WIRELESS for the WARRIOR

Pamphlet Series

No. 9 Key and Plug Assemblies Part 2 (British Larkspur and Clansman era). The cover artwork and layout of this publication was prepared in Serif Pageplus X8 using Times New Roman, Arial, Avant Garde Bk BT and Poppl-Laudatio fonts. The scanned illustrations and photos were enhanced and prepared with the use of Adobe Photoshop-Elements. The finished publication was directly converted into PDF format.

- First published in 2024, Version 1.00, as a free to download, print-ready publication.

© Louis Meulstee PA0PCR Ottersum The Netherlands <u>info@wftw.nl</u> <u>http://www.wftw.nl</u>

About this publication.

Key and Plug Assemblies were essential parts of many Army HF wireless sets and stations. This pamphlet is a follow-up of 'Key and Plug Assemblies, Pt. 1', which was primarily associated with the British Key W.T. 8 Amp. In this publication are shown Key and Plug assemblies used with British Larkspur and Clansman era HF radios, with in particular detail their connection to the associated radio, either direct or remote controlled.

This WftW Pamphlet was compiled in collaboration with Chris Bisaillion, VE3CBK, Canada. Many of the keys in this pamphlet are from Chris' collection.

The Pamphlet Series.

The Pamphlet Series of publications was created to accommodate a future range of reprints and articles of historical importance, hitherto not published documents, and reports on Army signalling. These can be downloaded from www.wftw.nl, freely copied and distributed, but only in their current form, preferably with mention on this website.

Note that the page layout of the Pamphlet Series was set up with mirrored pages, primarily intended for double-sided (colour) printing, preferably on good quality class A paper.

For previously issued free to download WftW Pamphlets, see the Info pages.



About this pamphlet.

This pamphlet is a follow-up of WftW Pamphlet series No. 5, 'Key and Plug Assemblies Pt. 1', which was primarily associated with the British 'Key W.T. 8 Amp.'. Shown in part 2 are hand speed Morse keys used with the British Army HF radios in the Larkspur and Clansman range, with the emphasis of being an assembly with a lead and plug, and leg straps. These Morse keys were often incorporated in a remote control assembly used for local and remote keying.

In contrast to the customary presentation of Morse keys, attention is given to the interface between the key and the associated radio, connected either directly or through a remote control system. Most of the Morse keys shown in this pamphlet are in the collection of Chris Bisaillion, VE3CBK. In addition, several interesting and less known items relating to the Larkspur and Clansman range of equipment are covered.

Contents

About this Pamphlet		3
Abbreviations		3
 # 1 Wireless Remote Control Unit L No. 2 # 2 Larkspur Remote Control Unit K and KV # 3 Larkspur Remote Control Unit K Mk.2 # 4 Larkspur Remote Control Unit K Mk.3		5 6 7 8
 # 5 Larkspur Station Radio A 13 # 6 Larkspur Station Radio A 14 (BCC 30) # 7 BCC 156 	·	9 11 12
# 8 A 510 # 9 C 14 (GR 510 T) # 10 C 15 (Collins VC 102)		13 13 13 14
# 12 Clansman UK/PRC-319 # 13 Clansman UK/PRC-320 # 14 Clansman UK/VRC-321/322 'Key Telegraph Manual' # 15 Racal TRA 931 series (Syncal 30)		14 14 15 16
Appendix 1 EMERs 'Keying unit, Vehicle KV'		17 18 20 23 27
References and additional reading		28
Info pages		29

Acknowledgements.

- Many thanks to the director and staff of the Royal Signals Museum, Blandford Forum, Dorset, UK, for permission to use illustrations from various sources held in the museum library.
- Chris Bisaillion guided me to unknown keys and took photographs of keys in his collection.
- Permission to use a photograph taken of a UK/PRC-319 was kindly granted by the Crypto Museum in Eindhoven, Holland.
- I am particularly indebted to Andy Jackson, G3JAC, for his help in providing scans of EMERs, correct VAOS/Nato Stores Numbers and proofreading of the pamphlet draft.

- Thanks to Pete McCollum, N0TDM, for doing the final proofreading, providing valuable suggestions on the readability of this WftW Pamphlet.

Abbreviations

VAOS = Vocabulary Army Ordnance Stores

NSN = NATO Stores Number

BCC = British Communications Corporation Ltd.

EMERs = Electrical and Mechanical Engineering Regulations

S.I. = Standard Inset

Notes.

No. 1. Remote Control Unit L No. 2.





Wireless Remote Control Unit L No. 1 (above) and associated circuit diagrams (below).



