# SECTION A
# MISCELLANEOUS

## SUB-SECTION AA INTRODUCTION



## SUB-SECTION AB DRAWING SYSTEM



## SUB-SECTION AC NOMENCLATURE



## SUB-SECTION AD STORES



## SUB-SECTION AE TECHNICAL INSTRUCTION

AA2
31.3.39

# NOTES ON W/T SETS

## CONTENTS

The pages of this book are to be mustered from this contents sheet whenever the book itself is mustered. Only pages which have replaced existing pages bear a date, and this date should be verified from page AA6. Whenever new pages are issued this contents list will be reprinted.
(NOTE. All items are in alphabetical and numerical order, making the book "Self Indexing".)

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| Remainder Reserve Stock. | |
| TOTAL | 1000 |

# INTRODUCTION.

NOTE:- **This Book should be available on loan to any telegraphist rating applying for it.**

Early in 1930 it was decided to standardise the instruction in Theoretical and Technical W/T. To achieve this it was realized that two closely related text books would be required, which would be available not only in all Signal Schools but in all ships and Establishments in which telegraphist ratings were borne. The technical text book has been called "Notes on W/T Sets", to indicate that the information it contains is not intended to be as detailed or authoritative as that given in the various "Books of Instruction" which are now issued with each W/T set or model, etc.

All theoretical explanations have been omitted from this book but in each case where such an explanation has been considered necessary it has been given in the 1931 edition of the "Admiralty Handbook of W/T" while a reference to the appropriate paragraph has been inserted in "Notes on W/T Sets". The two books have been prepared side by side and anyone not well versed in W/T Theory is recommended to have the "Admiralty Handbook of W/T" by him, for ease of reference, when reading "Notes on W/T Sets".

A third publication is being produced entitled "Aids to Self-Instruction in W/T", which contains questions on the W/T Theory contained in the Admiralty Handbook of W/T (including mathematics) and on the W/T Technical Information given in "Notes on W/T Sets." For convenience this will be bound inside this cover.

After reading a section of "Notes on W/T Sets" or a chapter of the "Admiralty Handbook of W/T" the reader is advised to turn to the appropriate page in "Aids to Self-Instruction" and attempt to answer every question asked on that particular subject. He should not pass on to a new subject until he can do so. By this system any intelligent person can teach himself almost as well as if attending a lecture.

It was decided, when the production of this book was started, to re-write as many of the existing "Handbooks" of W/T Sets as possible under the title of "Books of Instructions", to give them a pattern number and to make them part of the equipment of each set.

The wording in "Notes on W/T Sets" has been used, as far as possible, for the explanatory portions of the new "Books of Instruction". In addition, however, the latter now also contain complete test sheets showing how faults can be located by ship's staff. They also frequently contain wiring diagrams, which do not appear herein, and larger scale reproductions of the complete circuit diagrams given in this book.

"Notes on W/T Sets" has been classified as a Book of Reference (B.R. 222) and not as a C.B. or even O.U. Book to ensure that all telegraphist ratings in a ship can have easy access to it, since it need not be kept under lock and key. To enable this to be done it has been necessary to avoid any reference to confidential matter herein. The Admiralty policy is that the technical details of the vast majority of W/T sets are not confidential but that in certain cases their use is confidential. In such cases no reference has been made to their use in this book, while sets that are completely confidential are omitted altogether,.

"Notes on W/T Sets" has been bound in loose leaf form so that the book may easily be kept up-to-date. The policy will be to distribute the pages concerning new sets at the same time as the first standardised sets are sent to sea. Except in exceptional circumstances sets in the experimental stage will not be dealt with in this book, but a special set of notes on its use will accompany each set to sea. When a set is altered the pages affected will be brought up-to date and issued to replace the obsolete pages. Pages which replace existing ones will bear the date of issue, to avoid confusion with the superseded pages. No other pages will be dated. Corrections to be inserted by holders of "Notes on W/T Sets" will be issued only where such corrections are very small and easily inserted. A space for registering the entry of such corrections is given on page AA6.

The book is practically "Self-Indexing". That is to say all sets and models, etc., will be found in alphabetical and numerical order according to their names. A detailed list of contents of each section is given on the first page of the section.

IDENTITY NUMBERS.

Each piece of apparatus has been allotted an "Identity Number" for ease of reference. The numbers to not follow in any special sequence and the series may not always be complete, nor is each number necessarily referred to in the text. The numbers correspond with those actually fixed to the instructional sets in the Signal School and to the wall drawings in use for instructional purposes.

## FREQUENCY BANDS.

The following names have been agreed upon by international convention for the frequency bands specified -

| | | |
|---|---|---|
| Below 100 kc/s. ... ... | Low Frequencies ... ... ... | L/F |
| 100 - 1500 kc/s. ... ... | Medium Frequencies .. ... ... | M/F |
| 1500 - 3000 kc/s. ... ... | Intermediate Frequencies .. ... | I/F |
| 3000 - 30000 kc/s. ... ... | High Frequencies ... ... ... | H/F |
| Above 30000 kc/s. ... ... | Very High Frequencies ... ... | V H/F |

The terms "L/F", "I/F", and "H/F" which were previously also used in considering the theoretical working of a W/T set were found to cause confusion with the meanings allocated above. For example, if Amplifier M11 is receiving Rugby Press on 16 kc/s. this would now be defined as "L/F" and yet it is passed through what were known as "H/F" stages before reaching the note-magnifier. Then again the so-called "I/F" stages in Amplifier M5 are actually tuned to a frequency which falls under the "L/F" category quoted above.

To avoid this confusion the following terms have been brought into use in this book and in the 1931 edition of the "Admiralty Handbook of W/T" when discussing the action of W/T sets:-

Radio Frequency ... R/F ... Frequency of incoming or outgoing signals.
Supersonic Frequency. S/F ... Frequency after first detection in super-heterodynes and Quench Frequency.
Audio Frequency ... A/F ... Frequency of I.C.W. interruptions or audible note.

In general when referring to the class of W/T sets or waves, where the terms L/W and S/W were used while waves were still principally referred to by wavelength, the terms L/F and H/F may now be employed. In this general sense L/F may be taken as embracing L/F and most of I/F, while H/F may be considered to include a small part of I/F as well as H/F. V.H/F should be referred to separately.

Where two H/F attachments are fitted to one set (as in Type 47) the one dealing with the lower frequencies should be referred to as the H/F attachment and the other as the H.H/F attachment (Higher High Frequency).

