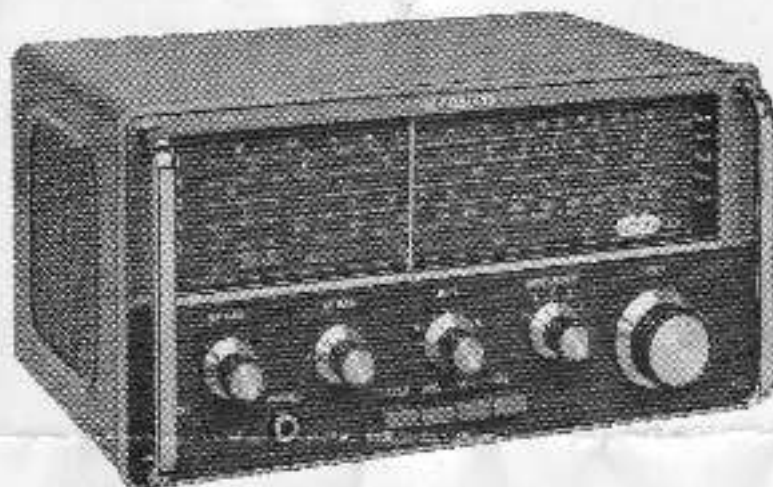


Eddystone

TRANSISTORISED COMMUNICATION RECEIVER

MODEL EC10

INSTRUCTION MANUAL



The EDDYSTONE Model EC10 is a fully transistorised single conversion communication receiver covering the frequency band 550 kc/s to 30 Mc/s in five ranges. Provision is made for AM and CW reception and the unit is powered by a self-contained battery pack. A total of ten transistors is employed together with five diodes one of which is a zenier type which serves to stabilise the supply for the RF section of the receiver. This arrangement helps to maintain a sensibly constant performance with falling battery voltage. Current drain has been kept to a minimum to prolong battery life.

A wide variety of aerials can be accommodated including a small telescopic rod aerial for portable operation. An internal five inch loudspeaker is fitted and arrangements are made for using low impedance telephones where this is more convenient. A push-pull

audio output stage is employed and a selective audio filter can be introduced for CW reception under conditions of severe adjacent channel interference.

Independent RF and AF Gain controls are fitted and the other controls include separate BFO and AGC switches and a variable BFO pitch control. The tuning drive is a geared type and is flywheel-loaded for ease of operation. Tuning scales are some nine inches in length and are calibrated directly in terms of frequency. Dial illumination is provided for use when necessary and is controlled by a switch on the panel.

The receiver is light in weight, has contemporary styling with compact dimensions and is housed in a strong metal cabinet. High quality components are used in all parts of the circuit and reliable operation is assured throughout the world.

TECHNICAL DATA

Frequency Coverage

550 kHz to 40 Mc/s in 5 ranges:—

Range 1	..	18.0 — 30.0 Mc/s
Range 2	..	8.5 — 18.0 Mc/s
Range 3	..	3.5 — 8.5 Mc/s
Range 4	..	1.5 — 3.5 Mc/s
Range 5	..	550 — 1500 kc/s

Intermediate Frequency

465 kc/s

Semiconductor Complement

TR1	OC171	RF Amplifier.
TR2	OC171	Mixer.
TR3	OC171	Local Oscillator.
TR4	OC171	1st IF Amplifier.
TR5	OC171	2nd IF Amplifier.
TR6	OC171	Beat Oscillator.
TR7	OC71	Audio Amplifier.
TR8	OC83	Audio Driver.
TR9	2 x	Audio Output.
TR10	OC83	
D1	OA70	AGC Attenuator.
D2	OA90	Detector/AGC.
D3	OA2202	Voltage Stabiliser.
D4,5	2 x DD005	Aerial Protection Diodes.

Power Supply

9V from 6 x 1.5V leak proof dry cells, external supplies of 12V or 24V DC (positive em.f.d.) using Voltage Converter Type 945 or standard AC mains supplies using AC Power Unit Type 924.

Consumption

36mA quiescent, 77mA at 50mW and 180mA at 500mW output. Dial lamps when in use add 90mA to the normal current drain.

Aerial Input Impedance

Ranges 1 — 4	..	75Ω (nom.) balanced or unbalanced.
Range 5	..	400Ω (nom.) balanced or unbalanced.

A high impedance input connection is provided for use on all ranges and is suitable for use with short rod aerials.

Sensitivity

Better than 50V for 10dB s/n ratio on Ranges 1—4.
Better than 150V on Range 5.

IF Selectivity

Typical overall bandwidths at 6dB and 40dB down are 5 kc/s and 25 kc/s respectively.

IF Breakthrough

Ranges 1 — 4	..	greater than 85dB down.
Range 5	..	greater than 85dB down.

Image Rejection

20dB at 18.0 Mc/s and 50dB at 2.0 Mc/s.

Calibration Accuracy

1% on all ranges.

Frequency Stability

Drift does not exceed 1 part in 10^4 per °C change in ambient temperature.

AGC Characteristic

An 8dB increase in signal produces less than 13dB change in output. Taken from 60V at 2.0 Mc/s on Range 4.

Audio Output and Response

The maximum audio output exceeds 1 watt and 800mW is available at 10% distortion.

Frequency response is level within 6dB over the range 500 c/s to 8 kc/s except when using the audio filter. The filter is resonant at approximately 1,000 c/s and can be brought into circuit for selective CW reception. 6dB bandwidth is of the order 180 c/s.

Dimensions and Weight

Height	..	..	..	6 1/2" (16.7 cm).
Width	..	..	..	12 1/2" (31.7 cm).
Depth	..	..	..	8" (20.5 cm).
Weight (less batteries)	..	..	..	122 lb. (55.8 kg).
Weight (with batteries)	..	..	..	14 lb. (6.4 kg).

