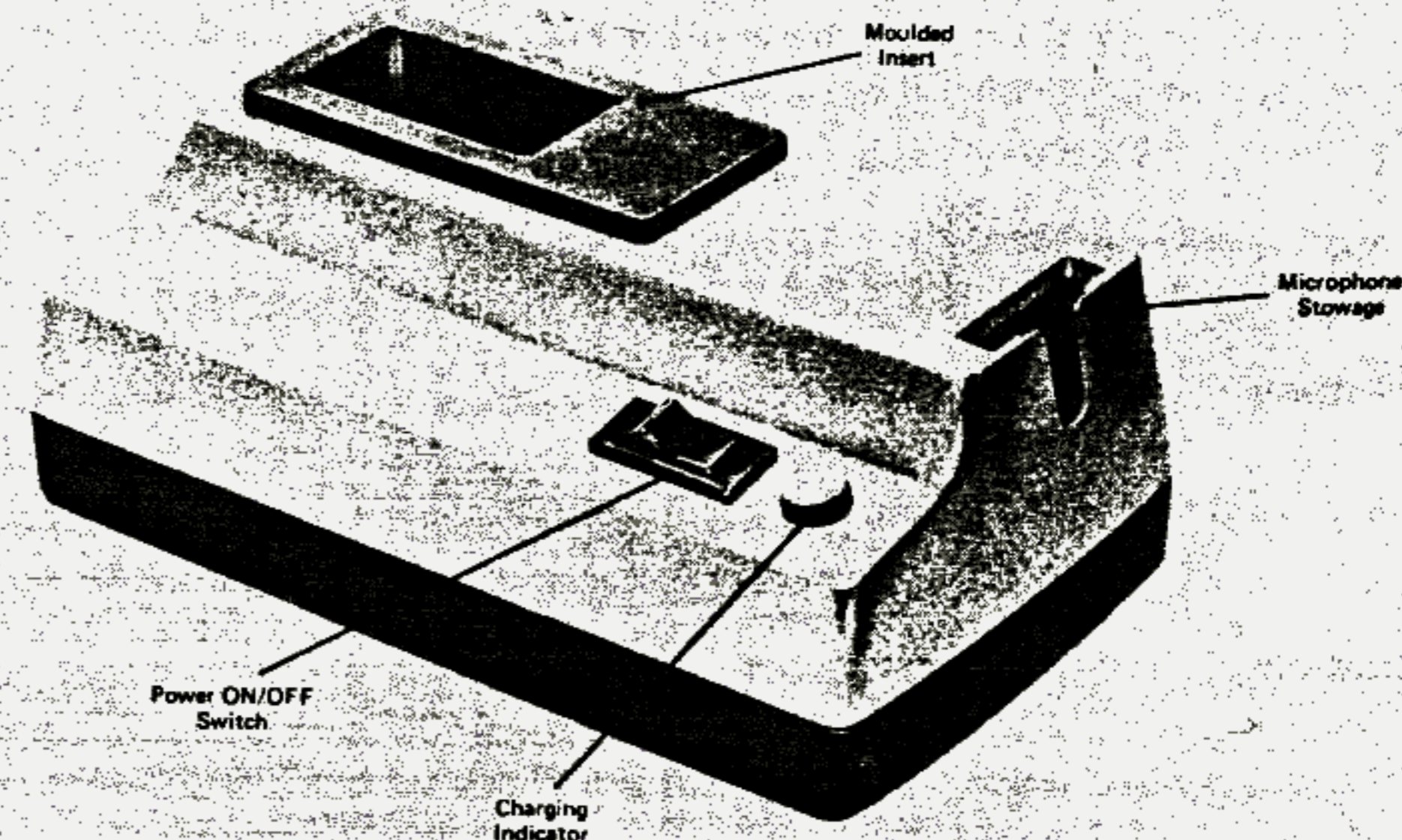


## SERVICING &amp; OPERATING INSTRUCTIONS

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The battery charger BC10 and BC16 allow the 15V 200mAh battery of a 'Pocketfone 70' radiotelephone to be recharged without removal from the radiotelephone unit. The Pocketfone can remain fully operational while its battery is being charged. If so desired the battery can be charged separately. For this a moulded insert is put into the charging compartment. A stowage is provided for the microphone of body-worn Pocketfones.

