Radio Communication Equipment in the British Army

WIRELESS for the WARRIOR

by Louis Meulstee

Compendium 1

Spark to Larkspur (Wireless Sets 1910 - 1948)



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W/T Set Field 500 watt Spark

DATA SUMMARY

Purpose: Corps Directing Station **Year of introduction:** 1918/19

System: Quenched spark gap (Telefunken pattern)

Frequency Coverage: Transmit: 200, 350, 400, 450, 500 and 550 metres: Receive: variable, probably from

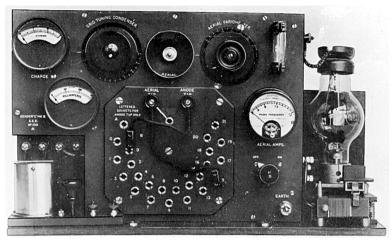
110 to 700 metres

Receiver: W/T Set Field 120 watt Spark D.C. Receiver

Type of Aerial: 200ft horizontal twin-wire T-type aerial on two 30ft masts, and earth nets

Power Supply: 500 watt alternator driven by a 4½hp A.B.C. engine

Note: It is believed that this set was intended as an alternative to the Light Motor Set. The design was based on the RAF 'Transmitter W/T Aircraft, Quenched Spark' (also known as 'Aircraft Transmitter 500 watt Quenched Spark'). The set consists of a transmitting panel and a receiving panel which fit, side by side, into an outer case in which are also compartments for accessories. We believe that only a small number of sets were produced



Sender C Mk.II. Note the transmit relay and local Morse key (bottom left)

W/T Set C Mk.II

(Also known as W/T Set C Mk.II Complete Station No. 1)

DATA SUMMARY

Purpose: Division and Brigade communication

Year of introduction: 1926 System: CW telegraphy

Frequency Coverage: Sender C Mk.II 650-2000 metres (150-462kHz); Reception Set C Mk.II 600-4000

metres (75-500kHz)

Range: 20 miles usingstandard Aerial 120ft Receiver: HF amplifier, detector with reaction and two AF stages

Types of Aerial: Normally issued: Aerial 120ft on two sectional 15 ft masts. Alternatively 60ft wire or a fan aerial. The receiver is designed for Frame Aerial 'C', 3ft square

Power Supply: Engine driven generator set (Power Unit 180 watt Mk.I or Mk.II and Switchboard Double Voltage providing 12V and 1200V). A 2V 16Ah accumulator and 48V HT dry battery is required for the receiver

Weight: Complete set 416lb. Pack saddle in two loads; Motor transport in sprung vehicle

Valves: 4x AR3, AT50



Reception Set C Mk.II with Frame Aerial C



Amplifier RF No. 2

Part of Wireless Set No. 19 High Power

DATA SUMMARY

Purpose: Amplifying the (modulated) RF output of any version or production Wireless Set No. 19 and so increases its working range. Principally used in a ground or truck station

Year of introduction: Mk.I: 1942/43, Mk.III: early 1950s

System: AM R/T and CW

Types of Aerial: All aerials normally used with the No. 19 Set. Vertical aerials should be at least 12ft or twin 8ft rods (or longer on lower frequencies)

Frequency Coverage: 2-4.5MHz and 4.5-8MHz. Operation between 2-2,1MHz and 7.5-8MHz is possible on any Wireless Set No. 19 but full gain is only obtained from the Mk.III or a specially selected Mk.II set **RF Power Output:** AM R/T 10-14W, CW 25-30W

Power Supply: 12V accumulator driving an internal rotary transformer providing 600V at max 240mA

Consumption: Mk.I and Mk.II
Transmit 24A 18A
Stand-by 2.5A 1.2A

Size (inches) and Weight (lbs):height length length widthweightAmplifier RF No. 28½12½17½45Aerial Tuning Inductance No. 15 in diameter cylinder 145

Valves: Mk.I and Mk.II: 4x ATS25. Mk.III: 2x ATS25

Note: The Amplifier RF No. 2 is designed for automatic transmit/receive operation by the microphone