## RESPONSIBILITY FOR W/T APPARATUS.

The responsibility for the electrical and W/T apparatus of a man-of-war is laid down in The King's Regulations and Admiralty Instructions. The relevant portions are quoted below:-

K.R. & A.I. ARTICLE 1248.

(1) Control of Signalling.

The control of all signalling (which is to be understood as including any official communication sent in the form of a "message", irrespective of the method of transmission employed), with the exception of messages which go by L/T over the whole of their route, is to be vested in a Commissioned Executive Officer.

Note:- The responsibility of the Officer of the Watch as regards V/S and W/T signalling is laid down in Article 1152, clauses 7 and 19.

(5) Maintenance of W/T Installations.

Where the officer referred to in clause 1 is qualified in (S) duties, he is to have charge of and be directly responsible for the efficiency and upkeep of the W/T apparatus of the ship from the D.C. terminals (input side) of all generators, motor-alternators, and rotary converters onwards, and for all internal buzzer lines used by the signal department.

(6) Should a Commissioned (or Warrant) Telegraphist be borne in ships where the officer referred to in clause 1 is not qualified in (S) duties, the former is to carry out the duties laid down in clause 5.

(7) Where the officer referred to in clause 1 is not qualified in (S) duties, and no Commissioned (or Warrant) Telegraphist is borne, the senior telegraphist rating on board is to be responsible to this officer for the performance of the duties laid down in clause 5.

(8) The officer in charge of the W/T apparatus of the ship should always have the power to apply direct to the Torpedo Officer for any assistance required in making good defects.

K.R. & A.I. ARTICLE 1244

TORPEDO OFFICER - DUTIES.

(1) Electrical Duties.

He is to be considered the electrical expert of the ship. Under the Captain, he is to have charge of and be responsible for all electrical machinery in the ship not in the care of the Engineer, Gunnery, Navigating, W/T or A/S Officer. He is to have charge of all lighting and power circuits wherever situated, his responsibility ending at the motor terminals when the motors are in charge of other officers. He is further to have charge of all communication circuits, and is to repair all electrical defects in instruments.

(4) If any machine or instrument in the charge of the Engineer, Gunnery or other officer fails electrically, the Torpedo Officer, upon being requisitioned, is to repair it; and if any of the electrical machinery outside the engine-room develops a mechanical fault, which the electrical staff is unable to repair, the Engineer Officer is to be requisitioned, and is to direct and carry out the necessary work.

(5) If any electrically-driven machine under the charge of another officer develops a fault, such as an earth leak, which impairs the electrical efficiency of the ship, the Torpedo Officer, after representing the fact to the officer in charge of the machinery in question, is to make good the defect.

AA6.

# CORRECTIONS.

Whenever a correction, issued in A.F.O's, has been inserted herein in manuscript, the number of the A.F.O., date of insertion and initials of person carrying out correction are to be inserted in the appropriate column below. The same columns are also to be used for recording the replacement of obsolete pages, the page number, date of the page, and initials of person inserting the new and destroying the old page.

| A.F.O. No. or Replaced Page No. | Date of Correction or Replaced Page. | Initials of Person Responsible. | A.F.O. No. or Replaced Page No. | Date of Correction or Replaced Page. | Initials of Person Responsible. |
|---|---|---|---|---|---|
| Correction No1 | 20-4-'32 | L. Tel | | | |
| " No2 | 8-8-32 | P.O.Tel | | | |
| Correction No-3 | 18/4/33 | L. Sig. | | | |
| Correction No:4 | 10-8-33 | [illegible] | | | |
| Correction No 5 | 16-3-34 | L. Tel | | | |
| " No 7 | 6.3.36. | L Tel | | | |
| Correction No6 | 20.8.36 | [illegible] | | | |
| Correction No8 | 10.7.36 | L. Tel. | | | |
| " No 9 | 1-2-38. | W. Tel | | | |
| ~~" No10~~ | ~~6-10-39~~ | ~~[illegible]~~ | | | |
| " No 10 | 30-11-39 | [illegible] | | | |

AA4.

THE FOLLOWING CORRECTIONS ARE TO BE MADE TO THE PAGES INDICATED OF BR222, NOTES ON W/T SETS, AND A NOTATION THAT CORRECTION NUMBER 1 HAS BEEN INSERTED, MADE ON PAGE AA6.

## CORRECTION NO. 1

| | | |
|---|---|---|
| Page B37. | Top line. | For "hand operated" read "hand operating". |
| | Third line of diagrams. | For "multiple change-over switch" read "multiple switches". |
| Page AC2. | Line 19. | For "e.g. Model-Outfit SGX" read "e.g. D/F Outfit SGX". |
| Page BA2. | Line 22. | For (3C) read (37). |
| Page BA3. | Line 3. | For "Model-Outfits" read "Receiver outfits". |
| Page BA4. | Line 3. | " " " " " " |
| Page BA7. | Lines 31, 32, 33. | Delete from "really a" to "it can be" inclusive. Sentence will now read "The variable 0.3 jar condenser(24) is used for controlling"etc. |
| Page BA9. | Line 3. | For "Model-Outfits" read "Receiver outfits". |
| Page BA10. | Fig. b. | Delete the valve equivalent condenser (30) as it is disconnected in "Stand-By" position. |
| Page BA11. | Line 3. | For "Model-Outfits" read "Receiver Outfits". |
| Page BB7. | Line 30. | For "figures b. and d." read "figure d." |
| | Line 38. | " " " c. and e " " " " e." |
| Page C5. | Line 2. | Frequency range should read "3,500 - 20,000 kc/s." |
| | Line 4. | For "NR16A" read "NR15A". |
| Page C9. | Line 2. | Frequency range should read "3,000 - 25,000 kc/s." |
| | Line 4. | For "NR16A" read "NR15A". |
| | Line 23. | For "0.09 jar" read "0.2 jar". |
| Page C16. | Fig. b. | For "(21)" read "(18)" and for "(18)" read "(21)". |
| Page C17. | Fig. c. | For "(21)" read "(18) & (22)" and for "(17)" read "(17) & (21)". |
| Page EA1. | Lines 7 & 8. | After "T25X" add "Page EB2". After "T26X" add "Page EB4". |
| Page CA1. | Line 16. | For "Section R" read "Section Q". |
| | Line 17. | For "Section Z" read "Section Y". |
| | Line 22. | Delete all reference to Oscillator G32. |
| Page GA11. | Delete last paragraph. | |
| Page GC1. | Line 3. | Delete all reference to Oscillator G32. |
| Page GD3. | Line 19. | For "G14X" read "G51". |
| Page GE3. | Line 5. | Delete "Variable". |
| Page H13. | Line 5. | For "NR16A" read "NR15A". |
| Page H17. | Line 4. | " " " " |
| Page K5. | Fig. e. | Delete (196). |
| Page MA3. | Line 12. | For "reducing resistance" read "economy resistance". |
| Page NB3. | Line 5. | For "2K and 2L" read "2L and 2K". |
| Page CA5. | Last half of line 37. | For "magnetic key (7) for the Type 14 set" read "magnetic key (31) for the Type 14 set". |
| Page R7. | Line 51. | For "10 c.p. lamp" read "32 c.p. 100 v. carbon filament lamp". |
| Page R33. | Table at top of page. | Under Aerial Excitation for "mutual" read "direct". |
| Page R35. | Line 1. | For "A/F" read "H/F" |
| Page R39. | Fig. q. | Dotted lead to heel of key (178) should be connected to centre of key (178) instead of heel. |
| Page R53. | Table at top of page. | Under "Direct" insert "Inductive" and under "Mutual" insert "Inductive". |
| Page R75. | Fig. k. | Condenser (80) should be shown as in figure e. page R70. |