Wireless Remote Control Unit L No. 2, in combination with (local) Remote Control Unit No. 1, allowed R/T and Morse communication of a Wireless Set No. 62 or Station Radio C 12 from a remote location up to a quarter of a mile using D 10 cable. In addition, the remote units could be used as an intercom and call when the set was switched off.

The VOAS stores number of the Wireless Remote Unit L No. 2 was ZA 29007, and that of the Wireless Local Unit L No. 1 was ZA 29008.



Block diagram of the local and remote control units L Nos. 1 and 2 connected to a WS No. 62.



Components of the remote side with Wireless Control Unit L No. 2.



Components of the local side with Wireless Control Unit L No. 1 connected to a Wireless Set No. 62.

No. 2. Larkspur. Remote Control Unit K and KV.

Remote Control Unit K (Stores number initially Z1/ZA46190, later renamed NSN 5904-99-911-4516) was developed for remote hand speed Morse keying and voice operation of Station Radio C 11/R210, C 12 and C 13 HF sets of the Larkspur range of radios. It had terminals for two-wire control cable, a call button and two special 5-pt sockets for connecting a 'Microphone and Receiver Headgear Lightweight Assembly No. 1A'. This assembly was (apart from only one receiver element) identical to the 'Microphone and Receiver Headgear Assembly S.I. No. 1A' (Stores Y1/ZA10717) as used with Station Radio A40 and A41, later renamed to NSN Y1/5965-99-901-4288.



A pair of canvas straps were provided to allow the unit to be strapped to the operator's knee. The unit could be used remotely up to 1000 yards (ca. 914 m) using D10 field cable. It was normally connected to the line terminals of the 'J1' box or to the 'R' box of a two-set harness. In Wireless Control Harness Type 'A' it was connected to the line terminals of the 'JD9' box. Handset 'Telephone Hand S.I. Remote Control No. 1', provided for remote voice communication only, was used when remote voice operation only was required.





Circuit diagram of Remote Control Unit K.

Keying unit, vehicle KV.

A variation of the remote control unit K, known as 'Keying Unit, Vehicle KV' was produced for local keying and installed in vehicles only. It had two Mk.4 six-point sockets instead of the terminals and sockets of the K unit, allowing the use of standard crew members headgear assemblies. (See Appendix 1 on page 17). The KV unit was permanently bolted in position and used with the Larkspur HF sets, the key being connected in parallel with the

'Telephone Hand S.I. Remote Control No. 1' was used when only remote voice was required. Note the calling button between both line terminals. (S.I. = Standard Inset).

send-receive line. As it was intended to be fitted in the vehicle, no call button or straps were provided. Both Remote Control Unit K and KV were replaced by Remote Control Unit K Mk.2 and later K Mk.3 for remote Morse operation in combination with a crew headset (without the microphone function). For remote voice operation, 'Telephone Hand S.I. Remote Control No. 1' was used instead.

Continued on next page.

Continued from previous page.



Larkspur Junction Box J1 of Type B harness for a one-set installation connected Remote Control Unit K, K Mk.2 and K Mk.3 (or 'Telephone Hand S.I. Remote Control No. 1') to the Station Radio C 11/R210, C 12 or C 13 by two line terminals. (See also next page).



A stand-alone C 12 could also be keyed direct via an Adaptor 5-pt No. 38 to 'Key and Plug Assembly No. 19'. See WftW Pamphlet No. 5 on page 39 at: www.wftw.nl/downloads.html

No. 3. Larkspur. Remote Control Unit K Mk.2.

Remote Control Unit K Mk.2 replaced both Remote Control Units K and KV. For remote operation, it was used for hand speed Morse keying only in combination with a standard crew headset (without the microphone function). Voice operation was done with Telephone Hand S.I. Remote Control No. 1.

For local operation the key could be mounted in a vehicle near the set, fixed or semi-fixed using a mounting plate, or fitted on a carrier strapped to the operator's knee. The K Mk.2, originally designated VOAS Stores Number ZA51445, was later renamed NSN 5820-99-949-1174.



Continued on next page.

J1 Box. 🖕

Larkspur Station Radio C 11/R210 in air-portable container with cover detached (right). Note the Remote Control Unit K Mk.2, fixed mounted for local operation at the right-hand side of the operator's table, connected to the one-set J1 Box.

Larkspur keys were usually connected to the harness by D10 or similar twisted field cable to the remote terminals, but there was an alternative direct connection to the pressel (push to talk) line when the key was fitted locally as shown here. This was 'Connector, 2 Condr., 3ft, NSN 5995-99-949-3514', which had 6-way connectors in each end.