CIRCUIT DESCRIPTION

The RF Section of the receiver comprises TR1, TR2, and TR3 (2 x OC171). TR1 is a grounded-base amplifier with signal input applied to the emitter from a tap on the appropriate tuned circuit which is selected by Slat. 5 and 6. L1/C3 is introduced on Range 5 and serves as an IF rejecter circuit to limit IF breakthrough when using this band. AGC can be applied to the RF Stage and manual gain control is effected by RVI which also controls the 1st IF Amplifier TR4. The RF Stage is coupled to the Mixer by L2-L11 which have low impedance secondaries to match the base impedance. Oscillator injection is to the emitter and IF output is taken from the collector to the 1st IF transformer IPT1.

A tuned collector circuit is employed in the Local Oscillator Stage (TR3) which tracks above the signal frequency on all ranges. Injection for the Mixer is taken from a low impedance link winding on the appropriate oscillator unit.

All three stages in the RF Section are operated from the stabilised supply provided by the zener diode D3 (OA2202). This gives a nominal 6.5V and maintains sensibly constant performance with falling battery voltage. All tuned circuits associated with TR1-TR3 employ precision wound coils and have individual trimming adjustments. The circuits are arranged in such a manner that the coils which are not in use are shorted out to prevent absorption and dead spots in the tuning.

IF amplification is provided by TR4 and TR5 (2 x OC171) which operate at 465 kc/s with a total of five tuned circuits to ensure a high degree of adjacent channel selectivity. AGC and manual gain control are applied to the first stage while the second operates at constant gain. Improved operation under strong signal conditions is given by the diode switch (D1 : OA70) which introduces a damping resistor (R19) across the primary of IPT1 when the signal exceeds a certain level. This action assists the AGC circuit and prevents overloading of the Detector and TR5.

The diode (D2 : OA90) which serves as the Detector is housed in the IPT3 screening can and also provides the AGC voltage which is applied to TR1 and TR4 via the filter circuit C63/R28. Audio output from the Detector is coupled through C76 to the base of the Audio Amplifier which is an OC71 (TR7).

TR5 is introduced for CW reception and provides a locally generated carrier which is amplified by TR5 and applied to the Detector along with the received signal. The beat frequency obtained can be adjusted by means of the pitch control C70. TR5 derives its supply from the zenor diode D3.

An audio filter (1.8M.76) is included in the coupling between TR7 and the Audio Driver Stage TR8 10C321. The filter is resonated at approximately 1,000 c/s and will be found most useful for CW reception when interference is severe. The filter can be switched out by S4 when receiving AM signals.

The push-pull Output Stage operates in Class "B" and provides a 30% output to feed the internal loudspeaker. Low impedance telephones can be plugged into a socket on the panel and the circuit is arranged so that the speaker output is interrupted when telephones are in use.

INSTALLATION

Batteries

The TC10 receiver is supplied without batteries. Six standard 1.5V dry cells are required and these are of a type which is available in all parts of the world. It is recommended that leak-proof types are used wherever possible, the Ever Ready HP2 being suggested as the most suitable battery for this receiver. Other batteries which can be used are as follows:—

EVER READY	U2	OLDHAM	K532
VEDDER	V0002	PERTRIX	601
DRYDIX	120/121	SIEMENS	T1
G.E.C.	RA6005	RAYOVAC	3LP

N.A.T.O. Stock No. 6135-99-010-1101

To fit the batteries, first unscrew the two knurled screws which retain the battery box at the rear of the receiver. Lift the box clear and free from the receiver by disengaging the four-way connector at the right hand end. Now remove the inner cover from the box, sort the batteries into two groups of three and slide them into the battery troughs.

Use the diagram printed on the battery container as a guide when fitting the batteries and make absolutely sure that they are in the correct positions before switching on the receiver. Switching on with the batteries connected the wrong way round will damage the transistors. Replace the inner cover, re-connect the four-way plug and then re-fit the battery container in the rear of the set. It should be noted that the plug is a non-reversible type so that there is no chance of the battery polarity being reversed at this point.

Aerial Connections

Sockets are provided for connecting short rod aerials, coaxial single wire aerials and either balanced or unbalanced transmission line feeders. Single wire aerials are connected to the "A1" socket with the special shorting plug in position between the "A1" socket and the "EARTH" terminal. This same shorting plug is also used when the receiver is fed with coaxial line or when using a short rod aerial. In the case of a coaxial feeder the outer braid is attached to the "EARTH" terminal and the inner conductor to the "A1" socket.

If a balanced feeder (twine transmission line) is employed, the shorting plug is removed and the feeder wires are connected to "A1" and "A2". The shorting plug can be pushed temporarily into the "A2" socket to avoid loss. This latter socket is used only for connecting short rod aerials when a full size aerial is not available. The socket is not suitable for connection of resonant loaded whip

aerials which should be connected at the "A1" socket with the link in place between "A1" and "EARTH".

In some cases a good earth will give improved results and it is well worth taking the trouble to install one. Reduction in the level of locally generated noise will be one of the advantages gained from proper earthing of the receiver.

Telephones

Telephones or an external loudspeaker can be connected to the socket on the panel. The output is matched to 300 Ω and will give satisfactory results with telephones of up to 600 Ω impedance. Higher impedance can be used but with some reduction in output and slightly inferior quality.

OPERATION

Operation of the receiver is quite straightforward and a few minutes spent in manipulating the various controls will quickly familiarise the user with their functions.

