

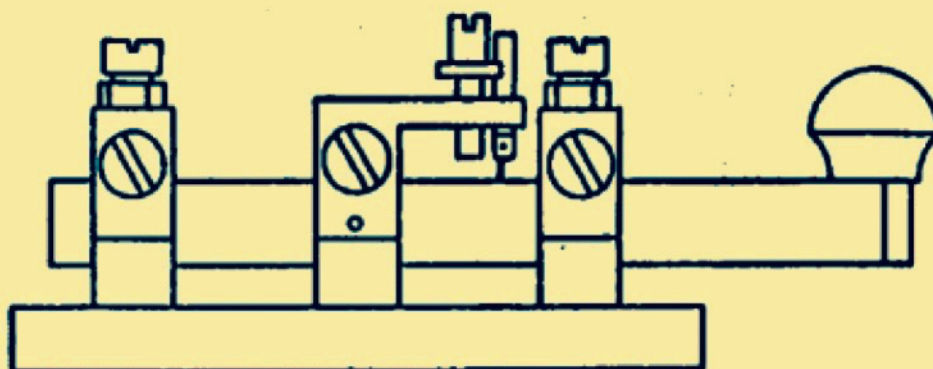
Reprints from:

**Flying
the flag
for
Morse**

Morsum Magnificat

The Morse Magazine

***Key WT 8 Amp
Worldwide Survey Results***



The Best of "MM" - 2

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Reprints from:



Key WT 8 Amp Worldwide Survey Results

Introduction

From 1989 to 2001, a number of articles on the Key WT 8 Amp appeared in *Morsum Magnificat* (known as “MM” to its readers). Three of the articles are reproduced here as originally published, and the worldwide survey reports from MM28, MM37, and MM50 have been brought together into one document which was compiled in 2006.

The compilation was re-edited in a larger and bolder font in April 2017. This version includes some alterations and some additional information received after the survey was originally published.

The articles published were:

The Ubiquitous Key WT 8 Amp, by Jim Lycett, MM22, Spring 1992.

Key WT 8 Amp, Worldwide Survey Results, by Tony Smith, MM28, June 1993.

Key WT 8 Amp, Further Information, by Tony Smith, MM37, Christmas 1994.

Key WT 8 Amp, Final Instalment, by Tony Smith, MM50, February 1997.

Keys for the Wireless Set No.19 (Canada & USA), by Chris Bisailion, MM45, April 1996.

Key WT 8 Amp No2 – Specification, by Tony Smith, MM77, September/October 2001.

Well over 100 variations of the Key WT 8 Amp, made in six countries, were reported in the survey and it is hoped that the information from all these articles, now presented as a single document, will help collectors and users to identify their keys and provide useful and interesting information about them.

This revised version of the Survey is downloadable from the internet free of charge as a service to Morse enthusiasts around the world. It must not be copied for any commercial use whatsoever without permission from the individual copyright holders of the articles contained therein.

73,

Tony Smith G4FAI

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I SUPPOSE I am a compulsive thematic collector of *objets d'art*. Over the years I have collected a variety of things from stamps to radios, instruments, cars, pictures, and of course Morse keys. Each time I collect a series of things I endeavour to become familiar with that field of specialisation, forever probing the hidden depths of my current theme.

I was awakened to the fact that there existed many variations on an inexpensive theme of World War II Morse keys by an

article which appeared in the 22 September 1938, issue of *Wireless World*, p.281, introducing the Whiteley Electrical Radio Company's 'W.B. Morse Key'. The extract below appears with permission of E+WW 1991.

The Ubiquitous Key WT 8 AMP

by Jim Lycett GOMSZ, BSc CEng MIEE

Similarity with Later Keys

It is apparent, even to an untrained eye, that a great

similarity exists between this Whiteley key and the generic form of some of the military keys of WWII. The generic form to which I refer is the KEY WT 8 AMP. It would appear in various assemblies as the

W.B. MORSE KEY

A Morse key of the kind usually described as the 'straight' variety has just been introduced by Whiteley Electrical Radio Co., Ltd., 109, Kingsway, London WC2. It is a delightful key to operate, for it has that feeling of solidity that contributes so much to good sending and there is not the slightest trace of side play or whip. Some idea of the massive construction can be gauged from the fact that the rocker arm is $\frac{3}{4}$ " square, while the Tungsten contacts measure $\frac{3}{16}$ " in diameter. It is claimed, and appearances support this, that the key will handle up to 8 amps of current.

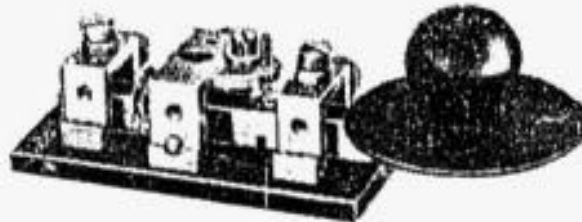
An unusual feature of its construction is

that the main contacts are at the back, or remote from the knob, of the key, one is located on top of the rocker arm and the fixed contact is on a screw attached to a stirrup-shaped piece of metal. A similar fitting supports another contact just in front of the knob, and this serves the same function of the usual 'back contact' on the key.

The parts are assembled on a small ebonite base about $\frac{3}{16}$ " thick, which should preferably be secured to a larger base of insulating material if the key is to be employed in high-

voltage circuits as the heads of the screws securing the various parts are not counter-sunk sufficiently for mounting on a metal base.

The price of this new key is 21s.



Morse key of massive construction made by Whiteley Electrical Radio.

war continued, the earliest forms being fitted into the KEY & PLUG ASSEMBLY No 9.

My earliest key of this type, (KEY WT 8 AMP No 1 - LMK & Co 1940), is shown in Fig. 1 (see page 24), although a 1938 model by LMK & Co. exists. Note the similarity of construction, with the $\frac{3}{8}$ in square rocker arm, 3 stirrup-shaped bridges, the rather nice spring tensioner (similar to the Post Office, and RAF D type keys – but at the front), the black ebonite base, the tapered pin bearing and the familiar shaped knob. The original Whiteley key sported a huge finger-plate some 2 inches in diameter and several military models displayed this facet, though the majority had somewhat modest alternative forms of protection.

Juxtaposed with the WT 8 AMP key is the American Bunnell key, Fig. 2, also fitted into the Key & Plug Assembly No 9. This key has three brass stirrups of equal cross sectional size and a brass arm, all unplated, and a base of identical size to the WT 8 AMP, but with a knob of different proportions. No military reference mark is carried on the key.

Design Changes

Shortly after the introduction of the military key, possibly due to pressures of war and scarcity of materials, several design changes took place. The WT 8 AMP No 3 (ZA 4605) 1941 by E.T. Ltd, reflects a minor change from taper pin to parallel pin bearings. The change from the PO style spring tensioner to a simple screw and locknut can be seen in Fig. 3, my only Whiteley Electrical Radio Company key (KEY WT 8 AMP No 3 - WER 1940 - ZA4605).

A variation on the theme can be seen in Fig. 4 (KEY WT 8 AMP No 2 - N.E. Co 1941), with the removal of the front stirrup and provision of an extra hole in the base for fitting into the No 9 assembly. Note the insulating material under the knob. The 'back stop' is formed from the head of the screw holding the main contact, and the fixed part by a recess in the ebonite base.

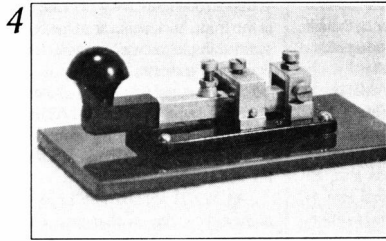
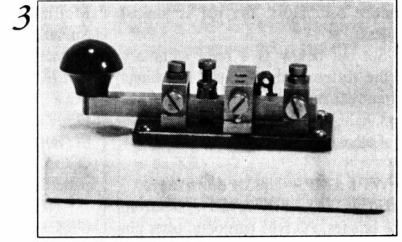
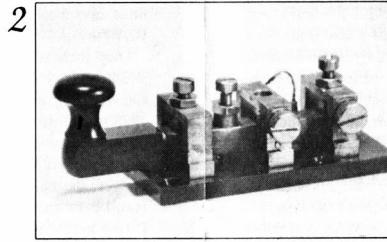
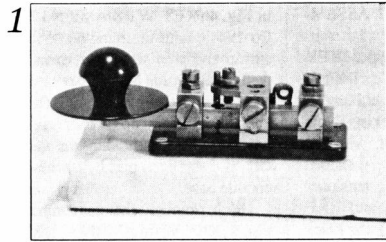
More dramatic changes can be seen in Fig. 5 (KEY WT 8 AMP No 2 MKII - ZA 2869 - PX 1), and Fig. 6 (KEY WT 8 AMP No 2 MKII – no further identification), where the key now takes on a conventional configuration with main contacts at the front, back contacts at the back, and again a simple screw and locknut for spring tension adjustment.

The base, incidentally, in all these models is the same size (3.5 x 1.625in), with four main fixing holes. Some models have an additional hole in the base for mounting into the No 9 assembly.

As WWII slipped into history, even more radical design changes took place. The $\frac{3}{8}$ in square rocker arm was replaced with a Bakelite moulding, along with moulded bearing blocks in the base. This new style (KEY WT 8 AMP No 2 MKIII - ZA 28685), Fig. 7, was retained well into the post war years. Last summer at a sea-front display, I saw a MKIII in service with the RAF TCW in a practice oscillator set.

Many Uses

The WT 8 AMP keys have appeared in numerous pieces of equipment and casings, such as hand signalling lamps; 'KEY & PLUG ASSEMBLY No 9'; radio transceivers (No 19 set); Unit Operator No 1



Evolution of the Key WT 8 AMP

Fig. 1. KEY WT 8 AMP No 2 - LMK & Co 1940.

With P.O. type tensioner and taper bearings

Fig. 2. KEY WT 8AMP, brass. J.H. Bunnell & Co, New York, USA

Fig. 3. KEY WT 8 AMP No 3 MKI - WER 1940 - ZA 4605.

Simple screw tensioner and parallel pin bearings

Fig. 4. KEY WT 8 AMP No 2 - N.E. Co 1941. Two bridges

Fig. 5. KEY WT 8 AMP No 2 MKII - ZA 2869 - PX 1.

Conventional configuration, main contacts at front

Fig. 6. KEY WT 8 AMP No 2 MKII. No further identification

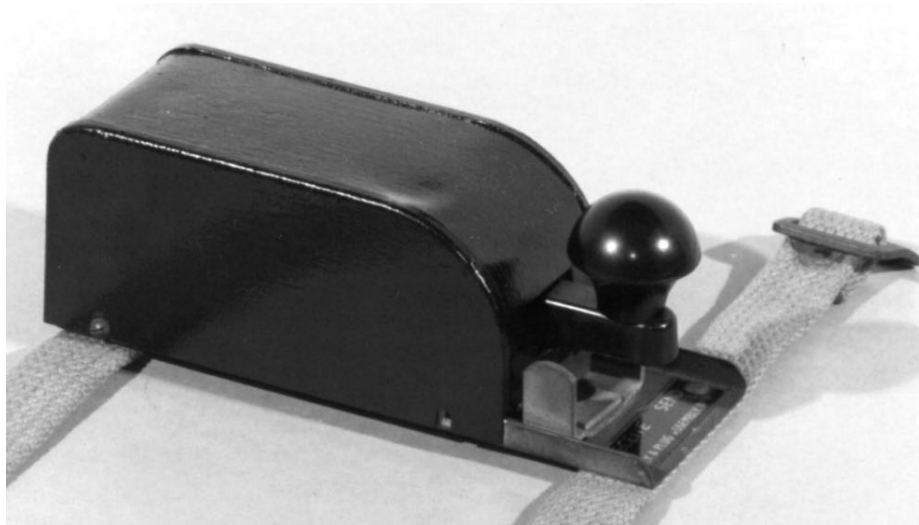
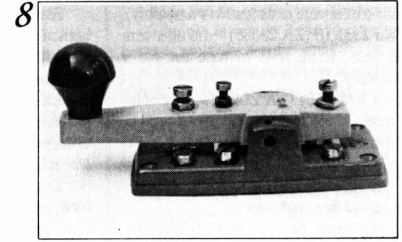
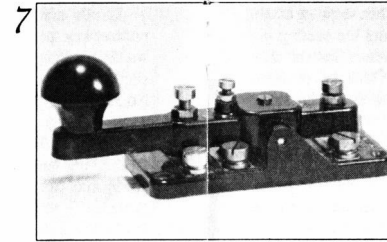
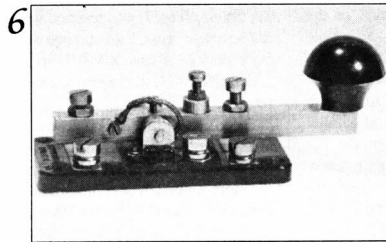
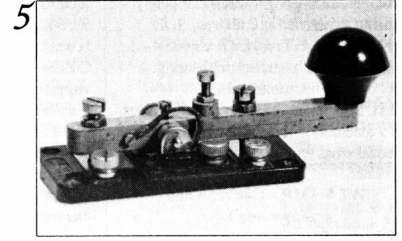
Fig. 7. KEY WT 8 AMP No 2 MKIII - ZA 28685.

Metal lever replaced by Bakelite moulding

Fig. 8. Last manifestation? S-R Cotel key

Photos Figs. 1 - 7 by Jim Lycett. Photo Fig. 8 by Tony Smith.

All keys photographed are in the collection of Jim Lycett



British Key & Plug Assembly No 9. Photo: Jim Lycett G0MSZ.

cases; 'Buzzer SIG. Training' assemblies; practice oscillators; the list is almost endless.

Set out below is a brief summary of the different models and markings currently in my collection of WT 8 AMP keys, in historic progression for the benefit of other collectors of these keys.

WT 8 AMP – 'Upside down' keys

1. No 2 1940 LMK & C0 – 3 stirrup type bridges, PO type tensioner, taper pin bearing.
2. No 2 1941 N.E.Co – 2 stirrup, simple screw tensioner, parallel pin bearing.
3. No 3 MKI 1940 WER (ZA 4605) – 3 stirrup, otherwise as 2 above.
4. No 3 1941 E.T. Ltd. (ZA 4605) – as 1 above, but with parallel pin bearing.

Unmarked

5. J.H. Bunnell & Co, New York, USA (ex No 9 assembly) – 3 unplated brass stirrups of equal cross section, simple screw spring tensioner.

WT 8 AMP – Conventional arrangement keys

6. No 2 MKII (ZA 2869 - PX 1) – painted arm with rounded ends, parallel pin bearing.
7. No 2 MKII (no other identification) – brass arm, square ends (ex No 9 assembly).
8. No 2 MKIII (ZA 28685) – moulded arm and base. Extra hole in base for No 9 Assembly.
9. No 2 MKIII/I (ZA 28685) – four holes in base.
10. No 2 MKIII/I (Y1/5805-99-104-0214) NATO numbering.

Prices – Then and Now

The price of the original Whiteley key, at 21s (£1.05) appears high compared

with other keys of the same vintage. The McElroy 'STRATE KEY' De Luxe Streamline – chromium plated with $\frac{3}{16}$ in contacts – as advertised by Webb's Radio in *Electronics & Television and Short-wave World*, December 1939, was 15s (75p) and in the same advertisement a Service Pattern key ('designed by British Operators who are used to handling navy pattern keys') was offered at 25s (£1.25).

Today, WT 8AMP keys may be obtained for as little as 20p, but a popular price at radio rallies and government surplus stores is between £2 and £5. Often the distinguishing features or identification markings will be hidden in wire-infested, open-fronted, army-green boxes carrying identification such as UNIT OPERATOR No 1 MKII. Possible suppliers in the UK include Anchor Surplus, Nottingham; M & B Radio, Leeds; and Telford Electronics.

A key found in a dirty or poor condition can generally be restored by a complete strip down and subsequent cleaning, either by hand or ultrasonically. For stubborn marks on plated brass work, immerse the parts in weak hydrochloric acid or a proprietary cleaning agent and wash thoroughly with soapy water.

Exercise caution when stripping down, particularly in removing the bearing pin and the tungsten contact inserts. The ebonite/Bakelite base can be made to sparkle by polishing with a mild metal polish such as Brasso.

Use a Heavy Base

These keys can be made to key very well, provided they are securely fixed to a large or heavy base. I have used a variety of materials for bases including marble

(they make very nice ornaments), Tufnol, wood and steel. Marble can be worked with conventional metal cutting tools, and the edges finished by filing, sanding (wet and dry paper), and careful finishing with brass polish or buffing wheel.

A useful hint to avoid cracking the ebonite/Bakelite base when mounting is to place a washer under each mounting hole, thus raising the key off the mounting base. Fixing to marble is made easier if a template is made and clearance holes drilled into the marble. Immediately prior to fixing the key, fill each hole with epoxy resin and push the fixing screws (4BA) – well oiled into place. The oil acts as a release agent and allows the key to be removed at a later stage.

A suitable base size for the WT 8 AMP key is 6 x 3in and up to 3/4in thick (marble). Green felt or baize on the underside gives the key that 'finished off' look, and should be acceptable to even the most discerning admirer.

Last Manifestation?

A more recent key which resembles the WT 8AMP is an elegant two-tone grey key, Fig. 8, bearing the marks 'S-R, Cotel, Made in England', fitted in ex-service Morse trainers.

A 'designer' key in every aspect, it is a little longer (by 1/2in) than the WT 8 AMP but has the same generic form as the MKIII, that is, a moulded arm and base, with contacts and spring positions in the same ratio. It also has the same military style of knob as the WT 8 AMP.

However the parallel pin bearing has been replaced with a pointed pin and grub screw, enabling precision adjustment. Overall, this key has a modern appear-

ance, with 'boxy' lines, and operates very well. Can this be the last manifestation of the WT 8 AMP key which has given faithful service for over half a century? *MM*

INFORMATION WANTED

For the benefit of collectors, *MM* is preparing a list of all reported versions of the **KEY WT 8 AMP**. Readers owning any of these keys are asked to send details to Tony Smith. Please send as much of the following information as possible. Don't worry about duplicating information. It is better to have the same details from several sources than not at all!:

1. Key WT 8 AMP designation, e.g. No 2 MkII, (or indicate N if not marked).
2. Number of bridges, i.e., 3, 2, or 0.
3. Type of tensioner, i.e. PO type (tension spring) or simple type (compression spring) (indicate P or S).
4. Reference No. ZA or other reference (indicate N if not marked).
5. Base with square or rounded corners (indicate S or R).
6. If mounted in No 9 Assembly, or if base has extra hole, see text (indicate 9).
7. Bearings, taper pin (indicate T) or parallel pin (indicate P). A taper pin may be identified by observing each end of the pin. The larger end diameter is 5/32in and the smaller 1/8in. The length of the pin is usually 1.5in. A parallel pin is generally 1/8in dia. and 1.3in long.
8. Finger plate/knob skirt (indicate F).
9. Maker (or N if not indicated).
10. Year (or N if not indicated).
11. Country, Australia (A), Canada (C), England (E), New Zealand (NZ), USA (US), other (specify), not indicated (N)
12. Any other information, especially original use and full name of maker if known.)

Key WT 8 Amp Worldwide Survey Results

by Tony Smith G4FAI

An amalgamation of three articles which appeared in *Morsum Magnificat*, *The Morse Magazine*, in 1993, 1994, and 1997 with some later additions.

The article by Jim Lycett G0MSZ in *Morsum Magnificat* No.22 (Spring 1992), describing the evolution of the Key WT 8 Amp aroused widespread interest among readers of *MM* and even produced some personal reminiscences. It was particularly pleasing for me to discover that a relative of mine, Charles Parker of Dunkirk, Kent, remembered supervising a line of girls making "8 Amp keys" in the early part of WW2.

This was at the Telephone Manufacturing Company in South East London, and Charles recalls: "We set them with a gap of about 8 thou (.008") and a War Department inspector would come from time to time to make sure the keys were satisfactory. We must have made thousands of them."

Another memory came from Roy Storey G3LBT who, at the age of 14, worked at the Phoenix Telephone & Electric Works in Hendon, N.W. London, assembling these keys when his wages were 18/6d for a 46-hour week.

HOW MANY WERE MADE?

Entries in a Ministry of Supply (MoS) purchasing ledger held in the National Archives at Kew record that, between March 1940 and June 1942, 254,559 Keys WT 8 Amp were ordered and delivered from four makers. These were LMK Mfg Co. Ltd (78,736 keys), Whiteley Electrical Radio Co. Ltd (62,584), Phoenix Telephone & Electric Works Ltd (26,783), Ericsson Telephones Ltd (32,824) and the Telephone Manufacturing Co. Ltd (53,632) with some orders delivered at the rate of 2000 keys per week.