No. 4. Larkspur. Remote Control Unit K Mk.3.



Remote Control Unit K Mk.3 superseded the Mk.2 version. It was principally similar to the K Mk.2, apart from a modified Morse key lever having a longer arm and a modified knob. The NSN of this unit was 5820-99-102-5319.

Remote Control Unit K Mk.3. Note the longer key lever and knob with a finger rest.

No. 5. Larkspur. Key Telegraph. Station Radio A 13.



Station Radio A 13 low-power ground station with a second operator charging the internal battery from the hand generator position on the man pack.

Racal McMurdo variant of this key.

Prior to the closure of this pamphlet, Andy Jackson, G8JAC, added the following: Another variant of the Clansman era man pack key was the same as the A13 and HF156 key, but had no markings at all on the top cover area. An adhesive label on the side had the Racal logo and AA 671/B.

The Racal numbers list says that AA 671/B was: 'AA660006/B, McMurdo miniature Morse Key with knee strap. Supplied with 6

Continued on next page.

The local control circuit was incorporated in the

SR A 13, the standard headset or handset being

used as an intercom to the remote operator. Two terminals located at the bottom of the SR A 13 connected via D10 field cable to the remote control.

Ft. lead terminated with 5 pin captive Din plug, part No. 9186751,

Its leg strap was stamped NSN 5805-99-102-0917, which cross-

references to Ultra Electronics Ltd type 640-1-08741 (which looks like a Plessey number) and SRDE SD/B199357. The plug was a

(Farnell Type E.43). For use with TPA1341. (LA1061)'.

5-pin commercial DIN style.

Continued from previous page.



The 'Control Transmit Receive Remote' unit (NSN 5820-99-949-6365) was used to provide remote operation of a Station Radio A 13 from a distant location of up to about 800m using D10 twisted field cable. The distant operator may use voice or low speed Morse with both the A 13 Morse key and headset or handset connected. An interesting feature was that in the CW position of the RT/CW switch a side tone oscillator in the control unit provided an audio tone in the phones of the headset when the Morse key was pressed.





No. 6. Larkspur. Key Type 502. Station Radio A 14



Station Radio A 14, Low Power.

of the SR C 13, having the same pin connections on the plug. For local keying, it was connected to one of the two audio sockets. A local control unit and a remote control unit, connected by up to 1.6 km D10 field cable, were provided for remote voice and Morse operation. The key contacts were connected to point C and D on

Close-up view of the Morse key issued with an A 14. NSN Y2/5805-99-106-0402. The top cover was marked 'Key Type 502 BCC, London, England'. (Appendix 1). (BCC Type B8000-196)



Operator keying a SR A 14.



SR A 14 remote keying and voice.

Continued on next page.

SR A 14 Remote operation.



Circuit diagram of the remote RCU.

The side tone for local and remote Morse keying was (instead of that in the SR A 13), generated in the A 14 itself. The remote headset assembly and handset were similar to those used with the local operator.

No. 7. Key Type 502. Station Radio BCC HF 156.





The Key and Plug Assembly Type 502 (marked with 'BCC' on its top cover), issued with an HF 156, was similar to Station Radio A 14 except for a different type of plug (left). The key contacts were connected to point C and D on the plug. SR BCC 156 was a commercial interim set, pending the release of SR A 13.



No. 8. Station Radio A 510 (Australia).



Station Radio A 510 was an HF man pack transceiver produced in Australia and adopted in a limited number by the British Army.

The SR A 510 was developed as a jungle set for Infantry Company patrols where VHF would be unsuitable. AM R/T and CW operation with a range of 3–5 miles. The construction and shape was similar to the BCC HF 156, SR A 13 and SR A14 Morse keys.



See also Appendix 4.

Grooves on the base of the key, and a corresponding guideway on the side of the transmitter, enabled the Morse key to be attached to the set.

No. 9. Station Radio C 14.



Enlarged part of SR C 14 front panel showing Morse key socket.

Station Radio C 14 was a modified commercial Redifon GR 410. Though it had Morse keying facilities, at the time of compiling this pamphlet an illustration of the correct Morse key (If any was actually issued) was not yet found.

Requested is an illustration of the Morse key originally issued with the SR C 14.



Station Radio C 14. (GR 410 T).

No. 10. Station Radio C 15 (VC 102).

Station Radio C 15 was a Collins 618T HF transmitterreceiver (also known as VC 102) repacked and equipped with a power inverter and a separate control unit in a waterproof fibreglass box known as 'Case Electrical Equipment'. The key assembly was a standard USA type J-45 with leg clamp.



