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SIEMENS CETS

~~757 18he.~~
~~103~~
~~719~~
~~440~~
 757. 18he.

FRONT VIEW CONTACTS

REAR VIEW COILS



849A



847A

A B C D



FRONT VIEW WIPERS



687A

FUSING: 1-2 AMP. PER 3 PANELS 60V.
 1-2 AMP. PER 3 PANELS DRIVE.
 1-2 AMP. PER MISC. PANEL 60V. INCLUDING BATT. JACK

1 GP. RELAY PER 1ST PS. ROW. 20 1ST PS. ROWS FORM A DIVISION

RELAY R. TRAVEL 1.1 MM.

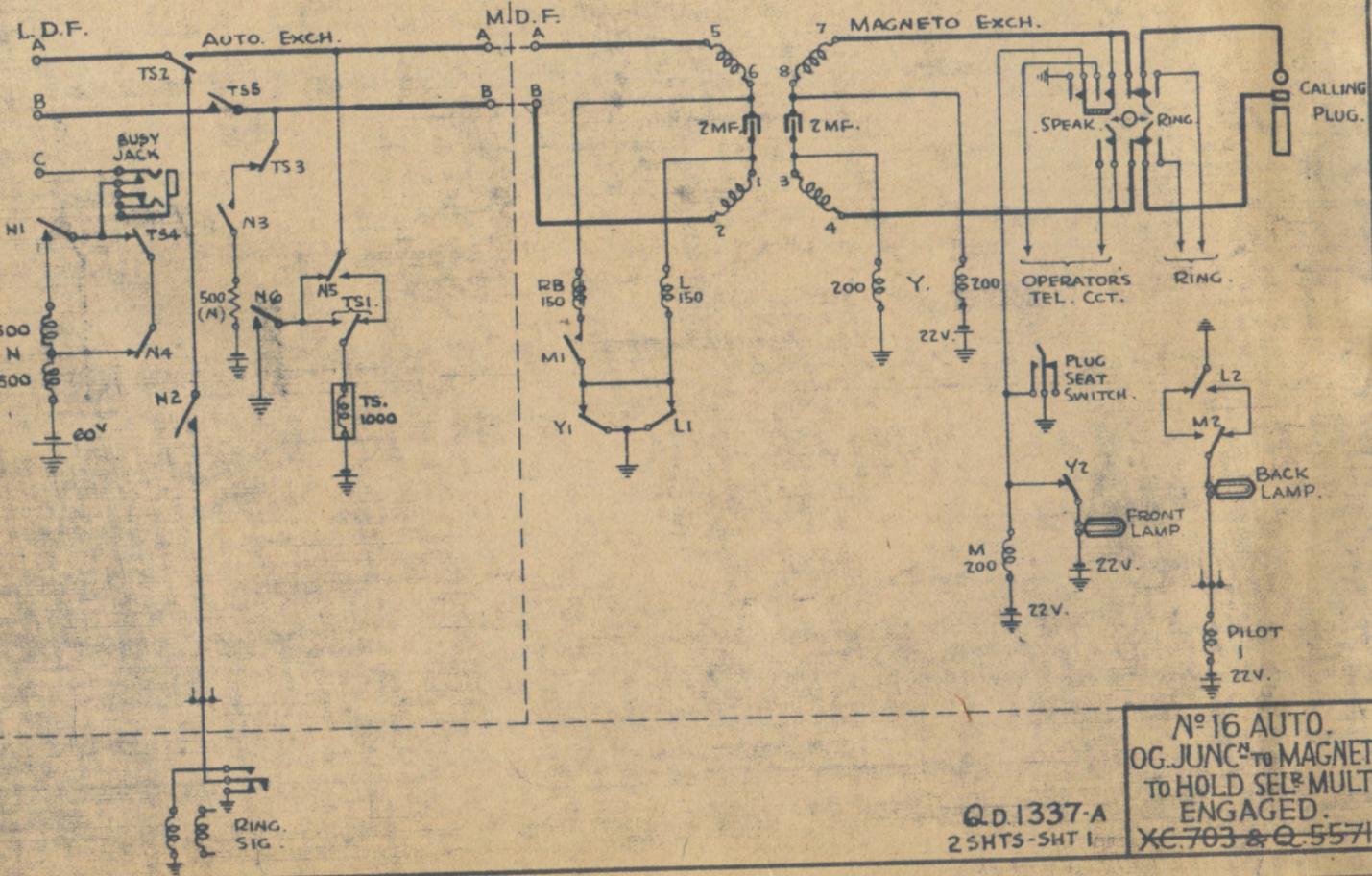
ISSUE 1

N° 16 AUTO.
 FIRST
 PRESELECTOR.

OR XN-757

QD 1341-A
 2 SHEETS - SHEET 2

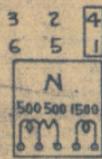
ISSUE 1



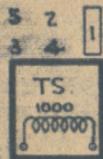
Q.D.1337-A
2SHTS-SHT 1

N^o 16 AUTO.
OG. JUNCⁿ TO MAGNETO
TO HOLD SEL³ MULT.
ENGAGED.
XC.703 & Q.5571

FRONT VIEW CONTACTS. REAR VIEW COILS.



960A.



776A.

FUSING:- RELAYS N.&TS. 1-2 AMP. PER 5 CCTS..

RELAYS N.&TS. TRAVEL 1-1 MM..

A.B.&C WIRES ARE CONNECTED TO SELR MULTIPLE.



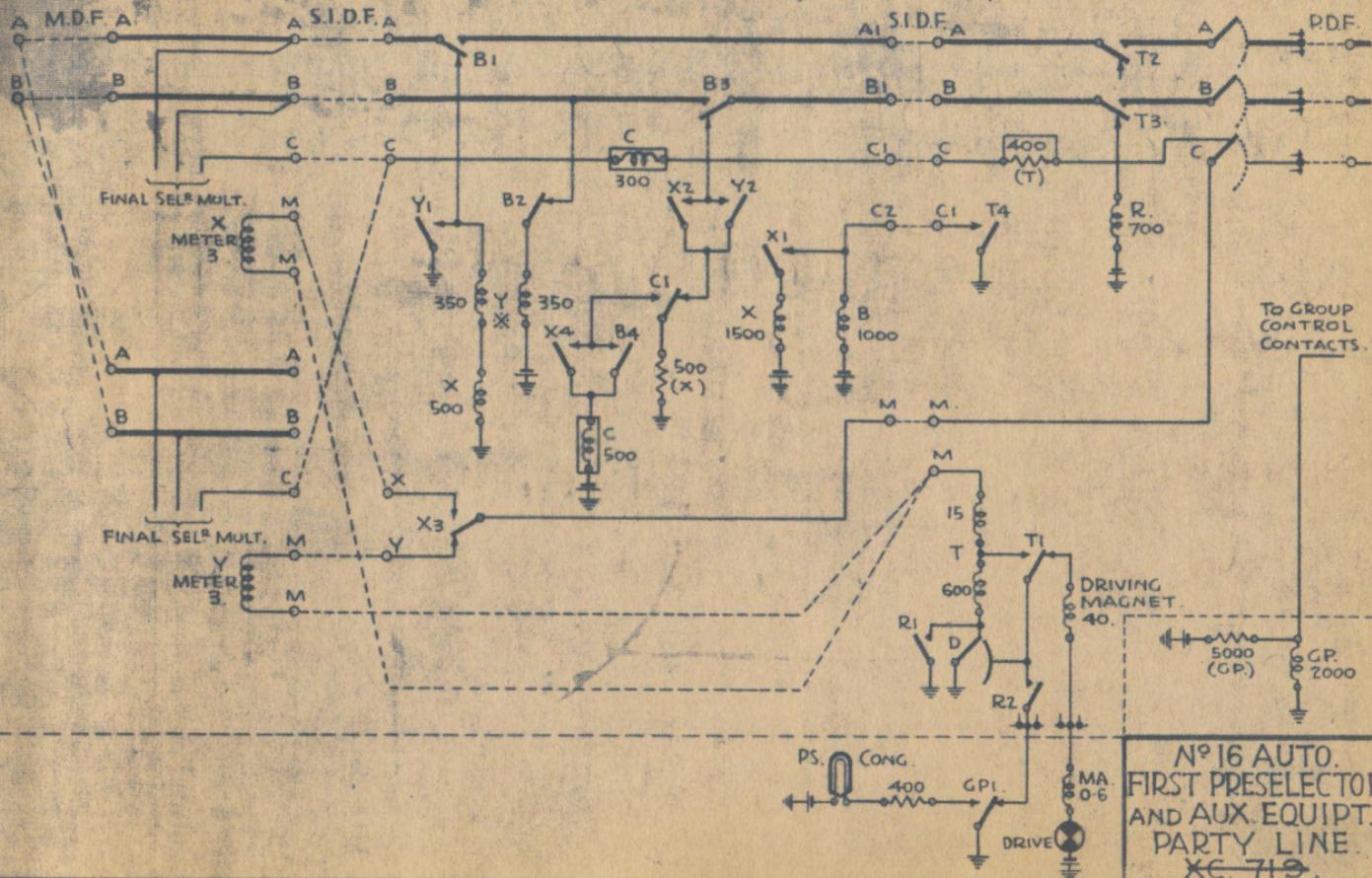
Nº 16 AUTO.
 OG. JUNC^N TO MAGNETO
 TO HOLD SELB MULT.
 ENGAGED.
 XN.703 & Q.5571.

QD 1337A

2SHEETS-SHEET 2

ISSUE 1.

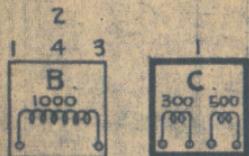
ISSUE 1.



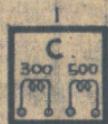
No. 16 AUTO.
FIRST PRESELECTOR
AND AUX. EQUIPT.
PARTY LINE.
XC-719.

QD 1339-A 2 SHTS-SHT.1

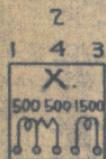
FRONT VIEW CONTACTS, REAR VIEW COILS.



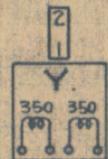
757A.



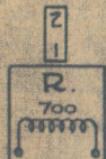
916A.



872A.



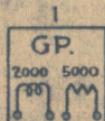
966A.



849A.



892A.



687A.



FRONT VIEW WIPERS.

FUSING: 1/2 AMP. PER 3 PANELS 60V.
 1/2 AMP. PER 3 PANELS DRIVE.
 1/2 AMP. PER MISC. PANEL 60V. INCLUDING BATT. JACK.
 1/2 AMP. PER 10 CIRCUITS AUX. EQUIPT. 60V.

RELAYS B, Y & R. TRAVEL 1-1 MM.

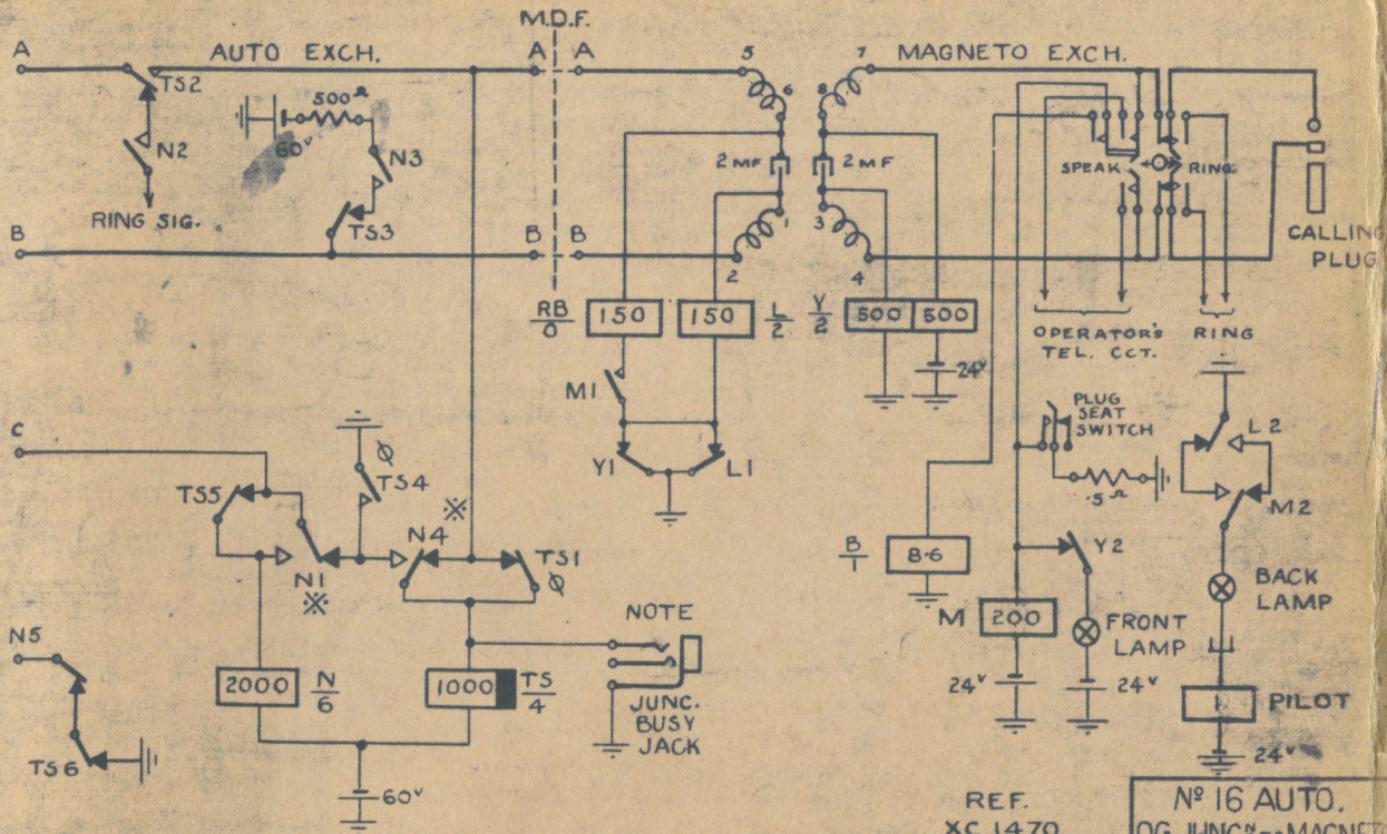
* Y. RELAY IS DIFFERENTIAL WITH BOTH WINDINGS IN SERIES.
 Y. SUBSCRIBER WHEN MAKING A CALL, MOMENTARILY
 EARTHS LOOP AT TELEPHONE SWITCH HOOK SPRINGS.
 A & B WIRES OF Y PARTY LINES ARE CROSSED AT M.D.F.
 THE PRESELECTOR CIRCUIT CAN BE USED AS AN ORDINARY
 PRESELECTOR BY CONNECTING ETH. TO BREAK OF CONTACT
 T2 AND REMOVING 5/C ON 400⁺(T).

ISSUE 1.

N^o16 AUTO
 FIRST PRESELECTOR
 AND AUX. EQUIPT.
 PARTY LINE
 XN-719.

QD. 1339-A
 2 SHEETS - SHEET 2

ISSUE 2.



NOTE. TO BUSY JUNC. INSERT METAL PLUG

⊗ SEE SH. 2

NOTE

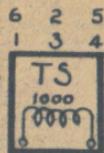
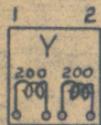


REF. XC 1470 & Q5571

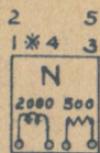
25HT5: SH. 1

Nº 16 AUTO. OG. JUNC. TO MAGNETO TO HOLD PS. MULT. ENGAGED. QD1370-A

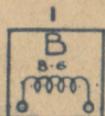
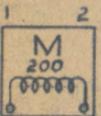
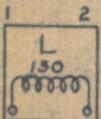
FRONT VIEW CONTACTS REAR VIEW COILS



1084A.



1083A.



FUSING - RELAYS N&TS. 1.2 AMP. PER 5 CCTS.

RELAY TS. TRAVEL 1.1 MM.

* NI MUST NOT MAKE BEFORE BREAK AND MUST BREAK BEFORE N4 MAKES.

A.B.C&N5 WIRES ARE CONNECTED TO PS. MULT. TERMINAL STRIP (SEE X1469 THE 'J' RELAY AND ASSOCIATED CONTACT NOT REQUIRED.)

WHEN IT IS NECESSARY TO ENGAGE A FAULTY JUNCTION, A BRASS PLUG MUST BE INSERTED IN JUNC. ENGAGE JACK, NOT A FIBRE DUMMY.

B RELAY USED AT TOOWONG ONLY. FOR FUNCTIONS SEE QD 680A

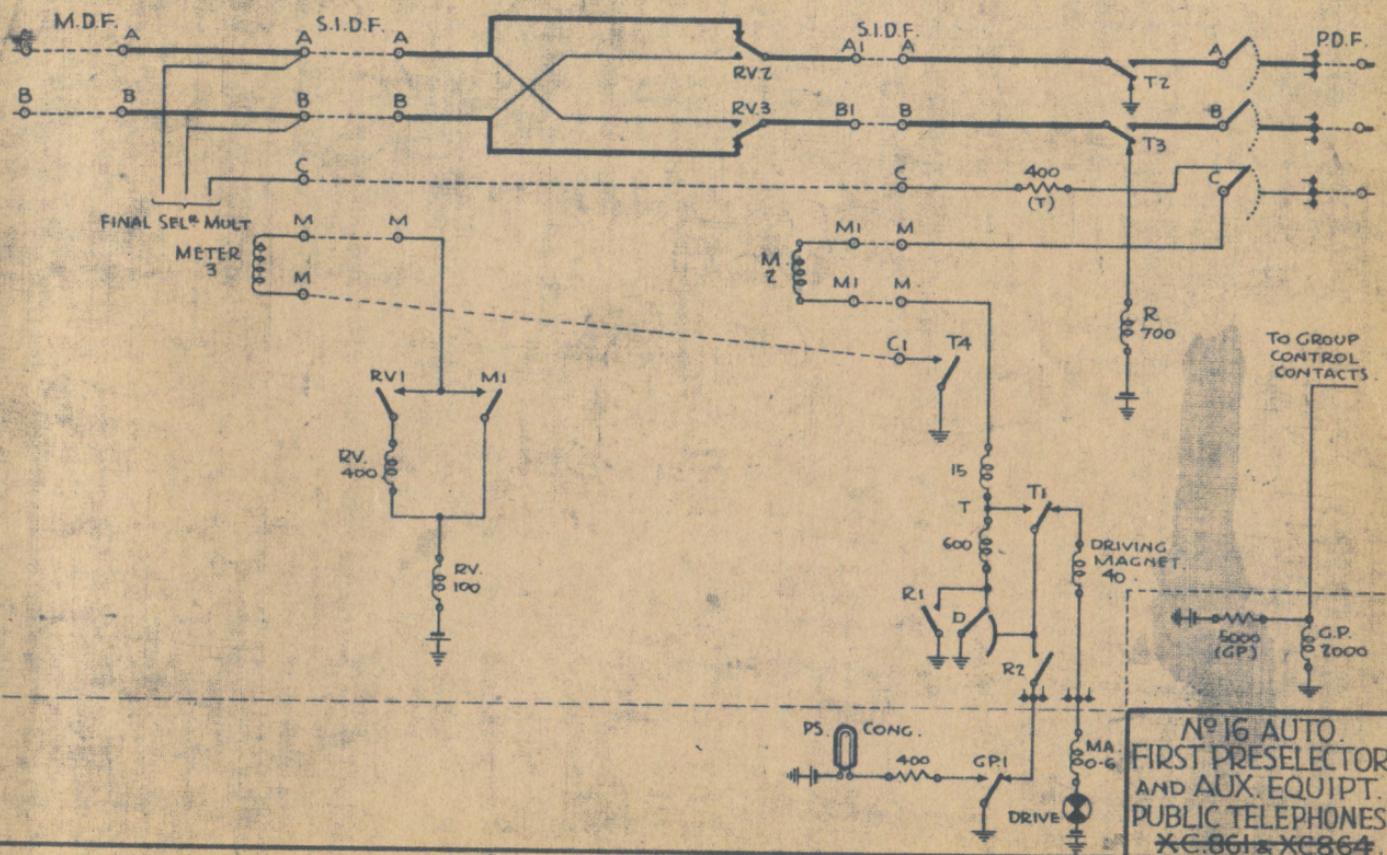
Q TS4 TO MAKE BEFORE TS1 BREAKS

N° 16 AUTO
OG. JUNC^{ON} TO MAGNETO
TO HOLD PS. MULT.
ENGAGED.
QD 1370-A

2 SHEETS-SHEET 2

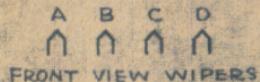
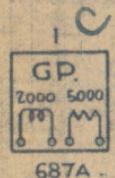
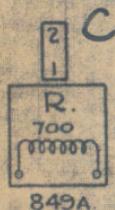
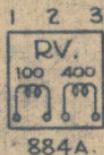
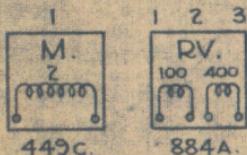
ISSUE 2.

ISSUE 1



No. 16 AUTO.
 FIRST PRESELECTOR
 AND AUX. EQUIPT.
 PUBLIC TELEPHONES
 XE-861 & XE-864

FRONT VIEW CONTACTS, REAR VIEW COILS



FUSING: 1/2 AMP. PER 3 PANELS GOV.
 1/2 AMP PER 3 PANELS DRIVE.
 1/2 AMP PER MISC. PANEL, INCLUDING BATT. JACK.
 1/2 AMP. PER 10 CIRCUITS AUX. EQUIPT GOV.

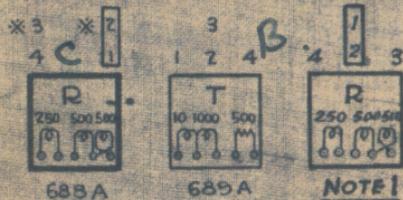
RELAYS M & R. TRAVEL 1.1 MM.
 RELAY M. CONTACT OPENING .5 - .6 MM.
 RELAY M SPRINGS. UPPER 80 GRMS. APPROX., LOWER 120 GRMS. APPROX.
 THIS CIRCUIT OPERATES IN CONJUNCTION WITH DISCRIMINATING REPEATER IN SATELLITE EXCHANGES.
 MAIN EXCHANGES USE AN ORDINARY 1ST PS. IN CONJUNCTION WITH A SPECIAL 1ST SEL^R. (SEE XC. 1009)

ISSUE 1.

N^o 16 AUTO.
 FIRST PRESELECTOR
 AND AUX. EQUIPT
 PUBLIC TELEPHONES.
~~XN861 & XN864~~

QD 1344-A
 2 SHEETS - SHEET 2

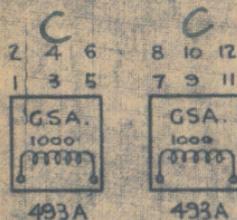
FRONT VIEW CONTACTS, REAR VIEW COILS.



A B C



FRONT VIEW WIPERS



FUSING:

- 1.2 AMP. PER PANEL 60V. EXCLUDING ENG. LAMPS
- 1.2 AMP. PER PANEL 60V. ENG. LAMPS ONLY
- 1.2 AMP. PER PANEL DRIVE.
- 1.2 AMP. PER MISC. PANEL 60V. INCLUDING BATTERY JACK.

TWO ADJACENT 2ND PS. RACKS FORM A DIVISION.
 ADJACENT PANELS ON TWO RACKS OR A DIVISION FORM A ROW OF 20. 2ND PS., HAVING ACCESS TO A PANEL OF 10. 1ST SECT^S.
 ONE GS. RELAY IS PROVIDED PER ROW, 5 BEING MOUNTED IN THE MISC. PANEL OF EACH RACK.
 ONE SET OF 4 GSA. RELAYS IS PROVIDED PER ROW, 2 BEING MOUNTED IN EACH PANEL.
 GSA. CONTACTS 1-10 ARE THE BREAK CONTACTS IN THE GROUP CONTROL CTT. ASSOCIATED WITH 2ND PS. 1-10 IN PANEL.
 GSA. CONTACTS 11 & 12 ARE PARALLELED AND DISCONNECT BATTERY FROM R. RELAYS IN PANEL.

RELAY R. TRAVEL. 1-1.1 MM.

CONTACTS R1 & R4 TO MAKE SIMULTANEOUSLY.

* CONTACT R3 TO BREAK BEFORE R2 MAKES.

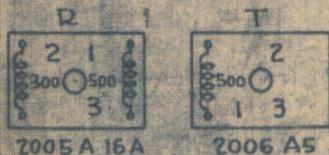
NOTE 1 ALTERNATIVE ARRANGEMENT OF "R" RELAY TO GIVE STEP ON FEATURE AT SATELLITE EXCHANGES.
 CONTACT R2 TO MAKE BEFORE R1.
 " R3. TO BREAK " R2. MAKES.

