VOLUME IX

PERPETUAL

TROUBLESHOOTER'S

MANUAL

REG. U.S. PAT. OFF.

JOHN F. RIDER
The strings of the 88 piano notes

Secondary of pre-amp output transformers

Additional input output

7 Wire Shielded Cable

Power Stage

Foot pedal

Voltaget Amplifier

B+ Out

Foot pedal

Solid Switch

Polarising Switches

Pre-amplifier

88 Delay filters 1 for each piano note

39 Delay Switches to first 39 filters

49 Delay Switches to last 49 filters

Bass

Treble

Phasing-Tone & Volume Controls

Master Assembly Diagram

Motor

Phono.

Jack for external & Speaker

Details of Delay Switches

Actuating fingers (on piano action) move to front bus when corresponding key is played

No: slight play here (front bus)

Closest to opposite side of metal rail

Details of Delay Switches

Rear Metal rail

Rear felt contact

Front Metal rail

Front felt contact

Wood rails

Steel springs

Wires to Delay filters

To string /Mega From Delay Switch

500,000A - Front Bus

To Delay Switch

To rear Bus

500,000A - Front Bus

Polarising Switch Circuits

©John F. Rider, Publisher
SRT/CHR. OF J. OSTERAN:

Due to variations in the design of pianos, the components will be located in different positions in different instruments; however, each of the controls which come to the attention of the servicer will be plainly located. The controls will be positioned either in the piano or in the lower section underneath the keyboard. In the latter position, the lower front of the piano can be removed to expose the various parts of the piano for service.

Turn on the power and set the left and push-button of the tone control switch. This connects the three phase control potentiometers and the two bass and treble tone control switch. Following the accompanying diagram, and the customer's general desire as to whether a basically thick or thin tone is required, try various settings of the tone controls mentioned above until the customer is satisfied. Select the bass or treble control which has the greater effect on the tone when the polarizing switches are on "piano" or "flanger" which are absent or loosened in the "organ" position. The trouble can be localized in the treble or bass as the corresponding polarizing switch is thrown to the above position.

This trouble is differentiated from a string short, which often acts like it, by the voltage tests mentioned under "Polarizing Circuit Troubles", it is unlikely that a piece of good conductor would lie between the strings and the pick-ups without being quickly displaced.

Dust from dirt can often be accomplished by just striking the keys and blowing away the accompanying vibration of the strings will shake the dirt loose. Dust, however, seems to require blowing with a blower. A vacuum cleaner usually has a blower attachment which should be run for a few minutes before directing the air stream into the piano so as to clean out old dust from the dust box or more dirt will be blown into the piano than will be blown out. Do not blow with your breath as the moisture will increase the trouble.

HUM: Outside of the usual causes of hum in an amplifier the only trouble to expect is from bad shielding, bonding, or grounding. Before anything else, make sure the amplifier is grounded to the ground point in the back of the box, the ground point is connected to ground. A loose grid cap, a defective (open) overload control, or other open low level grid circuits will also cause hum.

SELF-BLOWS: The overload control should not be set to permit playing much louder than an ordinary mechanical piano. Do not trust the player to cut down with the meter level control. If the customer wants louder an external special blow speaker is necessary, ask for feedback. Use only a special piano speaker of 4 ohm impedance and has special coil. These are available only from Krainz Bros. or the Jensen tube company will make them to order.

The sprocket on the swell pedal control should engage the chain in such a manner so that the swell pedal is one inch from full on when the pedal is in the full load position. Never set this control so that the player's foot can force the arm against the inside control. This control is not for the sake of the performer's convenience; it is for the sake of the player's convenience. Such deviation from the normal position of the pedals to suit the habits of the player is to be discouraged, as it is at the expense of the greater part of the player's technical skill.

A short in the circuit to ground may be detected with a 1000-ohm per volt voltmeter which should read 0.5 volt at the 50-watt scale or 0.1 volt in the 10-watt scale, high grounded between the strings and ground, the string being, positive at both ends. Low voltage indicates a short, providing the corresponding delay switch is not open and the polarizing switch is on "flanger".

The delay switch arm should normally lay against the rear bus. Each should have a slight play between itself and its attaching finger. Bend the finger to adjust. The resistance between the arm and the bus (both front and rear, as the bus is up or down respectively) should be between 20,000 and 100,000 ohms. The exact resistance is not important, but if too low the note will "creak" with low level and if too low the note will "speak" with a dull, thin or harsh (associated with "creak") sound. If the resistance is too high, the "creak" (colloquial phrase) becomes more and more of a problem (as the point of contact) and the bus (or even less or less in the "organ" position). The trouble can be localized in the treble or bass as the corresponding polarizing switch is thrown above the position.

For additional information on the Electronic Piano, see the special sections of "Piano's and Organ's of Rider's Volume VIII and IX".
MODEL AS-6
MODEL AS-6
Schematics, Alignment
Trimmers

ALIGNMENT PROCEDURE
ADJUST THE TWO TRIMMERS LOCATED ON TUNING CONDENSER UNDER CHASSIS. ALIGN AT 1450 KC

SHORT ANT. TO GND. SHORT OSC. SECTION OF GANG CONDENSER. CONNECT SIGNAL GENERATOR THRU .00025 MF CONDENSER TO GRID LET DIST. ADJUST IF AT 465 KC. THEN REMOVE SHORTS.
ADJUST RF AT 1400 KC, WITH SIGNAL GENERATOR CONNECTED TO ANTENNA.
TO ALIGN ON POLICE BAND, TUNE 3 GANG CONDENSER TO A 3500 KC SIGNAL. ALL ADJUSTMENTS MADE FOR MAXIMUM SENSITIVITY AND OUTPUT.
LAFAYETTE RADIO MFG. CO.

MODEL PA

MODEL M-31 (1936)

Schematics

6 • TUBE • 32 • VOLT • SUPERHET

© John F. Rider, Publisher
MODEL M-31-71
Midget Minstrel
Schematic

LAFAYETTE RADIO MFG. CO.

Midget Minstrel, M-31-71

© John F. Rider, Publisher
LAFAYETTE RADIO MFG. CO.

MODELS S-61, S-62
MODEL M-99, Pigmy
Schematics

All resistance in ohms
All capacities in MFDs

IF PEAK 456 KC.
MODEL S-62 IS IDENTICAL 361 EXCEPT
FOR SUBSTITUTION OF EUROPEAN
BROADCAST BAND FOR POLICE BAND.

LAFAYETTE S-61, S-62
11 TUBE 3 BAND SUPERHET RADIO RECEIVER

© John F. Rider, Publisher

www.americanradiohistory.com