The SUPPLY switch is geared to the RF GAIN control and is moved to the "on" position by rotating the RF GAIN in a clockwise direction. Tuning is with the large knob at the right-hand side of the panel, the drive mechanism being a precision unit employing spring-loaded spring-gears giving a reduction ratio of the order 110:1. This facilitates accurate tuning on the HF ranges while flywheel-loading allows the control to be "span" to permit rapid movement from one part of the dial to another. The dial calibration is in Mc/s on all ranges except Range 3 where the scale is marked in kc/s. Range numbering appears at the left-hand end of the dial and is repeated on the WAVE/CHANGE switch which is located immediately to the left of the TUNING control.

The calibrated vernier which appears in the window above the TUNING control is used in conjunction with the bottom logging scale on the main dial. Combining the two readings will give an arbitrary figure which corresponds to the actual frequency to which the receiver is tuned. The readings can be reversed to allow rapid re-setting to specific frequencies.

Independent RF and AT GAIN controls are provided, the former being a combined RF and IF control. Four push-button switches control the following functions:—

AT FILTER IN/OUT, BFO ON/OFF, AGC ON/OFF and DIAL LIGHTS ON/OFF. The DIAL LIGHT switch is mechanically biased to the "off" position and must be held in the "on" position to obtain scale lighting. Illumination of the dial will not normally be required and since the scale light consumption doubles the average current drawn from the supply, this facility should be used only when absolutely essential. The other switches are of the press-to-operate press-to-release type and lock in the "on" position.

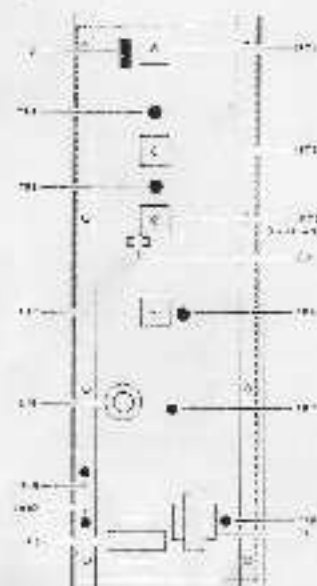
The remaining control is the BFO PITCH control which is functional only when receiving CW signals. It allows the BFO to be set to either side of the incoming signal and when using the audio filter it provides a means of setting the beat note to coincide with the resonant frequency of the filter (1,000 c/s).

The AGC will normally be switched "off" when receiving CW signals (BFO "on") and under this condition of operation it is used to reduce the setting of the RF GAIN to prevent overloading of the pre-detector stages. When receiving AM signals the AGC should be in use and the RF GAIN is then adjusted to maximum to secure optimum AGC action.

ERRATA

R24 should read: 1.5K, R40: 47K,
C10 should read: 20pF,
Add: C23a, 10pF Tubular Ceramic
nearest tuned winding of L9.
D1 is shown reversed.
Add: two DD006 diodes (parallel
connected with reverse polarity) across
the "A1" and "AE" terminals. Allow-
ance Reference D4 and D5.

Layout of the Printed Board



LIST OF COMPONENT VALUES

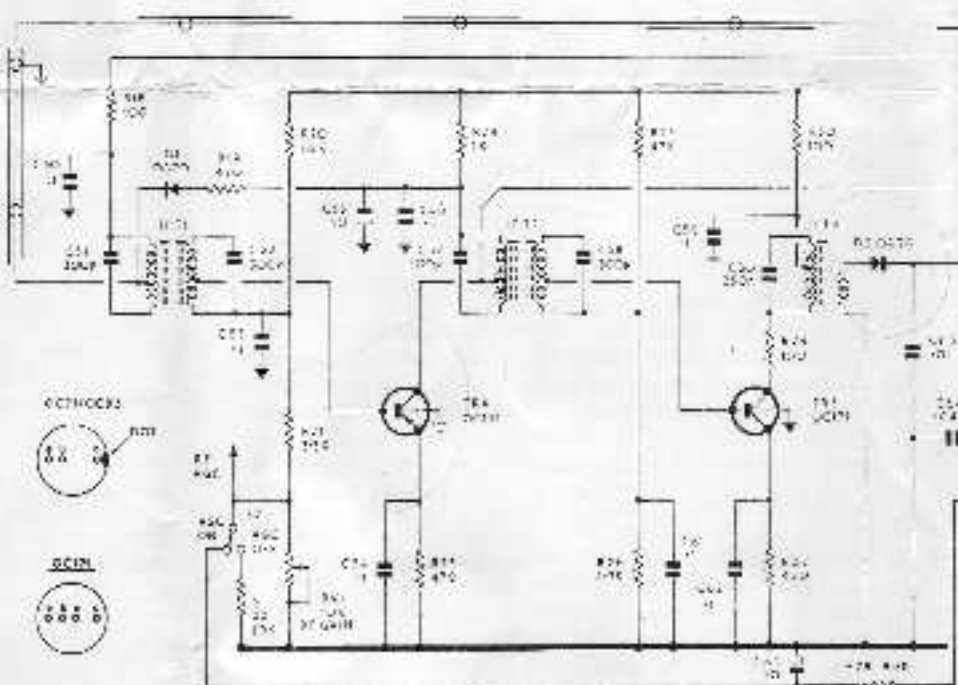
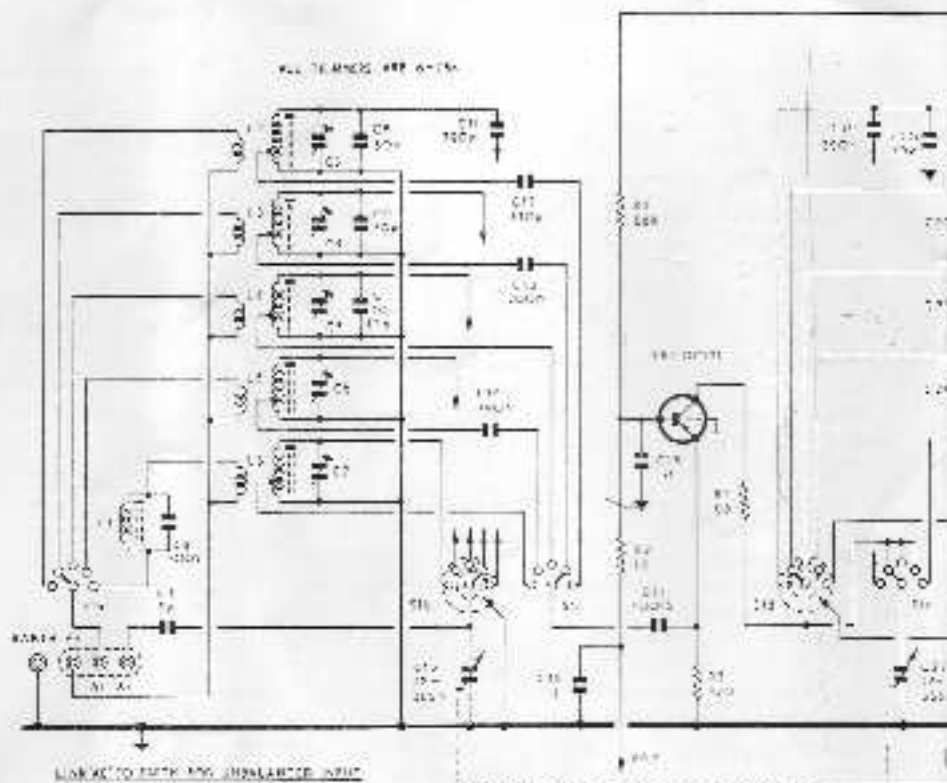
RESISTORS