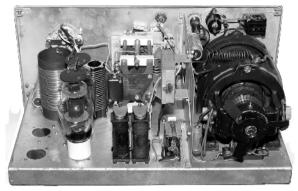
pressel switch; a separate switch is fitted for CW operation. The Aerial Tuning Inductance No. 1 is used for aerial matching to the set, replacing the Aerial Variometer. When the amplifier is switched off, the No. 19 Set operates normally and the aerial tuning inductance is used in place of the standard variometer. Mk.II amplifiers are fitted with a cooling fan and may be run continuously on send

Special connector for use with RF Amplifier No. 2 (right)



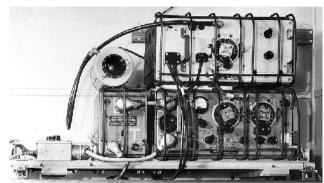
AAmplifier RF No. 2

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Internal view of Amplifier RF No. 2 Mk.III (left)

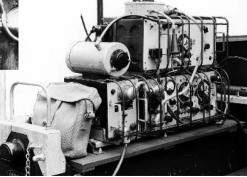
Complete Wireless Set No. 19 High Power station (right). Note Aerial Tuning Inductance No. 1 mounted on top of the Supply Unit No. 1 Mk.III. The control lead is part of a special 12-12point connector between the supply unit and the set





Wireless Set No. 19 High Power installed in Car 5cwt, 4x4, American jeep (left)

Wireless Set No. 19 High Power in Car 5cwt, 4x4, Rover (right)





Wireless for the Warrior Volume 1

WIRFI FSS

WARRIOR

by Louis Meulstee

VOLUME 1 WIRELESS SETS No. 1 – 88

First published December 1995 by GC Arnold Partners, Broadstone, Dorset, U.K., ISBN 1898805 08 3

Volume 1 (*Wireless Sets No. 1 to 88'*) of Wireless for the Warrior is published in A4 format softback, and contains 360 pages, about 150 photographs, 320 line drawings/circuit diagrams and 130 tables. An explanation of the various Type Nomenclature systems used for Army radio equipment from WW1 to the 1960's

Anny fadio equipment from which to is followed by descriptions of the sets themselves. The aim in each case has been to describe the history, technical details, aerials and accessories used with each set, together with spares schedules. Where a set was used in more than one application - for example as a mobile or a ground station - details of the variations are provided. Several versions and adaptations of the sets produced in Australia and Canada are also described.

The descriptions of the sets are followed by a series of appendixes: Glossary of Terms;

Condensed data of Equipment; Accessories List; Army Valves Designation and Equivalents; Table of Frequency Coverage of Army Wireless Sets.

All Wireless Sets in the numerical range (No. 1 to No. 88) are described. Detailed information is given on: Wireless Sets Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9, Cdn 9, 11, 12, 13, 14, 15 (E10), 16, 17, X20A, 21, 23, 24, 26, 27, Cdn 27, C

17, X20A, 21, 23, 24, 26, 27, Cdn 27, 28, X32D, 33, 36, 37, Cdn 43, 47, 49 (B40/C40), X56A, 57, Cdn 58, 63, 76, 78 and 86 (C41/R222).

Other sets mentioned: Wireless Sets Nos. 11 (Aust), 101 (Aust), 108 (Aust), 109 (Aust), 112 (Aust), 133 (Aust) and Admiralty Type 5G.

Since the standard World War 2 sets are described in Volume 2, only a summary is given here; this includes:

Wireless sets Nos. 10, 18, 19, 22, C29, 31, 38, 42, 46, 48, C52, 53, 62, 68 and 88.



First published March 1998 by GC Arnold Partners, Broadstone, Dorset, U.K., ISBN 1898805 105

Volume 2 ('Standard Sets for World War 2') of Wireless for the Warrior is published in A4 hardback, containing 722 pages, and featuring 200 photographs, approximately 750 line

drawings/circuit diagrams and 180 data tables. Comprehensive information on vehicle installations is included where appropriate, giving the book considerable appeal to military vehicle enthusiasts, as well as awakening memories of those who maintained or used these sets 'in anger'.

