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A. S. B. 6  
L.B. SUBSCRIBER SETS



*Bell Telephone Mfg. Co*

4, RUE BOUDEWYNS  
ANTWERP

1952

BELL TELEPHONE MANUFACTURING CO.  
ANTWERP.  
SALES DEPARTMENT.

A.S.B. 6

L.B. SUBSCRIBER SETS

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LOCAL BATTERY TELEPHONES.

PART 1

BAKELITE MOULDED SUBSCRIBER SET  
ADAPTABLE FOR USE EITHER AS A DESK  
OR WALL SET AND CONVERTIBLE FOR  
C.B. MANUAL OR AUTOMATIC SERVICE

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INTRODUCTION

The magneto set developed by Antwerp is of a type holding certain novel features which will render its use advantageous in many cases.

The main idea has been to construct an apparatus with conversion facilities, so that one and the same telephone might be used in one case as a desk set and in another as a wall set. This end has been attained in providing the apparatus with a reversible switch-hook cradle.

Furthermore the necessary accommodation space for a dial and inside accessories for C.B. service have been provided, which render the set also convertible for use on C.B. sets, either of the manual or automatic type.

Normally, the dial hole is covered by a detachable blank with a small card frame destined to receive a card bearing the subscriber's number.

A further facility resides in the fact that sufficient space is available in the set housing to accommodate 2 different types of hand generators. Output voltage curves of these generators

are included with the present description.

According to the characteristics of the generators used these L.B. sets have been subdivided into 2 categories.

#### ALTERNATIVE 1, PAR.A.

The L.B. set is connected to the central office through a normal line with an insulation resistance of more than 10.000 ohms between conductors, which value is considered a strict minimum.

It is accepted, in principle, that the signalling equipment of the central office operates with a current of 10 mA. The L.B. set assigned for use under these conditions contains a generator having two normal size moulded Alnico magnets which ensure a high efficiency to the apparatus. The generator (No.2061 A) is a compact article of reduced dimensions.

This generator will work the signalling apparatus above referred to through a resistance of 4400 ohms which is equal to a line length from set to central office of 440 Kilometres, it being accepted that the two conductors are of 2 mm diameter bronze wire.

#### PAR.B.

The same set as for "par.A" has been considered for use on lines with a lower resistance.

The generator will work the signalling apparatus through a resistance of 3000 ohms, which is equal to a line length from set to central office of 300 kilometres (2 conductors of 2 mm diameter bronze wire).

#### ALTERNATIVE 2, PARC.

A number of local battery sets are connected in parallel to



one line (farmer lines).

In this case a call put through from one of the sets will work the ringer of every set connected to the line.

In order to allow the connection of a greater number of sets, a ringer with an ohmic resistance of 2500 ohms or 1600 ohms and a generator with an armature of 250 ohms are provided.

This generator is furthermore provided with two large size Alnico magnets, which will allow the connection in parallel of 18 ringers to a line having an ohmic resistance of 2000 ohms. The attached curves show the number of ringers that can be worked under the above conditions by each of the generators in question.

Also when the line resistance between set and central office is abnormally high or the insulation resistance between the line conductors is very low this same generator (2062 A) will work the signalling apparatus.

a) through a line resistance of 6600 ohms on a line having a normal insulation resistance of 10.000 ohms.

b) through a line resistance of 2000 ohms on a line having an insulation resistance of only 1000 ohms.

No. 2738-A SUBSCRIBER SET (2061 A Generator).

#### MECHANICAL CHARACTERISTICS:

This subscriber set may be used, either as a table set or a wall set. The gravity switch cradle which is independent from the set housing, is fixed to the latter in such a way that by reversing it in an angle of 180° the apparatus is turned from a table set into a wall set and vice-versa. This modification is carried out without



the use of any tool and the subscriber set itself need not even be opened.