Nº 16 AUTO.
 SECOND
 PRESELECTOR.
 QD 1333-A

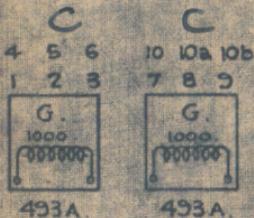
2 SHEETS - SHEET 2

ISSUE 2

FRONT VIEW CONTACTS. REAR VIEW COILS.



C C FRONT
B C VIEW
A C WIPERS.



FUSING - 1.2 AMP. PER 5 PRESELECTORS.

1.2 AMP. PER 4 G RELAYS.
1.2 AMP. PER 5 J RELAYS.
2.4 AMP. PER KEY-OUT LAMP.
2.4 AMP. PER GJ. RELAYS.

*R1 TO CHANGE OVER BEFORE R2 MAKES.

10 OG.PS. PER PANEL. 12 PANELS PER RACK.

4 PANELS PER ROW.

1 SET OF 2G RELAYS PER PANEL. G CONTACTS 1-10 ARE THE BREAK CONTACTS IN THE GROUP CONTROL CCT. ASSOCIATED WITH OG.PS. 1-10 IN PANEL.

A, B & C TERMINALS ARE PROVIDED ON THE OG.PS. RACK FOR THE 26 OUTLETS FROM EACH PANEL. THE PANELS FORMING A ROW ARE COMMONED AT THIS POINT WITH B.T.C.. A 'D' TERMINAL IS ALSO PROVIDED FOR EACH OUTLET, BUT IS ONLY USED, IN THE CASE OF THE 4TH PANEL IN ROW, FOR COMMONING THE J1 CONTACTS, AND, IN THE CASE OF THE 3RD PANEL IN ROW, FOR ETHING DEAD OUTLETS BY STRAPPING TO 'C' TERMINAL. THE 'D' TERMINALS OF 1ST AND 2ND PANELS ARE NOT USED.

WHEN IT IS NECESSARY TO ENGAGE A FAULTY JUNCTION, A BRASS PLUG MUST BE INSERTED IN JUNCTⁿ ENGAGE JACK, NOT A FIBRE DUMMY.

CONTACT 10a FOR PRE 1-5 & 10b FOR PRES. 6-10.

"	20	"	"	11-15	"	20b	"	"	16-20.
"	30	"	"	21-25	"	30b	"	"	26-30.
"	40	"	"	31-35	"	40b	"	"	36-40

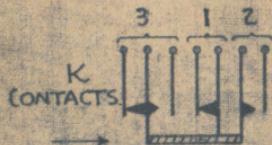
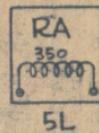
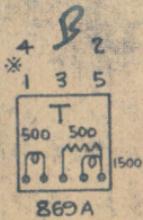
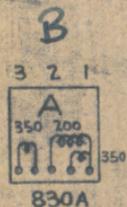
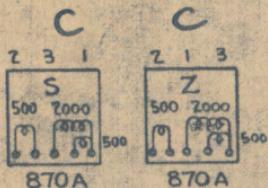
• N^o 16 AUTO.
OUTGOING JUNCTⁿ
PRESELECTOR.
XA-1469.

QD1369-A

2 SHEETS - SHEET 2

ISSUE 2

FRONT VIEW CONTACTS, REAR VIEW COILS.



FUSING: 1 ZAMP PER SELR 60V.
 1 ZAMP PER SELR DRIVE
 1 ZAMP PER MISC. PANEL 60V.
 1 ZAMP PER BATTERY JACK 60V.

10, 1ST SELRS FORM A PANEL TO WHICH A ROW OF 20, 2ND PS. HAVE ACCESS.
 10, 1ST SELR PANELS FORM A DIVISION OF 1ST SELRS.
 S & Z DELAYED METERING CAMS EACH GIVE A 60V. IMPULSE EVERY 2 SECS.
 S & Z IMPULSES ARE NOT SIMULTANEOUS, Z LAGGING NEARLY 2 SECS. BEHIND S.
 THUS METERING TAKES PLACE 2-4 SECS. AFTER OPERATION OF RELAY Y

RELAYS T & Y TRAVEL 1.1 MM.
 RELAY A ARMATURE SCREW LENGTH .3-5MM. SPRINGS, 15GRMS.
 RELAY D ARMATURE SCREW LENGTH .25-6MM.

*CONTACT T1 TO MAKE BEFORE T4.
 CONTACT A1 PLATINUM.
 DOTTED CONNECTION ALLOWS PL. LAMP TO LIGHT ON 11TH CONTACT OF LEVEL 1 (DEAD)
 BUSY TONE CONNECTED 11TH CONTACT LIVE LEVELS.] SEE XC967
 NU. TONE CONNECTED 11TH CONTACT DEAD LEVELS.]
 SELR BCO JACK DISCONNECTS 60V, DRIVE & OS. FEED TO V1.

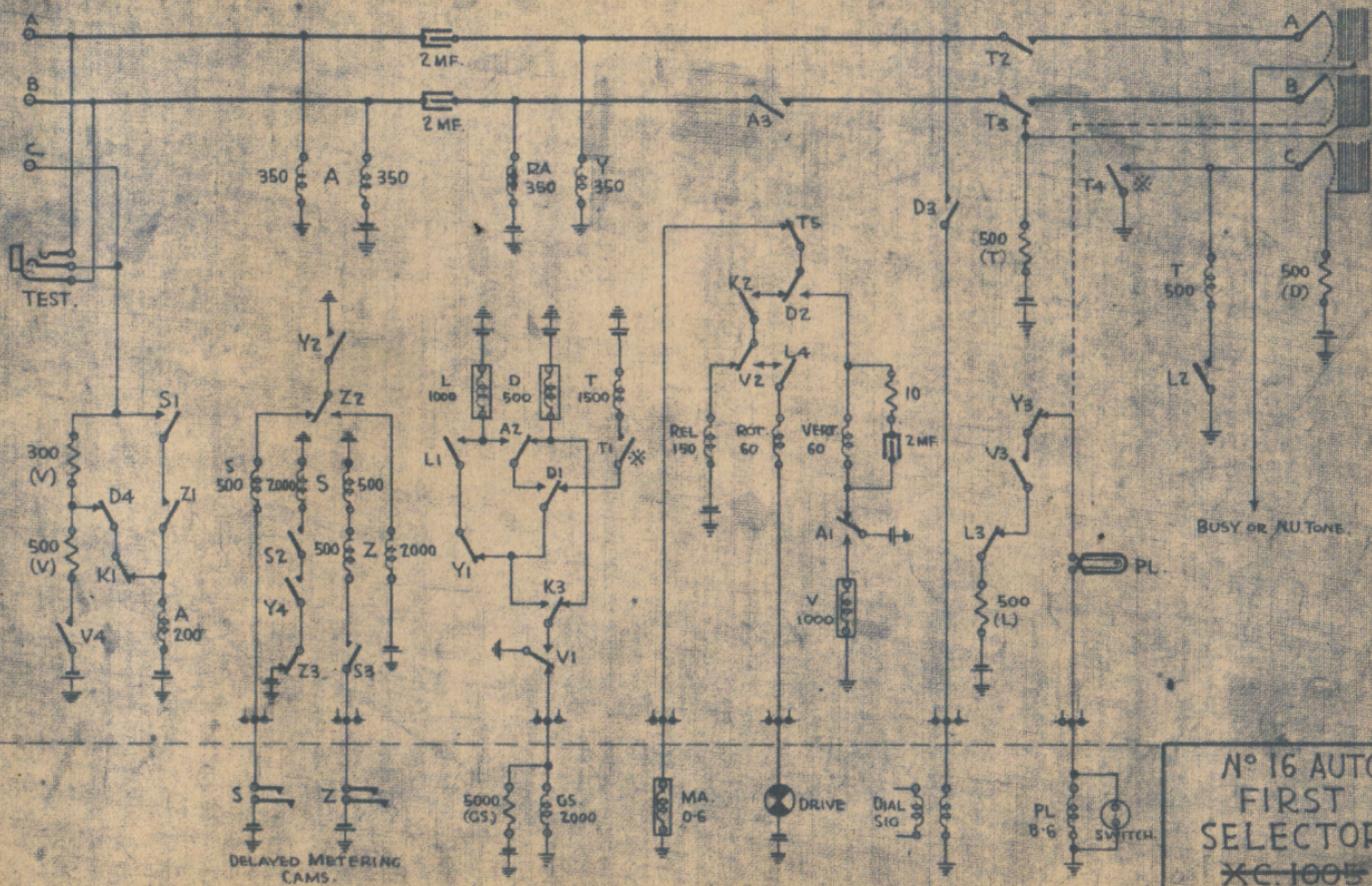


N^o 16 AUTO.
 FIRST
 SELECTOR.
 *N-1005.

QD.1352-A
 2 SHEETS - SHEET 1

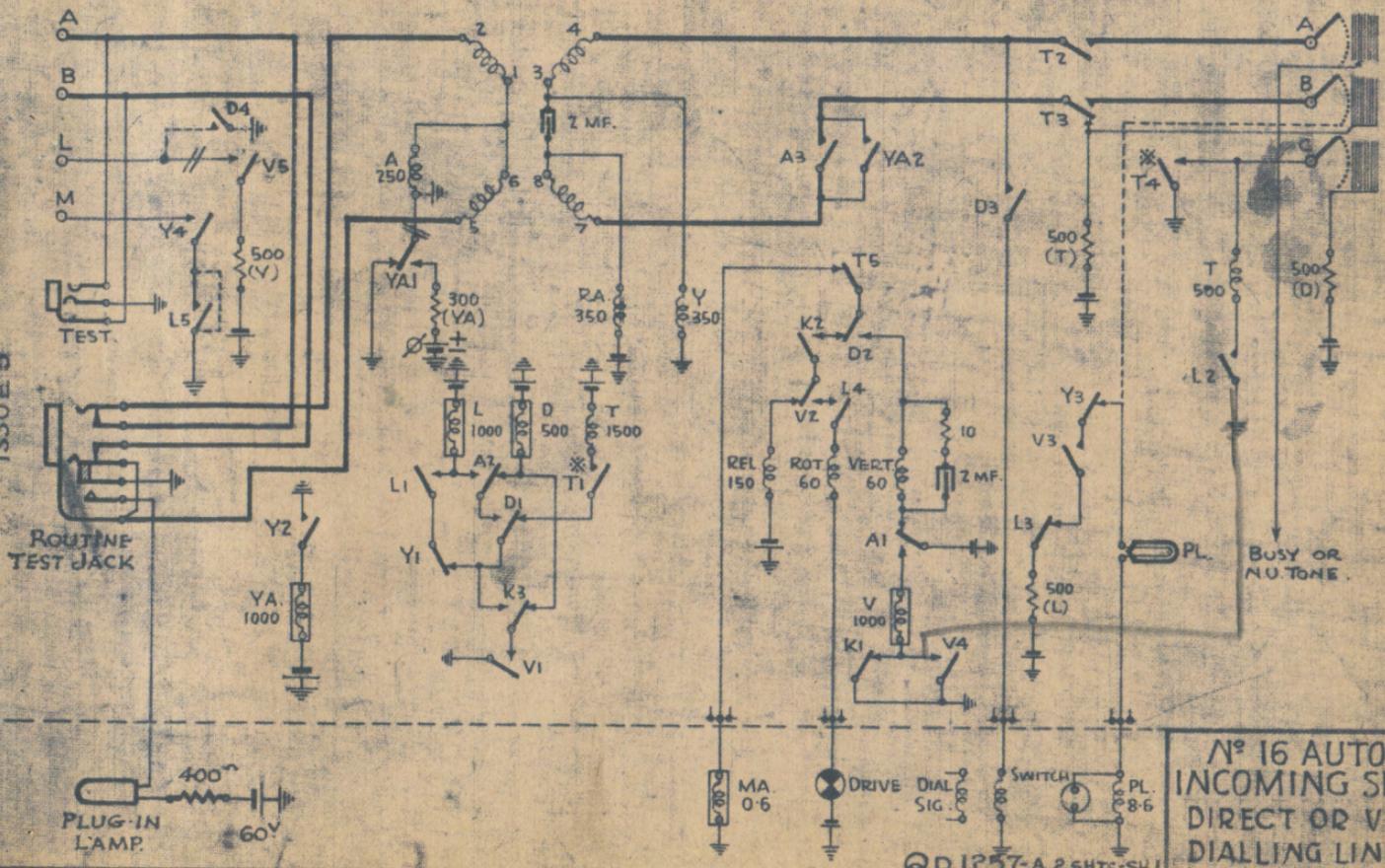
ISSUE 1

ISSUE 1



No 16 AUTO
FIRST
SELECTOR.
XC-1005

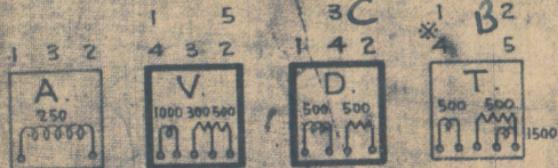
ISSUE B



No. 16 AUTO.
INCOMING SELF
DIRECT OR VF
DIALLING LINES

Q.D. 1257-A 2 & HTS-SH.1

FRONT VIEW CONTACTS. REAR VIEW COILS.

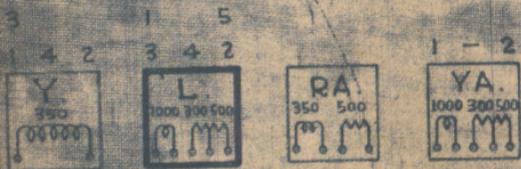


268A

936A.

866A.

869A.



267A

936A.

10H.



FUSING. 1.2 AMP. PER SEL^R 60V.
 1.2 AMP. PER SEL^R DRIVE.
 1.2 AMP. PER MISC. PANEL 60V.
 1.2 AMP. PER BATT. JACK 60V.

RELAYS T & Y. TRAVEL 1.1 MM.
 RELAY A. ARMATURE SCREW LENGTH 3MM. APPX. SPRINGS 15 GRMS.
 RELAY D. ARMATURE SCREW LENGTH .25 - .6 MM.

*CONTACT T1 TO MAKE BEFORE T4.

CONTACT A1 PLATINUM.

DOTTED CONNECTION ALLOWS PL LAMP TO LIGHT ON 11TH CONTACT OF LEVEL 1.

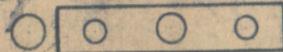
BUSY TONE CONNECTED 11TH CONTACT LIVE LEVELS.] SEE XC967

N. U. TONE CONNECTED 11TH CONTACT DEAD LEVELS.]

SEL^R BCO. JACK DISCONNECTS 60V. & DRIVE.

Ø SUPERVISORY BATTERY CONNECTED TO 300 (YA) IS 132V. + BATTERY VIA A 60 W. METAL FILAMENT LAMP. ONE LAMP PER SELECTOR.

PL. TEST SWITCH BCO.
 LAMP JACK. DESIGN JACK.



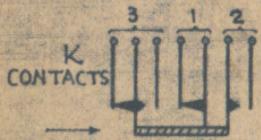
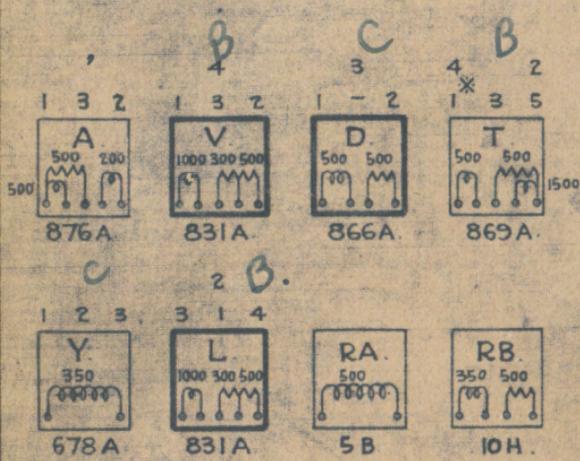
FRONT VIEW OF JACKS.

N^o 16 AUTO.
 INCOMING SEL^R
 DIRECT OR V.F.
 DIALLING LINES

QD.1257A
 2 SHEETS-SHEET 2

ISSUE 4.

FRONT VIEW CONTACTS, REAR VIEW COILS.



FUSING. 1-2 AMP. PER SEL^R 60V.
 1-2 AMP. PER SEL^R DRIVE.
 1-2 AMP. PER MISC. PANEL 60V.
 1-2 AMP. PER BATT. JACK 60V.

RELAY T. TRAVEL 1-1 MM.
 RELAY A. ARMATURE SCREW LENGTH - 3MM. APPX. SPRINGS 15 GRMS.
 RELAY D. ARMATURE SCREW LENGTH - 25 - .6 MM.

*CONTACT T1 TO MAKE BEFORE T4.
 CONTACT A1 PLATINUM.

DOTTED CONNECTION ALLOWS PL. LAMP TO LIGHT ON 11TH CONTACT OF LEVEL 1.

BUSY TONE CONNECTED 11TH CONTACT LIVE LEVELS.
 N. U. TONE CONNECTED 11TH CONTACT DEAD LEVELS. } SEE XC567
 SEL^R B.C.O. JACK DISCONNECTS 60V. & DRIVE.

THIS SELECTOR CAN BE USED IN A VARIETY OF DIFFERENT WAYS & CAN RANK AS A 1ST, 2ND, OR 3RD SELECTOR.

DIALLING SIGNAL, WHEN NOT REQUIRED, IS DISCONNECTED AND EARTH CONNECTED IN ITS PLACE.

SELECTOR USED AS BOTHWAY JUNCTION (ALARM EXT^N). ETH. IS DISCONNECTED FROM RING OF TEST JACK, V 1000 IS CONNECTED TO ETH. DIRECT & V4 CONNECTED TO INCOMING C WIRE.

PL. TEST SWITCH B.C.O.
 LAMP JACK. DESIGN JACK.



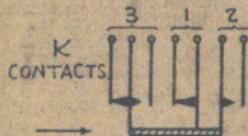
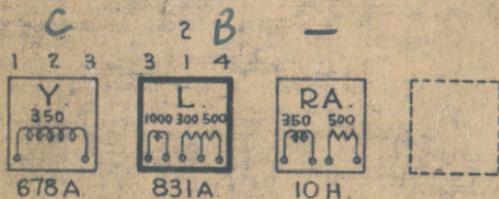
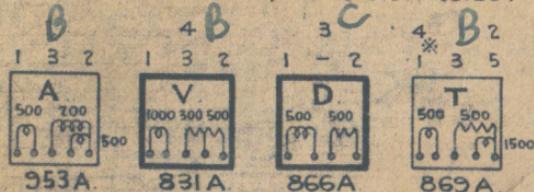
FRONT VIEW OF JACKS.

N^o 16 AUTO.
 INCOMING SEL^R
 WITH SINGLE COIL
 IMPULSE RELAY.
 XN 1240

QD. 1359-A
 2 SHEETS - SHEET 2

ISSUE 1

FRONT VIEW CONTACTS. REAR VIEW COILS.



FUSING. 1.2 AMP. PER SEL^R 60V.
1.2 AMP. PER SEL^R DRIVE.
1.2 AMP. PER MISC. PANEL 60V.
1.2 AMP. PER BATT JACK 60V.

RELAY T. TRAVEL 1.1 MM.
RELAY A. ARMATURE SCREW LENGTH .3MM-APPX. SPRINGS 15 GRMS.
RELAY D. ARMATURE SCREW LENGTH .25 - .6 MM.

*CONTACT T1 TO MAKE BEFORE T4.
CONTACT A1 PLATINUM.
DOTTED CONNECTION ALLOWS PL. LAMP TO LIGHT ON 11TH CONTACT OF LEVEL 1.

BUSY TONE CONNECTED 11TH CONTACT LIVE LEVELS.
N.U. TONE CONNECTED 11TH CONTACT DEAD LEVELS. } SEE XC967.

SEL^R BCO JACK DISCONNECTS 60V. & DRIVE.
THIS SELECTOR CAN BE USED IN A VARIETY OF DIFFERENT WAYS & CAN RANK AS A 1ST, 2ND OR 3RD SELECTOR.

DIALLING SIGNAL, WHEN NOT REQUIRED, IS DISCONNECTED AND EARTH CONNECTED IN ITS PLACE.
SELECTOR USED AS BOTHWAY JUNCTION (ALARM EXT^N) - ETH. IS DISCONNECTED FROM RING OF TEST JACK, V1000 IS CONNECTED TO ETH. DIRECT & V4 CONNECTED TO INCOMING C. WIRE.

PL. TEST SWITCH BCO.
LAMP JACK. DESIGN^N JACK



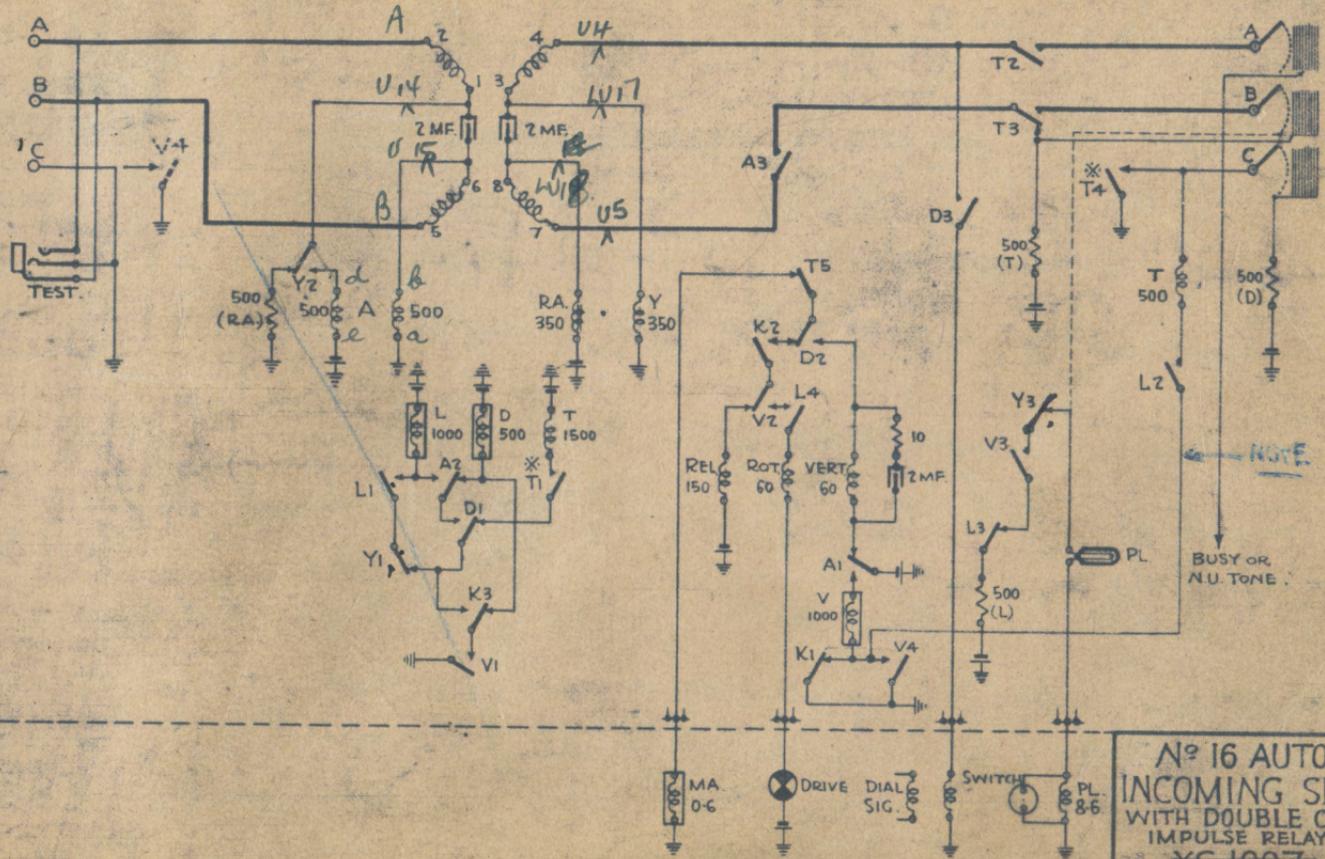
FRONT VIEW OF JACKS.

N^o 16 AUTO.
INCOMING SEL^R
WITH DOUBLE COIL
IMPULSE RELAY.
*XN-1007.

QD. 1353-A
2 SHEETS - SHEET 2

ISSUE 1.