AA8

31/7/32.

INSERT NEW PAGE AA1/AA2 DATED 31/7/32 WHICH REPLACES OLD PAGE AA1/AA2.
INSERT NEW PAGE MA1/MA2 DATED 31/7/32 WHICH REPLACES OLD PAGE MA1/MA2.

THE FOLLOWING CORRECTIONS ARE TO BE MADE TO THE PAGES INDICATED OF B.R.222, NOTES ON W/T SETS, AND A NOTATION THAT CORRECTION NO. 2 HAS BEEN INSERTED, MADE ON PAGE AA6. CARE SHOULD BE TAKEN, WHEN CORRECTING DIAGRAMS, TO USE THE APPROPRIATE COLOURED INK.

## CORRECTION NO. 2.

| | | |
|---|---|---|
| Page AD2. | Line 34. | For "articles" read "article". |
| Page BA8. | Fig. a. | Inductance (19) should be named "Aerial Tuning Inductance" and NOT "Secondary Tuning Inductance." |
| Page D8. | Line 5. | For "amplier" read "amplifier". |
| Page D8. | Line 3, Col. 2. | For "N9" read "M9". |
| Page F2. | Line 7 of F21. | For "angel-dividing" read "angle-dividing". |
| Page F4. | Line 18. | For "sam (17)" read "cam (17)". |
| Page GF2. | Fig. a. | Valve should be numbered "96" not "28". |
| Page H15. | Table of ranges; under "Grid Inductance", for "178,000" read "17,800". | |
| Page LA19. | In footnote. For "should measured" read "should be measured". | |
| Page NC2. | Figs. b & e. | Insert a vertical dotted line through coils (2) and (3), and join to contact arm on coil (2). |
| Page ND2. | Line 18. | For "40,000 ohm" read "high resistance". |
| Page OA1. | Line 8. | Should read "Sub-Section OB Transmitters 6". |
| Page P8. | Fig. e. | The two centre tappings on the spacing wave coil (73) should be connected to the coil as in Fig. i on page P11. |
| Page R32. | Fig. i. | Upper anode blocking condenser should be numbered (231), not (221). |
| Page R46. | Frequency range of transmitter 3K L/F should read "100 - 370 kc/s and 800 - 1365 kc/s." | |
| Page R63. | Fig. f. | Send-receive switch 138; aerial side of link should be connected to fixed end of send-receive switch, as in Fig. d. on page R61. |
| Page R66. | Fig. i. | Series motor fields should be inserted in filament machines (179) (180), as in Fig. c. on page R60. |
| Page R68. | Fig. b. | The lower of the two voltmeter fuses numbered (38) should be numbered (39). |
| Page R71. | Line 27. | For "H/F" read "R/F". |
| Page R72. | Line 13. | For "100,000" read "5,000". |
| Page R75. | Fig. k. | Sliders of rheostats (33) and (34) should be joined by a dotted line. " " " (108) " (109) " " " " " " |
| Page R76. | Line 24. | For "Fuse (78)" read "Fuse (45)". |
| | Fig. a. | Fuse numbered (78) should be numbered (45). |
| Page R77. | Beneath photograph, insert "Fig. c." | |
| Page R81. | Fig. c. | Fuses in supply to Auto Starter of Type 71's H.T. machine (145) should be numbered (156) instead of (154). |
| Page R86. | Fig. l. | Insert a knob on key (76) as this is a signalling key and not a switch. |
| Page S6. | End of line 24. | For "positive" read "negative". |
| Page S10. | Fig. j. | Delete the numbers (160) and (161). The numbers for these switches are (162) and (163). |
| Page S12. | Fig. m. | The grid leak for valve (1) should be numbered (24) and not (34). |

INSERT NEW PAGE AA1/AA2 DATED 31/1/38 WHICH REPLACES OLD PAGE AA1/AA2.
INSERT NEW PAGE AB9 DATED 31/1/38 WHICH REPLACES OLD PAGE AB9.
INSERT NEW PAGE R85/86 DATED 31/1/38 WHICH REPLACES OLD PAGE R85/86.

THE FOLLOWING CORRECTIONS ARE TO BE MADE TO THE PAGES INDICATED OF B.R.222, NOTES ON W/T SETS, AND A NOTATION THAT CORRECTION NO. 3 HAS BEEN INSERTED, MADE ON PAGE AA6. CARE SHOULD BE TAKEN, WHEN CORRECTING DIAGRAMS, TO USE THE APPROPRIATE COLOURED INK, AND WHEN CORRECTING TEXT AND/OR PHOTOGRAPHS TO USE BLACK INK.

