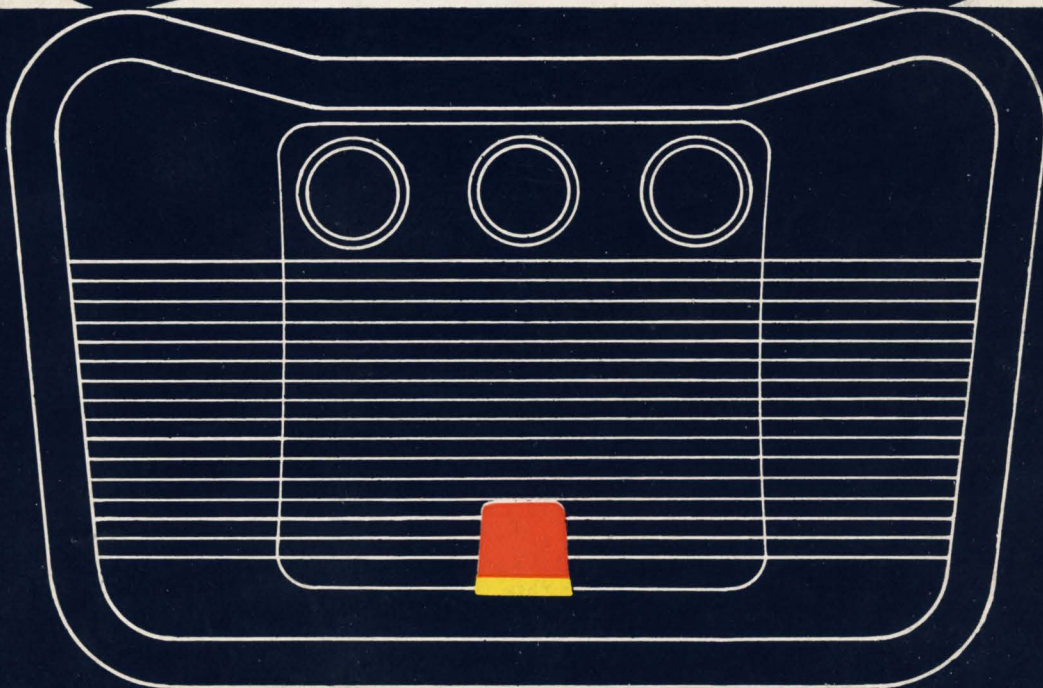
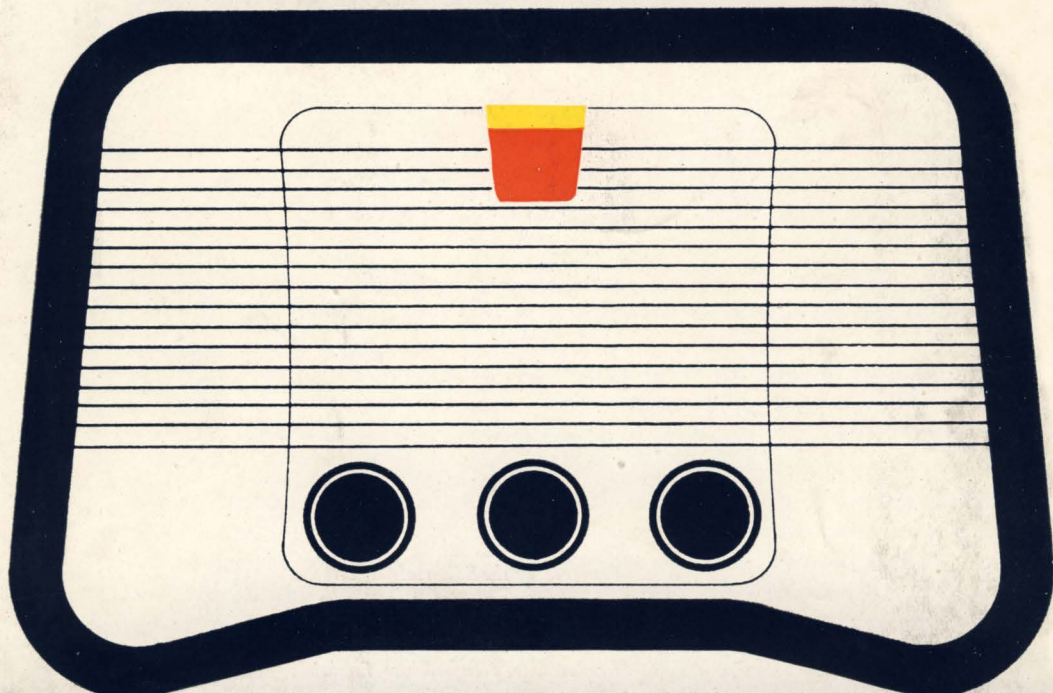