All 10%, 1/4 watt (unless otherwise indicated.)

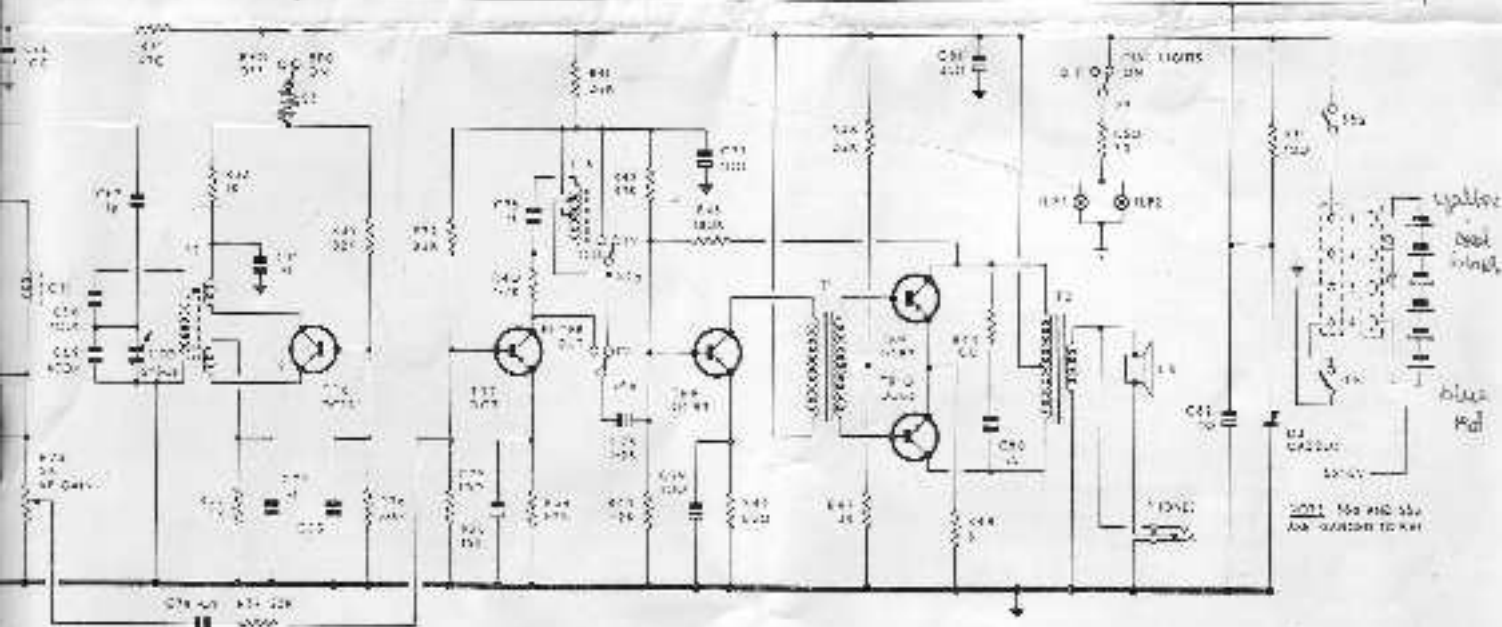
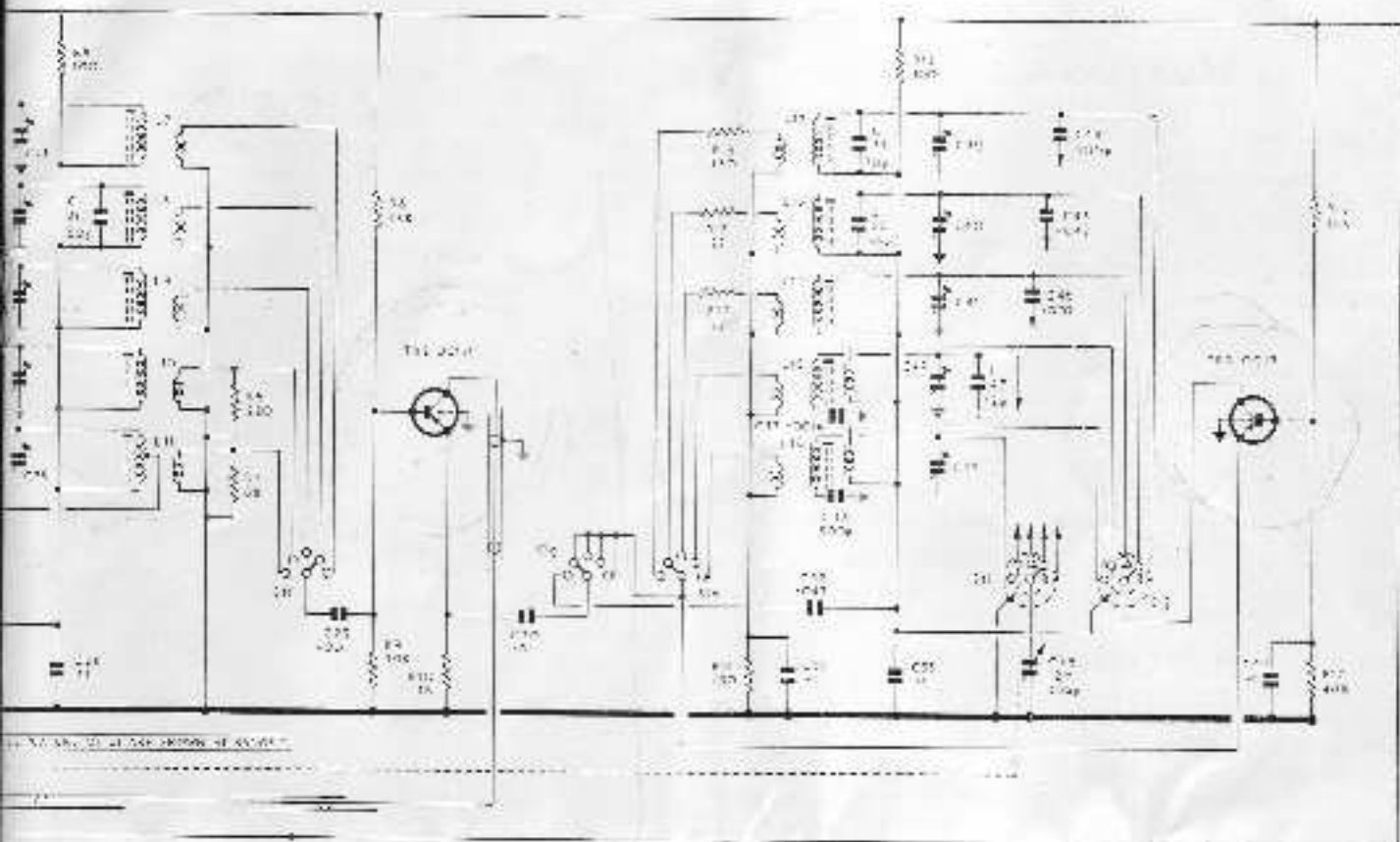
R1, R20, ...	68,000 Ω
R2, R10, R34, R42, R33 : ...	1,000 Ω
R3, R19, R23, R29, R31 : ...	470 Ω
R4, R7 : ...	68 Ω
R5, R15, R16, ...	100 Ω
R6 : ...	220 Ω
R8, R16, R35 : ...	15,000 Ω
R9, R21 : ...	5,000 Ω
R11 : ...	500 Ω
R12, R13 : ...	22 Ω
R14 : ...	150 Ω
R17, R26, R10 : ...	4,700 Ω
R22 : ...	10,000 Ω
R33, R35, R12 : ...	47,000 Ω
R28 : ...	8,200 Ω
R34 : ...	22,000 Ω
R17 : ...	82,000 Ω
R16 : ...	6,800 Ω
R19 : ...	1,200 Ω
R41, R45 : ...	2,200 Ω
R43 : ...	12,000 Ω
R44 : ...	680 Ω
R45 : ...	0.18M Ω
R47, R50 : ...	47 Ω
R48 : ...	51 $\pm$ 5% wirewound, 3W.
RV1 : ...	10,000 Ω potentiometer.
RV2 : ...	5,000 Ω potentiometer.

CAPACITORS

C1 : 36pF Tubular Ceramic $\pm$ 10%, 750V DC wkg.