Over the period noted, prices ranged from 3/11d to 5/6d per unit depending on the type of key and the quantity ordered. In this limited survey of the ledger entries the types noted were No2, No3, No2 MkII, No3 MkI & No3 MkII, some with guards and some without. As will be seen below, over 100 variations were made during WW2 by these and other makers in six different countries, so the final total of Keys WT 8 Amp made for use by the Allied Forces probably ran to several million. (*Thanks to Peter McKinven G4TFH for providing a sight of the MoS ledger entries.*)

MASS OF INFORMATION

In response to my appeal for information at the end of Jim's article, many readers/collectors around the world sent me details of the Keys WT 8 Amp they use or have in their collections. As a result it was found that over 100 versions were made in six countries. All of the information originally published in three articles, with supplementary information from other sources, is now brought together as a single source of reference. I received a great deal of information on Canadian keys from Chris Bisailion, VE3CBK, which was published in a separate article, and this article is also included here.

Some keys have only slight differences, some being identical apart from having different makers' names on them, or no name at all. Some have different numbers of fixing holes, or different markings. Some have more noticeable design differences, and all are listed here together with other information likely to be of interest to collectors or users. It is a daunting mass of information, which I have tried to condense and present in as clear a manner as possible. However, the result is not a definitive listing; it is simply a list of the keys reported in the survey and set out by me in what appear to be logical groupings.

Other, unreported, keys may well exist and information about them could result in different conclusions being drawn in some cases. Nevertheless, I feel that the information given here will be of value to collectors in identifying their keys, providing information on their original use, and will stimulate their efforts to find further versions of the Key WT 8 Amp.

Note that some pre-WW2 versions and some previously unknown makers were reported after the survey was published and details of these have been included in this revision.

CAUTIONARY NOTES

Although some keys are identified as serving a specific purpose, it appears that by having identical corner mounting holes, irrespective of whether a fifth hole is also provided, as described later, virtually all versions are easily interchangeable in use by the simple expedient of using only three, or even two, fixing screws when necessary.

Note also that while some keys have various forms of lever insulation, depending on the use to which they were put, other identical keys may or may not have such insulation. Lever insulation does not, therefore, appear to be a useful identification characteristic.

This same qualification applies to finger plates or knob skirts. Some keys have been noted as having finger plates of various sizes and materials while other similar keys have been reported without them.

The identifying features of each key listed, together with other information about them, are as reported by correspondents. The uses noted against these keys are clearly not exhaustive.

To obtain maximum benefit in identifying particular keys, and understanding their place in the development of the Key WT 8 Amp, this article should be read and used in conjunction with Jim Lycett's article, "The Ubiquitous Key WT 8 Amp", which appeared in MM22, p22 (reproduced above).

Note, however, that the 'S-R Cotel key' described in Jim's article was commercially manufactured by Jack Sykes G3SRK and is not a military key in the WT 8 Amp series.

KEY & PLUG ASSEMBLIES

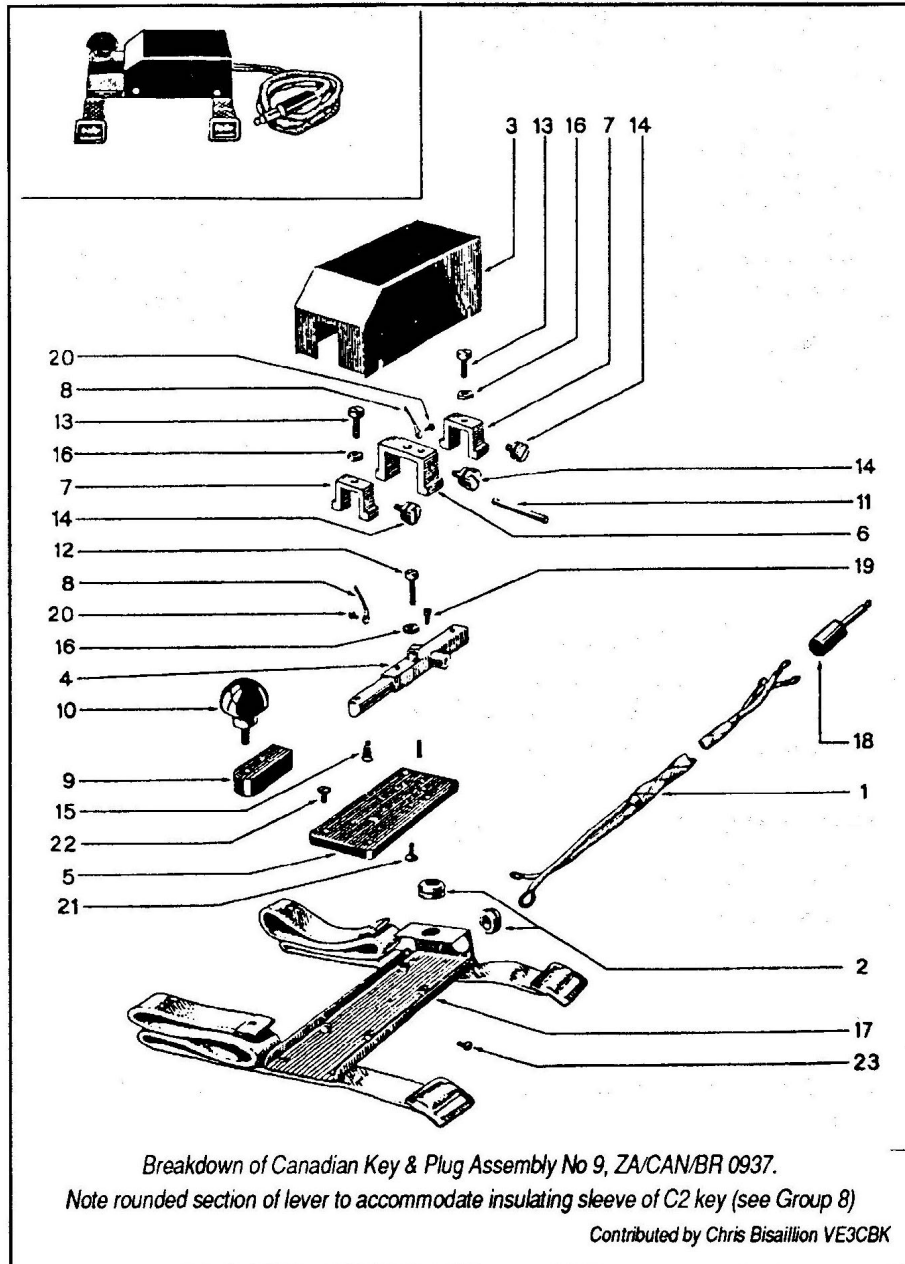
Keys WT 8 Amp are sometimes found in a Key & Plug Assembly, of which there are a number of different types. These are protective cases covering the key for field use, having thigh straps which enable the key to be located for use on an operator's leg. They sometimes incorporate switches or other features to control the transmitter/receiver associated with the particular Assembly.

The insulating sleeves sometimes found on key arms are used when a key is fitted in a Key & Plug Assembly. The most common is a simple sleeve of square section that slides over the arm of the key and is secured by the knob screw. This can be seen in the photos or drawings of various Key & Plug Assemblies illustrating this report.

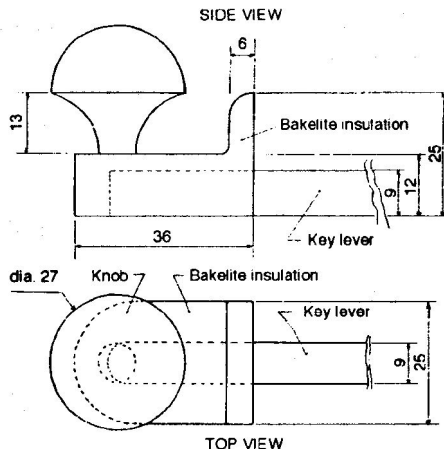
Slightly more complicated is the type of sleeve used with some Canadian keys and the Bunnell (USA) version. Here, the end of the lever has a rounded section and the sleeve fits over this. *See photo and drawing of Key & Plug Assembly No9 ZA/CAN/BR 0937 with C2 key (from Group 8) below:*



Key & Plug Assembly No9 ZA/CAN/BR 0937. Photo: Chris Bisailion VE3CBK



Another type, described in the key listing as 'insulating sleeve and finger guard', has a raised finger guard section. This has been noted on only a few keys and it has not proved possible to identify if it has a specific application. See drawing below:



Insulating sleeve and finger guard. See text

Drawing: Bernard Delage F5DE

Types of Key & Plug Assembly noted in the Survey are as follows. The list is not exhaustive and further types may well exist:

No 2. Used with Wireless Set No 2.

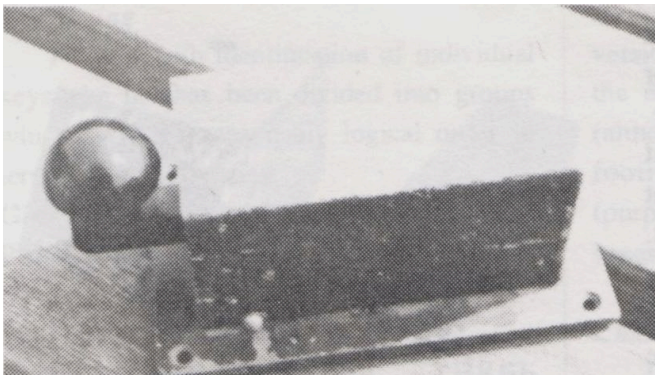
No 2B – ZA 4500. Used with Wireless Sets Nos 11, 12, 22, 33, and 53. Consists of a metal base plate on which a Key WT 8 Amp is mounted. Has a large round finger guard and a twin connecting cord ending in a tip and sleeve plug. For mounting on a table, the base plate is secured by "Slide No 1."

No 2C. Used with Wireless Set No 11 in tanks,

No 2D. Used in Wireless Remote Control Unit G for WS No.12HP in Lorry Command Vehicles or for remote control up to one-mile using field cable. Also used with WS HS1 and WS RCA ET4332A or B.

No 2B N.Z. Used with Key WT 8 Amp No2 with P.O. tensioner. No other information received.

No 6 - ZA 8328. Four-hole fixing. Used with Wireless Set No 9 and 36, with a metal cover to slide over the key.

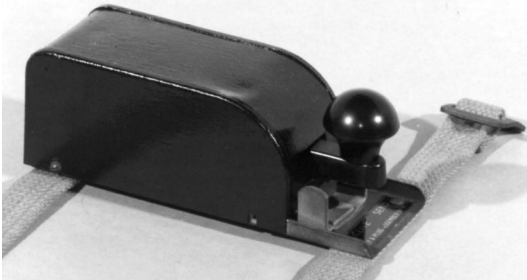


Key & Plug Assembly No 6. Photo: Derek Sheen G4CC.

No 8 - ZA 4354. Used with Wireless Sets Nos 8, 18 MkII and MkIII; also WS Nos 68T and 68R. Includes a send/receive switch connected to the filament supplies of the transmitter and receiver. When the switch is in the 'receive' position the key lever is held in the 'on' position by a small pin protruding through a hole positioned centrally at the back of the key base. The No.8 Assembly has five holes in key fixing positions but only four have tapped brass fixing bushes, ie, three corner holes plus the fifth hole position described under 'No 9' below.

A Ministry of Supply (MoS) purchasing ledger held in the National Archives at Kew records that the Ministry ordered 2,600 Key & Plug No.8 Assemblies from Pye Ltd in March 1941. A further order was placed on Roberts Radio Co. in May 1941 for 3,000 Assemblies. The latter order cost £1963.1s.0d, equating to 13s.1d per unit. This is the first reference found to Keys WT 8 Amp being made by Roberts Radio Co. No Roberts keys were reported in the Survey but in view of this new information the name of the company has now been included in the list of manufacturers.

Thanks to Peter McKinven G4TFH for this information.

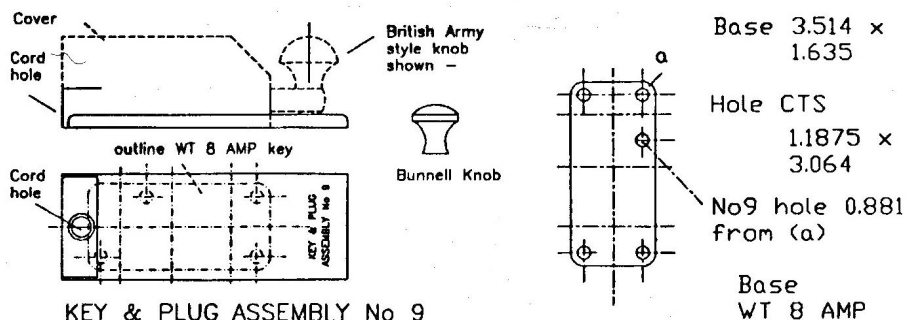


Key & Plug Assembly No 8. Photo: Jim Lycett G0MSZ

No 8B - ZA 24790. Tropicalised version of the Key & Plug Assembly No8. Easily recognised by its cover/metal baseplate of olive-drab colour, a plug filled with moisture resisting compound, and a rubber covered cord. Used with tropicalised versions of the No 18 and 68 sets.

No 9 - ZA 0937. Developed primarily for use with Wireless Set No19. Also used with other sets, including WS No9 and the Canadian WS No9. The "Wireless Set No 19 MkIII" manual, Section 5, indicates that for this set a Key W/T 8 Amp No 2 MK II was to be used. "The key is connected to the set by means of a twin cord terminating in a key plug which, when inserted into the key jack, automatically actuates the Send/Receive relay. The action of half withdrawing the plug restores the relay to normal, ie, switches the 'A' set to 'receive'".

The metal bases of the No 9 Assembly (ZA29115) have been noted in two versions. One has five holes, but tapped brass fixing bushes are fitted to three of the corner holes and to the fifth "extra" hole which is brought forward to clear the cord anchorage (*see illustration below*). Another, with the same ZA reference, has the same five holes, but fixing bushes are fitted only to the four corner holes.

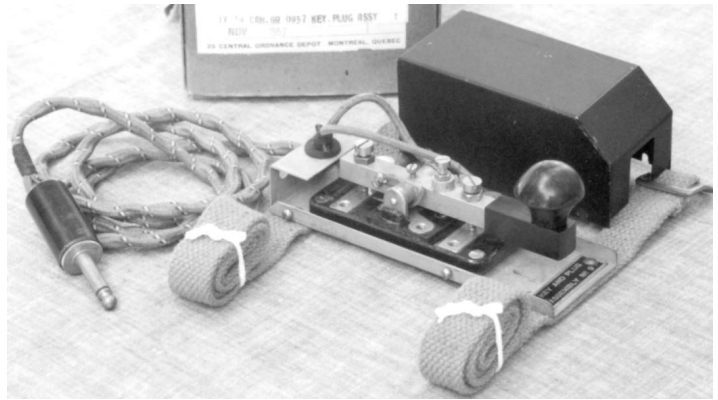


Positioning of the 'fifth hole', as found in Key & Plug Assemblies Nos 8 & 9. See text

Drawing: Jim Lycett G0MSZ



(a)



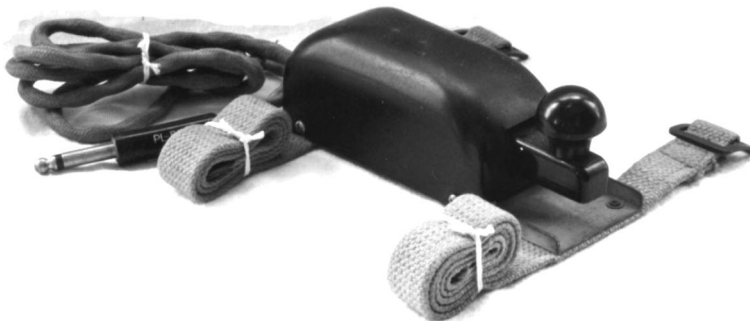
(b)

British Key & Plug Assembly No 9. Note the squared corners of the cover compared to the Canadian (Cdn) rounded version, below. Photo (a): Jim Lycett G0MSZ. Photo (b) Chris Bisailion VE3CBK

No 9A – ZA 17693. Tropicalised version differing very little from the original Assembly No 9.

No 9 MarkI/I – ZA 26291. Tropicalised version differing very little from the original Assembly No 9.

No 9 Cdn, ZA/CDN 0926.



Westclox Key & Plug Assembly No9 Cdn, ZA/CAN 0926. Note the rounded cover. Photo: Chris Bisailion VE3CBK.

No 9 - ZA/CAN/BR 0937. Supplied for Canadian/American WS No19 MkII instead of Key & Plug Assembly R.11950 (ie, ZA 0937) 'until stocks exhausted'.

CDN No 9, ZA/CAN 0937 (RCA 110072-1). Used with WS (Canadian) No 52.

CDN No 9, Type 1 – ZA/CAN 1643. Used with WS (Canadian) No 19 Mk II.

CDN No 9, Type 2 - ZA/CAN 0715 (RCA 110072-1). With four (corner) fixing bushes. Cover has rounded top. Used with WS (Canadian) No 19 MkIII.

CDN No.9, Type 2/T - ZA/CAN 2320. Used with WS (Canadian) No 29.

No 17 – ZA 25381. Used with WS No 42.

No.19 - ZA 28656. Used with Wireless Set No 19, No 62, and Wireless Set C12. Provided with a snatch plug for inserting into one of the drop leads on the set. The key itself carries a snatch socket so that a second microphone and receiver assembly may be connected to the set in addition to the Morse key. Break-in working is used on CW so that no separate send-receive control is necessary. (From Wireless Set No. 62 Working Instructions. ZA27690, October 1945, reprinted Sept. 1953. W.O. Code no. 1548). The Assembly is also known as "Key and Plug, Telegraph", NATO Stock No Z1/5805-99-420-5943.

R11950. Made by Northern Electric, used with Canadian W.S. No 19 MkII and MkIII. Normally issued as "Key & Plug Assembly No 9" (ZA 0937).

Unknown. Made of very heavy metal, the cover looks rather like a locomotive assembly and is held onto a heavy steel plate, 5 7/8" x 3" x 3/16", by means of a U-clamp. It has two holes on the top for access to the adjusting screws on the key. The key itself is secured to the cover assembly by means of a single hole drilled and tapped in the centre of the key base. The cover is separated from the steel base by two rubber pads, back and front, measuring 1 3/4" x 1" x 5/16". Noted fitted with a Key WT 8 Amp No2 MkII, ZA 3145 (H&C unplated brass, Group 11). *See photo below:*

Unknown key & plug assembly, separated into component parts.

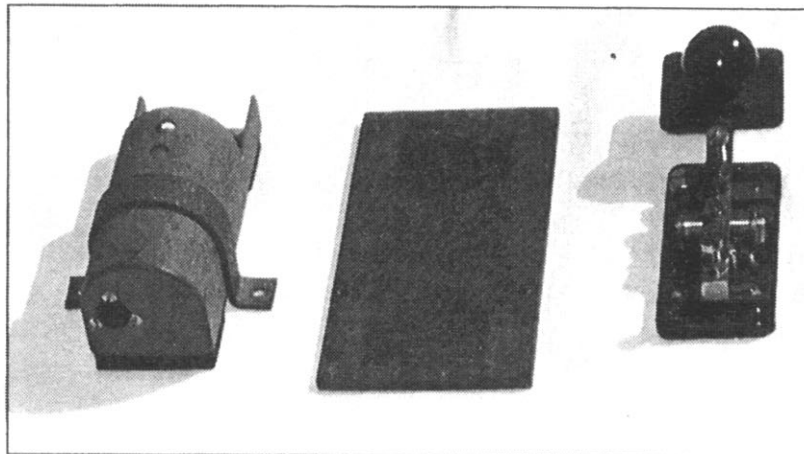


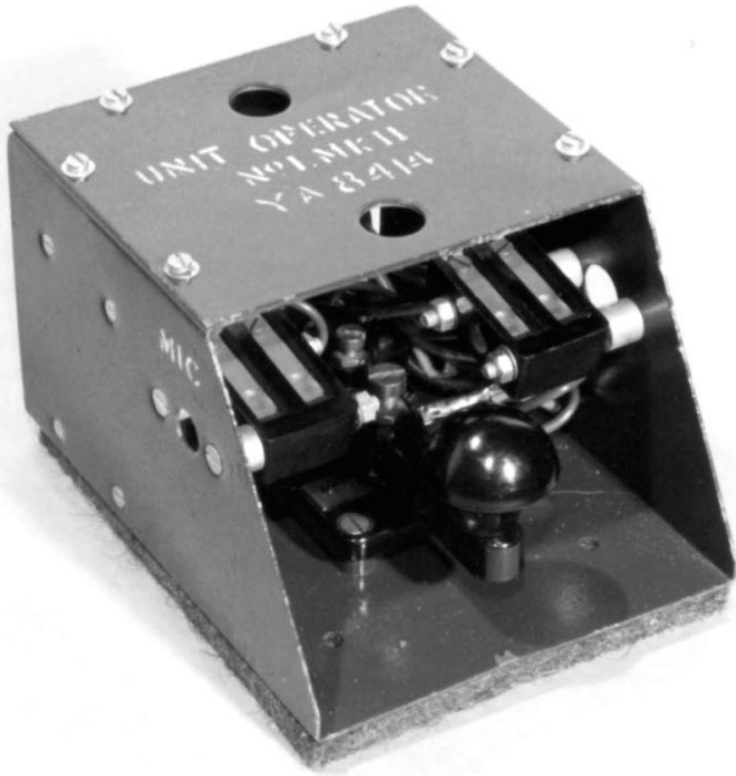
Photo: John Elwood WW7P

UNIT OPERATOR NO.1, MKII, YA 8414.

