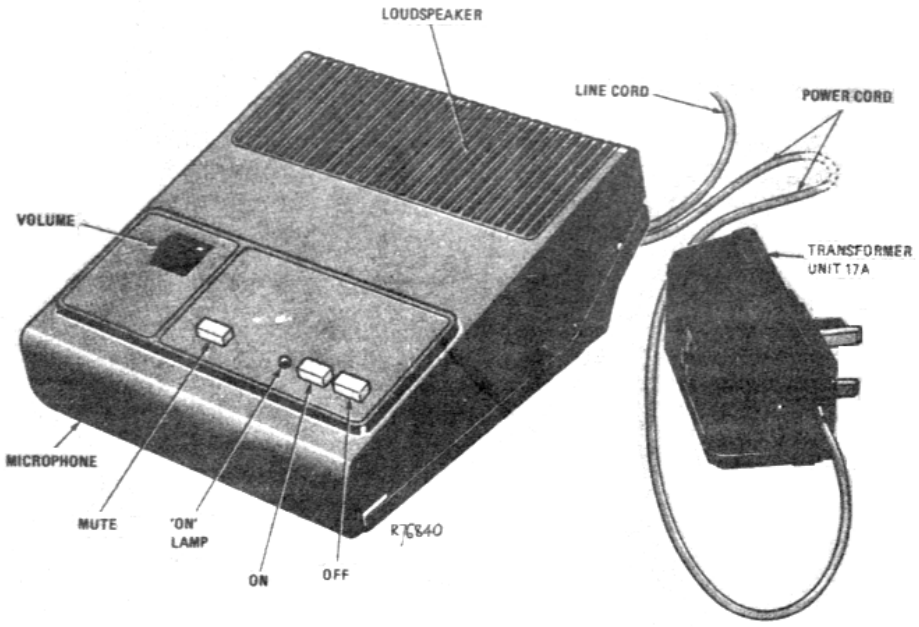
AMPLIFIER & LOUDSPEAKER 12A (HARMONY)

(This instruction is distributed to appropriate Type 1 files)

1 GENERAL The 'HARMONY' (Amplifier and Loudspeaker 12A) shown in fig 1 is a loudspeaking telephone attachment which can be added to existing handset telephone installations, (except Internal Telephone System) to provide full, voice-switched, loudspeaking telephone facilities.

The circuitry of 'HARMONY' is based on that of the 'DORIC' (Amplifier and Loudspeaker unit 11A), which it will eventually replace. The case has been styled to be compatible with the Herald call connect system and the Ambassador telephone range.

The 'HARMONY' incorporates a line connect relay which operates when the "on" button is pressed, this connects the unit across the line pair and disconnects the telephone instrument. The relay has an additional break unit which is brought out onto terminals T9 and T10 for use on C wire signalling PMBX extensions.



2 DESCRIPTION Controls on the unit consist of:

2.1 Drum Wheel Volume Control To adjust the incoming speech level.

2.2 A red light emitting diode (LED) indicator, which is illuminated when the HARMONY is switched on.

2.3 Three Press Button Keys Their function from left to right is as follows:

2.3.1 Mute Key - Marked 'M' Depression of this key will mute the microphone such that the distant party cannot hear conversation taking place in the vicinity of the HARMONY. The key must be held depressed throughout the required duration.

2.3.2 On Key Depression of this key operates the line-connect relay which connects HARMONY to the line.

2.3.3 Off Key Depression of this key releases the line-connect play and restores the line to the telephone instrument.

3 OPERATING INSTRUCTIONS The operating instructions for HARMONY are similar to those of DORIC except when used on C wire signalling PMBX extensions and are as follows:

	METHOD 1	METHOD 2
	Used when connected to:Plan extensions Nos. 2 2A and 105/107 (main) Keymasters 3 and 4.	Used when connected to:Plan extensions Nos 1, 1A, 4 and 1.05/107 (extn). Exclusive and shared service exchange lines. Two wire and C wire signalling PBX extensions.
MAKING A CALL	Pick up the telephone handset and call the desired number. * Press the "on" key. The indicator will light and remain illuminated. *The telephone handset will be disconnected but must not be replaced on its cradle.* Adjust the loudspeaker volume to the level you prefer.	Pick up the telephone handset and call the desired number. * Press the "on" key. The indicator will light and remain illuminated. The telephone handset will be disconnected and may, if desired, be replaced on its cradle. Adjust the loudspeaker volume to the level you prefer.
ANSWERING A CALL	The call must be answered normally by handset and then transferred to the unit (see below).	Press the "on" key. The indicator will light and remain illuminated Adjust the loudspeaker volume to the level you prefer.

** The telephone dial or press button unit must be allowed to finish pulsing out to line before the HARMONY "on" button is pressed.*

TRANSFERRING FROM HANDSET TO UNIT	METHOD 1	METHOD 2
	Press the "on" key. The indicator will light and remain illuminated. The telephone handset will be disconnected but must not be replaced on its cradle. Adjust the loudspeaker volume to the level you prefer.	Press the "on" key. The indicator will light and remain illuminated. The telephone handset may, if desired, be replaced on its cradle. Adjust the loudspeaker volume to the level you prefer.
TRANSFERRING FROM UNIT TO HANDSET	Press the "off" key. Continue your conversation using the telephone handset. Replacing the handset will terminate the call.	Lift the telephone handset from its cradle and then press the "off" key. Continue your conversation using the telephone handset. Replacing the handset will terminate the call.

4 TECHNICAL CONSIDERATIONS The unit uses voice switching techniques to prevent acoustic feedback or 'howl' when the apparatus is in use. The housing is designed to provide acoustic isolation between microphone, (which is an electret type situated behind the front edge of the unit) and loudspeaker, (situated under the grill to the rear of the unit). The unit possesses omnidirectional characteristics, and functions without the user having to be situated close to the microphone.

The unit employs circuitry which virtually eliminates speech clipping in normal use and also has a degree of tolerance to constant background noise without switching permanently to the 'Send' mode. However, to achieve good performance the usual requirements for room acoustic conditions still apply.

5 POWER Power for the HARMONY is provided by a transformer unit 17A which transforms mains voltage to 18 V a.c.

The Transformer Unit 17A is a plug top type transformer for use in 13 amp 3 pin mains socket outlets and incorporates a 100 mA input fuse.

6 MAINTENANCE On-site maintenance of HARMONY units, apart from changing transformer input fuses is not recommended as workshop facilities are required for effective testing and repair.

Should a HARMONY unit be reported as faulty it should be given a functional test. If it appears to be totally dead then the transformer input fuse should be checked before changing the unit and transformer complete.

Faulty HARMONY units should have labels attached giving brief details of the fault symptoms and be carefully packed to prevent damage and returned to Section Stock.

7 SPARES Spare HARMONY units will be stocked complete with transformer units 17A at local section stocks. Fuses for transformer units 17A may be obtained by local purchase, the correct type to order is:

20 mm HRC ceramic tube type fuse, 100 mA

8 MISCELLANEOUS During the trials of the DORIC (Amplifier and Loudspeaker 11A) a large percentage of 'faulty' units returned were found to be RWT indicating that customers were reporting faults incorrectly. Voice switched LSTs do not perform well on noisy lines, these lines tending to bias the apparatus into a receive mode and prevent, or severely clip, outgoing speech. If bad performance is complained of, check with the customer to determine if the line was noisy and, if possible, make a test call to confirm the fault. Poor acoustic room conditions will also degrade the performance of the unit.

9 REFERENCES

Marketing Installation, TI C3 B2012

Installation connexions diagram, N4446

10 QUERIES Maintenance queries should be directed to Regional Service Groups who will consult THQ/ME/BS4.4.2 as necessary.

THQ/ME/BS4.4.2 E N D