THE CURRENT RANGE OF MURPHY RADIO RECEIVERS

FROM WELWYN GARDEN CITY, HERTFORDSHIRE, ENGLAND

m u r p h y



DAVID

About MURPHY RECEIVERS



THIS booklet describes the current range of radio receivers specially designed and manufactured by Murphy Radio for use outside the United Kingdom. Three things ought to be said about these receivers.

First of all the reader will be able to see for himself when he reads the following pages just how comprehensive is the range of Murphy sets for overseas use, from the small and cheerful 152 up to the high-performance luxury model, the 128.

Here is the second point that must be said about them. Many of the sets available to you from the world's radio industries are little better than modified versions of receivers intended primarily for home use in their countries of origin. That emphatically cannot be said of any of the Murphy receivers herein described. It is Murphy Radio's policy to inquire in detail which types of sets are needed in the various countries of the world and then to meet those requirements with receivers specially developed for the purpose. To this end there is at Murphy Radio's establishment in Hertfordshire a large section of the Design Division which is constantly engaged in research work on the best circuits, components, and materials for use in export models.

Thirdly—and this is less immediately obvious—is the reliability which is built into every Murphy design. It is not enough for a set to give a good performance when new; it must keep on giving it even under the most arduous climatic conditions. Close attention to the reliability of their products has in the last twenty years earned Murphy Radio a reputation second to none at home and overseas.

* * *

We now invite you to turn the page and to study the details of the five receivers which this booklet describes. Each one is dealt with separately; a brief specification faces the natural colour illustration, then overleaf will be found a more detailed description and a group of chassis views.

So may we wish you good reading—and good Murphy listening.

THE 152

MAIN FEATURES

- A compact low-priced 5-valve mains-driven superhet employing multi-purpose valves.
- Fully tropicalized for use in any climate; modern design techniques ensure great reliability and long life under the most exacting conditions.
- Three wavebands covering normal broadcast bands and all short-wave bands from 13–120 metres.
- Large external perspex scale clearly marked in kilocycles and megacycles with a pilot lamp on/off indicator housed in the scale mounting.
- Adequate power output to sensitive p.m. speaker gives good reproduction.
- Extremely attractive plastic cabinet of modern design with chocolate-brown body and cream front panel; finely louvred loud-speaker aperture.
- CONTROLS:
Left to right: volume and on/off; tuning; waverange.
- AVAILABLE FOR THE FOLLOWING VOLTAGES:
 - TA152 for a.c. mains only
90–160 and 190–250 volts, 40–100 cycles
Consumption: 38 watts (approx.)
 - TUI52 for a.c. or d.c. mains
200–250 volts d.c. and 200–250 volts a.c., 25–100 cycles
Consumption: 39 watts (approx.)
- WAVE RANGES:
 - Medium Waves: 560–185 metres (535–1630 Kc/s)
 - S.1 Band: 120–36.6 metres (2.5–8.2 Mc/s)
 - S.2 Band: 37.5–13.7 metres (8.0–22.5 Mc/s)
- VALVE TYPES:
 - TA152—Mazda 10C1 10F9 10LD11 10P14 U404
 - TUI52—as TA152
- DIMENSIONS:
14 in. by 7½ in. by 8½ in. tall (35.6 cms. by 19 cms. by 21.6 cms.)
- WEIGHT:
 - TA152: 12 lb., 5.5 Kgs.
 - TUI52: 9¾ lb., 4.5 Kgs.



THE 152, shown here in natural tones, is a small receiver of most satisfying compactness of form, with pleasing contrasts of colour in the design of its moulded plastic cabinet. Its external perspex scale is of exceptional size and readability for a receiver in this popular price class. Having only three controls, the 152 is a simple set to operate, even by the uninitiated.

The 152 in detail

THE 152, in common with all Murphy receivers intended for export, has been specially developed to meet the needs of overseas listeners and is designed to stand up to the very exacting conditions met with in tropical countries.

It is a compact but high-performance receiver at a very moderate price. By paying very careful attention to detail in its design we have been able to give this small set a full-size performance.