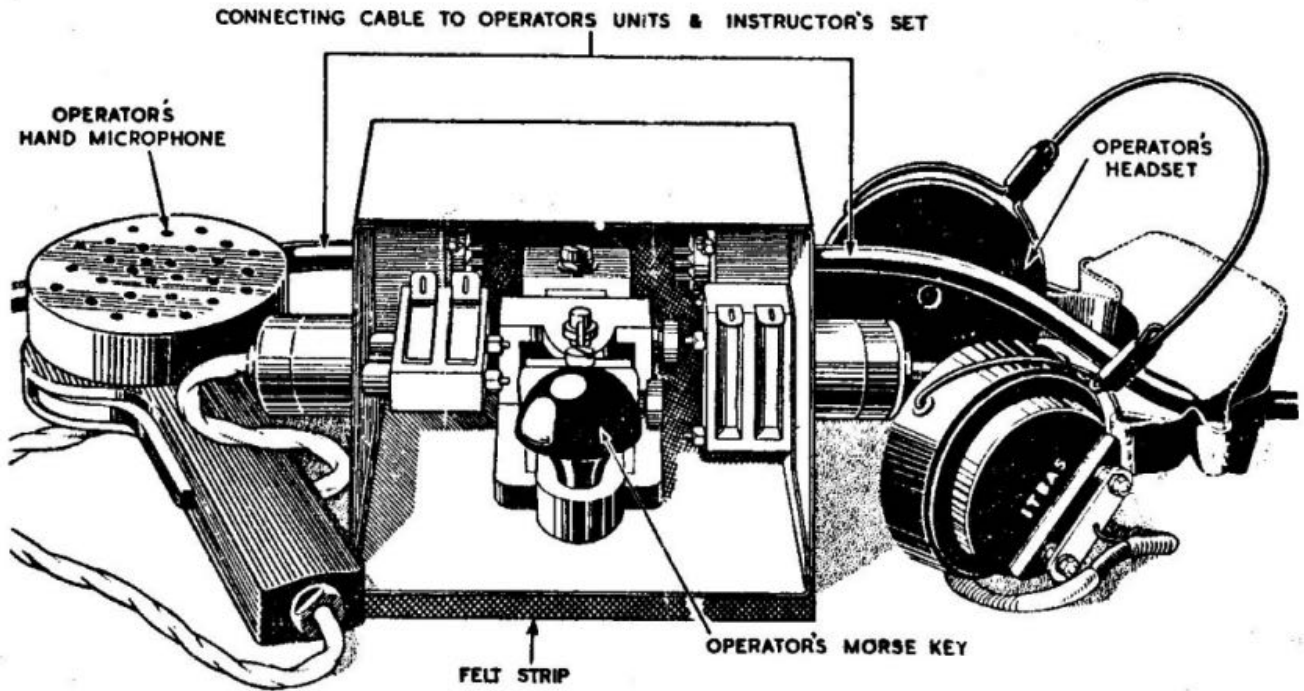
This unit is not a Key and Plug Assembly. It is part of "Training Set Universal, Wireless No 1" for voice and operator training. Working Instructions for the Training Set, Universal, Wireless, No.1, MK.1 & MK.2, dated December 1948 (reprinted August 1953) describe the functions of the set as follows:

"The Training Set Universal, Wireless, No. 1 is a semi-portable instrument for training operators in Morse reading and sending and R.T. communication... The set can also be used for Morse training on line instruments such as the Fullerphone... Facilities are provided for individual and class tuition and indoor wireless exercises. The equipment also caters for Morse and R.T. interference and background noise interference... The Mk.2 equipment differs from the Mk.1 equipment in that it uses 4-point plugs and sockets in place of the 6-point connectors used on the Mk.1 equipment."

The Training Set provided tuition for a class of up to 36 operators arranged in groups of 6. All operations were under the control of the instructor, and each operator had a microphone and headphones plugged into an operator's control unit fitted to the table in front of him. The Units Operator No.1, which contained a Key WT 8 Amp, were connected to the instructor's set by four-core cables. See illustrations below:



Unit Operator No 1 MKII, YA 8414. Photo: Jim Lycett G0MSZ.

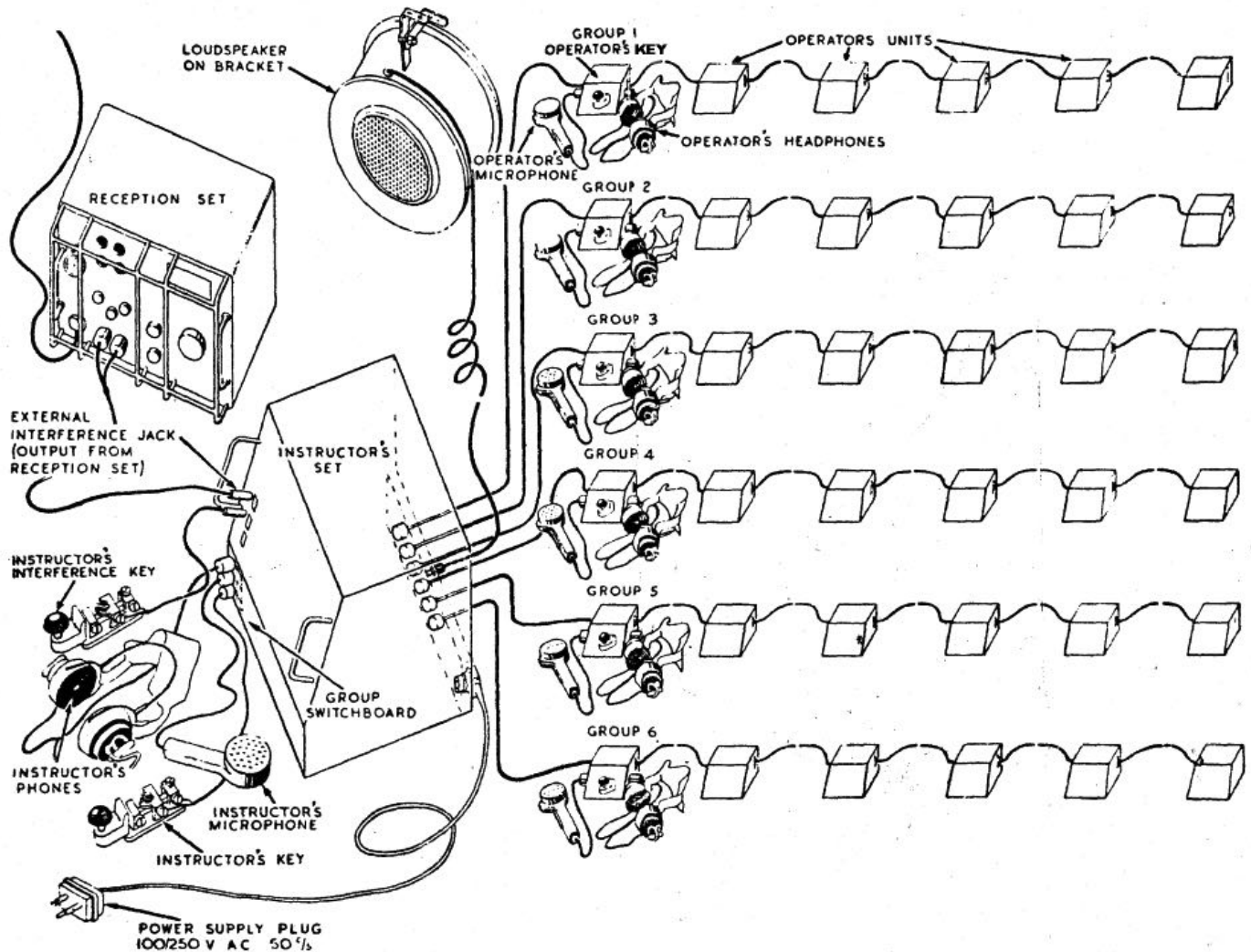


Operator's control unit (Mk. 1 model)

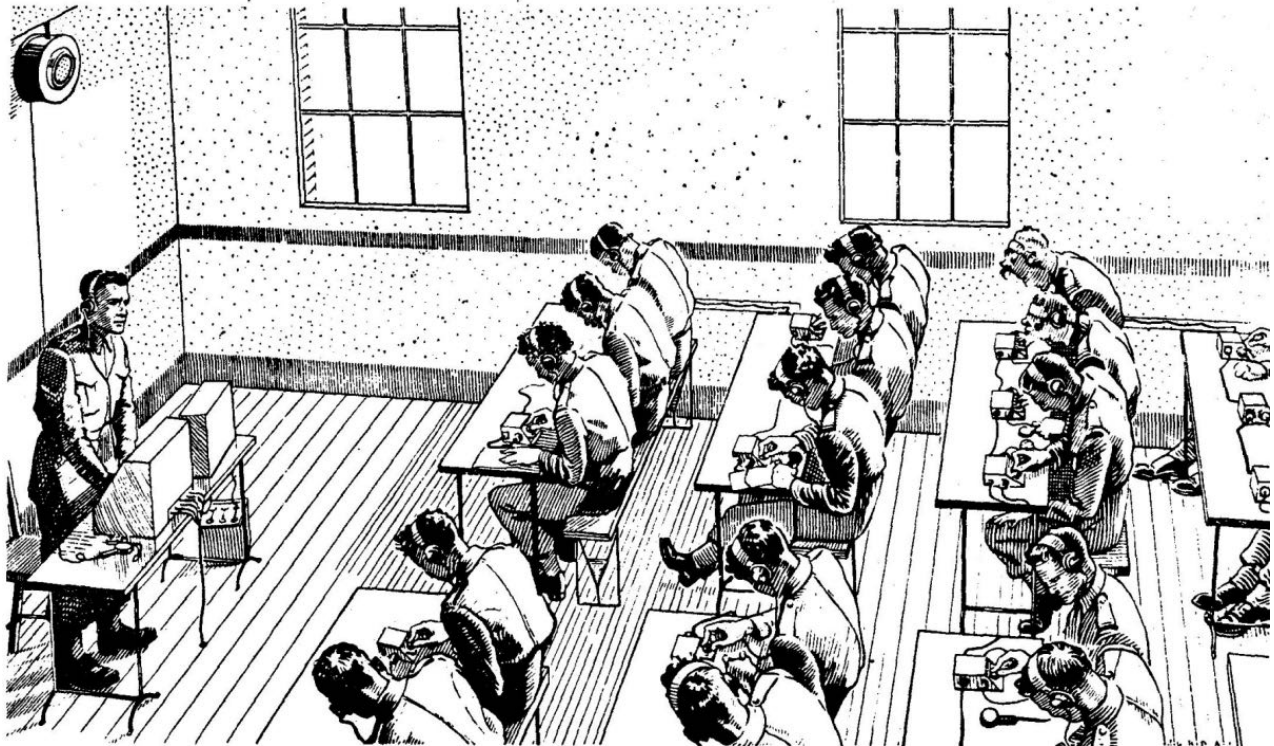
Complete layout of the Training Set Universal, Wireless, No.1.

Each of the 36 operator's control units contained a Key WT 8 Amp.

The "reception set" was a broadcast receiver which provided interference to local signals or allowed trainees to receive broadcast signals.

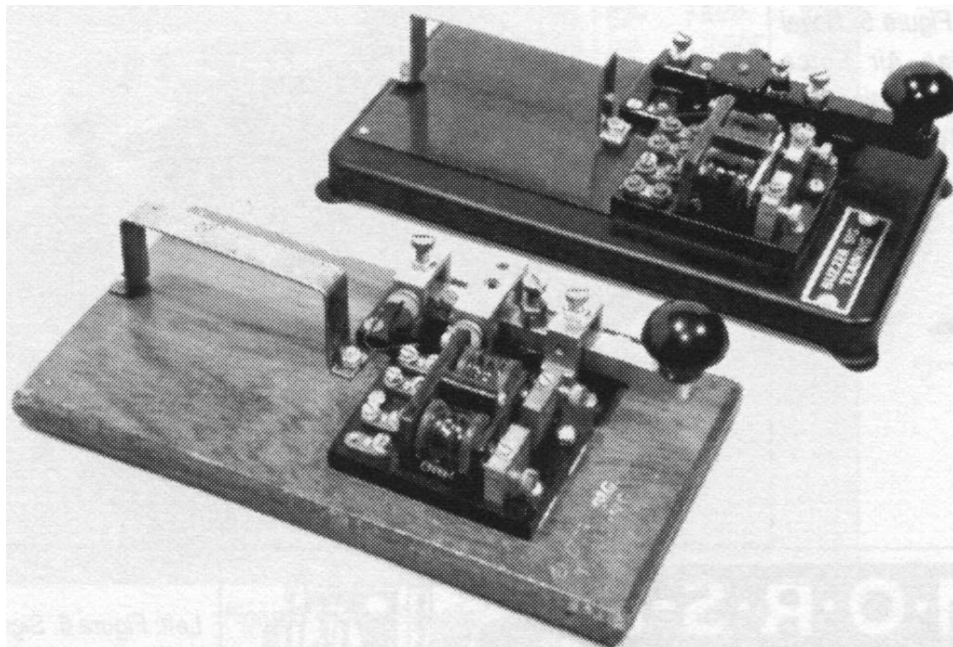


Training Set Universal No.1 in use.



BUZZER SIG TRAINING SETS

A number of the keys reported have been fitted in BUZZER SIG TRAINING SETS, two examples of which are shown below:



Top: BUZZER SIG TRAINING SET with Key WT 8 Amp No2 MkIII, CEL, on metal base.

Bottom: BUZZER SIG TRAINING SET with Key WT 8 Amp No 3 MkI, WER, on wooden base.

Photo: Jim Lycett G0MSZ.

MAKERS OF KEY WT 8 AMP NOTED AND ORIGINAL ADDRESSES (WHERE KNOWN).

A.G.I. LTD : Aeronautical & Gen. Instruments Ltd. Present-day address, Ebblake Industrial Estate, Verwood, Dorset, BH31 6BE.

APP. MFG Co. LTD : No other information received.

AWA : Amalgamated Wireless Australia.

Bunnell : J.H. Bunnell & Co, 81 Prospect St., Brooklyn 1, New York, USA.

C (circled) : No definite information. Possibly the Chad Valley Co? Or it could be the General Electric Co. Ltd? C was the original code for equipment made by GEC for the General Post Office. Other suggestions welcomed.

C.E.L. : Tring ? No other information received.

Clipsal : Gerard Industries (possibly known as Gerard Electric Mfrs Ltd. in 1941) of Adelaide, South Australia, a family owned business started in the mid-1930s. There is no specific information available on that period but the present-day company believes just three people were involved in making the keys, one to operate the compression moulding press for the bakelite base, a metal fabricator, and an assembler. Only two versions made by Clipsal were reported in the survey (in Group 1), namely Keys WT 8 Amp No2 dated 1942 and 1944. . (Information from Colin MacKinnon VK2DYM).

Creed & Co : No other information received.

D↑D : Department of Defence, Australia.

E.T. Ltd : Ericsson Telephones Ltd, Beeston, Nottinghamshire (now Plessey and G.E.C.).

Rowland Cox, G4AL, worked at the Beeston factory until he retired. He remembers the keys being made there in 1940, and managed to obtain one. The survey lists only three versions made by this company, ie, Group 1, No2, ZA4511, 1940; Group 2, No3, ZA4605, 1941; and Group 6, Key Signalling No2, undated, installed in a Fullerphone.

EWT : Contractors to Department of Defence, Australia?

H & C : No information received.

Joseph Lucas Ltd: Birmingham, UK.

L.A.M. : No information received.

LMK : LMK Manufacturing Co. Ltd.

LC : Contractors to Department of Defence, Australia?

N.E. Co : Northern Electric, Canada.

Northern Electric: Canada.

P.M.G. : Postmaster-General, Postal Workshops, Melbourne, Australia.

P.R.E. Co Ltd: No information received.

PT & EW : Phoenix Telephone & Electric Works, The Hyde, Hendon, London N.W.9.

PX : No definite information. Ken Homewood, G4UBP, reports that PX Ltd made aerial components and small bakelite mouldings pre-WW2. Their trade mark was PX either side of a pixie, and he thinks their products were marketed by Woolworths. It has not been possible to confirm that they also made Keys WT 8 Amp. Alternatively, it could be Phoenix Telephone & Electric Works Ltd. PX was the original code for equipment made by Phoenix for the General Post Office.

Pye Ltd : England.

R.C. & Co: Assumed to be England.

Roberts Radio Co. East Molesey, Surrey.

Silvertown : The India Rubber, Gutta Percha & Telegraph Works Co. Ltd, Silvertown, London.

Stanley Elec : No other information received.

H.W. Sullivan : No information received.

Sutton-Horsley : No information received.

TB&S : Thomas Bolton & Sons, Cheadle, Staffordshire.

T.C. & M. Co: Probably the Telegraph Construction & Maintenance Co. Ltd, London.

TMC : Telephone Manufacturing Co. Ltd, , Martell Road, London, S.E. 21.
 U^D : South Africa? No other information received.
 W.B. : Assumed to be Whiteley, Boneham & Co. Ltd (Whiteley Electrical Radio Co., Ltd).
 WER : Whiteley Electrical Radio Co., Ltd, 109 Kingsway, London W.C.2. Also known as
 Whiteley, Boneham & Co. Ltd
 Westclox : Canada.
 Willis & Co. Ltd, London / W. Willis & Co : Presumably the same company.

BRIDGE OR BRACKET?

In the original survey articles the structures on the earliest Keys WT 8 Amp supporting the bearing pin, and the terminals, are described as “bridges”, as this is the term by which they are popularly known.

However, as will be seen from the Specification of the Key WT 8 Amp No2, in the Appendix below, the correct term is “bracket”, and in the interest of historical accuracy all reference to “bridge(s)” have now been changed to “bracket(s)”

THE FIRST KEYS WT 8 AMP - No 1 and No 2

Key WT 8 Amp No1.

By coincidence, while the MM survey of the Key WT 8 Amp, was in progress, Louis Meulstee PA0PCR was preparing an article titled "Unusual Military Morse Keys" for publication in *The AWA Review*, Volume 8, 1993, published by The Antique Wireless Association in the USA, and included in his 45 page article was a section on the Key WT 8 Amp.

While his work covers a lot of the same ground as the MM survey, albeit in a different way, he also records information not included in the survey, and with his permission, that information is included here.

The "Key WT 8 Amp" (ie, No1) was used with Wireless Telegraph Sets "A" Mk I* and "C" Mk II, as listed in the British Army's Signal Training Volume III, Pamphlet No. 5.A, November 1926 and Pamphlet No. 11, September 1926, respectively.

Rare photographs discovered by Louis at the Royal Signals Museum reveal that the P.O. type tensioner of this key is located on the front bracket, not on a centre bracket as on later models, and there is no terminal screw to enable the front stop to be used as a spacing contact (see drawing below).

Louis suggests that the latter omission is the reason why this key was soon replaced by the Key WT 8 Amp No2. Possibly, not many of the No1 keys were made and any still existing will be highly prized by collectors.

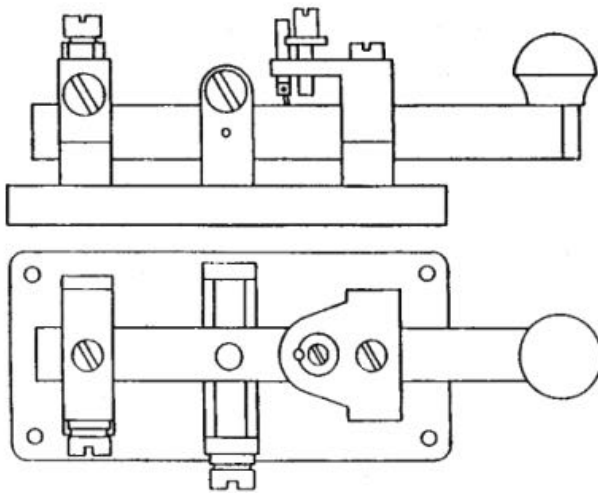
None were reported in the original survey but, by good fortune, information on three of the original Keys WT 8 Amp have been noted since then and details are included in the listings below in a new Group 0.