Studs on the base of the radiotelephone unit or battery make automatic contact when inserted in the charging compartment. To obtain optimum battery life, the rate of charge can be pre-adjusted to suit any specific requirement.

BC10 is for use with the 3-channel 'Pocketfone 70', bodyworn (e.g. PF2UB) or handheld (e.g. PF2FMH)

BC16 is for use with the single-channel 'Pocketfone 70' (e.g. PF5UH).

Power Supply Required 240V or 115V a.c. 50/60 Hz.

#### Controls & Indicators

Power on/off switch  
Charging Indicator (Red).

#### Dimensions (Overall)

3 in. x 7½ in. x 4¼ in. & (7.6 x 19 x 10.8 cm)

#### Weight

2 lb 2 oz (1 kg)

#### Circuit

The circuit comprises a power transformer T1, and a rectifier D1 which provides the d.c. to charge the battery. The output is stabilised by zener diode D3 and R2, and smoothed by C1. The charging current is set by RV1.

The transistor TR1 is a lamp driver which obtains its d.c. supply via D2. Plugging in the battery switches on TR1 which provides the current to light the charge indicator lamp LP1.

The d.c. output of the charger at the battery terminals is between 27 and 32 volts depending on the setting of the pre-set potentiometer RV1, adjustable 7–22mA.

#### Dismantling

To dismantle the charger remove the four outermost screws in the base. This allows access to the power transformer, the fuse and the potentiometer RV1 for adjusting the charging rate.

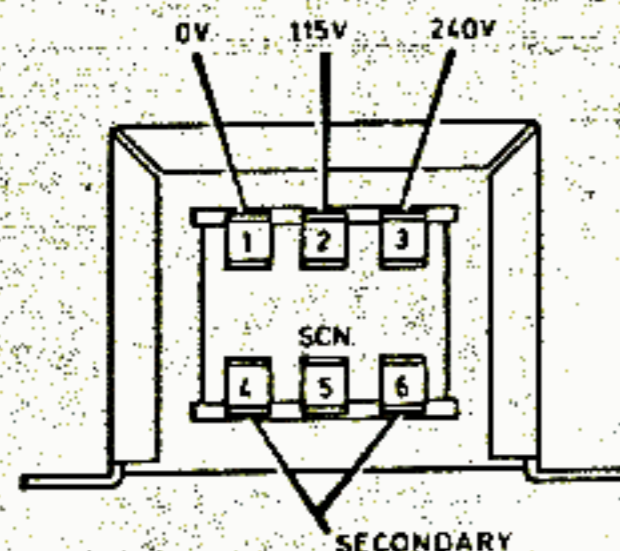
#### Installation

Set the taps of the power transformer T1 for 240V or 115V a.c. supply. Check that the fuse is serviceable.

On despatch from the factory the charger is set for 240V operation and the charging rate at 14mA.

Connect charger to the a.c. supply. Use 3-pin plug with earth connection.

D.C. Resistance between pins 1 and 3  $\approx$  226 ohms



Power Transformer Voltage Taps

#### Operation

**Note:** The charger has a constant current output regardless of the state of the battery.

The charger is despatched set to charge at 14mA. This should be sufficient to restore the amount of charge used during an eight hour tour of duty in an eight hour charge period i.e. for most schemes two batteries are sufficient to give 24 hour operation.

The Graphs 1 and 2 show the recommended charging current for different operational requirements based on an 8 hour shift, 8 hour charge cycle.

Graph 1 covers the range of radiotelephones types PF2FMB, PF2FMH, PF3FMB and PF3FMH (including any intrinsically safe versions).

Graph 2 covers the range of radiotelephones types PF2UB, PF2UH and PF5UH (including any intrinsically safe versions).

For example: On Graph 1 after 8 hours operation, 10% receive, 2% transmit, 88% standby, the charging rate required is 14.2mA for 8 hours.

#### To charge battery within 'Pocketfone 70'

Switch on the power switch (marked 0 1).

