

INSTRUCTION MANUAL

Fairchild MODEL 260R

FIFTY WATT
POWER AMPLIFIER

FAIRCHILD RECORDING
EQUIPMENT CO.

154th Street and Seventh Avenue, Whitestone 57, New York
Manufacturers of the World's Finest Professional Sound Equipment

PRICE \$1.00

FAIRCHILD 260

The Fairchild 260 Power Amplifier is designed to meet the requirements of our professional line of equipment. It will therefore deliver the ultimate in performance in home music installations, and is ideally suited for many applications, such as public address, motion picture work and other situations where high power output is advantageous.

While it is hardly likely that a sustained level of 50 watts will ever be required in home use, there are other factors to be considered having to do chiefly with adequate reserve power for any loud passages, or peak levels. It should be remembered that a 3 db increase means doubling the power output, and that the dynamic range in music may often be very large. Thus, for example, if the average level of the music should be 1 watt for a normal listening level, an increase of 12 db would mean a power requirement of 16 watts, and 15 db would mean 32 watts. The usual home amplifier would be overloaded under such conditions, but the Fairchild 260 would still be operating far below its overload point, thus providing an adequate reserve of power. At the same time, the low-power operating characteristics of the 260 are such that it is virtually distortion free. This combination makes the amplifier an ideal choice for home use where maximum performance is required.

The sensitivity of the 260 Power Amplifier is such that 0.9 volts at the input will deliver 50 watts at the output. The input impedance is 100,000 ohms which is ideal for cathode follower outputs or high impedance transformers. Output impedances of 4, 8 and 16 ohms are available which makes it adaptable to practically any standard type of speaker. The 260 Power Amplifier, unlike many others, will not be affected by the capacitance of a long speaker lead, and lines up to 1000 feet in length may be used without danger of ringing.

The performance of most amplifiers degenerates with time, due to aging of tubes, which causes unbalance of the push-pull output circuit. The 260 provides a Balance Control which makes it possible for the owner, without any instruments whatever, to adjust for minimum distortion almost as accurately as it could be done with an Intermodulation Test set. In this way it is possible for the user of the amplifier to maintain the performance which was built into it. In addition to this balance adjustment, a Bias Adjustment is also provided, which enables the user to get equally good performance from widely varying tubes.

The circuits of the 260 Power Amplifier are adjusted so that it delivers optimum performance with a loudspeaker load, which is of course the load which is presented to it in ordinary use. It is for this reason that the response curve is seen to roll off slowly at the high end, exhibiting no peaks, or rising points of response. When an amplifier with a high frequency peak is connected to a loudspeaker load and a square wave passed through it, "ringing" may always be observed on the oscilloscope screen. This ringing is usually at supersonic frequencies and will thus not be heard directly, but it reflects a basic instability of the amplifier. Such amplifiers tend to have a vaguely distressing and unnatural sound, and much effort has been expended in eliminating it from the 260.

For these and many other reasons, we think you will enjoy listening to the 260 amplifier for a long time to come. The following remarks are intended to help you get best results.

INSTALLATION

There are no particular requirements as to the location of the amplifier other than those required by sound engineering practice in this field. The amplifier should be installed where there is adequate ventilation, since it is a high-power unit, and a considerable amount of heat is generated.

Any power amplifier will generate a fairly strong electromagnetic (alternating) field near its power transformer, and it should therefore be kept as far as possible from low-level circuits. Such circuits include the phonograph pickup, the leads to and from the preamplifier, and in some cases the preamplifier itself. If absolutely necessary to place it near such units, and if hum is induced in them, a great improvement can sometimes be made by changing the position of the amplifier until the system is as quiet as possible.

OPERATION

Connection to the input jack should be by means of standard low capacity shielded cable. The maximum setting of the gain control will provide a sensitivity of 0.9 volts for full output. In many cases less sensitivity will be required and the gain control should be turned counterclockwise until the volume control of the preamplifier operates through a reasonable range.