This new Group (0) was chosen to avoid the need to change the existing Groups 1 – 16 which were already used by some collectors to classify and identify keys in their collections

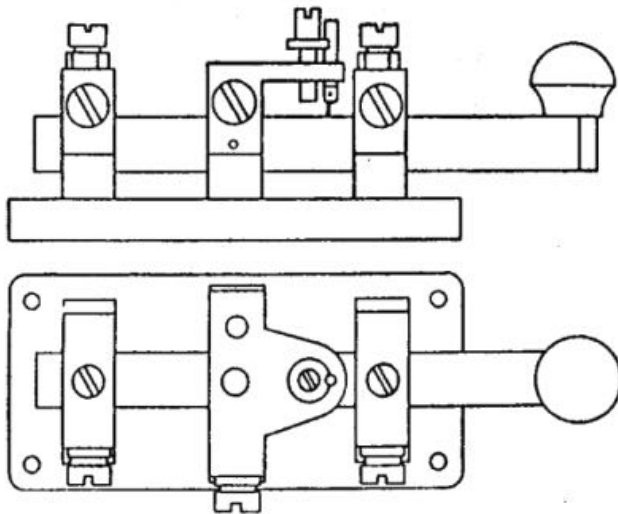
Key WT 8 Amp No2.

While the MM survey found a No2 key (Group 1, below) dated 1935, Louis Meulstee discovered references to this key as early as 1926. The Specification for Reception Set "C" Mk II, dated 20th April 1926, calls for a "Key, W.T. 8 Amp, No.2" to be supplied by manufacturers; and Signal Training Volume III, Pamphlet No. 12 (February 1929), for Wireless Telegraph Set "A" Mark 1* (Pack), notes that the pattern of the key used "is known as Key W/T 8 Amp. No. 1 or No. 2."

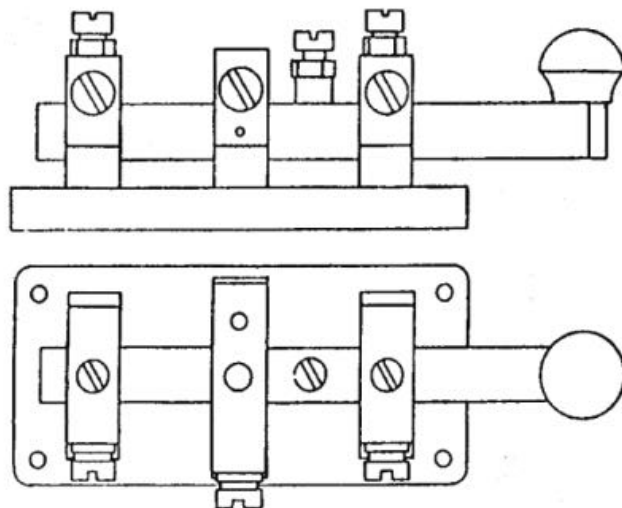
See illustrations by Louis Meulstee, below:



(a) Dated c. 1926, with P.O. type tensioner on front bridge. This original design (i.e., No 1) had no spacing contact, and its two terminals were usable on the left-hand side of key only. For those who have already seen the article in the AWA Review, Vol. 8, please note that this is an amended drawing based on photographs discovered after the original article was published.



(b) Dated c. 1926–39. P.O. type tensioner on centre bridge. Three contacts, with three terminals usable on either side of key. As referred to in Groups 1, 2, 3, and 5 of the survey.



(c) Dated late 1930s (possibly 1939–1941). Simplified tensioner mounted on lever arm. Three contacts, with three terminals usable on either side of the key. As referred to in Groups 4, 6, 7, and 8 of the survey.

Drawings: Louis Meulstee

EVOLUTION OF THE THREE-BRIDGE KEY WT 8 AMP DESIGN

KEY LISTING

To help with identification of individual Keys WT 8 Amp reported in the survey, they have been divided into groups which follow a reasonably logical order in terms of characteristics:

Group 0: No1 (OR NO NUMBER). TWO BRACKETS. P.O. TYPE TENSIONER ON FRONT BRACKET.

Group 1: No2. THREE BRACKETS. P.O. TYPE TENSIONER ON CENTRE BRACKET.

Group 2: No3. THREE BRACKETS. P.O. TYPE TENSIONER ON CENTRE BRACKET .

Group 3: NO NUMBER. THREE BRACKETS. P.O. TYPE TENSIONER ON CENTRE BRACKET.

Group 4: No2. THREE BRACKETS. SIMPLIFIED TENSIONER.

Group 5: KEY SIGNALLING No2. THREE BRACKETS. P.O. TYPE TENSIONER ON CENTRE BRACKET.

Group 6: KEY SIGNALLING No2. THREE BRACKETS. SIMPLIFIED TENSIONER.

Group 7: No3 MkI. THREE BRACKETS. SIMPLIFIED TENSIONER.

Group 8: NO NUMBER. THREE BRACKETS. SIMPLIFIED TENSIONER.

Group 9: No2. TWO BRACKETS. SIMPLIFIED TENSIONER.

Group 10: NO NUMBER. TWO BRACKETS. SIMPLIFIED TENSIONER.

Group 11: No2 MkII. NO BRACKETS. SIMPLIFIED TENSIONER.

Group 12: NO MARKINGS. SIMILAR TO No2 MkII.

Group 13: No2 MkIII. NO BRACKETS. SIMPLIFIED TENSIONER. BAKELITE.

Group 14: No2 MkIII/I. NO BRACKETS. SIMPLIFIED TENSIONER. BAKELITE.

Group 15: No3 MkII. NO BRACKETS. SIMPLIFIED TENSIONER.

Group 16: ALSO NOTED

CHARACTERISTICS

Within these groups the listing is in eight columns covering various characteristics to aid identification. Some characteristics have not been included as they would not necessarily help to differentiate between various versions.

The omissions include the shape of the ends of lever arms; lever arm material (although this is sometimes included in the footnotes); and the small tapped holes (purpose unknown) found in the sides of some bases.

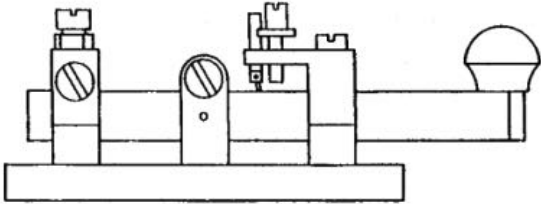
The characteristics noted are listed under the following numbered headings:

- 1 Reference No. ZA or other, or not indicated (N).
- 2 Base with sharp (S) or rounded (R) corners (includes two types, small radius and larger radius).
- 3 Base has extra (5th) mounting hole suitable for Key & Plug Assembly No8 or No9 as described under 'Key & Plug Assemblies' above. Indicated as '5'.
- 4 Bearing pin, taper (T) or parallel (P).
- 5 Finger plate/knob skirt (F). Some noted with, some without (S).
- 6 Maker, or not indicated (N).
- 7 Year, or not indicated (N).
- 8 Country: Australia (A), Canada (C), England (E), New Zealand (NZ), South Africa (SA), USA (US), not indicated (N).

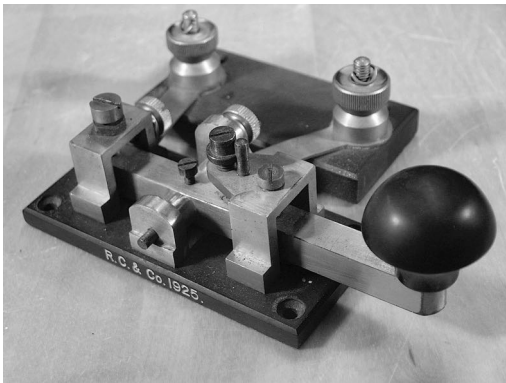
KEYS REPORTED IN THE SURVEY

GROUP 0

**KEY WT 8 AMP No1 (OR KEY WT 8 AMP NO NUMBER). TWO BRACKETS.
P.O. TYPE TENSIONER ON FRONT BRACKET (TENSION SPRING).**



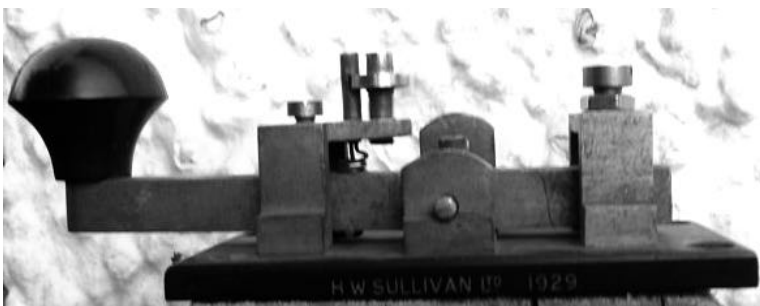
Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	S		P		R.C.& Co.	1925	N
Unknown fitting with terminal posts at side of key. See photo below.							



R.C. & Co., 1925. Photo: Mike Maguire M0DVO.

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	S		P assumed		P.R.E. Co Ltd	1926	N
Brass construction. On wooden base 9" x 2-3/4".							

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	S		P		H.W. Sullivan	1929	E
Marked Key WT 8 Amp. Tensioner on front bracket. No terminal on front bracket. Two terminals only, on left-hand side of rear two brackets. No flexible link between arm and body of key. This type of key was used with Wireless Telegraph Sets "A" Mk I* and "C" Mk II. The key reported appears to have been used with a Lamp Signalling Daylight. (See <i>The First Keys WT 8 Amp - No 1 and No 2</i> above, and photo below).							

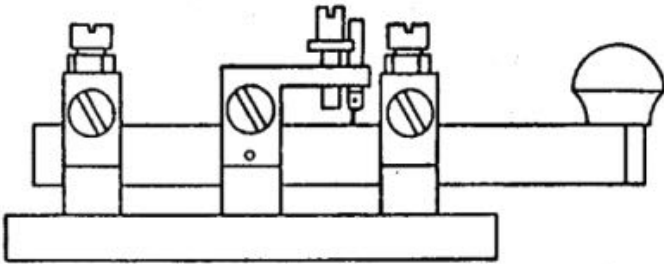


Key WT 8 Amp, H.W. Sullivan, 1929. Photo: Mike Prince GW7EUL

GROUP 1

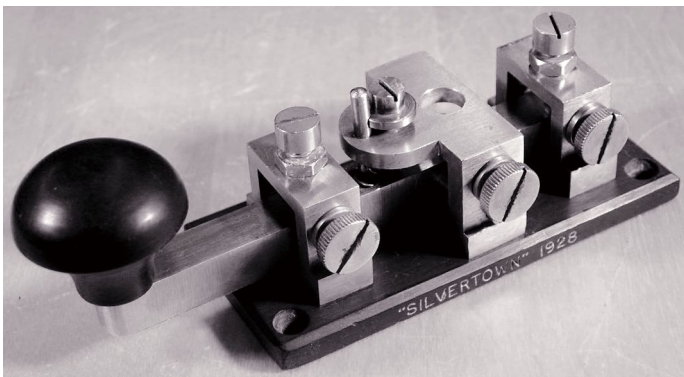
KEY WT 8 AMP No2. THREE BRACKETS. P.O. TYPE TENSIONER ON CENTRE BRACKET (TENSION SPRING)

Reference has been found to the No2 key with P.O. type tensioner in an equipment specification dated 1926 (see *The First Keys WT 8 Amp - No 1 and No 2* above). Until 1939, these keys had bases with sharp corners. The last ones of this type made in the UK seem to be dated 1941, with a slight change in design (ie, to bases with rounded corners), while they apparently continued in production in Australia until 1944. Note that there are also No2 keys with simplified spring tensioner (compression spring) and these are listed later.



Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	S		T		Silvertown	1928	E

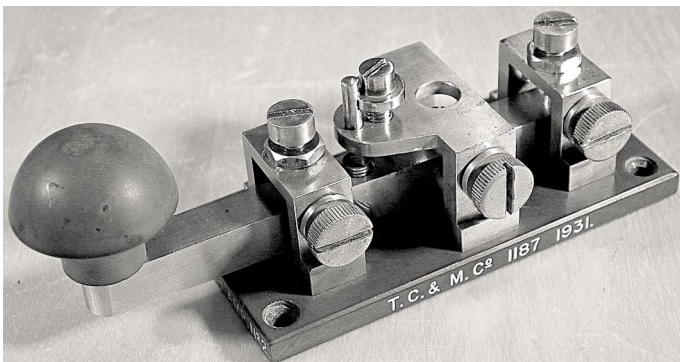
An early and rare example of this version of the Key WT 8 Amp. *See photo below.*



Key WT 8 Amp No2, Silvertown 1928. Photo: Mike Maguire M0DVO.

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	S		T		T.C. & M. Co	1931	E

Marked "1187" after maker's name. Another rare version. *See photo below.*



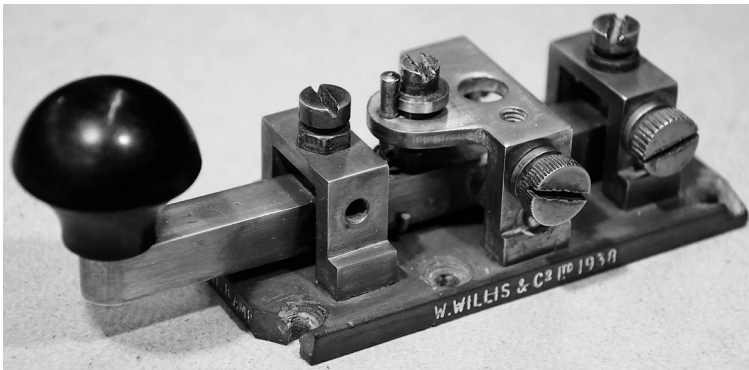
Key WT 8 Amp No2, T.C. & M. Co 1931. Photo: Mike Maguire M0DVO

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	S		T		Willis & Co Ltd	1935	E

Base and knob are brown ebonite. Base has two extra holes for fixing to a mounting plate with serrated edge which slides into a rectangular hole in the front of W.S. No1.
Size of the plate is similar to that of Key & Plug assembly No2B. Key installed with a Wireless Set No1 at Royal Signals Museum, Dorset.

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	S		T		W. Willis & Co	1938	E

Another pe-war key. *See photo below.*



Key WT 8 Amp No2, W. Willis & Co. 1938. Photo: Mike Maguire M0DVO.

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	S		T		Creed & Co		E

Year not marked but key reported to be original from a 1935 Wireless Set No1.

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	S		T	F	Stanley Elec.	1936	N

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	S		T		A.G.I. Ltd	?	E

Fitted in W.S. No.1, Serial No. 1417 made by Aeronautical & Gen. Inst. Ltd, 1937. Exhibit in Kapiti Coast Museum, New Zealand.
Key has 6 holes drilled in base to fit a thin plate with serrated edge. This engages with a spring in the radio set and allows adjustment of the amount the key extends from its enclosure. (Info from Max Kempson, ZL1VV/G3JJT.)

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	S		T	S	PT & EW	1937	E
N	S		T		APP Mfg Co Ltd	1938	N
N	S		T		LMK	1938	E

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	S		T		LMK	1939	E

Noted with Lamp Signalling Daylight, Short Range Projector, MkII LAM. *See photo below.*



**Key WT 8 Amp No2, LMK 1939, fitted on Lamp Signalling Daylight Short Range Projector MKII.
Photo: Malcolm Henchley G0CHZ.**

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
ZA 4511	R		P		E.T. Ltd	1940	E
Plated brass arm.							

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	R		T	F	LMK	1940	E

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	R		T		Josep Lucas Ltd	1940	E
A rare key. Probably used with Light Signalling equipment. <i>See photo below.</i>							



Photo: Source unknown.

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	R	5	T		LMK	1940	E
Insulating sleeve under knob. The Ministry of Supply ordered 7,270 of these keys from LMK in 1939, for a total cost of £1726.12s.6d, or 4s.9d per key.							

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	S		T		N.E. Co	1940	C
Noted mounted on brass plate, 3" x 1-7/8", engraved KEY & PLUG ASSEMBLIES NO. 2B. Noted in Wireless Remote Control Unit 'A' (N.E. Co 1941) used with W.S No1 and WS No11.							

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	S		T		PMG	1940	A
Assembly mounted on slide tray for WS 109 & WS 101							

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	R		T		PT&EW/2	1940	E
All nickel plated brass metalwork.							

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	R		P	S	TMC	1940/1	E

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	R		P		TMC	1940/2	E
Insulating sleeve and finger guard under knob noted on some keys.							

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
ZA 4511	R		P	F	TMC	1940/2	E
N	R		T		TMC	1940/2	E
N	R	5	T		ET Ltd	1941	E

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	S		T		N.E. Co	1941	C
(1) Insulating sleeve and guard under knob. Key mounted on steel plate 109x70x4.5mm, with metal cover. (2) Another, also with sleeve, mounted on brass plate 4" x 2-3/4" x 1/8" with Canadian Army insignia painted underneath. Key base separated from brass base by spacers, and enclosure with inward facing lips slides between the two bases. Enclosure is 3" x 1-11/16" x 1-11/16", and has Formica insulation riveted inside.							

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	?		T		Sutton-Horsley	1941	N
Corners of base of the key reported have apparently been rounded manually. Base is marked with a large "C" in yellow paint with the WD arrow inside it.							

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	S		T		PMG	1941	A

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	R		T		PMG	1941	A/NZ?
Country of origin Australia or NZ. Known as a "ZC-1" key when used with the NZ ZC-1 General Service HF Transmitter/Receiver. Used by many ZL's on the amateur bands after WW2.							

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	R		T		Clipsal	1942	A

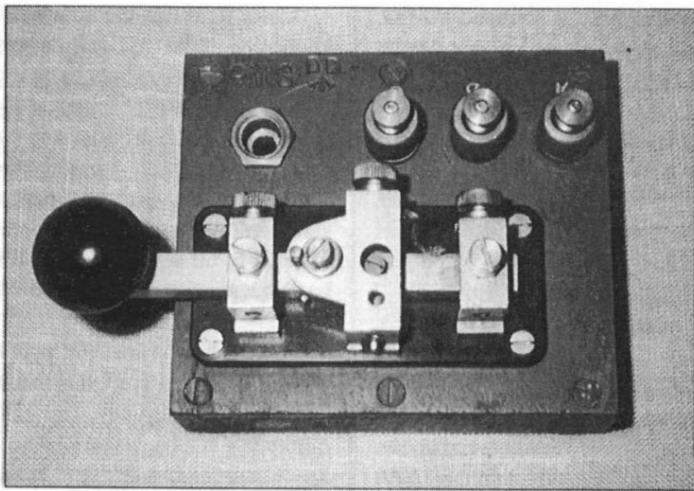
Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	R		T		PMG EWT	1942	A
Dept of Defence stamp D↑D on lever arm. One noted fitted to Lamp Signalling Daylight Short Range, made by Northern Electric Co Ltd.							

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	R		T		PMG LC	1943	A
Arm stamped S. 123-6 C.3423/42.							

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	R		T		Clipsal	1944	A
N	R		T		TB&S	1944	N

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	R		T		D↑D	N	A

Fitted in No9 Assembly. A second key of this type reported, with plated brass lever and brackets, is mounted on a wooden base with three terminals marked A, B, and C, plus a headphone socket. Wooden base is stamped PMG D↑D. Unknown application. *See photo below.*



Key WT 8 Amp No2 (Australian) fitted to P.M.G. D↑D wooden base. Photo: Wes Tyler VK2WES.

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	R		P	F	L.A.M.	N	N
Part of set, LAMPS, SIGNALLING DAYLIGHT, SHORT RANGE							

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	R		P	F	TMC/1	N	E
Mounted on brass plate marked KEY & PLUG ASSEMBLY No 2B. This slides into bracket ZA 4381 and KEY & PLUG ASSEMBLY SLIDE No 1.							

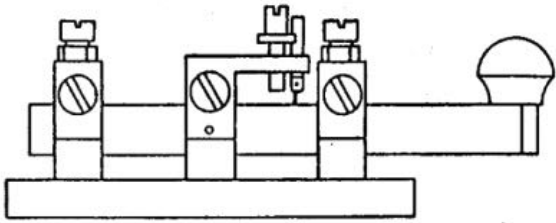
Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	R		T		N	N	NZ
Also marked KEY AND PLUG ASSEMBLIES No 2B N.Z.							

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	R	5	?		N	N	NZ
Also marked KEY AND PLUG ASSEMBLIES No 2B N.Z.							

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	R		T	S	N	N	N
Arm and brackets in cast aluminium. One noted with Lamp Signalling Daylight Short Range.							

GROUP 2

KEY WT 8 AMP No3. THREE BRACKETS. P.O. TYPE TENSIONER ON CENTRE BRACKET (TENSION SPRING)



Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
ZA 4605	R		P		E.T. Ltd	1941	E

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
ZA 4605	R		T		LMK	1940	E
Insulating sleeve and finger guard under knob.							