Insert 'Pocketfone 70' unit in the charging compartment (moulded insert removed). Studs in the base of the unit will make contact with the charging pins, and charging indicator (red) will light.

If required, the 'Pocketfone 70' may remain switched on. Allowance must be made for any current consumed by the Pocketfone transmitter and receiver and the charging period extended accordingly.

#### To charge battery separately

Fit moulded insert in the charging compartment and insert battery.

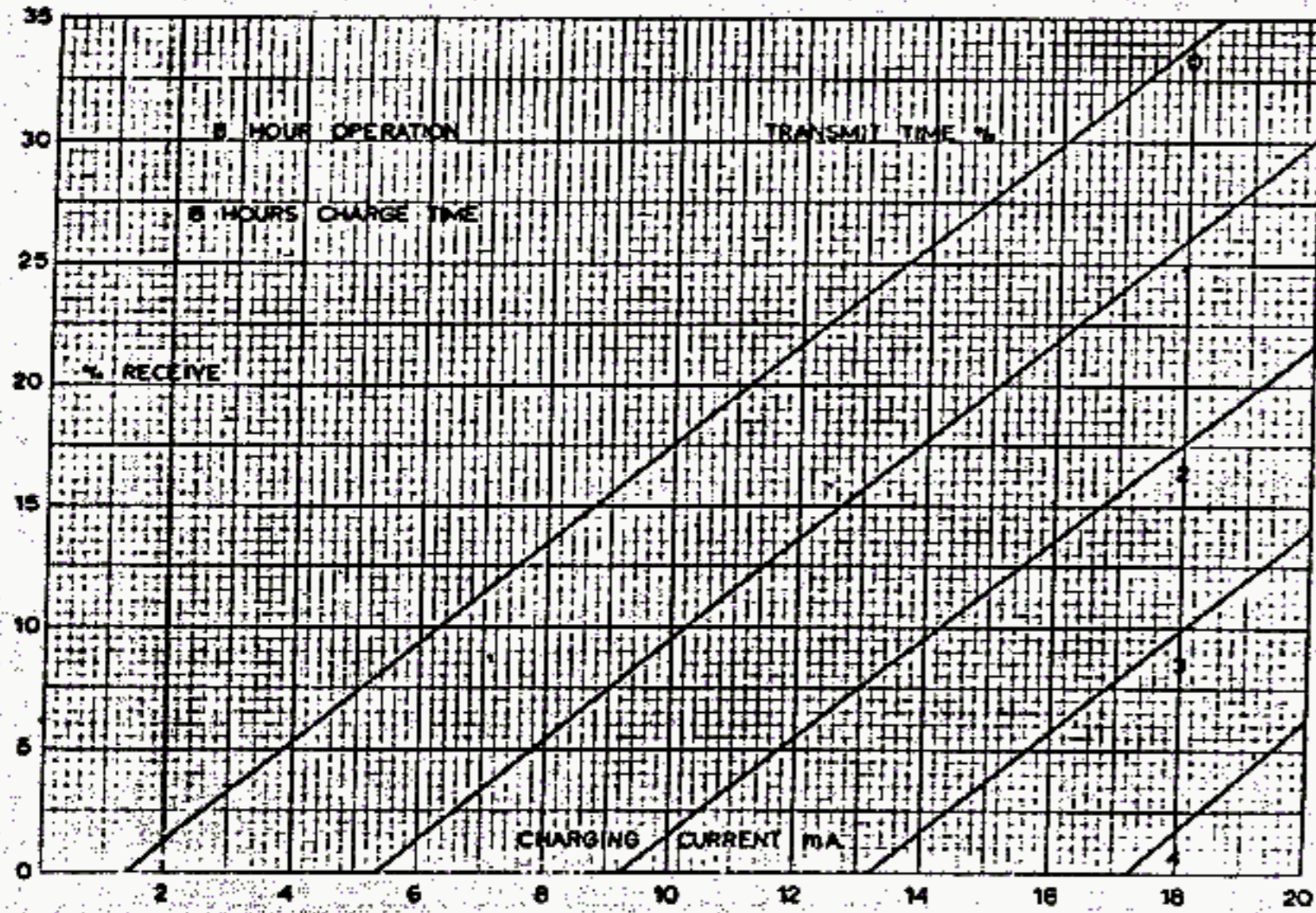
#### To obtain optimum life from battery

The charging time or current can be adjusted to suit individual scheme requirements. The following points are important.