ISSUE 2



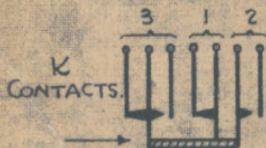
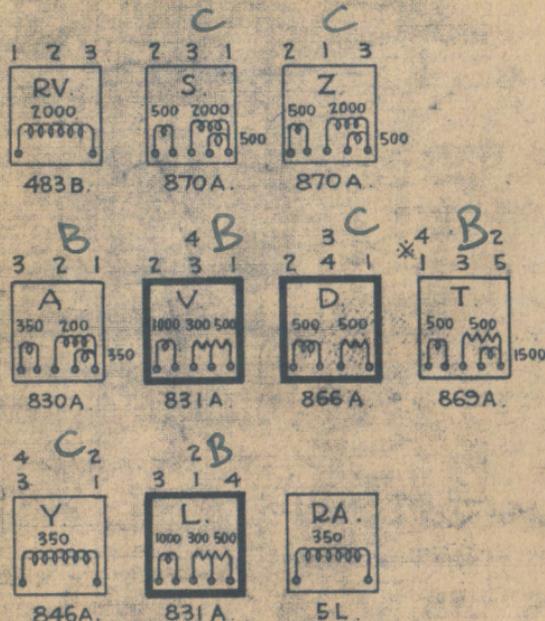
No. 16 AUTO.
 INCOMING SEL.
 WITH DOUBLE COIL
 IMPULSE RELAY.
 XC-1007

Padd.:— Plse Ed. Set, - used Rect. between.
VII & LU9.

Normanet:— used extra relay RG-2000 or sp by K2 to Ed.
and replaced K2 by RG-1 & RG-2, contact
was wired between V1 (LU3) & LU9 (Phone).
apparently Group Relay at was not used.

also by buying loop dial. cts, use was
made of the Ave. H. sp. of Batt c/o Jack.
& Ed. org. line sp & make sp to 6 wires
of dest Jack - thus still busies by ofc. Plug in Batt Jk.
at Padd. sp tel. ckt was wired, so busy
by 2 plugs. (one into Batt c/o Jack - Steve - Ed.)
& other into dest Jack (Ring - Phone). 1 way cord.

FRONT VIEW CONTACTS, REAR VIEW COILS.



FUSING. 1.2 AMP. PER SEL^R 60V.
 1.2 AMP. PER SEL^R DRIVE.
 1.2 AMP. PER MISC. PANEL.
 1.2 AMP. PER BATTERY JACK. 60V.

RELAYS T & Y.. TRAVEL 1.1 M.M.

RELAY A.. ARMATURE SCREW LENGTH .3-.5 MM.. SPRINGS 15 GRMS.

RELAY D.. ARMATURE SCREW LENGTH .25-.6 MM..

*CONTACT T1 TO MAKE BEFORE T4.

CONTACT A1 PLATINUM.

DOTTED CONNECTION ALLOWS PL. LAMP TO LIGHT ON 11TH CONTACT OF LEVEL 1. (DEAD)

BUSY TONE CONNECTED 11TH CONTACT LIVE LEVELS.] SEE XC.967.

N.U.TONE CONNECTED 11TH CONTACT DEAD LEVELS.]

SEL^R B.C.O. JACK DISCONNECTS 60V. DRIVE & GS FEED TO VI.

THE ORDINARY 1ST PS. -X.757-15 USED IN CONJUNCTION

WITH THIS CIRCUIT IN MAIN EXCHANGES. SATELLITE

EXCHANGES USE THE ORDINARY DISCRIMINATING REPEATER

CIRCUIT IN CONJUNCTION WITH A SPECIAL 1ST PS. AND

AUXILIARY EQUIPMENT. (SEE X.861 & X.864)

PL. TEST SWITCH .B.C.O.
 LAMP JACK. DESIGN JACK.



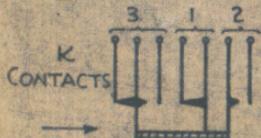
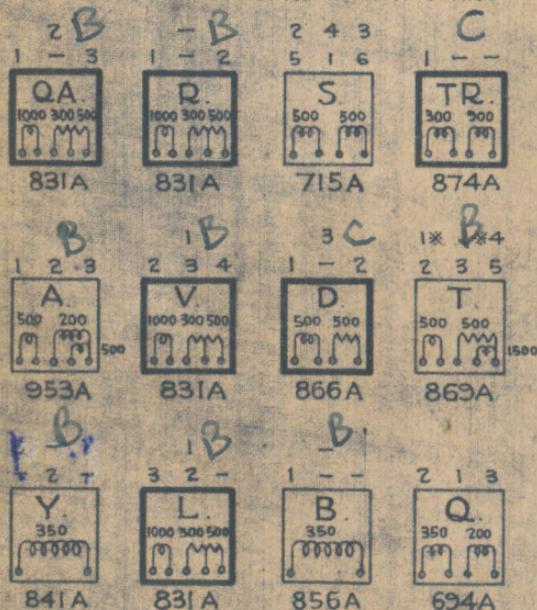
FRONT VIEW OF JACKS.

N^o 16 AUTO.
 FIRST SELECTOR
 PUBLIC TELEPHONES
 XN 1009.

QD. 1354-A
 2 SHEETS - SHEET 2

ISSUE 1

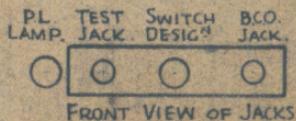
FRONT VIEW CONTACTS. REAR VIEW COILS.



FUSING: 1/2 AMP. PER SEL^B 60V.
1/2 AMP. PER SEL^B DRIVE.
1/2 AMP. PER MISC. PANEL 60V.
1/2 AMP. PER BATTERY JACK 60V.

RELAYS Q.T.&Y. TRAVEL 1-1 MM.
RELAY A. ARMATURE SCREW LENGTH 3MM. APPX. SPRINGS 10-15 GRMS.
RELAY D. ARMATURE SCREW LENGTH 25 -- 6 MM.
RELAY TR. MIDDLE SPRINGS, 10 GRMS. MINIMUM.

* CONTACT T1 TO MAKE BEFORE T4.
CONTACT A1 PLATINUM.
DOTTED CONNECTION ALLOWS PL LAMP TO LIGHT ON 11TH CONTACT OF LEVEL 1 (DEAD).
BUSY TONE CONNECTED 11TH CONTACT LIVE LEVELS. } SEE XC.967.
N.U. TONE CONNECTED 11TH CONTACT DEAD LEVELS.
SEL^B B.C.O. JACK DISCONNECTS 60V. & DRIVE.



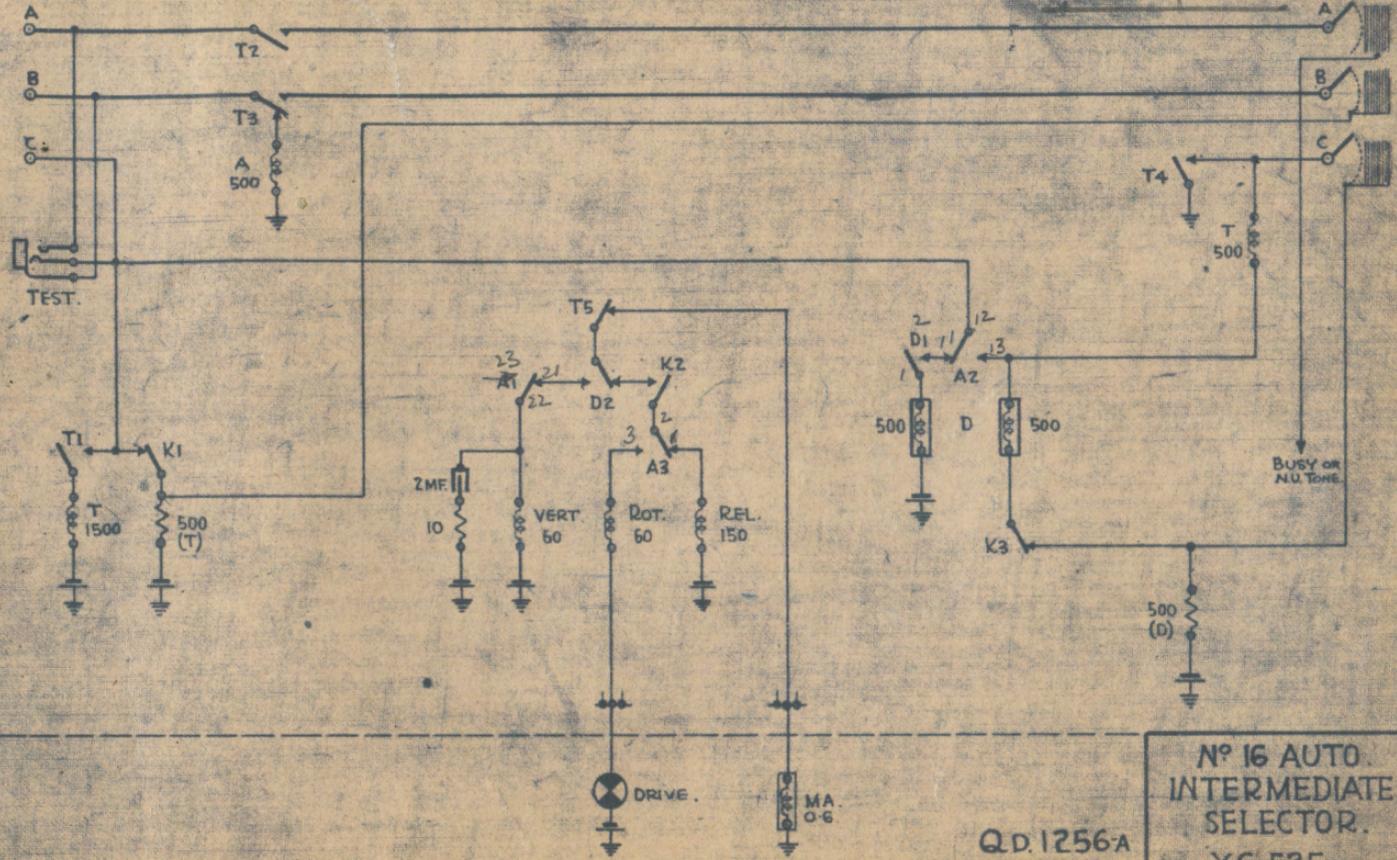
N^o 16 AUTO.
INCOMING
SELECTOR.
(WITH T.O.)
XA1.933.

QD.1346-A
2 SHEETS - SHEET 2

ISSUE 1

PAGE 1C →

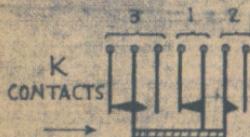
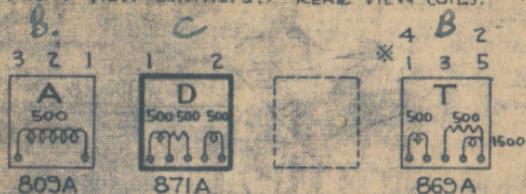
ISSUE 1



N° 16 AUTO.
 INTERMEDIATE
 SELECTOR.
 XC-525.

QD. 1256A
 2 SHEETS - SHT. 1

FRONT VIEW CONTACTS., REAR VIEW COILS.



FUSING: 1/2 AMP PER 2 SEL^{RS} 60V.
 1/2 AMP. PER 2 SEL^{RS} DRIVE
 1/2 AMP. PER MISC. PANEL 60V.
 1/2 AMP. PER BATT. JACK 60V.

RELAY T TRAVEL 1.1 MM
 RELAY A ARMATURE SCREW LENGTH 3MM. APPX. SPRINGS 15 GRMS.
 RELAY D ARMATURE SCREW LENGTH 5 - 6MM.

* CONTACT T1 TO MAKE BEFORE T4.
 CONTACT A1 PLATINUM.
 BUSY TONE CONNECTED 11TH CONTACT LIVE LEVELS
 NU TONE CONNECTED 11TH CONTACT DEAD LEVELS } SEE XC 967
 SEL^R BCO. JACK DISCONNECTS 60V. & DRIVE

TEST SWITCH B.C.O.
 JACK. DESIG^N JACK.



FRONT VIEW JACKS

N^o 16 AUTO.
 INTERMEDIATE.
 SELECTOR.
~~XN-525.~~

Q.D. 1256-A
 2 SHEETS - SHEET 2

ISSUE 1

FRONT VIEW CONTACTS, REAR VIEW COILS.

B SPS C SPS C SPS C SPS

1 2 3 1 3 2 2*4 1 1 2 3



809A 872A 866A 865A

C SPS C SPS B SPS B SPS

2 1 3 1 2 3 2 1 3 5 6 2



873A 874A 831A 718A



FUSING:

- 1/2 AMP PER 2 SEL'S 60V.
- 1/2 AMP PER MISC PANEL 60V.
- 1/2 AMP PER BATT JACK 60V.

RELAY TL TRAVEL 1.1 MM.

RELAY A ARMATURE SCREW LENGTH .3 MM APPEX SPRINGS 15 GRMS

RELAY D ARMATURE SCREW LENGTH .75 - .6 MM.

RELAY TR MIDDLE SPRINGS 10 GRMS. MINIMUM.

- *CONTACT D4 TO BREAK BEFORE D2 BREAKS.
- Ø CONTACT TL6 TO MAKE BEFORE TL4 CHANGES OVER.
- CONTACT A1 PLATINUM.
- SEL'S BCO JACK DISCONNECTS 60V.

*ccc
8mm
1.1
2000*

ISSUE 1

TEST JACK SWITCH DESIGN BCO JACK



FRONT VIEW OF JACKS

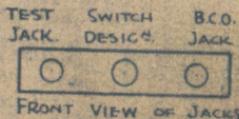
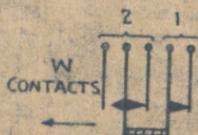
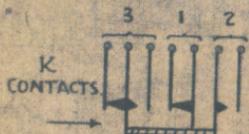
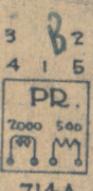
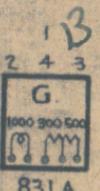
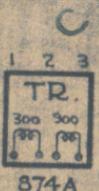
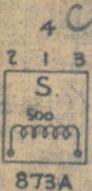
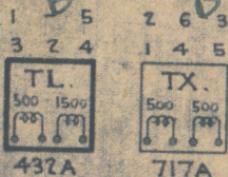
N°16 AUTO.
FINAL SELECTOR.
ORD.

(WITH TO)

~~KN-934~~

Q.D. 1347-A
2 SHEETS - SHEET 2.

FRONT VIEW CONTACTS. REAR VIEW COILS.



FUSING. 1/2 AMP. PER 2 SEL^{NS} GOV.

1/2 AMP. PER 2 SEL^{NS} DRIVE.

1/2 AMP. PER MISC. PANEL GOV.

1/2 AMP. PER BATT. JACK GOV.

*RELAY TX. TRAVEL 1.1 MM.

RELAY A. ARMATURE SCREW LENGTH .3 MM. APPX. SPRINGS 15 GRM.

RELAY D. ARMATURE SCREW LENGTH .25 - .6 MM.

RELAY TR. MIDDLE SPRINGS, 10 GRMS. MINIMUM.

*CONTACT D4 TO BREAK BEFORE D2 BREAKS.

CONTACT A1. PLATINUM.

SEL^B B.C.O. JACK DISCONNECTS 60V. & DRIVE.

MAXIMUM NUMBER OF LINES IN A SMALL PBX. GROUP IS 10.

PINS FITTED IN P.B.X. ARC FOR EACH LINE OF A GROUP.

EXCEPT THE LAST LINE

SWITCH SEARCHES WHEN 1ST LINE OF A GROUP DIALED,
IS ENGAGED.

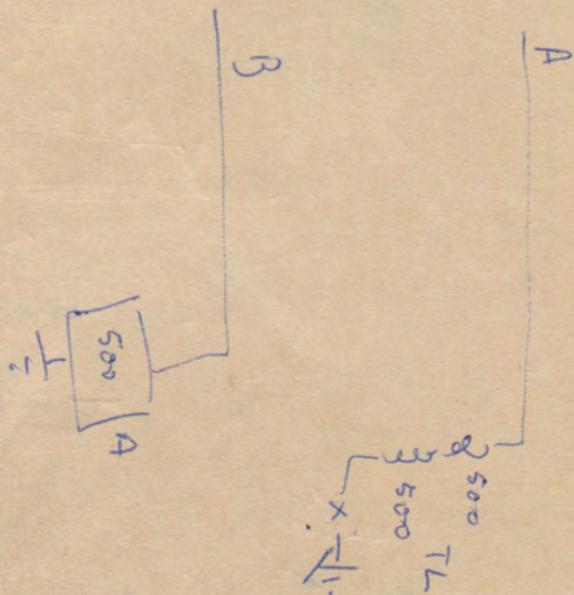
ANY LINE OTHER THAN 1ST IN GROUP CAN BE USED FOR
NIGHT SERVICE EXTENSION.

N^o 16 AUTO.
FINAL SELECTOR
SMALL PBX.
(WITH T.O.)
XN-936.

QD.1349-A
2 SHEETS - SHEET 2

ISSUE 1

Padding! Load 500 ohms in series with
Rise Set as check on traffic.



First Amendment was for the alteration as regards attractions to Ring.

Siemens 16 has Batt behind ring and R/R. ~~250~~
but 2000 TYPE has Et behind ring + R/R Batt.
so that Siemens R/R Et had to be changed to Batt.
and firstly this was done by using TL relay coils
500 + 500 connected in parallel (diff. to prevent
it chattering on ring) (Ring sent out via
relay coil to act as choke)
when nearly completed 10w porcelain resistors of
100 Ω were delivered

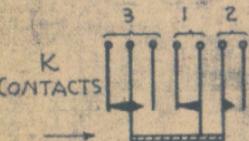
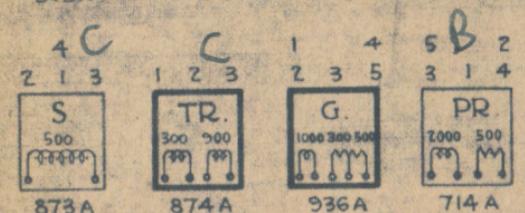
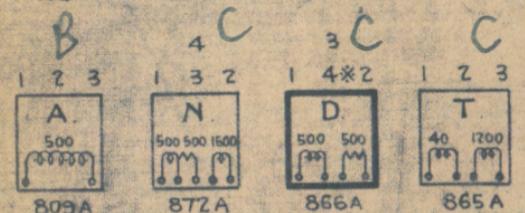
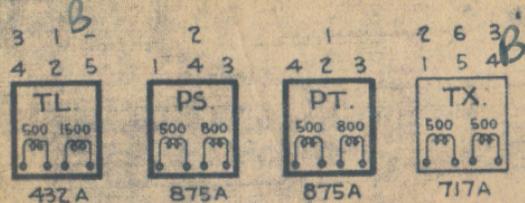
at Paddington. - old exchange was Siemens
2016. which used R/return with Batt
behind ring and R/Rt Et.

When the new Padd. 2000 type exchange was
installed, the old Siemens rings were
done away with and replaced by 2000 type
rings which have Et behind Ring and
R/Rt Batt.

Ring should go out via relay (TR in series
& F in 2000) to act as choke to cut down
peaks which would cause interference etc)
so that the R/Return on Siemens F/S lead
Et on.

On changesover. Batt on Ring was replaced
by Et. (and rings) but R/Return was
changed from Et to Batt by use of
2000 Rad. next (3W100) on LUI - LUG
note Eng. decided they wanted Inductives Batt
so as the TR relays weren't used as no T/O
in use. TL & TX were taken out of cct &
appropriate wiring alterations made and
the both windings of TX in parallel (-250V)
were put to Batt & on V6 to provide R/R Batt.
(Latest idea is to use 8/sets of TL & use 2, x 100 or
Ceramic Resistors in series in lieu of coils of TL.
- mount on TL yoke, as TL remains in set.)

FRONT VIEW CONTACTS, REAR VIEW COILS.

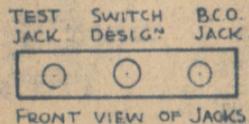


FUSING 1/2 AMP. PER 2 SEL^S 60V.
 1/2 AMP. PER 2 SEL^{DS} DRIVE.
 1/2 AMP. PER MISC. PANEL 60V.
 1/2 AMP. PER BATT. JACK. 60V.

RELAY TX. TRAVEL 1.1MM.
 RELAY A. ARMATURE SCREW LENGTH .3MM. APPX. SPRINGS 15GR^{MS}.
 RELAY D. ARMATURE SCREW LENGTH .25 - .6MM.
 RELAY TR. MIDDLE SPRINGS 10 GRMS. MINIMUM.

*CONTACT D4 TO BREAK BEFORE D2 BREAKS.
 CONTACT A1 PLATINUM.
 SEL^S B.C.O. JACK DISCONNECTS 60V. & DRIVE.
 MAXIMUM NUMBER OF LINES IN A LARGE PBX GROUP IS 100.
 PINS FITTED IN P.B.X. ARC FOR EACH LINE OF A GROUP
 EXCEPT THE LAST LINE

SWITCH SEARCHES WHEN 1ST LINE OF A GROUP DIALED,
 IS ENGAGED.
 ANY LINE OTHER THAN 1ST IN GROUP OR 1ST IN EACH
 LEVEL OF GROUP CAN BE USED FOR NIGHT SERVICE EXT^D



N^o 16 AUTO
 FINAL SELECTOR
 LARGE P.B.X.
 (WITH T.O.)
~~KA 939~~

QD. 1350-A
 2 SHEETS-SHEET 2

ISSUE 1

RELAY OPERATION.

X934.

N.

A.

D.

DIAL 1ST TRAIN.

END OF TRAIN

Dials.

Gops.

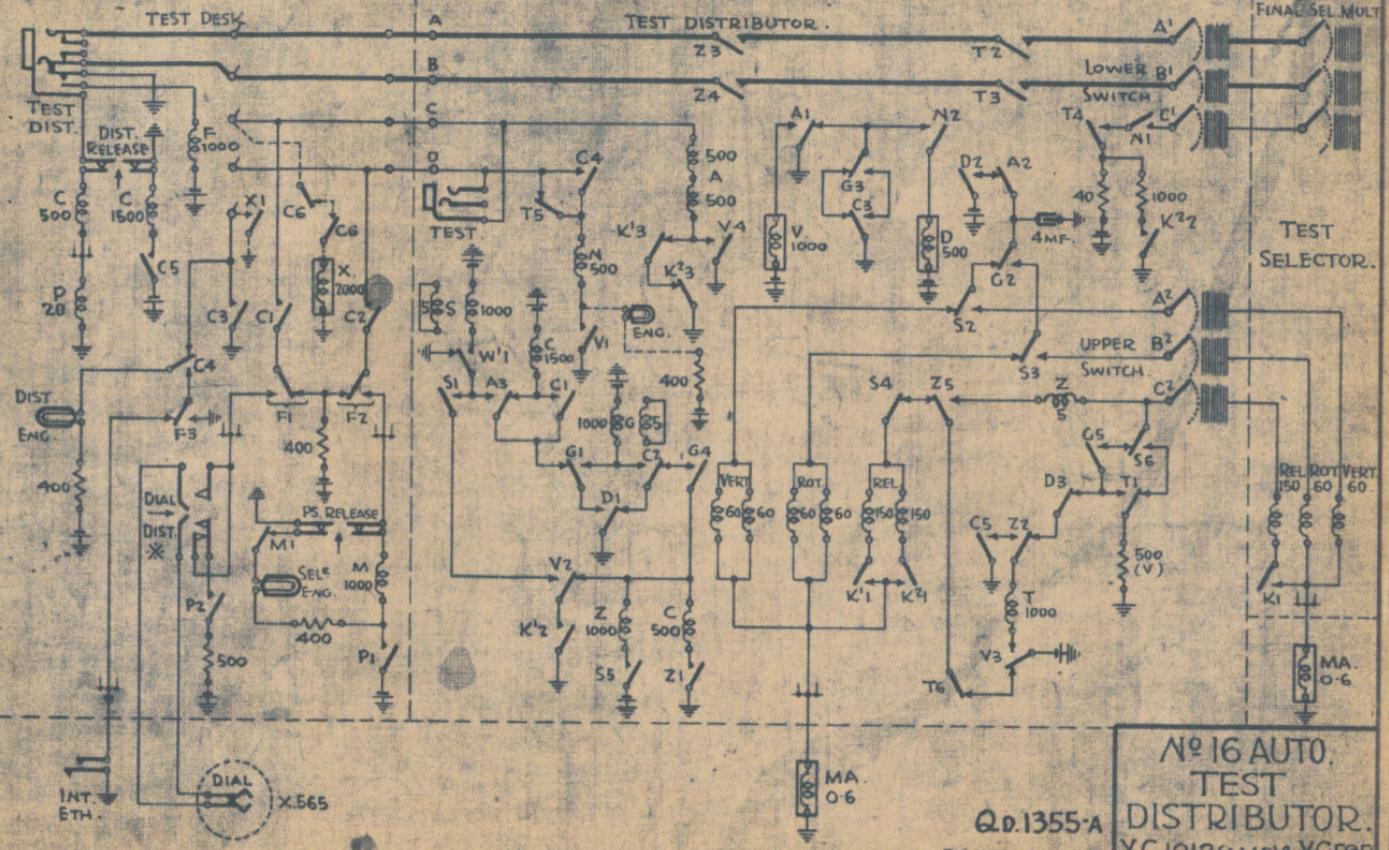
Drops

DIAL 2ND TRAIN.