The apparatus comprises a body and cradle of moulded bakelite and a brass base plate on which the various inside components are mounted. A generator having two normal size moulded Alnico magnets is provided. This corresponds to alternative par.A in the introduction to the present description.

If, however, this generator is found inadequate in specific cases, another type with larger moulded magnets as described under par.C may be substituted.

#### ELECTRICAL CHARACTERISTICS:

The Universal circuit of the apparatus allows its conversion from L.B. to C.B. use, either for manual or automatic service. This conversion is easily carried through and will only require the substitution of the No.2251-C induction coil to the No.2253-C and the eventual addition of a dial.

In order to avoid the necessity of soldering connections during the process of conversion, the induction coil has been provided with screw connections. It will therefore be sufficient to:

Unscrew the small terminal strip which connects the coil to the set cable and the 2 screws which fix the coil.

Mount the replacing coil in its stead and connect it to the terminal strip of the set cable.

When converted for automatic service the apparatus can be used in our 2 party line system.



### EFFICIENCY:

The efficiency of the generator has been described in the introduction. The transmission and reception values of the set, tested in the modified SETAC circuit i.e. when the set is directly connected to the line of 600 ohms impedance, and expressed in reference equivalents, are established as follows:

Transmission : 4,5 db. worse

Reception : 1 db. worse

These values are averages for these sets when a 3 V. battery is used for feeding.

### No. 2738-B SUBSCRIBER SET (No. 2061 A generator).

This subscriber set is identical with the 2738-A except that the generator used will operate the signalling apparatus through a resistance of 3000 ohms. This limits the use of the set as indicated under par.B of the introduction.

To modify a L.B. set into a C.B. set -

- 1) remove Induction coil and generator
- 2) connect induction coil
- 3) eventually remove 2047-C apparatus blank and connect 7019-A dial.

In the latter case when the apparatus is destined to be used as a wall set a No.7026-A dial mounting must be provided.

### No.2739-A SUBSCRIBER SET (No.2062-A Generator)

The No. 2739-A subscriber set is mechanically and electrically identical with the No. 2738-A subscriber set except for the following points:



A 250 ohms generator having large size Alnico magnets is provided. This corresponds to "Par.C" of the introduction of this description.

In order to allow in the case of "farmer lines" the connection of a greater number of sets in parallel on the same line, the ohmic resistance of the ringer is of 2500 or 1600 ohms instead of the usual 1000 ohms.

As shown on the attached curve, forty such subscriber sets may be connected in parallel on a line having an ohmic resistance of no more than 500 ohms (50 Km wire 2 conductors of 2 mm diameter).

No. 2738-E Subscriber set.

This apparatus is identical with the No. 2738-A set, except that it does not contain a  $1\mu\text{F}$  condenser.

Conversion to C.B. not possible.

No. 2738-J Subscriber set

This apparatus is identical with the No. 2738-E set but is arranged for use in two-party line service. As for the No. 2738-E it is not possible to convert this apparatus for use in C.B.

No. 2739-E subscriber set

Is identical with the No. 2739-A set, except that no condenser ( $1\mu\text{F}$ ) is included.

Conversion to C.B. not possible.

No. 2739-G Subscriber set

Resembles the No. 2739-A set in all respects, except that conversion to C.B. is not possible.



No. 2739-H subscriber set

Is identical with the 2739-E set, except that a No. 2059-C ringer of 1600 ohms is provided instead of the No. 2059-B ringer (2500 ohms).

Conversion to C.B. not possible.

No. 2739-J Subscriber set

This apparatus is identical with the No. 2739-E set described above, but is arranged for use in two-party line service.

Conversion to C.B. not possible.

No. 2739-K Subscriber set

Is identical with the No. 2739-G set but arranged for use in two-party line service.

Conversion to C.B. not possible.

No. 2739-L Subscriber set

This set resembles the No. 2739-H subscriber set in all respects except that it is arranged for use in two-party line service.

Conversion to C.B. not possible.

