

SIGNALLING

Builder Level

Purpose

To enable you to send messages over long distances with communication other than speech.

Exploring

Morse Code is a language of sound, not a combination of dots and dashes. It is easy to *speak* Morse Code by using 'dit' and 'dah' so that A would be 'didah' and B 'dah-di-di-dit'. The 't' is dropped in such combinations, as 'ditdah' would make two distinct letters, namely 'dit' (E) and 'dah' (T).

Learn the Morse Code by taking a few characters at a time. First learn the letters 'E, I, S, H, and T, M, O', as they present no difficulty. Then try reading and sending words formed by these seven letters such as: 'it, hit, she, set, met, the, hot, shoes, host' etc. Learn them thoroughly in 'didah' language before going on to new letters.

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

1. Create an attractive title page and copy the Morse Code.
2. Write out on as a separate insert and memorize the 'Phonetic' alphabet

A lpha	H otel	O scar	V ictor
B ravo	I ndia	P apa	W hiskey
C harlie	J uliet	Q uebec	X ray
D elta	K ilo	R omeo	Y anky
E cho	L ima	S iera	Z ulu
F oxtrot	M ike	T ango	
G ulf	N ectar	U niform	

Other ways of sending messages with **signals**.

a. International Code of Signals

This is done with flags used in Mercantile Marine of seven different countries. It makes it possible to communicate between ships. There is a flag for every letter in the alphabet, as well as number flags, substitute flags and the answering flag. A total of 40 flags.

b. Field or Troop Signals

Using a whistle, it is mainly used by scout and army patrols, and even by some cadet clubs. For example.

One long blast. Silence! Stop what you are doing and listen for instructions.

Three short blasts followed by one long blast.

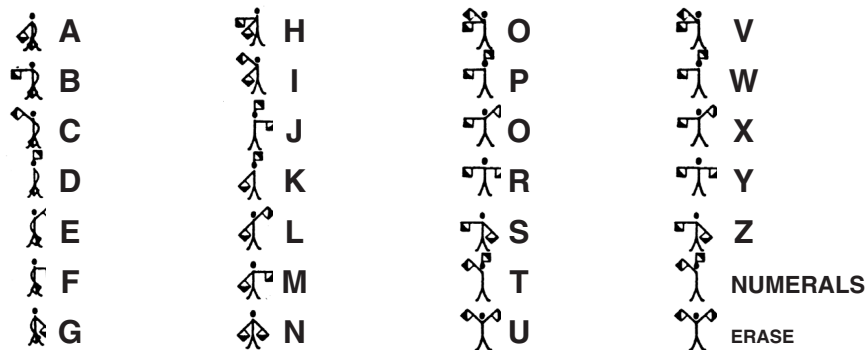
Patrol leaders are wanted (*lea-der-s come h - e - r - e*).

c. Signing

This code is used by the Deaf and uses both hands to spell the letters of the alphabet as well as special signs that mean whole words.

d. Semaphore

These signs can be made with arms or with flags.



Semaphore is used for rapid communication over short distances in good daylight. The sender has to signal the message letter by letter, and after each group of letters or word, the arms are lowered to the 'ready' position. When he has sent a word, he waits until the reader makes the answer signal, (the letter A) to acknowledge receipt of word. There are 28 signs in total. It is still used today in the Royal Australian Navy and the United States Navy.

e. Smoke Signals

This is done by releasing puffs of smoke from a fire by means of a damp cloth or blanket. In Australia it is generally understood that three smoke columns, about 50 feet apart, means that you are in distress, and that help is required.

f. Animal Calls

The cries and calls of the dog, the horse, the cow, the cat, the pigeon and the owl are easy to imitate, and you can make your own code.

Doing

Make Your Own Buzzer

Both light flashes and tone are used to transmit the Morse Code. A buzzer will help you to learn Morse Code. You will need.