Case Electrical Equipment.



No. 13. Clansman. Key Telegraph Manual Manpack. UK/PRC-320.

For hand speed Morse operation of a UK/PRC-320, the key and plug assembly 'Key Telegraph Manual Man pack NSN 5805-99-117-7542' was connected direct to one of the two headgear sockets of the PRC-320. When stationary and using remote operation, a 'Control Radio Set CRL/R' was connected to the set. A 'Remote

Combining Unit RCU' at the remote side was connected via up to 3 km D 10 twisted field cable. The key contacts were connected to point C and D on the key plug. This key assembly was also issued with the UK/PRC-319.

(The Plessey part number of this key was 640/1/14572).



Continued on next page.



and Morse at static operation of a UK/PRC-320. The Morse key and plug assembly were connected to either one of the two headgear sockets of the Remote Combining Unit. This unit had an amplifier to increase the microphone gain and a locally generated side tone, receiving its power along the line from the radio. It could be used up to a distance of 3 km using D10 cable. It should be noted that the remote control CRL/R and RCU could also be used with other (HF) radios in the Clansman range, and this is an example of its use with a Clansman UK/PRC-320.

No. 14 Clansman. Key, Telegraph, Manual (KTM).

The 'Key, Telegraph, Manual' was issued for fitting in a vehicle connected direct to one of the two audio sockets on an HF radio such as Clansman UK/VRC-321 and UK/VRC-322 when fitted in a vehicle. It was electrically identical to the UK/PRC-320 Morse key, with the key contacts connected to point C and D on the plug.

The standard model (NSN 5805-99-652-5672) was a replacement of an earlier version (NSN 5805-33-117-5983) shown below.





Continued on next page.

Continued from previous page.



Standard version of the KTM Morse key with associated Tray Assembly.

'Key, Telegraph, Manual' (KTM) was primarily used with the Clansman UK/VRC-321 and UK/VRC-353 vehicle and fixed stations. The cable terminated with a standard Clansman audio plug and could be used with UK/PRC-319 and UK/PRC-320 when used in a stationary role. The mounting, 'Tray Assembly' was NSN

5805-99-653-0439. This key was manufactured by Royal Ordnance Factories (R.O.F.), Blackburn. R.O.F. was a collective name for the UK government's munitions factories during and after World War II.





Part of EMERs Tels L 782. This is the only evidence found to date of the existence of the KV Morse key.

RESTRICTED TELECOMMUNICATIONS ELECTRICAL AND MECHANICAL L 787 Mod Instr No 4 ENGINEERING REGULATIONS (By Command of the Army Council) RADIO CONTROL HARNESS, TYPE B TECHNICAL HANDBOOK - MODIFICATION INSTRUCTION SUB-TITLE: Increasing keying speed Introduction 1. In order to allow higher keying speeds (above 12 w.p.m.) to be used in Radio control harness, type B installations, two diodes must be incorporated in the circuit of Junction box Ji, or remote control unit R (as the case may be) to reduce the time lag of the relays. This regulation gives the necessary modification detail. Pricrity: Group 'B' (ACI 407/58 refers) 2. Estimated time required: 3/4 man-hour per unit or box 3: 4. Items affected Radio control harness, type B fitted in Station, radio, Cll/R210 installations Junction box, 1-set, J1, 24V - Part No Z1/ZA 46288 (NATO designation - Interconnecting box - Part No Z1/5820-99-949-1011) Remote control unit, R, 24V Part No Z1/ZA 46292 Part No Z1/5820-99-949-1072) (NATO designation - Control, radio set Boxes and units used in other installations will not be modified on the authority of this instruction. Action required by:-5. (a) Units and establishments holding the equipment (i) Request REME to modify equipment. (b) Units authorized to carry out field or base repairs (i) When requested by units demand stores and carry out this modification. (11) Demand stores for, and carry out, this modification on all units received for repair or overhaul when these are to be used with Cll/R210 installations. (iii) On completion of this modification ensure that the catalogue number of the unit concerned is suitably amended as required by sub para 7(o) and 8(m). Issue 1, 18 Oct 63 Page 1 Distribution - Class 334 and 335. Code No 3

It appeared that some operators were able to work at speeds beyond the capability of the relays in the harness. Therefore, a modification was authorized to enhance the operational speed and to modify certain boxes. This primarily affected C 11 installations, but applied to the C 13 as well.





Appendix 3a.

