ORBIT

10417 Long Beach Blvd.
Lynwood, California.

ORBIT 8 Channel — ORBIT 5 Channel

GENERAL INFORMATION & OPERATIONAL DATA

Acclaimed the World over, ORBIT Radio Control Equipment is among the finest and most advanced R.C. equipment available today. Operating on the Examination-Free frequency of 27.255 mcs, it offers DEPENDABLE MULTI-CHANNEL OPERATION and SIMULTANEOUS CONTROL. ORBIT Transmitters and Receivers are identified by their outstanding and distinctive Black Anodized cases, made from durable lite-weight Aluminum, and bearing the popular ORBIT insignia. The electronic circuits used in this equipment have been designed and tested to give optimum performance even under adverse climatic conditions and are TEMPERATURE STABILIZED.

Transmitter

Price, 8 Channel.. $ 98.50 5 Channel.. $ 93.50

The ORBIT Crystal Controlled, Tone Transmitters feature complete stability of tones with no drift occuring as the battery voltage drops. When turned on, the brightness of the Indicator Light on the Control Panel will reveal the strength of the carrier and thus provides a visual means of tuning without the need for a meter. The Transmitter is hand-held. The effective range of this powerful unit is well beyond the visual range of your model. The rear cover of the Transmitter case is easily removed for installing batteries or tuning. Each ORBIT Transmitter comes equipped with a Chrome-plated telescoping antenna which mounts firmly to the top of the case and is quickly removed when not in use.

Receiver

Price, 8 Channel..$ 119.50 5 Channel..$107.50

The sensitive, Transistorized, ORBIT Tone Receiver, employs the latest design using resonant reeds for audio-channel separation. One detector tube and two transistors are used in the circuit. The detector tube is used in the first stage for stability and has a 10 mil filament drain. The total idling current is approx. 1 3/4 mils. The reed bank and relays are completely accessible when the cover is removed and protected from damage when replaced. The tuning procedure is quick and simple. The battery compliment weighs only 1½ ounce.

Weight and Dimensional Data

8 Channel Rcvr. --- 2 1/16" x 2 1/4" x 3 3/4"----Weight-- 9 oz.
5 Channel Rcvr. --- 2 1/16" x 2 1/4" x 3" ----Weight-- 7 oz.

Battery Requirements

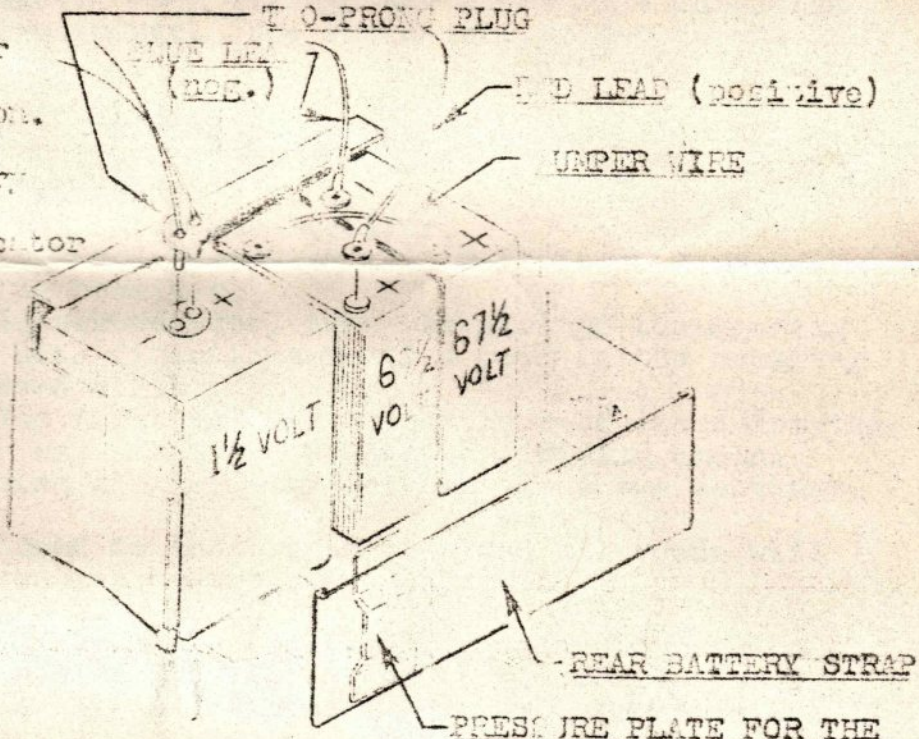
Transmitter --- 2 Burgess XX45 (67½ Volts) or equivalent.
1 Burgess 4F (1½ Volts) or equivalent.
Receiver------- 1 Burgess U20 (30 Volt) hearing aid or equiv.
1 Burgess Z (pencell 1½ Volt) or equiv.