## CORRECTION NO. 3

Old correction sheets, numbers 1 and 2, should be numbered as pages AA7 and AA8 respectively, and inserted after page AA6.

| | | |
|---|---|---|
| Page AB4. | Under heading "BLACK" insert "Neutralising Circuits." | |
| Page BA10. | Fig. a. | The 3.5 condenser should be numbered 29 instead of the switch contact just above it. Brackets should be put round the following figures:-- 1 & 2, 8, 3 to 8, 5 to 8, to conform with page BA11, line 20 from the bottom. |
| Page BB8. | Fig. d. | Terminal numbered "32" should be renumbered "36". |
| Page C14. | Fig. a. | The lead between earth terminal 11 and condenser 15 should be connected to the yellow screen by a blue dot. |
| Page D4. | Col. 3 | Receiver Outfit CI*. For "15 - 1500" read "15 - 550". |
| | " | Receiver Outfit CJ. For "25 - 550" read "15 - 550". |
| Page D5. | " | Receiver Outfit MH. For "30 - 1500" read "30 - 1900". |
| | " | Receiver Outfit QK. For "6000 - 20000" read "3500 - 20000". |
| | " | Receiver Outfit QL. For "6000 - 25000" read "3000 - 25000". |
| Page EB4. | Fig. a. | The connection between the screen 28, and the lower connecting lead of the plug-in unit 29, from the condenser 27 is not clear. A green dot should be made to indicate the connection. |
| Page GA10. | Fig. a. | Switch 26. Delete letter C. |
| Page GB2. | Line 2. | For "Model Outfit SD" read "D/F Outfit SD". |
| Page H11. | Line 3. | For "Sub-Section DA" read "Section D". |
| | Line 24. | Before "Since" insert "When receiving C.W., ". |
| | Lines 9 and 10 from the bottom. | For "Sub-Section DA" read "Section D". |
| Page H15. | Line 3. | For "Sub-Section DA" read "Section D". |
| Page I3. | Line 5. | Delete "Model and. " |
| Page JA3. | Line 2 from the bottom. | For "Dull Emitter first 15 sockets" read "Dull Emitter first 10 sockets". |
| Page LA5. | Fig. a. | Switch 120. Positions of SA and D/F should be exchanged. |
| Page LA10. | Fig. e. | Left hand curve. For centre "10" read "0". |
| Page OB4. | Fig. a. | Insert black dotted line across switch 55 as on page R47, fig. c. |
| Page OB5. | Line 7. | Note. Delete whole line. |
| Page P4. | Fig. a. | Fuzes and busbars numbered 51 - 56 are to be renumbered 82 - 87. |
| Page R6. | Fig. a. | Fuzes and busbars numbered 51 - 56 are to be renumbered 82 - 87. |
| Page R9. | Table at top of page. | Valves used - Cols. 2 and 4, insert "2 MU1" in each column. |
| Page R19. | Fig. n. | Key "365" to be labelled "Type 13 Key". |
| Page R35. | Line 28. | For "D.C. Switch 10" read "D.C. Switch 15." |
| Page R36. | Fig. m. | Coil 220. Insert centre tap to agree with fig. i. on page R32. |
| Page R37. | Second line from bottom. | For "(155)" read "(156)". |
| Page R38. | Fig. p. and line 15. | Fuzes "(269)" should read "(264)". |
| Page R43. | Fig. v. | Switches 160 and 162. Colours should be altered to agree with colours shown in fig. t. page R41. |
| Page R44. | Fig. x. | Fuzes from NO. 10 switch. For "269" read "264". |
| Page R52. | Fig. m. | Rheostat (120) should be redrawn on the other side of lead from magnetic key bobbin (152), so that rheostat controls only current through valves and not through bobbin. |

| | | |
|---|---|---|
| Page R53. | Line 8. | For "lower power" read "low power". |
| Page R65. | Fig. h. | For number "112" read "111". |
| Page R79. | Fig. e. | Insert the same correction as for page R52. |
| Page R88. | Fig. a. | The top and second left hand contacts of switch 24 should be connected together (as on page R95, fig. c.). |
| Page R97. | Fig. d. | Coil 55 should be shown as variable. |
| | Fig. d. | Position of anode blocking condenser 294 should be moved further down so as to be between coil 55 and lower right hand contact of switch 296. |
| Page R98. | Fig. da. | Coil 55 should be shown as variable. |
| | Fig. da. | Condenser 294 should be deleted. |
| Page R101. | Line 23 from bottom. | For "two 1 jar condensers" read "two 5 jar condensers". |
| Page R105. | Line 11. | Amend brackets to read as follows:- (176) Loop Aerial Send-Receive Switch. (198) { H.T. and Filament C.O.S. / H/F and H.H/F D.C. Filament Switch. / H/F and H.H/F Aerial Switch. |
| Page R112. | Fig. t. | Same correction as for page R97, fig. d. |
| | Fig. t. | Delete lead connecting primary and secondary of main transformer 133. |
| | Fig. t. | Contact arm of blower relay switch 182 should be drawn on lower side of switch contact (as on page R106), to show that switch breaks when blower is running. |
| Page V15. | Fig. r. | Transmit and Alarm Boxes. For "1, 3 and 5" read "5, 3 and 1". |
| Page V16. | Figs. a. and aa. | Delete one cell of grid bias battery 235. |
| Page V19. | Fig. bc. | A second contact should be inserted for filament relay 201, to agree with fig. g.; page V26. |
| | Fig. bc. | A large value condenser (see page AB5) should be inserted in violet ink across the upper contacts of anode relay 191 to agree with fig. 1 page V30. |
| Page V20. | Line 18. | For "6 volts" read "4 volts". |
| | Line 18. | After "required" insert "(2 volts being lost in choke (208))". |
| | Fig. c. | Same correction as for page V16. |
| Page V21. | Figs. ca. cb. | Same correction as for page V16. |
| Page V25. | Fig. f. | An ammeter should be inserted in green as shown on page NB6, number 41. |
| Page V26. | Fig. h. | A large value condenser is to be inserted as for fig. bc. page V19. |
| Page V30. | Fig. e. | Insert ammeter mentioned in correction to page V25, in black. |

<u>Further Corrections.</u>

| | | |
|---|---|---|
| Page D3. | Line 32. | For "note magnifier N9 (19)" read "note magnifier N9 (18)". |
| Page LA13. | Fig. a. | Positions of 101 and 102 should be reversed (as on page LA5). A note to this effect should be inserted at the side of the sketch. |
| Page LC3. | Fig. a. | Resistance 11 should be redrawn as a non-inductive resistance, similar to 12. |
| Page V19. | Fig. bc. | An ammeter should be inserted in green as shown on page NB6, No. 41. |

INSERT NEW PAGE AA1/AA2 DATED 31/7/33 WHICH REPLACES OLD PAGE AA1/AA2.
INSERT NEW PAGE Z11 DATED 31/7/33 WHICH REPLACES OLD PAGE Z11.