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	R		T		LMK	1940	E

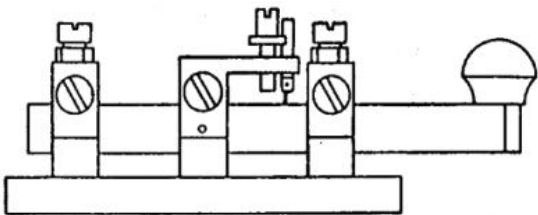
Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
ZA 4605	R		P		TMC	1940/1	E
Insulating sleeve and finger guard under knob noted on some keys. One noted in Wireless Remote Control Units "A" ZA 7533, TMC 1940 (used with Wireless Sets No1 and No11)							

On the TMC keys (above and below), 1940 /1 and 1940 /2 are assumed to mean two separate production runs in 1940. The figures 1 and 2 are engraved beneath the year.

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	R		P		TMC	1940/2	E

GROUP 3

KEY WT 8 AMP, NO NUMBER. THREE BRACKETS. P.O. TYPE TENSIONER ON CENTRE BRACKET (TENSION SPRING)



Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
3R 2018	R		T	F	AWA	N	A
Ebonite base screwed to cedar base. Dept of Defence stamp, D↑D, on lever arm.							

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	R		?		NE	N	C
Marked 'Northern Electric'.							

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	S		T		N	N	N
Additional contact assembly at rear, making contact a few milliseconds before main contact.							

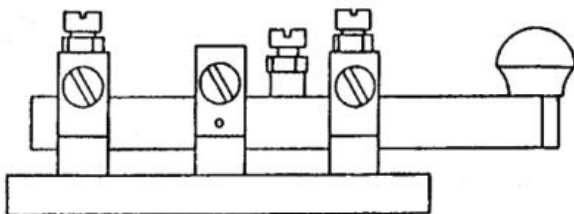
Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	S		T		N	N	NZ
N↑Z marked on side of arm under knob.							

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	R		T	F	N	N	A
Marked D↑D. Assumed to be Australian. Complete with cord and 1/4" phono plug on large rounded bakelite plug marked No.10↑560. Believed to have come from a Lancaster bomber.							

GROUP 4

KEY WT 8 AMP No2. THREE BRACKETS. SIMPLIFIED SPRING TENSIONER (COMPRESSION SPRING)

Overlapping with keys having the more complicated PO type tensioner, this version of the No2 key seems to have been produced in the UK by one company only, during 1939 and 1940, with one other version made in Canada in 1941.



Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	S	5	P		WER	1939	E
Some keys with insulating sleeve on arm under knob. Others without.							

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	R	5	P		WER	1939	E
N	R		P		WER	1939	E

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	R	5	P		WER	1940	E
Noted in Key & Plug Assembly No8.							

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	R		P		WER	1940	E
Noted in Key & Plug Assembly No8, using three fixing holes only as key does not have 5th hole to locate in the Assembly. Also in Key & Plug Assembly No2B ZA 4500, as used with Wireless Sets Nos 11, 12, 22, 33, and 53.							

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
ZA 4510	R	5	P		WER	1940	E
Noted fitted in Key & Plug Assembly No8.							

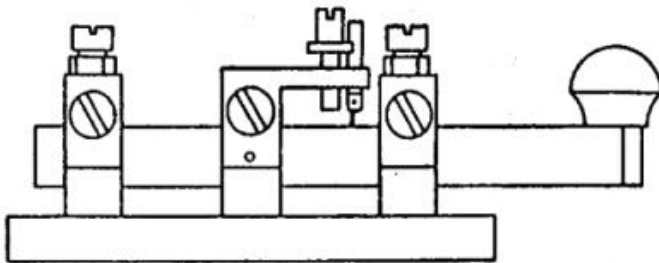
Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
ZA 4510	R		P		WER	1940	E
Noted in Fullerphone							

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	R		P		N.E. Co	1941	C
Insulating sleeve and finger guard under knob noted on some keys. Noted in Key & Plug Assembly No9 - ZA/CAN/BR 0937.							

GROUP 5

KEY SIGNALLING No2. THREE BRACKETS. P.O. TYPE TENSIONER ON CENTRE BRACKET (TENSION SPRING)

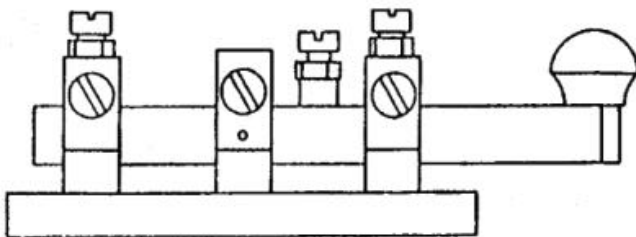
The Key Signalling is the landline version of the Key WT 8 Amp used with Fullerphones and other line equipment.



Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	R		T		N	N	N
Noted in Fullerphone MkIV X							

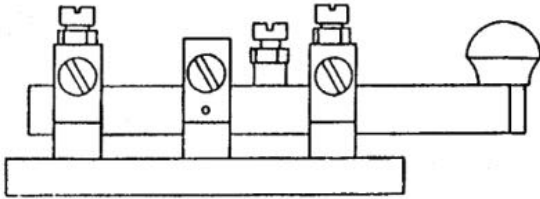
GROUP 6

KEY SIGNALLING No2. THREE BRACKETS. SIMPLIFIED SPRING TENSIONER (COMPRESSION SPRING)



Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	R		P		E.T. Ltd	N	E
Noted in Fullerphone MkV							

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	R		P		N	N	N
Noted in Fullerphone MkV.							

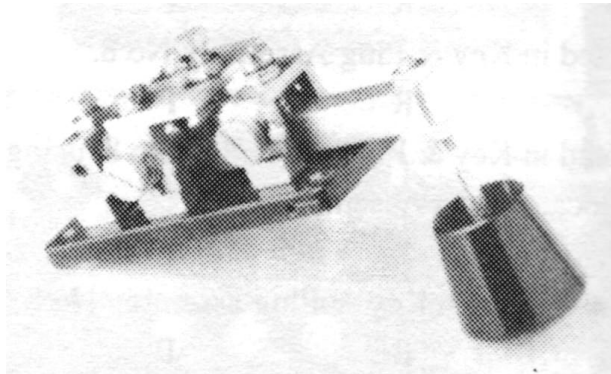
GROUP 7**KEY WT 8 AMP No3 MkI. THREE BRACKETS. SIMPLIFIED SPRING TENSIONER (COMPRESSION SPRING)**

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
ZA 4605	R		P		WER	1940	E

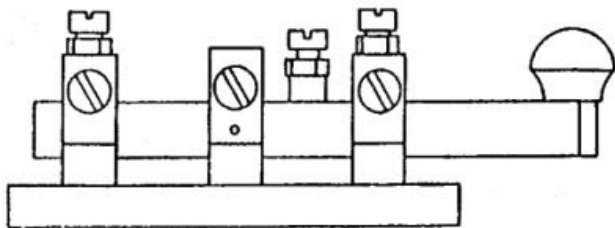
Insulating sleeve and finger guard under knob noted on some keys. 'MkI' handwritten on the back edge of the base. Noted in Unit Operator No1 MkII, YA 8414; also in BUZZER SIG. TRAINING set.

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
ZA 4605	R		P		N	N	N

"Upside Down" version. Spring and contact adjusters heavily locked with varnish. Non-standard tall knob fitted with 4cm extension. 'MkI' engraved on base. See photo.



*Key WT 8 Amp No3 MKI, "Upside Down" version.
Photo: Guido Roels ON6RL.*

GROUP 8**KEY WT 8 AMP, NO NUMBER. THREE BRACKETS. SIMPLIFIED SPRING TENSIONER (COMPRESSION SPRING)**

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
10F/2533	?		P		PT & EW/1	1940	E

Also marked 'AM' (with crown). 10/F coding indicates use by RAF.

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
10F/2533	R		P		WER	1940	E
Also marked 'AM' (with crown). 10/F coding indicates use by RAF.							

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
10F/2533	R		P		WER	N	E
Also marked 'AM' (with crown). 10/F coding indicates use by RAF.							

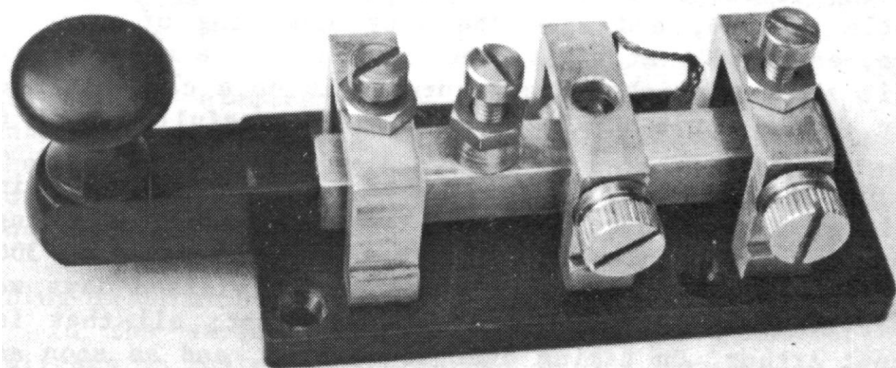
Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	S	5	P		N	N	N
Key mounted on tray of No9 Key & Plug Assembly marked PYE/V 1955.							

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
ZA/CAN 0982	R		P		N	N	C
Listed in EME Regulations FZ 256/3 as Key, WT, 8 Amp, C2. Fitted in No9 Key & Plug Assembly ZA/CAN/BR 0937 which was supplied for Canadian/American WS No19 MkII instead of Key & Plug Assembly R.11950 (ZA 0937) until stocks exhausted, per Working Instructions for set, July 1942. Base of key has four fixing holes, three in corners and the fourth brought forward to the '5 th ' position. (See notes on Key & Plug Assembly No9 above).							

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	R		?		NE	N	C
Marked 'Northern Electric'.							

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	S		T		N	N	A
Key marked D↑D.							

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	R		P		Bunnell	N	US
Unplated brass construction. Smaller knob than other keys. Insulating sleeve under knob. Base has three corner fixing holes and a fourth hole in the '5th' position Underside of base marked L/NOR/C circled and C circled. Used in Key & Plug Assembly No9 with American contract Wireless Set No 19 (RCA Victor Division) believed made by Zenith. <i>See photo below.</i>							



Key WT 8Amp by J.H. Bunnell & Co, New York. Photo: Alex Vilensky 4X1MH

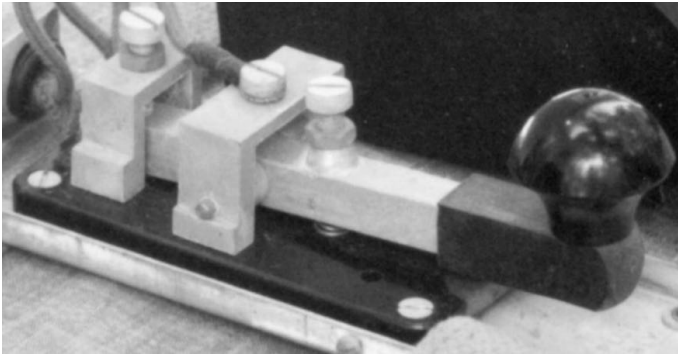
Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	S	5	P		U↑D	N	SA?

'U↑D' indicates probably made in South Africa.

GROUP 9

KEY WT 8 AMP No2. TWO BRACKETS. SIMPLIFIED SPRING TENSIONER (COMPRESSION SPRING)

These two-bracket versions (Group 9 and Group 10) seem only to have been made in Canada.



Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	R	5	P		N.E. Co	1941	C
N	R		P		N.E. Co	1943	C

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	R	5	P		N.E. Co	1943	C

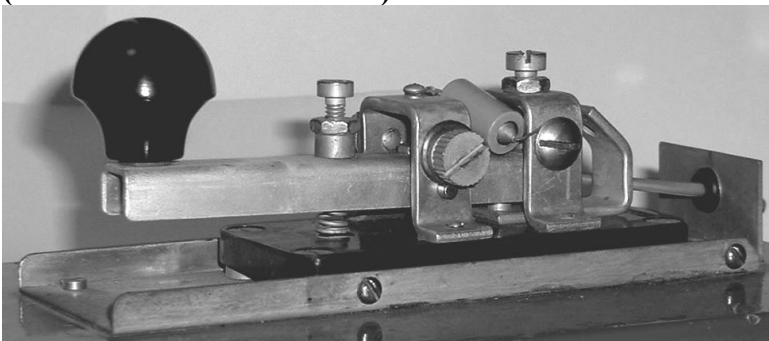
In Key & Plug Assembly No9, ZA 0937 (Pye Ref: R11950) as supplied for Canadian/American WS No19 MkII.

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	R	5	P		N	N	C?

Country not marked, but probably Canada. In Key & Plug Assembly No9, ZA 0937 (Pye Ref: R11950). Included as a spare in CASES SPARE PARTS, No 5C. (RCA).

GROUP 10

KEY WT 8 AMP, NO NUMBER. TWO BRACKETS. SIMPLIFIED SPRING TENSIONER (COMPRESSION SPRING)



Westclox Key WT 8 Amp, No C3, with insulating sleeve removed from arm to show pressed steel construction. Photo: Tony Smith G4FAI.

Ref	Base	5 th hole	Bearing Pin	Finger Plate	Maker	Year	Country
ZA/CAN 0926	R		P		Westclox	N	C

Listed in EME Regulations FZ 256/3 as Key, WT, 8-Amp, No C3. Arms and brackets of pressed steel. Insulating sleeve on arm. Fitted in Key & Plug Assembly No9 (Canadian), Type 2, ZA/CAN 0715 (RCA-110072-1), with four fixing holes in base and Assembly.
Cover has rounded top. Also supplied in CASES SPARE PARTS, No.5C. Key may have no markings except KEY AND PLUG ASSEMBLY No9 CDN WESTCLOX on base tray of the Assembly.

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
ZA/CAN 0977	R		P		Westclox	N	C

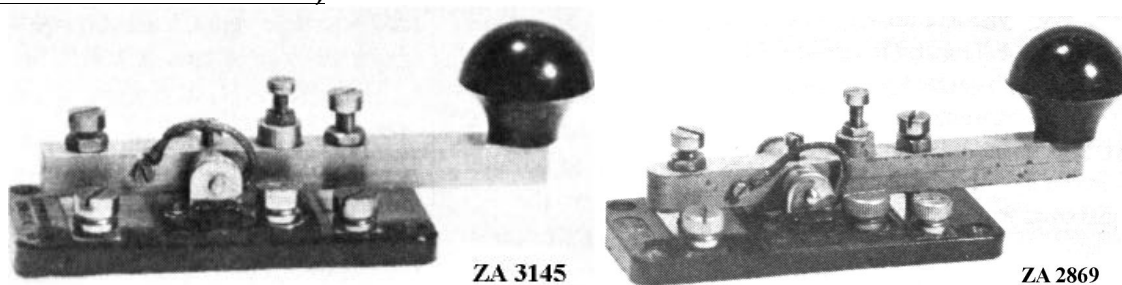
Listed in EME Regulations F 256/3 as Key, WT, 8-Amp, C1. (RCA 111809-1). Identical to ZA/CAN 0926 (above) except that Knob ZA/CAN 0975 replaces Knob ZA/CAN 0968, and Guard ZA/CAN 0967 is omitted.
Used on Wireless Remote Control Units, Canadian No 1, ZA/CAN 1332 (PC 82506 C-190) to control WS No 19, MkI, MkII, & MkIII; WS No 9; WS (Canadian) No 9; WS, Canadian, No 9 MkI; WS, Canadian, No 62; Transmitter, Canadian, No 43 and No 43 MkII. Also used on base 3 3/4" x 7 3/4" with small buzzer. *See photo below.*



Key WT 8 Amp No C1 (ZA/CAN 0977) used in Wireless Remote Control Unit CDN, No.1. Note knob, specific to this version. Photo: Chris Bisailion VE3CBK.

GROUP 11

KEY WT 8 AMP No2 MkII. NO BRACKETS. SIMPLIFIED SPRING TENSIONER (COMPRESSION SPRING)



Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
ZA 3145	R		P	F	PT & EW	1940	E
Nickel plated brass arm. Circled 1 on underside of base.							

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
ZA 3145	R		P		PT & EW	1940	E
Nickel plated brass arm. Circled 3 on underside of base.							

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
ZA 3145	R	5	P		PT & EW	1941	E
Insulating sleeve on arm under knob. Key in Key & Plug Assembly No9. Plated brass arm.							

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
ZA 3145	R	5	P		PT&EW	N	E
Unplated brass arm.							

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
ZA 3145	R	5	P		PT & EW	N	E
Unplated brass arm. Moulded ZA 3145 obliterated (apparently by manufacturer) and ZA28?? substituted (white stamp) (? ZA 2869).							

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
ZA 3145	R		P	S	PT & EW	N	E
Plated brass. Circled "7" underneath base. Noted in Wireless Remote Control Unit 'E', ZA 11954, for WS 19.							

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
ZA 3145	R		P	F	LMK	1942	E
Finger plate cardboard which appears to be original. Base mounted on turbax plate (textile reinforced insulating material).							

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	R		P		LMK	1942	E
Plated brass arm.							

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
ZA 3145	R	5	P		LMK	N	E
ZA 3145	R		P	S	LMK	N	E

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
ZA 3145	R	5	P	S	H & C	N	N
No1 Unplated brass. Some with insulating sleeve on arm under knob. Others without. Noted installed in Unit Operator MkII, YA 8414, also with Buzzer Sig Training set.							

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
ZA 3145	R		P	S	H & C	N	N

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
ZA 3145	R		P		PX	N	N
All brass finish. Circled "1" under base. 'PX' may be Phoenix but this is not confirmed.							

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
ZA 3145	R		P		PX/2	N	N
All brass finish. 'PX' may be Phoenix but this is not confirmed.							

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	R		P		PX/2	N	N
ZBA (zinc base alloy) cast arm. 'PX' may be Phoenix but this is not confirmed.							

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
ZA 3145	R	5	P		WER	N	E
Mounted on brass plate marked KEY & PLUG ASSEMBLIES No2B ZA 4500, four corner holes used for fixing, 5th hole unused.							

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
ZA 3145	R		P	S	WER	N	E

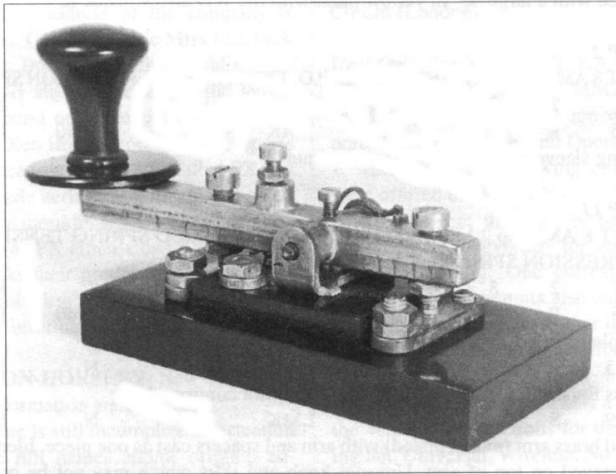
Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
ZA 2869	R	5	P		WER	1941	E
Insulating sleeve and finger guard under knob noted on some keys. Noted in Key & Plug Assembly No9.							

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
ZA 2869	R		P		WER	N	E
Air Ministry stamp (with Crown) under base. Indicates use by RAF.							

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
ZA 2869	R		P		LMK	1942	E
ZA 2869	R	5	P		LMK	N	E

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
ZA 2869	R		P	S	LMK	N	E
Moulded brass arm (nickel plated), with arm and spacers cast as one piece.							

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
ZA 2869	S		P	F	LMK	N	E
Moulded brass arm (nickel plated) with arm and spacers cast as one piece. Identification engraved on top of arm. Unusual knob and skirt which may not be original. Unusual base of ebonite, in two parts. Bearing assembly is on a sub-base 1-3/4" x 1-1/2" x 7/32" thick. This is mounted on a main base 4" x 2" x 7/16" thick. Front and back contact plates are mounted separately on the main base. There are no mounting holes and the assembly is heavy enough to be free-standing. <i>See photo below.</i>							

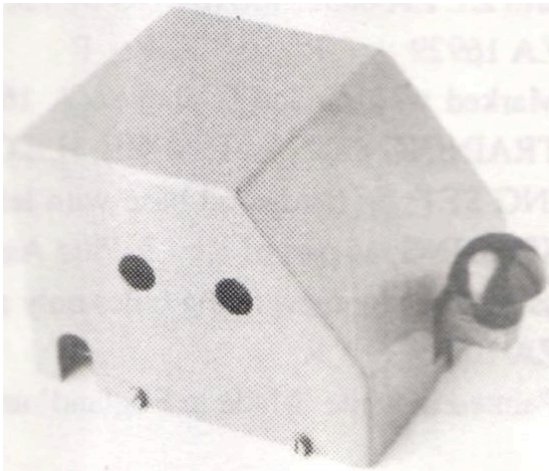


Collection: John Goldberg G3ETH. Photo: G3GKS

Key WT 8 Amp No2 MKII ZA 2869, LMK, with unusual knob, skirt and ebonite base.