1. The maximum charge rate 20mA for 14 hours is for a fully discharged battery.
2. Exceeding the 14 hour charge period at maximum charging current (20mA) will reduce the number of cycles (charge/discharge) finally obtainable from a battery.
3. The lower the charging current the more tolerant the battery will be of excess charging time. Therefore, use the lowest current necessary to restore the capacity.
4. The battery will benefit from an occasional complete discharge (once per month), followed by a full charge cycle i.e. 280mAh.

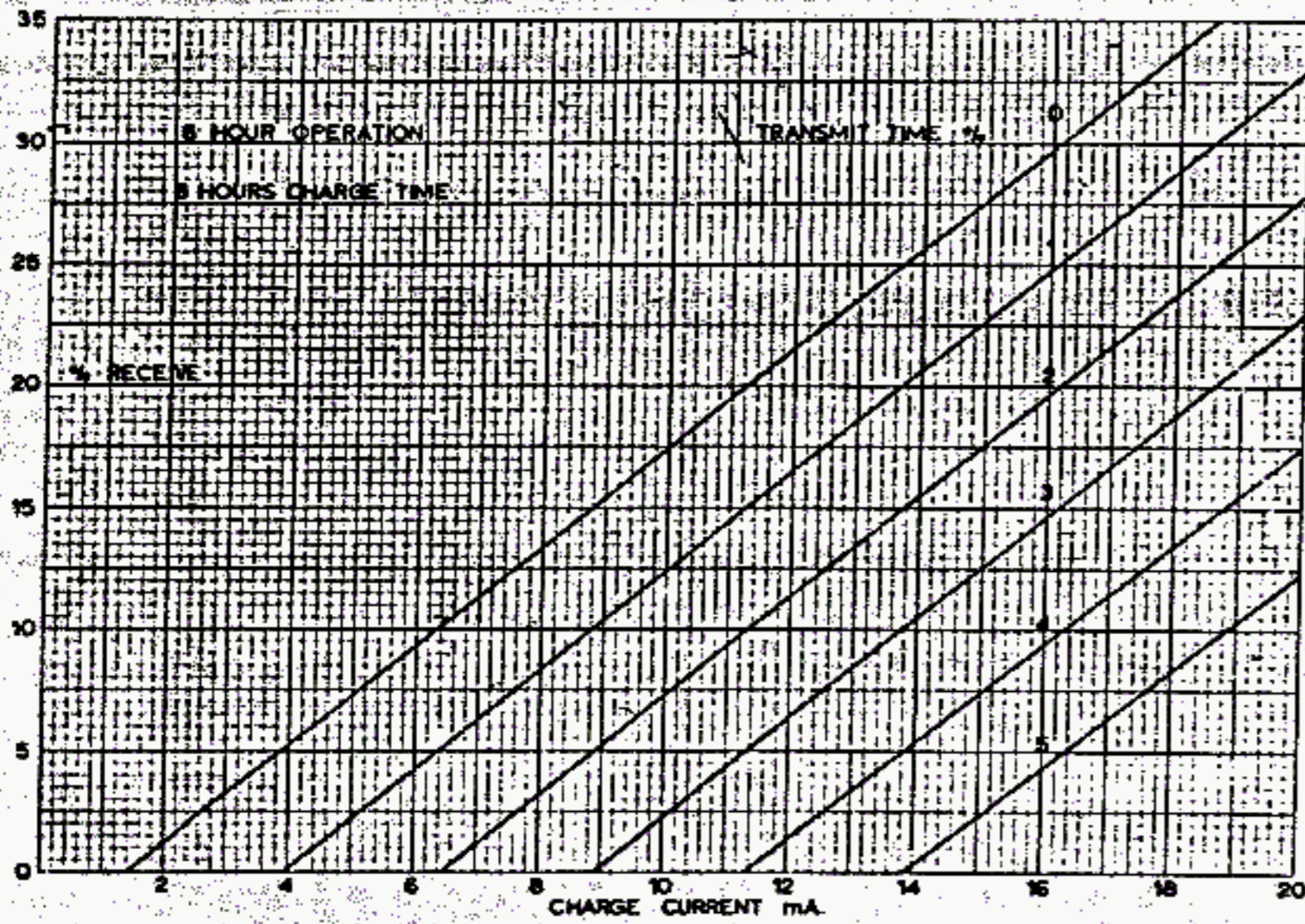
**Note:** For information the charge and discharge characteristics of the nickel-cadmium battery are dis-similar. "The battery is approx. 70% efficient. It requires a charge of 280mAh to give 200mAh output".