THE FOLLOWING CORRECTIONS ARE TO BE MADE TO THE PAGES INDICATED OF B.R.222, NOTES ON W/T SETS, AND A NOTATION THAT CORRECTION NO.4 HAS BEEN INSERTED, MADE ON PAGE AA6. CARE SHOULD BE TAKEN, WHEN CORRECTING DIAGRAMS, TO USE THE APPROPRIATE COLOURED INK, AND WHEN CORRECTING TEXT AND/OR PHOTOGRAPHS TO USE BLACK INK.

## CORRECTION NO. 4

Page AB9 Add symbol for aerial plug fittings JoL

Page AC2 Insert at bottom of second table the following:- Panels 9, etc., Panels for Wa/T sets.

Page BA4 Line 4. Delete from "short circuited" to end of sentence and insert "by the stand-by-tune switch. This circuit is, of course, already earthed."

Page C10 Fig.a. Insert a resistance in parallel with spark gap (6).

Page C11 Line 18. After "terminals (74)(75)" add "and a resistance is fitted in parallel with spark gap."

Page C15 Line 46 For "30 kc/s" read "20 kc/s."
Line 52 For "1000 cycles note" read "1200 cycle note."

Page EB5 Line 2 Frequency range should read "700 - 20,000 kc/s."
Line 7 For "1500" read "700".
Line 25 For "set of five pairs" read "set of six pairs".
Table of ranges. Insert new first range as follows "700 - 1500 kc/s."

Page H11 Line 11 from bottom. Correct to read "This introduces damping to the tuned grid circuits of valves (1) and (2) and in "Tuned position" only with reference to valve (1)."
Line 7 from bottom. Alter to read "The condenser (61) in the tuned anode circuit, also the condenser (52) in the transformer circuit are semi-variable. These are set ..... "

Page LA12 Fig. g. Add footnote as follows "Tests Nos. 2, 3, 4, 6, 13 and 14 should be carried out weekly, before going to sea and before carrying out a D/F exercise."

Page MA3 Line 10 After "in both cases" delete to "provided" and insert "In 100/110 volt starters no reducing resistance is provided. In 220 volt starters the reducing resistance is of the order of 200 - 240 ohms. In 220 volt starters the "economy" resistance ...."
Amend table to read as follows:-

| Voltage. | Economy Resistance. | Reducing Resistance. |
|---|---|---|
| 220 | 500 (earlier type) adjusted to 200. | 1000 (earlier types adjusted to 895). |
| 220 | 200/240 (later types) | 1000 (later types adjusted as necessary) |
| 100/110 | 500 | None. |

Page MA8 Fig.c. Number "4" to be inserted near the coil above the starting resistance 19.

Page P4 Fig.a. Delete core in aerial ammeter transformer 11.

Page P8 Fig.d. Fuse 90 to be placed in a similar position in positive lead.
Fig.e. Delete core in aerial ammeter transformer 75.

Page P11 Fig.i. Delete core in aerial ammeter transformer 75.
Fig.i. Fuse 90 to be placed in a similar position in positive lead.

Page R1 For "Type 34" read "Type 34A".
Add "Type 47, page R87" and "Type 46, page R114".

Page R6. Fig.a. Delete core in aerial ammeter transformer 11.

Page R7 Heading For "Type 34" read "Type 34A".
Frequency range. For "60 - 300 kc/s" read "60 - 1364 kc/s".
Line 21 Delete from "Owing" to "I.C.W."
Line 15 from bottom. Delete "in fifths".

Page R8 After paragraph on Tuning insert the following:-

"In 1933 Type 34 was modified and the frequency range increased to enable this set to transmit up to 1364 kc/s. It is now referred to as Type 34A.

The sketch on page R6 is to be altered in accordance with E.F.O. 189/32. The aerial condenser being numbered 88 and its short circuiting switch 90, the variometer short circuiting switch 89, the high frequency grid windings 91 and the switch in the lead to the smoothing condensers 92.

A No.7 condenser (88) is wired in series with the aerial and is used on wave frequencies above 500 kc/s. A switch (90) short circuits this condenser on lower frequencies. A switch (89) is fitted to short circuit the variometer on wave frequencies above 300 kc/s. The grid coil (48) had been rewound with two windings. The high frequency winding (91) is brought to two terminals - the low frequency to two others with a tapping. On the higher frequencies the low frequency winding should be short circuited. To transmit I.C.W. a switch (92) breaks the lead to the smoothing condensers (43).

AA12

Page R9 Frequency range Type 13. For "60 - 500 kc/s" read "375 - 1364 kc/s".

Page R10 Line 13 Correct to read "Machine running lamps (110) and (118) are also fitted and are connected between the series and shunt winding of the motor."

Page R11 Line 28 For "Two 1 jar condensers (35) connected" read "One 1 jar condenser (246) connected".

Page R34 Fig. j. This circuit is to be modified in accordance with E.F.O.52/33.

Page R35 After paragraph on Tuning add:-

"In certain ships, when in the parallel position on a wave frequency of 7800 kc/s there was a frequency jump to 18,000 - 20,000 kc/s. This undesired oscillation was set up round a circuit consisting of the valve capacity, the anode blocking condenser (76), the tuning condenser (73) and the inductance of the leads. It has been found that by shortening the leads and by connecting the grid of the valves direct to the common bar of the series-parallel switch (74), the frequency at which "jump" occurs has been adjusted so as not to affect the performance when the set is in the "parallel" position.

Further, to increase stability the grid leak (79) is connected to the lower end of the primary coil (71).

The set, when in the "parallel" position, will now tune accurately up to a frequency of about 7,200 kc/s, after which the "series" position must be used. The minimum frequency, when in the "series" position is about 6,400 kc/s, so there is ample overlap. Changing over to the "series" position will vary in different ships, but should take place at about 7000 kc/s.

When using H/F the voltage regulation of the machines is poor. Therefore the secondaries of the main transformers are to be in the parallel position. (See A.F.O 1526/33).

Page R50 Line 5 For "0.06 jar aerial" read "0.6 jar aerial".

Page T6 Fig. a. Fuses 92. For "To Rec.N.T." read "To Rec.H.T."

Page V3 Line 16 After "ring main C.O.S.(45)" add "and the machine starting relays (7)".

Page V8 Line 21 For "No.3 machine" read "No 2 machine".