END OF TRAIN.

Dials.

ISSUE 1



No. 16 AUTO.
 TEST
 DISTRIBUTOR.
 XC1012 (AMD) & XC535

Q.D. 1355-A
 2 SHTS - SHT. 1

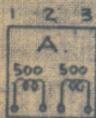
FRONT VIEW CONTACTS, REAR VIEW COILS:



737A.

B

C



920A.



831A.



866A.



737A.



843A.



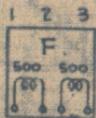
737A.



737A.

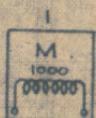


864A.

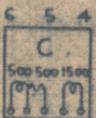


829A.

B



497H.



864A.



536A.



607A.

FUSING: 2.4 AMP. PER DISTRIBUTOR 60V.
1.2 AMP. PER DIST. MISC. PANEL 60V.
1.2 AMP. PER TEST DESK POSITION.

CONTACT A2 PLATINUM.
TEST SELECTOR, FITTED PER 100 SUBSCRIBERS.
TEST DISTRIBUTORS PROVIDED ACCORDING TO EXCHANGE REQUIREMENTS. WHERE MORE THAN ONE TEST DESK POSITION IS PROVIDED, THE DISTRIBUTOR CIRCUITS ARE MULTIPLIED OVER EACH POSITION. RELAYS F & C PROVIDED PER DISTRIBUTOR, PER POSITION.

RELAYS M & P PER POSITION ONLY. IN SATELLITE EXCHANGES, THE DISTRIBUTOR IS PROVIDED WITH AN ENGAGED LAMP (SHOWN DOTTED) & OPERATED FROM A LOCAL DESK (Q22), CONNECTED AT A, B, C, D. A FOUR WIRE JUNCTION TO THE MAIN EXCH. TEST DESK IS CONNECTED ALSO AT A, B, C, D, AND RELAY X & CONTACT C6 ADDED, AS SHOWN DOTTED.

*BREAK CONTACT OF THIS KEY TO OPEN AFTER BOTH OTHER CONTACTS ARE MADE.

TEST SWITCH B.C.O. JACK DESIGN JACK



FRONT VIEW OF JACK



CONTACTS. UPPER & LOWER SWITCHES.

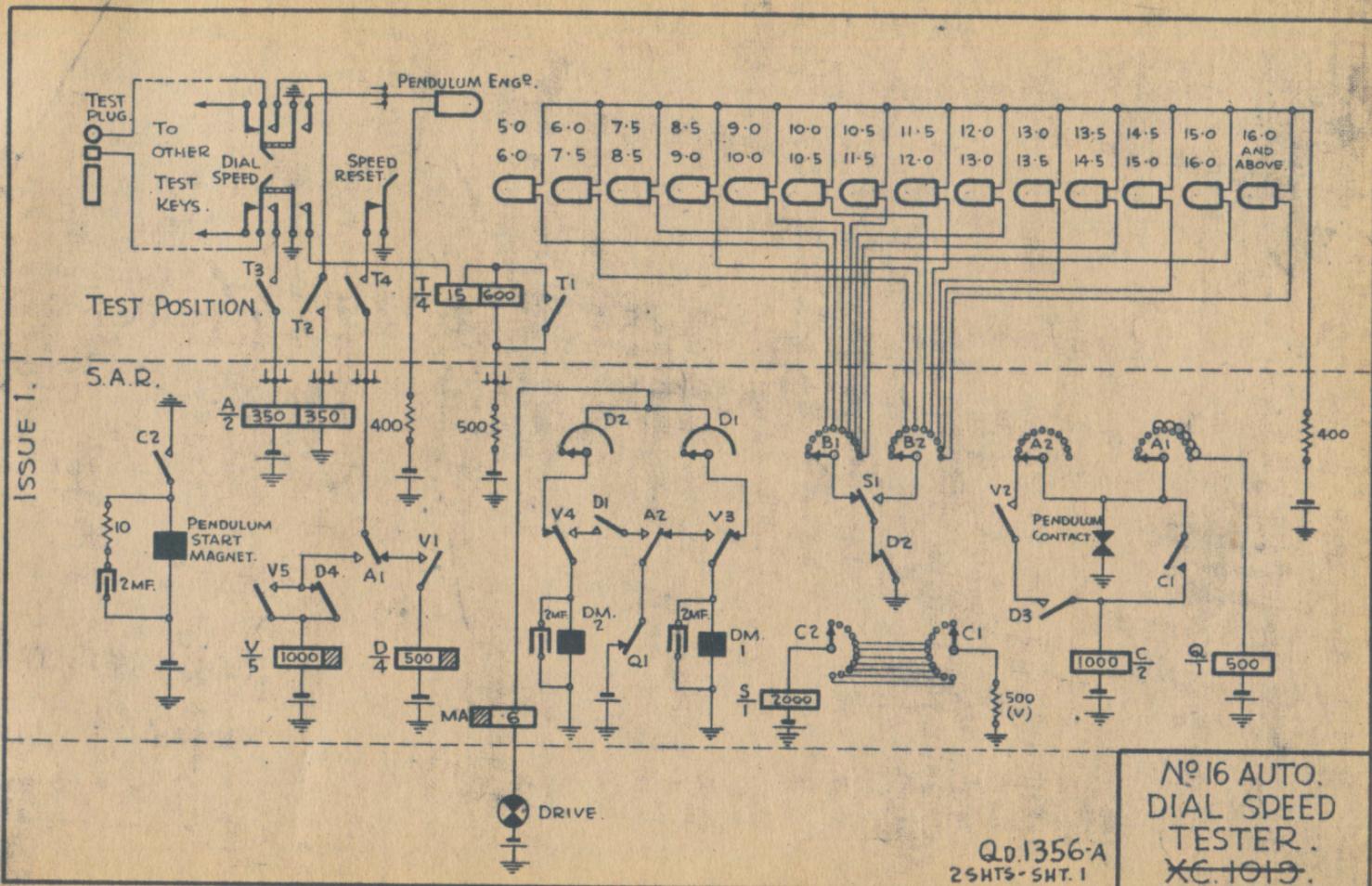


W CONTACT. LOWER SWITCH.

Nº 16 AUTO.
TEST
DISTRIBUTOR.
XN 1012 (AMD) & XN 595

Q.D. 1355-A
2 SHEETS - SHEET 2

ISSUE 1.

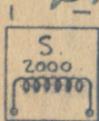


No. 16 AUTO.
DIAL SPEED
TESTER.
XC. 1019.

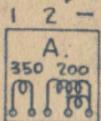
QD. 1356-A
2SHTS-SHT. 1

FRONT VIEW CONTACTS, REAR VIEW COILS.

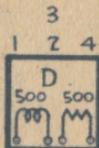
FUSING 1-2 AMP. PER CIRCUIT.
CONTACT AZ PLATINUM.



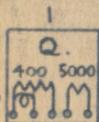
574 B.



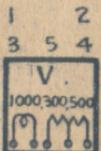
830 A'.



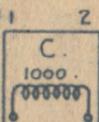
866 A.



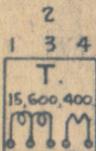
860 A.



936 A.



574 E.



892 A.



ISSUE 1.

Nº16 AUTO.
DIAL SPEED
TESTER.
~~*N.1019.~~

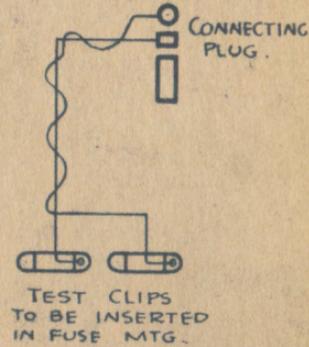
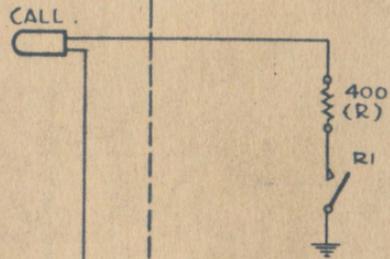
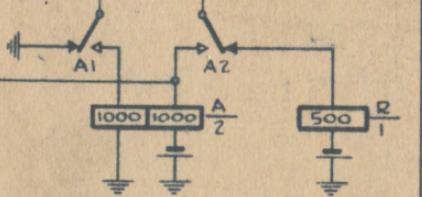
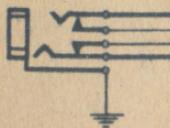
QD 1356-A
2 SHEETS - SHEET 2

ISSUE I.

TEST POSITION

S. A. R.

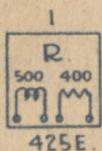
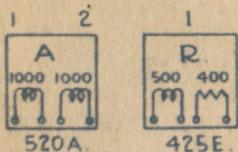
PROTECTOR



Nº 16 AUTO.
NEW SUBSCRIBERS'
TEST CIRCUIT.
XG.705.

Q.D. 1338-A
2 SHTS. - SHT. 1

FRONT VIEW CONTACTS, REAR VIEW COILS.



FUSING: 1-2 AMP. PER 10 CIRCUITS 60V.

NEW SUBS. LINE IS CONNECTED TO TEST CIRCUIT BY MEANS OF TEST CLIPS INSERTED IN FUSE MTG. AND CONNECTED TO LINE JACK.

ISSUE 1.

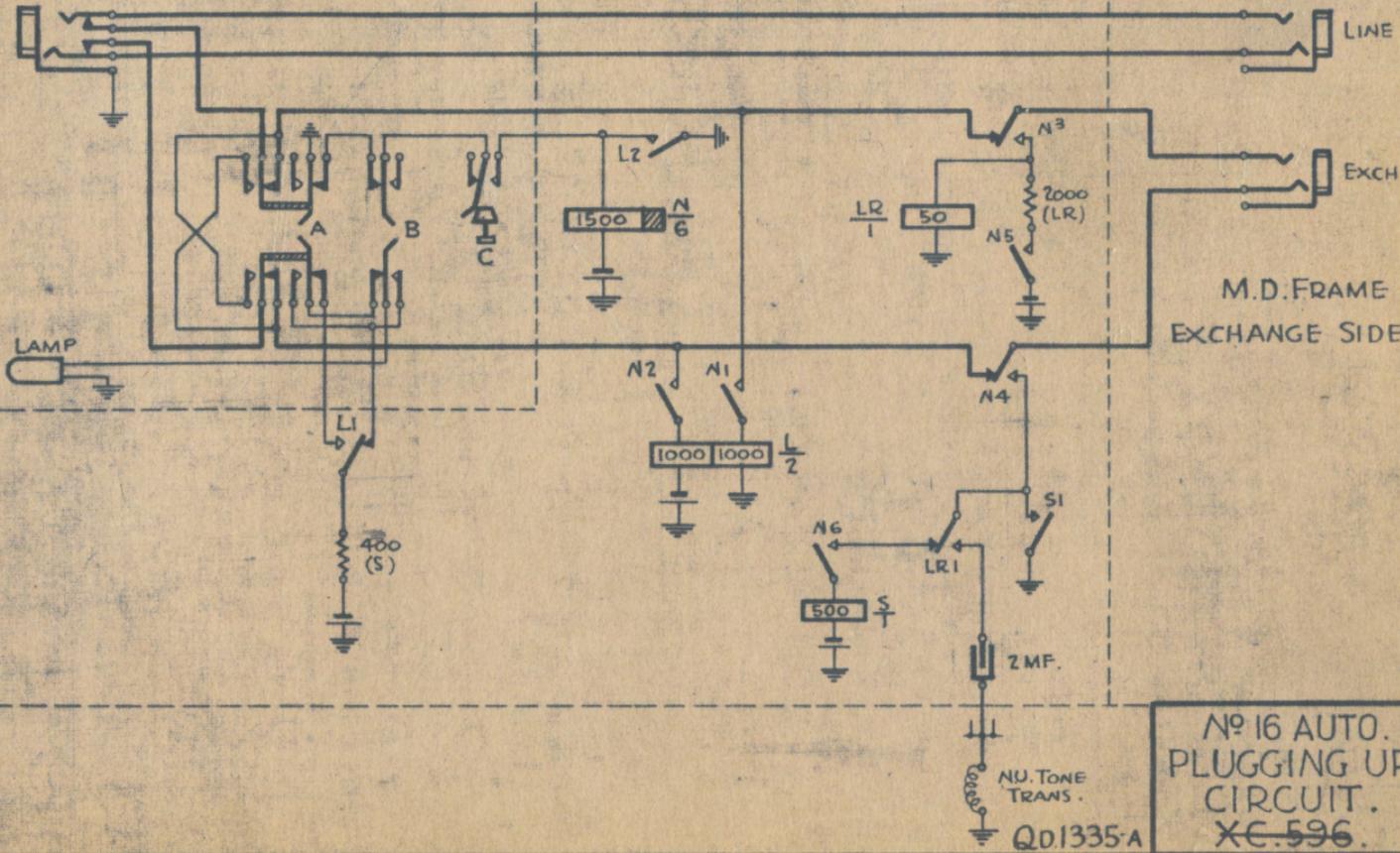
№16 AUTO.
NEW SUBSCRIBERS
TEST CIRCUIT.
~~XN.705.~~

QD 1338-A
2 SHEETS - SHEET 2

TEST DESK OR AUX. TEST RACK

S. A. R.

ISSUE 1

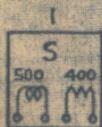


No. 16 AUTO.
PLUGGING UP
CIRCUIT.
XC. 596.

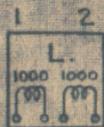
QD1335-A

FRONT VIEW CONTACTS, REAR VIEW COILS.

FUSING: 1-2 AMP. PER 5 CIRCUITS.



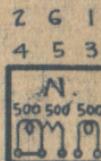
425 E.



520 A.



741 A.



864 A.

CONDITION.	OPERATE KEYS.
SHORT CIRCUIT, EARTH ON A OR BATTERY ON B.	C FIRST THEN A.
SHORT CIRCUIT, EARTH ON B OR BATTERY ON A.	C FIRST THEN B.
DISCONNECTION AND INTERMITTENT FAULTS.	C.

NO 16 AUTO.
PLUGGING UP
CIRCUIT.
XN-596.

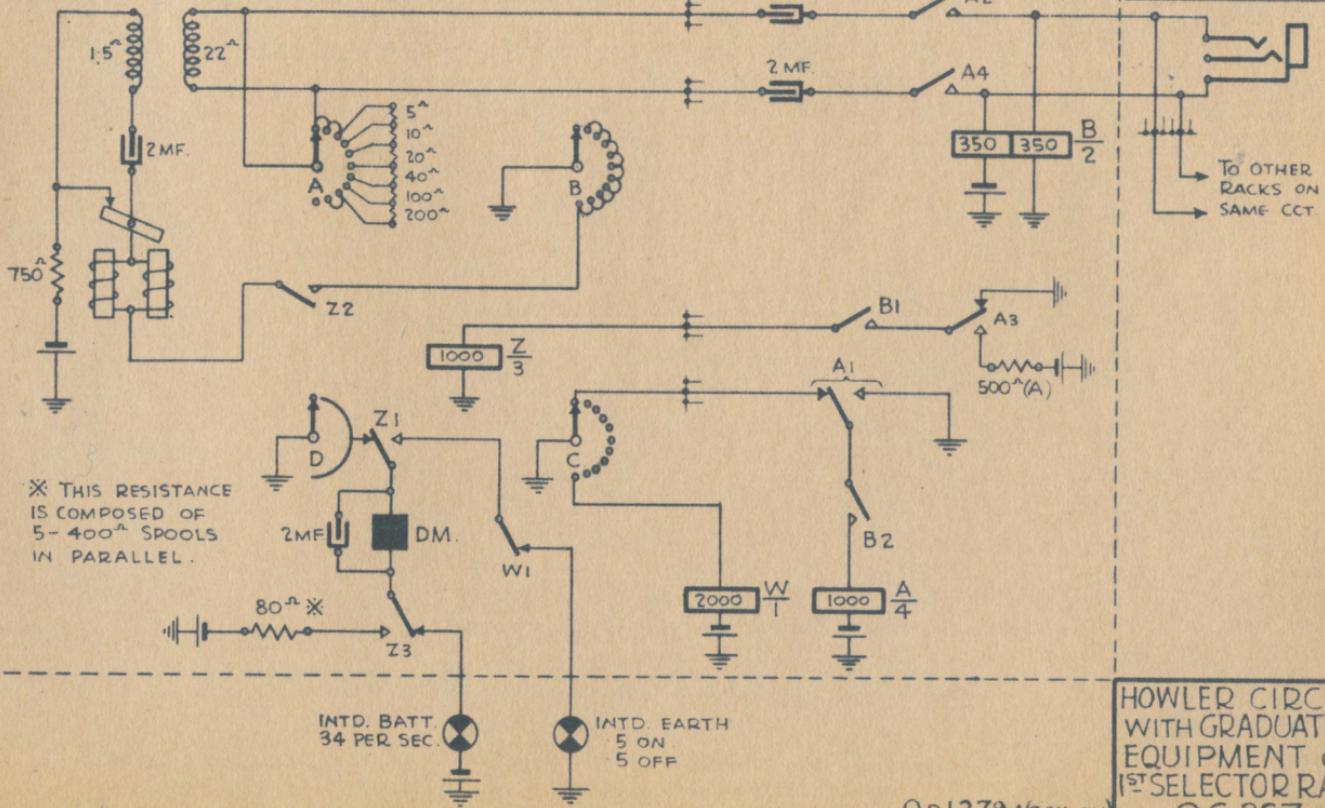
QD.1335-A
2 SHEETS - SHEET 2

ISSUE 1.

ISSUE 1

S. A. RACK.

1ST SELECTOR RACKS



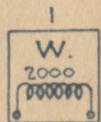
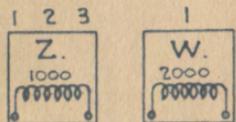
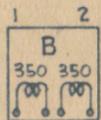
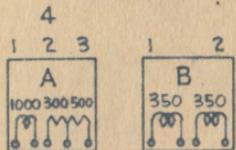
✱ THIS RESISTANCE IS COMPOSED OF 5-400^Ω SPOOLS IN PARALLEL.

HOWLER CIRCUIT WITH GRADUATING EQUIPMENT ON 1ST SELECTOR RACKS
Q.C. 267.

Q.D. 1279-A(25H-5H)

INTD. BATT 34 PER SEC
INTD. EARTH 5 ON 5 OFF

FRONT VIEW CONTACTS, REAR VIEW COILS.

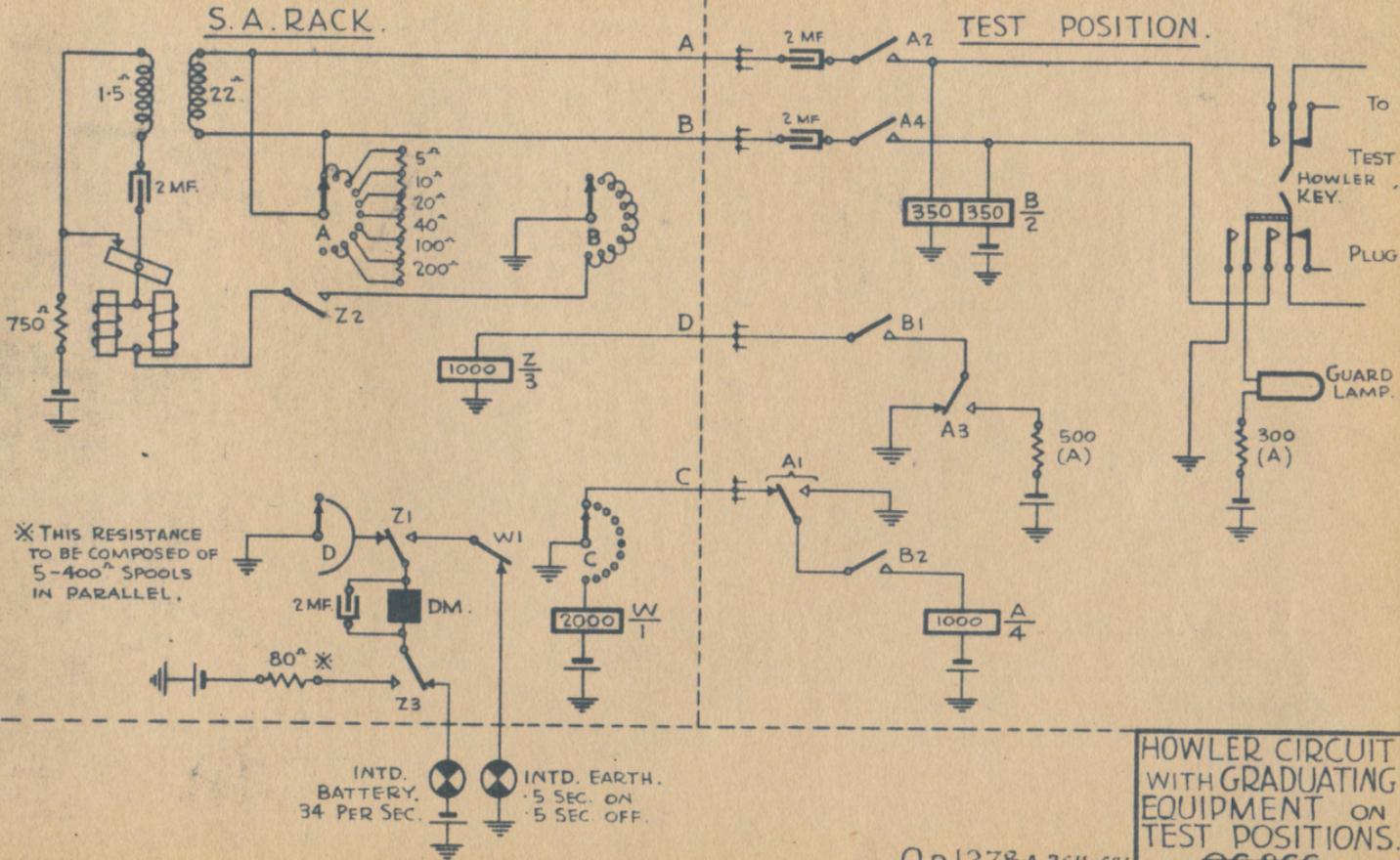


HOWLER CIRCUIT
WITH GRADUATING
EQUIPMENT ON
1ST SELECTOR RACKS
~~Q.N. 267.~~

QD1279-A
2 SHEETS-SHEET 2

ISSUE 1

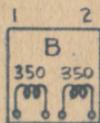
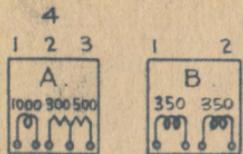
ISSUE I.



Q.D.1278-A 2SH-5M1

QC.266

FRONT VIEW CONTACTS, REAR VIEW COILS.

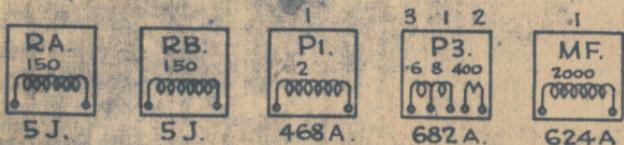


ISSUE 1.

HOWLER CIRCUIT
WITH GRADUATING
EQUIPMENT ON
TEST POSITIONS.
Q.N. 266.

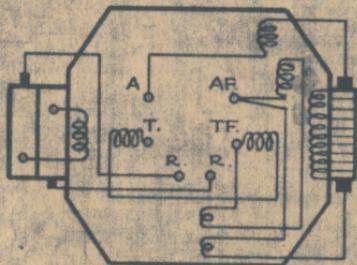
QD.1278-A
2 SHEETS - SHEET 2

FRONT VIEW CONTACTS, REAR VIEW COILS.



FUSING: 2.0 AMP. PER DELAYED METERING CAMS 60V.
 2.0 " " BUSY TONE 60V.
 2.0 " " RINGER 60V.
 2.0 " " P.L. CONTROL CAM 60V.
 2.0 " " INTERRUPTER RINGING CAMS 60V.
 2.0 " " S.RELAY, MS.CAMS, MR.RELAY
 S³ & S⁵ CONTACTS, MS1 CONTACT.

ACTUAL CONNECTIONS OF INTERRUPTER MACHINE.



TERMINAL T CONNECTS TO EARTH.
 " A " " VIA RHEOSTAT.
 " AF. " " 60V. BATTERY.
 " TF. " " N.U. TONE TRANSFORMER.
 TERMINALS R NORMALLY SUPPLY 16V RINGING
 BUT ARE NOT USED BRISBANE NETWORK.

