumn by members of the Academic Radio Club (RC) in Trondheim in cooperation with students from the Technical High School; the ARC began in 1923, and in 1927 received LAIK—among the oldest in Norway. Members of the xmtr's technical staff must all have an amateur license. Mr. Roiseng was gratified w-rpts. (Ture Olsson, GDXC)

OUTER MONGOLIA — Ulan Bator hrd on 10.375 at 2320; weak, w-QRM; chanting, typical Asian mx. (Freeland, Kans., via AMSWLC) Sked 2300-0200, 0800-1000, 6.345, 10.375, 15 kW. (SCDXers) The Mongolian Radio is to increase programming to include a F. Serv. in ENG., Fr. other languages—in addition to Russian, Chinese, which are already aired. (Miller, Finland, via SCDXers)

PAKISTAN—R. Pakistan, 15.275, Karachi, hrd w-N-E 1530-1545 in GOS; gud level in Mo. (Boggs) Hrd in H. Serv. on 21.500 w-N-E 1200. (SRK) Excellent on 11.674 in Conn. 1815-1900 in beam to Turkey. (Berg) APK, 21.690, Karachi, noted 2045 w-dictation-speed nx in Far Eastern Serv.; hrd on 7.010 at 1930 w-N-E and commentary to UK. (Sanderson, Australia) Parallel channel in this xmsn is now 9.505. (SCDXers, others)

PERU—R. La Cronica, 9.520, noted 0535 w-Peruvian-type mx, Sp. anncmts. (Rowell, Minn.) R. Loretta, 9.525, hrd to 0500 but w-severe JAMMING on channel. (Cushen, N.Z.) "R. Nacional del Peru," OAX4T, 15.153A, Lima, carries OVERSEAS SERV. w-ENG. 2100, Fr. 2115, Ger. 2130, Sp. 2145 on MON., WED., FRI. (Brown, Scotland, via ISWC)

PHILIPPINES—FEBC, 6.030, Manila, faded thru recently 0950 w-man preaching in ENG.; 3.345 outlet hrd about a half-hr later. (Cox, Dela.) DZH7, 9.730, hrd 1705 s-off when gives complete list of call signs and fqs for FEBC. (Palmer, Wash. State) DXCA, 3.305, hrd 1200 w-band concert; DXI8, 21.515, noted 0830 w-religious b-c. DCXD, 6.000, hrd 1200 w-band concert and nx. (Sanderson, Australia)

PITCAIRN IS.—Perhaps it's because it's spring—but once again "stories" are afloat about "possible broadcasts" from "The Home of the Mutineers of the H.M.S. BOUNTY." Overseas "sources" say that, accdg to a colored picture cd, operates on 14.324. And that fqs now in use by VR6AC are 14.100, 14.200, 14.324. ANY CONFIRMATION, PLEASE?—Ed.

POLAND—R. Warsaw has ENG. to Eu. 1830-1900, 9.540; 1930-2000, 7.125, 5.950, 1,205 kc.; 2030-2100, 7.315, 9.775; 2130-2200, 9.540, 9.590. And to N. Am. 1130-1200, 1230-1330, 17.800, 15.275, 15.120; 0030-0130, 0230-0330, 15.275, 11.815, 7.315. (Cooper, S.C.) Hrd 0100 on 7.308A asking for rpts (ENG.); organ mx (pops); good strg but w-hvy CWQRM; news of sort 0115; world N-E 0117; N-E frn Poland 0125; when concluded ENG. 0128, ID, "This is the Polish Radio, Warsaw, 'Voice of Peace and Friendship.'" Gave QRA as Polish Radio, English Language Transmission to North America, Warsaw, Poland; 0130, after few bars of mx, cont'd in Polish. (Mast, N.Y.)

PORTUGAL—QSL cd just in frn R. Clube Portugues, CSB51, 6.080, Parede, LISTS power as 500 w.—but is believed to be running 10 kW now (see WRH60). (Berg, Conn.)

RHODESIA — FBS, 3.396, Salisbury, hrd frn 0448 tun-in w-variety mx, man in ENG.; sig just "on way out"; slightly better on 4.911 but w-more QRM there. (Cox, Dela.) Salisbury, 6.018, noted 2015 w-Commercial Serv. in nx, mx. (Sanderson, Australia)

ROUMANIA — R. Bucharest, 9.254, noted in Sweden w-violin mx arnd 1800; hrd on 6.210 at 2030 in Fr. (MALMO DX-aren) Bucharest strg level in N.Z. on 5.980 w-ENG. 0430; on 4th FRI. of month has NEW Amateur Prgm. (Cushen)

SARAWAK—SBS, 4.835, Kuching, tuned weakly 1030 w-Chinese mx, lang. (Cox, Dela.) Accdg to RADX, Kuching has been TESTING on 4.820 at 1100-1430 in ENG., Malay, Chinese, Tamil.

SENEGAL (FR. W. AF.) — R. Mauritanie, 4.855, S. Louis, is sked 0700-0800, 1930-2315; on 9.610 at 1215-1330. (Buettner, Germany; Brown, Scotland, via ISWC) N-Fr. 2035, then in Ar. (CARM) Late rpt from Saylor, Va., says hrd s-on 0700 w-Fr. and native prgm. He rpts R. Senegal, 4.893, Dakar, arnd same time w-Fr., native prgms. R. Mali, 4.950, Dakar, s-on 0630-0800 w-Fr., native prgms.

SIERRA LEONE—Freetown, 3.316, noted w-N-E 0700-0715, then mx. (Saylor, Va.)

SINGAPORE—R. Singapore, rptd TESTING on 4.780 at 1100-1430, wants rpts to Box 1092, Singapore. (Brown, Scotland, via ISWC) This one often RELAYS R. Malaya. (Palmer, Wash. State; Balbi, Calif.) R. Malaya, ZH110, 7.200, hrd 1500-1530 s-off; ZHL7, 7.280, noted 2330. (ISWL) BBCFES, 25.755, hrd 0900 w-nx-Japanese. (ISWL) Hrd closing on 9.690 at 1719 w-"GSTQ." (Palmer, Wash. State)

SOLOMON IS.—VQO2, 5.960, Honiara, noted 0840 w-pop mx; fair level w-QRN. (Saylor, Va.) Good in W. Va. 0900 (DESPITE U.S.A. "POWERHOUSE" ON 5.965!) when relays ABC nx from Australia's Domestic Network; have hrd CBC relay or rebroadcast 1000 over this one. (KBLP) Hrd in Australia 0745 w-mx, N-E 0800. (Sander-son)

SOMALILAND (FR.)—R. Djibouti, 4.780, hrd in France w-classical mx 1745; 1800 nx-native dialect. (CARM)

SPAIN—R. Santander, 7.195, noted w-ID 1520 for "R. Santander Juventud de la Cadena Azul"; R-4-S-6 in France. (CARM) RNE, 11.815, Madrid, excellent level in Sp. xmsn 0100-0300. (Boggs, Mo.) Hrd s-off in ENG. on 7.105 at 2050. (Roth, Conn.) REPLACED 7.100 w-7.105 at 1630-2010; 2020-2200, 7.105 parallels 9.360; 1630-2010 prgms are REPEATED 0300-0710 on 7.105. (Legge, Va., via WRHB)

SUDAN—R. Omdurman, 9.540, hrd frm arnd 0415-0530 lately in Ar. (Saylor, Va.) Sked rcd frm R. Omdurman reads 5.039, 20 kW, 9.600, 7.5 kW, 11.855, 20 kW, w-Ar. 0415-0530 DAILY EXCEPT FRI.; FRI. 0415-1100, and 1430-2100 DAILY; local prgm for Southern Sudan 1400-1430 DAILY, 0800-0900 SUN.; ENG. 1230-1300 DAILY. (Roth, Conn.; Rowell, Minn.) Rowell says the LISTED 9.600 one is actually "hrd" on 9.630.

SUDAN (FR.)—R. Soudan, 4.835A, Bamako, hrd 1820 w-ID; 1830 Fr. (Young, England) NX-Fr. 1835. (CARM) S-on 0630 w-Fr. and native prgms; N-Fr. 0700. (Saylor, Va.)

SURINAM—A.V.R.O.S., Paramaribo, is using 3.395, 4.852, 15.405 frm 0930-0330; now varies w-cd. (Brown, Scotland, via ISWC)

SWITZERLAND—Prgms from the Eu. Office of the UN, Geneva, are sked 1300-1315 (MON. ONLY), HED5, 9.545; 1345-1410 (MON.-FRI.), HED5, 9.545; 1430-1445 (SAT. ONLY), 17.770, 11.905; 1920-1935 (MON.-FRI.), 11.810, 9.575, 6.010. (Since 17.770, 11.905, 11.810, 9.575, 6.010 are fqs assigned to RAI, I assume xmsn listed on these channels are "relayed" by Rome, Italy.—Ed.) Skeds came direct from UN, NYC.