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
ZA 2869	R	?	P		H & C	N	N

Part of closed assembly (8cm cube) with a 4 and a 2-pin connector. Assembly marked ZA 4390. See photo below.



Key WT 8 Amp No2 MKII, ZA 2869, by H & C. Part of ZA 4390 closed assembly with a 4 and a 2-pin connector. Photo: Guido Roels ON6RL.

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
ZA 2869	R	5	P		H & C	N	N

Moulded brass nickel plated arm, square ends, with arm and spacers cast as one piece. Note that the arm of the apparently identical key listed above in a ZA 4390 Assembly, is not nickel plated.

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
ZA 2869	R		P		PX/1	N	N

Painted lever arm with rounded ends. 'PX' may be Phoenix but this is not confirmed.

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
ZA 2869	R		P		PX/2	N	N

Original ZA number obliterated. New ZA 2869 stamped on and varnished over. Fitted to Key & Plug Assembly No8, with 5th hole in key not original but drilled after manufacture. 'PX' may be Phoenix but this is not confirmed.

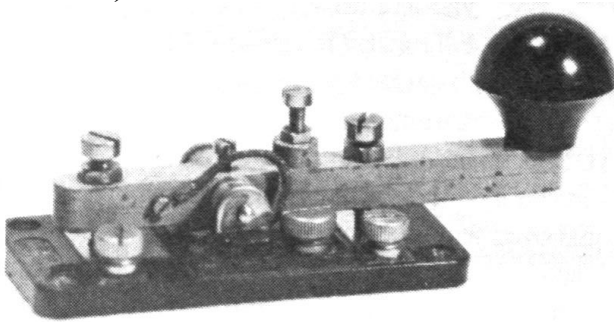
Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
ZA 2869	R		P		PX/3	N	N
White metal arm. All other metal parts brass. 'PX' may be Phoenix but this is not confirmed.							

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
ZA 2869	R	5	P		N	N	N
Original ZA 3145 number almost obliterated and engraved number ZA 2869 substituted. Key fitted in base of Westclox Key & Plug Assembly CDN No9.							

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
ZA 2869	R		P		N	N	N
N	R	5	P		N	N	N
N	R		P		N	N	N

GROUP 12

NO MARKINGS. NO BRACKETS. SIMPLIFIED SPRING TENSIONER (COMPRESSION SPRING)

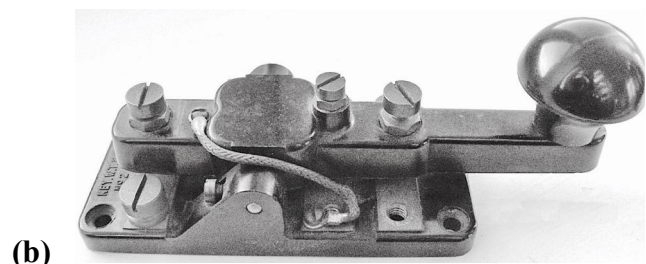
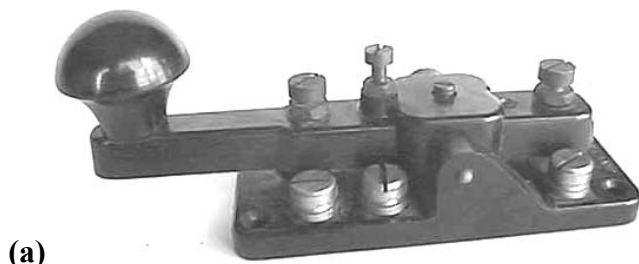


Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	R		P		N	N	N
No markings. Similar to No2 MkII ZA 2869 (Group 11 above).							

GROUP 13

KEY WT 8 AMP No2 MkIII. NO BRACKETS. SIMPLIFIED SPRING TENSIONER (COMPRESSION SPRING). BAKELITE.

All keys in this group have a bakelite arm and base.



Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
ZA 16929	R	5	P		C.E.L.	N	E

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
ZA 16929	R		P		C.E.L.	N	E

One key reported as part of BUZZER SIG, TRAINING set; one, on hard wood base with label on arm Z1. ZA 6852. TRAINING SETS, WT KEYS SENDING.

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
ZA 16929	R		P		N	N	N

Marked with circled C above ZA 16929. Noted mounted on oak base (two keys) as part of TRAINING SETS W.T. MKIII, H.E.C.L., Cat No. ZA 21137; as part of BUZZER SIG, TRAINING SET; on hard wood base with label on arm Z1. ZA 6852. TRAINING SETS, WT KEYS SENDING; as part of Key & Plug Assembly No6; also as part of Key & Plug Assembly No 8, using three (corner) fixing holes only as key does not have 5th hole to locate in the Assembly. One version reported does not have a central pivot retaining screw but has two retaining screws, one on each pivot mount, either side of the lever.

See photo (b) above. Photo: Peter McKinven G4TFH

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
ZA 16929	R		P		N	N	E

Painted in white 'Made in England' under base.

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
ZA 28685	R	5	P		N	N	N

Marked with circled C above ZA 28685.

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
ZA 28685	R		P		N	N	N

Marked with circled C above ZA 28685. Some have arm stamped "N", just in front of knob. Although this key does not have the 5th base fixing hole, one key has been noted installed in a Key & Plug Assembly No9 by use of two only (diagonal) of the four base fixing holes. Some reported used with BUZZER SIG. TRAINING 6350-99-446-4165 (NATO No.)

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	R	5	P		N	N	N

Noted in Key & Plug Assembly No8.

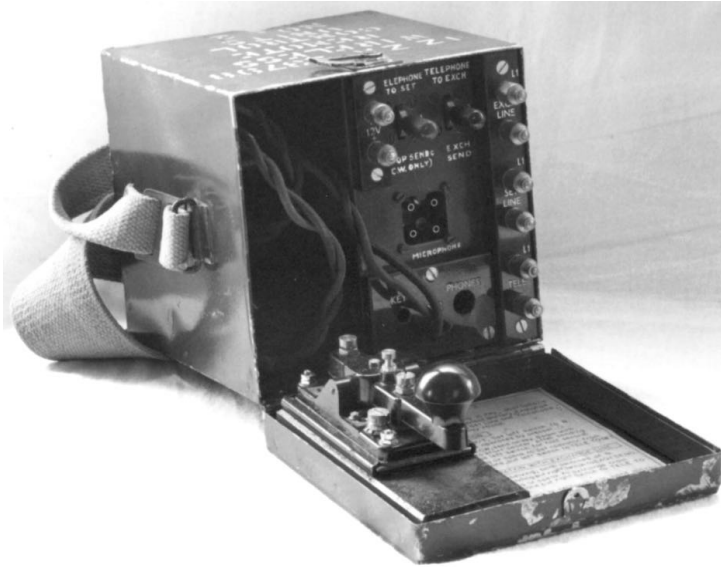
Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	R	5	P		N	N	E

Marked under base (white painted) MADE IN ENGLAND.

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	R		P		N	N	N

Noted in Key & Plug Assembly No 8 using three fixing holes only as key does not have 5th hole to locate in the Assembly.

Also in ZA 23798 Wireless Remote Control Units No2. *See photo below.*

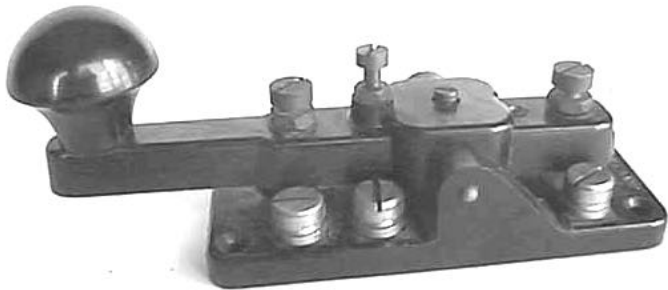


Key WT 8 Amp No2 MkIII in Wireless Remote Control Units No2. Photo: Deborah Bisailion.

GROUP 14

KEY WT 8 AMP No2 MkIII/I. NO BRACKETS. SIMPLIFIED SPRING TENSIONER (COMPRESSION SPRING). BAKELITE

All keys in this group have a bakelite arm and base.



Ref	Base	5 th hole	Bearing Pin	Finger Plate	Maker	Year	Country
ZA 28685	R		P		N	N	N

Marked with circled C above ZA 28685. Some have arm stamped "N", just in front of knob. Noted used with BUZZER SIG. TRAINING 6350-99-446-4165 (NATO No); in Unit Operator No1 MkII, YA 8414; in Wireless Remote Control Unit 'H' No2 Mk1/1, ZA 29540; and in Key & Plug Assembly No 19, ZA 28656 P.C.A. (marked PC.88344 on another Assembly reported), as used with W.S. No 62.

Ref	Base	5 th hole	Bearing Pin	Finger Plate	Maker	Year	Country
N	R		P		N	N	N

Has NATO number - Y1/5805-99-104-0214. Some have arm stamped "N", just in front of knob. Some noted with BUZZER SIG. TRAINING 6350-99-446-4165 (NATO No.)

GROUP 15

**KEY WT 8 AMP No3 MkII. NO BRACKETS. SIMPLIFIED SPRING TENSIONER
(COMPRESSION SPRING)**

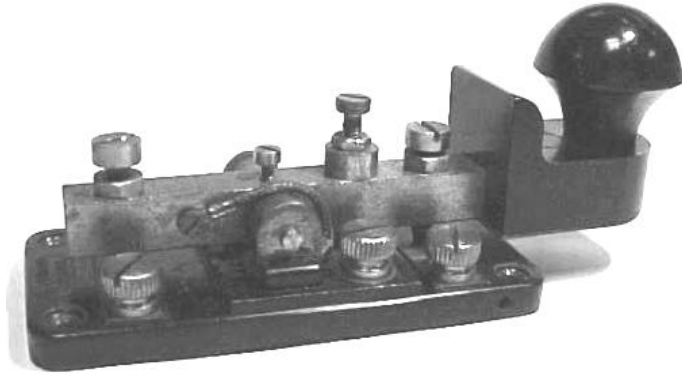


Photo: Dennis Goacher G3LLZ

Ref	Base	5th hole	Bearing Pin	Finger Plate	Maker	Year	Country
ZA 10051	R		P		PX/2	N	N

Insulating sleeve and finger guard under knob noted on some keys. PX may be Phoenix but this is not confirmed.

GROUP 16

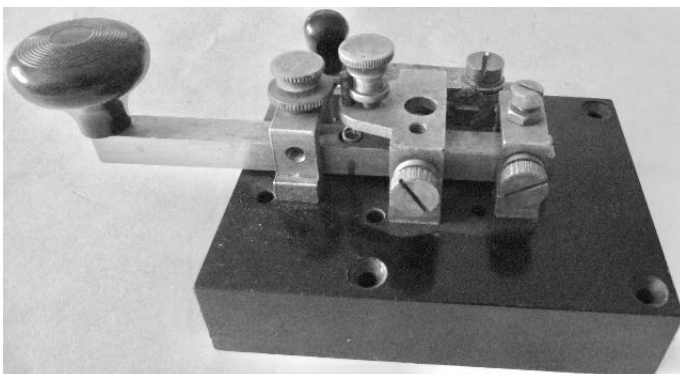
ALSO NOTED

AUSTRALIAN POST OFFICE USE

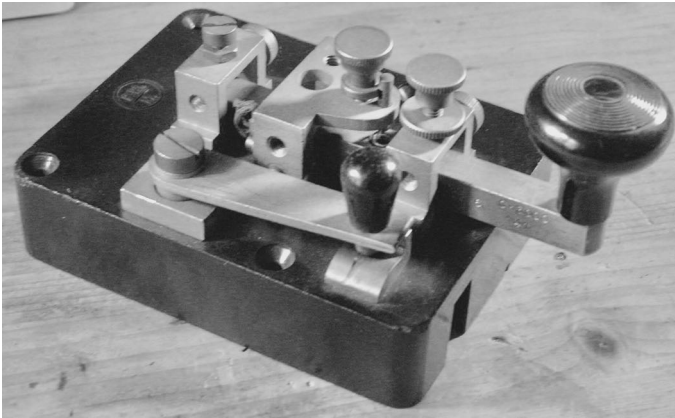
During WW2 the Postmaster-General's Postal Workshops in Melbourne made WT 8 Amp keys for the Department of Defence, several of which are reported in the Survey. After the war the Workshops converted some of these keys for use on PMG landlines by mounting the key on a standard size PMG key Bakelite base with square corners, replacing the arm with a longer one, and adding a circuit closer. A cut out in the base housed a socket to take a jack from a jigger (an over-ride socket for a semi-automatic key) and the knob was the standard PMG knob. *See photo below.*

Another, very scarce, version from the same source has a base with rounded corners. *See second photo below.* For purposes of comparison, and to see where the inspiration for the conversion came from, a photo of the standard PMG key is also shown.

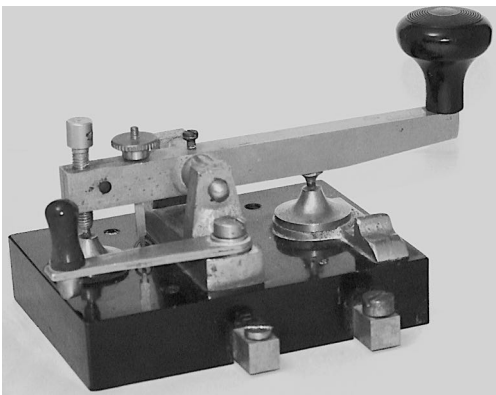
Thanks to Ron McMullen for the above information.



*PMG converted WT 8 Amp key with square cornered Bakelite base. Note extended arm.
Photo: Ron McMullen.*



*PMG converted WT 8 Amp key with round cornered Bakelite base. Note extended arm.
Photo: Mike Maguire M0DVO.*

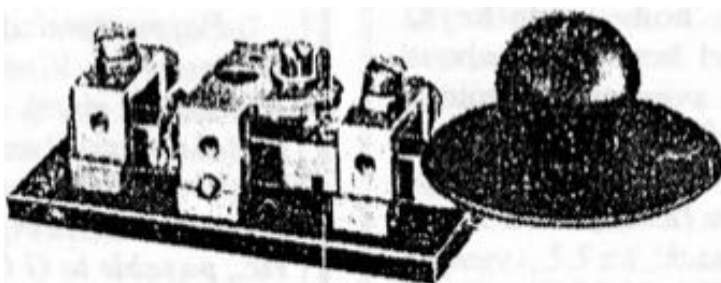


*Standard PMG key. Photo: Tony Smith G4FAI. For more information about the PMG keys and the conversion of Keys WT 8 Amp by the PMG Workshops see Ron McMullen's website, *The Australian Telegraph Office*: <https://australiantelegraph.files.wordpress.com/2013/03/australian-telegraph-keys-and-instruments9.pdf>*

CIVILIAN USE

The "W.B. Morse Key" was described in Jim Lycett's article *The Ubiquitous Key WT 8 Amp*, above, and was reviewed by *Wireless World* in September 1938. It was released by Whiteley Electrical Radio Co. Ltd, who later made thousands of Keys WT 8 Amp marked "WER" for the Armed Services. The W.B. key was priced at 21/- (£1.1.0d) and was claimed to be able to handle "up to 8 amps of current." The mysterious initials "W.B." were probably derived from Whiteley's alternative name "Whiteley, Boneham & Co. Ltd.

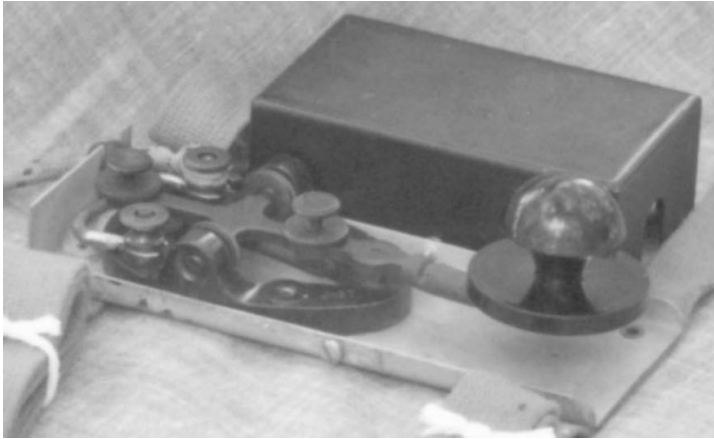
From the illustration it appears to be a Key WT 8 Amp No2 with a P.O. type tensioner although no keys with this type of tensioner manufactured by WER have been noted in the survey. It would be interesting to know how a key for which there was an official military specification, and which was currently in production by other makers, became available for sale to the general public.



W.B. Morse Key, 1938

MODIFIED AMERICAN J-37 KEY

Mounted as a low profile Key & Plug Assembly No 9 made by Alden Products Co, Brockton, Mass. Used with American contract Wireless Set No 19 (RCA Victor Division), believed made by Zenith. *See photo below:*



*Alden Key and Plug Assembly No 9 with modified J-37 key.
Photo: Chris Bisailion VE3CBK.*

NAVY USE.

While Keys WT 8 Amp have been identified in this survey principally for Army applications, plus a few as used by the RAF, two have been identified in a Navy application. One is a Key WT 8 Amp No2 Mk II, ZA 3145, simplified tensioner (Group 11), with a 10A/7790 knob from an RAF bathtub key, mounted on an ADMIRALTY PATTERN 1271 BUZZER REPEATER AND KEY UNIT, SER. No. WER 12917. *See photo and connections diagram, below.*

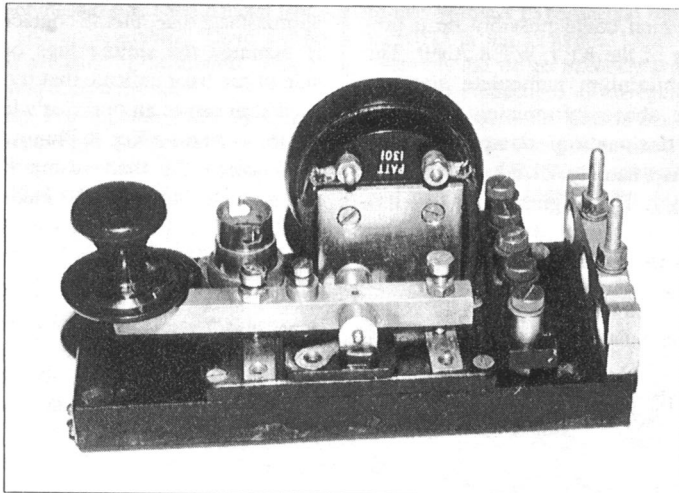
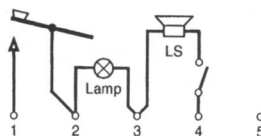


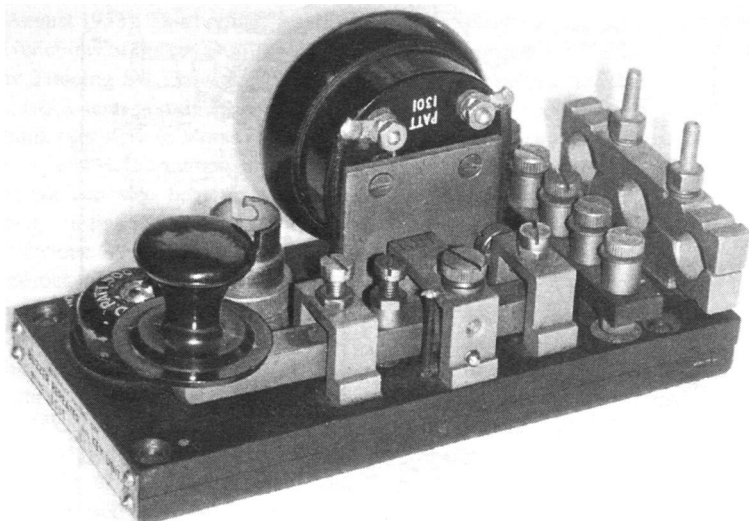
Photo: Henri Jacob F6GTC

(above) ADMIRALTY PATTERN 1271 BUZZER REPEATER AND KEY UNIT, SER. No. WER 12917, containing a KEY WT 8 AMP No 2 MkII with a 10A/7790 knob from an RAF 'bathtub' key and (right) connections for the unit



The other is in a similar AP 1271 Unit, Serial No 3686, WER, reported with a three bracket, simplified tensioner, Key WT 8 Amp (notionally Group 8). This key has no base of its own, but is incorporated into the unit's base. The knob is also a type 10A/7790. *See photo below.* It has been suggested, but not confirmed, that this type of unit was used on large warships for internal

communications between the main W/T office and other offices. As well as the 'phones earpiece it has a miniature bulb which was used to attract attention when the Radio Supervisor was calling.