POCKETPHONE 70 VHF SERIES - CHARGING CURRENT



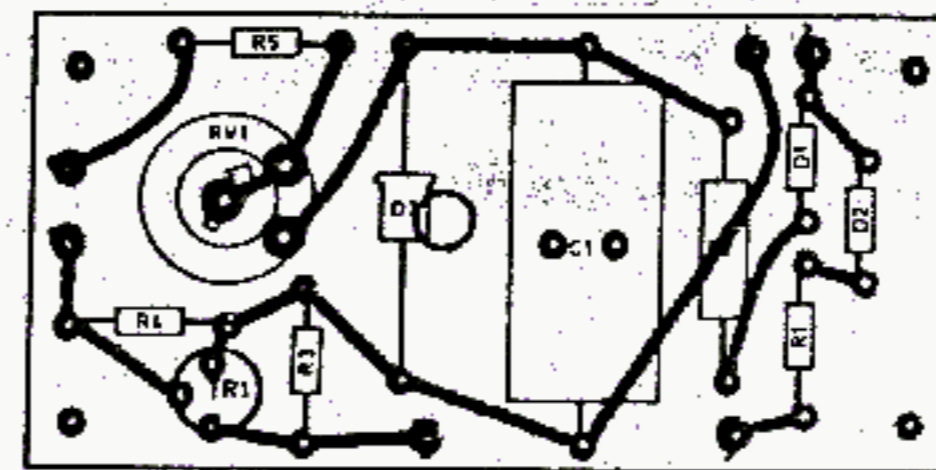
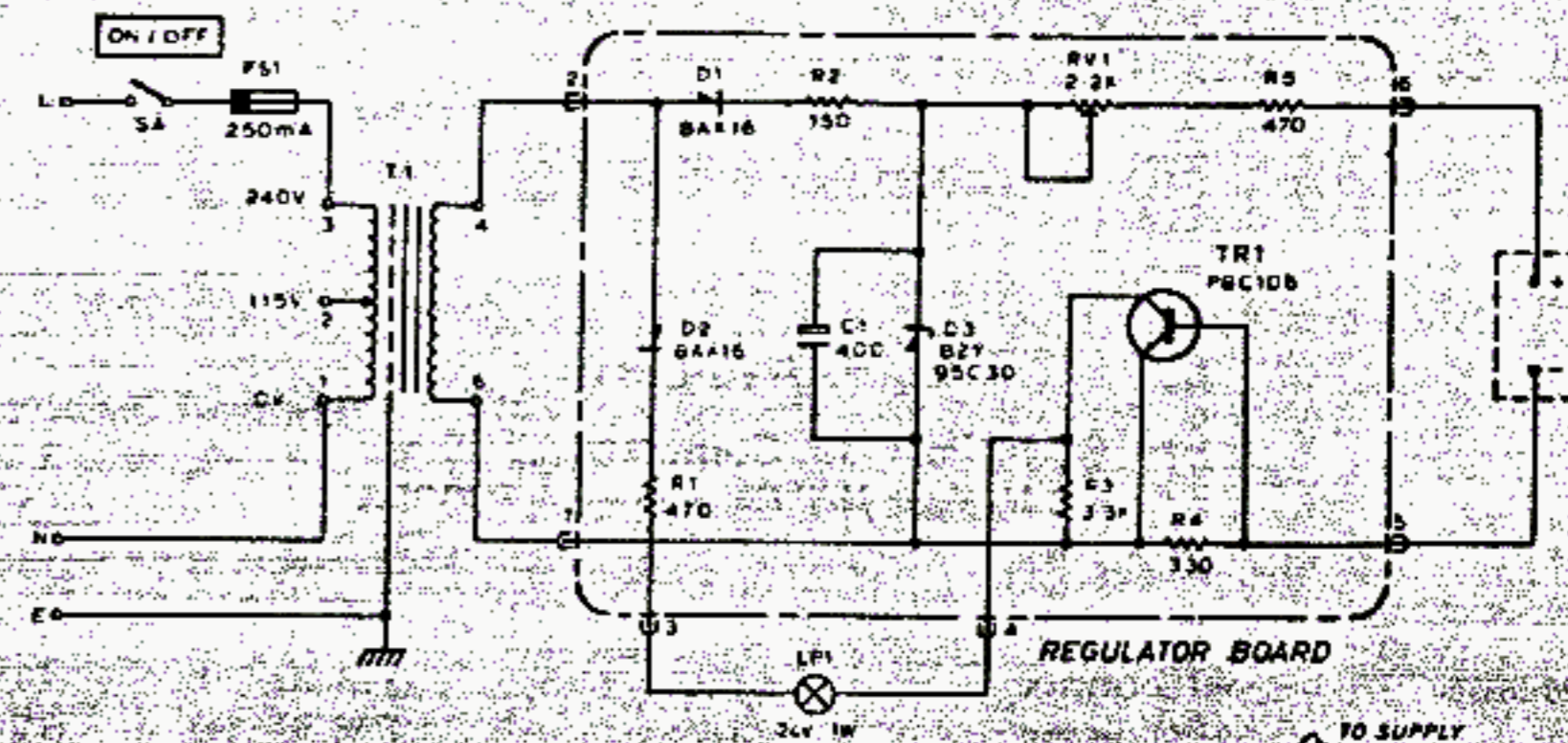
Graph 1