SYRIA (UAR)—R. Damascus, logged on NEW fq of 5.677 arnd 2200. (Young, England)

TIWAN (FORMOSA)—BED35, 15.470, Taipei, hrd at strg level frm 1030 onwards in Chinese to 1640 s-off; "Voice of Free China" on 9.675 hrd arnd 1100, strg, all-Chinese; 9.630 outlet noted 1500-1725 w-all-Chinese prgms, believed H. Serv.; 17.755 Taipei fair in Chinese 1730; 6.095 outlet strg 1400 w-"Little Dragon Show" (ENG.). (Balbi, Calif.) Ham-QRM permitting, BED7, 7.234, often is gud sign in W. Va. 1005 when airs N-E. (KBLP)

TANGANYIKA—Dar-es-Salaam, 4.785, noted on this NEW channel arnd 1800; s-off 1915. (Young, England) In early March, one "night" YVKD, Venezuela, suddenly went off air, and Dar-es-Salaam was logged on 5.050 at 0328 to 0400 fade-out for first time this season. (Thomas, Ohio)

THAILAND—HSK, 4.930, Bangkok, hrd in Thai 1410-1506 tune-out; features typical SE Asian mx, common to Buddhist countries ("temple" mx). (Palmer, Wash. State) R. Bangkok, 15.385, hrd well 1320 w-lang, mx. (Backus, Va.)

TOGO—R. Lome, 5.036, hrd 0635 w-Fr. anncmt; native-type mx; ID, "Ici Lome." (Rowell, Minn.)

TUNIS—Current fq of R. Tunis is 6.104.5, but VARIES to 6.105; checked several days arnd 2200. (Cox, Dela.) Hrd s-on 0500 over 9.630; after Nat. Anth., went into Ar. (Rowell, Minn.) Uses both Fr., Ar. on this channel; QSL's w-fine cd and personal message frm 139, Ave. de Paris, Tunis. (Watson, England, via ISWC)

TURKEY—In DAILY beam to Brt. Isles, W. Eu. from R. Ankara 2100-2145, TAS, 7.285, TAP, 9.745 are currently used (TAS may be REPLACED soon for SUMMER season by TAU, 15.160—Ed.); has MAILBAG and request prgm SUN. 2115. (ISWC) TAT, 9.515, hrd 2323-2400 s-off in beam to N. Am. DAILY. (Hovey, Wisc.) Incidentally, WRH60 lists the following channels for Ankara's F. Serv.: TAN, 6.000; TAM, 7.240; TAP, 9.465 (now on 9.745A—Ed.), TAK, 11.760; TAQ, 15.195; TAD, 17.720 as Ankara 1, 20 kW; and TAL4, 7.140; TAS, 7.285; TAT, 9.515; TAO, 11.880; TAU, 15.160; TAL3, 15.220; TAV, 17.820, and TAX, 21.660 as Ankara 11, 100 kW. Of course, many of these outlets are INACTIVE.

UNION OF S. AF.—SABC's Commercial Serv. (SPRINGBOK RADIO), 4.945, tuned 2120 w-usual prgm of variety mx; weak level in Del. (Cox) SABC, 25.800, excellent in Conn. to 1800 s-off. (Berg) SABC, 4.810, s-on 0430 w-devotional service; N-E 0700 after clock session, when chimes for 7 a.m. S. Af. Time. (Saylor, Va.) Strg in Calif. 0445 tune-in; 3.355 outlet excellent 0405 tuning, commercials. (John, Margie Gibson) Many other SABC outlets have been widely reported this season.—Ed.

URUGUAY—CXA60, 15.385, Montevideo, R. Sarandi, hrd w-mx arnd 2220-2300. (ISWL)

U.S.A.—Anyone who wishes to add police stn varies to his collection should "go after them now," accgd to Holbrook, Md., since such stns will eventually MOVE TO FQS ABOVE 30 mc. Those hrd by Holbrook recently include KQA-383, 1.706, Cincinnati, OHIO, w-strg sig AFTER DARK, varies by ltr, power 500 w.; KEA-31, 2.422, Freehold, NEW JERSEY, 1 kW, rcd well AFTER DARK, varies by ltr; KMA-363, 2.490, San Diego, CALIFORNIA, often rcd well of late, varies by "prepared" cd, 800 w. Holbrook has recent rpts out to KMA-367, 1.730, and KMA-785/786/878, 2.366, Los Angeles, and to KMA-388, 1.698, Bakersfield, CALIFORNIA, and to KCA, 1.682, Concord, NEW HAMPSHIRE, often strg AFTER DARK.

USSR—Kiev, 11.890, noted 0128-0232. (Cardwell, Texas, via AMSWLC) Stalinabad, 7.330, logged in Sweden 1430 w-mx. (MALMO DX-aren) R. Moscow now h-c to N. Am. frm 2300 on 11.890, 11.860, 11.690, 9.760, 9.680, 9.660, 9.620, 9.590, 9.570, 7.180. (Hovey, Wisc.; Sunderstrom, N.J.) Annces sked to UK and Eu. 0700-0730 in 13-, 16-, 19-, 25-, 31-, and 49-m. bands; 1900-2300 in 31-, 41-m. bands. (Sunderstrom) Anatole Kryzhanski, DX Editor, R. Moscow, informs your SW Editor that "DX-Club" is now scheduled (since April 27) to ECNA on SUN. 2350 and MON. 0250, and to WCNA on MON. 0345. Is hrd on the SECOND and THIRD SUNDAYS of each month.

VATICAN—HVJ, 21.515, hrd on a SAT. in ENG. 1600-1615; gud strg but w-hvy QRN. (Mast, (continued on page 38)

SHORTWAVE STATION REPORT

DXing Horizons Salutes . . .

HCJB, Quito, Ecuador

More than a quarter-century of
"Heralding Christ Jesus' Blessings"

For almost 30 years . . . from the heart of the majestic Andean mountains of Ecuador in South America . . . the *pioneer missionary broadcaster of the world*, HCJB . . . *"The Voice of the Andes"* . . . has been *"Heralding Christ Jesus' Blessings"*! HCJB is located just 10 miles south of the line of the equator, at the Ecuadorian capital city of Quito.

The first broadcast over HCJB was aired on Christmas Day 1931. Now, more than a quarter-century later, this SW broadcaster has perhaps the most ambitious program schedule of any radio station in the world. For it presents programs around-the-clock, 24 hours a day! And this is augmented by the fact that from 7 to 10 hours a day, TWO broadcasts go forth from the HCJB studios **SIMULTANEOUSLY . . . serving TWO LANGUAGE GROUPS AT THE SAME TIME.** Currently, HCJB presents programs in *Spanish, ENGLISH, Russian, German, Swedish, French, Quechua, Portuguese, and Ukranian.*

Station officials tell me *"across the mountains, across international boundaries, over the oceans, and even behind the 'Iron Curtain' . . . overcoming all obstacles that man would erect to prevent the entrance of the Gospel Message . . . goes the powerful 'Voice of the Andes' that emanates from our seven transmitters. Our two largest shortwave transmitters operate with 40 kW and 30 kW, respectively. Our medium-wave transmitter operates with 20 kW (soon to be boosted to 50 kW)."*

"During the past 12 months, more than 38,000 letters were received from listeners in every part of the globe, reporting conversions, blessing, and inspiration received from our programs.

"Ours is a missionary organization. For financial support, we depend on friends of nearly all denominations who share with us the burden and the challenge of 'reaching the regions beyond' with radio.



This impressive building at Quito, Ecuador, South America, houses the studios of HCJB, *"The Voice of the Andes."* The first HCJB program was aired on Christmas Day 1931. Today, HCJB radiates programs—2,430 of them monthly in 9 languages—to all corners of the globe, *"reaching the Regions Beyond by radio."*

"The 'official' name of our mission is the WORLD RADIO MISSIONARY FELLOWSHIP, INC. In addition to HCJB, this mission sponsors many other ministries, including:

"1. The RIMMER MEMORIAL HOSPITAL, the first evangelical hospital in Ecuador, located adjacent to the compound of HCJB, serving the rich and the poor, Ecuadorians and missionaries. It is one of the best-equipped hospitals in the entire country.

"2. The EPP MEMORIAL HOSPITAL, located at the gateway of the jungle in the town of Shell Mera, serving the vast jungle area in the Amazon headwaters. The pilots and planes of the MISSIONARY AVIATION FELLOWSHIP cooperate with our hospital in this area, bringing in sick people by air from the most remote jungle fastness.

"3. HOXO, 'The Voice of the Isthmus,' at Panama. This work is carried on as a united effort with the LATIN AMERICAN MISSION. HOXO broadcasts on medium-wave 760 kc, with a power of 5 kW.

"4. The BIBLE INSTITUTE OF THE AIR, which has provided Bible correspondence courses for thousands of national workers and others who wish to study material in Spanish. These courses serve as textbooks at 33 Bible Institutes and Seminaries. Courses have been translated into five other languages.