25th: APRIL 1968

DIRECTOR OF ORDNANCE SERVICES MINISTRY OF DEFENCE

E.S. 4280

rem PL	ATEL	MANAG	EMENT C	ODE	N.A.T.O. STOCK No.			ő	SCHEMATIC	DRAWING No.
.o Z	EF.	NAVY	ARMY	AIR FORCE	OR CATALOGUE No.	ITEM NAME OR DESIGNATION	ITEM DESCRIPTION	OFF	REF.	AND/OR REMARKS
	-									• •
-	A		۲2		5805-99-106-0402	TELEGRAPH KEY ASSEMBLY	with straps and 6 pole plug			B.8000-196
N	A		21		5340-99-949-3254	STRAP, WEBBING	cotton; 2 ft lg; 1 in. w; w/buckle	-		6642-598
5	¥		Y2		5805-99-106-7399	SOLE FLATE, TELEGRAPH KEY	Cd plated; 2-13/32 in. lg, 2 in. w, 1/16 in. thk; 2 slots	-		MP2681
.4	A	-	21		5820-99-949-2052	PAD, RUBBER	synthetic; 2.49 in. 1g, 0.83 in. w, 1/32 in. thk; one end radiused	-		MF2661
5	A		Z1		5805-99-947-2047	BODY ASSEMBLY, TELEGRAPH KEY	plastics; 2.52 in. lg, 1 in. w, 0.875 in. h o/a dim.	-		MF2651
9	A		21		5310-99-949-2073	NUT, SLEEVE	<pre>BA; br; hex; Cd plated; No 8; 0.180/0.190 in. o/a lg</pre>	-		MF2667
2	¥		21		5310-99-949-2074	WASHER, FLAT	rd; br; Cd Flated; 0.106 in. id; 0.312 in. od; 0.020/0.025 in. thk	-		MF2671
80	A		237		5945-99-109-8480	ARM ASSEMBLY	*. - * -	-	· .	MP2655
6	A		21		5340-99-949-2046	SPRING, HELICAL COMPRESSION	6 active turns; 0.128 in id, 0.406 in. free lg; 0.36 in. dia wire	-		MP2664
0	¥		21		5330-99-949-2051	GASKET	synthetic rubber; rect; one end radiused; 2.167 in. 1g aperture, 0.56 in. w, aper- ture; 0.22 in. w of bearing surface	-	1	MP2662
-	¥		21		5805-99-949-2032	COVER, TELEGRAPH KEY	plastics; 2.5 in. lg, 1 in. w, 0.16 in. thk	- ·	2	MF2652
N	¥ ,		21		5820-99-949-2054	DIAFHRACM, TELEGRAFH KEY	synthetic rubber; heel share; corrugated; 0.76 in. 1g, 0.781 in. w o/a dim.	-		MP2663
5	A		21	· .	5310-99-949-2071	WASHER, FLAT	br; rd; 0.25/0.250 in. od; D shape hole; 0.116/0.118 in. w, 0.14.3/0.145 in. lg, 0.028 in. thk	-		MP2665
4	¥		21		5820-99-949-2033	FLATE, RETAINING, DIAFHEACM	plastics; semi-circul ar; 0.5 in. rad, 15/15 in. lg	-		MP2653
	A		12		5355-99-949-2045	KUOB	plastics; domed; 4 BA tapped insert; 0.93 in. od, 0.78 in. h	5		MP2654
9 1-	A A		232	•	5935-99-108-6772	CABLE ASSEMBLY, SFECIAL PURPOSE FLUG, ELECTRICAL	Al; free; male shell; size 10; 6 pole; vermer montrel			MP2676 05-0022-10-6P
	A		212		5975-99-109-8479	SLEEVE, HEAT-SHRINK	Acted licential	-		6001-1012_P

ILLUSTRATED SPARE PARTS LIST FOR

READ PREFACE BEFORE DEMANDING SPARES

TELEGRAPH KEY ASSEMBLY, BCC TYFE B8000-196

Appendix 3b.