No. 2838-A - B-E - 2839-A-E-G-H-J-K and L Subscriber sets.

Are respectively identical with the No. 2738 and 2739 type sets, except for their finish, which is the light tropical finish.

Note: Upon request the above described telephone sets can be supplied for use in heavy tropical countries, so that apart from the protection against moisture and heavy temperatures, the sets can be made insect proof.



BELL TELEPHONE MFG CO.  
ANTWERP

# DIAGRAM FOR LOCAL BATTERY BT. 33652 SUBSCRIBER SETS

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APP. CIR

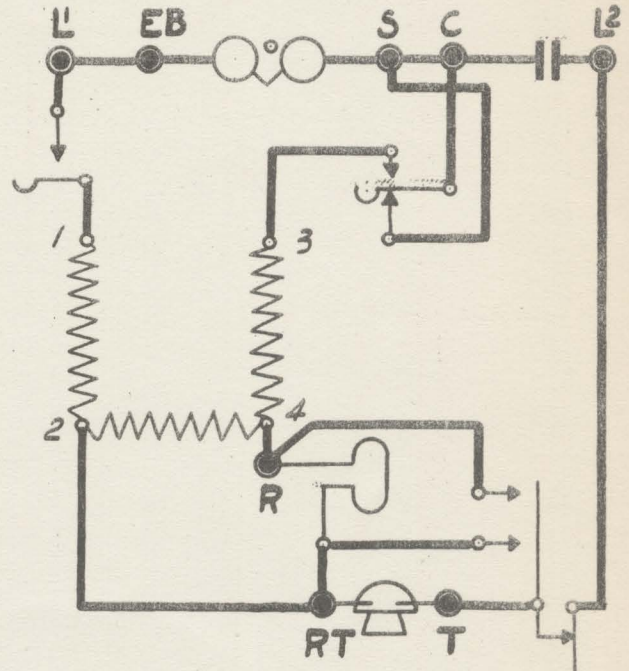
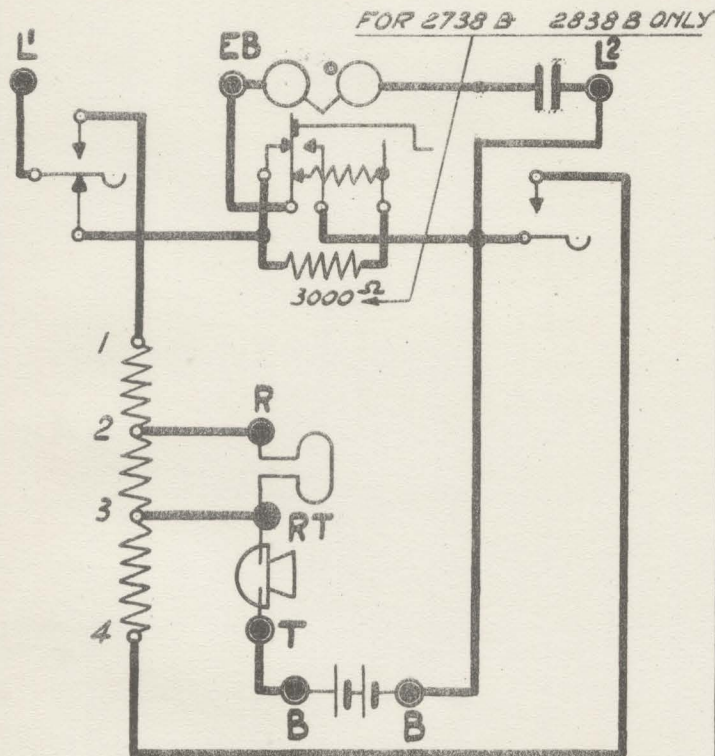
2738 A-B  
2739 A

2838 A-B  
2839 A

SUBSCRIBER SETS

CONNECTED IN  
LOCAL BATTERY

CONNECTED IN  
COMMON BATTERY



THESE SETS ARE LOCAL BATTERY SETS CONVERTIBLE FOR CB MANUAL  
OR AUTOMATIC SERVICE.