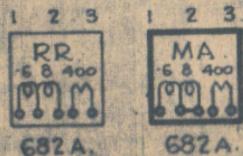
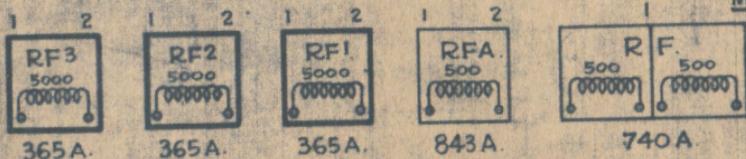
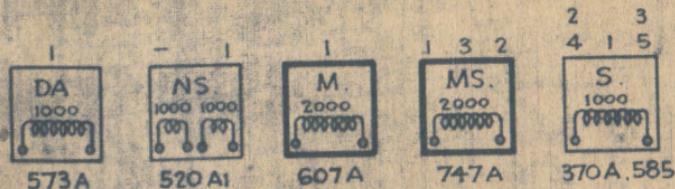
BATTERIES MARKED * ARE DISCONNECTED FROM MACH. 2 CTS. WHEN MACH. 1 IS IN USE AND VICE-VERSA.

NUMBERS MARKED AGAINST CHANGE-OVER SWITCH CONTACTS DENOTE POSITION OF SAME ON SWITCH.

N^o 16 AUTO.
 M.I. RACK.
 SATELLITE EXCH^S
 MISC. CIRCUITS.
 XN 1437 (4SHTS. SHT3)

QD. 1368-A

FRONT VIEW CONTACTS, REAR VIEW COILS.



FUSING:

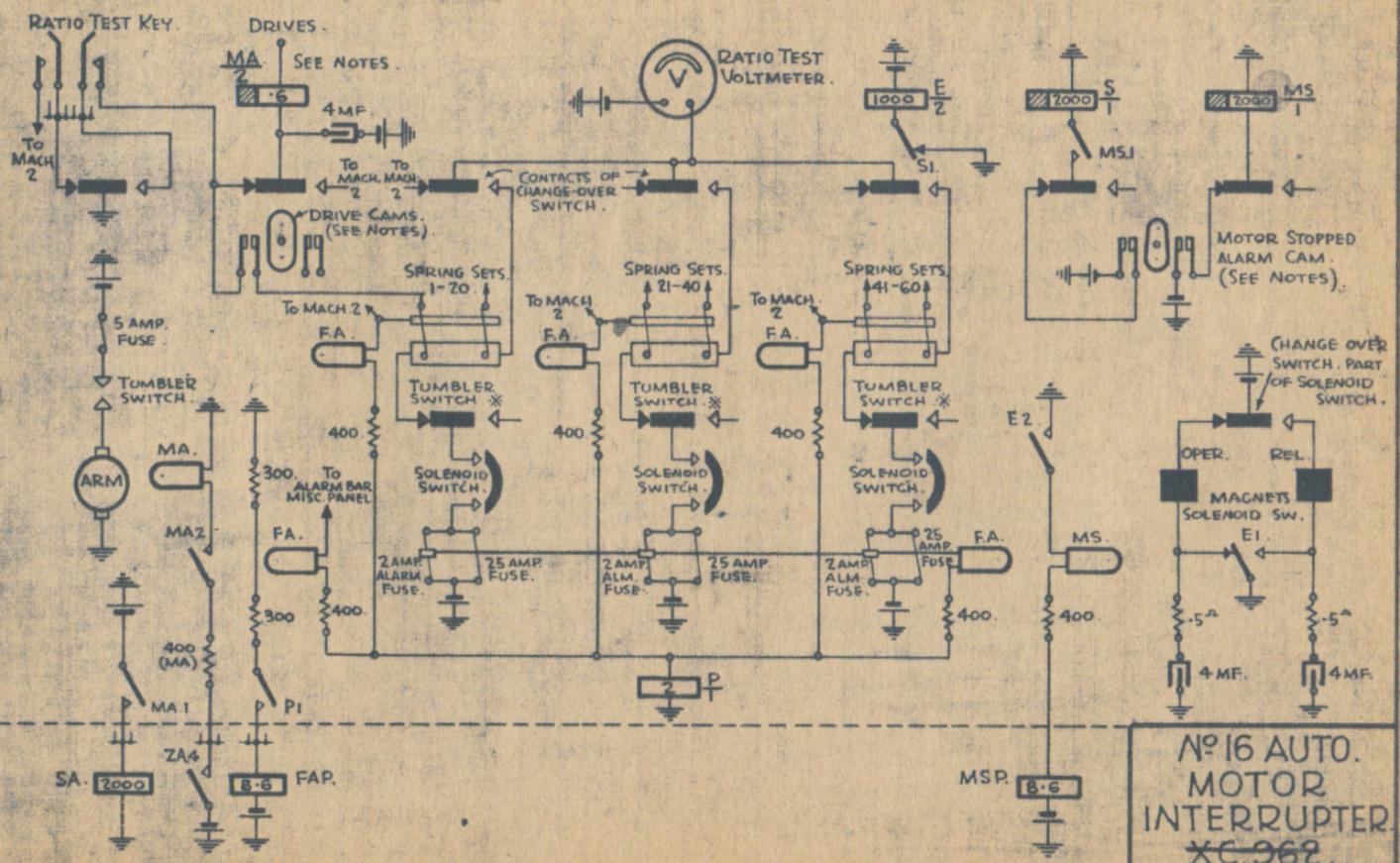
1-2 AMP. FOR VOLTMETER	60V.
1-2 " " MA ² CONTACTS.	60V.
1-2 " " F.A.LAMP.	60V.
2-0 " " SQ.CONDENSERS.	60V.
1-2 " " R.F.LAMPS.	60V.
1-2 " " V.AND R.F.A.RELAYS.	60V.
2-0 " PER DRIVE CCT.	60V.
2-0 " FOR DA & NS.RELAYS & TRIP COIL	60V.

BATTERIES MARKED * ARE DISCONNECTED FROM MACH.2 WHEN MACH.1 IS IN USE AND VICE-VERSA. MOTOR CONTROL CAM OPERATES IN 2.5 MINUTES. NUMBERS MARKED AGAINST CHANGE-OVER SWITCH CONTACTS DENOTE POSITION OF SAME ON SWITCH. M.A.RELAYS ARE FITTED ON M.I.RACK FOR PRE-SELECTOR DRIVES ONLY. SELECTOR DRIVES ARE WIRED DIRECT. PRE-SELECTOR DRIVES — 34 STEPS PER SEC. RATIO 1M-1B. SELECTOR DRIVES — 34 " " " RATIO 2M-1B. P.B.X. DRIVE — 17 " " " RATIO 2M-1B. MOTOR STOPPED CAM — 17 " " " RATIO 1M-2B.

NO 16 AUTO.
M.I.RACK.
SATELLITE EXCHANGES
MISC. CCTS. (4 SHEETS)
* N1437 (SHEET 4)
Q.D. 1368-A

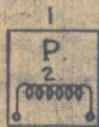
ISSUE 1

ISSUE 1

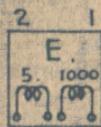


№16 AUTO.
MOTOR
INTERRUPTER.
XC-962.

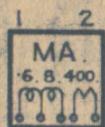
FRONT VIEW CONTACTS, REAR VIEW COILS.



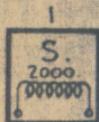
468A.



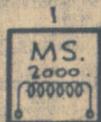
667A.



850A.



585A.



607A.

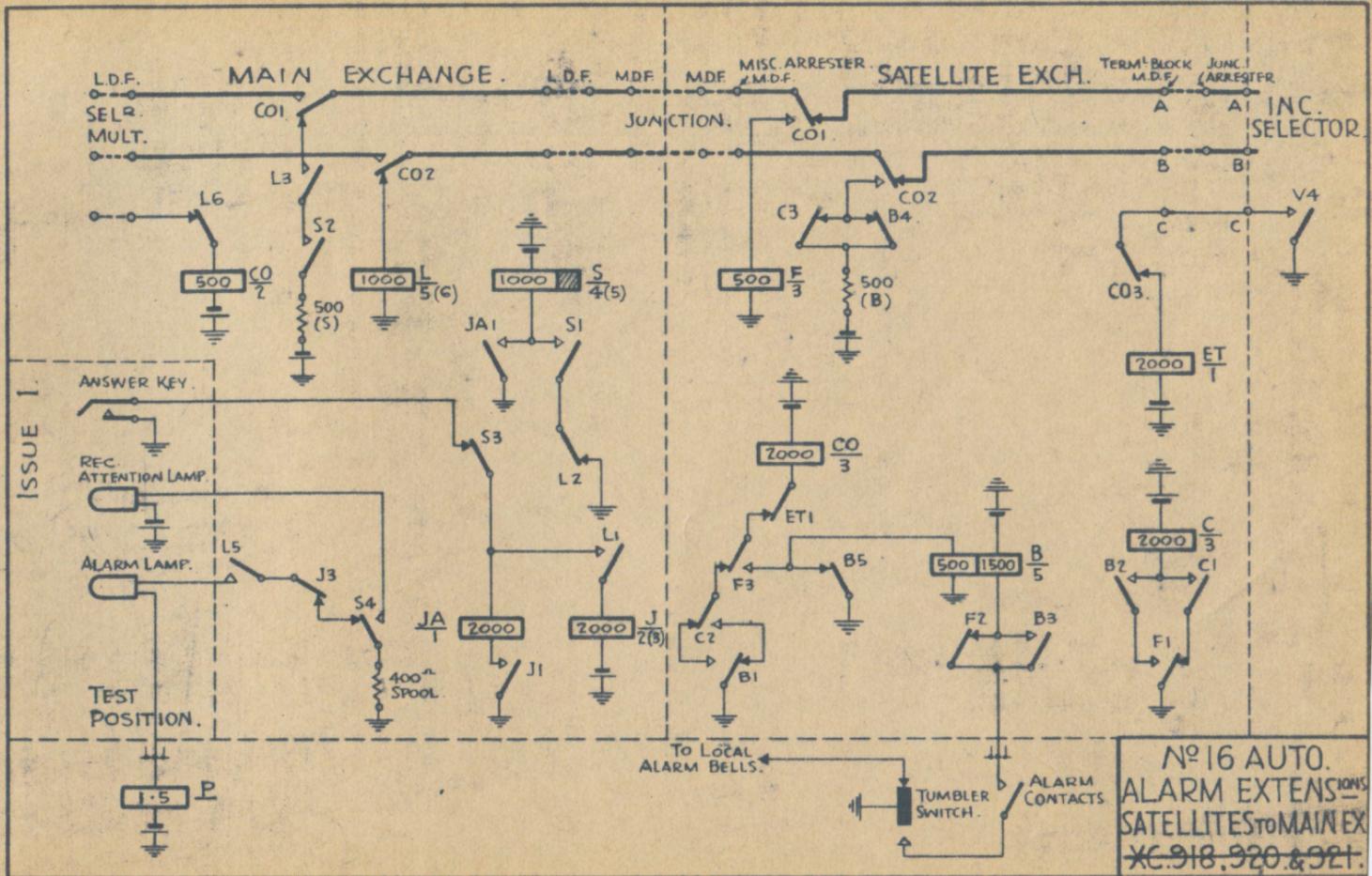
FUSING. 25 AMP. PER 20 SPRING SETS.
2.0 AMP. PER SPRING SET.
2.0 " FOR MOTOR STOPPED ALARM.
2.0 " " SOLENOID SWITCH.
2.0 " " SPARK QUENCHERS.
2.0 " " MISCELLANEOUS.

TUMBLER SWITCHES MARKED * ARE COUPLED TO CHANGE-OVER SW.
DRIVES. 1PS. 34 STEPS PER SECOND. RATIO 1M - 1B.
" SELECTOR. 34 " " " RATIO 2M - 1B.
" P.B.X. 17 " " " RATIO 2M - 1B.
" * MOTOR STOPPED ALARM. 17 STEPS " " RATIO 1M - 2B.
MA. RELAYS ARE FITTED ON M.I. RACKS FOR PRESELECTOR DR'S ONLY.
SELECTOR DRIVES ARE WIRED DIRECT.
WHEN MA. RELAYS ARE FITTED ON 1.PS. RACKS, OMIT MA.
RELAY AND ASSOCIATED EQUIPMENT AND WIRE DIRECT.
SPRING SETS 1-2 ARE USED FOR MOTOR STOPPED ALARM.

ISSUE 1.

№ 16 AUTO.
MOTOR
INTERRUPTER.
*N-362.

QD. 1351-A
2 SHEETS - SHEET 2



No. 16 AUTO.
 ALARM EXTENSIONS
 SATELLITES TO MAIN EX
 XC. 918, 920 & 921.

FRONT VIEW CONTACTS, REAR VIEW COILS.

FUSING. 1-2 AMP. PER CIRCUIT.

1 3 -
2 6 5



833A.

1 2 -



790A.

1 - 3



483B.

1 -



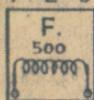
574B.

1 2
3 4 -



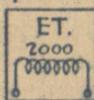
936A.

1 2 3



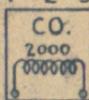
809A.

1 -



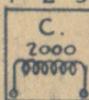
574B.

1 2 3



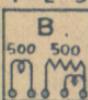
483B.

1 2 3



483B.

1 3
4 2 5



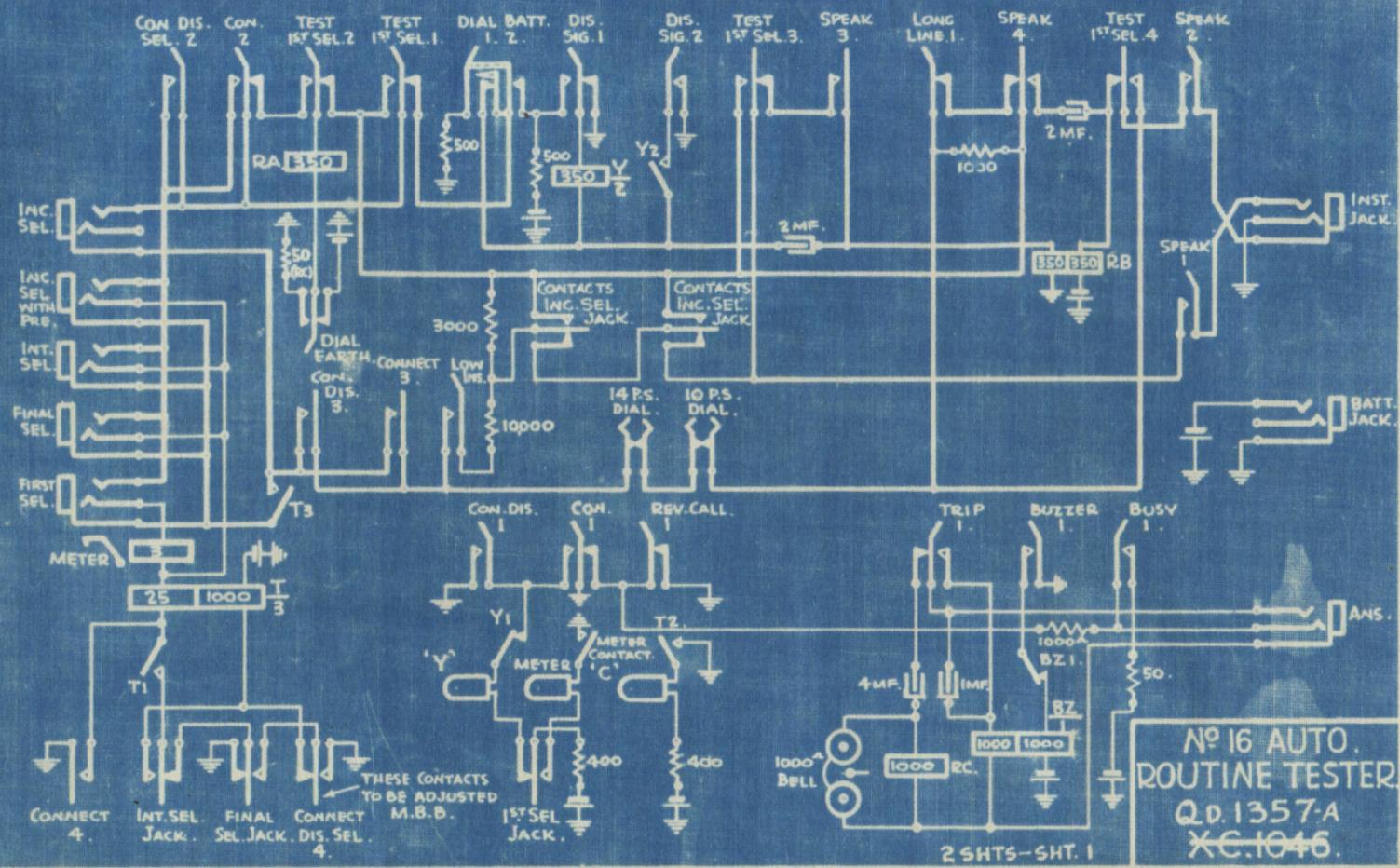
935A.

ISSUE 1.

№ 16 AUTO.
ALARM EXTENSIONS
SATELLITES TO MAIN EX
XN. 918, 920 & 921.

QD. 1345-A
2 SHEETS - SHEET 2

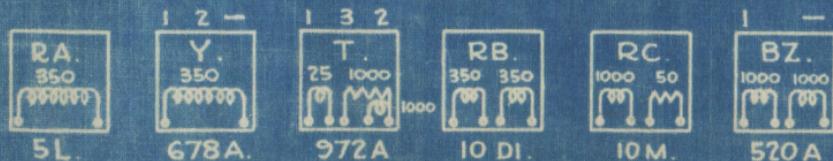
ISSUE I.



No 16 AUTO.
 ROUTINE TESTER
 QD. 1357-A
 XC. 1046.

FRONT VIEW CONTACTS.

REAR VIEW COILS.



REAR VIEW OF KEYS SHOWING POSITIONS OF CONTACTS.



N^o 16 AUTO.
 ROUTINE TESTER
 QD. 1357-A
 XN. 1046.

2 SHEETS - SHEET 2

INDEX

- FIG 1. a EARTH TEST VOLTMETER METHOD.
 1 b CIRCUIT TEST VOLTMETER METHOD.
 1 c LOOP RESISTANCE TEST VOLTMETER METHOD.
 1 d FOREIGN BATTERY TEST VOLTMETER METHOD.
 1 2 LOCATION OF EARTH FAULTS VOLTMETER METHOD.
 1 f LOCATION OF CONTACTS BETWEEN TWO TRUNKS VOLTMETER METHOD.
 2. LOOP RESISTANCE TEST, WHEATSTONE BRIDGE METHOD.
 3. LOCATION OF EARTH FAULTS, VARLEY LOOP METHOD.
 4. SHORT CIRCUIT LOCATION, VARLEY LOOP METHOD.
 5. LOCATION OF CONTACTS, VARLEY LOOP METHOD. 3 WIRES REQUIRED.
 6. LOCATION OF AN EARTH WHERE THE 2 LEGS FORMING THE LOOP ARE OF UNEQUAL SIZE & MATERIAL, (VARLEY LOOP METHOD)
 7.
 8. LOCATION OF AN EARTH ON BOTH LEGS OF LINE, 3RD WIRE AVAILABLE, VARLEY LOOP METHOD
 9. RESISTANCE OF EACH LEG OF METALLIC CIRCUIT. (VARLEY LOOP METHOD. NO 3RD WIRE AVAILABLE)
 10. 1ST. TEST, METALLIC CCT CONDUCTOR RESISTANCE OF EACH LEG, 3 WIRE METHOD
 2ND. TEST
 3RD. TEST
 11. CAPACITY TEST LINE TO EARTH.
 12. " " WIRE TO WIRE
 13. TRUNK TEST DESK, LINE CIRCUIT.

<p style="text-align: center; margin: 0;">NOTES</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="4" style="text-align: center; padding: 2px;">ISSUES</th> </tr> <tr> <th style="font-size: 8px; padding: 2px;">DWT ORD NO</th> <th style="font-size: 8px; padding: 2px;">NO</th> <th style="font-size: 8px; padding: 2px;">DATE</th> <th style="font-size: 8px; padding: 2px;">APP AMENDMENTS</th> </tr> <tr> <td style="padding: 2px;">572</td> <td style="padding: 2px;">1</td> <td style="padding: 2px;">23/47</td> <td style="padding: 2px;"></td> </tr> </table>	ISSUES				DWT ORD NO	NO	DATE	APP AMENDMENTS	572	1	23/47		<p style="text-align: center; margin: 0;">COMMONWEALTH OF AUSTRALIA PMG'S DEPARTMENT</p> <p style="text-align: center; font-size: 1.2em; margin: 10px 0 0 0;">TRUNK LINE TEST CIRCUITS</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <tr> <td style="width: 60%; padding: 2px;">DRAWN..... J.P.E.....</td> <td style="width: 40%; padding: 2px;">DRAWING NO.</td> </tr> <tr> <td style="padding: 2px;">EXAMINED.....</td> <td style="padding: 2px;">20-782-A</td> </tr> <tr> <td style="padding: 2px;">APPROVED..... <i>Reib</i>.....</td> <td style="padding: 2px;">SHT 1 OF 5475</td> </tr> <tr> <td style="padding: 2px;">DATE 4/2/47.....</td> <td style="padding: 2px;"></td> </tr> </table>	DRAWN..... J.P.E.....	DRAWING NO.	EXAMINED.....	20-782-A	APPROVED..... <i>Reib</i>	SHT 1 OF 5475	DATE 4/2/47.....	
ISSUES																						
DWT ORD NO	NO	DATE	APP AMENDMENTS																			
572	1	23/47																				
DRAWN..... J.P.E.....	DRAWING NO.																					
EXAMINED.....	20-782-A																					
APPROVED..... <i>Reib</i>	SHT 1 OF 5475																					
DATE 4/2/47.....																						