C2 : 0.002uF Polystyrene $\pm$ 5%, 125V DC wkg.
C3 : 7, 21, 23, 29-13 : 6-25pF Ceramic Trimmer.
C8 : 80pF Silvered Mica $\pm$ 10%, 750V DC wkg.
C9, 26 : 50pF Tubular Ceramic $\pm$ 10%, 750V DC wkg.



C10, 47 : 12pF Tubular Ceramic $\pm$ 10%, 750V DC wkg.
C11, 19 : 350pF Polystyrene $\pm$ 5%, 125V DC wkg.
C12 : 130pF Polystyrene $\pm$ 5%, 125V DC wkg.
C13 : 200pF Polystyrene $\pm$ 5%, 125V DC wkg.
C14 : 790pF Polystyrene $\pm$ 5%, 125V DC wkg.
C15, 27, 28 : 2-pang Air-sealed Variable 12-365pF.
C16, 18, 28, 31, 33, 49, 50, 53, 54, 56, 59, 61, 62, 71,
72, 73, 76 : 0.1uF Polyester $\pm$ 20%, 250V DC wkg.
C17 : 0.0015uF Tubular Ceramic $\pm$ 5%, $\pm$ 25%, 750V DC wkg.
C20, 34 : 70pF Tubular Ceramic $\pm$ 10%, 750V DC wkg.
C29 : 0.005uF Tubular Ceramic $\pm$ 10%, 750V DC wkg.