A very definite demand exists in many markets for an inexpensive three-waveband receiver without bandspreading, such as the 152, to be sold either to people unable to afford sets of more ambitious specification or to homes where a second set is required for use in bedroom, kitchen, or other rooms where a larger receiver would not be installed.

Because the 152 has been developed with price considerations very much in mind, it amply fulfils these requirements. It is not only the lowest-priced Murphy superhet ever to have been marketed for sale outside England; it can claim to offer the best value for money of any similar type of receiver available anywhere. This is particularly noticeable in respect of its performance. From many small receivers the quality of sound emitted has been poor, so much so that a listener might be excused for believing that nothing better could be expected. A listening test to the 152 will compel any one to readjust his ideas as to just what exceptionally good quality *can* be achieved from a well-designed instrument. For the 152 in its class is outstanding.

CONTROLS

Simplicity of operation is the keynote of the 152. Only three controls are fitted and they are all clearly marked so that even the most inexperienced user should have no trouble when operating the receiver.

All of the important wavebands are covered in three ranges, selection being carried out by a normal three-position rotary switch.

Tuning on short waves is remarkably easy due to the employment of a high-ratio tuning drive, further assistance in this respect being given by the large, clearly marked tuning scale.

CABINET AND LOUD-SPEAKER

The appearance of the Murphy 152 is extremely attractive. Its well designed plastic cabinet with brown body, cream front panel, and neat

louvres for the speaker is very pleasantly offset by the large, colourful perspex scale.

All three control spindles pass through the scale so that the scale and knobs are very well grouped together.

The loud-speaker fitted is a sensitive five-inch permanent magnet type with totally enclosed gap and coil, thus ensuring complete protection from dust.

Cabinet proportions and loud-speaker response have been very carefully matched to ensure a well-balanced acoustic performance, with the result that the quality of reproduction of the 152 is exceptionally good for such a compact receiver.

FOR A.C. OR UNIVERSAL OPERATION

Models are available for either a.c. or a.c./d.c. operation. The a.c. models are suitable for connection to a very wide range of mains voltages. In order to preserve simplicity in design and production, and therefore to keep cost to a minimum, the two types of receiver employ exactly the same valves and circuit arrangement. There is only one difference between the two models: the TA152 uses an auto-transformer, while the TU152 incorporates a dropping resistor for providing correct voltages for the valve filaments and h.t. supply.

SERVICING

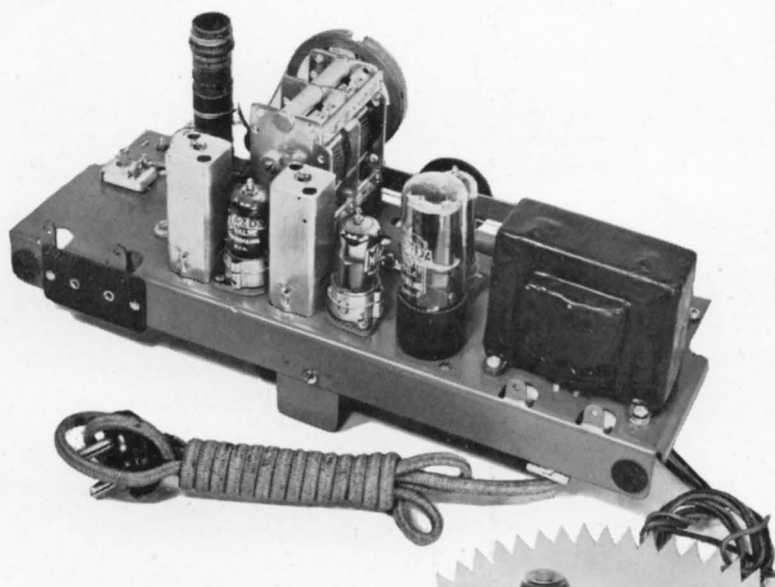
Although a comparatively small chassis is employed in the 152, careful layout of components has resulted in an arrangement that provides maximum accessibility for any one who may have occasion to service the receiver.

The chassis retaining screws are accessible from the back of the set. In consequence the 152 does not need to be inverted before removing these screws. The danger of scratching its cabinet is thus avoided.