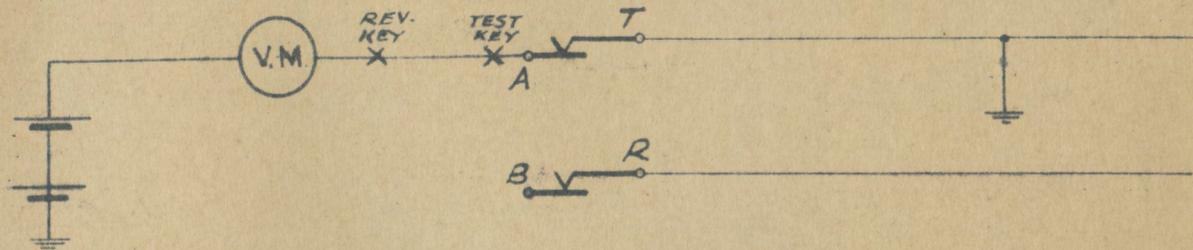


FIG. 1 A

EARTH TEST
VOLTMETER METHOD

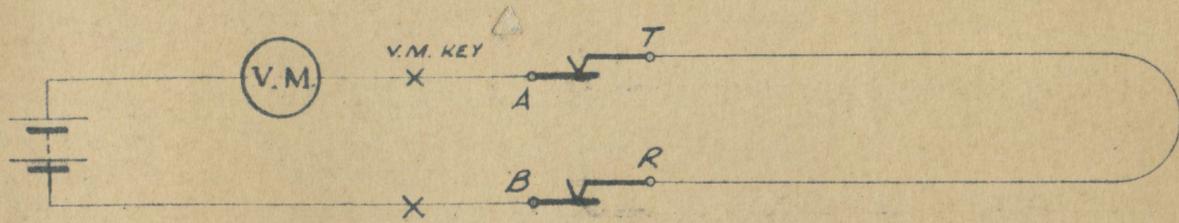


FIG. 1 B

CIRCUIT TEST
VOLTMETER METHOD

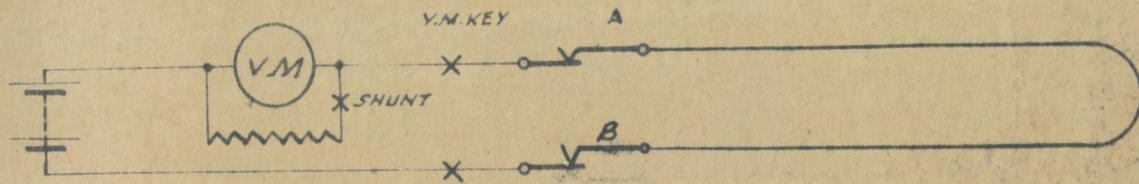


FIG. 1 C

LOOP RESISTANCE
TEST
VOLTMETER METHOD

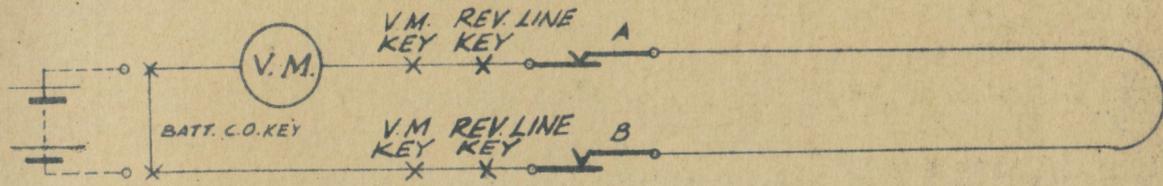
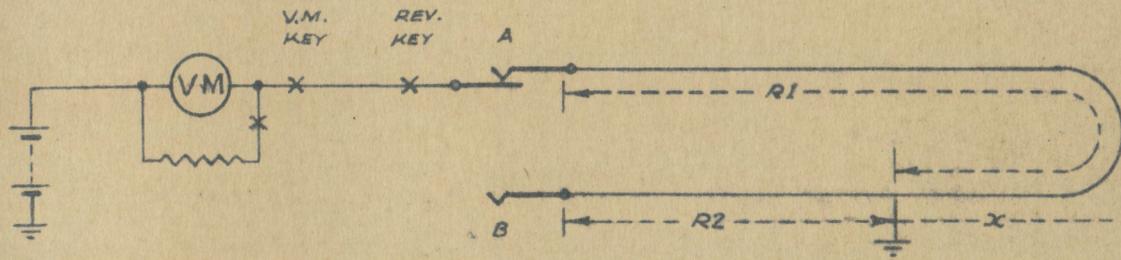


FIG. 1 D

FOREIGN BATTERY
 TEST
 VOLTMETER METHOD



$$X = \frac{R1 - R2}{\text{LOOP-MILE RESISTANCE}}$$

FIG. 1e

LOCATION OF EARTH FAULTS

VOLTMETER METHOD

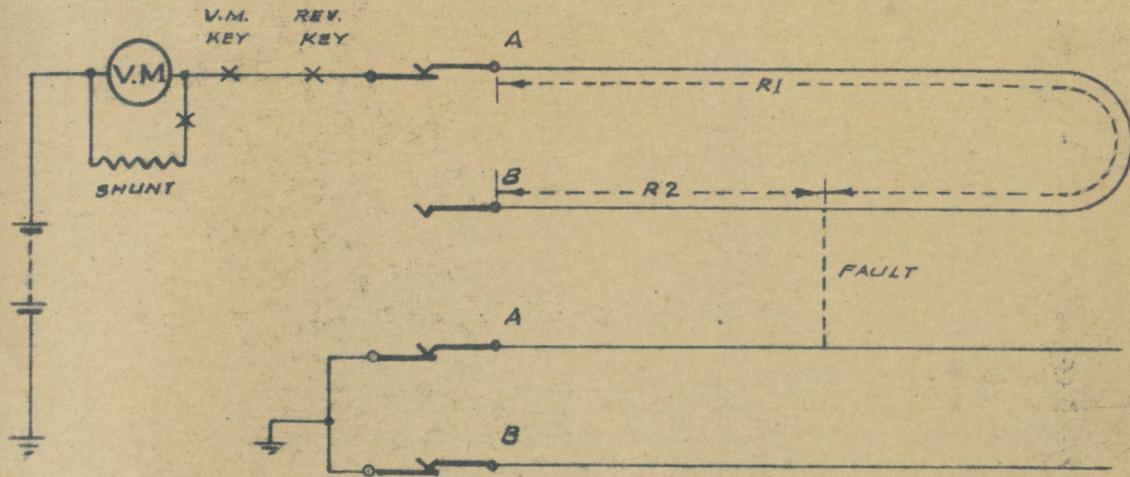


FIG. 14

LOCATION OF CONTACT
BETWEEN TWO TRUNKS
 VOLTMETER METHOD

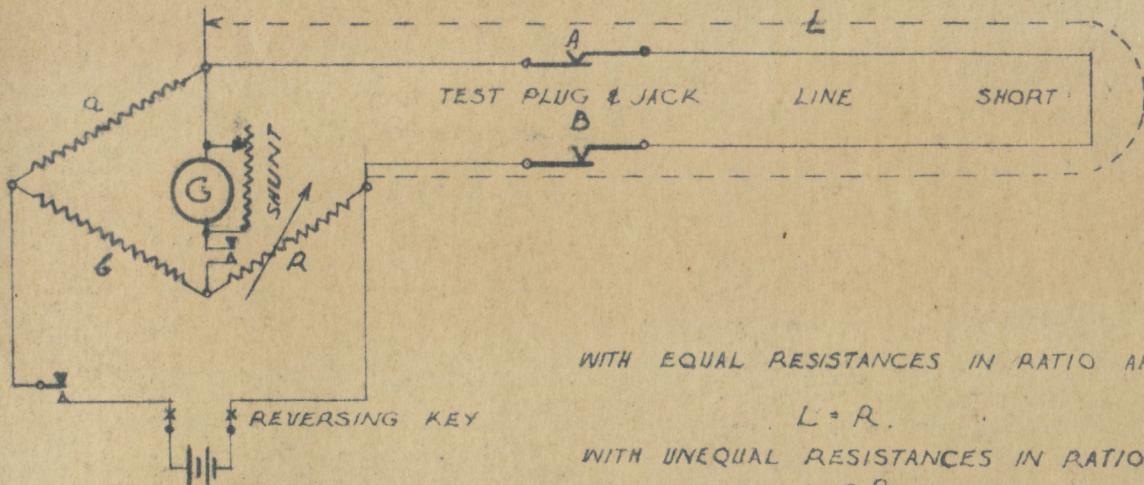
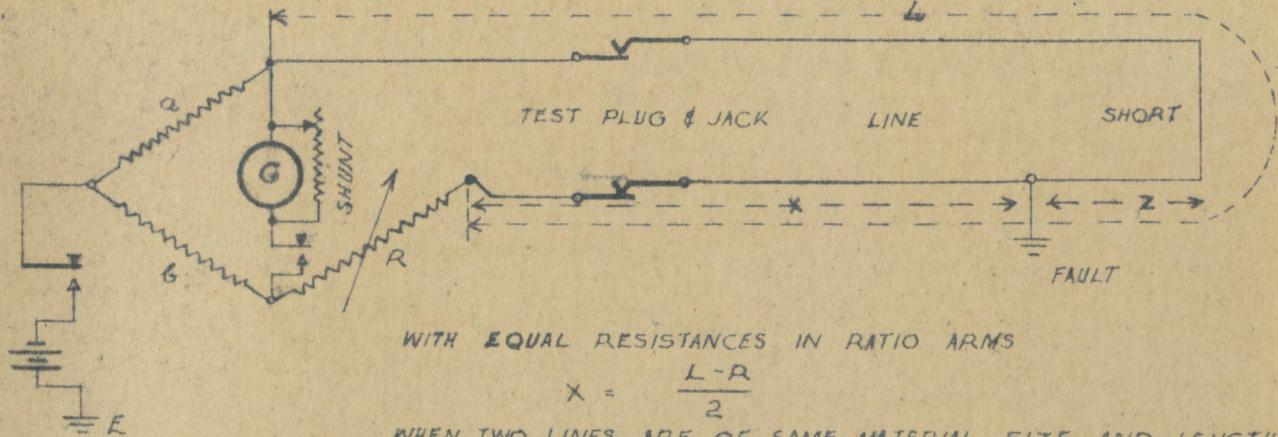


FIG. 2.

LOOP RESISTANCE TEST
 (WHEATSTONE BRIDGE METHOD)



WITH EQUAL RESISTANCES IN RATIO ARMS

$$X = \frac{L-R}{2}$$

WHEN TWO LINES ARE OF SAME MATERIAL SIZE AND LENGTH

$$Z = \frac{R}{2}$$

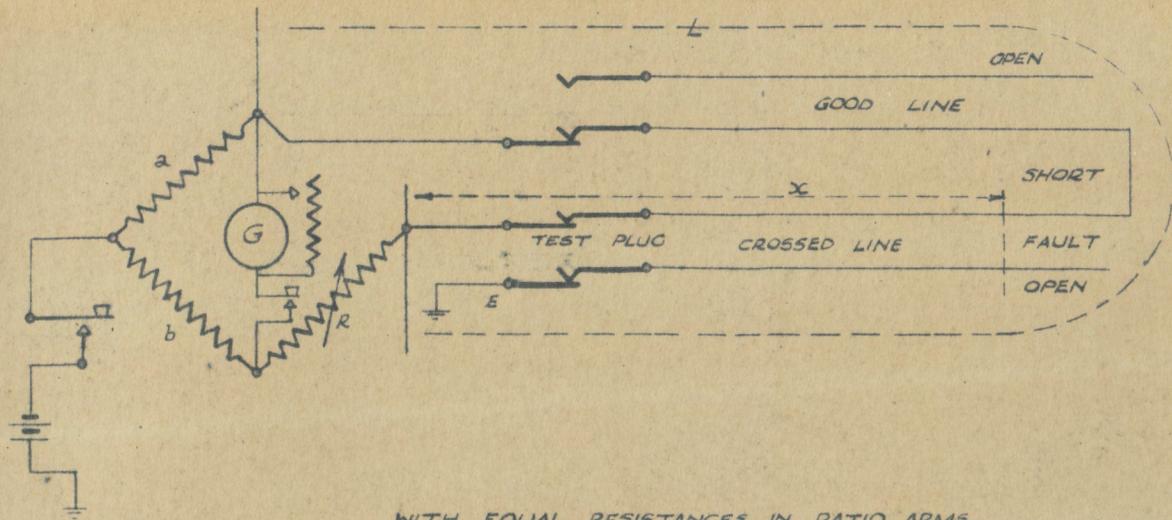
WITH UNEQUAL RESISTANCES IN RATIO ARMS

$$X = \frac{bL - aR}{a+b}$$

FIG. 3.

NOTE: RESISTANCE OF LOOP L MUST BE MEASURED BEFORE APPLYING LOOP TEST.

LOCATION OF EARTH FAULTS
(VARLEY LOOP METHOD)



WITH EQUAL RESISTANCES IN RATIO ARMS

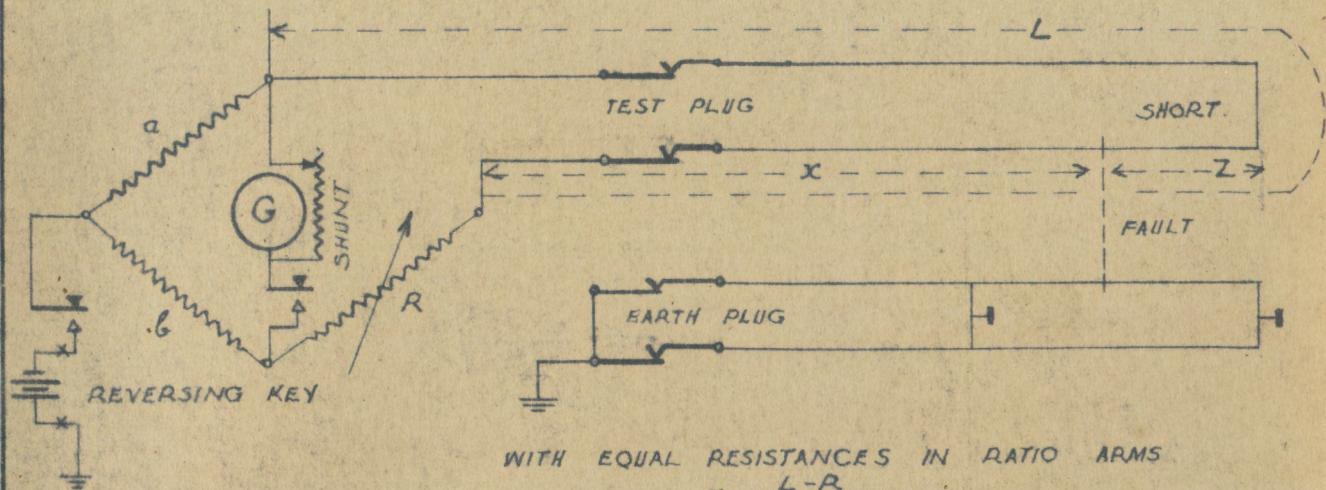
$$x = \frac{L - R}{2}$$

FIG. 4.

NOTE :

RESISTANCE OF LOOP L MUST BE MEASURED BEFORE APPLYING LOOP TEST.

SHORT
CIRCUIT
LOCATION OF .
VARLEY LOOP METHOD.
3 WIRES REQUIRED .



WITH EQUAL RESISTANCES IN RATIO ARMS

$$x = \frac{L-R}{2}$$

FIG. 5 WHEN THE TWO WIRES CONNECTED TO THE BRIDGE ARE OF THE SAME SIZE MATERIAL AND LENGTH

$$z = \frac{R}{2}$$

NOTE. RESISTANCE OF THE LOOP L MUST BE MEASURED BEFORE APPLYING THE LOOP TEST

LOCATION OF CONTACTS

(VARLEY LOOP METHOD)

(3 WIRES REQUIRED)

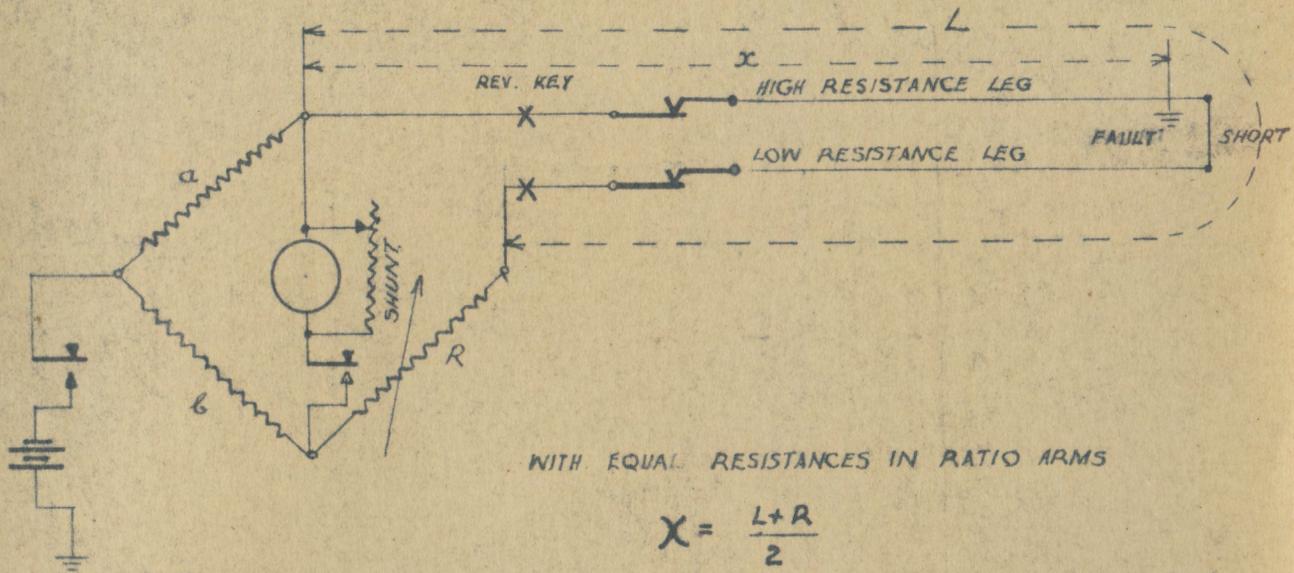


FIG. 6.

NOTE: RESISTANCE OF LOOP L MUST BE MEASURED BEFORE APPLYING LOOP TEST.

LOCATION OF AN EARTH
 WHERE THE TWO LEGS FORMING
 THE LOOP ARE OF UNEQUAL
 SIZE & MATERIAL
VARLEY LOOP METHOD

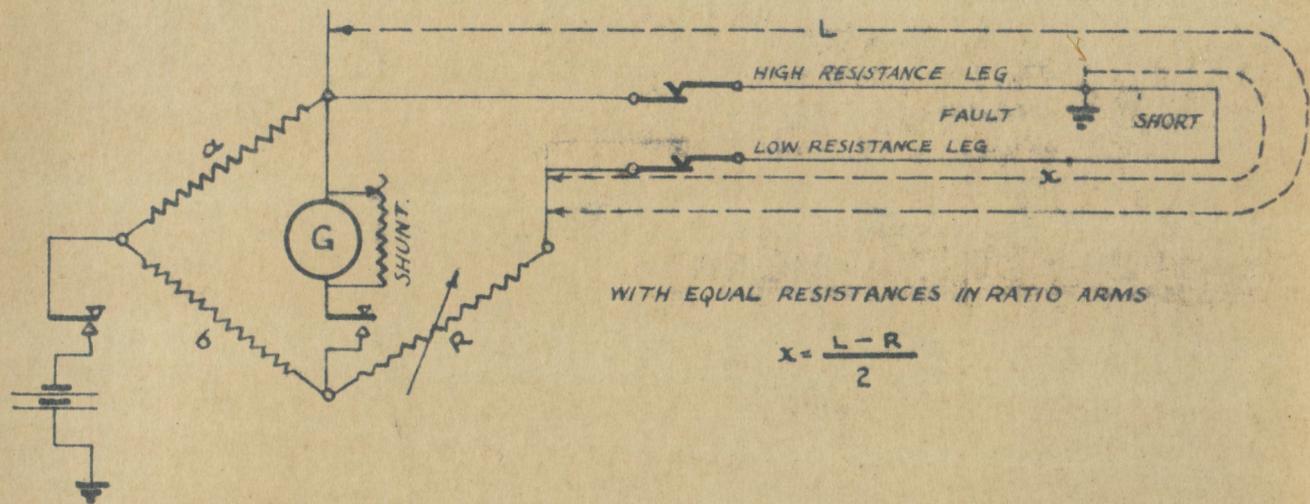
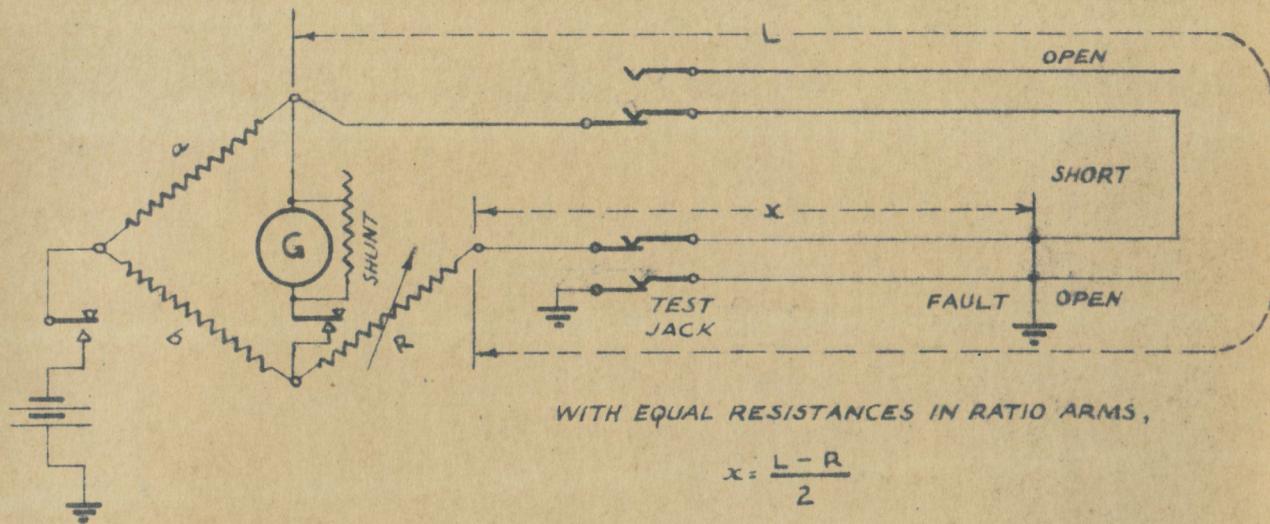


FIG 7.

NOTE. RESISTANCE OF THE LOOP L MUST BE MEASURED BEFORE APPLYING LOOP TEST.

LOCATION OF AN EARTH
(WHERE THE TWO LEGS FORM-
ING THE LOOP ARE OF UN-
-EQUAL SIZE & MATERIAL)
VARLEY LOOP
METHOD.



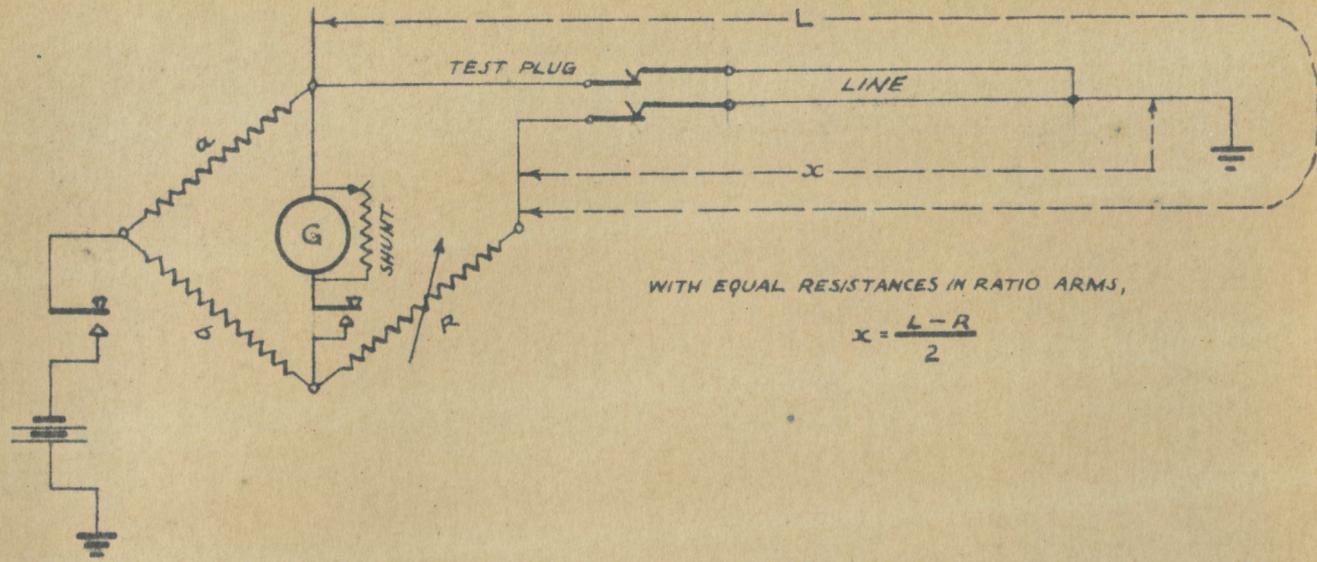
WITH EQUAL RESISTANCES IN RATIO ARMS,

$$x = \frac{L - R}{2}$$

FIG. 8.

NOTE. RESISTANCE OF THE LOOP L MUST BE MEASURED BEFORE APPLYING LOOP TEST.

LOCATION OF AN EARTH
ON BOTH LEGS OF A LINE
(THIRD WIRE AVAILABLE)
VARLEY LOOP
METHOD.



WITH EQUAL RESISTANCES IN RATIO ARMS,

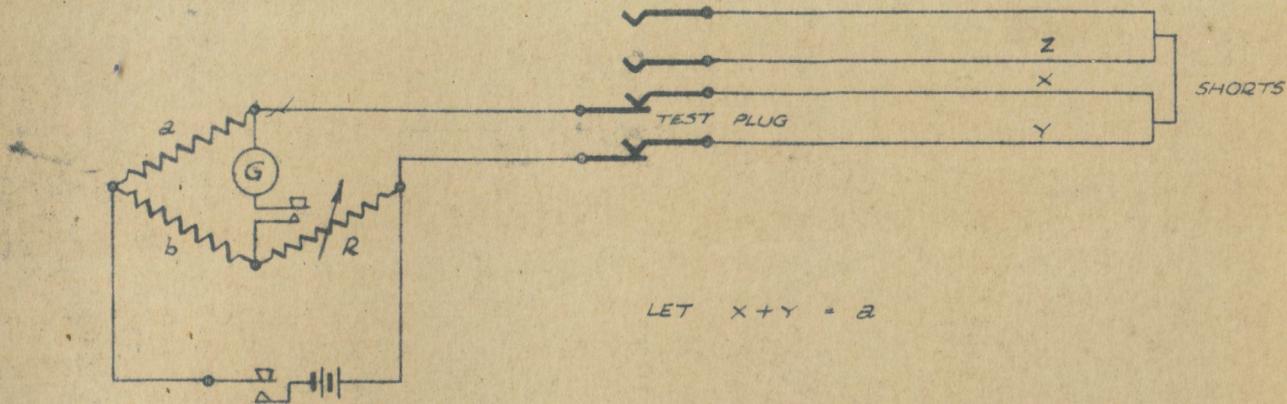
$$x = \frac{L - R}{2}$$

FIG 9

NOTE. RESISTANCE OF LOOP L MUST BE MEASURED BEFORE APPLYING LOOP TEST.