The maximum power requirement of the amplifier at 117 volts is 180 watts (150 watts with no signal). An output terminal board is provided with four screw type terminals. One speaker wire is always connected to "0" (ground) and the other to 4, 8, or 16, according to the impedance of the speaker, as specified by the manufacturer. Speaker ratings are "nominal" and the 16 ohm connection, for example, may be used with complete satisfaction for speakers rated between 12 and 20 ohms.

BALANCE ADJUSTMENT

To adjust for minimum distortion, proper phase inversion and dynamic balance of the output tubes proceed as follows:

- 1- Remove the 12AU7 tube.
- 2- Insert an ordinary phone plug in the jack provided at the rear (no meter need be connected to the plug for this operation). This will cause a hum to be heard in the speaker.
- 3- With a screwdriver, turn the slotted control shaft in recess marked "Balance" to the left and to the right. A null point will be heard where the hum is least loud, and where there is a distinct change in the quality of the sound.
- 4- Leave the control at this position, remove the plug and replace the 12AU7 tube.
- 5- If no such null point is found it is probable that one or both of the output tubes (type 1614) should be replaced.

BIAS ADJUSTMENT

When tubes are replaced, or at any time if it is desired to check for exact optimum operating condition, the proper bias of the output tubes may be checked by the use of a simple DC Voltmeter with a scale which will accurately read a half volt. The procedure is:

- 1- Connect the voltmeter to the same phone plug used in adjusting the dynamic balance (above) with the positive terminal at the center and the negative at the sleeve.
- 2- Insert plug and adjust "Bias" control by means of a screwdriver until the meter reads 0.45 volts. (The meter may of course be connected to the phone plug when the balance is adjusted).

There are no other instructions necessary for the use of this amplifier. It is of course advisable to check the tubes from time to time, but aside from tube replacements there should be little if any need for attention.

GUARANTEE & SERVICE POLICY

Every effort has been made to provide you with a unit as near perfect in performance as can be made. It should operate satisfactorily for an indefinite time. In the event that any defects in materials, workmanship or performance should develop which cannot be handled by your authorized representative, feel free to call upon the Fairchild Recording Equipment Company for assistance. Address your inquiry to the attention of our Service Department, 154 Street and 7th Avenue, Whitestone 57, New York. If you wish to return your unit to the factory please request return authorization before making shipment.

If you will sign and return the Warranty Card enclosed with your amplifier the unit will be registered in your name, and you will be sent additional information pertaining to its use or to other associated equipment in which you might be interested.

SPECIFICATIONS

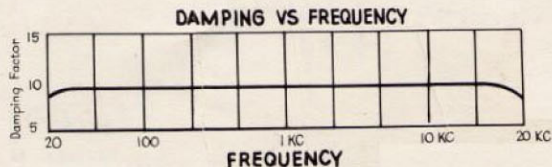
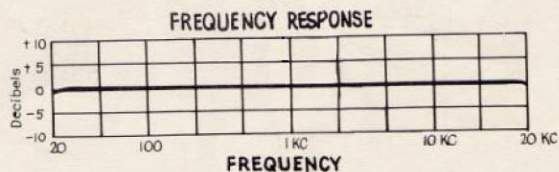
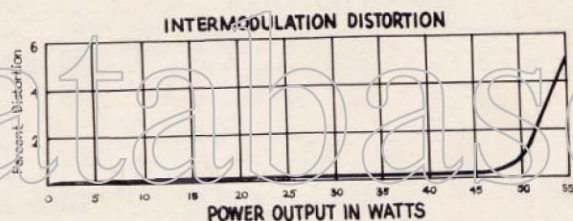
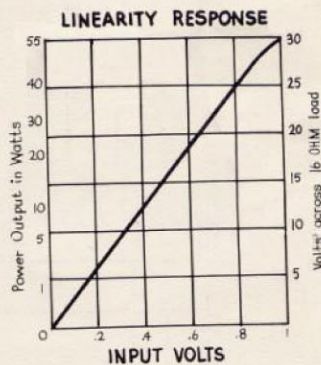
- Power Output - - - - - 50 Watts
- Controlled Frequency Response - - - - - Within 0.5 db from 20 to 20,000 cps.
- Input - - - - - Full 50 Watt output with input of 0.9 volts.
- Intermodulation Distortion Under 0.5% at 45 watts
Under 2% at 50 watts
- Harmonic Distortion - - Under 0.2% at 45 watts
Under 1.0% at 50 watts
- Noise - - - - - In excess of 85 db below rated output
- Damping factor - - - - - 9
- Exclusive Balance Control results in proper balance of output tubes without use of test equipment.
- Adjustable bias supply for lowest possible distortion.
- Remarkable stability under adverse loading conditions. Guaranteed not to ring at any level. Especially important where 2 or 3-way speaker systems or multiple speakers are used. Stability unaffected by loads of wide power factor.