"5. The RADIO CIRCLE, which constructs and distributes electric, battery, and transistor receivers that are fix-tuned to HCJB. Not only in the Quito area, but in many isolated spots where missionaries can seldom visit, these sets are bringing the Gospel into homes of every type."



The transmitter building of HCJB, "The Voice of the Andes," Quito, Ecuador, South America, is located at Pifo, at an altitude of almost 10,000 feet, in the majestic Andean Mountains. Programs originating in the five studios of HCJB in the Ecuadorian capital are sent to Pifo over a FM link where they are re-transmitted instantaneously to a world-wide audience. HCJB's transmitters include two that are the MOST POWERFUL in Ecuador, designed and built in that country by HCJB's own Engineers and Ecuadorian technicians.

Fifteen miles east of Quito is the small town of Pifo where the HCJB transmitters are located. Programs originating from the five studios of HCJB in Quito are sent to the Pifo transmitters over a FM link where they are re-transmitted instantaneously to a world-wide audience.

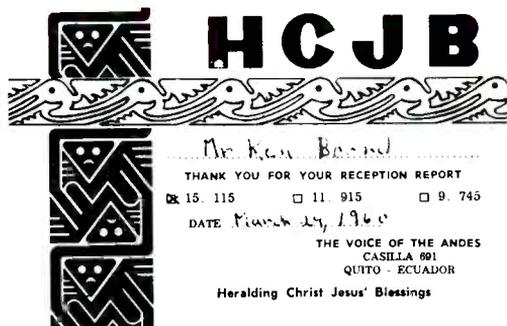
There are five transmitters at Pifo. One operates with 20 kW on medium-wave (soon to be boosted to 50 kW); another is a 70-kW dual transmitter for shortwave. HCJB also has three 1-kW transmitters for short- and medium-wave operation.

The first two transmitters cited are the MOST POWERFUL transmitters in Ecuador, and were designed and built in that country by HCJB's own engineers and Ecuadorian technicians.

The 70-kW DUAL transmitter is ACTUALLY TWO-IN-ONE—since it has TWO INDEPENDENT RADIO-FREQUENCY UNITS which are modulated on two different frequencies with powers of 40 kW and 30 kW, respectively.

HCJB operates around-the-clock—seven days a week—on several of these frequencies—17.890, 15.115, 9.745, 6.050, 700 kc (HOXO, Panama, is on 760 kc.)

The antenna system consists of nine steel towers which support eight curtain-beam arrays. The tallest tower also services as the medium-wave antenna. All are fed with overhead, open-wire transmission lines. One interesting feature of the location of HCJB is that it is almost in the middle of a Great Circle line between Australia and Europe; therefore,



This attractive QSL card—sent out by HCJB, "The Voice of the Andes," Casilla 691, Quito, Ecuador, South America, bears a tribal design of the ancient Inca Indians who populated Ecuador, Peru, and Bolivia centuries ago. Listeners' reports are requested by HCJB and are studied carefully by the station's engineering staff. If requested, reports are answered by a QSL card; otherwise, reports are answered by letter.

HCJB uses only one array for both of these areas. By reversing the directors and reflectors, HCJB signals are beamed to either the Southwest Pacific or to Europe.

All the electric power consumed at the HCJB transmitting installations in Pifo is presently generated by HCJB's own diesel plant which includes four diesels with a combined full-load power capacity of 725 kW. In the near future, HCJB engineers plan to install a hydro-electric plant in the nearby mountains, thus saving a tremendous sum of money that is now spent yearly for diesel fuel to keep HCJB on the air.

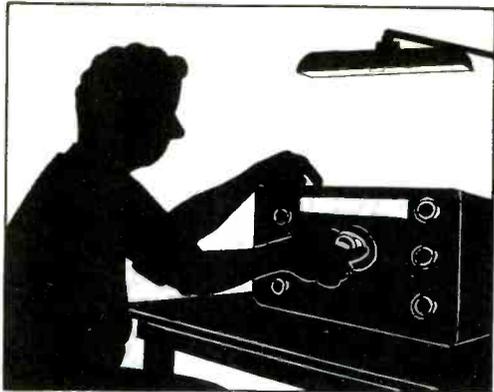
Future plans for HCJB include a transmitter to operate in the 13-m. band.

Listeners' reports are wanted by HCJB and are studied carefully by the station's engineering staff. Please make your reports COMPLETE AND AS DETAILED AS POSSIBLE and give information that will be helpful to the station's engineers. If requested, reports are answered by a QSL card; in other cases, reports are answered by letter. QRA is HCJB, Casilla 691, Quito, Ecuador, South America.

Officials of the WORLD RADIO MISSIONARY FELLOWSHIP, INC., include Dr. Clarence W. Jones, president; Robert Savage, vice-president; Abe Van Der Puy, treasurer and Joseph Springer, secretary.

Yes, since 1931, "The Voice of the Andes," HCJB, has been "reaching the Regions Beyond by radio" with 2,430 programs monthly in 9 languages. May it long continue its WORK OF SERVICE in "Heralding Christ Jesus' Blessings"!—KEN BOORD

SHORTWAVE PROFILE



Mr. Paul B. Silver
Woodbridge, New Jersey, U.S.A.

How long has it been since YOU visited the six continents of the world? Or were on the scene at major disasters? Or followed the docking of a great ship or the landing of huge airliners?

Paul B. Silver, 547 Olive Place, Woodbridge, New Jersey, does all these things practically every day. Furthermore, *he does it the easy way—right at home via that wonderful medium—you guessed it?—shortwave radio.*

An amateur radio operator since 1912—years before the days when licenses were even thought of for such activities—Mr. Silver today keeps a careful ear tuned to his three radio sets for hours at a time, participating in the comfort of his radio den in a large portion of the adventure and excitement taking place in all corners of the world.

His radio hobby has kept pace with the vast strides made in the field of communication. When he started in this field back in 1912, dots and dashes were the standard means of transmission and the senders and receivers were all on the surface of the earth. Over the years, the dots and dashes were replaced by voice transmission and the transmission points no longer were restricted to the earth's surface. Aviation had added a new dimension to mankind's communication system!

Still later, aviation itself was dwarfed by a new era of adventure and today Mr. Silver finds himself on occasion setting the dials and adjusting his equipment so he can pick up the transmission from those new travelers—space satellites. That is truly a far cry from 1912 when Mr. Silver tapped out dots and dashes—hoping that his signal might be picked up and



TUNING IN ON ADVENTURE—The four corners of the earth are at the fingertips of Paul B. Silver, Woodbridge, N.J., radio hobbyist for almost a half-century, as he adjusts the dials of one of his three receivers. Very little of the world's major events or even the day-to-day routines escape the monitoring of Mr. Silver, for whom excitement and adventure anywhere can be shared in the comfort of his radio den!

answered by another operator who probably would be only a few miles away.

A member of the early *Short Wave League of America*, over the years Mr. Silver has "visited" by radio in all of the earth's six continents. In 1935, he made news by being the first radio amateur to "come aboard" a "China Clipper" airliner via airwaves while it was flying far out over the Pacific. That even was so unusual for that time that the acknowledgement of the radio contact plus pictures of the plane and its crew became a framed trophy addition to his radio den.

Mr. Silver holds a **VERIFIED ALL CONTINENTS** certificate from **CERNBACK PUBLICATIONS** (1935); as already mentioned, *he has the only verification of the first flight of the Pan-American Clipper—known as the "China Clipper"—(Capt. Musick was its pilot, and its call letters were KHAGV); he has a verification from the League of Nations Radio, Geneva, Switzerland; verifications of the Graf Zeppelin and the Hindenburg, and of the steamship S. S. SCRAMIAL (on the rocks Oct. 11, 1935) and the M. V. (Motor Vessel) KAMIMBLA, the 11,000-ton marine broadcasting station owned by McIlwraith-McEacharn, Ltd., Melbourne, Australia.*

Last, but assuredly not least, Mr. Silver just "flashed" this message to your DXH Shortwave Editor: "I have received my verifications from Russia for January 2 and 9, 1960 (2045 EST) on frequencies of 7.150, 7.240, and 7.390 and my verification of the Russian SPUTNICK (heard May 15, 1955), and I sure put it in a frame!"

This veteran SWL has a collection of upwards of 4,000 verifications—from boats, planes, 110 nations of the world, as well as QSLs from fire and police stations from all over the United States.

Receivers at his Listening Post include a HALLICRAFTERS, a CROSLEY, and a PHILCO. His antennas consist of a 50-footer, a 75-footer, and a "special"-type which he designed himself and "which is a secret!"

Today, almost 50 years after he sent out his first signal over primitive equipment, Mr. Silver confines his radio hobby to monitoring by which it is possible for him to participate directly in most of the world's major news events and to share a wide variety of adventures or day-to-day routines that provide a scope of experience for wider than Marco Polo could have ever imagined!

As a recent example, in the crash of an airliner into the Gulf of Mexico, Mr. Silver had all three of his sets in operation at once on a variety of wavelengths, listening in on all of the rescue operation details—in effect flying with the helicopter pilot as they searched the area and reported on their findings.