Last paragraph on D.C Supply correct to read:-

"Connected across the brushes of the H.T. - L.T. motor are a bobbin (21) and resistance (22). As the motor speeds up and the back E.M.F. rises to a predetermined value, the bobbin (21) is energised and the arm attached to it cuts out the starting resistance (23) in one movement. The starting bobbin of the grid bias (29) is energised by the movement of the H.T. - L.T. motor generator starting contact. Both motors start at the same time.

Page V9 Paragraph 1. Amend to read.-

"The machine starting relays (7) are fitted on the Power Board Panel at the top, behind the voltmeter, which registers the filament and grid bias voltages. The supply for these relays is from the 20 volts mains."

Page Y17 Frequency range. For "4,000 kc/s" read "3,000 kc/s."

Page Y19 Line 4 For "On the lowest of the four H/F bands" read "On the three higher H/F bands."

INSERT NEW PAGE AA1/AA2 DATED 31/1/34 WHICH REPLACES OLD PAGE AA1/AA2.
INSERT NEW PAGE C17 DATED 31/1/34 WHICH REPLACES OLD PAGE C17.

THE FOLLOWING CORRECTIONS ARE TO BE MADE TO THE PAGES INDICATED OF B.R.222, NOTES ON W/T SETS, AND A NOTATION THAT CORRECTION NO.5 HAS BEEN INSERTED, MADE ON PAGE AA6. CARE SHOULD BE TAKEN, WHEN CORRECTING DIAGRAMS, TO USE THE APPROPRIATE COLOURED INK, AND WHEN CORRECTING TEXT AND/OR PHOTOGRAPHS TO USE BLACK INK.

## CORRECTION NO.5.

Page AA11 - Line 15 Correction for page H11. For "grid circuits of valves (1) and (2)" read "grid circuits of valves (1) and (4)."
Page C1 - Line 11 Insert "Page C18"
Page D2 - Fig. a. Left hand position of switch (8) to be marked "K5 Tuning".
Page D3 - Line 14 Add the following:- "The switch (8) is normally to be in the central position".
- Line 23 from bottom. After "tune the secondary circuit." alter to read, "Couple K5 to the primary of I.T.M. and tune acceptor circuit, with switch (8) in position K5 tuning. Tighten the I.T.M. coupling and tune the aerial circuit."
- Line 21 from bottom. For "always" read "normally".
Page GA1 - Sub-Section GD. Add Wave Indicator G52. Page GD4.
Add Wave Indicator G53. Page GD5.
Add Wavemeter G57. Page GD6.
- Sub-Section GE. Add Heterodyne Unit K7. Page GE5.
Page GD1 - Add Wave Indicator G52. Page GD4.
- Add Wave Indicator G53. Page GD5.
- Add Wavemeter G57. Page GD6.
Page GD6 - Line 22 from bottom. Amend value of condensers to read "micro-micro-farads".
Page GE1 - Add Heterodyne Unit K7. Page GE5.
Page H1 - Add Amplifier M19. Page H24.
Page H11 - Line 11 from bottom. For "valves (1) and (2)" read "valves (1) and (4)"
Page I1. - Add Note Magnifier N20. Page I10.
Page I9 - Heading. Amend to read "Note Magnifier N19".
Page JA1 - Sub-Section JA. Add Valve Test Board for W/T Rack. Page JA4.
Page MB3 - Machine 6597/A. Pattern number of motor and alternator brushes should read "7515".
- Machine 7212M. Pattern number of ball bearings should read "6327".
Page R1 - Add Type 51. Page R133.
- Add Type 51HX. Page R140.
Page R24 - Table. Frequency range of 3G H/F correct to read "4160 - 17090"
Page R68 - Fig. b. Filament output terminals - reverse the polarity shown.
Page R69 - Line 17. Choke (100). Correct value is 0.1 henry.
Page R70 - Line 24. Correct to read "The leak (98) and condenser (80) are short circuited by a link (97) when the stabiliser is in use".
- Fig. e. Amend sketch as per amended text.
Page R71 - Line 7. Frequency range should read "1800 - 2500 kc/s."
Page R72 - Lines 11 and 12. Delete from "The coupling" to "altered."
Page R75 - Fig. k. Amend grid leak (98) circuit as now shown in Fig.e, page R70.
Page R91 - Line 15. For "A decrease" read "An increase".
- Line 7 from bottom. Delete from "slight adjustment" to "as necessary."
Page T5 - Frequency range should read "2800 - 4200 kc/s."
Page W2 - Last Table. Line T. Delete from "Main" to "also".
Line U. Delete.
Page W3 Fig. b. Alter as per correction for page W2.
Page W5 Fig. d. Alter as per correction for page W2.
Page NB1 - Add Charging Arrangements for 100 volt Batteries. Page NB13.

AA 14

INSERT NEW PAGE AA1/2 DATED 31/1/35 WHICH REPLACES OLD PAGE AA1/2.
INSERT NEW PAGE ND1/2 DATED 31/1/35 WHICH REPLACES OLD PAGE ND1/2.

ALL REPLACED PAGES SHOULD BE DESTROYED.

RENUMBER PAGES R3 - R4 to read RB3 - RB4; R9 - R22 to read RD3 - RD16.
R29 - R32 " " RE5 - RE8; R35 - R44 " " RE11 - RE20.
R47 - R56 " " RF3 - RF12; R59 - R66 " " RG3 - RG10.
R67 - R74 " " RH3 - RH10; R77 - R78 " " RI3 - RI4.
R85 - R86 " " RJ5 - RJ6; R87 - R112 " " RJ3 - RL28.
R115 - R132 " " RK3 - RK20; R133 - R138 " " RP3 - RP8.

REMOVE PAGES R1/2; R5/6; R7/8; R23/24; R25/26; R27/28; R33/34; R45/46; R57/58; R75/76; R79/80; R81/82; R83/84; R113/114; R139/140; R141/142; R143/144; R145.

Arrange the renumbered pages, together with the new pages for Section 'R' issued herewith, in order and check that the section is complete according to the contents list on page AA2 dated 31/1/35.

DESTROY THE PAGES WHICH WERE REMOVED.

THE FOLLOWING CORRECTIONS ARE TO BE MADE TO THE PAGES INDICATED OF B.R.222, NOTES ON W/T SETS, AND A NOTATION THAT CORRECTION NO.6 HAS BEEN INSERTED, MADE ON PAGE AA6. CARE SHOULD BE TAKEN, WHEN CORRECTING DIAGRAMS, TO USE THE APPROPRIATE COLOURED INK, AND WHEN CORRECTING TEXT AND/OR PHOTOGRAPHS TO USE BLACK INK.