CONTROLS: Master Gain Test Jack
Bias Adjust Input phono jack (100,000 ohms)
AC Balance 4, 8 and 16 ohms output terminals

DIMENSIONS: 12" wide x 7" deep x 7-1/4" high

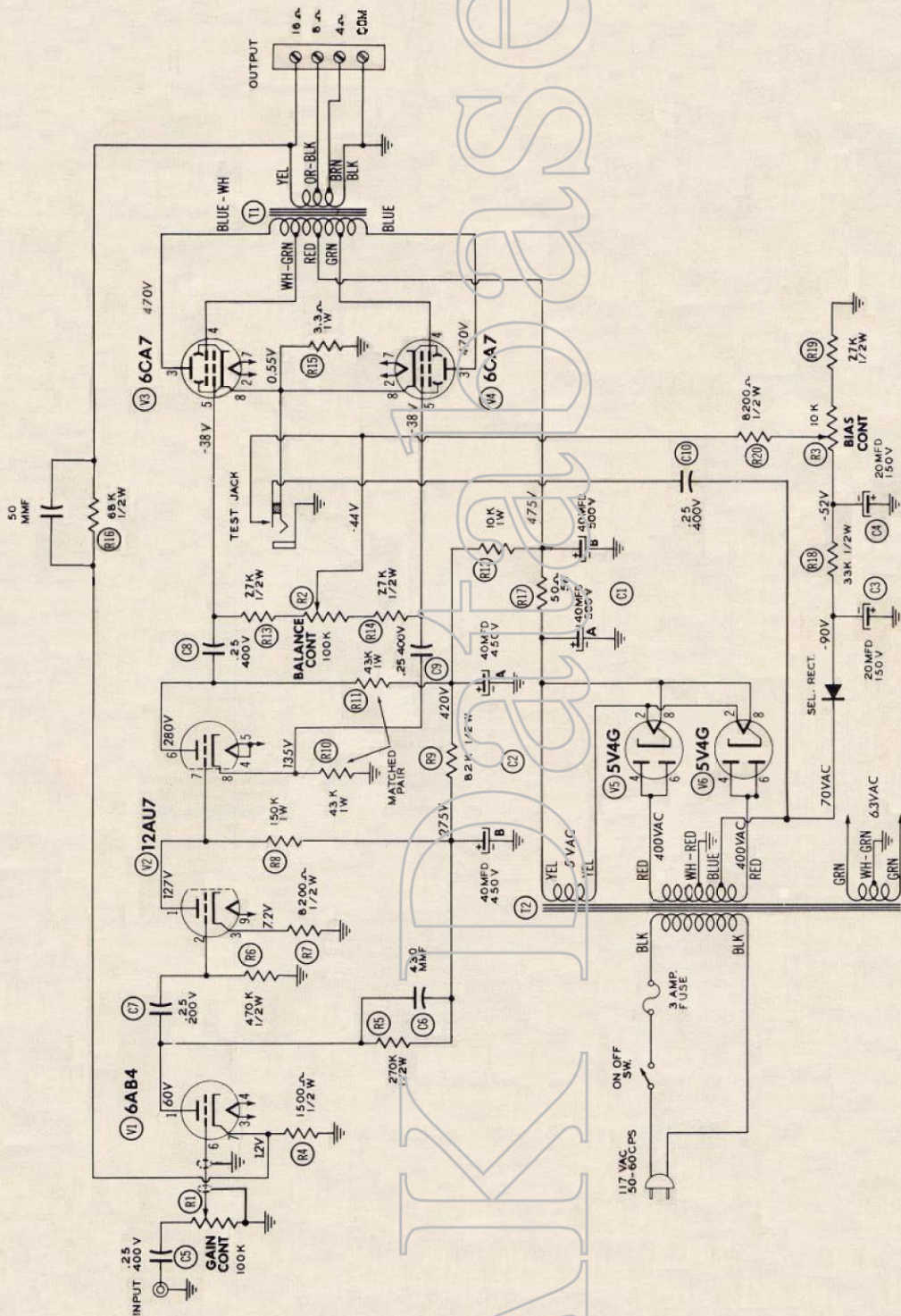
WEIGHT: 27 lbs.