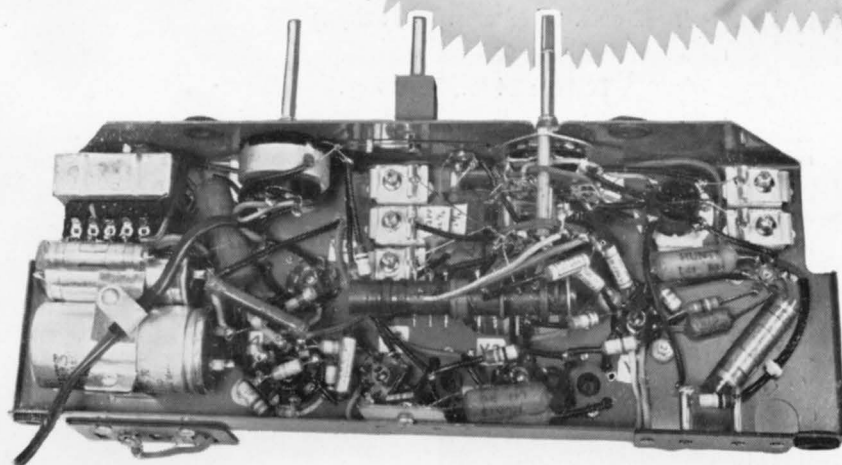
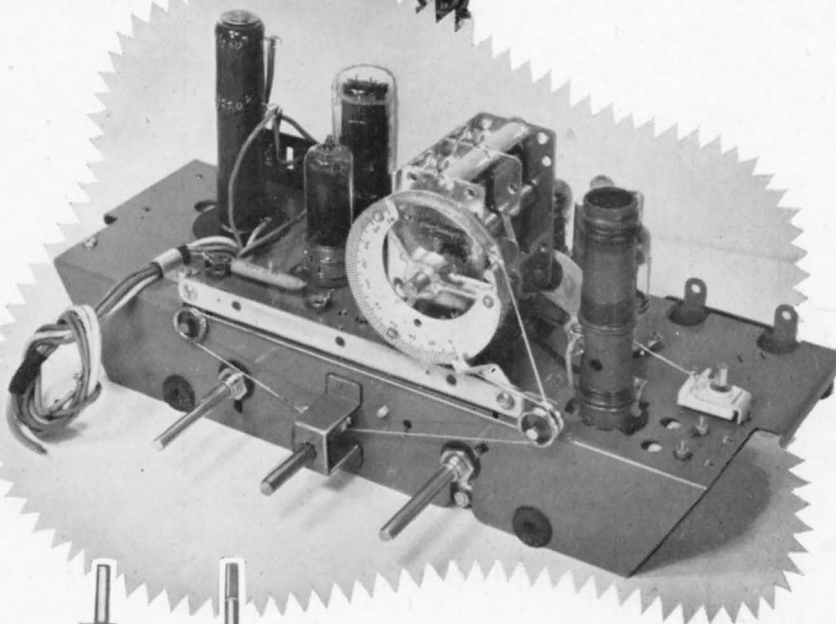
Because the tuning scale is attached to the front of the cabinet and is not withdrawn with the chassis when service work is being done, an auxiliary scale is provided on the chassis itself so that the r.f. circuits may be correctly trimmed when the chassis is out. This trimming scale is in the form of a 180° plate attached to the condenser drive drum, and a cursor for it is mounted on the chassis. Complete trimming instructions are given in the Service Instruction Book.

The 152

CHASSIS VIEWS



Lively performance at low price is the aim of the 152—and here is the chassis that does the job. Its compact layout utilizes multi-purpose miniature British valves of the latest design. The mains auto-transformer distinguishes the a.c. version (above) from the a.c./d.c. version (right). A calibrated scale is provided on the condenser so that the set can be lined up when removed from its cabinet on which the main tuning scale is permanently mounted.



Murphy sets have always been noted for "clean and clear" construction, and the 152 under-chassis view seen here shows that this latest "small Murphy" is no exception to the rule.

THE 126

MAIN FEATURES

- A 5-valve mains-driven superhet using multi-purpose valves.
- Complete tropicalization of all components ensures a reliable and long life under the most adverse conditions in any climate.
- Continuous bandspread tuning from 13–45 metres divided into six sections; also 42–104 metres and normal broadcast waveband.
- Large illuminated tuning scale, with station names on all short-wave bands.
- Generous power output and good reproduction; a tone control permits adjustment to suit individual taste.
- Switched gramophone pick-up sockets for convenient record playing.
- Sockets for connecting external loud-speaker.
- Handsome plastic cabinet in chocolate shade with cream fascia and louvred loud-speaker aperture.

