

## SUPPRESSION

Due to the unique design of the circuit, freedom from interference due to drive motors and random pulses is extremely good. However, in some installations having heavy current motors or severely arcing contacts it may be necessary to suppress the offending equipment by the use of capacitors placed across the motor electrical supply terminals or contacts. This is normally carried out by the equipment manufacturer or alternatively adequate suppression instructions are given. In the absence of guidance on suppression, a 0.1 micro-farad capacitor placed across motor terminals or excapement coils will usually suffice. A similar value capacitor placed across relay terminals will also be beneficial.

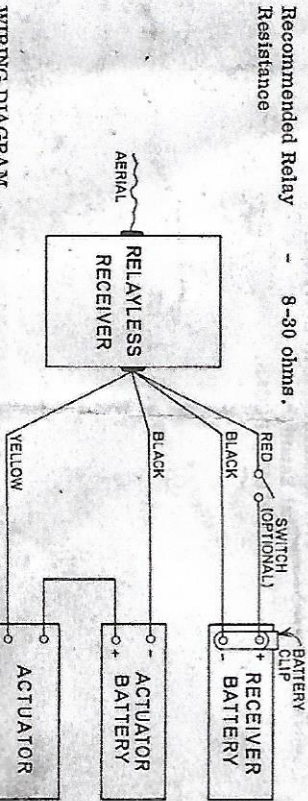
## SPECIFICATIONS

### TRANSMITTER

Supply Voltage	- 9 Volts
Output Stage	- 2 Silicon NPN Planar Transistors in Push-Pull
Current Consumption	- Approximately 50 mA
Size	- 6" x 3 1/2" x 1 1/2"
Weight (with batteries)	- 16 ounces
Aerial Length	- 2" retracted, 39 1/2" extended, bottom loaded.
Modulation	- Chopped sine wave at 1000 c/s.
Temperature Range	- 0°F - 120°F
Frequency	- 27.255 Mc/s

### RECEIVER

Case Size	- 2" x 1.3/8" x 3/8"
Weight	- 1 ounce
Receiver Voltage	- 9 Volts
Standby Current	- 3 mA
Max. Actuator Current	- 500 mA
Recommended Actuator Resistance	- 8-14 ohms.
Recommended Relay Resistance	- 8-30 ohms.



PATENT APPLIED FOR

MAY 1968

# INSTRUCTIONS FOR PATHFINDER 27 Mc/s CRYSTAL CONTROLLED TONE TRANSMITTER AND RELAYLESS RECEIVER

## INTRODUCTION

The PATHFINDER 27 Mc/s transmitter and receiver incorporate the most modern components available. Silicon transistors are used throughout which ensure the user of maximum life and reliability. Both transmitter and receiver operate from a 9 volt supply, the current consumption being small, thus ensuring maximum battery life. Tested range of the equipment is in excess of 600 yards.

### TRANSMITTER

Provision is made for using 9 volt batteries

Recommended types are:-

EXIDE	DT6
EVEREADY	PP6
VIDOR	T6006
SIEMENS	TR6

Battery press studs are provided for connection to each battery. These should be pressed firmly into place before insertion of the batteries into the case.

This transmitter is capable of giving usable RF output at a battery voltage level of less than 6 volts; however, batteries should be discarded at a voltage level of 6-7 volts if optimum performance is to be maintained.

Having ensured that the battery clips are firmly in place, replace the back and the transmitter is ready for operation.

Switch on the transmitter by means of the ON/OFF switch at the left. This will cause a continuous unmodulated carrier wave to be radiated. Depressing the tone button on the right will produce a tone modulated signal of approximately 1000 cycles/second.

The above operation may be carried out with the aerial either extended or retracted. For full RF power radiation the aerial must be fully extended.

Always switch off the transmitter when not in use. This conserves the batteries and eliminates the possibility of causing interference with other receivers operating on the same frequency.