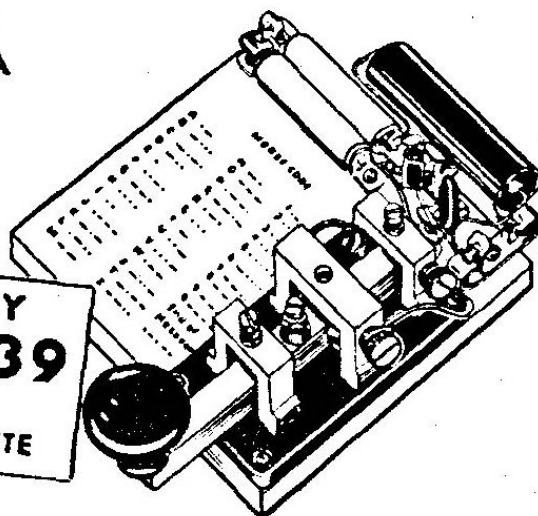
ADMIRALTY PATTERN AP 1271 Unit. Serial No 3686, WER. Key has no base of its own but is fitted to the unit's base. The knob is an RAF type 10A/7790. Photo: Wyn Davies

OVERSEAS SURPLUS MARKET

MASTER MORSE CODE WITH THIS SENSATIONAL NEW B-A TRANSISTOR CODE PRACTICE OSCILLATOR KIT

A truly up-to-date kit ideally suited for radio amateur beginner, boys groups, etc.—anyone desiring to learn sending and receiving of the Morse Code through actual practice.

ONLY
\$4.39
COMPLETE



Will provide, because of the special transistor circuitry, a strong clear audible tone equivalent to that received from vacuum tube code oscillators costing a great deal more. Requires fewer parts, far less power (uses only 2 penlight cells), and is considerably smaller in size.

Kit comes complete with the popular British version of the J-38 key, regularly at least a \$5.00 value, Raytheon CK722 transistor, mounting base and all parts. Uses any high impedance magnetic headphones such as listed on opposite page. Easy to build, no soldering, no previous electronic experience necessary. Includes simple pictorial diagram that shows complete wiring and parts placement. Wt. 1 1/4 lbs.

No. 29A250.

(Less Headphones). Each.....

\$4.39

10 Lots,

Each.....

\$3.99

Advertisement from the ARRL license manual, 1961, by Burstein-Applebee Co. of Kansas City, Missouri, for a Code Practice Oscillator Kit which included a Key WT 8 Amp (three brackets, simplified tensioner), described as "the popular British version of the J-38 key".

Steel - To be stainless and of best quality.

Steel for springs - To be best quality, hard drawn.

Wire electric R.13, Mk. I - To conform to the latest R.S. Specification.

SCREW THREADS AND NUTS

To conform to the latest B. S. Specification No. 93 for B.A. threads; even numbers only to be used.

CONSTRUCTION

All parts to be shaped, dimensioned and assembled as shown in drawings.

Base - to be of ebonite.

Front bracket, Centre bracket, Back bracket, Lever - Each to be of brass.

Contacts - To be of steel, faced with Tungsten. The latter to be welded to the former in such a manner that neither of the metals will develop rust.

Spring - Steel wire No. 22 S. W.G. when stretched by 3/8-in. and released it must return to its original length. The metal shall not develop rust.

Connection flexible - To be Wire electric R.13, Mk. I, securely soldered to 2 No. 8 B.A. lugs, holes of lugs to be 1.3/4-in. apart. Resin only to be used as a soldering flux.

Axle pin, Axle pin screw, Spring adjusting pin, Spring adjusting screw, Spring retaining pin - To be of Stainless Steel.

FINISH

Ebonite - To be finished smooth and dull.

Brass - To be finished smooth and dull nickel plated.

Spring - To be dull nickel plated.

Contacts - to be finished flat and their surfaces burnished.

TESTS

A current of 12 amperes will be applied across the contacts of the key for 10 minutes, during which time the key will be operated in the normal manner, the key must work freely and smoothly and show no signs of overheating at the contacts.

MARKING

The key to be engraved on the front edge of the base in No. 8 characters. The makers initials only are to be marked. Any other marking called for is to be adhered to.

GENERAL CONDITIONS OF CONTRACT (extract)

If one-fourth of any delivery is found inferior to the terms of this Specification, the whole delivery may be rejected.

Comments

This document is very interesting. It gives the correct terminology, ie, "brackets", for what I called "bridges" in my previous articles, so that has been corrected in this version of the survey. It also explains why only the makers' initials are on the keys and not their full names. The high quality of this early specification is notable while, presumably, later versions of a simpler design were introduced as a wartime economy measure.

The specification is signed "A.C. Fuller, Chief Inspector, Engineer and Signals Stores". One can only speculate that this was probably Captain (in 1915, and eventually Major-General) Fuller the inventor of the Fullerphone.

TONY SMITH'S ARTICLE, 'Key WT 8 Amp Worldwide Survey Results' (MM28 pp.7-23) and Louis Meulstee's article, 'Unusual Military Morse Keys', in *The AWA Review* Vol. 8, 1993 pp. 39-41, inspired me to combine several sources of information to elaborate on keys that were used with the Wireless Set No. 19, the workhorse Wireless Set of the Second World War.

Mk.II Set

The Wireless Set (Canadian) No. 19 Mk.II used two types of Key and Plug Assemblies described as follows. The first type is the Key and Plug Assemblies No. 9, ZA/CAN/BR 0937 (Manufacturers # PC 90691C-1) as shown in **Fig. 1** and **Fig. 2**. Internally it has a three-bridge Key W.T. 8 Amp No. 2.

The second type is the Key and Plug Assemblies, CDN, No. 9 Type 1, ZA/CAN 1643 (Manufacturers # R 11950-1) as shown in **Figs. 3 and 4**. Internally it has a two-bridge Key W.T. 8 Amp

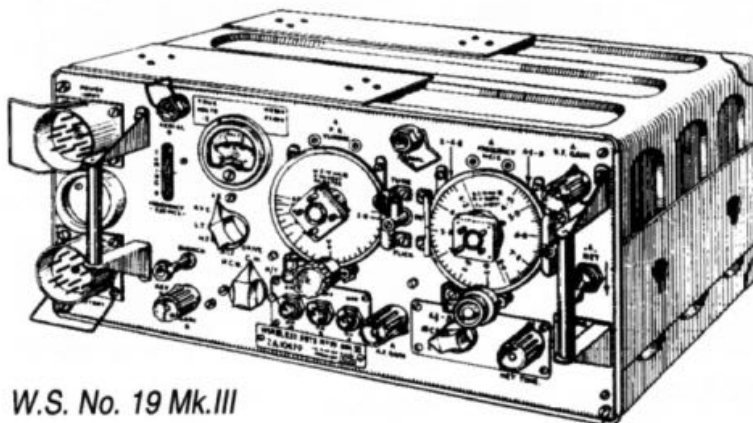
Keys for the Wireless Set No. 19

(Canada and USA)

by *Chris Bisailion VE3CBK*

No. 2 made by Northern Electric Co. The designation 'Key and Plug Assembly R 11950' is stamped into the base from underneath creating raised lettering under the lever arm.

There is an interesting note in the Working Instructions for the WS No. 19 Mk.II; 'Key and Plug Assembly, PC90691C-1 will be supplied instead of Key and Plug Assembly, R.11950 until present stock is exhausted.'



W.S. No. 19 Mk.III

Mk.III Set

The Wireless Set (Canadian) No. 19 Mk.III also used two assemblies described as follows. The first is the Key and Plug Assemblies No. 9, ZA/CAN/BR 0937 already described above.

The second type is the Key and Plug Assemblies,

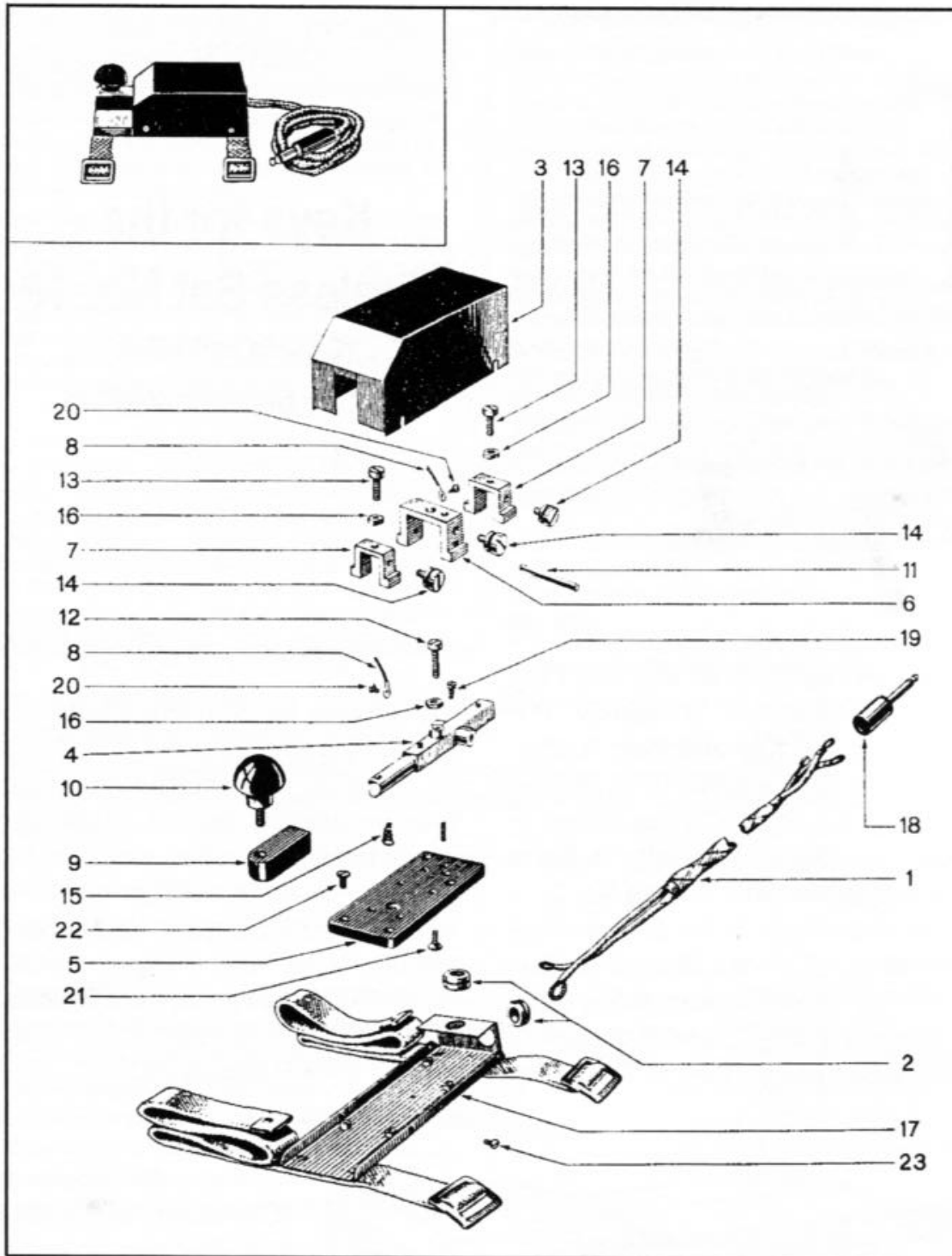
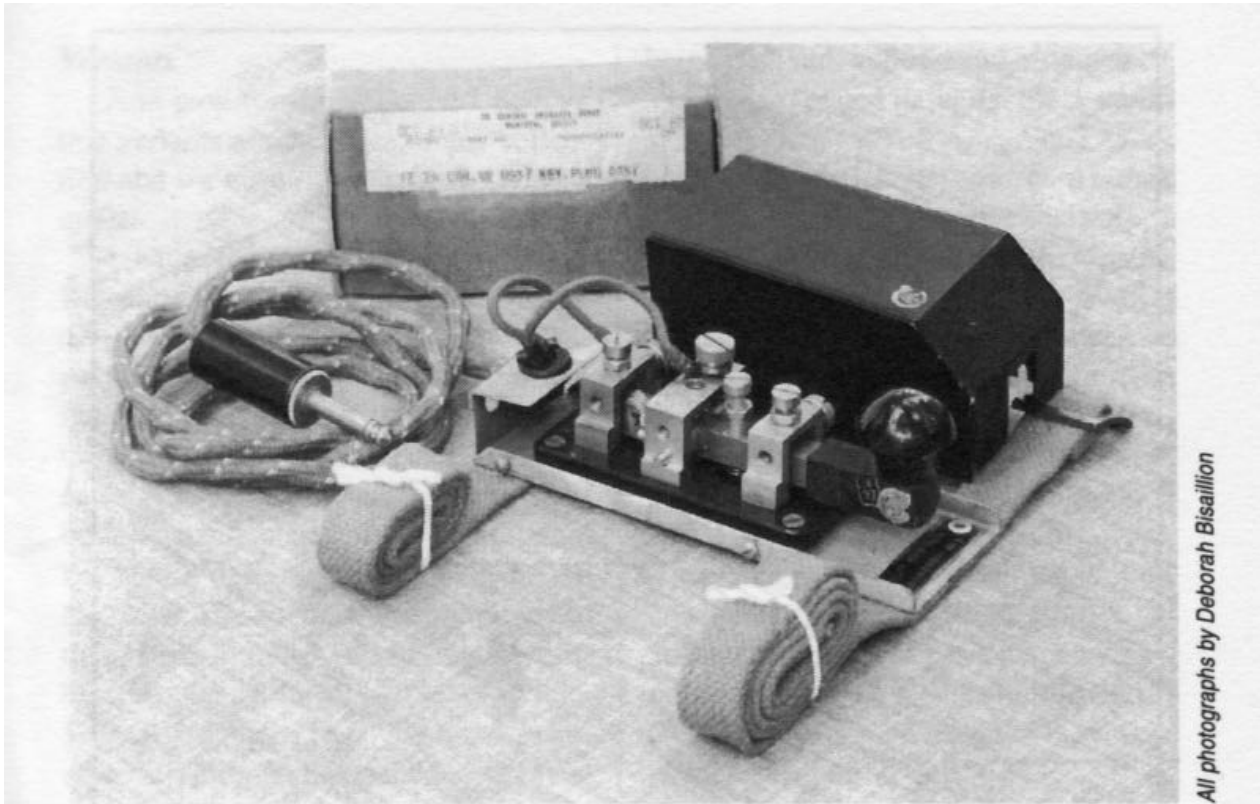


Fig. 1. Key and Plug Assemblies No. 9 (ZA/CAN/BR 0937),
from EMER FZ 256/2 and FZ 256/3

CDN, No. 9 Type 2, ZA/CAN 0715
(Manufacturers # RCA 110072-1) made
by Westclox, as shown in Figs. 5 and 6.

Internally it has a two-bridge Key W.T.
8 Amp No. 2 of pressed steel construc-
tion.
to page 30 >



All photographs by Deborah Bisailion

Fig. 2. Key and Plug Assemblies No. 9 (ZA/CAN/BR 0937)

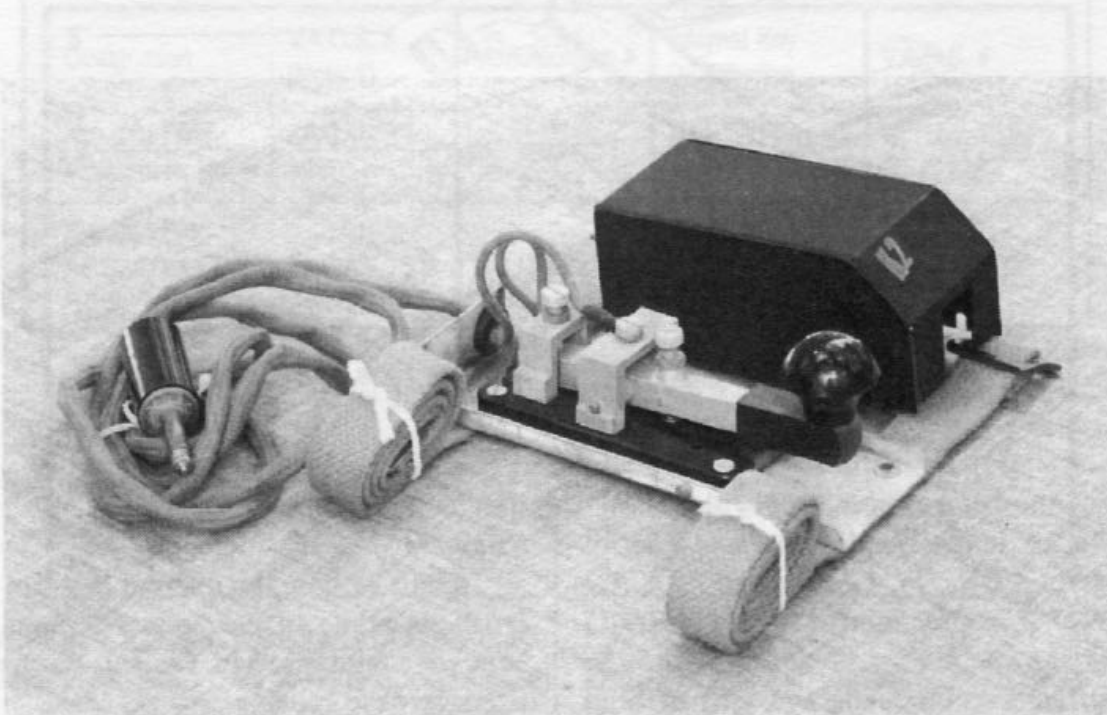


Fig. 3. Key and Plug Assemblies, CDN, No. 9 Type 1 (ZA/CAN 1643)

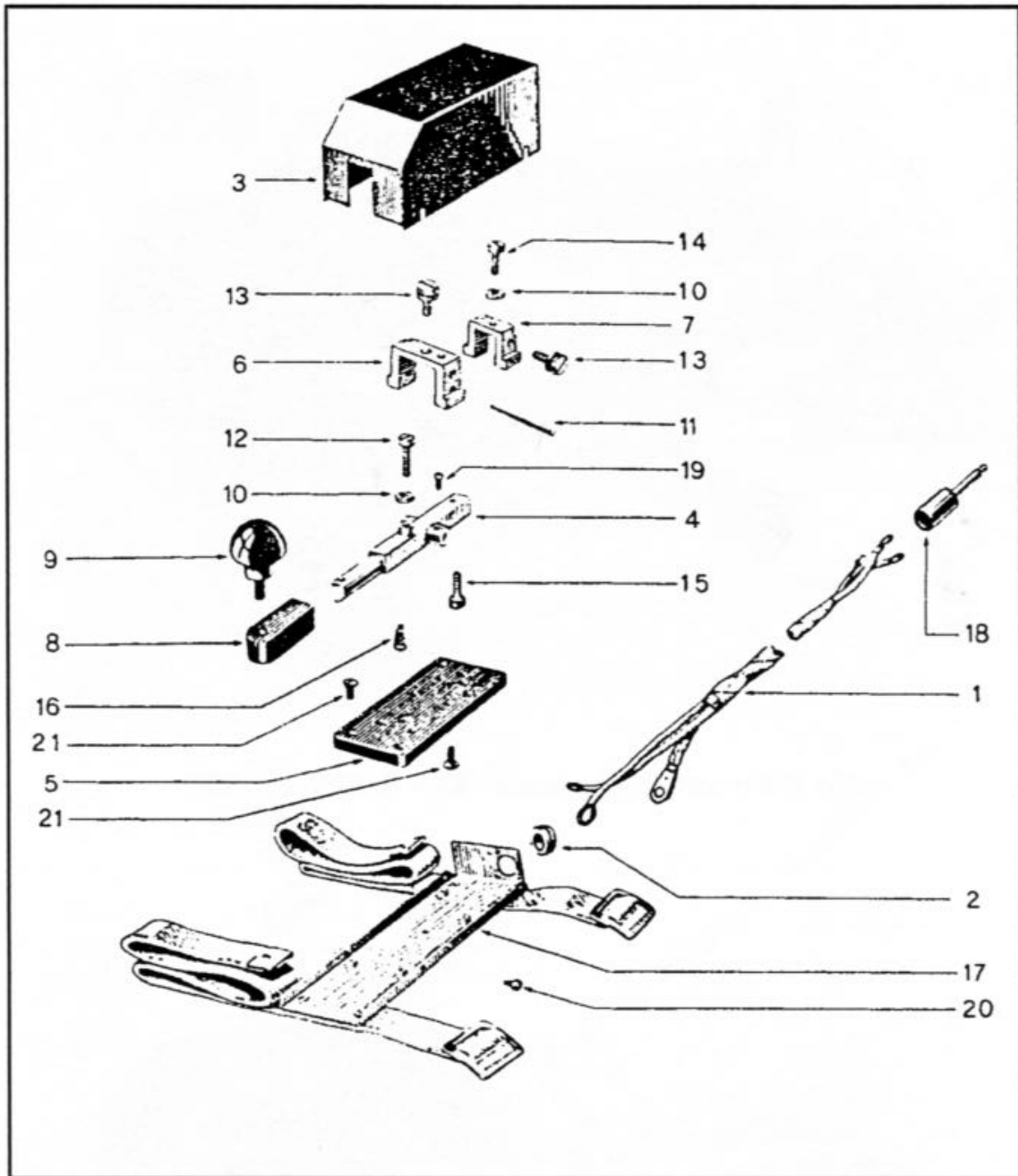


Fig. 4. Key and Plug Assemblies, CDN, No. 9. Type 1 (ZA/CAN 1643),
from EMER FZ 256/2

Another key was used with the WS No. 19, in the Wireless Remote Control Units, CDN, No. 1 designated ZA/CAN 0977 (Manufacturers # RCA 111809-1) as shown in **Figs. 7 and 8**. Note the different knob shape and lack of high voltage guard sleeve.