INSTALLING THE TRANSMITTER BATTERIES

Remove the Rear Cover by taking out the four sheet metal screws located on each side of the case. Slide off the Rear Cover. Next, unfasten and remove the Rear Battery Strap by depressing the side plates inward to disengage the flanged connections. Connect the two-prong plug into the 1½ volt battery socket. Then, connect the remaining leads to the 7½ volt batteries as illustrated.

Note that the pressure plate on the Rear Cover is used to hold the 1½ volt battery in position.

Replace the Rear Battery Strap and turn on the Transmitter.--The Indicator Light on the Front Panel should glow brightly since all Transmitters are tuned at the factory prior to shipment; however, it may be necessary to retune the tuning condensers until Max. brightness of the Indicator light is obtained.



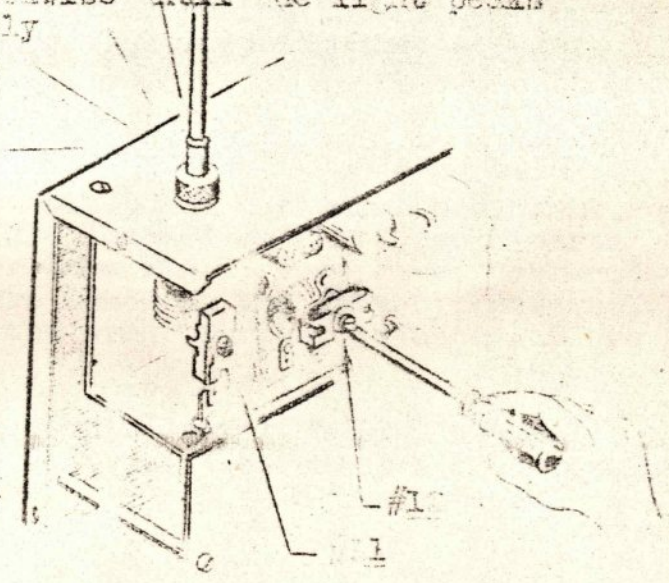
TUNING TRANSMITTER FOR MAXIMUM OUTPUT

Note:- USE A NON-METALLIC SCREWDRIVER FOR THE FOLLOWING TUNING PROCEDURE TO PREVENT DETUNING WHEN SCREWDRIVER IS REMOVED!

1.-Turn #11 Condenser Screw counter clockwise until the Indicator Light goes dim.
2.-Turn #12 Condenser Screw in both directions until the Indicator light shows peak brightness. Then, turn off peak SLIGHTLY, in a counter clockwise direction.
3.-Now, turn #11 Condenser Screw clockwise until the light peaks again.--Then back off peak Slightly in a counter clockwise direction.

You are now tuned for a Maximum Output (RF)

Note:- If the Indicator Light goes out or flashes when holding on simultaneous tones, the output is peaked excessively. Turn #12 Condenser Screw SLIGHTLY, counter clockwise.



ALL TRANSMITTER TUNING SHOULD BE PERFORMED WITH THE ANTENNA INSERTED AND EXTENDED.

WIRING AND TUNING THE RECEIVER

CAUTION:- IMPROPER WIRING OF THE RECEIVER SOCKET CAN DAMAGE THE RECEIVER! Check wiring carefully before plugging in the battery power.