It provides detailed information on the following standard World War 2 sets and other sets of which sufficient information was unavailable when Volume 1 was published:- Wireless

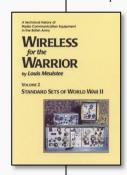
Sets Nos. 10, 18, 19, 22, 31, 31AFV, 38, 38AFV, 42, 46, 48, 53, 62, 68, 88 and 88AFV - Wireless Sets Canadian Nos. 19, 29 and 52;

Australian Nos. 19, 22, 108, 122, 133 and 153 Other sets mentioned include: Burndept BE201, CN348, RCA ET-4332b, DF station PE No.1. Larkspur range: Station Radio B47, C42, C45

and C11/R210. Air Ministry: TR1143, TR1987. US Signal Corps: SCR-300, BC-610, AN/TRC-5 and AN/TRC-6.

In the Appendixes the following items are covered: Glossary Terms: Condensed Data of Equipment; Accessories: Armv Valves Designations Equivalents; Table of Frequency Coverage of Army Wireless Sets; References and Bibliography; Commercial Equipment; Miscellaneous Military Equipment; Secondary Generating Sets and

Batteries; Collecting and Safety; Vehicle Installations; Mains Power Supply Unit.





Wireless for the Warrior Volume 3

First published July 2001 by Wimborne Publishing Limited, Dorset, U.K., ISBN 0952063-35-2

The third Volume in the Wireless for the Warrior series, entitled 'Reception Sets', is devoted to receivers (also known as Reception Sets) used in the British Army over the period 1932 to the 1960s. The contents of this Volume is principally concentrated on the R100 to R508 series, but many other receivers with different nomenclatures are covered

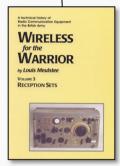
Volume 3 consists of eight main chapters, each dealing with a distinct group of receivers (in total more than 70 receivers), introductory and general information pages and a number of appendixes. It contains 546 pages and features 230 photographs, 470 line drawings and 220 data tables in A4 hardback format

- 1 Army Reception Sets.
- 2 Reception Sets Adopted from other Arms.
- 3 Special Receivers.
- 4 Direction Finding Receivers.
- 5 Army Broadcast Reception Sets.
- 6 Commonwealth Army Reception Sets.
- 7 Commercial Receivers Adopted by the Army.
- 8 Army Welfare Reception Sets.



- Condensed Data of Equipment.
- Army Valve Designations and Equivalents .
- Headphones in use in the British Army.

A large number of related equipment and wireless sets are mentioned in Volume 3 including specialists' vehicles and installation layout.



Wireless for the Warrior Volume 4

First published September 2004 by Wimborne Publishing Limited, Dorset, U.K., ISBN 0952063 36 0

The fourth Volume ('Clandestine Radio') in the Wireless for the Warrior series is different in approach to the previous books. Although it still contains a mix of technical data, photographs,

line drawings and circuit diagrams, no extensive descriptions are provided, principally to limit the number of pages but also for reasons of non-availability of detailed information for the majority of the sets. This Volume is a combined effort of Louis Meulstee, Rudolf Staritz and a number of other authors, notably Jan Bury, Pete McCollum and Antero Tanninen, experts in their own fields and living in various parts of the world.

The time period imposed on the selection of sets to be included in this

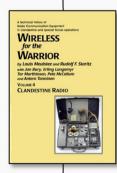
volume stretches from about 1938 up to the early 1990s, approximately to the fall of the Berlin Wall.

It must be noted that apart from Clandestine, Agents or 'Spy' radio equipment, sets which were used by Special Forces, Partisans, Resistance, 'Stay Behind' organisations, Australian Coast

Watchers and Diplomatic Service are covered. Also included are selected associated power sources, intercept receivers, RDF equipment, High speed keyers, S-Phone, bugs and radio- and radar beacons such as Eureka/Rebecca. In the Appendix there is a list of abbreviations

Volume 4 is covered in a number of main chapters, describing equipment used or manufactured in a certain country. Information is included on more than 230 sets. It contains 692 pages in A4 hardback format, and

features over 850 photographs, 360 line drawings and 440 data tables.