7610-010-0810





IDENTIFICATION LIST

KEYS. TELEGRAPH. LIGHTWEIGHT. (AUST.) NO. I

1956



		RESTRICTED		
PLATE REF. NO.	DESIGNATION	CATALOGUE NO.	NO. OFF	DRAWING NO. OR REMARKS
1 *	KEYS, TELEGRAPH, LIGHTWEIGHT, (AUST.), NO. 1	Y1/TSE(W)9-2		
2 345 6789 10	ARM ASSEMBLIES. ARMS NUTS, lock, 2BA, hex., NS, cad.pl. NUTS, 4BA, hex., w/collar, 1 in. AF, MS, cad.pl. FLATES. RIVETS. SORKWS, grub, 2BA, br., ET, cad.pl. SPRINGS. POINT ASSEMBLIES BODIES.		1 11 1211 111	TSE(W)9-15 M.Pt.No. 31603 TSE(W)9-16 M.Pt.No. 31603 TSE(W)9-16 M.Pt.No. 31625 TSE(W)9-13 M.Pt.No. 31630 TSE(W)9-20 M.Pt.No. 31604 TSE(W)9-19 M.Pt.No. 31629 TSE(W)9-17 M.Pt.No. 31627 TSE(W)9-18 M.Pt.No. 31628 TSE(W)9-21 M.Pt.No. 31626 TSE(W)9-21 Braised
11 12	BODY ASSEMBLIES		1 1146211 .111	TSE(W)9-3 M.Pt. No. 31601 TSE(W)9-3 M.Pt. No. 31601 TSE(W)9-4 M.Pt. No. 31616 TSE(W)9-5 M.Pt. No. 31616 TSE(W)9-5 M.Pt. No. 31618 TSE(W)9-6 M.Pt. No. 31619 TSE(W)9-6 M.Pt. No. 31620 TSE(W)9-8 M.Pt. No. 31621 TSE(W)9-9 M.Pt. No. 31615 TSE(W)9-11) Braised TSE(W)9-12) together.
13 14 15 16 17 18 20 20 21 22	CORD AND PLUG ASSEMBLIES CABLE, electric, miniature, No.1C PLUG3, 3-pin HOUSINGS, LH HOUSINGS, RH MOULDINGS NUTS, 8BA, hex., br., cad.pl PINS SCREWS, 8BA, ch.hd., 5/16 in.lg., br., cad.pl	¥3/6145-100001 ¥1/TSE(¥)47-2	1 As req. 1 1 3 2 1 3	M. Pt. No. 32432 TSE(W)47-6 TSE(W)47-7 TSE(W)47-3 TSE(W)47-4 T3E(W)47-5
23 24 25 26	COVERS, body DIAPHRAGMS GASKETS GASKETS	¥1/TSE(#)9-29	1 1 1	T3E(W)9-24 M.Pt.No.31605 T5E(W)9-32 M.Pt.No.31612 N.Pt.No.31609 TSE(W)9-31 M.Pt.No.31611
27 	KNOBS, moulded	¥1/T6E(¥)9-13	1	M. Pt. No. 31602 TSE(W)9-14 M. Pt. No. 31624
28 29 30 31 32 33 34 35 36 37 38 39	LUGS, solderless, SBA, tinned cpr. NUTS, 6BA, hex., br., BT, cad.pl. NUTS, 8BA, hex., slotted, br., cad.pl. NUTS, lock, 4BA, hex., br., ET, cad.pl. NUTS, lock, 6BA, hex., br., ET, cad.pl. PLATES. FLATES. SCREWS, 8BA, ch.hd., ‡ in.lg., br., ET, cad.pl. SCREWS, 8BA, ch.hd., 3/16 in.lg., MS SCREWS, 8BA, c'sk.hd., ‡ in.lg., MS SLEEVES, identification		2 1 3 2 1 1 1 1 7 2 5 1	M. Pt. No. H 290 TSE(W)9-33 M. Pt. No. 31613 TSE(W)9-25 M. Pt. No. 31606 TSE(W)9-20 M. Pt. No. 31604 TSE(W)9-28 M. Pt. No. 31608 TSE(W)9-26 M. Pt. No. 31607 TSE(W)9-34 M. Pt. No. 31614
40	SPRINGS		1	TSE(W)9-27 M. Pt. No. 25790

Appendix 4d

PLATE REF. NO.	DESIGNATION	CATALOGUE NO.	NO. OFF	DRAWING NO. OR REMARKS	
41 42 43 44 45	<pre>WASHERS, ET, cad.pl. WASHERS, plain, large, 8BA, br., ET, cad.pl. WASHERS, spring, 4BA, st., cad.pl. WASHERS, spring, 8BA, st., cad.pl. WIRE, 20 SWG, tinned cpr., w/nylex sleeve</pre>		1 2 1 4 As req.	TSE(W)9-35 M.Pt.No.31654	
	RE	PAIR KITS			
•	KITS, repair, No.1 (Aust.) lightweight telegraph key, consisting of :-	Y1/YAA 1436	1		
37946 246 337 494	ARMS RIVETS. SPRINGS DIAPHRAGMS GASKETS PLATES SCREWS, 8BA, ch.hd., 3/16 in.lg., MS SPRINGS WASHERS, spring, 8BA, cad.pl.		121112212	TSE(W)9-16 M. Pt. No. 31625 TSE(W)9-19 M. Pt. No. 31629 TSE(W)9-18 M. Pt. No. 31628 TSE(W)9-32 M. Pt. No. 31612 TSE(W)9-31 H. Pt. No. 31611 TSE(W)9-20 N. Pt. No. 31604 TSE(W)9-27 M. Pt. No. 25790	
13 28	<pre>KITS, repair, cord and plug assembly,</pre>	¥1/YAA 1437	1	M. Ft. No. H 290	
	WASHARS, Spring, ODA, Caq.pl		2		