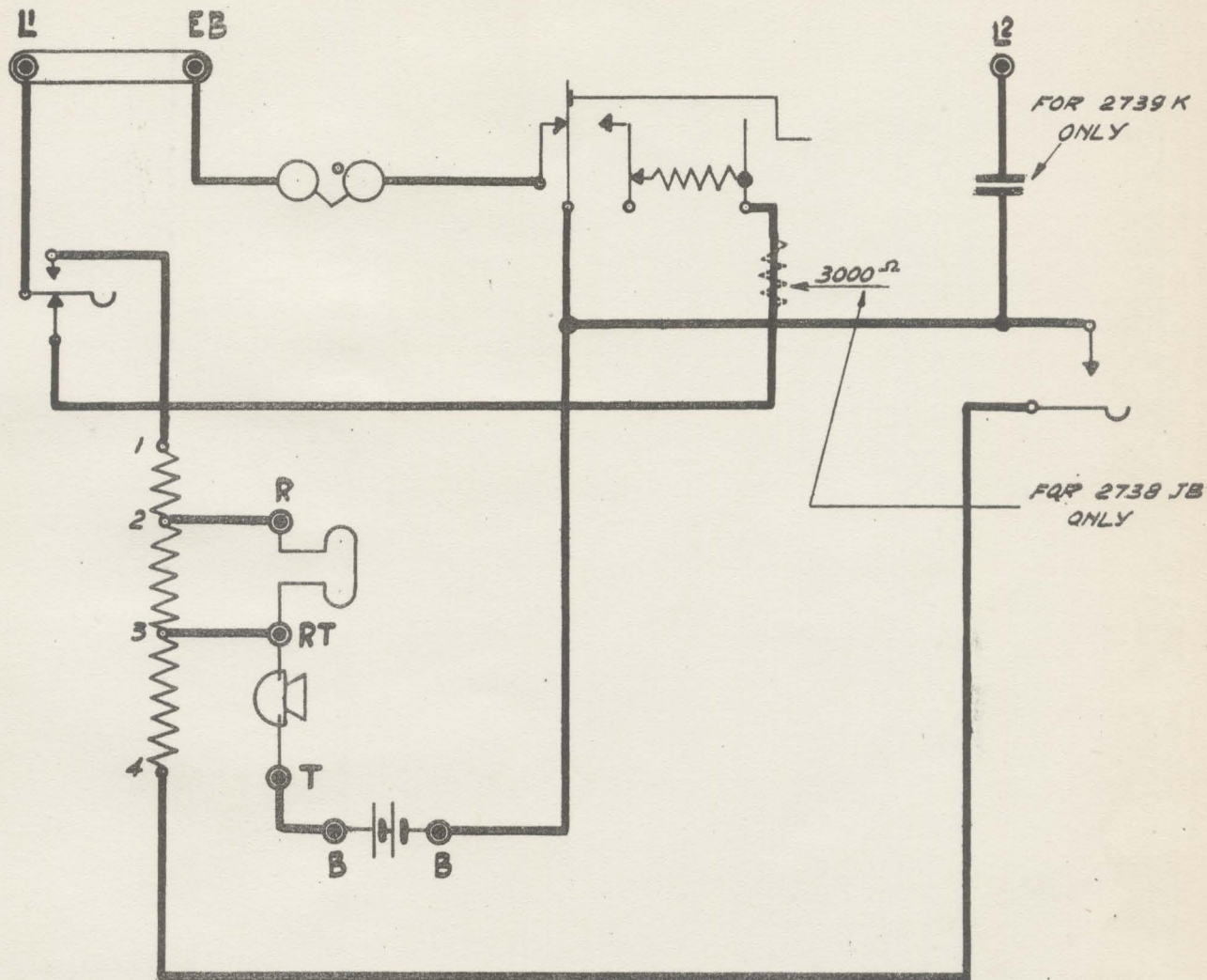
BELL TELEPHONE MFG CO  
ANTWERP

# DIAGRAM FOR LOCAL BATTERY BT. 33654 SUBSCRIBER SETS

ISSUE 2 SEPT. 1950

APP. 019

2738 J 2738 JB - 2838 J  
2739 J.K.L. ~~2838~~ J-SUBSCRIBER SETS

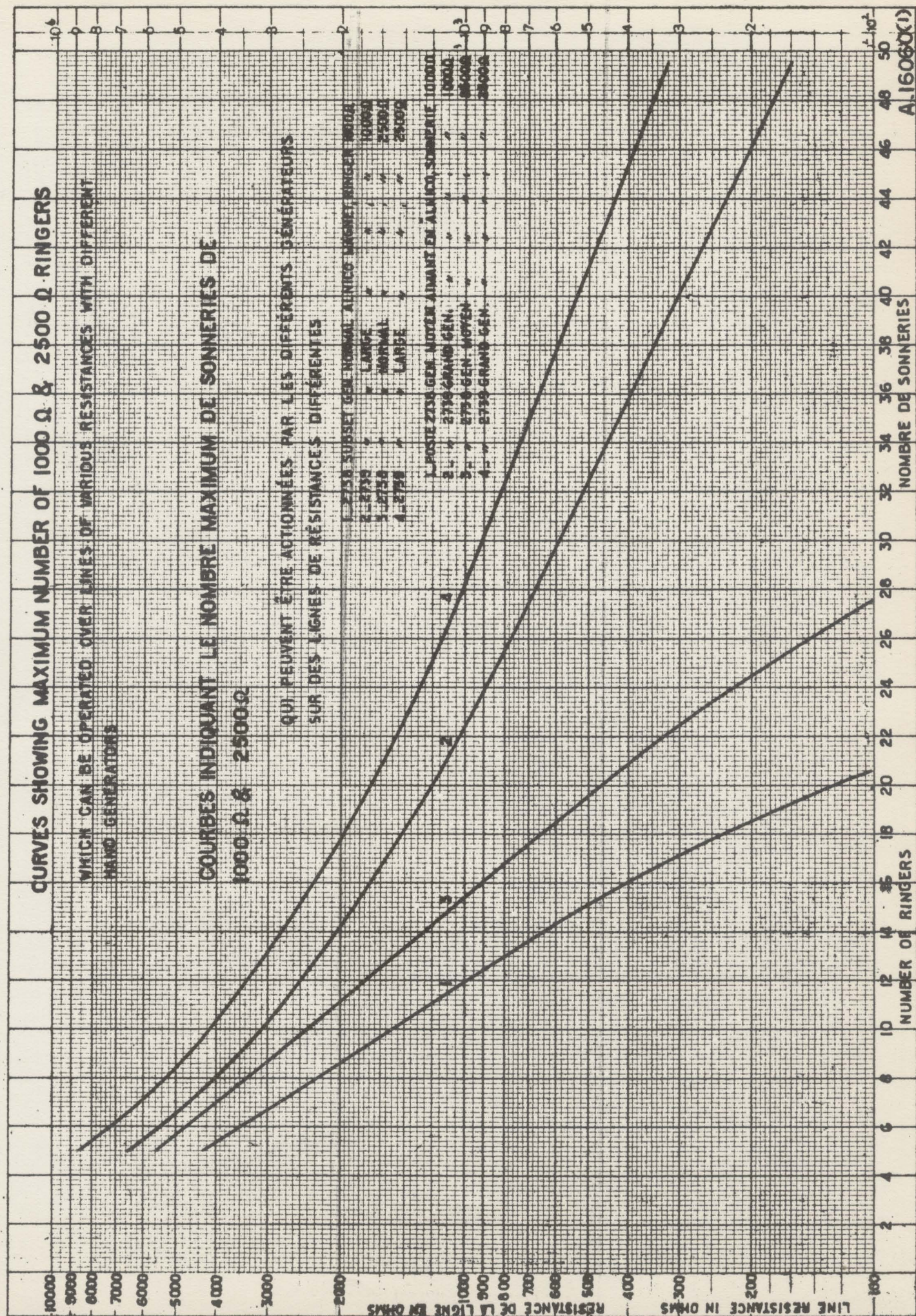


FOR PARTY LINE SYSTEM, REMOVE STRAP L' - EB

THESE SETS ARE LOCAL BATTERY SETS, ARRANGED FOR USE  
IN TWO PARTY LINE SERVICE.

NOT CONVERTIBLE FOR C.B. SERVICE







COMPOSED OF:

HANDLE ASS.	AP. 41871 HANDLE	}	NORMAL USE
	AP. 207524 EARPIECE		
	AP. 207525 MOUTHPIECE		
	AP. 41871 HANDLE	}	FOR BUENOS-AYRES
	AP. 207524 EARPIECE		
	AF. 207526 MOUTHPIECE		