For many folks, there often occurs a dull sort of day in which "hat to tdo?" poses a question of great importance and the opportunities for doing something different seem quite limited. There are no such days for Paul B. Silver! Without the problems of congested highways, passports, crowds and, especially, without the problems of expense, he can vicariously "fly" to Europe by following the radio reports from the great aircrafts that split the air over the Atlantic.

Or, safe from all the turmoil and danger, he might take a radio cruise all over South America to see who is winning today's revolution! If South American revolutions get monotonous and he loses track of which government is in power or out of power at the moment, he might decide by way of variety to do a little radio "fishing." Just sitting in his home in Woodridge, minus all the pitching and tossing, he can join the fishing fleets and find out what's biting!

Instead of "the commercially-produced and artificial crime drama" on TV, Mr. Silver can participate directly in an endless series of actual crime adventures simply by tuning in on police radio frequencies. The chase of a holdup car, the search for a suspect through city streets, the dispatch and follow-up of a murder—they all come into Mr. Silver's radio den and *they're all very real!*

When he is not monitoring the airwaves of the world, and currently even out of this world, Mr. Silver is employed as a chemical operator at the plant of Merck and Company in Rahway, N.J.

To be ready for every new development in space travel, so that he won't have to worry about technical details when the satellites "take off," Mr. Silver maintains a file of government data on the transmission equipment aboard this country's space vehicles. His sets are already beamed in when the rockets leave the launching pads. By the published reports of the U.S. Government on the known characteristics of Russian satellites, Mr. Silver is also able to keep fairly close watch over the Soviet space probes, picking up their signals as easily as millions of other Americans tune in their local TV station!

Mr. Silver—who has spent almost a half-century riding on radio waves—is constantly fascinated by the endless variety of experience that can be shared by this hobby. He says: "I am still looking for new spots!"

He is, of course, a member of the *National Association of Armchair Adventurers*. By that membership, he is "entitled to explore the four corners of the earth, to sail the seven seas, to cross in the comfort of a favorite chair the six continents, and to visit freely and without passport the 260 countries of the world. Permission is also granted to eavesdrop whenever possible on aircraft and satellites in outer space, ships at sea, the work of police and fire departments, and the conversation of radio amateurs throughout the world!"

AND THAT'S EXACTLY WHAT HE DOES!—KEN BOORD°

°The use of material from Mrs. Silver's local newspaper, THE EVENING NEWS, is gratefully acknowledged.—K. B.

DXing HORIZONS TECHNICAL ADVICE SERVICE

Booster operators, Translator operators, and cable TV system operators will find a wealth of knowledge and brand new data in each month's Tech Notes section of DXH, to be edited by VHF DX-pert Robert Grimm of Oakland, California starting with the June issue. VHF man Grimm will also make himself available for questions from the field, from you and your installation, and provide solutions wherever possible by mail, or through the column. Tech Notes is being expanded with the June issue.

DXing HORIZONS presents . . .

DX PRODUCTS

GONSET PUSH BUTTON CONVERTER

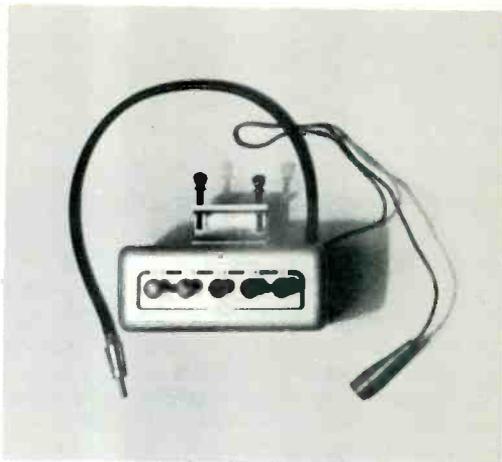
One of the prime functions of DXing Horizons in the months and years ahead will be our agitating for more and better shortwave products . . . designed primarily for the shortwave fan. We feel manufacturers of shortwave components and finished assemblies are missing a sure bet by not catering to the huge untapped reservoir of shortwave "only" listeners.

It was *therefore* much to our delight to receive from the GONSET COMPANY (801 South Main Street, Burbank, California), a test sample of their "for shortwave listeners only" Model 3128 Push Button SW Converter.

We lost no time in unwrapping the unit from its heavy cardboard container, briefing ourselves with the instructions and taking off the cover to see "what is inside." What we saw we liked . . . high Q slug tuned coil forms operating as tuned circuits in the 49-, 31-, 19- and 13-meter bands. The unit uses but a single tube . . . a 12AD6, which is a penta grid miniature. Its only function is as oscillator mixer . . . and though we were a little bit apprehensive about the sensitivity and image rejection "before we hooked it up," we certainly were not after installation as this report will explain.

A SIMPLE INSTALLATION

Downright rudimentary would be more like it! *Step Number One* . . . Pull the coaxial cable jack from the back of the auto receiver and insert it in the jack on the back of the converter. *Step Number Two* . . . Take insulation covered "firm grip" alligator clip in hand and under the dash attach it to one side of the ignition switch (preferably accessory side). *Step Number Three* . . . Take the short length of coaxial cable from the output of the converter and insert it into the auto radio input jack. *Step Number Four* . . . Turn on your auto radio, set it between 1100 KC and 1600 KC and VOILA!, you have shortwave reception. The push buttons on the front of the converter allow you to "push" and select the shortwave band you want to listen to . . . 49-, 31-, 19- or 13-meters. We found the entire range of our car radio (550 KC to 1610 KC) was filled with shortwave type signals and after a little re-peaking of the clearly marked antenna trimmer coils, we got high gain response across the band. *Step Five* . . . The top of the converter



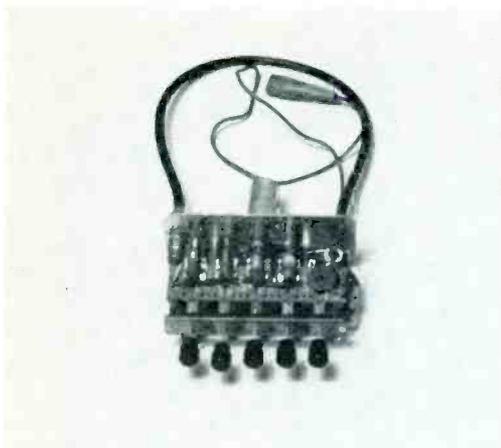
GONSET Push Button Converter

(see photo) comes equipped with two vice type screwdown clamps. You merely slip the lip of the clamp under the dash and tighten down, and your converter is mounted . . . with no holes in the dash, *no modifications of any type* in the car. *And best of all . . . our total installation time* (and we are very slow) *was 15 minutes!*

ANTENNAS AND PERFORMANCE

The GONSET engineers suggest you use your auto antenna for shortwave if it extends to 56-60 inches. Ours does not . . . so we installed a 60-inch whip on the back bumper. The input circuit of the push button tuner allows it to be "resonated" to the antenna . . . so it is possible to get good performance with almost any reasonable antenna.

The sensitivity and the stability of the unit (and what else is there?) amazed not only the DXH staff, but additionally several ham friends we showed it off to. We could hear cars coming a block away (drat it!) attesting right away to the need for a noise limiter in our receiver. The first night we had the unit installed we were not aware shortwave conditions were so poor (April 7 . . . remember?). Nonetheless we drove about the area listening to WWV on 10 megacycles, Radio Moscow, and a dozen and one others. April 8th SW conditions appeared to be improving on our home receiver so we gave the GONSET unit another try. On 13-meters the VOA and nearby 15-meter amateurs from all parts of the Midwest and East Coast abounded across the dial. On 19-meters we enjoyed the programs of ZL4, 15.280 for nearly 30 minutes near dusk, and the New Zealander seemed to hold up well even in downtown traffic. Nighttime reception on 31-meters is particularly good



Cover off — Model 3128

with Europe and South America logged and identified in a 30-minute period.

SHEER JOY OF LIVING

We feel the real benefits of *mobile SW reception* may be realized on long trips when you want to keep up with special broadcasts, or just general SW conditions. When the wife says "leave the blankety-blank SW receiver home" on your next vacation, even she would find it hard to object to a unit 5 inches wide, 4 inches deep and 2 inches high!

FOR PARTICULARS

Contact your local supply house (handling the GONSET line of equipment), your favorite mail order house, or as a last resort . . . write GONSET directly at 801 South Main Street, Burbank, California. Address your queries and orders in care of Bill Hunter. As yes . . . the total price for the Model 3128 (12 volt) Push Button Converter is \$29.97 . . . complete with all cable(s), tube, tuning tool and instructions.

R.B.C.

