



# AVR-15 AND 15A



*Aircraft*  
**RECEIVERS**  
200 to 410 KCS





# AVR-15 AND 15A

AIRCRAFT RADIO RANGE  
AND WEATHER BROADCAST

## RECEIVER

WITH SEPARATE TRAFFIC  
CONTROL CHANNEL

**T**HE AVR 15 Receiver is the result of over a year of engineering effort to design a receiver approaching the standards of airline equipment in performance yet small enough for easy installation in light aircraft. Of a size and weight easily carried by the smallest ships, the reliable performance of the AVR 15 Receiver is yet designed to satisfy the requirements of the most severe "instrument" conditions.

The receiver is tunable over the radio range and weather broadcast band of 200 to 410 KCs, large specially selected knobs permitting easy adjustment even with gloved hands. A switch is provided for instant change over to the traffic control frequency of 278 KC. This feature is of especial importance when approaching an airport with the receiver tuned to the radio range station. Selection of either radio range or traffic control may be instantly accomplished by means of the Traffic Control Switch.

Selectivity of the AVR 15 Receiver is of the unusually high order recommended by the CAA for proper reception from simultaneous radio ranges. The importance of this feature is discussed in more detail on the opposite page. Ample audio power, high input sensitivity, and a complete transmission line antenna system are a few of the other outstanding features of this excellent unit. Regardless of aircraft size or type of flying, the AVR 15 Receiver will prove an invaluable addition to the ship's equipment.

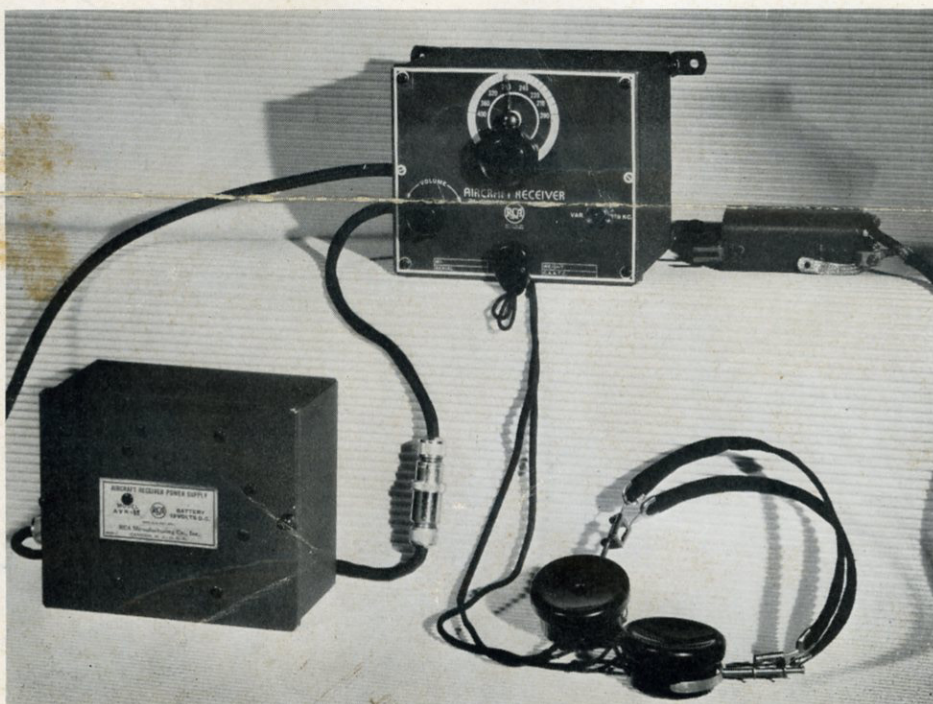
### UNIVERSAL ADAPTABILITY

The AVR 15 Receiver is arranged to operate from dry A & B batteries, the power developed by the RCA AVT 15 transmitter or from a special approved vibrator power unit (AVA 51) shown at the right. These power units are available for either 6 or 12 volt operation and the cost is small.