NEVER ATTEMPT TO ADJUST THE TRANSMITTER CIRCUIT. The transmitter has been factory tuned for optimum performance and the coils sealed. Any alteration of the settings will inevitably reduce performance.

## RECEIVER

It is recommended that the relayless receiver be operated from a two battery system as shown in the wiring diagrams below, i.e. a small 9 V battery for receiver operation only and a separate battery for operation of the actuator or escapement. If required a 6 or 7.2 volt DEAC may be used for the receiver supply.

The following batteries are suitable for operating the receiver only:-

9 volt EVEREADY PPS  
EXIDE DT3  
VIDOR T6003  
6 or 7.2 volt DEAC 225DKZ

Most escapements and servos operate from a 3 or 4.5 volt supply and the manufacturer's instructions should be followed regarding the correct batteries.

The receiver is supplied in a strong plastic case to protect the components. It is suggested that a suitable compartment be made in the model lined with plastic foam to accommodate the receiver. For model aircraft the receiver is best mounted in a vertical position with components facing forward. A thick pad of foam should be placed forward of the receiver to protect it in the event of a crash. Batteries should preferably be placed in front of the receiver to avoid them being thrown against the receiver should an accident occur.

## WIRING

The wiring diagrams shown below should be followed carefully. The diagrams are intended to be a general guide using typical escapements and motorised actuators and are not intended to replace other manufacturers instructions.

Note:- THIS RECEIVER USES ALL SILICON N. P. N. TRANSISTORS AND THEREFORE REQUIRES THAT COMMON BATTERY CONNECTIONS SHOULD BE NEGATIVE.

## TUNING

All receivers are tested and tuned to the approximate correct position before leaving the Works, and in consequence it should only be necessary to peak the actual tuning to suit the particular transmitter being used. Should it be necessary to completely re-tune, it should be done in the following manner.

Start with the tuning slug slightly above the level of the coil former. Place the transmitter with the minimum or no aerial at all a yard or so from the receiver. Switch on and key the transmitter holding on the signal. Now gradually turn the tuning slug clockwise until the armature of the actuator is seen or heard to pull in, and continue turning until the armature returns to neutral. Stop turning and note the position of the slug. Now turn the slug back anti-clockwise whereupon the armature will again pull in and finally drop out. Note this position of the slug also. The slug should now be turned clockwise back to the mid-point between the two extreme positions. Repeat the process at 50, 100 and 300 yards, extending the transmitter aerial to full length.

## SERVICE

If the equipment becomes damaged or unserviceable it should be returned to PATFINDER RADIO CONTROL, Canal Estate, Langley, Bucks., together with a postal order or cheque for 15/-. This charge is necessary to cover the cost of handling, checking, postage and packing. In the event that the service charge should exceed this amount due to replacement of components or materials you will be advised of the additional cost prior to despatch of your receiver.

Before returning your receiver please check for the following errors which are frequently the cause of unnecessary delay and expense:-

- 1) Receiver batteries are connected correctly and firmly. Check that battery voltages are normal.
- 2) All switch and wiring connections are properly soldered. Check the switch is not faulty if fitted.
- 3) Receiver is tuned correctly to your transmitter.
- 4) Receiver aerial is fully extended.
- 5) Transmitter aerial is fully extended.
- 6) Transmitter batteries are not down in voltage.
- 7) Transmitter functions correctly using a known working receiver.
- 8) Servo, actuator or escapement is correctly connected and in working order.

Always pack your equipment carefully and always write your name and address clearly. NEVER SEND BATTERIES THROUGH THE POST.

## GUARANTEE

All PATFINDER equipment is subject to a very thorough examination and final test. Should you have any complaints regarding damage or unsatisfactory operation, return the unit to us immediately. We guarantee against faulty manufacture and will repair or replace defective parts free of charge, providing the equipment has not been tampered with, and was purchased through a bona fide retailer. This guarantee is effective up to six months from the date of purchase.

PATFINDER RADIO CONTROL  
Canal Estate,  
LANGLEY, BUCKS.