FREE MAGAZINES . . . ANYPLACE IN THE WORLD

Whether your interest is Shortwave, TV or FM DX reception, or AM Broadcast Band Twirling, we know you find the latest news, most detailed reports and a wealth of feature articles every month in *DXing HORIZONS*. We suspect you would like your friends and business acquaintances to share in your newly found friend . . . "DXing HORIZONS." We are always more than happy to send a copy of the current issue to any enthusiast—anyplace in the world . . . free of cost . . . as a sample of what *DXing HORIZONS* is and can do for weak signal interests. Send the names and addresses of people you think might be interested in receiving *DXing HORIZONS*, to "Sample Copies, P. O. Box 3150, Modesto, California, U.S.A."

IMPROVED TV FILTER

"KNOCKS OUT"
Amateur Radio
Interference

Protects TV Receivers
from properly operating
Ham Transmitters

The R. L. Drake Co. now offers an improved High Pass Filter that effectively eliminates all amateur interference from 6 to 160 meters.

The Drake TV-300-HP is for use on all types of TV receivers and, when properly installed, protects against both IF interference and interference from amateur radio—even from the transmitter of the ham next door.

However, the filter must be installed properly. It is a simple procedure for a TV repairman as he need not dismantle the receiver and can usually attach the filter to the back of the TV set.

R. L. DRAKE
TV-300-HP

\$5.95
LIST

Available from your
TV repairman



If an amateur can operate his transmitter in his own home while his family is enjoying TV and at the same time his neighbor is troubled by interference, it's a good indication that the neighbor's TV set needs a filter.

Call your TV repairman and insist on a Drake Model TV-300-HP Filter.

R. L. DRAKE CO. / MIAMISBURG, OHIO

Reprints of the above ad and other TVI literature available on request. Write to R. L. Drake Co., Miamisburg, Ohio.

PROPAGATION REVIEW

SHORTWAVE

Sunspots and Magnetism

In April this section discussed the various affects of magnetic activity and sun spots upon the F layers (F1, F2) of the ionosphere. This month's discussion continues with a look at some of the cycles involving the sun and the various degrees of validity involved in assuming sun spots may be blamed for everything from weather to shortwave reception conditions.

VOLUME TWO, NUMBER 35

The Carnegie Institution of Washington, D.C., in a news service bulletin titled "Earth's Magnetism Records Solar Changes," has this to say about areas of magnetic activity on the sun's surface:

"Terrestrial-magnetic activity reveals persistent solar influences which are definitely recognized as such by the 27 day recurrence, which is the sun's rotation period. Magnetic activity (on the earth and in the ionosphere) must, therefore, be attributed to some action of fairly definite regions on the sun's surface. These regions cannot always be identified with any of the known phenomena of the sun, for example, sun spots, solar flares, bright eruptions, etc. From an average set of readings taken of the degree of magnetic activity in the earth's ionosphere over a period of several decades, it appears these hidden regions which do not always show visibly, but still affect the earth's magnetic field, must vary in area and intensity as do the more visible sun spots. Our records show that magnetic activity definitely has an eleven year cycle about it."

27 DAYS

When a man of the ionosphere speaks of the 27 day cycle, he is referring to the observation that an unsettled period in the ionosphere, which is generally caused by unusual magnetic activity on the sun's surface, will recur 27 days from the first period. He is relatively sure of 27 day recurrence because most magnetic disturbances as well as most sun spot groups last through several periods of rotation for the sun (i.e. the sun rotates on his own axis, just as the earth does. A sun spot group, or a disturbed area causing magnetic disturbance is positioned at a fixed spot on the sun's surface. When this spot (or region) again turns towards the earth, scientists surmise it will again affect the earth's magnetic field and/or the ionosphere as it did 27 days previously). During a period of three to four months the active magnetic area, or the sun spot, will eventually disappear taking with it the ability to upset the balance in our ionosphere. Some groups last through but one cycle, explaining predictions which had forecast "unsettled conditions" turning out in error. And new regions appear weekly which cannot be considered in forecasts issued before the spots appeared. In some instances mildly disturbed regions on the sun's surface suddenly take on new energy bursting forth with tremendous force completely breaking down the earth's normal magnetic field and disrupting communications in the F layer.

11 YEARS

In addition to the short term 27 day cycle which

affects both good and bad SW conditions, a long term variation in the "average monthly count" of sun spots (not magnetic activity now) has been found to have most direct correlation with long term value shortwave conditions. As an example, when the sun spot count is greatest, the shortwave reception above 10 megacycles is vastly improved. When the sun spot count is low, shortwave reception is vastly improved below ten megacycles (on the night reception bands) while on frequencies normally used for daylight reception, conditions become very poor. Fortunately for the shortwave fan the general level of sun spots does not vary rapidly. The day to day count may change markedly but the monthly average which is most closely associated with SW reception does not. Normally the count climbs slowly, reaches a peak, and then drops slowly, reaching a low point, leveling off for a few months and then beginning another climb. The time lapse between one peak (high point) and the following peak is usually between 9.5 and 11.5 years. This is called the "11-year sun spot cycle." We reached the peak of the current cycle in March of 1959 when the sun spot number leveled off at 201.9 (the highest peak ever recorded, records have been kept since the 18th century). The May 1960 count is predicted to be 115.0. It is believed radiation from sun spots acts as a slow trickle charge does to a battery, slowly building the ionosphere. A sudden appearance of a large sun spot seldom, if ever, has a pronounced "good affect" on the reflective layer. It is the total cumulative value of all of the spots working together which effects the "charging of the layer (F1 and F2)." In years when the total sun spot number is low the "amount of charging" going on is also low . . . with poorer shortwave conditions (as the F layers lose their "charge" they also lose their superior reflective characteristics). Soon all reception on the 11, and then the 13-meter band ceases, except during rare instances of unusually good reception. Soon SW stations throughout the world cease to use these frequencies, shifting instead to the 19 and 25-meter bands. At the very bottom of the sun spot cycle (the next "bottom is forecast for 1963-65) even reception on the 19-meter band becomes poor and the 25-meter band takes on a heavy load for all long range transmission.

GIANT SUN SPOT GROUP

The Swiss Solar Observatory has termed the giant sun spot group of March 31—April 4 "the largest in the past 13 years." Associated with the huge sun spot (we are told it was 50,000 miles across or more than twice the diameter of the earth!) was perhaps the strongest and most severe ionospheric storm (i.e. disrupted HF broadcasting and reception) in more than a decade. HF circuits between the United States and Europe, and west into the Pacific, and Asia, were all but wiped out. So severe was the magnetic disturbance that "land line" cables between the U.S. and Europe were closed down because of the heavy electrical currents "induced into their lines" by the electricity in the atmosphere! As could be expected a brilliant aurora followed the initial affects the evening of March 31. An aurora display the night of March 31 was seen as far south as Jacksonville, Florida and Texas in the United States, reportedly into Germany and France in Europe. Shortwave conditions March 31 were very disturbed, while HF conditions April 1-3 were all but useless. Condi-

tions had begun to return to normal on the fourth when a second smaller disturbance on the sixth of April set the ionosphere into a state of frenzy. For followers of the index of magnetic activity (a system similar to the "average or smoothed sun spot count) the index rose from an average reading of 16 on March 30 to 88 on March 31 (GMT) and to a near record of 138 on April 1! By the second it had dropped to 47 while the fourth saw it at 15 again. The lasting effects of the severe magnetic disturbance lasted until the weekend of April 8-9.

PREDICTIONS:

With summer rapidly approaching we are going to dispense with the usual listing of band conditions until September. Instead we present a brief summary of what can be expected, and when.

PROPAGATION

SW fans in the northern hemisphere are in for a long "dry" summer. Reception of stations from any spot in the 2.0 mc/s to 8.0 mc/s range will be subject to extremely heavy QRN (static noise) from 1800 LST to 0500 LST most days with S9 noise levels covering most DX. Early morning reception in the one hour prior to sun up will probably be the only period during the day for DX reception in most locations, and that will be poor.

Dawn and thereafter for three hours should see fair to good reception in the 8.0 mc/s-1.0 mc/s region.

19 meters (15.0 mc/s-15.5 mc/s) will remain the best band through May with good morning time reception from the East, and evening time reception from the westerly direction.

16 and 13 meters, north of the equator, are well on their way to summertime doldrums as we write. Reception should be spotty with deep fading and low reliability. Early morning and late afternoon reception will be the best.

LAST MINUTE SHORTWAVE CONDX FORECAST

A recurrence of the late March—early April ionospheric storm is expected over the period April 28-May 1. Another storm is forecast for May 3-7. Otherwise conditions should continue to be good.

April 28-May 1—Heavy storm expected, frequencies above 15 megs. Poor in daytime.

May 3-7—Poor reception from Asia, Africa, Europe expected as storm condx return. Good reception from South Pacific and South America in evening LST.

May 9-18—Fair conditions.

May 15-18—Excellent reception from Asia in evening LST, all frequencies in 25-, 19-, 17- and 13-meter bands.

May 25-28—Disturbed conditions forecast.

May 30-June 2—Partially disturbed condx forecast.

RCA SPIDERWEB ANTENNA... HELP!