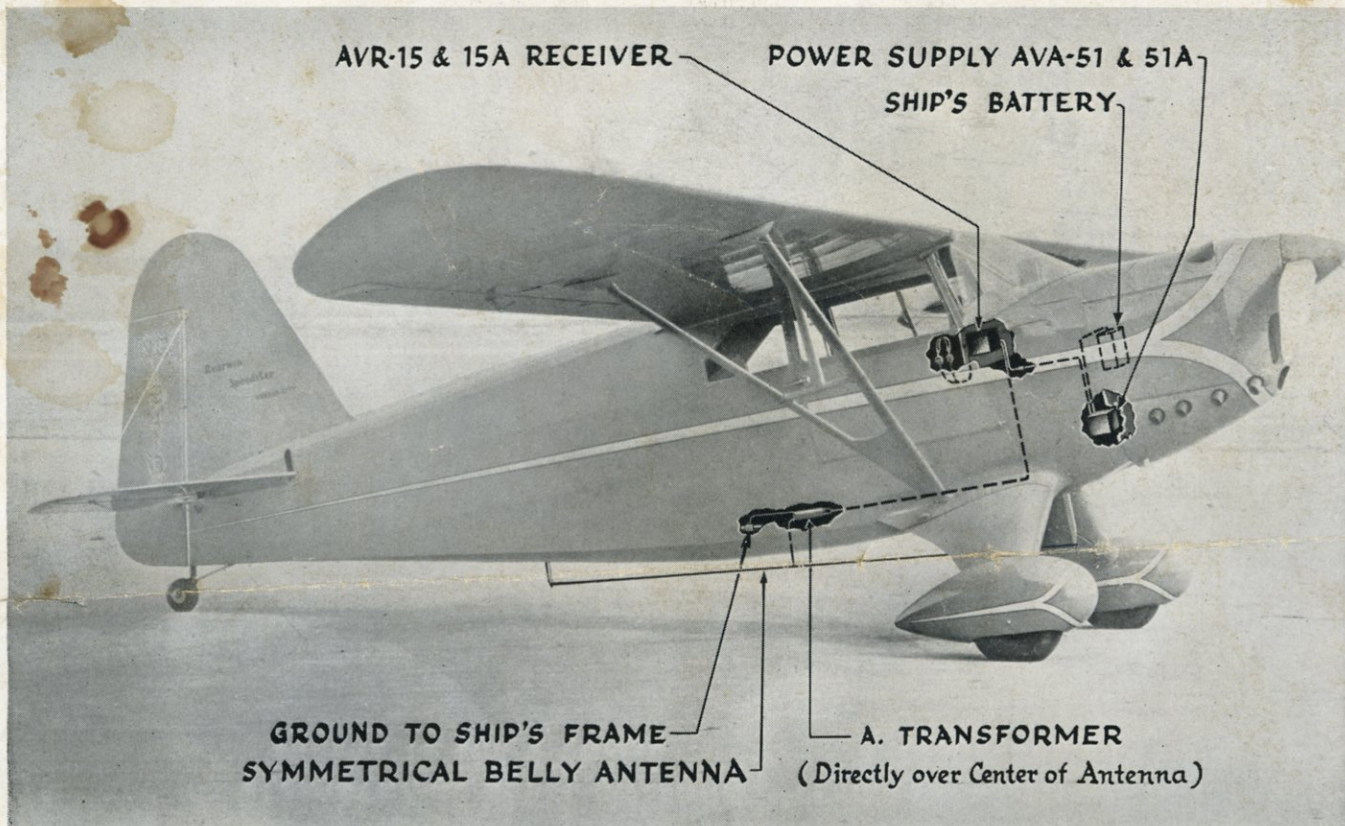
Due to the specially constructed shock mount brackets which may be fastened to the receiver case in four different positions, the receiver unit may be easily mounted in almost any location in the aircraft. Location of the receiver with regard to the radio beacon antenna may be completely disregarded as the antenna transmission line may be run between receiver and antenna in any convenient manner.

This feature is of great importance as it is usually necessary to locate a receiver with particular attention to the radio beacon antenna if proper orientation and cone of silence indications are to be preserved. The transmission line system of the AVR 15 provides normal indication regardless of receiver position.

The above facts clearly illustrate the universal utility of the AVR 15 receiver. Simplicity of installation is an outstanding feature.







## INSTALLATION

Installation may be conveniently made in the manner shown above. However actual location of the receiver may be entirely a matter of personal preference as long as the unit is within easy reach of the pilot. If the AVA 51 vibrator Power unit is used, it may be mounted on the rear of the fire wall, under the pilot's seat or other suitable position. Cables and plugs are furnished for interconnection. With the AVR 15 as with any receiver of adequate sensitivity, complete shielding of the engine ignition system will be necessary. An excellent bulletin on this subject, "Location and Elimination of Engine Ignition Interference", is available on request from Aviation Radio Section, RCA Mfg. Co., Camden, New Jersey.

## ANTENNA

The antenna for use with the AVR 15 Receiver should be of the symmetrical radio beacon type as illustrated above and may be mounted either above or below the aircraft. The belly antenna shown is recommended especially if a later installation of the AVT#15 Transmitter is contemplated as it leaves the top of the ship clear for the AVA 41 Reel Antenna system.