POCKETPHONE 70 UHF SERIES (EXCLUDING PF30M) - CHARGING CURRENT

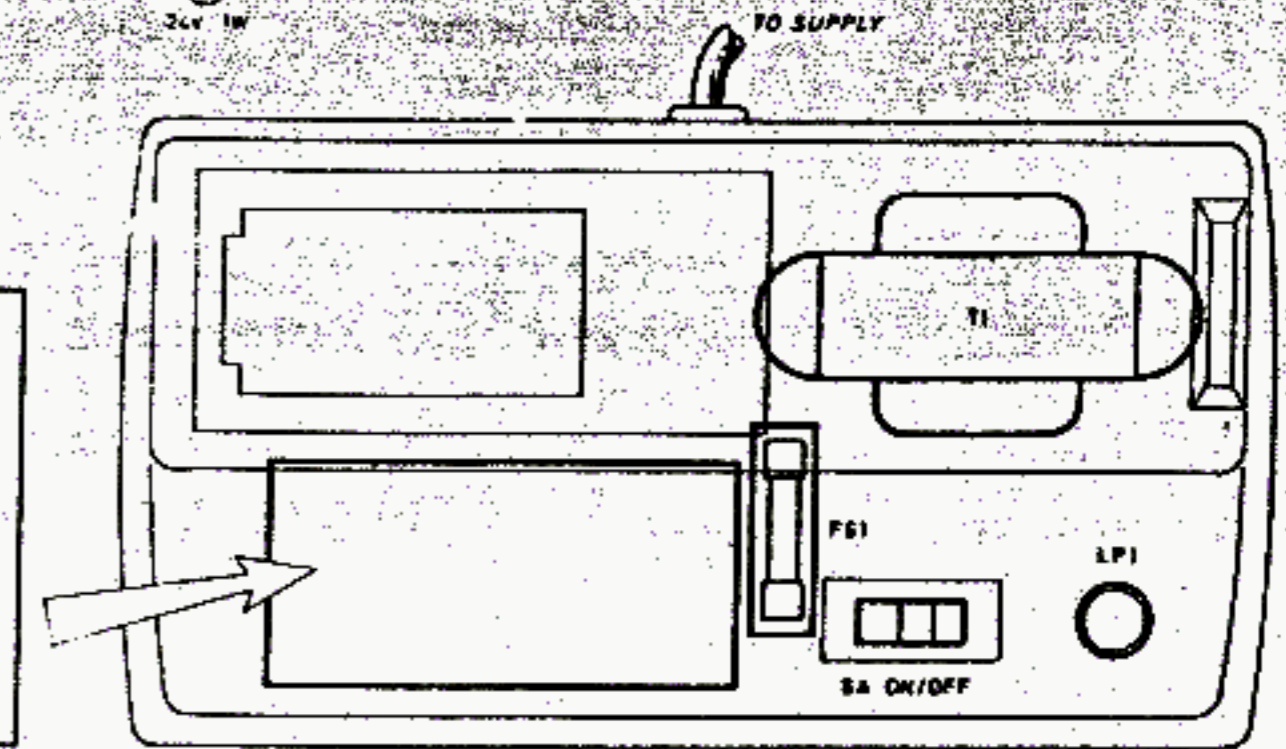


Graph 2

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TOP VIEW



CHASSIS VIEWED FROM TOP (with COVER ON)

Circuit and Component Layout Diagram

**To adjust charging rate.**

Switch off the charger and dismantle it.  
 Unplug the flying lead from pin 6 of the printed circuit board.  
 Insert a milliammeter in series with the flying lead and pin 6 (+ve on pin 6).  
 Insert battery in charging compartment. Switch on and set potentiometer RV1 (adjustable for 7 to 22mA output) for the required charging rate. Switch off.  
 Remove milliammeter, replace flying lead on pin 6, and reassemble the charger.

**To replace the charging indicator lamp**

Simply unscrew the red window and lift out the lamp.

**To replace power on/off switch**

To replace the power switch dismantle the charger. Unplug leads. The switch is a push fit and is held in position by two integral spring retainers.

To release switch, squeeze each retainer, in turn, using a screw-driver with wide blade, simultaneously push the switch out through the top panel.

Fit new switch, which will lock in, when pushed into position through the top panel. Connect leads. Carry out a functional check.

**PARTS LIST**

BC10 Part No. Complete AT00062  