The Wireless for the Warrior Compendium series is principally intended as a practical guide and reference source to vintage military signal communication equipment. It is particularly valuable to anyone with an interest, professionally or otherwise, in this subject, requiring an elementary but complete quick reference and recognition handbook. Containing condensed data summaries, liberally illustrated with photos and drawings, explanatory captions and short descriptions of the main ancillaries, its pocket size format and laminated soft cover makes it an ideal reference and reliable companion for events such as auctions and radio rallies, or just for browsing at leisure.

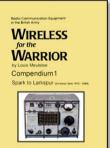
WftW Compendium 1

Spark to Larkspur (Wireless Sets 1910-1948)

First published September 2009 by Emaus Uitgeverij, Groenlo, The Netherlands. ISBN 978 90 808277 2 1

Wireless for the Warrior Compendium 1 Spark to Larkspur (Wireless Sets 1910-1948) is published in a practical A5 softback format. It contains 354 pages and over 560 photographs, line drawings and tables, a comprehensive index, and a fold-out 'Chart of interrelationship of

Compendium 1 is organised into three main sections being 'World War 1', further divided into chapters covering spark sets, CW sets, receivers, amplifiers and miscellaneous.



The second section, 'Interwar years' covers standard sets, experimental communication sets, experimental tank and AFV sets, early sets in the numerical series and miscellaneous items.

Finally, the section 'World War 2' covers sets in the numerical series up to Wireless Set No. 88 AFV, wavemeters, aerial coupling equipment, wireless remote control units and Morse training sets.

WftW Compendium 2

Spark to Larkspur (Special Sets, Receivers and Larkspur)
First published August 2012 by Louis Meulstee, ISBN 978 90 819271 0 9

WIRFI FSS

WARRIOR

by Louis Meulstee

Compendium 2

Wireless for the Warrior Compendium 2 'Spark to Larkspur' (Special sets, Receivers and Larkspur) is published in a practical A5 softback

format. It contains 215 different sets and systems in 458 pages, and over 1050 photographs, line drawings and tables. Included are a comprehensive index and a list of suggested further reading.

Compendium 2 is divided into five main sections and sub-divided into chapters by application, operational use, range or family of sets, and date of introduction.

The first section covers 'Special Sets' with chapters: commercial, RAF and other sets adapted for Army use;

ground to air sets; special sets; miscellaneous and local pattern sets; experimental sets.

The 'Commonwealth Sets' section deals with equipment manufactured and/or used in Australia, New Zealand and South Africa.

'Receivers' are covered in a separate section comprising chapters on: numerical series; commercial, RAF and special receivers adopted for Army use; Receivers manufactured in Australia, Canada and New Zealand; Army broadcast and welfareamenities receivers.

'Direction Finding receivers and Systems' include chapters on rotating loop DF systems; commercial U-type Adcock DF systems; Army U-type Adcock DF systems; miscellaneous DF sets and systems.

The final section covers the 'Larkspur' era of sets, including Anti-Aircraft Command sets.

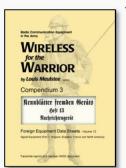


WftW Compendium 3 and 4

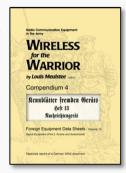
Foreign Equipment Data Sheets Part 1 and 2

First published August 2012 by Louis Meulstee

WftW Compendium 3: ISBN 978 90 819271 1 6 WftW Compendium 4: ISBN 978 90 819271 2 3



Wireless for the Warrior Compendium 3 and 4 contains a facsimile reprint of the German World War 2 publication entitled 'Signal Equipment' ('Nachrichtengerät'), also known as D50/13. The publication is Volume 13 in the 'Foreign Equipment Data Sheets' ('Kennblätter fremden Geräts'), a series of German Army publications providing data on enemy equipment, principally from Belgium, England, France, North America, Russia and Switzerland. It was first issued to the German forces in July 1940, completely revised in 1941, with supplements issued in 1941, 1942 and 1943