● CONTROLS:

Left to right: volume; on/off tone; main tuning and s.w. band selector; wavechange switch; bandspread s.w. tuning.

● AVAILABLE FOR THE FOLLOWING VOLTAGES:

TA126: for a.c. mains only

105–150 volts and 210–260 volts, 50–100 cycles

Consumption: 75 watts (approx.)

TUI26: for a.c. or d.c. mains

200–250 volts 25–100 cycles a.c. and 200–250 volts d.c.

Consumption: 75 watts (approx.)

● WAVE RANGES:

	13·6–17·5 metres (22–17·1 Mc/s)
	17·1–21·5 metres (17·54–13·95 Mc/s)
<i>Bandspread</i>	21–25·1 metres (14·27–11·5 Mc/s)
<i>Short Waves</i>	25·5–31·2 metres (11·78–9·62 Mc/s)
	30·2–37 metres (9·94–8·11 Mc/s)
	36·6–44·6 metres (8·2–6·73 Mc/s)
<i>S.2 Band</i>	42·2–104 metres (7·1–2·88 Mc/s)
<i>Medium Waves</i>	185–550 metres (1620–540 Kc/s)

● VALVE TYPES:

TA126—Mazda	TH41	VP41	HL41DD	PEN45	UU6
TUI26—Mazda	TH233	VPI33	HLI33DD	PEN383	U403

● DIMENSIONS:

20 in. by 7½ in. by 12 in. tall (52 cms. by 19 cms. by 31 cms.)

● WEIGHT:

TA126: 28 lb., 12·7 Kgs.

TUI26: 24 lb., 10·9 Kgs.

THE 127

- A 4-valve battery-operated superheterodyne, based on the 126, and suitable for connection to a 6 volt accumulator.
- Low consumption of 2·5 amps at 6 volts.
- Appearance and controls: as 126.
- Multi-purpose valves.
- Special permanent magnet loud-speaker of maximum sensitivity.

● VALVE TYPES: Mazda 6C31 Mullard EF39 and EBC33 Mazda QP25

● WEIGHT: 28 lb., 12·7 Kgs.



THE 126-127 receivers—for mains and for battery operation respectively—are contained in this attractive plastic cabinet of chocolate shade with cream fascia and distinctively coloured tuning scale. Bandsread short waves and high gain are other characteristics of the 126 and 127—and they come at a very competitive price.

The 126/127 in detail

THE 126 models are good general purpose receivers in which special attention has been given to the problem of making short-wave tuning easy.

A new system of bandspreading has been introduced for this purpose, and we believe that the performance is a great advance on any hitherto obtainable in this price range.

The quality of reproduction is well above the average for this class of receiver, speech being rendered with particular clarity and intelligibility. A tone control is fitted, however, so that individual tastes can be satisfied and also so that noises due to atmospheric, etc., can be reduced under bad conditions of interference.

Three main wavebands are provided—the broadcast band (185-550 metres), an intermediate band (42-104 metres), and the short-wave band (13-45 metres), the latter being sub-divided into six separate sections. Each of the three bands is selected by rotation of the waveband switch, the particular one in use being clearly indicated on the tuning scale. In the first two positions a pointer moves to the appropriate scale, while in the third position a shutter uncovers a second indicator which is used to show which of the six sub-sections of the short-wave band is in operation.

The tuning condenser is rotated by means of a high ratio cord reduction drive.

BANDSPREAD TUNING

In the 126 series the variable condenser is not used for the actual tuning on short waves; it is only used to select one of the six sections into which the short-wave range is divided. Station tuning within the selected section is then carried out by variation of the oscillator and aerial inductances by movement of dust cores within the coils.

Each of the six scales associated with this system of bandspread tuning is five inches in length, thus providing an effective scale length of thirty inches. An important advantage of this system of bandspreading is that the whole frequency range is spread so that the "easy tuning" facility covers stations operating outside the narrow s.w. bands themselves. The scale itself is very large and well illuminated and all the principal stations are clearly marked.

An essential requirement for the correct operation of a tuning system of the 126 type is that the variable condenser should be set accurately to the same points before the fine tuning device is used.