## CORRECTION NO.6.

Page BA11. Line 3. Amend to read:- Receiver Outfits CI and CJ".
Page D7. Outfit C9, Column 5, for "C13" read "C18".
Page GD3. Line 19. For "G14X" read "G51".
Page NA1. Add new line 20. "Charging arrangements for 100 volt batteries - Page NB13".
Page RD3. Bottom line of table at top of page to read:-

| Reference page. | RD8 | RE11 | RD10 | OB6 | RD12 |
|---|---|---|---|---|---|

Fourth line from bottom of page. For "(See figure b. on page R25)" read "(See figure b. on page RE3)".
Page RD8. Line 7. For "R16" read "RD10".
Page RD9. Line 23. For "R42" read "RE18".
Line 45. For "R35" read "RE11".
Page RD10. Line 10. For "R11 and R13" read "RD5 and RD7".
Line 11. For "R14" read "RD8".
Last line. For "R38" read"RE14".
Page RD12. Line 6. For "R38" read "RE14".
Line 28. For "R38" read "RE14".
Page RD13. Line 13. For "R15" read "RD9".
Page RD15. Line 33. For "R42" read "RE18".
Page RE5. Line 12 from bottom. For "R13" read "RD7".
Page RF11. Line 13. For "R32" read "RE8".
Page RE17. Line 20. For "R33" read "RE9".
Line 25. For "R42" read "RE18".
Page RF6. Line 3. For "R55" read "RF11".
Page RF7. Line 31. For "R55" read "RF11".
Line 35. For "R46" read "RF2".
Page RG4. Line 6. For "R47" read "RF3".
Page RG5. Line 4. For "R49" read "RF5".
Page RG6. Line 14. For "R35" read "RE11".
Line 4 from bottom. For "R50" read "RF6".
Bottom line. For "R65" read "RG9".
Page RG7. Line 3. For "R51" read "RF7".
Page RH3. Bottom line of table at top of page to read:-

| Reference page. | RH5. | OB3 | RH7 |
|---|---|---|---|

Line 13. For "R80" read "RA4".
Page RH10. Line 14. For "R81" read "RA5".
Line 20. For "R81" read "RA5".
Page RI3. Line 6. For "R83" read "RJ3".
Line 26. For "R84" read "RG8".

Page RI4. Line 2. For "R53" read "RF9".
Page RJ5. Line 13. For "R80" read "RA4", in both cases.
Page RK2. Line 10. For "R125" read "RK13".
Line 19. For "R102" read "RL18".
Page RK3. Line 2 from bottom. For "R91" read "RL7".
Page RK4. Line 18. For "R118" read "RK6".
Fig. b. The leads marked "TO FILAMENTS". Delete the earth symbols on ends of leads and substitute arrows.
Page RK6. Line 14. For "R35" read "RE11".
Fig. e. Delete identity number (134) on the rectifier switch (130).
Page RK7. Line 4. For "R96" read "RL12".
Last line. For "R96" read "RL12".
Page RK8. Line 3. For "R94" read "RL10".
Line 27. For "R119" read "RK7".
Line 40. For "R127 to R129" read "RK15 to RK17".
Page RK10. Line 6. For "R118" read "RK6".
Line 19. For "R120" read "RK8".
Page RK12. Line 2. For "R103" read "RL19".
Page RK13. Line 18. For "R102" read "RL18".
Page RK18. Line 14. For "R115" read "RK3".
Line 16. For "R102" read "RL18".
Page PI8. Bottom line of table at top of page to read:-

| Reference page. | RL10 | RL17 | RL13 | RL15 | RL20 | RL18 |
|---|---|---|---|---|---|---|

Page RL4. Line 6. For "R105" read "RL21."
Page RL5. Line 2. For "R29" read "RE5".
Page RL8. Line 15. For "R37" read "RL3".
Line 51. For "R35" and R62" read "RE11 and RG6".
Line 53. For "R100" read "RL16".
Line 56. For "R97 and R99" read "RL13 and RL15".
Page RL10. Line 5. For "R42" read "RF5".
Line 31. For "R96" read "RL12".
Line 47. For "R106 to R119" read "RL22 to RL26".
Page RL12. Line 6. For "R94" read "RL10".
Line 17. For "R105" read "RL21".
Page RL13. Line 4. For "R34" read "RE10".
Line 13. For "R92" read "RL8".
Line 16. For "R94" read "RL10".
Page RL14. Line 19. For "R106 to R110" read "RL22 to RL26".
Last line. For "R100" read "RL16".
Page RL15. Line 10. For "R92" read "RL8".
Page RL16. Line 18. For "R106 to R110" read "RL22 to RL26".
Page RL17. Line 3. For "R62" read "RG6".
Line 7. For "R92" read "RL8".
Line 13. For "R94" read "RL10".
Line 49. For "R110" read "RL26".
Page RP3. Line 14. For "R134" read "RP4".
Page RP4. Line 10, from bottom of page. For "R138" read "RP8".
Page RP5. Table at bottom of page. For numbers "1, 2, 3 -- 10, 11" read "11, 10, 9 -- 2,1"
Page RP7. Line 2. For "R140" read "RP10".
Page RP8. Line 14. For "R136" read "RP6".
Page RP10. Line 23. For "R133" read "RP3".
Page RP6. Line 6 from bottom of page. For "ten and eleven" read "two and one".

INSERT NEW PAGE AA1/2 DATED 31/1/36 WHICH REPLACES OLD PAGE AA1/2.
INSERT NEW PAGE RH5/6 DATED 30/9/35 WHICH REPLACES OLD PAGE RH5/6.

ALL REPLACED PAGES SHOULD BE DESTROYED.

THE FOLLOWING CORRECTIONS ARE TO BE MADE TO THE PAGES INDICATED OF B.R.222, NOTES ON W/T SETS, AND A NOTATION THAT CORRECTION NO.7 HAS BEEN INSERTED, MADE ON PAGE AA6. CARE SHOULD BE TAKEN, WHEN CORRECTING DIAGRAMS, TO USE THE APPROPRIATE COLOURED INK, AND WHEN CORRECTING TEXT AND/OR PHOTOGRAPHS TO USE BLACK INK.