CHARACTERISTIC PERFORMANCE



PARTS LIST

Symbol	Description
Condensers C1	60/40 mfd 500V Electrolytic
C2	40/40 mfd 450V Electrolytic
C3,C4	20 mfd 150V Electrolytic
C5,C8,C9,	.25 mfd 400V Mylar paper
C10	tubular
C6	430 mmf mica
C7	.25 mfd 200V Mylar paper
	tubular
Resistors R1,R2	100,000 ohm Potentiometer
R3	10,000 ohm Potentiometer
R4	1500 ohm, composition, 10%, 1/2W.
R5	270K, composition, 10%, 1/2W.
R6	470K, composition, 10%, 1/2W.
R7,R20	8200 ohms, composition, 10%, 1/2W.
R8	150 K, Composition, 10%, 1W
R9	82 K, Composition, 10%, 1/2W
R10,R11	43 K, Composition, 5%, 1W (matched pair)
R12	10 K, Composition, 10%, 1W
R13,R14	27 K, Composition, 10%, 1/2W
R15	3.3 ohm Composition, 10%, 1W
R16	68 K Composition, 10%, 1/2W
R17	50 ohms, Wirewound, 5 watt
R18,R19	33 K, Composition, 10%, 1/2W
Transformers T1	Output transformer, No. 1024 (D21654)
T2	Power transformer, (D21655)
Miscellaneous CR1	Selenium rectifier, Seletron 8Y1
	Fuse, 3 amps (Littlefuse 312003)
V1	Tube, type 6AB4
V2	Tube, type 12AU7
V3,V4	Tube, type 1614
V5,V6	Tube, type 5V4G



Fairchild Model 260R
50 Watt Power Amplifier

FAIRCHILD

is Proud to Announce its new

50 WATT POWER AMPLIFIER

The MODEL 260

Here is the finest audio amplifier for home music systems as well as professional installations. The result of intensive investigation, the Fairchild 260 reflects the high calibre and professional know-how that has characterized Fairchild professional recording equipment over the past twenty years.

The Fairchild 260 introduces many new and exciting innovations in power amplifier design

A primary aim was to so design an amplifier that any speaker system could be used without fear of causing the amplifier to oscillate. In this, the Fairchild 260 has achieved outstanding results. By carefully selected circuit constants, the amplifier's stability remains unaffected over



for increased listening enjoyment. Wide frequency response and abundant reserve power with optimum damping are of the highest order. Amazingly low inter-modulation and harmonic distortion coupled with an excellent signal to noise ratio produces breathtaking performance. This full undistorted power is available for the most crashing crescendos and other severe passages with realism that is unsurpassed.

A most important advance in amplifier design is the truly remarkable stability achievement by the Fairchild 260 under adverse load conditions,

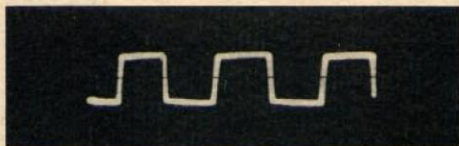
wide variations of power factor. This means that any single speaker, 2 or 3-way speaker system, or multiple speaker installation will not affect the outstanding inherent stability of the amplifier.