Attached rigidly to the condenser shaft is a disc with six notches suitably spaced to divide the tuning range into the required sections and a phosphor-bronze ball is driven into the notches

by spring pressure. The 126 disc drive is built up from brass sectors insulated from each other so that the accurate setting of the condenser is thus not dependent only on mechanical location but is precisely determined by the completion of an electrical contact at the moment the ball bridges the two sectors. This contact is used to complete the circuit of the loud-speaker, which is muted until the setting is correct.

The particular band selected is shown by a pointer travelling horizontally under the six scales in turn. The user accordingly turns the condenser tuning knob until the pointer is opposite an indicating mark under the desired frequency band. At this point the locating ball will be felt to fall into the notch and then if necessary the knob is given a touch to unmute the loud-speaker.

Tuning over the selected band is performed by rotation of a separate control driving a large quadrant which in turn drives a pair of "slugs", one of which controls the inductance of the oscillator coil, while the other performs a similar function on the aerial coil. Each slug is a combination of iron dust core and brass disc, this being necessary to achieve a linear frequency law. Great care has been taken to ensure that all moving parts in the tuning system are free from backlash and to this end all bearings are of the "vee slot" spring-loaded variety.

CABINET AND LOUD-SPEAKER

The set is housed in a very attractive moulded cabinet with brown body and cream front. The five control knobs all appear at the front.

A 6½ inch permanent magnet loud-speaker is employed, incorporating complete protection from dust in the gap.

The TB127

THE TB127 special model differs from the 126 only in the respect of power supply and valves. Since it is intended to operate from a 6 volt accumulator, economy in operating current is most important. A careful choice of valve types, a well designed power supply and quiescent push-pull operation of the output stage has led to a very low input current of 2.5 amps. The performance of the set, however, is very little below that of the mains-operated model.

Every care has been taken to eliminate electrical and mechanical noise from the self-rectifying vibrator. The whole power unit is contained in a thick cast aluminium box which is attached to the chassis with flexible rubber mountings. A special spring suspension is used for holding the vibrator.



THE 128. Real craftsmanship has gone into the design of the 128, both in respect of appearance and performance. Externally, this set with its contrasting mahogany and avodire woods is very rich and satisfying. Internally, the circuit by the use of a very high slope r.f. amplifier gives tremendous gain designed to provide more than adequate bandspread short-wave reception anywhere in the world. The controls on the front are volume and tuning. Two other controls are recessed into the side panels of the cabinet; they are the on/off tone control (left) and the gram switch (right).

The 128 in detail

THE 128 has been specially developed for overseas listeners, to many of whom short-wave reception provides their only radio entertainment. Such development has actually been proceeding for many years now, and the 128 models are the latest members of a long series of Murphy short-wave specialist receivers.

BANDSPREAD TUNING

The most obvious direction in which a short-wave signal needs special treatment as compared with one on normal broadcast frequencies, is in the method of tuning. In the 128, tuning is made as easy on short waves as on other frequencies by the use of "bandspreading". A small condenser of suitable capacitance is connected in series with the main variable condenser so causing its effective "cover" to become much smaller. The full movement of the condenser then tunes the receiver over a single short-wave band.

The 13, 16, 19, 25, and 31 metre bands each have a separate range and each range is selected by pressing the appropriate button of the wave-range switch. On the lower frequency bands, special arrangements of this kind are not so important and the 42 and 49 metre bands are included in wider cover sections.

In the 128 supplementary cover has been provided from 18.5 to 48 and 47 to 130 metres. This should prove a most useful feature not only to those whose local station lies between the bands but also to listeners who like to feel they are not missing anything.

An important aid to tuning on the 128 is the marking of station names on the scale at the actual tuning points. Although the open nature of a bandspread tuning scale facilitates the showing of station tuning points, it has required a very considerable amount of development work to ensure sufficient constancy of the circuit components for the calibration to remain correct in use.

FREEDOM FROM INTERFERENCE

The next important feature of a short-wave receiver is that it should have a high *useful* sensitivity. It is not sufficient merely that the amplification should be high, for this may produce so much self-generated noise within the receiver that the signal is drowned. In the 128 the first stage (where most of the noise is produced) contains an SP41 valve having the very high slope of over 8 mA per volt. This ensures a very high signal-to-noise ratio.

Another important point in the operation of a

receiver is freedom from interfering signals. The 128 would be inherently good in that respect on account of the extra selectivity given by the r.f. valve anode circuit, but in addition special filter circuits are fitted to suppress interfering signals of image frequency.