Solder-connect the battery leads to the Receiver Socket (supplied with the Receiver) as shown in Fig. 2, Page Five. Each terminal is numbered on the socket. When wiring, use high-grade insulated wire having at least 14-strands. Use rosin-core solder to obtain best results.

Remove the Transmitter antenna and tune Receiver as follows:

1.-Extend the Receiver antenna.
2.-Turn on both the Transmitter and Receiver.
3.-Depress one of the control levers on the transmitter thus sending a tone to the receiver.
4.-Using a non-metallic screwdriver, turn the slotted tuning slug of the receiver in both directions until a reed in the receiver begins to drive. (reed vibration)
5.- Turn the tuning slug first one way until the reed stops driving, and then the other way until the reed stops driving again.
6.-Now, adjust the tuning slug mid-way between these two settings.

Your receiver is now tuned to the transmitter and all reeds will drive when the corresponding controls are actuated.

Note;- The adjusting screws on the reed bank should not require re-adjustments unless damaged in some way. These screws should always be set so as to pass maximum current to the receiver relays.

After all radio equipment is installed, make a range check. The distance of one city block is suggested and is sufficient. Have an assistant send a control to the receiver while you repeat steps 4, 5, and 6 with the Transmitter antenna connected and fully extended. This will ensure accurate tuning for operation.

Note;- Due to the power of the transmitter and sensitivity of the receiver, the receiver may tend to become swamped (receives signal which is too strong). This sometime occurs at very close range. The condition can be remedied by putting your hand on the transmitter antenna thus reducing the output and preventing the swamping.

TUNING TRANSMITTER TONES TO THE RECEIVER-REEDS

This tuning procedure applies to both 5 and 8 channel equipment. The tuning "pots" (potentiometers) are located on the large Micarta panel in the back of the transmitter (see Fig 1, Page Five, numbered 1. thru 8.) The transmitter tones are tuned at the factory; however, the following procedure is used in the event further adjustments are found necessary...

1.-On the Standard transmitter (non-simultaneous), hold a control lever on and adjust the corresponding potscrew until the correct reed stops driving,(turning clockwise)-then turn the screw in the-

counter-clockwise direction until the reed starts driving again. Leave the pot screw in this position and tune each control in the same manner.

2.-On the simultaneous transmitters, hold the Rudder Control lever at one position while tuning the Elevator or Engine pots and then hold the Elevator control lever at one position while tuning the Aileron or Rudder pots. Tune in the same manner as described in step 1.

The Transmitter tones are now tuned to the receiver reeds and Simultaneous Control is available by operating either of the two control levers on one side of the control panel simultaneously with either of the control levers on the opposite side of the panel. You will find that simultaneous use of one Engine Control lever and one position of Aileron Control will cause the receiver to chatter; however, this should not cause any trouble since these two controls are rarely used at the same instant while flying.

WIRING SERVOS TO THE RECEIVER RELAYS

Since each manufacture may prescribe unlike servo hook-ups it is suggested that you refer to the wiring instruction supplied with each servo. Fig. 2 on Page Five shows a typical relay terminal board. The different terminals are identified.. Only three of these terminals are normally used for the servo hook-up. These are identified as NO (normally open), NC (normally closed), and COMMON (center contact). When soldering to these connections, use only enough heat to insure a good joint. Excessive heating may cause the relay contacts to sag out of their proper adjustments.

Battery Checks;--- Low batteries may cause loss of simultaneous control. Check Transmitter "A" (1½ volt) battery and/or Receiver batteries.

Low batteries may sometimes be the cause for the Indicator Light to be dim. Check both "A" (1½ volt) and "B" (67½ volt) batteries.