The Fairchild 260 eliminates "ringing," the disturbing type of distortion due to poor transient response found in many amplifiers. The oscillograms below indicate this excellent square wave response and show the absence of both low and high frequency instability and ringing.

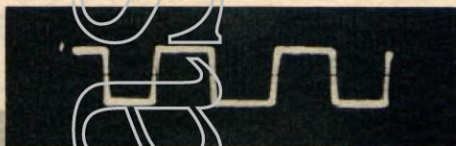
For full flexibility and ease of maintenance, an exclusive Balance Control has been incorporated to permit proper balancing of the output tubes without the need for test equipment of any type! This unique system applies a small

time. Provisions are also readily available for measuring the cathode current if desired.

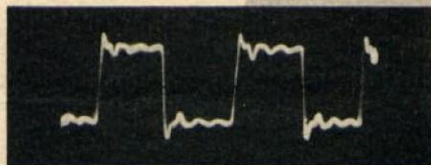
Superbly constructed, the amplifier chassis is only 12 inches wide, 7 inches deep and 7¼ inches high and will therefore readily fit in new



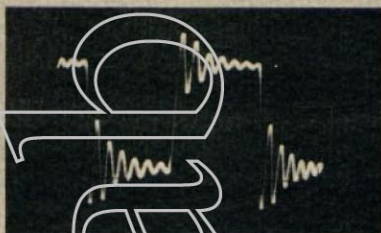
Model 260 with resistive load at 10KC



Model 260 with speaker load at 10KC



Competitive amplifier with resistive load at 10KC



Competitive amplifier with speaker load at 10KC

AC voltage to the grids of the final tubes. By varying the Balance Control, it is possible to correctly balance the output stage by simply listening to the output signal. Now for the first time you can not only be certain that your amplifier's output tubes are properly matched, but you have at your finger tips the means for aurally checking and adjusting their condition at any

as well as existing installations. No other amplifier of a similar power rating approaches this relatively small size. As in all Fairchild equipment, workmanship and construction is the finest possible.

Make certain you stop, look and listen to the Fairchild Model 260 Fifty Watt Power Amplifier at your equipment dealer's showroom.

SPECIFICATIONS

- Power Output — 50 Watts
- Frequency Response — Within 0.5 db from 20 to 60,000 cps.
- Input — Full 50 Watt output with input of 0.9 volts.
- Remarkable stability under adverse loading conditions. Guaranteed not to ring at all levels. Especially important where 2 or 3 way speaker systems or multiple speaker are used. Stability unaffected by loads of wide power factor.
- Optimum damping factor of 9 assures best transient response.
- Exclusive Balance Control results in proper balance of output tubes without use of test equipment.
- Adjustable bias supply for lowest possible distortion.
- Intermodulation Distortion — Under 0.3% at 45 watts.
Under 1.5% at 50 watts.
- Harmonic Distortion — Under 0.1% at 45 watts.
Under 0.5% at 50 watts.
- Noise — In excess of 85 db below rated output.
- Uses specially designed output transformer.
- Fully adaptable to professional use.
- CONTROLS: Master gain Test Jack
Bias Adjust Input phono jack (100,000 ohms)
AC Balance 4, 8 and 16 ohm output terminals
- TUBES: 2—type 1614 2—type 5V4G
1—type 12AU7 1—type 6AB4
- DIMENSIONS: 12" wide x 7" deep x 7¼" high. Weight: 27 lbs.

PRICE **\$149.50**

FAIRCHILD RECORDING EQUIPMENT
Manufacturers of professional recording and play-back equipment for over 20 years—adopted as standard by Columbia Broadcasting System, key Mutual station WOR, Metro-Goldwyn-Mayer station WMGM, DuMont Television Network and others

**WHITESTONE,
NEW YORK**