2684-B RECEIVER

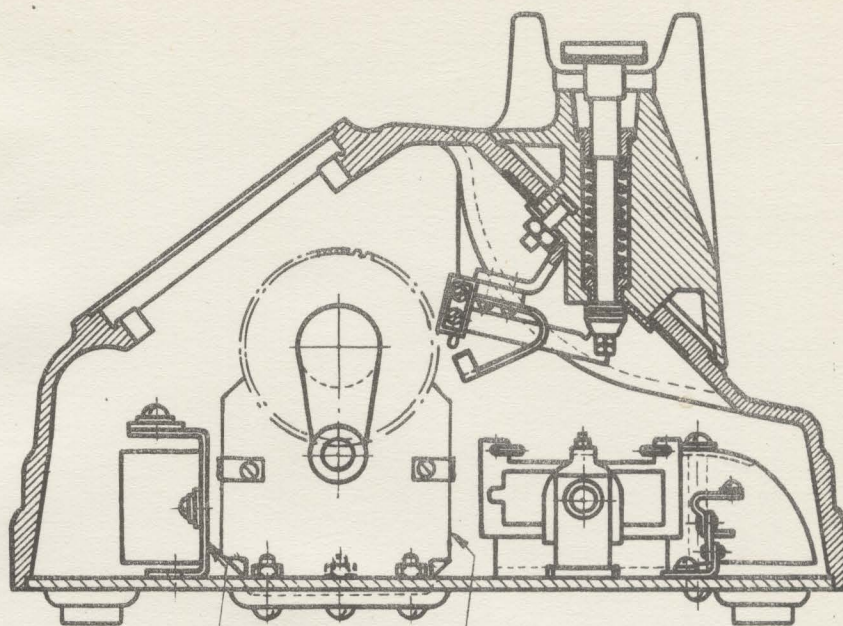
2040-A CAPSULE



FOR REMOVAL OF MOUTH PIECE USE \* 2117-A TOOL

2290-A MICROTELEPHONE





COND. SUPP.  
SEE LIST

GONG 2245-B

GENERATOR  
SEE LIST

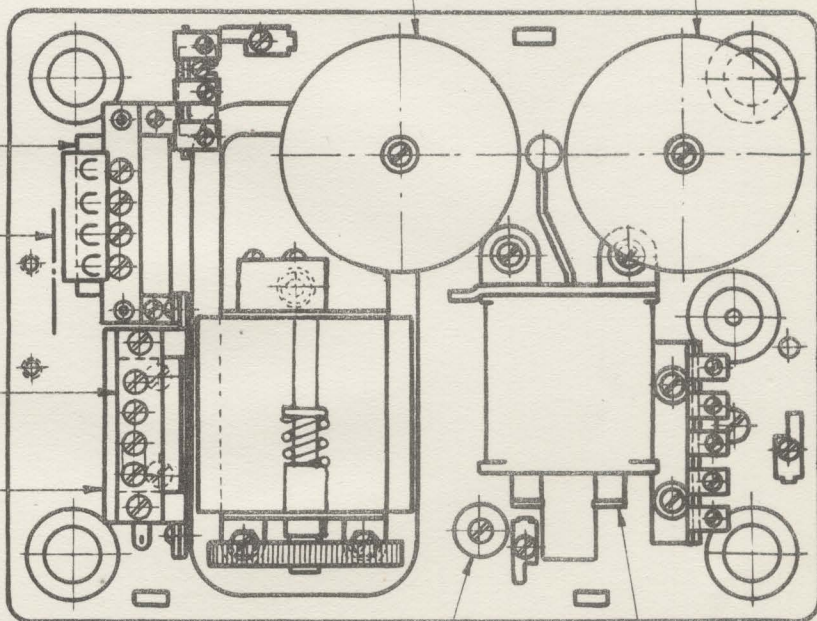
GONG 2245-A

IND. COIL  
SEE LIST

CABLE  
SEE LIST

TERM. STRIP ON CONDENS.  
SEE LIST

CONDENSER  
SEE LIST



RESISTANCE  
SEE LIST

RINGER  
SEE LIST

2738-2838 SUBSETS

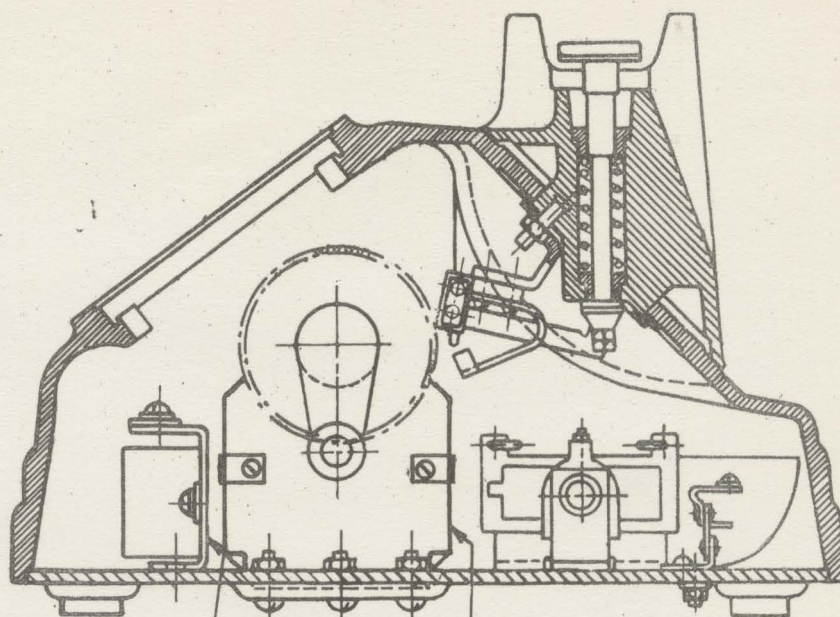


# LIST OF COMPONENTS

CODE No	GENERAT.	IND.COIL	CONDENS.	COND.SUPP	TERM.STRIPE ON CONDENS	RINGER	CABLE	RESISTANCE
2738-A	2061-A	2253-C	2060-A	AP 205162	AP 62560	2057-A	AP 62563	
" B	2061-A	2253-C	2060-A	AP 205162	AP 62560	2057-A	AP 220151	3000 Ω AD 37057
" E	2061-A	2249-C	NONE	NONE	NONE	2057-A	AP 205226	
" EB	2061-A	2249-C	NONE	NONE	NONE	2057-A	AP 220154	3000 Ω AD 37057
" J	2061-C	2249-C	NONE	NONE	NONE	2057-A	AP 208176	
" JB	2061-C	2249-C	NONE	NONE	NONE	2057-A	AP 220153	3000 Ω AD 37057
2838-A	2061-AT	2254-C	2060-AT	AP 205162	AP 62560	2058-A	AP 62563	
B	2061-AT	2254-C	2060-AT	AP 205162	AP 62560	2058-A	AP 220151	3000 Ω AD 37057 SPEC. FINI 2151
" E	2061-AT	2250-C	NONE	NONE	NONE	2058-A	AP 205226	
" J	2061-CT	2250-C	NONE	NONE	NONE	2058-A	AP 208176	