C30, 34 : 0.01μF Metallized Paper, 20%, 200V DC wkg.
 C42, 45, 64 : 0.047μF Polyester, 50%, 250V DC wkg.
 C45 : 40μF Tubular Ceramic, 10%, 750V DC wkg.
 C46 : Reference not allocated
 C47 : 0.001μF Polystyrene, 5%, 125V DC wkg.
 C48 : 500μF Silvered Mica, 2%, 350V DC wkg.
 C44 : 400μF Silvered Mica, 2%, 350V DC wkg.
 C46 : 0.007μF Polystyrene, 5%, 125V DC wkg.
 C51, 52, 57, 58 : 300μF Polyester, ±5%, 60V DC wkg.
 C55, 63, 82 : 10μF Tantalum Electrolytic, ±50%, -10%, 10V DC wkg.

C60 : 250μF Polystyrene, 5%, 50V DC wkg.
 C65 : 0.01μF Metallized Paper, 20%, 150V DC wkg.
 C66, 75, 77, 79 : 100μF Tubular Electrolytic, 100%, -20%, 15V DC wkg.
 C87 : 1μF Tubular Ceramic, 0.5%, 750V DC wkg.
 C88 : 0.001μF Polystyrene, ±5%, 125V DC wkg.
 C69 : 4.0μF Polystyrene, ±5%, 125V DC wkg.
 C70 : 5.0μF Air-Spaced variable.
 C78 : 1.25μF Tubular Electrolytic, 100%, -10%, 16V DC wkg.
 C80 : 0.25μF Metallized Paper, 20%, 150V DC wkg.
 C81 : 350μF Tubular Electrolytic, 100%, -20%, 12V DC wkg.

MAINTENANCE

General

The TC10 receiver should require very little in the way of routine maintenance apart from replacement of the batteries. If a fault should develop, the cabinet can be removed by carrying out the procedure detailed below:

1. Remove the battery container by unscrewing the two knurled retaining screws and disengaging the four-way battery connector at the right-hand end.
2. Remove the four cabinet retaining screws.
3. Ease the cabinet from the panel by applying pressure with the fingers between the rear inner edge of the cabinet and the ends of the strip which supports the IF printed board near the top of the cabinet.
4. Slide the cabinet away from the panel.

Dial Bulbs

Each of the four can be changed by levering the holders free from the rubber mounting protrusions at the extreme ends of the dial. Replacement bulbs should be of the L.H.S. type rated at 6V, 50mA.

Instructions for re-stringing the drive cord

In the unlikely event of the pointer drive cord either breaking or slipping out of the pulley grooves, replacement will present no real problems if the instructions given below are followed carefully. If the cord is broken, a new length should be obtained and this can be made longer than the length actually required (32" : 82 cm.) to make it easier to handle. Right-hand and left-hand in the instructions given below are as viewed from the rear of the receiver.

1. Remove the existing cord and then set the tuning gang to full mesh.
2. Tie a double knot in one end of the replacement cord and feed the cord through the hole provided in the left-hand drive pulley with the knot on the inside of the rim. The hole should lie at approximately "4 o'clock."
3. Wind approximately one and a half turns anti-clockwise round the drive pulley and then pass the cord under and over the left-hand guide pulley.
4. Pass the cord across the dial from left to right and then, while holding the free end of the cord in tension, rotate the tuning control to fully unmesh the tuning gang. This operation will wind just over three complete turns of cord onto the left-hand drive pulley and tension must now be maintained to prevent the cord from slipping out of the pulley grooves.
5. Pass the cord clockwise round the jockey pulley (right-hand side of the receiver) and then back across to the right-hand drive pulley. Feed the cord into the pulley groove and then through the hole in the rim (hole lies at about "10 o'clock"). Increase the tension on the cord until the outer rim of the jockey pulley takes up a position level with the nearest edge of the panel handle retaining screw. Mark the cord with a pencil at the point where the retaining knot must be tied.
6. Free the cord from the jockey pulley and while maintaining tension, draw the cord through the hole in the right-hand drive pulley until the cord tightens on the left-hand guide pulley.
7. Tie a double knot in the position marked in (5) above and cut off any surplus cord. Feed the cord back through the hole and replace in position round the jockey pulley.

8. Set the tuning gang to full mesh and slide the pointer to "0" on the logging scale. Attach the pointer to the cord (when viewed from above the cord should pass under the two outer prongs at the rear of the pointer frame) and then check the drive for free and normal operation.

Re-alignment

The initial factory alignment of the receiver should hold for a long period of time and re-alignment should not be carried out unless there is a clear indication that it is in fact necessary. Alignment should be carried out only by individuals with a sound knowledge of the procedures involved and the test equipment listed below must be available if the task is to be completed satisfactorily. It should be noted that any figures quoted for sensitivity etc., are based on the assumption that a new set of batteries is in use. It is further assumed that the receiver cabinet has been taken off as described earlier.

The following items of test equipment are required for re-alignment:

Signal generator(s) covering 465 kHz and the range 550 kHz to 30 Mc/s with provision for modulation at 30% (400 c/s) and with an output (in balance) of 50/750.

Crystal controlled harmonic generator providing 100 kHz markers up to 7.5 Mc/s and 1 Mc/s markers up to 30 Mc/s.

Output meter matched to 300 Ω with plug to mate with telephone socket.

Trimming tools — Miniature insulated screwdriver with $\frac{1}{16}$ " blade, small metal-tipped insulated screwdriver and a No. 6 Type H.S.L. hexagonal screw adjuster.

Re-alignment of the IF Stages and RFO

First locate and remove the four screws which retain the IF printed wiring board. Turn the board through 90° into a vertical position and replace two of the screws to keep the board in this position. All trimming adjustments are now accessible and there is no need to unsolder connections to the board.

