

OPERATION MANUAL

OFFICIAL BOY SCOUT SIGNAL TRAINING SET



CONTINENTAL (International) MORSE CODE

••••• A	••••• J	••••• R
••••• B	••••• K	••••• S
••••• C	••••• L	••••• T
••••• D	••••• M	••••• U
••••• E	••••• N	••••• V
••••• F	••••• O	••••• W
••••• G	••••• P	••••• X
••••• H	••••• Q	••••• Y
••••• I		••••• Z
••••• 1	••••• 6	••••• .
••••• 2	••••• 7	••••• ,
••••• 3	••••• 8	••••• ?
••••• 4	••••• 9	••••• -
••••• 5	••••• 0	

LETTER GROUPINGS

••••• E	••••• T	••••• R	••••• P
••••• I	••••• M	••••• K	••••• X
••••• S	••••• O		
••••• H		••••• L	••••• Y
		••••• F	••••• Q
••••• A	••••• N		
••••• W	••••• D	••••• U	••••• G
••••• J	••••• B	••••• V	
	••••• Z		
	••••• C		

THE GENERAL SERVICE CODE

The International Morse, or General Service Code, is the one method of communication which is understandable by the signalmen of all nations, and which may be used effectively by every type of signaling device, by day or by night, by flag or by lantern, by sight or by sound. It should become the base of your signaling equipment.

The first job that you must tackle is to memorize the code. Before wireless or code radio reached its present high state of development, the beginner always learned the code as if the most important method of using it was by flag, or Wig Wag, and consequently found that he was badly handicapped and had a great deal to "unlearn." This is no longer true. The majority of times that you will use the General Service Code, you will be using it as the code was originally intended to be used, as a sonic or sound signaling system. The radio, field telegraph, buzzer or whistle will be the instrument. The fastest and most effective means of transmitting the code is by sound, so let's learn it that way! All other methods of sending the General Service Code are merely outgrowths of the original. Actually with radio now all about us, facilities for both practice sending and receiving by sound are easier to find than those of Wig Wag or any other method.

There are two methods of approach. One is to grasp the bull by the horns and sit down to two or three evenings of diligent work, memorizing in alphabetical order, and keeping at it until you have it.

Or you can learn by the so-called "memorization groups," which appear in the diagram. Letters which are built in a similar manner are grouped together. If you use the first method, concentrate on getting five letters at a time—A B C D E—and sending those on the buzzer until you are sure of them.

Whichever method is used, remember that you are "learning by listening!" The letter A is not "dot dash." It is "dit-dah," or however you care to interpret the symbol as it comes from the sounder. Neither is it "An ant and adder," or the rest of the hodge-podge in that old memorization scheme! Learn to think of these letters in terms of sound, rather than how they appear on the printed page. As soon as you have memorized the code, then all thoughts as to how these characters look should disappear, and you should be thinking of how they sound. The thought processes should be "Dit-dah-dit. That's R" and not "Dit-dah-dit. That is dot-dash-dot, and that is the letter R." The importance of this method may not be apparent at once, but as you gain skill, you will find that you are not conscious of the groups as such, but that you are thinking of the letters in terms of the code, just as you now read print.

CONVENTIONAL SIGNALS

Error (Series of E's)
Wait (AS)
Received O.K.	.. - . (R)
End Message	.. - . - . (AR)
Invitation to Start	
Sending	- . - (K)
End Transmission	... - . - (SK)

ABBREVIATIONS

After you have become proficient, and in situations where you are sure of the ability of the receiver, you will find that work can be speeded up still more by abbreviation. Don't try to do it, however, if there is any danger of the receiving signalman becoming "lost," and unless you can abbreviate the words intelligently. The following table gives you some of the standard abbreviations, but most work of this sort is done by the signalman on the spur of the moment. It is best to work out the message and the abbreviations you are going to use on paper, before you start sending, so you are sure they can be interpreted correctly. Don't abbreviate too many words in succession.