RESISTANCE OF EACH LEG OF METALLIC CIRCUIT. VARLEY LOOP METHOD. (NO THIRD WIRE AVAILABLE)

FIRST TEST.



$$\text{LET } X + Y = 2$$

FIG. 10

METALLIC
CIRCUIT
CONDUCTOR RESISTANCE
OF EACH LEG
3 WIRE METHOD

SECOND TEST

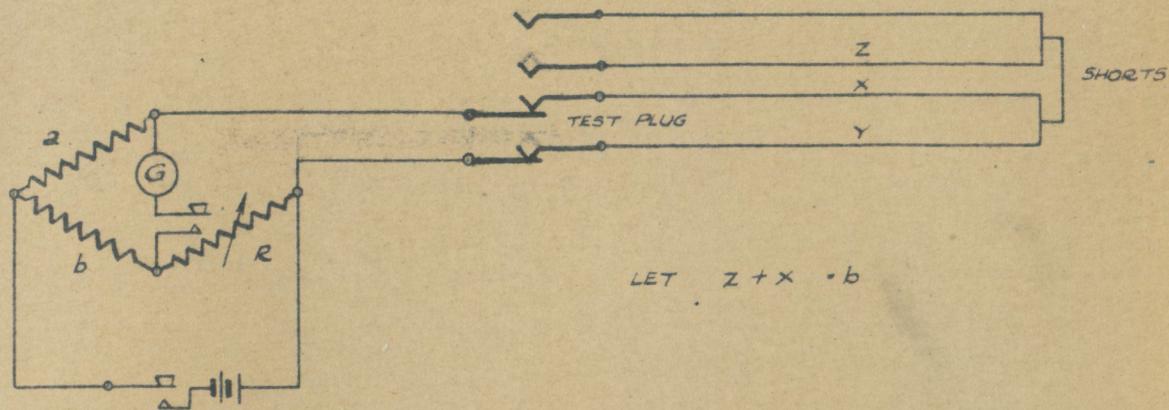
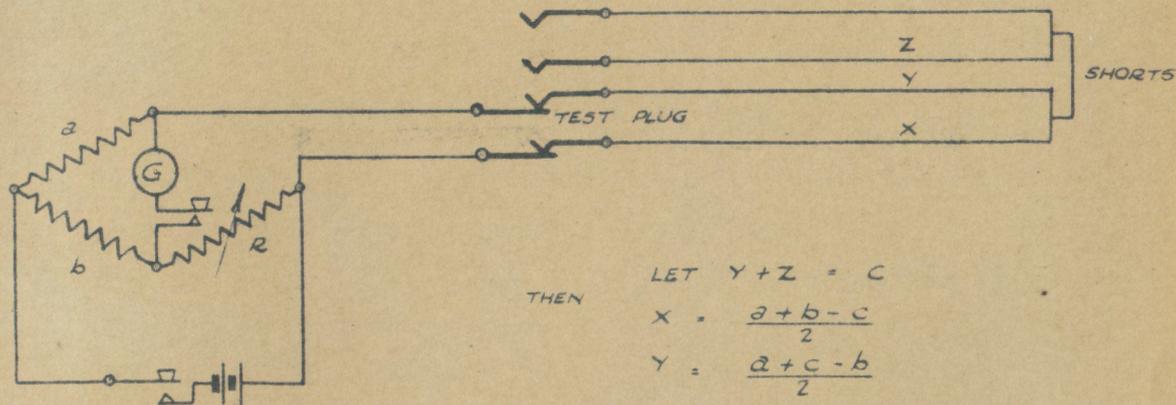


FIG. 10

METALLIC
CIRCUIT
CONDUCTOR RESISTANCE
OF EACH LEG
3 WIRE METHOD

THIRD TEST



THEN

LET $Y + Z = C$

$$X = \frac{a + b - c}{2}$$

$$Y = \frac{a + c - b}{2}$$

$$Z = \frac{b + c - a}{2}$$

FIG. 10

METALLIC
CIRCUIT
CONDUCTOR RESISTANCE
OF EACH LEG
3 WIRE METHOD

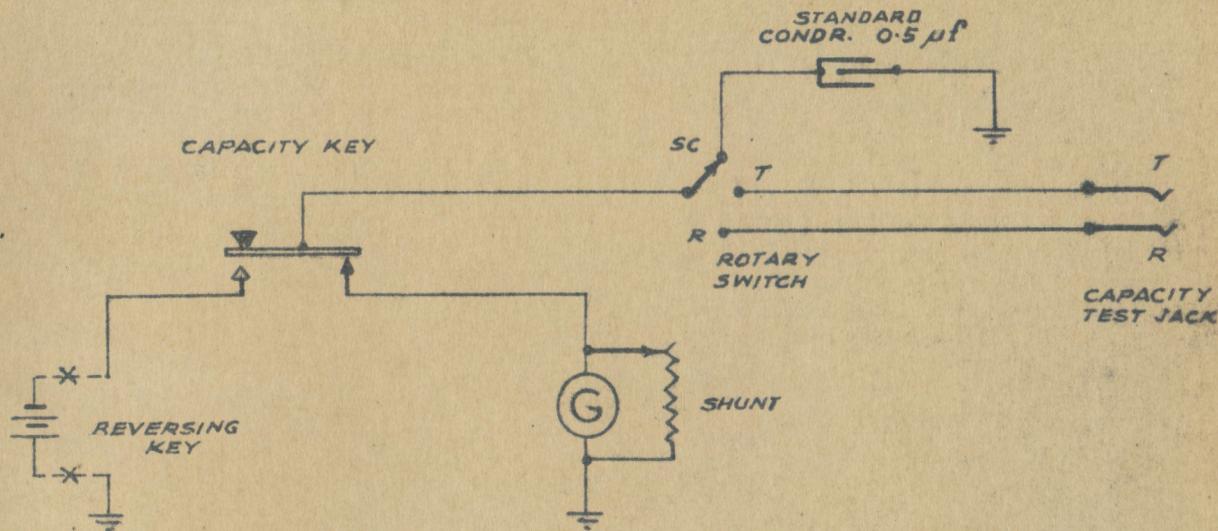


FIG. 11

CAPACITY TEST
LINE TO EARTH

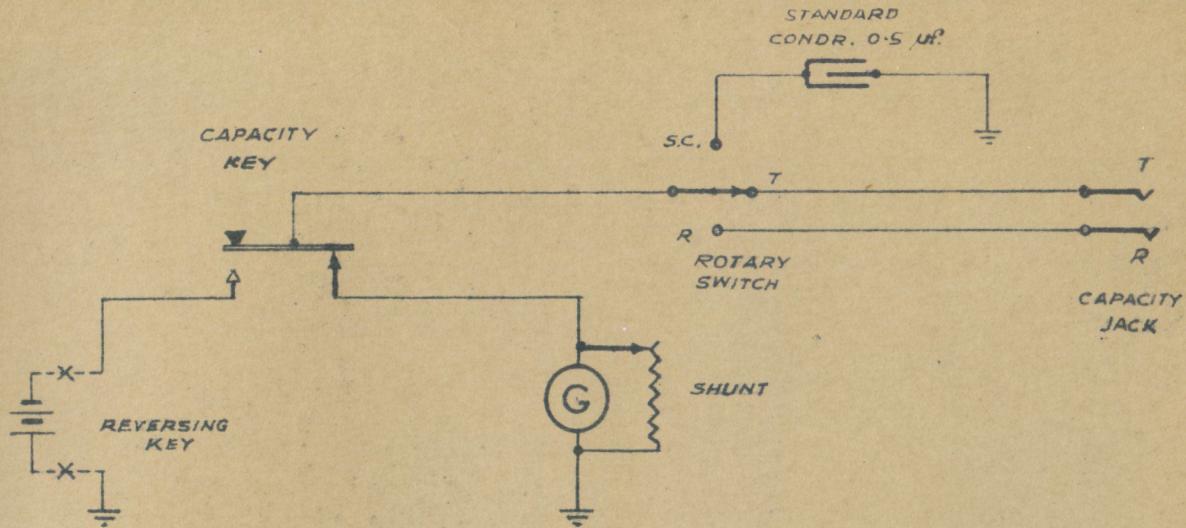


FIG. 12

CAPACITY TEST

WIRE TO WIRE

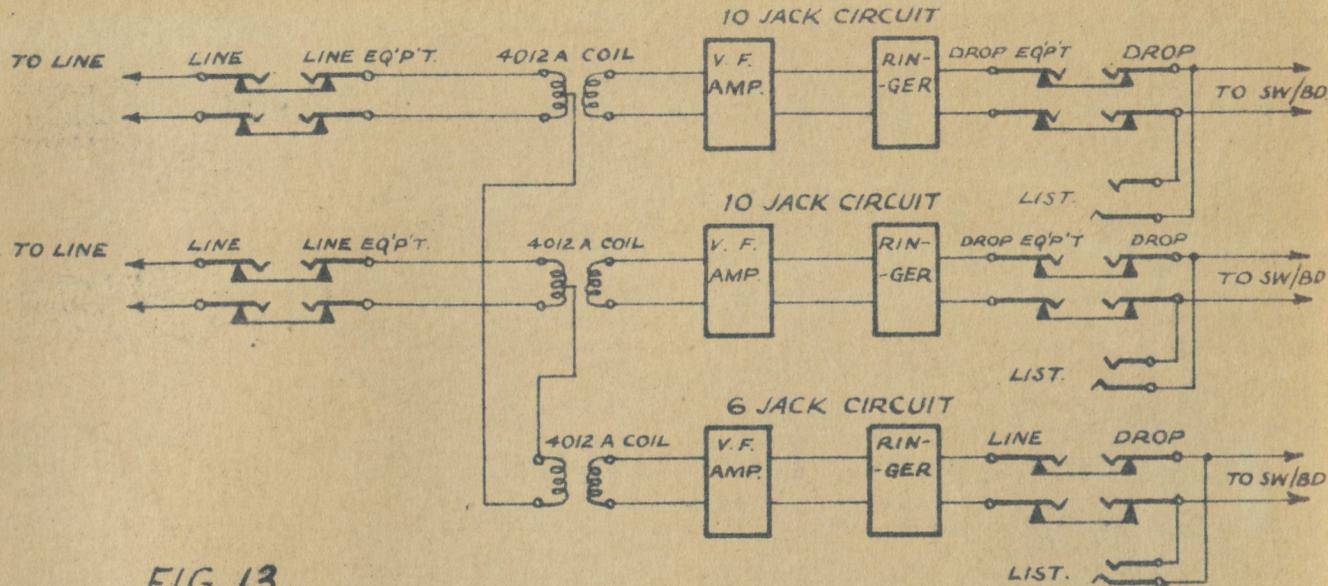
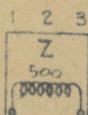
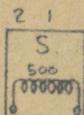
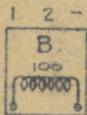
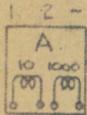
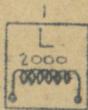


FIG 13

TRUNK TEST DESK
LINE CIRCUIT.

FRONT VIEW CONTACTS, REAR VIEW COILS.



FUSING: 12 AMP PER 5 CCTS. 24 V.
12 AMP PER 100 CCTS. RINGING
RINGING RESISTANCE LAMPS, 1 PER 20 CIRCUITS.

NOTE 1 COMPOSITE SETS WIRED FROM THESE POINTS
WHEN REQUIRED FOR TELEGRAPH OR DIALLING CCTS.
CARRIER FILTER SETS WIRED FROM THESE
POINTS WHEN REQUIRED.

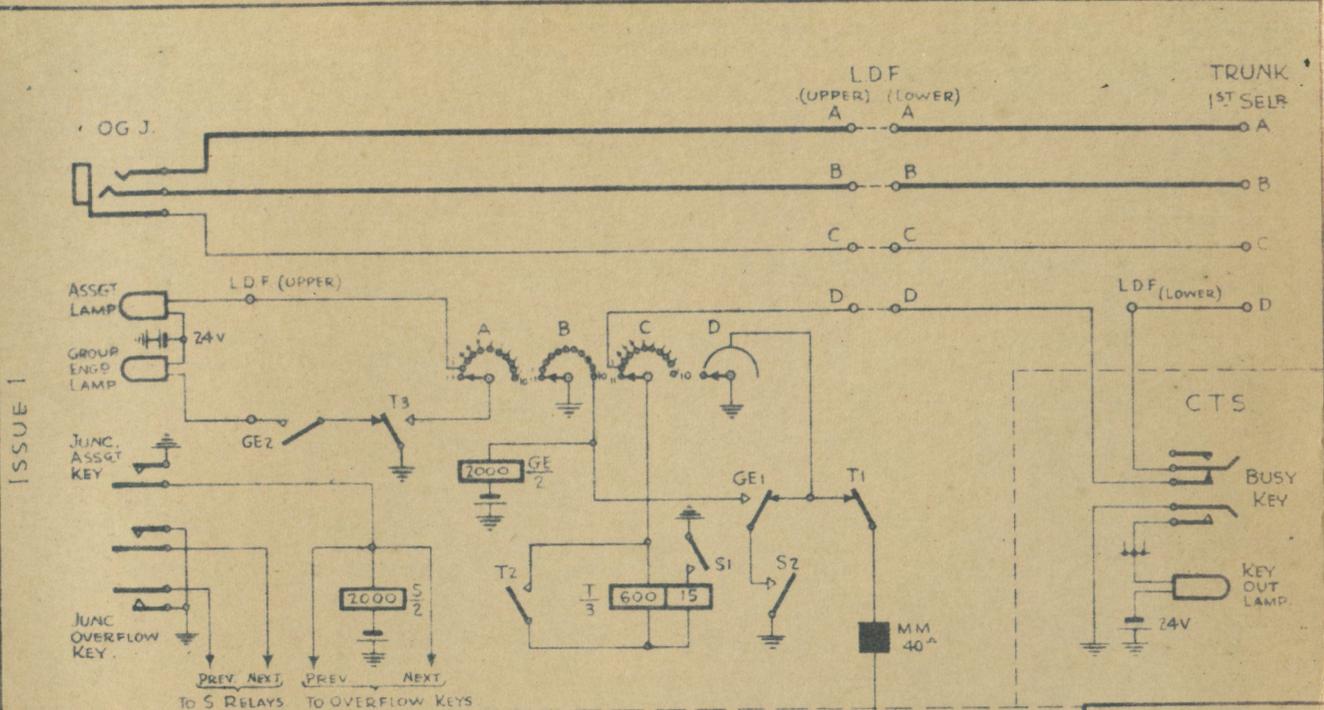
NOTE 2 CXX RINGING SETS, WIRED FROM THESE POINTS
WHEN REQUIRED.

RELAY B TO OPERATE WHEN RINGING KEY ON TRUNK
SWITCHBOARD IS THROWN.

TRUNK LINE
CIRCUIT.
Q.D. 1247-A
Q.N. 313.

2 SHEETS - SHT. 2

ISSUE I



ISSUE 1

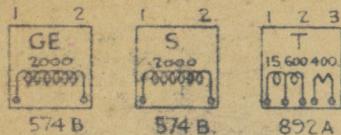
6

INT
60V

2 SHEETS-SHT 1

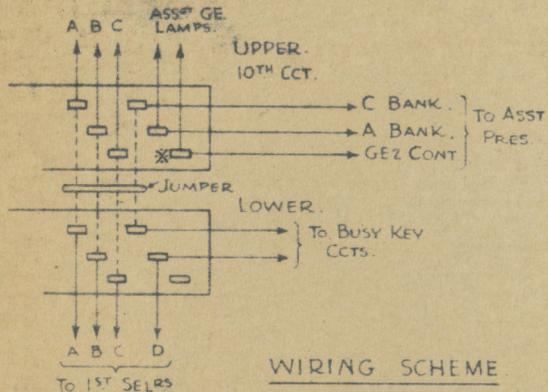
OG. JUNCTION
ASSIGNMENT Cct
QD.1255-A
QC.312

FRONT VIEW CONTACTS, REAR VIEW COILS



FUSING: 1/2 AMP. PER PANEL (10 CCTS.) 60V.
1/2 AMP. PER PANEL (10 CCTS.) DRIVE

× NOTE: THIS TERM SPARE ON CIRCUITS 1-9.
USED ON 10TH CIRCUIT FOR GROUP ENGAGED LAMP.

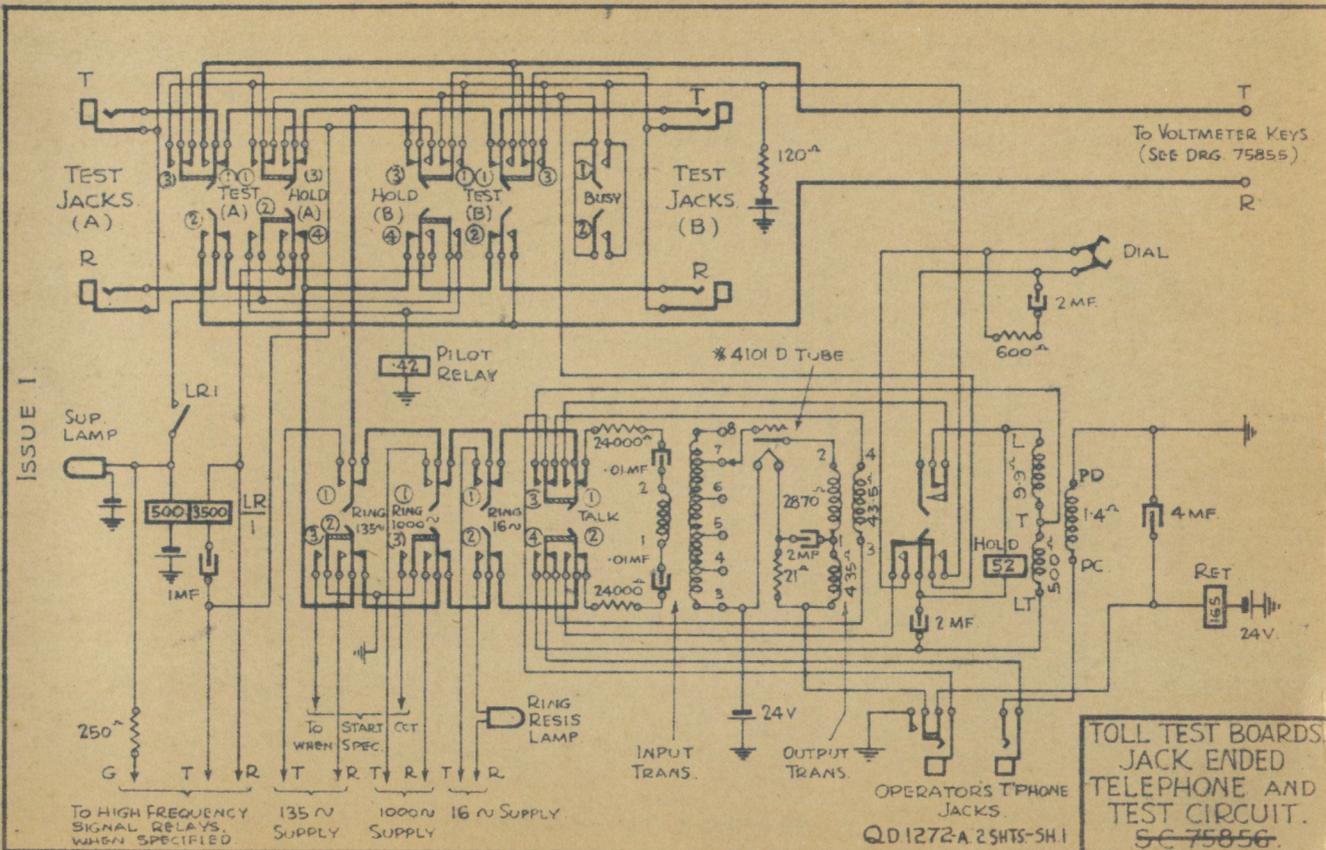


WIRING SCHEME
— L.D.F. —

OG JUNCTION.
ASSIGNMENT CCT
QD. 1255-A
ON 312.

2 SHEETS - SHEET 2

ISSUE 1



ISSUE I

TO HIGH FREQUENCY
SIGNAL RELAYS,
WHEN SPECIFIED

135 V SUPPLY
1000Ω 16 V SUPPLY

OPERATOR'S TPHONE
JACKS.
QD 1272-A 25HTS-SH.1

TOLL TEST BOARD
JACK ENDED
TELEPHONE AND
TEST CIRCUIT.
S-C 75856.

REAR VIEW KEY CONTACTS.

3
1 2
135 ~
VFSIG
1 2
3

3 4
1 2
TALK
16 ~
1 2

1 2
BUSY
DIAL
1 2
3

3
1 2
TEST B
HOLD B
1 2
3 4

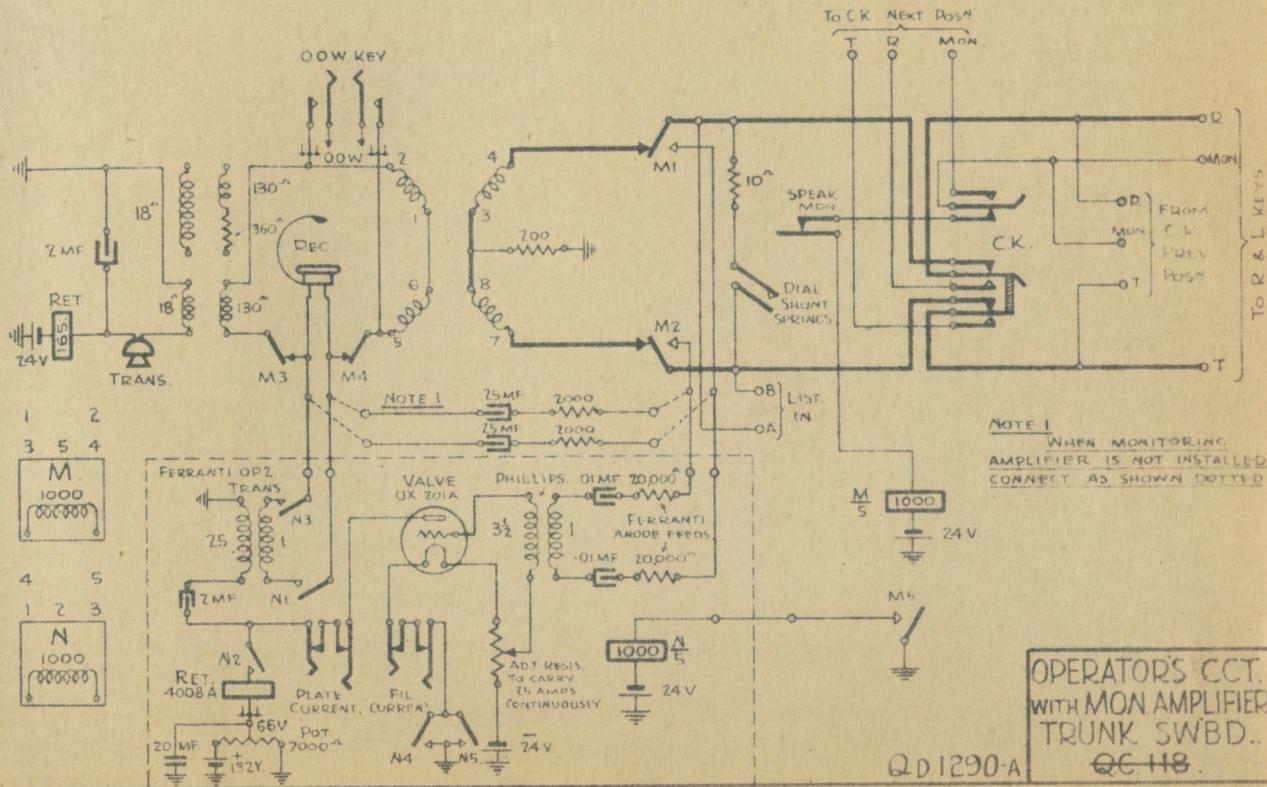
3
1 2
TEST A
HOLD A
1 2
3 4

ISSUE 1

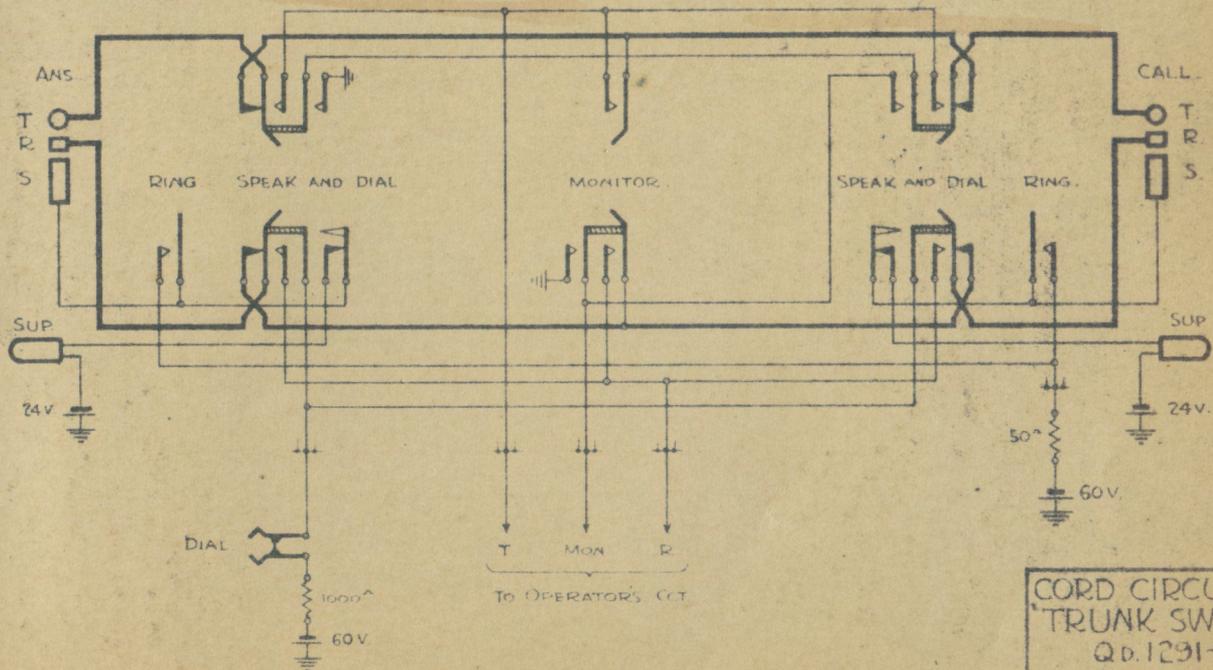
TOLL TEST BOARDS
JACK ENDED
TELEPHONE AND
TEST CIRCUIT.
SN. 75056.