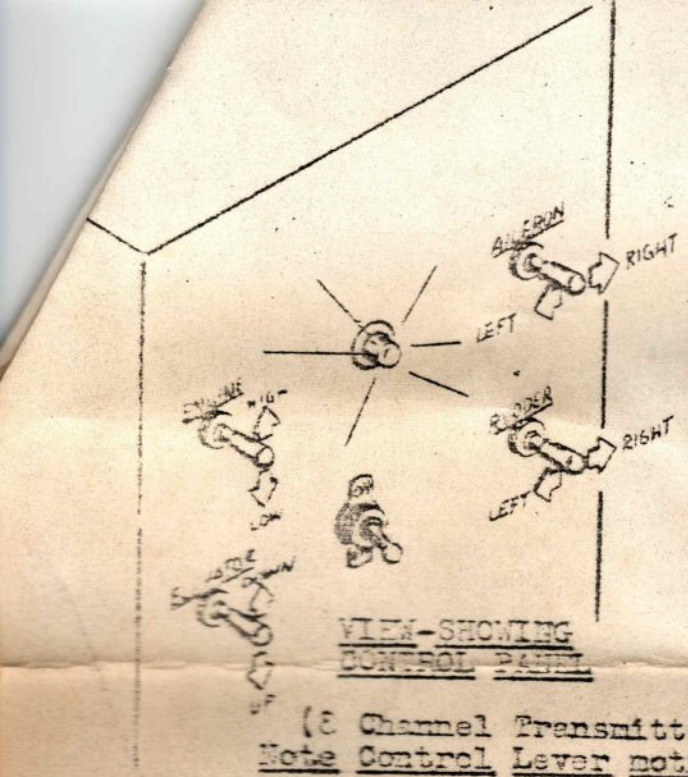
GUARANTEE & REGISTRATION

A Warrantee and Registration Certificate is furnished with each purchase of ORBIT equipment. This certificate should be filled out and returned to the factory immediately upon receipt. No charge will be made for service rendered under the guarantee. We are not responsible for any damage which occurs during shipment. Postal insurance is recommended for your protection. Please send both the Transmitter and Receiver to permit factory tuning. Tubes and transistors are not covered under this guarantee.

FACTORY SERVICE

The factory will repair and tune your damaged ORBIT equipment for a minimum charge of $ 2.00 each, plus parts. Upon request, an estimate of repair costs will be furnished for your approval prior to proceeding. Please adress your correspondence to:

ORBIT ELECTRONICS, 10417 Long Beach Blvd..... Lynwood, California.



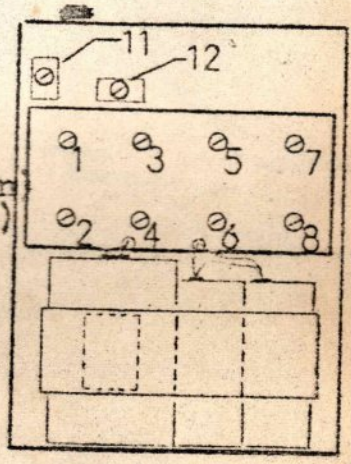
VIEW-SHOWING CONTROL PANEL

(8 Channel Transmitter)
Note Control Lever motions.

POT LOCATIONS
(Nomenclature)

1.-Right Rudder
2.-Left Rudder
3.-Right Roll (Aileron)
4.-Left Roll (Aileron)
5.-Fast Engine
6.-Slow Engine
7.-Up Elevator.
8.-Down Elevator

11.-Tuning Condenser
12.-Tuning Condenser

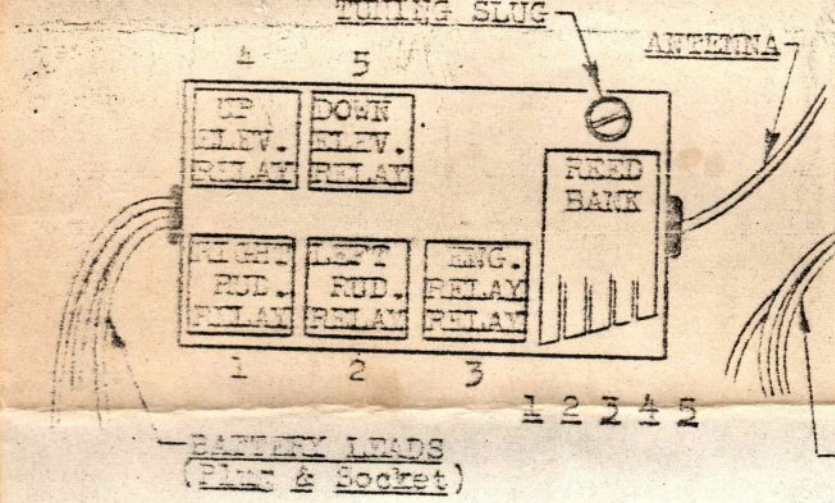


REAR VIEW
(Case cover removed)

5-CHANNEL TRANSMITTER

1.-Right Rudder
3.-Left Rudder
5.-Up Elevator
6.-Down Elevator
8.-Engine (Push Button)

FIGURE 1.