In either case the antenna should be as long (up to about twelve feet) as the size of the aircraft will permit and the lead-in should be attached at the exact center. Over or under this point the lead-in should enter the ship and connect directly to the antenna transformer of the AVR 15 Receiver. The transmission line connecting the Antenna Transformer and receiver may then be run in the most convenient manner.

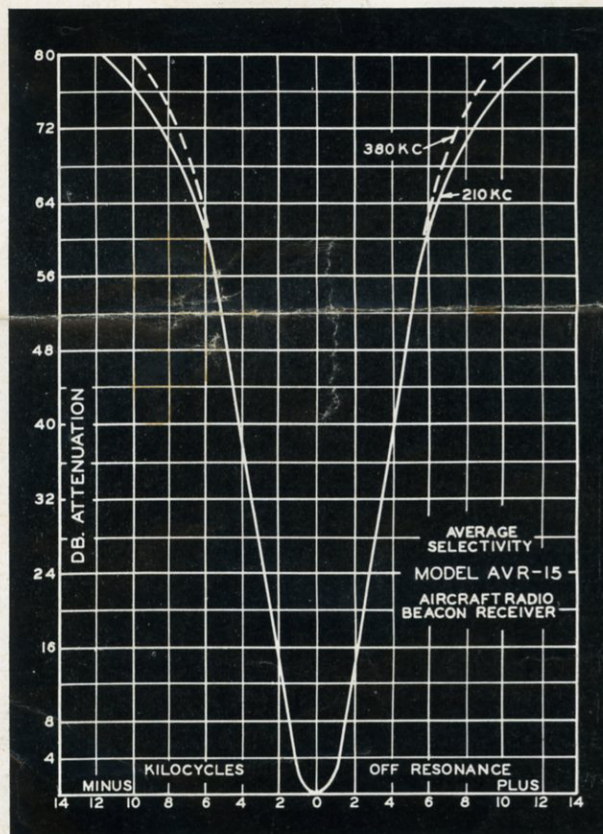
## SELECTIVITY

Particular attention has been given the selectivity of the AVR 15 Receiver due to the difficulty of reception from Simultaneous ranges unless the receiver is equipped with a Simultaneous Audio Filter.

The selectivity curve of the AVR 15 is only 2.8 KC off resonance, 25 DB down permitting a pronounced degree of selection between voice and range transmissions by tuning alone. The selectivity of the receiver is even better than that recently recommended for airline operation.

## TRAFFIC CONTROL CHANNEL

An additional and especially attractive feature of the AVR 15 Receiver is the separate traffic control channel pre-tuned to 278 KC and operated by a switch on the front panel. When approaching an airport the receiver tuning may thus be left on the radio range frequency at all times. A flip of the Traffic Control Switch brings in the control tower yet permits instant return to the radio range frequency to which the receiver is tuned. This feature becomes increasingly important in congested air traffic and poor weather conditions.