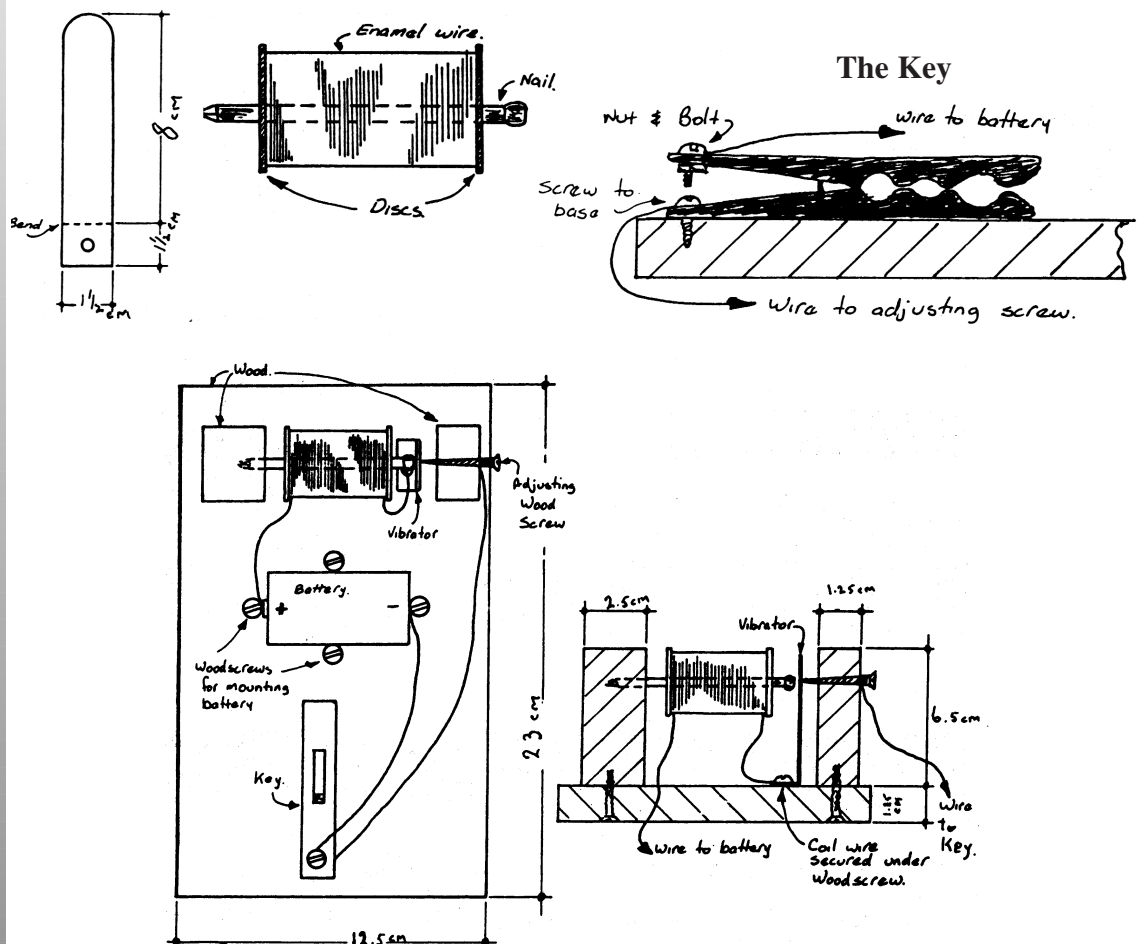
- Battery, 1.5 volt, size 'D' preferably alkaline type
- 8-10 cm Nail
- Tin can
- Plastic Clothes Peg
- Wooden Base

- 45 metres of enamel wire of about 0.25mm diameter.(ask your electrician)
- Various wood screws, and a nut and bolt, hook-up wire.

From the tin can cut a piece of tin about 8 x 1.5 cm and sandpaper the paint off if necessary. This is used to make the vibrator.

The coil is wound around the 8 cm nail. To prevent the turns from slipping off, you can use two cardboard discs.

The best way to wind the coil is to stick the nail in the chuck of a **hand** drill. A friend or your Counsellor can help you by winding the drill or feeding the 45 metres of enamel wire onto the nail.



Then the coil, key, battery and vibrator can be mounted on the wooden base-plate using the sketch as a guide. The components are then wired as shown.

It is important that the vibrator should be spring loaded against the adjusting screw, and should not touch the nail.

If it doesn't work first go, press the key, and by turning the adjusting screw, you can vary the space between the vibrator and the nail until it is small enough for the magnetic nail to make it vibrate.

Use this buzzer to learn your Morse Code

Reflection

Discuss with your Counsellor what you have learned in this Merit Badge and how it may be useful in your life.

Ask your Counsellor to sign below and arrange for the presentation of your badge.

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