 BC16 Part No. Complete AT00068

			Part No.	Code
Resistor	470 ohms	±10%	PM00221	R1
	150 ohms	±10%	PM00515	R2
	3.3k ohms	± 5%	PM01442	R3
	330 ohms	± 5%	PM01430	R4
	470 ohms	± 5%	PM01432	R5
Pot.	2.2k ohms	Lin	PL09595	RV1
Cap.	400uF	40V	PS44021	C1
Transistor	PBC108		*FV05800	TR1
		* Composite number.		
Diode	BAX16		FV05232	D1,D2
	BZY95C30		FV05282	D3
Insulator, Black (BYZ95)			712622	
Transipad			QA05950	
Pin			FT10525	
Tag			FT00077	

Above items are part of the regulator printed circuit board

**PARTS LIST (Cont.)**

Transformer  
 Fuse 250mA  
 Lamp 24V 1.0W  
 Switch BC10  
 Switch BC16  
 Fuseholder  
 Signal Lamp Red  
 Cap Adaptor (for LES type lamp)  
 Feet 1/2" x 5/16" deep  
 Grommet  
 Grommet  
 Socket Receptacle  
 Receptacle  
 Supply Cable 72"  
 † Battery Adaptor BC10  
 † Battery Adaptor BC16  
 Clamp  
 Screws 6Z x 3/8" (Cover to base)  
 Screws 6Z x 1/2" (Feet)

† Moulded Insert

**Sub-Assemblies**

Unit Pocket Assembly BC10  
 Unit Pocket Assembly BC16  
 Cover Assembly  
 Base Assembly  
 Regulator PCB Assembly

Part No.	Code/ Remarks
AL21377	T1
FF00812	FS1
FL17760	LP1
FS03809	SA
FS03813	SA
FH02756	
FL01014	
FH03063	
FR06172	
FG02016	
FG02034	
FT10524	
FT10597	
FC04529	
BT10116	
BT10118	
BT15989	
QW41105/A	
QW41108/A	

AT11593  
 AT11631  
 AT11626  
 AT11627  
 AT27147