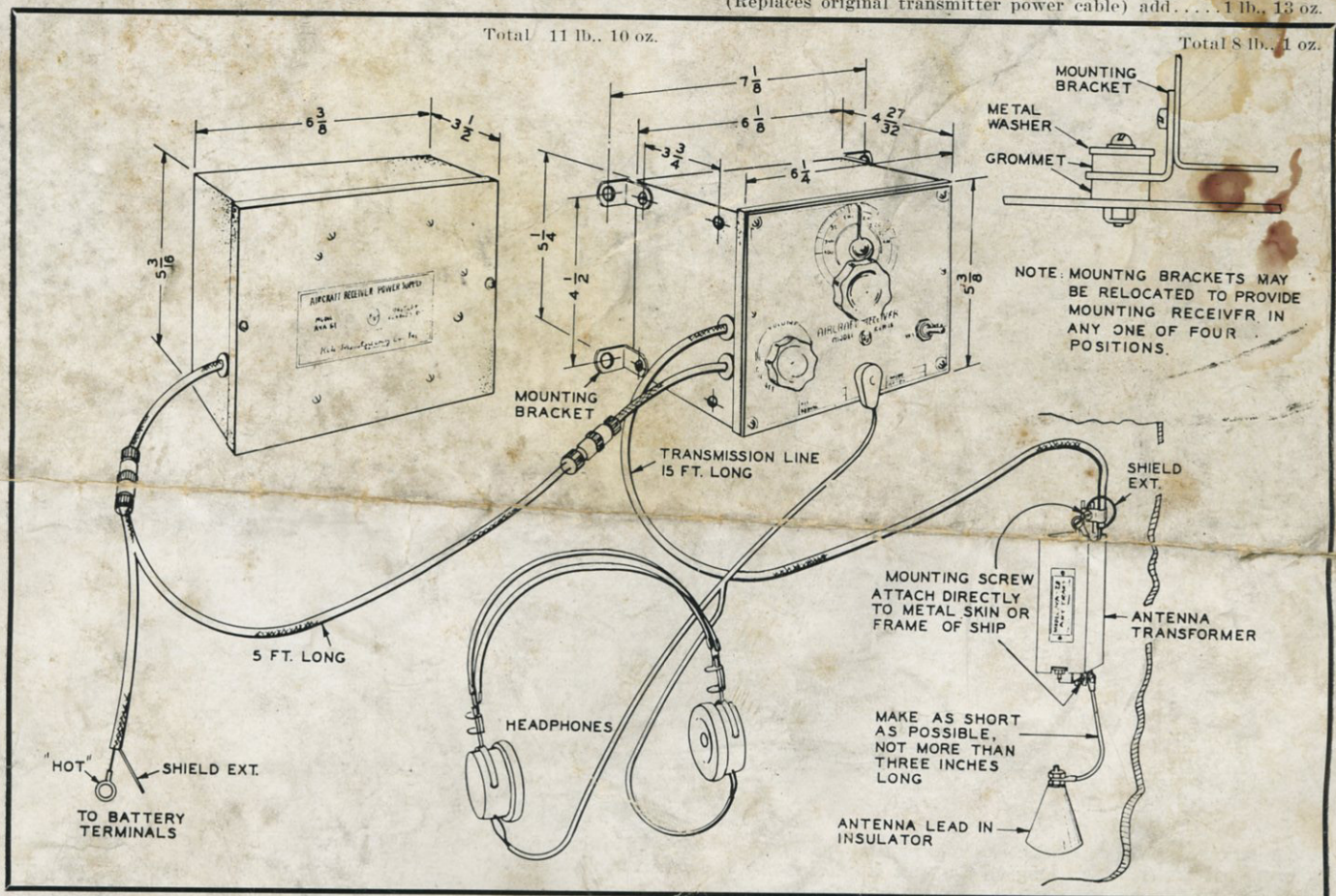
AVERAGE SELECTIVITY CURVE



- 1—Receiver and 15-ft. transmission line..... 5 lb., 5 oz.
- 2—Antenna transformer..... 4 oz.
- 3—Headphones cord and plug..... 11 oz.
- 4—Power supply unit..... 5 lb., 0 oz.
- 5—5-ft. Cable for connecting receiver to power unit..... 6 oz.

**NOTE:** If receiver uses AVT 15 transmitter power supply weight is.

- 1—Receiver and 15-ft. transmission line..... 5 lb., 5 oz.
- 2—Antenna transformer..... 4 oz.
- 3—Headphones cord and plug..... 11 oz.
- 4—Receiver-Transmitter power cable complete with plugs (Replaces original transmitter power cable) add..... 1 lb., 13 oz.



## SPECIFICATIONS

### ELECTRICAL

**Circuit**—Superheterodyne, with dual oscillator channel.

**Tubes**—Total 3. 2 6F7, 1 6K8.

**Selectivity**—2.8 KC off resonance 25 DB down.  
Selectivity curve on reverse side of page.

**Power input**—With AVA 51—51A power supplies  
AVR 15, 1.75 amperes at 12 volts DC  
AVR 15A, 2.5 amperes at 6 volts DC  
“B” drain approximately 25 milliamperes

**Power output**—Better than 300 milliwatts into 600 ohm phones.

**Antenna Coupling**—Complete transmission line system for coupling to any properly constructed radio beacon antenna.

### MECHANICAL

**Dimensions and weights**—See above diagram.

**Construction and finish**—Heavy gauge aluminum case fitted with universal shock mounts. Case finished in durable grey cracked enamel. Front panel reverse etched aluminum.

**Approval**—Approved by the Civil Aeronautics Authority for Air-line Use. The following certificate numbers are assigned:

|                                |            |
|--------------------------------|------------|
| AVR 15                         | CAATC #227 |
| AVR 15A                        | CAATC #228 |
| AVA 51                         | CAATC #229 |
| AVA 51A                        | CAATC #230 |
| AVR 15/15A Antenna Transformer | CAATC #231 |

**Price**—AVR 15/15A Aircraft receiver complete with one set of tubes, one pair headphones, antenna transformer and transmission line and power supply cable for connection to A or B batteries or to AVT 15 Transmitter \$99.50  
AVA 51/51A vibrator power unit complete with vibrator and cable for connecting to AVR 15 Receiver \$43.00

**FOR FURTHER INFORMATION, DEMONSTRATION OR PURCHASE ADDRESS**

AVIATION RADIO SECTION

# RCA Manufacturing Company, Inc.

CAMDEN, N. J. A Service of Radio Corporation of America U. S. A.