RESTRICTED

Appendix 5

List of VAOS and NSN of Morse keys in the Larkspur and Clansman era.

Name	VAOS	NSN	Key	Page	Type of radio
Remote Unit L No. 2	ZA 29007		1	5	WS 62, SR C 12
Remote Control Unit K	Z1/ZA 46290	5904-99-911-4516	2	6	C 11/R210, C 12, C 13
Remote Control Unit K Mk.2	ZA 52445	5820-99-949-1174	3	7	Idem
Plate, Mounting. (K Mk.2 Semi fixed)	ZB 15000	5240-99-105-4022	3	7	Idem
Carrier, Free, Remote (K Mk.2 with strap)	ZB 15001	5820-99-104-3728	3	7	Idem
Remote Control Unit K Mk.3		5820-99-102-5319	4	8	Idem
Key, Telegraph		5805-99-949-9618	5	9	SR A 13
Control,Transmit,Receive, Remote		5820-99-949-6365	5	10	Idem
Automatic Keyer, 2 operating speeds		5820-99-103-4146	5	10	Idem
Key, Type 502 (BCC type D8000-196)		YA/5805-99-106-0402	6	11	SR A 14
Control Radio Set, RCU 513L		Z1/5820-99-106-0631	6	11	Idem
Interconnection Box, RCU 513R		Z1/5820-99-106-0632	6	11	Idem
Key, Type 502 (BCC)		Info requested	7	12	SR HF 156
Key, Telegraph, Lightweight, Aust., No. 1		Y1/TSE(W) 9-2	8	13	SR A 510
GR 410 Morse key		Info requested	9	13	SR C 14
J-45 with leg clamp		USA Army type	10	13	SR C 15
Key and Plug Assembly No. 2B, Mk.I	Z1/ZA 26924		11	14	SR D 11/R210
Slide No. 1	Z1/ZA 4291		11	14	Idem
Key, Telegraph, Manual, Manpack		5805-99-117-7542	12	14	UK/PRC-319
Key, Telegraph, Manual, Manpack		5805-99-117-7542	13	14	UK/PRC-320
Control Radio Set, Local/Remote CRL/R		5820-99-117-0449	13	15	Clansman HF radio
Control Radio Set, RCB		5820-99-117-6111	13	15	Idem
Key, telegraph, Manual KTM (Prototype)		5805-33-117-5983	14	15	UK/VRC-321/322
Key, telegraph, Manual KTM		5805-99-652-5672	14	16	UK/VRC-321/322
Racal Syncal Morse key		Info requested	15	16	Syncal 30 Series