For practical reasons the reprint was split into two parts: Compendium 3 covering the Belgian, English, French and North American sections containing 225 different signal instruments in 474 pages, and Compendium 4 with the Russian and Swiss sections, containing 171 different signal instruments in 364 pages. For English-speaking readers an English introduction, table of contents, glossary and translation of original German sample pages are provided. The facsimile reprint represents the D50/13 publication as it was used issued and updated, including all supplements, of

which the last was issued in November 1943. 'Foreign Equipment Data Sheets' is a series of 15 different German Army publications providing principal data on enemy equipment ranging from small arms, heavy weapons, ammunition and vehicles, to communication equipment. They were compiled by the German high command, based on captured equipment and handbooks, but also from various (commercial) documents and journals, and issued to the German Forces as a guide to the reuse of the equipment. Original and complete copies are rare.

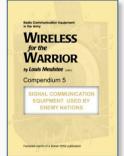
WftW Compendium 5

Signal Communication Equipment used by Enemy Nations

First published November 2012 by Louis Meulstee, ISBN 978 90 819271 3 0

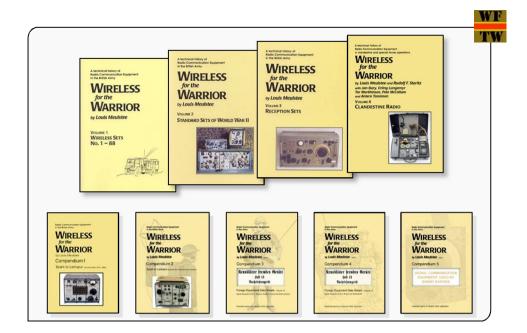
Wireless for the Warrior Compendium 5 is a facsimile reprint of 'Signal Communication Equipment used by Enemy Nations', a British publication providing technical and operational data on captured enemy communication equipment originating from Germany. Italy and Japan. It was produced by the Signals Research and Development Establishment (SRDE) operation with M.I. 8 and first issued as a secret document in January 1944.

The publication was a result of careful study and examination, based on captured equipment and handbooks, intended as a guide to the reuse of the equipment. At first glance the publication may be considered as the British



counterpart of the German 'Kennblätter fremden Geräts, Heft 13, Nachrichtengerät' (reprinted in WftW Compendium 3 and 4). However, the individual entries 'Signal Communication Equipment used by Enemy Nations' are far more detailed and accurate. In addition it provide many practical details such as hints on the operation and maintenance of the sets, glossaries, nomenclatures with an explanation of the type numbering systems, and connections of plugs, sockets and valve bases. Original and

complete copies are very rare. This reprint reproduces the publication as it was originally issued, including all supplements with the amendment changes already carried out.



Wireless for the Warrior

Volumes 1-4 and Compendium 1

Wireless for the Warrior *Volumes 1 - 4* and *Compendium 1* are available by mail order from Direct Book Service.

The easiest and most convenient way to order is online via www.radiobygones.com (go to the 'UK Store' via the 'EPE Online' link)

Books are normally kept in stock and despatched within seven days. It should also be noted that reduced postage rates may apply if more than one book is ordered. Contact the Direct Book Service for details.

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Wireless for the Warrior

Compendiums 2 - 5

Wireless for the Warrior *Compendiums 2, 3, 4 and 5* are only available direct from the 'Print On Demand' printers via the internet on-line bookshop at www.lulu.com/spotlight/wftw.

Print on demand (POD) is a printing technology and process in which new copies of a book are not printed until an order has been received, which means books can be printed one at a time. Each order is printed and shipped locally, which minimizes time in transit and transit costs.

For more information and up-to-date news about developments in the Wireless for the Warrior range of books, particularly the Compendium series, and a link to the bookshop see the Wireless for the Warrior website www.wftw.