Now stand the receiver on one end to allow connection of the generator output lead to the Range 5 Mixer coil L11 (see underside view of receiver). The generator should be arranged to provide a 30% source and the earth lead can be clipped to the screen adjacent to the coil. Disable the Local Oscillator by sliding out the foreword section of the tuning gang (C48) and then plug the lead from the output meter into the telephone socket on the panel. The speaker is automatically disconnected on insertion of the plug and the meter will therefore indicate true output power.

Switch on the generator, allow it acoustic tune to stabilise against drift and then set the receiver controls as follows:

Range Switch	..	Range 5.	AGC/RFO	..	..	Off.	
Tuning	..	..	500 kHz.	Audio Filter	..	..	Out.
RF/AF Gains	..	Maximum.					

Tune the generator to 465 kHz (with modulation 30% at 400 c/s) and then set the attenuator to give a reading of approximately 50 μ W on the output meter. Peak the curves in IFT1, IF12 and IF13 for maximum output, all cores being set on the "outer" peak. Re-check each adjustment several times to ensure accurate alignment and then set the attenuator for an output reading of 50 μ W. The input should be of the order 4 μ V at 465 kHz. If the IF sensitivity appears to be on the low side investigation can commence with a

check on the AF sensitivity. At 1,000 c/s an input of 12mV across RV2 should result in an output of 50mW.

Leave the generator tuned to the intermediate frequency, switch off the modulation and unplug the output meter. Set the BFO pitch control to mid-travel (arrow on knob at 12 o'clock) and check that the mid position corresponds to the half-capacity setting of the capacitor and that clockwise rotation of the control results in an increase in capacity. If necessary, slacken the grub screw and re-set the knob before proceeding. With the control at mid-travel, switch on the BFO and adjust the core in L17 for zero-beat. Check for normal operation of the BFO control and then disconnect the generator and the shorting link across C48.

Re-alignment of the RF Section

The first step in this part of the procedure is a check on the overall set tuning accuracy. Proceed as follows:

Connect the output of the harmonic generator to the "AF" and "AF" sockets with the shorting link in place between "AE" and "EARTH." Set the generator to provide 1 Mc/s markers and then with the BFO switched on, tune across Range 1, checking the scale accuracy at each megacycle point. The scale accuracy should be within 1% (i.e. 300 kc/s at 30 Mc/s, 180 kc/s at 18 Mc/s etc.) and re-alignment of the Local Oscillator should not be attempted unless the error observed is greater than this.

Repeat the check on Ranges 2 and 3, again using the 1 Mc/s markers and then cover Range 4. The 100 kc/s markers can be introduced

Range	Frequency	Trimmer	Frequency	Core
1	29.0 Mc/s	C39	18.0 Mc/s	L12
2	18.0 Mc/s	C40	8.5 Mc/s	L13
3	7.5 Mc/s	C41	3.5 Mc/s	L14
4	3.5 Mc/s	C42	1.5 Mc/s	L15
5	1400 kc/s	C43	560 kc/s	L16

on this range so that checks can be made at the half-megacycle points. Finally use the 100 kc/s markers to check Range 5.

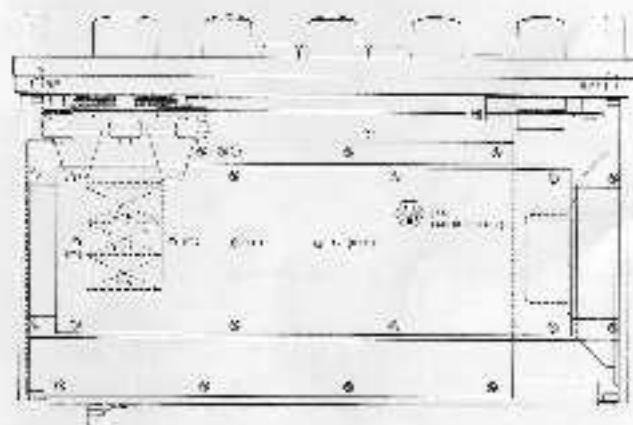
If errors in excess of 1% are noted, carry out normal tracking procedure using the alignment frequencies and adjustments listed in the preceding Table. Adjustment should be restricted to the ranges on which excess error is noted and care should be taken to repeat the adjustment of trimmer and core until intersection between the two adjustments is nullified.

Alignment of the RF (Aerial) and Mixer circuits can now be commenced. Disconnect the harmonic generator and connect the standard signal generator (modulation 40% at 400 c/s) and arrange the output impedance to match 75 Ω for Ranges 1—4 and 400 Ω for Range 5. Re-connect the output meter and switch off the BFO.

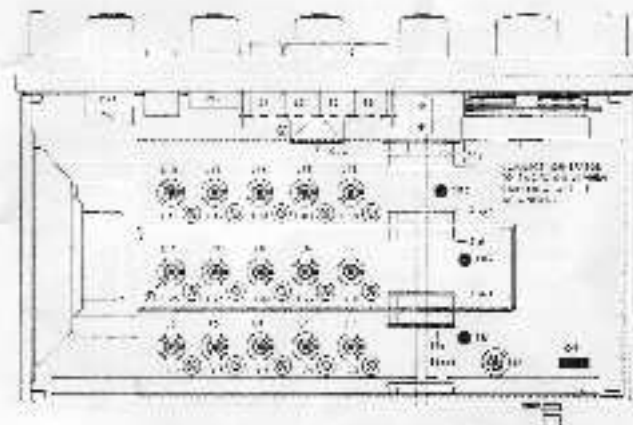
Adjustments are made at the same frequencies employed for oscillator alignment but using the trimmers and cores listed in the second Table. As with oscillator alignment each adjustment should be repeated several times to cancel the interaction between core and trimmer.