References

User handbook for Wireless Control Harness Type A, W.O. Code No. 11194, Apr. 1955. User handbook for Wireless Control Harness Type B, W.O. Code No. 11195, Feb. 1956. Illustrated spare parts list for Control, Transmitter-Receiver, Remote, A 13, E.S. 3989, W.O. Code No. 14474, Feb. 1965. User handbook for Station Radio A 13, Army Code No. 13120, (revised edition) Jan. 1966. Complete Equipment Schedule, Service Edition 43205, Station Radio A 13 LP Basic, Army Code No. 43205, Aug. 1975. Portable Transmitter-Receiver Type HF 156 Mk.2, BCC Code No. TP 35/3, Feb. 1964. User handbook for Station Radio A 14, Army Code No. 13119, Jan. 1969. Station Radio BCC30 (A 14), Commercial Brochure British Communications Corporation Ltd, (n.d.) Complete Equipment Schedule, Service Edition 43122, SR A 14, Simple Equipment, Army Code No. 43122, Dec. 1973. User handbook for Wireless Station A 510, WO Code No. 12175, Nov. 1957. User handbook for Station Radio C 12, Army Code No. 11562, (revised edition) 1977. User handbook for Station Radio C 15 (VC 102), W.O. Code No. 13127, Dec.1963. Reference handbook for Clansman Radio and Ancillary equipment, Army Code No. 61004, May 1976. User handbook for Clansman radio control harness, Army Code No. 61172, April 1976. EMERs Tels F 162, Station Radio A 14, Issue 1, Nov. 1968. EMERs Tels L 782, Page 17, Keying unit, vehicle KV, Sep. 1969. EMERs Tels L 787, Mod. Instr No. 4, Radio control harness, type B, Increasing keying speed, Oct. 1963. EMERs Inst. Instr. Q115, Truck Radio Medium, SR D11-R230, 1-ton 4x4, Austin K9, Technical handbook, Aug. 1962. Illustrated spare parts list for acoustical equipment used with Harness Types A and B, W.O. Code No. 13473, Dec. 1961. Illustrated spare parts list for Wireless Control Harness, Type B, 12V, E.S. 3713, W.O. Code No. 13069, Sep. 1960. Illustrated spare parts list for Control, Transmitter-Receiver, Remote, A 13, E.S. 3989, W.O. Code No. 14474, Feb. 1965. Illustrated spare parts list for Wireless Control Harness, Type B, 24V, W.O. Code No. 13067, (rev.) Apr. 1975. Illustrated spare parts list for Test Kit Radio, Transmitter-Receiver Radio A 13, E.S. 4131, Army Code No. 14720, Sep. 1967. Illustrated spare parts list for Telegraph Key Assembly, BCC Type B8000-196, E.S.4280, Army Code No. 60200, April 1968. Identification list. Keys Telegraph Lightweight. (Aust.) No. 1, Australian Military Service, 6710-010-0810, 1956. The Royal Signals Reference Manual, Part IV, Equipment Data (Provisional), HQ School of Signals, April 1962. The Royal Signals Reference Manual, Part 2, Equipment Data, Army Code No. 70806, July 1973. Assessment Trial Report No. 562/71, Racal Syncal and Comcal HF SSB radios, School of Signals, Mar. 1971. Clansman, Sales brochure, MOD Defence Sales Organisation, Dec. 1979. Key and Plug Assemblies, WftW Compendium No. 7, isbn 978-90-819271-6-1. Free download at: http://www.wftw.nl/downloads.html

A loose leaf folder for the WftW Pamphlet Series.

Shown right is a suggestion for a simple and inexpensive method to keep the printed pages together in a plastic clear view A4 document folder. Separate front and rear cover sheets, provided with the downloads, will give the folder an attractive appearance.





The WftW Pamphlet series is an addition to the Wireless for the Warrior range, created to accommodate a future range of reprints of articles and reports of historical importance, hitherto not published documents, and technical reports on British Army signalling. This free to download and print ready series in A4 format replaced the now discontinued 'Overview' booklets. WftW Pamphlet No. 5 replaced the earlier Compendium 7 A5 format free

download and is now only available in A5 printed form and free A4 format download.

In response to requests, WftW Pamphlet No. 4 (Technical Manual Art) is now also available through the print ondemand feature of Lulu Inc.

See https://www.lulu.com/spotlight/wftw

About the Wireless for the Warrior books

The Wireless for the Warrior range of books (comprising the **Volume, Compendium, Supplement**, and **Pamphlet** series) are intended as a source of reference to the history and development of radio communication equipment used by the British Army from the very early days of wireless up

to the 1960's. Line equipment and military radio communication equipment from other countries is also covered in the recently published Compendiums. For detailed information, review pages and order information visit www.wftw.nl



The books in the WftW Volume series are very detailed and include circuit diagrams, technical specifications and alignment data in addition to technical development history, complete station lists and vehicle fitting instructions. Generally, no operational histories are given, as these have been published extensively in numerous other books.



The WftW Compendium series is a new addition to the Wireless for the Warrior range, currently comprising 7 books. The new series is principally intended as a practical guide and reference source to vintage military signal communication equipment. The books are particularly valuable to anyone with an interest, professionally or otherwise, in this subject, requiring an elementary but

complete quick reference and recognition handbook. Its condensed data summaries are liberally illustrated with photos and drawings, explanatory captions and a brief description of the main ancillaries.

Its pocket-size format and laminated soft cover make it an ideal reference and reliable companion for events such as auctions and radio rallies.



WftW '**BUGS**' is a recent book describing the technical history of telephone and room surveillance systems of the Stasi. It was written in cooperation with Detlev Vreisleben.



The WftW **'Supplement'** series are full colour reprints of previously published WftW Vol. 4 Supplement 'Chapters'.