BT. 35332





COND. SUPP.  
SEE LIST

GENERATOR  
SEE LIST

GONG AP 62565

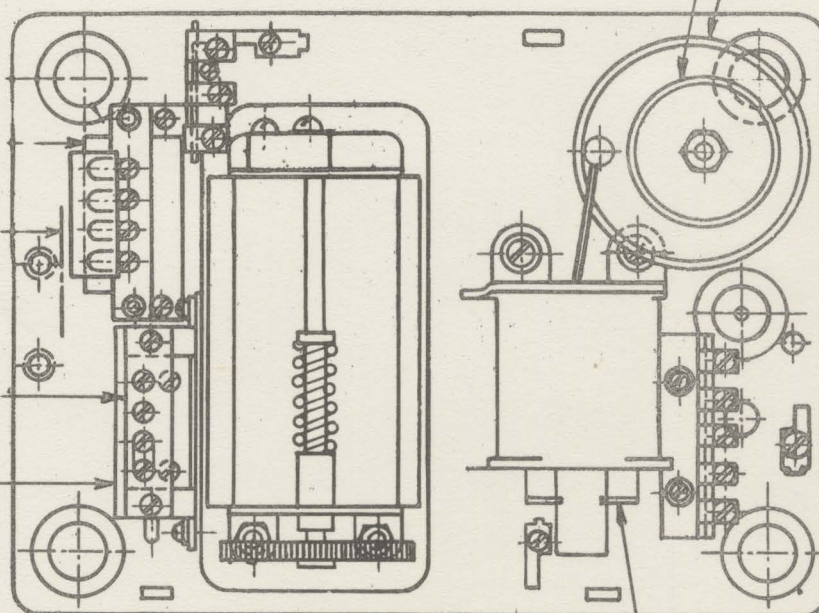
GONG 2245-A

IND. COIL  
SEE LIST

CABLE  
SEE LIST

TERM. STRIP ON  
CONDENS. SEE LIST

CONDENSER  
SEE LIST



RINGER  
SEE LIST

2739-2839 SUB. SETS



# LIST OF COMPONENTS

CODE №	GENERAT. 250 Ω	IND.COIL	CONDENS.	COND.SUPP.	TERM.STRIPE ON CONDENS	RINGER	CABLE	
2739-A	2062-A	2253-C	2060-A	AP 205162	AP 62560	2059-B	AP 62563	
" E	2062-A	2249-C	NONE	NONE	NONE	2059-B	AP 205226	
" G	2062-A	2249-C	2060 A	AP 205309	NONE	2059-B	AP 205286	
" H	2062-A	2249-C	NONE	NONE	NONE	2059-C	AP 205226	
" J	2062-C	2249-C	NONE	NONE	NONE	2059-B	AP 208176	
" K	2062-C	2249-C	2060-A	AP 205309	NONE	2059-B	AP 208177	
" L	2062-C	2249-C	NONE	NONE	NONE	2059-C	AP 208176	
2839-A	2062-AT	2254-C	2060-AT	AP 205162	AP 62560	2060 B	AP 62563	
" E	2062-AT	2250-C	NONE	NONE	NONE	2060 B	AP 205226	
" G	2062-AT	2250-C	2060-AT	AP 205309	NONE	2060-B	AP 205286	
" J	2062-CT	2250-C	NONE	NONE	NONE	2060-B	AP 208176	

BT. 35333.