Can anyone—anywhere tell DXH who to get in touch with at RCA Communications regarding the famous "Spiderweb Antenna" of the 30's? Does anyone have the design particulars on this antenna?

FCC Analyzed

A FAINT LIGHT STILL SHINES...

Washington circles say there is still "some hope" for additional VHF spectrum space for VHF TV, from the military. In a carefully worded statement the Office of Civil Defense Mobilization announced, "We will try to reach a firm position by late May on the request for additional spectrum space for VHF TV." Previously, the last words FCC heads reportedly had with the OCDM on the subject revolved around the OCDM contention "Moving military users from VHF to the UHF TV range would have adverse effects on the "national defense." Since the OCDM has the last say as to what does and does not affect national defense, the FCC decided any further negotiations were useless. Now... perhaps not.

WITH DROP-INS

Crowded Mid-West and Eastern VHF channels will have to wait until June 30 for the FCC decision regarding further "drop-in channels" of sub-standard mileage separations. The FCC, petitioned by the Association of Maximum Service Telecasters (and they stand for exactly what it would appear), set the June 30 date as an extension of time from the April 19 original date... for further comments from the field.

IN CANADA

The hotly contested Channel 9 spot in Toronto has gone to the Toronto Telegram, a veteran newspaper there. Eight others had applied for the "rich" facility.

CFCL-6, Timmins, Ont. has been granted a power increase from 18 kW V. to 100 kW V. and 50 kW A.

A new Channel 7 will be established at Sturgeon Falls, Ontario to carry the CBC French circuit programming. And a new Channel 13 will go in at Sudbury to relay "Satellite Fashion" the new Channel 7.

IN TEXAS

KFJZ (11—Ft. Worth) request to move Channel 2 from Denton (Tex.), where it is reserved for educational use, and swap 11 in Ft. Worth to Denton, has been denied. KFJZ will remain on 11.

KRLD-4, Dallas, has been granted permission to identify with Dallas and Ft. Worth now.

3 OR 8 FOR JOHNSTOWN, PA.

A Johnstown, Pa. group has petitioned the FCC to drop-in Channel 3, or 8, in Johnstown for commercial TV use. Neither is likely.

FCC GRANTS

Translators:

Libby, Montant 76 to repeat KXLY-4

Honohina, Hawaii 76 to repeat KMVI-12

Lihu, Hawaii 70 to repeat KGMB-9

Memphis, Texas 71, 77, 81 to repeat KGNC-4, KVII-7, KFDA-10

Yakima—Selah, Wash. 73 to repeat KOMO-4

Cowiche—Naches Hghts, Wash. 78 to repeat KOMO-4

New TV Stations

Vermillion, S.D., Channel 2 (Educational) 167 watts video.

Kansas City, Missouri 19 (Educational) 18 kW.

Kaiser Haw. Village, Haw. 13 2 kW video.

Eugene, Oregon 9, Liberty TV Co.

Fargo, N.D. 13 (Educational).

THE WORLD AT A TWIRL

(continued from page 29)

N.Y.) Hrd opening on 11.685 in Pt. after usual ID and the bells of St. Peter's 1530. (Boice, Conn.) Same noted in Calif. but on parallel 15.120. (John, Margie Gibson)

VENEZUELA—YVKD, 5.020, R. Cultura, hrd w-light mx in England 0300. (ISWL) R. Barquisimeto, 9.510, now issues QSL-cd instead of ltr verie. (Watson, England, via ISWC)

VIETNAM (N.)—R. Hanoi, 15.008A, hrd 1507-1530 s-off; fair sig in Kans. (Freeland via AMSWLC) N-Vietnamese hrd 1440. (ISWL) R. Hanoi s-on in language 1130 on 11.840 parallel 9.840; strg and in clear then on 11.840; s-off is 1545. (Balbi, Calif.) The 11.840 outlet around 1300-1500 is "buried" by Moscow, same channel, in W. Va. (KBLP)

VIETNAM (S.)—R. Saigon, 7.260, hrd w-ENG. 2315. (ISWL) Noted on 9.754 at 1535-1600 s-off w-classical mx. (SRK)

WINDWARD IS.—WIBS, 15.085, St. George's, Grenada, relays BBC N-E 2300. On SUN. has LETTERBOX 2245. (Herd, Dela.) An interesting, informative session, "Your Radio Doctor," hrd 0100-0130 TUE. (Howald, Calif.) Hrd s-off to UK 2120. (Ekblom, Finland) Noted on 3.365 w-BBC N-E 0200. (Combs, Mo., via AMSWLC)

YUGOSLAVIA — R. Beograd, 6.100, 7.200, 9.505, has nx-Fr. 1615. (CARM) Near presstime, Rowell, Minn., flashed to DXH that he had logged R. Beograd on 6.100 at 2115.

PRESSTIME FLASH! — BULGARIA — On the day this was compiled, your SW Editor rcd this sked of ENG. b-c from R. Sofia—To Great Britain —1930-2000 and 2335-2400 (concert), 9.700; 2135-2205, 9.700, 7.670, 7.255. MAILBAG on THUR. and SUN. (in 2135-2205 beam). A DX program is b-c on FIRST FRI. of each month and a program dedicated to the Society for Friendship with Bulgaria in London is radiated on the LAST FRI. of each month. To N. Am.—0100-0130, 0400-0430, and 2335-2400 (concert). Has MAILBAG on THUR. and SUN. (in 0100-0130 beam). The DX program iis b-c on FIRST FRI. of each month. Says: "Reports on reception and listeners' suggestions about our programs are most welcome. Questions about life in Bulgaria are answered in our MAILBAG programs or by post. Please send your letters to: ENGLISH LANGUAGE BROADCASTS, RADIO SOFIA, SOFIA, BULGARIA."

DEADLINE—Send ONLY YOUR TOP DX FLASHES for JUNE DXH to Ken Boord, 948 Stewartstown Road, Morgantown, West Virginia, U.S.A.—to reach me BY MAY 10. Thanks . . . good DXing . . . and 73 . . . K. B.

REMEMBER CONELRAD!

A 30 minute "Dead Air Drill" scheduled for Tuesday, May 3, will take all TV, FM and AM Broadcasters off the air from 1300-1330 EST. Allowing for daylight time zones, and standard time zones, don't be caught un-aware! Only 640 and 1240 will remain active.

TV REPORTING

(continued from page 19)

PROPAGATION CALENDAR

PROJECTED DATES FOR E SKIP

(27 Day Cycle)

April 28—May 1, May 10, May 14-17, May 25-28, 1130 LST to 1300 LST, 1600 LST to 2100 LST.

PROJECTED GROUND WAVE DATES

The latter two weeks of May (15-31) frequently produce excellent ground wave sessions over the Great Lakes and Mid-Western region. (0600-0900 LST)

The first week in May is known for the excellent ground wave for the Gulf of Mexico states, with morning reception (to 1000 LST) often stretching to 1,000 miles on Channels 2-13.

E SKIP

In addition to the projected dates above, E skip reception on Channels 2-6 is likely to occur one day in three over all observation areas, most likely from 0700-1000 LST, 1100-1300 LST and 1600-2100 LST. Watch Channels 2-4 for first signs of E skip in the 500-1,500 mile range.

METEOR SHOWER DATES

May 6—Aquarids Meteor Shower, excellent rating. Peaking shortly after noon LST, leveling out through 1700 LST. Watch for reception bursts from stations 400-1200 miles on Channels 2-13 (2-6 BEST).

DOUBLE HOP E SKIP

May 1-21—DXers in Wash., Oregon., Calif., Arizona and New Mexico should be alert for reception from the South and Southeast from Mexico, Guatamala, and other Central American TV stations on Channels 2-4 from 1600-1900 LST.

May 14-25—DXers throughout the country (especially in the south and southeast) should be alert for reception from Venezuela, Brazil, and Peru on Channels 2, 3 and 4 between 1700 and 1900 LST. Reception will be characterized by deep fading and poor sync.

May 15-31—DXers in California should be alert for E skip reception in the 1700-2400 mile range between 1700 and 2100 PST, often starting at 1745 PST from WJBK (2—Detroit), WGR (2—Buffalo), and WBBM (2—Chicago). Heavy distortion, A and V.

SPECIAL ANNOUNCEMENT FOR TV DX FANS

On April 25 word has been received from James Gould, Kokomo, Indiana, that his experiments with the pentode high MU Amperex tubes for IF receiver service have produced positive results! We are now attempting to schedule a complete report on Gould's amazing TV DX RECEIVER for the July issue of DXH. Gould's rebuilt RCA-630 chassis uses a 6922 front end (RF) stage, IN149 crystal mixer (and this is another "overdue innovation"), 6922 CASCADE TUNER IF, and then a string of four 6EJ7's in conventional IF amplifier service!

Watch for expanded TV DX Section in June!