Key Designations v. Assembly Numbers

Details of how the internal key designations relate to the assembly numbers are summarised in Table 1, on the opposite page.

Variants

And now for the variants! I believe that variants are the spice of any collection and we must have them all. What a quest!

I have found several British-built Key and Plug Assemblies No. 9 with the designation ZA 0937 on the cover but packed in a cardboard box with the designation ZA/CAN/BR 0937 printed on the label as shown in **Fig. 9**. This indicates that the Canadians used British-built keys interchangeably. The internal key has the designation Key W.T. 8 Amp No. 2 Mk.II. I found slight variations in these British-built Key and Plug Assemblies No. 9 as follows:

1. Standard plated base, flat black painted cover, Key W.T. 8 Amp No. 2 Mk.II designation on Bakelite base, cord is

beige with red, yellow, and blue stripes.

2. Standard plated base, flat black painted cover, Key W.T. 8 Amp No. 2 Mk.II designation on Bakelite base, cord is dark brown with yellow, red, and blue stripes.

3. Standard plated base, flat black painted cover, Key W.T. 8 Amp No. 2 Mk.II ZA 2869 LMK designation stamped on lever arm, cord is dark brown with yellow, red, and blue stripes.

4. Standard plated base, flat black painted cover, Key W.T. 8 Amp No. 2 Mk.II designation on Bakelite base, cord is light brown with green, yellow and blue stripes, brass lever arm.

5. Flat black painted base, black wrinkle painted cover, Key W.T. 8 Amp No. 2 Mk.I designation on Bakelite base, cord is beige with no stripes.

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Table 1. Assembly Numbers and Internal Key Designations

Designation	V.A.O.S. # (Note 1)	Manufacturer #	Internal Key Designation	V.A.O.S. #
Key and Plug Assemblies No. 9	ZA/CAN/BR 0937	PC 90691C-1	Keys, W/T, 8-Amp, No. C2	ZA/CAN 0982
Key and Plug Assemblies CDN No. 9, Type 1	ZA/CAN 1643	R 11950-1	Keys, W/T, 8-Amp, No. C4	ZA/CAN 1522
Key and Plug Assemblies CDN No. 9, Type 2	ZA/CAN 0715	RCA 110072-1	Keys, W/T, 8-Amp, No. C3	ZA/CAN 0926
Wireless Remote Control, CDN, No. 1	ZA/CAN 1332	PC 82506 C-190	Keys, W/T, 8-Amp, No. C1	ZA/CAN 0977 (Note 2)

Note 1: V.A.O.S. = *Vocabulary of Army Ordnance Spares*.

Note 2: Keys, ZA/CAN 0977, is identical to Keys, ZA/CAN 0926, with the following exceptions:

1. KNOBS, ZA/CAN 0975 replaces KNOBS, ZA/CAN 0968.
2. GUARD, ZA/CAN 0967 is omitted

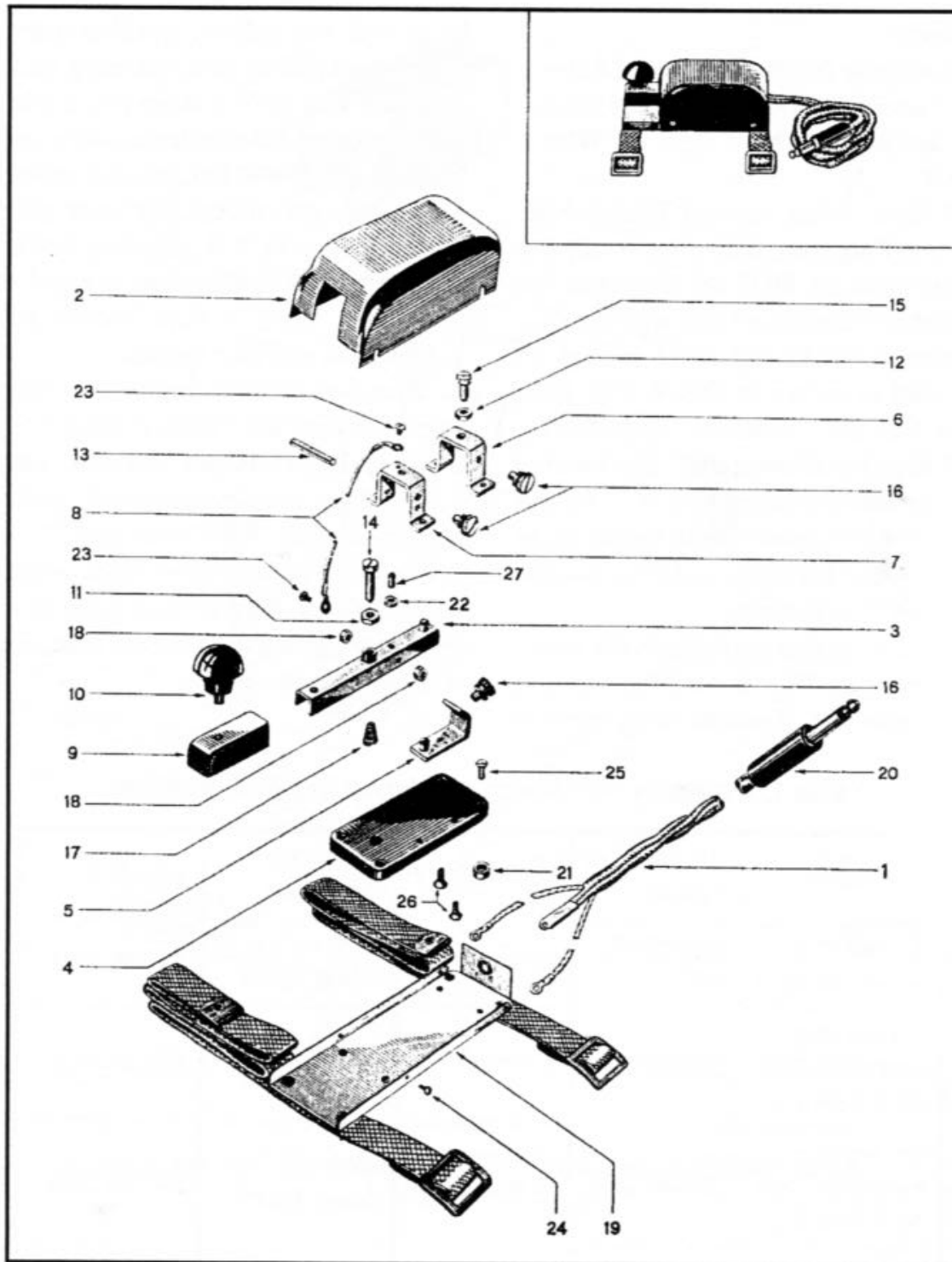


Fig. 5. Key and Plug Assemblies, CDN, No. 9 Type 2 (ZA/CAN 0715),
from EMER FZ 256/3

American Sets

The United States of America also manufactured the Wireless Set No. 19

and had their own suppliers of Key and Plug Assemblies No. 9, namely, J.H. Bunnell (New York, NY) and

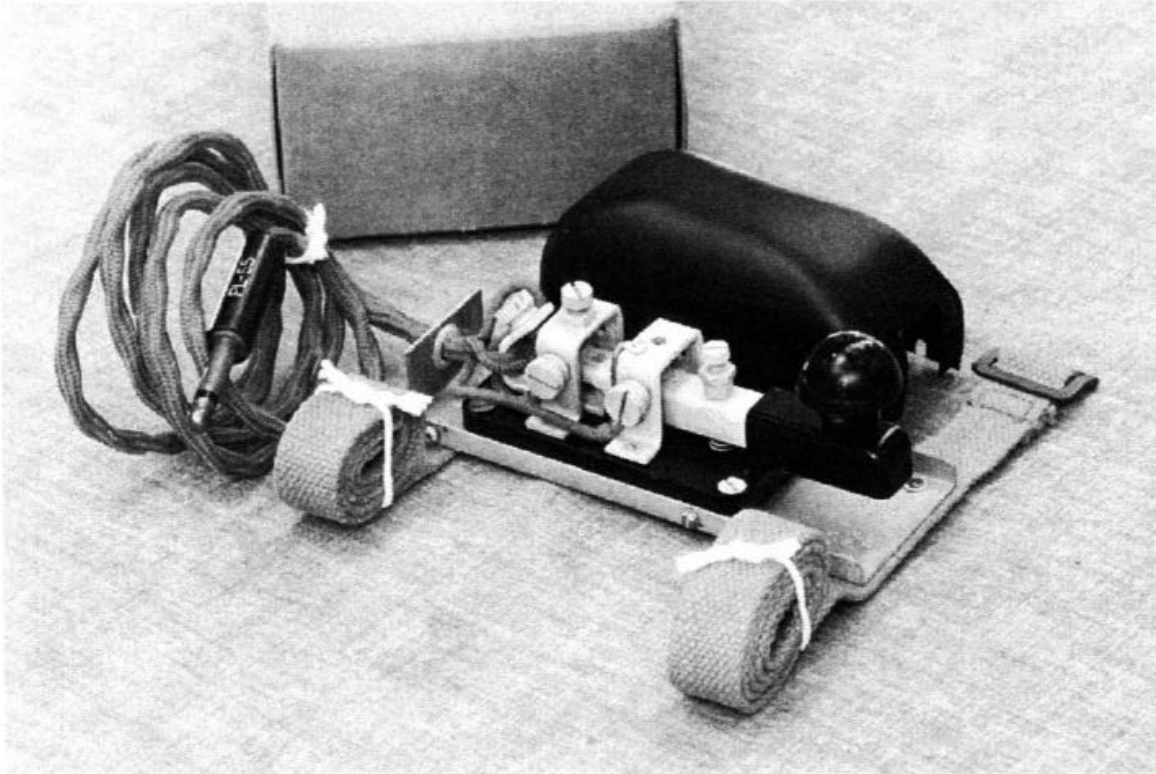


Fig. 6. Key and Plug Assemblies, CDN, No. 9 Type 2 (ZA/CAN 0715)

Alden Products Company (Brockton, Mass). The 'Tabular List of Replaceable Parts for the Wireless Set No. 19 – Mark II manufactured by RCA Victor Division of the Radio Corporation of America – dated May 20, 1943' lists the two assemblies under the designation 90691C-1.

The J.H. Bunnell Key and Plug Assembly No. 9 is shown in **Fig. 10** in two variations. The lower key has a black wrinkle finish base and the designation ink-stamped on the lever arm, the upper key has a plated base with the designation stamped on the base under the lever arm and interestingly enough it has the Canadian Army designation ('C' with a broad arrow) stamped in red on the cover.

This means that this key was des-

igned for use in the Canadian Army and represents a strong connection between US manufacture and Canadian use of Wireless Set No. 19 equipment.

The Alden Key and Plug Assembly No. 9 is shown in **Fig. 11**. The key is a modified J-37 with the knurled lever set nuts moved internally to the frame to reduce width to meet the overall width requirements of the Key and Plug Assembly No. 9.

Two variations are shown, the upper key has brass hardware components and the lower key has black painted hardware components.

Most Variations Found?

After many years of collecting, I believe I have found most variants of the keys that were used with the

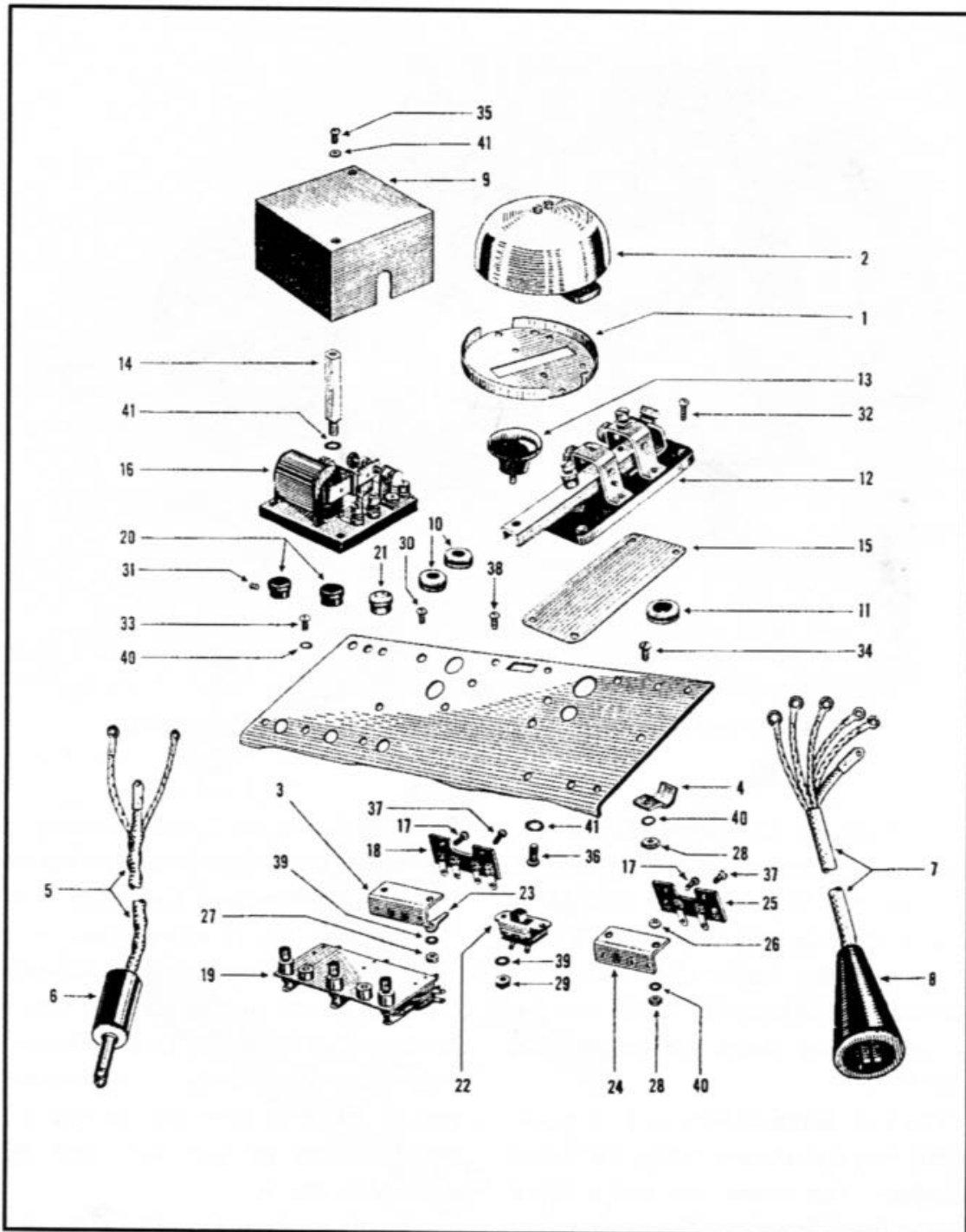


Fig. 7. Keys, W.T. 8 Amp, No. C1 (ZA/CAN 0977) item 12 as used in Wireless Remote Control Units, CDN, No. 1 (ZA/CAN 1332), from EMER FZ 256/3

Canadian and American versions of the Wireless Set No. 19, but I would be glad to hear from readers with information on ones that I have possibly missed and any anecdotes that would help to

complete the picture.

Although many variations of the keys for the Wireless Set No. 19 existed, it is

to page 37 >



Fig. 8. Keys, W.T. 8 Amp, No. C1 (ZA/CAN 0977) as used in Wireless Remote Control Units, CDN, No. 1 (ZA/CAN 1332), also shown below in close-up



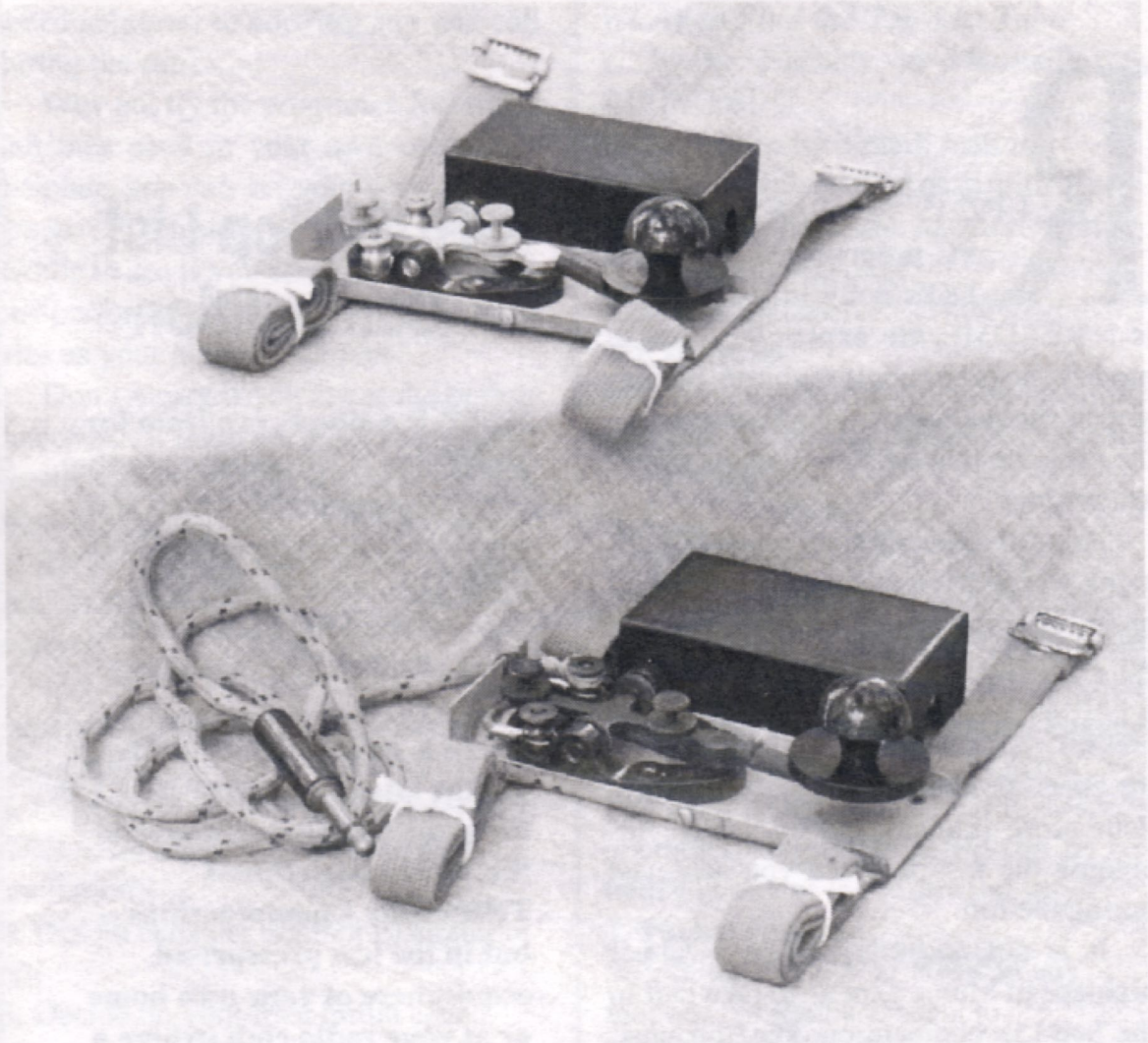


Fig. 11. Alden Key and Plug Assemblies No. 9 (USA)

reasonable to assume that these were not intentional variants. Lack of available materials and substitutions made during wartime manufacture, meant that equipment had to be made available for service in a timely manner.

On the opposite page:

Fig. 9 (top). British Built Key and Plug Assemblies No. 9 (ZA 0937).

Box is marked ZA/CAN/BR 0937.

Fig. 10 (bottom). J.H. Bunnell Key and Plug Assemblies No. 9 (USA)

Dedication

Fifty plus years later it is quite an honour to be able to sit back and ponder the variations from a collector's point of view. I dedicate this article to the Wireless Operators that no doubt had to use these keys under extremely adverse conditions.

(Chris Bisailion owns the Whiskeytown Wireless Collection.

His speciality is the Wireless Set No. 19.)

© Chris Bisailion VE3CBK 1996



**Wireless Set No.19.
Workhorse of the Allied Forces in WW2 and later.
The natural partner of the Key WT 8 Amp.**