But the excellent capabilities of the 128 receivers are not confined to short-wave reception. The high mutual conductances of the Mazda valves enable large stage gains to be obtained, so the sensitivity on broadcast bands is much better than that which would be provided by a similar number of valves of other types. Tuning of these bands, too, is made very easy by use of the double reduction drive, yet the set can be spun rapidly from station to station owing to the use of a flywheel on the knob shaft.

THE REPRODUCTION

Careful attention has been paid to quality. The high note response is well maintained, giving a marked clarity to speech, but if static or similar interference becomes too troublesome, the tone control can be adjusted to a compromise position. The large beam tetrode output stage delivers more than adequate audio output to the fully dust-proofed 8 in. p.m. speaker.

CHASSIS LAYOUT

For convenience in manufacture and servicing, the 128 is constructed in such a manner that the push-button switch, tuning coils, and fixed condensers form an easily detachable unit (shown in one of the photographs on the opposite page). The aerial coils for the five bandspread positions are arranged on a single former running horizontally behind the switch. These coils are all of large diameter to secure the highest possible gain and are air-cored. The remaining three aerial coils, together with the h.f. anode coils for the bandspread sections, are carried in a row above the switch button shafts.

The main panel of the chassis carries the tuning condenser and scale, the i.f. and l.f. amplifying sections, and the power supply components in order.

CABINET

The excellent electrical performance of the 128 is well matched by its appearance, for it is housed in a most attractive cabinet of strikingly modern design. The tuning scale has been inclined to a convenient viewing angle by mounting the chassis at a suitable angle in the cabinet, while the loud-speaker is carried below the chassis.

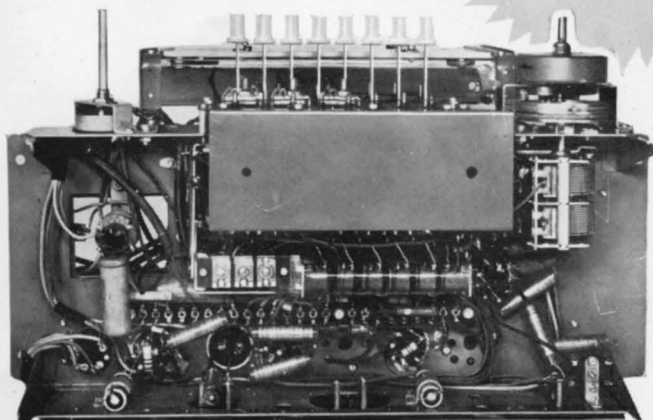
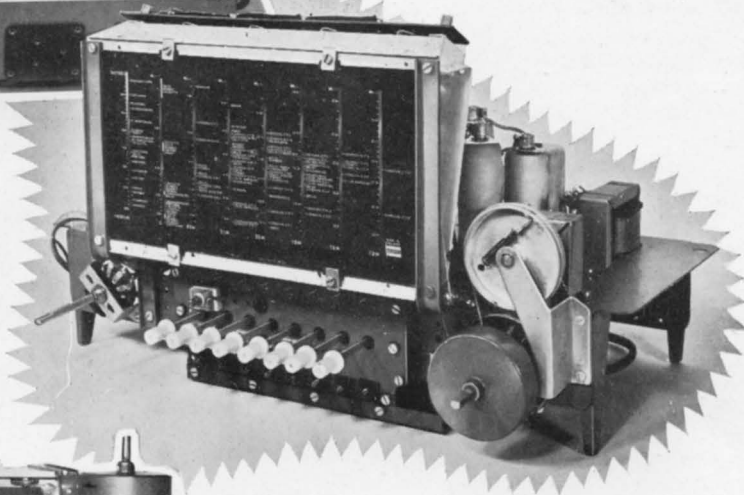
The 128

CHASSIS VIEWS



These views of the chassis of the 128 are given to show the distinction between the d.c./a.c. version (left) with its mains dropping resistor and fuse, and the a.c. version (above) using a transformer. They are respectively the TU128 and the TA128.

RIGHT. The large, clear scale of the 128 is well shown in this photograph, together with the eight wavering selector press-buttons, and the fly-wheel tuning system which permits any band to be rapidly traversed from one end to the other or "fine tuned" when desired.



LEFT. This under-chassis view of the 128 shows the efficient method of mounting the s.w. coil box and the tuning condenser in close proximity. Although the 128 is an advanced design with many refinements giving high gain on short waves, it is remarkably accessible and—should the need arise—will be easy to service.

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