AT FADE-OUT

REPORT ON SPECIAL DXH DX BROADCASTS

The Published and SW Editor of DXH wish to thank officials of HCJB, Quito, Ecuador, and 4VEH, Cap Haitien, Haiti, for the opportunity to present the FIRST DXH SPECIAL DXBC over their facilities at Eastertime. We hope YOUR reception of these stations was as gratifying as that experienced at the DXH SW Listening Post in Morgantown, W. Va. I was able to make an excellent tape recording of the HCJB b-c on the 15.115 outlet, April 15, 2330, while the 17.890 channel was equally as good. 4VWI, 9.773, April 16, 2330, had a high-level signal (arnd 20-30 dbS over S9 thru LOCAL QRN—storm brewing!), while 4VEC, 6.002, was inaudible due to QRM-QRN; the "repeat" on April 18, 0930, was quite good on both these channels and I was able to get a good tape recording from the 9.773 outlet.—K. B.

ANTARCTICA—C. C. Huff, Calif., comments he got a great thrill in following the USS Shangri-La from Long Beach, Calif., to the East Coast U.S.A. "by way of the Horn," since the ship was too large for the Panama Canal; the Shangri-La was operating on AM and SSB, 20 m. AUSTRALIA—The WKLY DX PRGM fr m R. Australia, under "winter" sked is now SAT. 2200, 15.240 to E. Asia, N. Pacific Is.; SUN. 0530, 21.680, to Af.; SUN. 0715, 11.710, to UK, Eu., N. Z., S. Pacific Is.; SUN. 1300, 11.710, ECNA; SUN. 1600, 11.810, WCNA and 11.740, 9.580, 7.220, to S., SE Asia.

SPECIAL BROADCASTS FROM BDXC SCHEDULED OVER PRN9

In cooperation w-PRN9, 9.295, 2.5 kW, and 760 kc (MW), 2 kW, the BRAZILIAN DX CLUB has arranged to produce a SERIES OF SPECIAL BROADCASTS TO SCANDINAVIA—May 5 to DENMARK; May 26 to NORWAY; June 16 to FINLAND, and July 21 to SWEDEN—all 0000-0100. Will consist of Brazilian mx, general information abt Brazil—anned in ENG., Ger., Sp., Pt., and PERHAPS Fr., Japanese. CORRECT RPTS will be VERIED BY QSL-cd and STREAMER fr m PRN9, R. Difusora do D.F.S.P., Rua da Relacao, Rio de Janeiro, D. F., Brazil.

BURMA—Howald, Calif., flashes that he has just logged ZXK4, 7.125, Rangoon, strg w-native-type mx 1040. CHINA—R. Peking, 17.765 (NEW FQ) hrd w-Fr. 1830-1900; ENG. 2130-2230. (Balbi, Calif.) Peking Press Agency logged on NEW UNLISTED FO of 11.203.5M fr m 2240 w-woman giving nx in Chinese, PARALLEL 10.487M (fair), 12.126 (gud), 7.526 (gud), and 13.847 (weak); 11.203.5M was excellent. Yunnan Province outlet lately on 10.028, weak 2217 w-Chinese mx, language. R. Peking noted on 0.259M, excellent 2223 w-man, woman in Chinese, excellent, and on 11.331 w-SEPARATE Chinese session. (Cox) COOK IS.—ZK1ZA, 4.965, Rarotonga, hrd w-fair sig 0520-0530 s-off (THUR. only); no anthem at s-off. (Balbi, Calif.) CUBA—Union Radio, 6.330,

Havana, hrd 0030-0530 w-mx, anncmts in Sp.; no ENG. noted. (Stephenson, Okla.) CURACAO (NETH. ANTILLES)—FLASH!—NEW is R. Curom, Willemstad, 9.652A, hrd to 0330 s-off; some ENG. noted arnd 0230. CZECHOSLOVAKIA—On April 15, R. Prague effected this NEW SKED—to N. Am. 0030, 17.790, 15.280, 15.010, 9.550, 11.990; 0300, 0500, 11.990, 9.550, 15.010, 15.280, 11.840. To F. East 0830, 11.990, 17.750, 21.450. (Howard, Mo.) DUTCH NEW GUINEA—R. Sorong was MOVED fr m 3.395 to 4.835. (Edward, Guam, Midway Is., via WRHB) EGYPT—The NEW 9.805 outlet noted 1520-1555 in Ar. w-Main Ar. Prgm, NOT on 9.790 as most skeds show. (Palmer, Wash. State) GABON—CORRECT FQ for Libreville is 4.775. NOT 5.040. (Cox, Dela.) GREECE — MOST POWERFUL ARMY STN now in this country is Serrai, 7.163; hrd 1600 w-pop mx; 1700 dance mx, commercials. (Buettner, Germany, via WRHB)

ID OF STATION WTH THE EASTER MIDNIGHT MASS BIG SURPRISE!

CONGRATULATIONS AND THANKS to all who ID the station with the ANNUAL EASTER MIDNIGHT MASS as requested by Bill Roemer, Kentucky! Shortly after the April issue of DXH was published, this letter was received: "On Page 31 (MARCH DXH), you published a short article entitled 'S.O.S. . . . And A Challenge.' In it you asked your readers to listen-in to an Easter Mass on April 16th, and to identify the station from which it is broadcast. In all probability, Mr. Roemer has tuned-in to our station, was we regularly broadcast an Easter Mass in our 2200 GMT transmission on 11.730. Yours faithfully, RADIO NEDERLAND WERELDOMROEP, Mr. E. van Eldik's letter is GREATLY APPRECIATED! —K. B.

HUNGARY—UNSCHEDULED xmsn hrd on Budapest, 9.833, 0618-0628 in It, and Ar. 0515-0545 s-off another day; IS prior to Ar. fr m 0509 s-on. TESTING FOR NEW SERVICE? (Palmer, Wash. State) INDIA—AIR, 15.300M, Delhi, excellent 0110 w-Indian mx, Tamil; ENG. ID by man, s-off 0115; noted on 21.700M in Tamil to s-off 0115; hrd on 17.795 from 0230 s-on w-E-ID, then E-N by man, excellent; observed on 11.800M at 1205 w-wx by YL in ENG., off 1210; hrd 1230 on 15.280M w-E-N. (Cox, Dela.) AIR, 9.530, Calcutta, hrd now 0000-0015 s-off w-man in ENG.; some slop-over fr m Berne, 9.535. (Saylor, Va.) IRAQ—R. Baghdad, 6.030, hrd 2100-2130 in ENG.; woman anncr for N-E; hrd on 3.297 w-Ar. 2100, talk. IVORY COAST—R. Abidjan, 7.215, fair in lingo 0615. (Howald, Calif.) KENYA—ENG. Serv., Nairobi (Langata), now aired on 4.934 and 4.855, is in Swahili; 4.934 hrd fr m 0325 w-classical mx, ID by man in ENG.; 4.885 hrd 0310 w-Swahili vocals, frequent chimes and ID; latter slightly STRONGER; wx forecast on BOTH 0330. Coast Regional outlet. SPECIAL TIP—THE NEXT TWO OR THREE MONTHS WILL BE THE BEST TIME FOR EAST COAST U.S.A. DXers to log this country, along w-Rhodesia, 4.911, and Tanganyika, 5.050. (Cox, Dela.) LIBERIA—ELWA, Monrovia, recently noted on TUE. in N. Am. xmsn on 21.535 (NOT 21.515) and 15.198A; WED. 0100, in 2nd wkly xmsn to N. Am., 21.535 was parallel 11.986. (Balbi, Calif.)