OK	All Right
ANR	Another
ANS	Answer
GA	Go Ahead
GN	Good Night
NIL	No More
NM	
OB	Official Business
OFM	Official Message
OPR	Operator
QK	Quick
SIG	Signature
BK	Break
TU	Thank You
MSG	Message
FM	From
GM	Good Morning
C	Yes
TFC	Traffic
WA	Words After
WB	Words Before

MEMORIZATION GROUPS

E	T —
I	M — —
S	O — — —
H	N — .
A . —	D —
W . — —	E —
J . — — — —	G — —
U . . . —	Q — — —
F . . . —	K —
R	Y —
L	X —
P . — —	
V	C —
	Z —

NUMERALS

After you have memorized the alphabet, turn to the numerals. You will find them easy, as they follow a definite system and can be learned quickly. The numerals should be followed by the punctuation marks, and when you are sure of these, in addition to the alphabet itself, you are ready to start developing speed.

. — — — —	1	— — — —	8
.	2	— — — —	9
.	3	— — — —	0
.	4	. — — — —	
.	5	— — — —	
—	6	. . — — —	?
— —	7	— —	

OPERATING INSTRUCTIONS

The Official Boy Scout Signal Training Set is equipped with a regular sending key. To use the key properly, which is the secret of high speed sending, it is necessary to have the hand, arm and body in a comfortable, relaxed position. The feet should be flat on the floor and the key placed so that the entire forearm rests on the desk, or on the same level with the key. Grasp the key lightly but definitely and with the thumb and the first two fingers of the hand. The thumb is not under the knob, but rather on the side. The elbow becomes a pivot and the entire forearm, flexing at the wrist, is used to send the characters. This allows the muscles of the arm to do most of the work, and is less tiring than if the wrist alone were used. Allow the spring to bring the knob back into position, and don't pull it back with your thumb or your sending will be "choppy." If you feel your arm and body tightening up, sit back and rest for a moment, because your sending will become an unintelligible mess if you continue in a nervous, tense state.

At the rear of the signal set, below the key, is located the control switch. Four positions on the switch govern the operation of the set. When the switch is placed in the "O" position, a grooved safety lock holds the set in OFF position, for carrying purposes.

For transmission by telegraph sounder move the switch to "Position 1." For night signaling, the Navy Blinker Light may be used by setting the switch at "Position 2." And for the Radio Code Buzzer, the switch should be at "Position 3."

Adjustment of Telegraph Sounder Tone

The tone of the telegraph sounder may be altered to a higher or lower pitch by carefully turning the blue screw on the bottom of the base.

Installation of Batteries and Bulb

The base may be quickly removed by placing the switch in the "O," or "OFF" position and inserting any small pointed article, such as a key or pencil, in the large semi-circular hole in the front of the set and snapping the case out of the base. Standard 1½ volt dry cell flashlight batteries should be placed between the battery clips, being careful to reverse one battery. A No. 233 General Electric bulb is used in this set and may be easily screwed in the socket at the front of the base.

To replace the base in the case, be sure the switch arm is still in the "O," or "OFF" position, and the key contact is placed in the slot on the top of the case, then snap the base in place in the case.

Use of Two Signal Sets for Transmission Between Two Points

A Double Signal Set may be purchased from your local distributor to make possible the sending of messages between two points. Each Double Signal Set comes complete with a reel of connecting wires.

Two sets can be connected by loosening the red and green screws on the base of each set and attaching the two wires to these screws. Connect the wire running from the red screw of one set to the red screw of the other set and the wire from the green screw of one set to the green screw of the other set.

Adjustment Instructions

If this Set, after unusually hard jarring and rough handling, should fail to operate, check the following points:

1. Remove the Base from the Case as per instructions on page 8 of "Operation Manual."
2. Check Batteries to be certain that they are fitting tightly between Battery Clips and are making a firm contact with them. If this is not the case, remove Batteries and press Clips carefully together as per illustration. Then replace Batteries. (Note: Batteries must be reversed in clips).
3. Check Ground Strip to be certain it protrudes approximately 1/8 inch beyond

Base and sufficiently far to make a firm contact with the Case when assembled. If such a contact is not made, bend the Ground Strip outward slightly so it will touch the Case when reassembled as in illustration.

4. Reinstall the Base in the Case as per instructions on page 8 of "Operation Manual," being careful to position the Base evenly between the six indentations in the Case. If the Base does not fit firmly, press the sides of the Case together slightly.
5. Check for 2-way Operation. If buzzer tone or radio click does not operate or give the desired tone, carefully turn the "blue" adjustment screw until the desired tone is obtained.