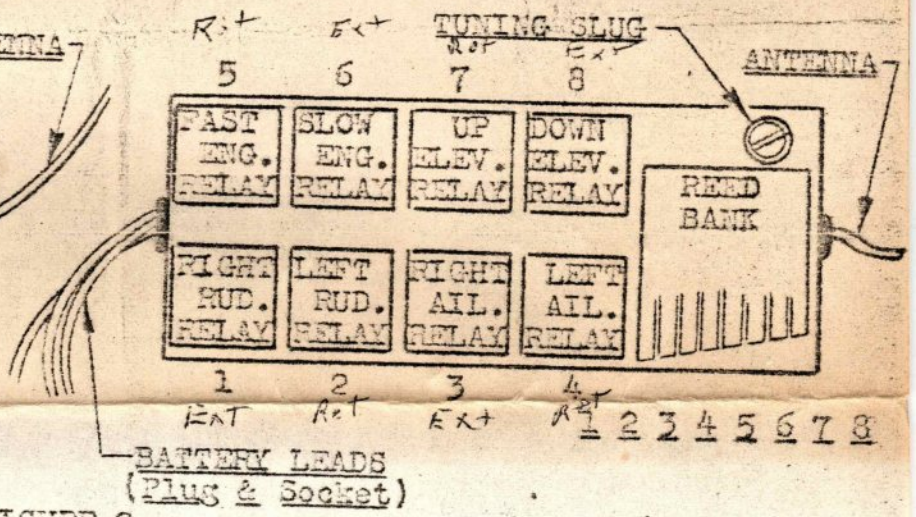
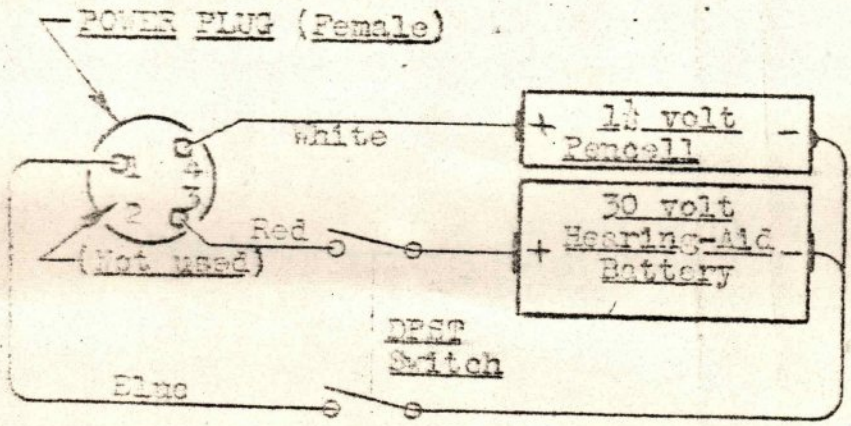
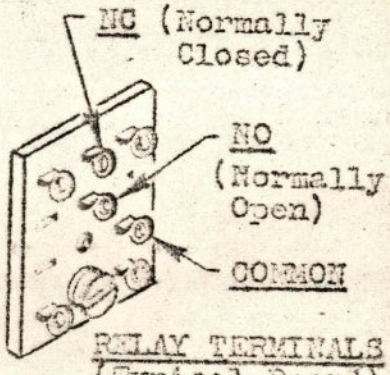


FIGURE 2.