MALAYA—R. Malaya, 7.200, strg in ENG. 1400; gave LOCAL TIME as "9:30 p.m." MOZAMBIQUE—CR7BG, Lourenco Marques, noted lately on 15.156.5 INSTEAD of 15.152 to s-off 1801; all-Pt. (Cox, Dela.) NEW ZEALAND—On April 8, ZL4, 15.280, Wellington, anncd that as of April 8 would REPLACE 15.280 w-17.820 to Australia 2245-0545—BUT on April 10 was "found" still on 15.280! (Cox, Dela.) PAKISTAN—Karachi, 6.072, tuned 0150, hrd in native to 0200, then N-E followed to 0215; weak but readable. (DXHCNE) Rowell, Minn., flashes that R. Pakistan, 11.855, again noted 0030-0115 to SE Asia; s-on w-"big" drums; Pakistani mx; strg by 0100 (when should have E-N—Ed.) PHILIPPINES—FEBC, Manila, hrd TESTING 0300-0400 on NEW 21.495 (ALTHO ANNC'D DZ18, 21.515), parallel DZ16, 17.805, DZH3, 15.385; ASKED FOR RPTS ON ALL THREE FQS FOR COMPARISON to P. O. Box 2041; ID every 5 min.; DZF2, 11.92 lately s-on 1030, and DZF3, 15.385, is still hrd 2300-0130 parallel 17.805. (Balbi, Calif.) RHODESIA—Lusaka, 4.911, hrd frm 0356 w-cathedral bells IS, opened 0400 w-E-ID by man for "FBC," then began mx prgm w-"Magnifique." Excellent level, in the clear; Lusaka, 4.826, hrd 0420 w-jazz mx, ENG. ID by man, had severe QRM frm 4.825; "steep" selectivity is a "must" on this one! (Cox, Dela.) SENEGAL (MALI FED.)—R. Mali, 9.585, definitely hrd ID at s-on; all-native; in clear since WLWO vacated 9.585; N-Fr. 0730; fades out arnd 0815; fair level in Calif. (Balbi) SINGAPORE—BBCFES hrd s-on 0910 (INSTEAD of 0900) in ENG. (INSTEAD of Japanese), strg on 11.930, 15.435, 17.755; BBC-N-E relayed 0915; N-E hrd again 1100 on 11.955, 9.690, 9.725, 7.120; at 1600 noted over 11.725, 11.955, 9.690; gives fq details 0935A. (Balbi, Calif.) SWITZERLAND—Space will NOT PERMIT listing of complete SUMMER skeds effective May 1 by SBC, Berne, which were rcd direct from stn at press time; however, sked to ECNA is 0130-0215, 11.865, 9.535, 15.315; to WCNA 0415-0500, 6.165, 11.865, 9.535; to E. Australia-N.Z., 0715-0900. TAIWAN (FORMOSA)—Noted on NEW 17.786 (REPLACING 17.755) at 0135 tuning in N. Am. beam, usual prgm in ENG.; excellent level some days. (Niblack, Ind.) However, SPRING skeds rcd from stn indicate BED58, 17.755, 0130-0145, parallel BED7, 7.230, BED6, 11.815, BED57, 15.345; second ENG. BC at 1005-1050, same channels. (Boice, Conn.) TUNISIA—In mid-April, R. Tunis was observed on 6.105 INSTEAD of 9.630 at 0530; strg w-chants, Ar. mx; STILL ON 6.105 in "evening" xmsn (GMT). (Cox, Dela.) UNION OF S. AF.—SABC, 25.800, s-on 1100 parallel 15.200; 1100 orchestrals; 1115 N-E, wx; ENG. and Afrikaans used on ALTERNATE DAYS; c-d is 1800. (Pearce, England) U.S.A.—Direct from WRUL comes this NEW SKED effected April 24—when much of the U.S.A. went on DAYLIGHT SAVING TIME (DST)—To Eu., Af.—MON-FRI. 1945-2100, SAT. 1900-2115, SUN. 1845-2100, 17.750, 15.380, 21.460 (SUN. only). ENG. to L. Am.—MON-SAT. 2300-2400, SUN. 2215-2400, 17.755, 15.380, 11.830. U.S.S.R.—Moscow, 21.600M, logged 1115 to L. Am. in Sp.; powerful, local-like sig; 0157 played Red Anthem, gave IS 0200, then clock struck (5), and had Russian ID by woman; parallel 15.100M, 17.880. Weak stn hrd on 4.425M at 2335 tune-in w-operatic-type mx, woman annr seemingly in Russian; BELIEVED Dudinka, N. SIBERIA; CAN

ANYONE CONFIRM? (Cox) VATICAN—LATE SPRING-SUMMER SKED of HVJ is ENG. 1500, 1815 DAILY, 9.646, 11.685, 15.120; 1030 MON., WED., FRI., 17.735, 21.740; 1600 MON., WED., SAT., 17.840, 21.515. (Boggs, Mo.)

SUNSPOT COUNT FOR MARCH '60

As heard in April from HER4, 9.535, Berne, Switzerland, here is the Sunspot Count for March—1-52, 2-57, 3-71, 4-76, 5-74, 6-79, 7-108, 8-111, 9-109, 10-109, 11-82, 12-68, 13-85, 14-76, 15-84, 16-106, 17-86, 18-85, 19-102, 20-97, 21-115, 22-128, 23-145, 24-123, 25-128, 26-133, 27-146, 28-139, 29-154, 30-142, 31-138. MARCH AV.—103.5. PREDICTION—APRIL 110, MAY 106, JUNE 102, JULY '98, AUGUST 94, SEPT. 90.—Grady C. Ferguson, North Carolina

In answer to several inquiries, I still have a FEW copies of my book, "THE WORLD AT A TWIRL," published 1956, AVAILABLE at \$2.50, POSTPAID. This "Guidebook to Successful SW'Lg," which runs more than 120 pages, contains articles on HOW AND WHEN TO TUNE, THE ART OF VERIFICATION, "THERE'S A CLUB FOR YOU," TIME CONVERSION, FEATURES ON STATION INSTALLATIONS AND STATION PERSONALITIES AROUND THE WORLD, plus hundreds of photographs of SW'ls and their Listening Posts, station installations, and world-renowned station personalities.—KEN BOORD

DEADLINE—Send only YOUR BEST DX FLASHES for "AT FADE-OUT" for JUNE DXH to Ken Boord, 948 Stewartstown Rd., Morgantown, West Virginia, U.S.A.—to reach me BY MAY 10. DEADLINE for JULY DXH will be MAY 31 for "WT" Section, JUNE 9 for "AT FADE-OUT." Thanks for YOUR cooperation! See you next month? . . . 73 . . . K. B.

NEW DX BROADCAST FOR DXH SW MONITORS

As this issue was going to press, an agreement was reached with Walter S. Lemmon, President of International Broadcasting Station WRUL, New York (with transmitters at Scituate, Mass.), for the world's first SW DX news broadcast, prepared in conjunction with a DX magazine. This "DXing Horizons Shortwave Newscast," prepared by SW Editor Ken Boord and engineered in Modesto, California, in the DXH offices, will be aired over WRUL the third Saturday of each month (May 21), at 2100 GMT in the WRUL European-African beam on frequencies of 15.380, 17.750, 21.460, and repeated again at 2345 GMT in the Latin America beam on frequencies of 11.830, 15.380, 17.755.

Complete details on this special broadcast series, to be aired monthly by WRUL (the voice of freedom) and DXing Horizons Magazine, will appear in next month's DXH.

Be sure to mark Saturday, May 21, on your calendar for this first "SW Newscast," of special interest to all SW fans the world over. Complete up to the minute news on what is being heard, where, and by whom, on the "DXing Horizons Shortwave Newscast," May 21, 1960.

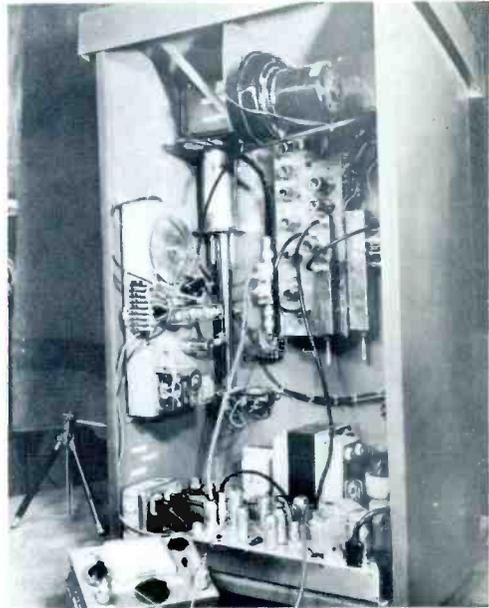
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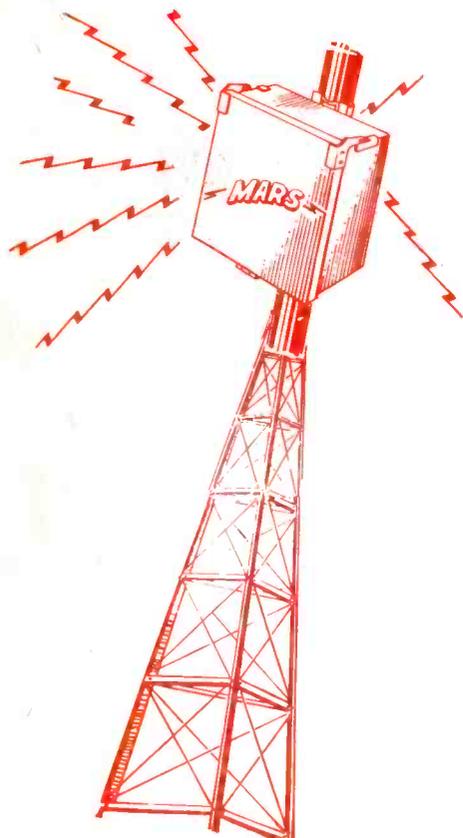
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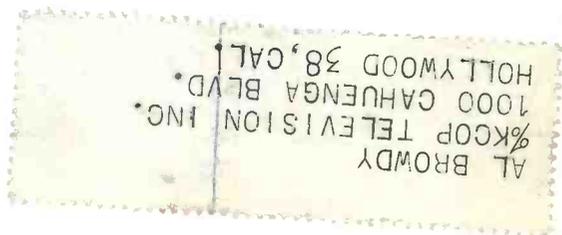
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