QD 1272-A
2 SHEETS - SHEET 2

ISSUE I

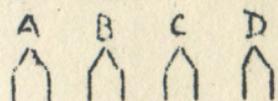
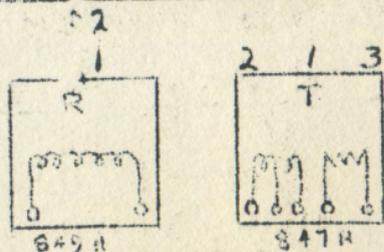


ISSUE I.

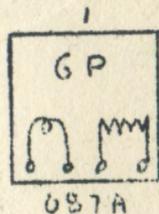


CORD CIRCUIT
TRUNK SWBD.
QD. 1291-A
QC. 303.

FRONT VIEW CONTACTS REAR VIEW COILS



FRONT VIEW WIPERS.



FUSING.

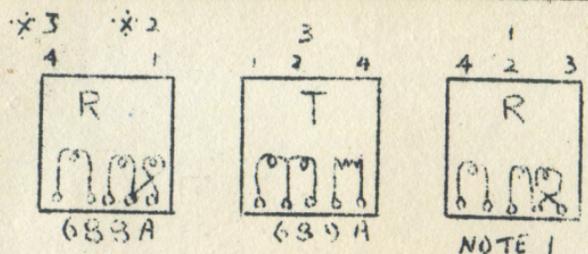
1 1/2 AMP PER 3 PANELS 60V
 " " " " " DRIVE
 3 " " " " " MISC PANEL 60V
 " " " " " INCL BATT JACK.

1 GP RELAY PER 1st 1/2 ROW
 20 1st 1/2 ROWS FORM A DIVISION

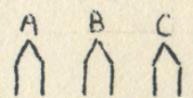
R. RELAY TRAVEL 1.1 mm

FIRST UNISELECTOR No 16 AUTO

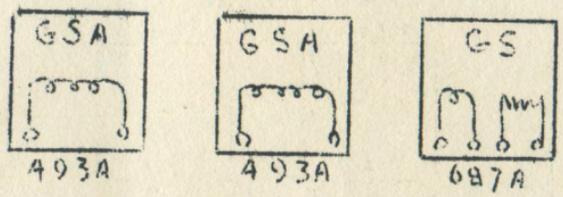
FRONT VIEW CONTACTS REAR VIEW COILS



NOTE 1



FRONT VIEW WIPERS



NOTE 1. ALTERNATIVE ARRANGEMENT OF R RELAY FOR STEP ON FEATURE AT SATELLITE EXCHANGES
 R2 MAKES BEFORE R1
 R3 TO BREAK " R2 MAKES.

FUSING. 1.5 AMP PER PANEL EXCL ENG LAMPS.
 " " " ENG LAMPS ONLY
 " " " DRIVE
 3.0 AMP " MISC PANEL INC BATT JK

TWO ADJACENT 2ND ¹/₂ RACKS FORM A DIVISION
 ADJACENT PANELS ON TWO RACKS OF A DIV.
 FORM A ROW OF 20 2ND ¹/₂ HAVING ACCESS TO
 A PANEL OF 10 1ST SEALS.

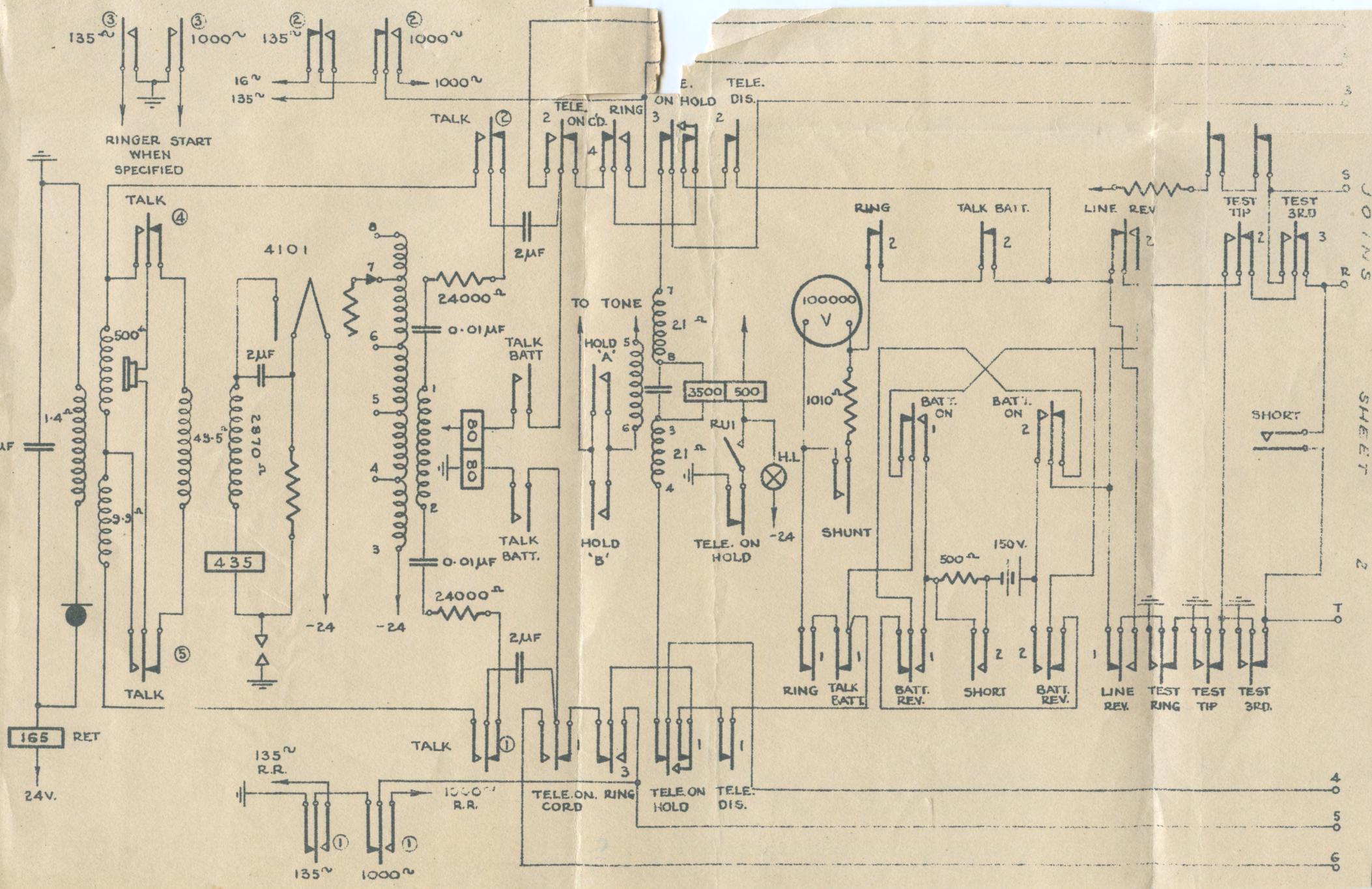
ONE GS RELAY IS PROVIDED PER ROW. 5 BEING
 MOUNTED IN THE MISC PANEL OF EACH RACK.

ONE SET OF 4 GSA RELAYS IS PROVIDED PER ROW
 2 BEING MOUNTED IN EACH PANEL.

GSA CONTACTS 1-10 ARE THE BREAK CONTACTS
 IN THE GROUP CONTROL CCR ASSOCIATED WITH
 2ND ¹/₂ 1-10 IN PANEL. GSA CONTACTS 11/12
 ARE PARALLELED AND DISCONNECT BATTERY
 FROM R. RELAYS IN PANEL

RELAY 'R' TRAVEL 1-1.1mm
 CONTACTS R1 & R4 MAKE SIMULTANEOUSLY
 * R3 TO BREAK BEFORE R2 MAKES.

SECOND UNISELECTOR No. 16 AUTO

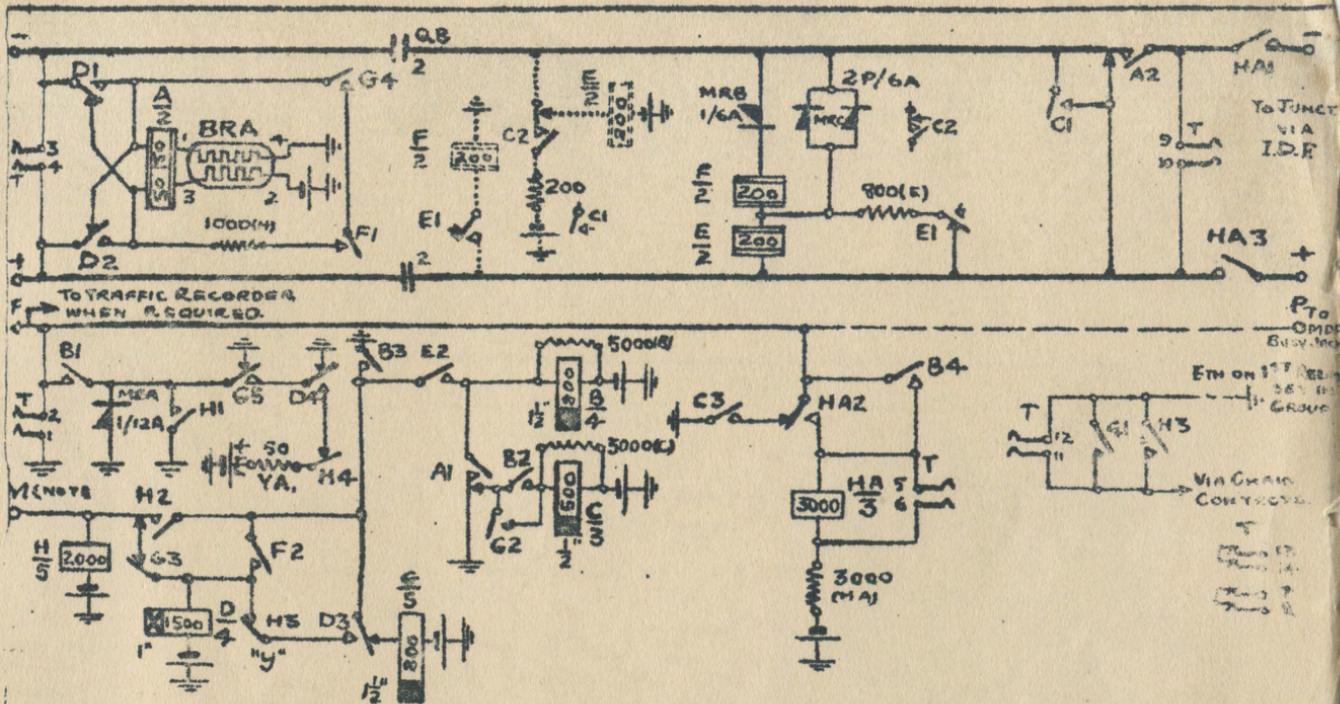


JOINS

SHEET

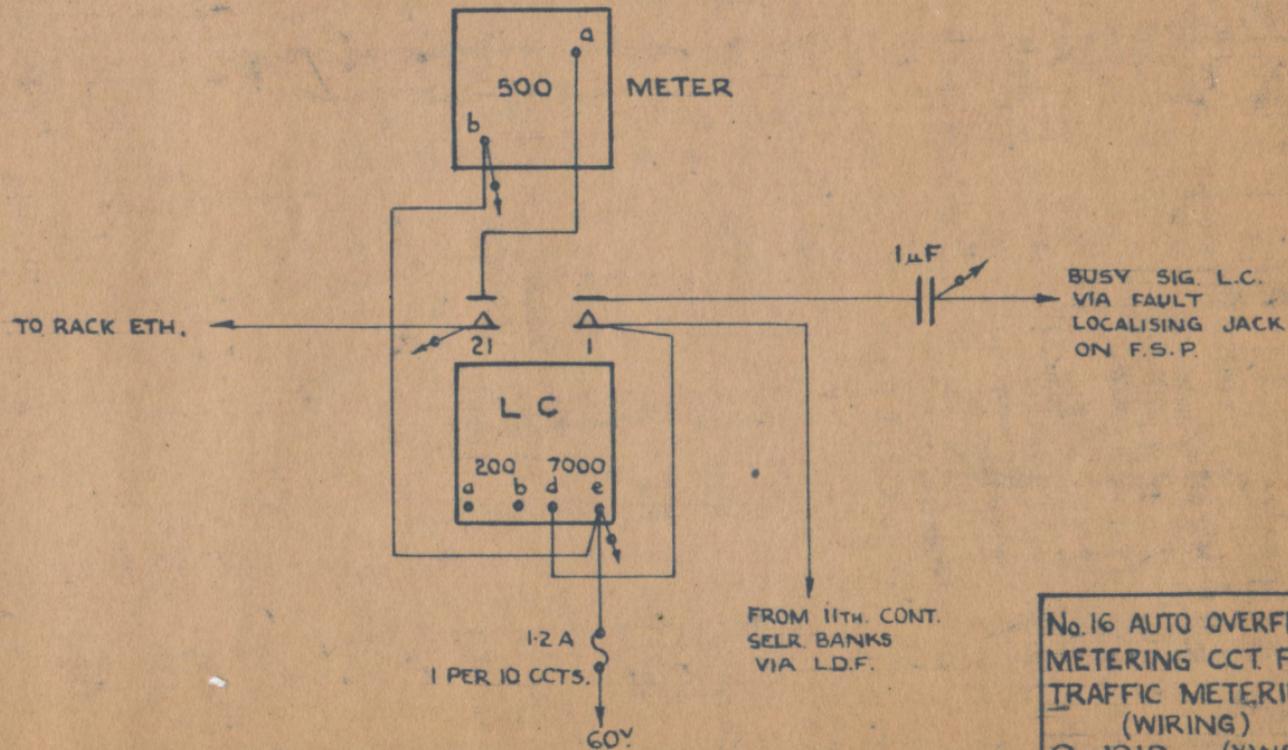
2

4
5
6

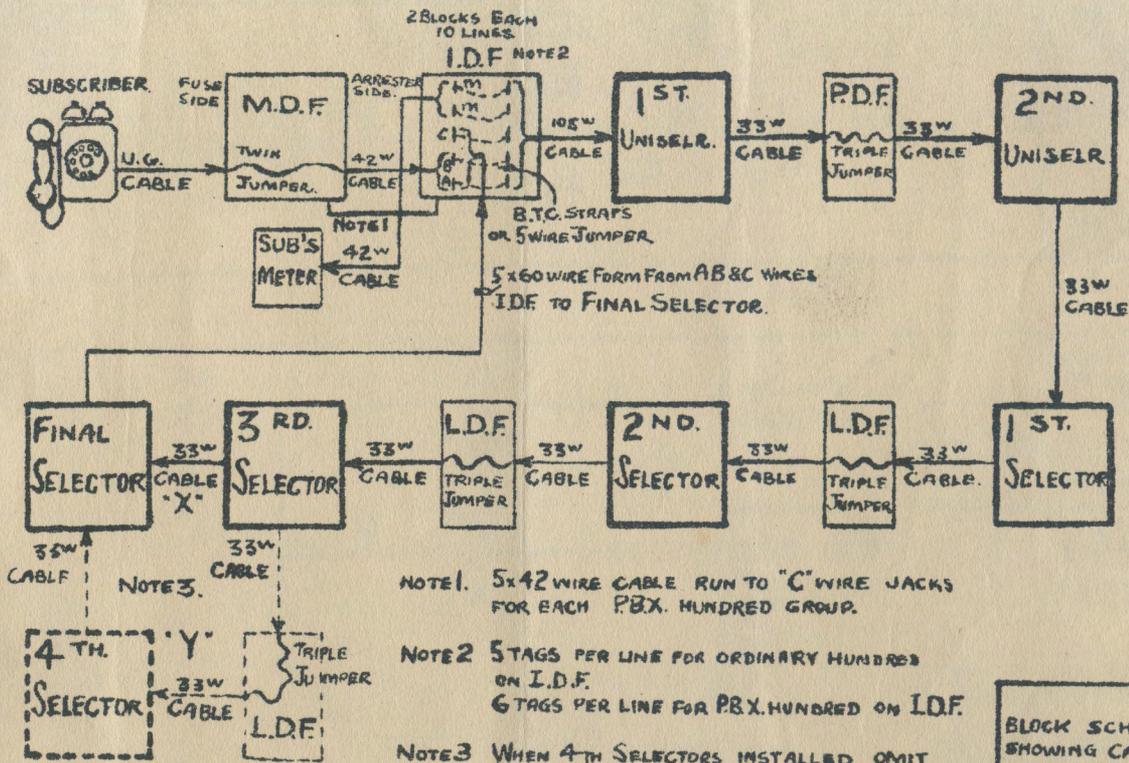


"M" LEAD IS REQUIRED ONLY ON FULL SATELLITE EXCHANGES WITH 4TH WIRE METERING.

REPR. AUTO-AUTO. O/G TO N916 TYPE EXCHANGE 2000 TYPE CE478-B (Dotted Line)	REPR. AUTO-AUTO. SPECIAL RELAY SET 2000 TYPE CE478-B (Full Line)
--	---



No. 16 AUTO OVERFLOW
METERING CCT FOR
TRAFFIC METERING
(WIRING)
QD.1319-A (XW967)



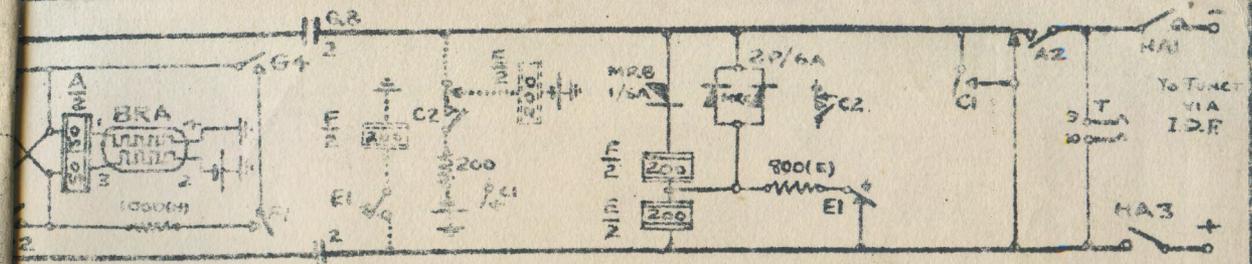
NOTE 1. 5x42 WIRE CABLE RUN TO "C" WIRE JACKS FOR EACH PBX. HUNDRED GROUP.

NOTE 2 5 TAGS PER LINE FOR ORDINARY HUNDREDS ON I.D.F.
6 TAGS PER LINE FOR PBX. HUNDRED ON I.D.F.

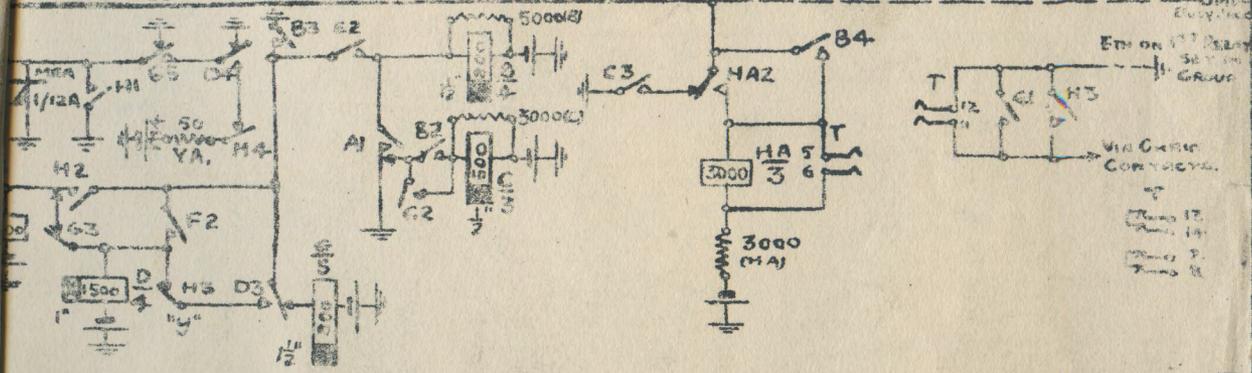
NOTE 3 WHEN 4TH SELECTORS INSTALLED OMIT "X" CABLE & INSERT "Y" CABLE. (DOTTED).

BLOCK SCHEMATIC SHOWING CABLING OF MAIN AUTO EXCHANGE SIEMENS N°16 SYSTEM.

10/96



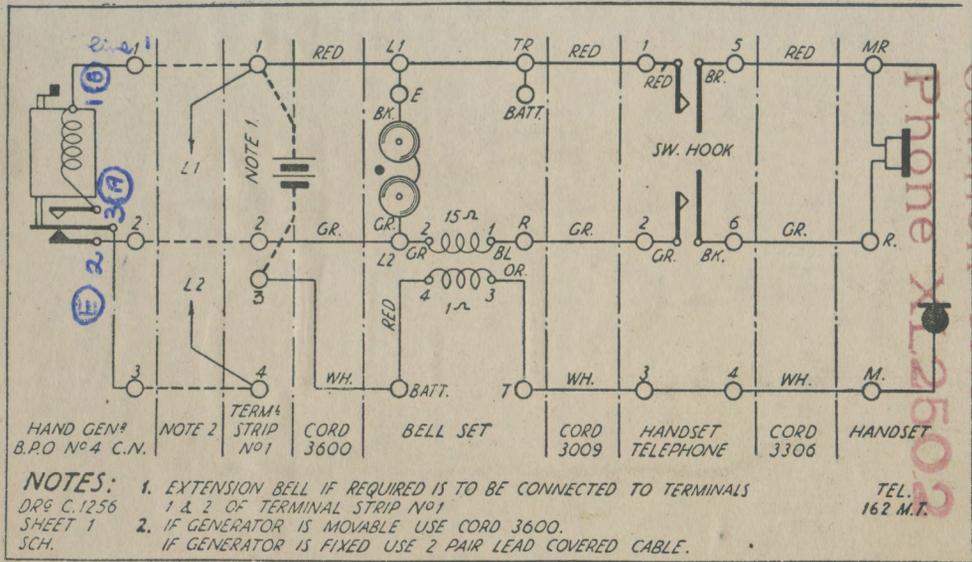
LEAD IS REQUIRED ON FULL SATELLITE
CHANGES WITH 4TH W/WT METERING.



LEAD IS REQUIRED ONLY ON FULL SATELLITE
CHANGES WITH 4TH W/WT METERING.

REPTR. AUTO-AUTO O/G TO NR16 TYPE EXCHANGE 2000TYPE CE478-B (DOTTED LINE)	REPT'S AUTO-AUTO. SPECIAL RELAY SET 2000TYPE CE478-B (SOLID LINE)
---	---

10/96.



Cannon Hill
 G. V. Fleming
 35 Stanton St.