## CORRECTION NO.7.

Blank page on back of page AA13 to be numbered AA14.
Page C10. Fig. a. Condensers 49 and 50 should be coloured violet.
Page C14. Fig. a. Condensers 48, 49 and 50 should be coloured violet.
Page C15. Line 9. Delete the word "tuned".
Line 10. Delete the word "tuned".
Page D6. Col.1. Item 7. Amend to read SHx No.1.
Page D8. Col.1. Item 3. Amend to read SHx No.2.
Page RA1. Add new lines 19, 20 and 21, between Types 47 and 51.

| | |
|---|---|
| Type 48 | Page RM2 |
| Type 49 | |
| Type 50 | Page RO2 |

Page RE11. Remove and destroy the slip attached to this page.
Page RK3. Line 17. For R114 read RK2.
Page RK4. Line 12. For R29 read RE5.
Page RK6. Line 19. For R115 read RK3.
Page RK8. Line 3. For R49 read RF5.
Page RK15. Line 6 from bottom. For R126 read RK14.
Page RL4. Line 8. For RS7 read RL8.
Page RM22. Line 7. For NT32A read NT45A.

AA18

INSERT NEW PAGE AA1/2 DATED 30/6/36 WHICH REPLACES OLD PAGE AA1/2.
INSERT NEW SUB-SECTION RN.
INSERT NEW PAGES BB11 TO BB14.

THE FOLLOWING CORRECTIONS ARE TO BE MADE TO THE PAGES INDICATED OF B.R.222, NOTES ON W/T SETS, AND A NOTATION THAT CORRECTION NO.8 HAS BEEN INSERTED, MADE ON PAGE AA6. CARE SHOULD BE TAKEN, WHEN CORRECTING DIAGRAMS, TO USE THE APPROPRIATE COLOURED INK, AND WHEN CORRECTING TEXT AND/OR PHOTOGRAPHS TO USE BLACK INK.

## CORRECTION NO. 8.

Page BB1. Insert Tuner A46, Page BB11.

Page GE5. Figures a. and b. Condenser 145 should be connected to the other end of choke coil 144. Connect L.T. - lead direct to earth. Amend marking on terminal 150 to read Com - .

Page I10. Figure a. Delete condenser 119. Connect condenser 120 between L.T.+ lead and earth. Connect L.T.- lead direct to earth. Amend marking on terminal 126 to read Com - .

Page RA1. Against Type 49 add RN2.

Page RM22. Figure p. Amend identity number 49 on rectifying valve to read 48.

Page RM31. Line 24 from bottom. For contacts read consists.

Page V52. Figure z. Identity numbers 307 and 308 on the local output jacks in the remote group control output unit should read 351 and 352 respectively.

INSERT NEW PAGES AA1/2 DATED 21/1/38 WHICH REPLACE OLD PAGES AA1/2.
INSERT NEW PAGES GD9/10 WHICH REPLACE OLD PAGES GD6/7.
INSERT NEW PAGES BB15 TO BB18, GC5 TO GC8, GD5 TO GD8 AND RE21 TO RE45.
ALL REPLACED PAGES ARE TO BE DESTROYED.

THE FOLLOWING CORRECTIONS ARE TO BE MADE TO THE PAGES INDICATED OF B.R.222, NOTES ON W/T SETS, AND A NOTATION THAT CORRECTION NO.9 HAS BEEN INSERTED, MADE ON PAGE AA6. CARE SHOULD BE TAKEN, WHEN CORRECTING DIAGRAMS, TO USE THE APPROPRIATE COLOURED INK, AND WHEN CORRECTING TEXT AND/OR PHOTOGRAPHS TO USE BLACK INK.

## CORRECTION NO. 9.

Page BA1. At bottom of page add:-
Tuner A46. Page BB11.
Tuner A47. Page BB15.

Page BA13. Second line from bottom. Amend to read:-
"between the moving plate of the coupling condenser (20) and the screen (44). The equivalent circuit is shown in fig. d."

Page BA14. Line two:-
Delete all between "condenser (20)" and "(see figures f and g)".

Page BB1. Add:- Tuner A47. Page BB15.

Page C18. Fig. a. Delete condenser (118).

Page GC1. Add:- Oscillator G33. Page GC5.

Page GD1. Amend to read:-

| | |
|---|---|
| Wavemeter G51. | Page GD2. |
| Wave Indicator G52. | Page GD4. |
| Wave Indicator G53. | Page GD5. |
| Wavemeter G56. | Page GD6. |
| Wavemeter G57. | Page GD9. |

Page GD4. Line 5. For "Page R152" read "Page RK20".

Page GD5. Line 5. For "Page R152" read "Page RK20".

Page H28. Lines 4 and 5.
Delete all after "(118)".

Page H28. Line 10. For "1000 ohms" read "100 ohms".

Page OB5. Line 7. Amend end of line to read:- "Types 37, 38 and 49".

Page RA1. Between Type 36S and Type 37S insert new line:-
Type 36M. Page RE22.

Page RM2. Details of components.
Amend columns 5 and 6. Wave form for 3S, H/F Master Controlled and Self Excited should read:- "C.W. and I.C.W."

Page RM8. Delete last sentence.

Page RM11. Line 19 from bottom of page:-
For "2500 ohms" read "10,000 ohms".

Page RM22. Line 9. For "80,000 ohms" read "20,000 ohms".
Line 10. For "series" read "series-parallel".
Line 35. For "3000 ohms" read "30,000 ohms".
Line 43. For "3000 ohms" read "30,000 ohms".

Page RM31. Line 23 from bottom of page:-
For "contacts" read "consists".

Page RN7. Line 19. For "1" read "2" and for "2" read "1".

Page RN17. Line 26 from bottom of page:-
Delete "(61)" and amend "magnetic keys" to read "magnetic key".

AA 20.

INSERT NEW PAGES AA1/2 DATED 31/3/39 WHICH REPLACE OLD PAGES AA1/2.
INSERT NEW PAGES RR1 TO RR8, RY1 TO RY17 AND VE1 TO VE22.

THE FOLLOWING CORRECTIONS ARE TO BE MADE TO THE PAGES INDICATED OF B.R.222, NOTES ON W/T SETS, AND A NOTATION THAT CORRECTION NO.10 HAS BEEN INSERTED, MADE ON PAGE AA6. CARE SHOULD BE TAKEN WHEN CORRECTING DIAGRAMS, TO USE THE APPROPRIATE COLOURED INK, AND WHEN CORRECTING TEXT AND/OR PHOTOGRAPHS TO USE BLACK INK.

CORRECTION NO.10.

Page RR5. Fig. g. Amend identity number of fixed inductance (25) to read (24)