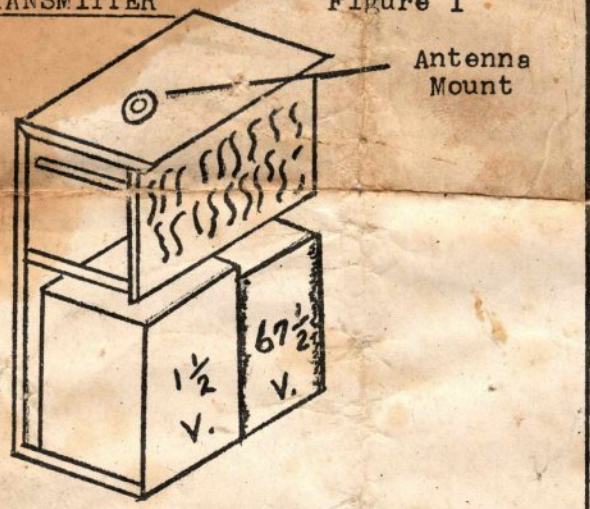
RELAY TERMINALS
(Typical Board)

Your ORBIT I transmitter and receiver are guaranteed against defective parts and workmanship for 3 months from date of purchase. If for any reason your transmitter or reciever failes to operate after following these instructions, return both to the factory for checking and repair. Nocharge will be made for service when the transemitter and reciever are returned under the guarantee. However, if either has been tampered with, altered, or show signs of abuse, this guarantee is void. The tubes or crystal are not guaranteed against burn-outs or breakage. We are not responsible for equipment damaged in shipment, so please insure. Send both transmitter and reciever to permit factory tuning.

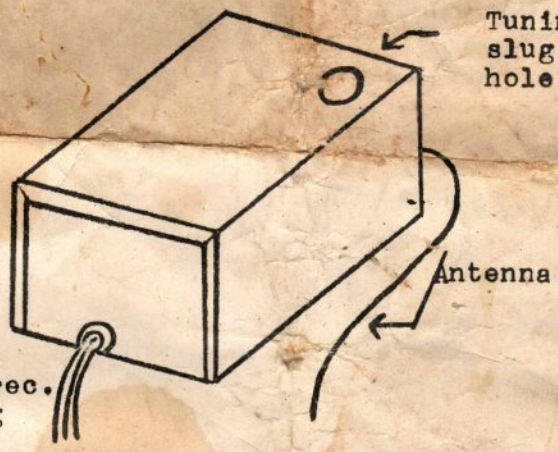
FACTORY SERVICE

After your guarantee has expired, the factory will repair and tune your ORBIT I equipment for a minimum charge of $2.00 each plus parts. You will be notified of cost before going ahead with repairs.
Send to ;ORBIT ELECTRONICS, 10417 Long Beach Blvd. Lynwood, Calif.

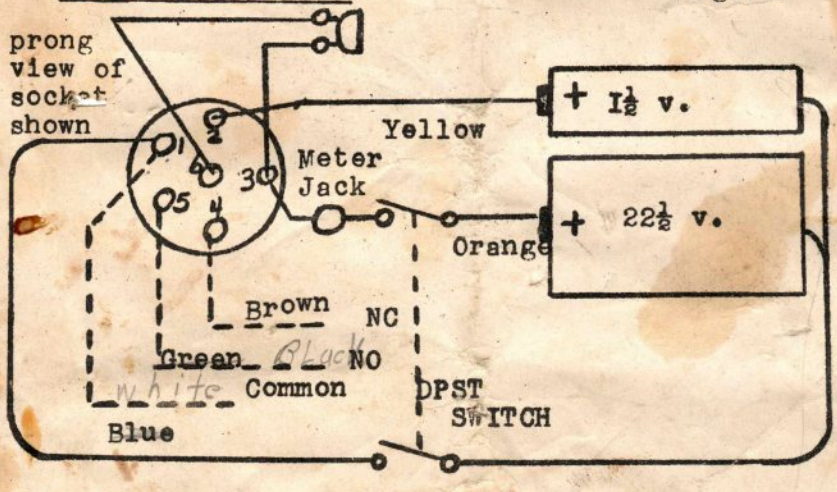
TRANSMITTER Figure I



RECIEVER Figure3



BATTERY HOOK UP Figure2



TYPICAL ESCAPEMENT HOOK-UP