Range	Trimmer			Core		
	Frequency	Aerial	Mixer	Frequency	Aerial	Mixer
1	29.0 Mc/s	C3	C21	18.0 Mc/s	L2	L7
2	18.0 Mc/s	C4	C22	8.5 Mc/s	L3	L8
3	7.5 Mc/s	C5	C23	3.5 Mc/s	L4	L9
4	3.5 Mc/s	C6	C24	1.5 Mc/s	L5	L10
5	1400 kc/s	C7	C25	560 kc/s	L6	L11

On completion of the adjustments on Range 5, tune the receiver to the low frequency alignment point (560 kc/s) and the generator to 485 kc/s. Increase the generator output until an indication is obtained on the output meter and then adjust the IF rejector coil L1 for minimum output. Re-tune the generator to 560 kc/s, reduce its output and check the alignment of L1 for maximum signal. Repeat the checks once more at both 485 kc/s and 560 kc/s and then carry out a sensitivity check on all ranges.



Plan View of Model EC10 Receiver



Underside View of Model EC10 Receiver

VOLTAGE ANALYSIS

The voltage readings given in the Table will prove useful in the event of the receiver developing a fault which makes it necessary to carry out voltage checks. All readings are typical and were taken with a meter having a sensitivity of 20,000 Ω/V . The batteries were in good condition and a tolerance of 10% will apply to all readings taken with a meter of the sensitivity quoted. The tolerance should be increased if a meter of lower sensitivity is employed and allowance must be made for the state of the batteries.

Readings should be taken under "no-signal" conditions with the controls set as follows: All readings are NEGATIVE with respect to chassis and the standard supply should lie in the range 6.4-6.6V.

Wavechange	Range 1	AF Gain	Maximum
Tuning	20 Mc/s	AGC	Off
RF Gain	Maximum	RFQ	On

Resistivity	Collector	Base	Emitter
TR1*	6.55V	1.0V	0.68V
TR2	6.4V	1.2V	1.1V
TR3	6.4V	1.15V	1.2V
TR4**	5.6V	1.15V	0.87V
TR5	5.5V	0.9V	0.4V
TR6	6.4V	0.75V	0.6V
TR7	4.0V	0.97V	0.9V
TR8	8.9V	1.5V	1.5V
TR9	9.1V	0.15V	0.07V
TR10	9.1V	0.15V	0.07V

* Readings become 6.5V, 0.7V and 0.6V with RF Gain at min.

** Readings become 7.35V, 0.35V and 0.16V with RF Gain at min.

SPARES

The following list details all spare parts for the EC10 receiver. The Serial No. of the receiver must be quoted in all correspondence and enquiries should be directed to the "Sales and Service Dept."

Inductors, Transformers etc.

L1	465 kHz IF Rejection coil	..	..	..	D3204
L2	Range 1 RF (Aerial) coil	..	..	..	D3189
L3	Range 2 RF (Aerial) coil	..	..	..	D3190
L4	Range 3 RF (Aerial) coil	..	..	..	D3191
L5	Range 4 RF (Aerial) coil	..	..	..	D3192
L6	Range 5 RF (Aerial) coil	..	..	..	D3193
L7	Range 1 Mixer coil	..	..	..	D3194
L8	Range 2 Mixer coil	..	..	..	D3195
L9	Range 3 Mixer coil	..	..	..	D3196
L10	Range 4 Mixer coil	..	..	..	D3197
L11	Range 5 Mixer coil	..	..	..	D3198
L12	Range 1 Oscillator coil	..	..	..	D3199
L13	Range 2 Oscillator coil	..	..	..	D3200
L14	Range 3 Oscillator coil	..	..	..	D3201
L15	Range 4 Oscillator coil	..	..	..	D3202
L16	Range 5 Oscillator coil	..	..	..	D3203
L17	RF Oscillator coil	..	..	..	6656P
L18	Audio Filter coil	..	..	..	D3216
IFT1	1st IF transformer (405 kc/s)	..	..	..	6653P
IFT2	2nd IF transformer (405 kc/s)	..	..	..	6654P

IFT3	3rd IF transformer (465 kc/s)	..	..	..	6655P
T1	Audio Driver transformer	..	..	..	6657P
T2	Audio Output transformer	..	..	..	6658P

Miscellaneous

Range Switch	Clicker mechanism	..	..	..	5625P
	Wafers : S1a, S1b, S1c, S1d	..	..	..	3392P
	Wafers : S1e, S1f, S1g, S1h	..	..	..	5101P
Push Switch Assembly (S2-S5)	..	..	..	..	6510P
RF Gain control (with switch)	..	..	..	..	6601P
AF Gain control	..	..	..	..	6660P
Dial bulbs (L.E.S. 50mA 6.7mm)	..	..	..	..	6659P
Dial bulb holders	..	..	..	..	6600P
Phone jack	..	..	..	..	6660P
Loudspeaker	..	..	..	..	7447P
Aerial socket, strip	..	..	..	..	15520P
Earth terminal	..	..	..	..	6571P
3-gang tuning capacitor	..	..	..	..	6528P
Flexible coupler	..	..	..	..	D2017
HTO tuning capacitor	..	..	..	..	D830
Drive Assembly	..	..	..	..	L02864
Pointer Assembly	..	..	..	..	D3215
Dial glass (calibrated)	..	..	..	..	D3188
Knobs (large)	..	..	D3613/1	SLD	7089/1P
Knobs (small)	..	..	..	..	D3617/2
Shorting plug (AE)	..	..	..	..	D3210

Manufacturers :



EDDYSTONE RADIO LIMITED
ALVECHURCH ROAD, BIRMINGHAM 31

Telephone : 021-475 2231

Cables : EDDYSTONE, BIRMINGHAM

Telex : 33708

