



## Civil Aviation Authority – DofE Skill Activity Logbook

# Radio Signals

Participant name: \_\_\_\_\_

Participant age: \_\_\_\_\_

eDofE ID: \_\_\_\_\_

DofE Level (Bronze, Silver, Gold): \_\_\_\_\_

Start Date: \_\_\_\_\_



**DURATION**  
3 months



**MATERIAL REQUIRED**

Video recording device, pen, pencil, paper, phone for app download (optional), torch or light

## The Duke of Edinburgh's Award Radio Signals

Thank you for choosing the Radio Signals course through the Civil Aviation Authority. We are keen on sharing our knowledge with the next generation of talent to enter the aviation industry and giving you the opportunity to learn a new talent. This course will contain key skills such as the Phonetic Alphabet and Morse Code which are used across the world in a language that can be used in many situations.

The below is a series of signposts of work that can be undertaken in any order. Each activity should last a minimum of one hour per week for the minimum time suggested. This course is designed for Bronze level award lasting 3 months (13 weeks), and can also be used to combine to achieve Silver and Gold awards.

After completion of the course please confirm you have done so by emailing [dofe@caa.co.uk](mailto:dofe@caa.co.uk) with your eDofE ID so we can process your skills award.

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You may fill the sheet digitally, or handwrite answers before scanning them for submission.

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## NATO Phonetic Alphabet

Learn the NATO phonetic alphabet and learn to spell your name using phonetics.

[Phonetic Alphabet | The NATO Phonetic Alphabet For Teaching - Bing video](#)

Using the NATO phonetics, type out your name and / or record either a video or a sound clip saying your name.

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## Discovery of the Radio

Learn about the discovery and development of radio, including different technologies. For example, FM Radio, TV, Digital, Wi-Fi.

A few example resources below.  
Please do not copy & paste.

[Introduction - Radio - GCSE Media Studies Revision - BBC Bitesize](#)

[Radio - Students | Britannica Kids | Homework Help](#)

[Who Really Invented the Radio? - Bing video](#)

1. Develop in your own words (typed or handwritten) a timeline of the invention of radio
2. List your references used
3. Highlight milestones

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## Morse Code Part 1

Investigate the origin of morse code and the morse code alphabet.



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## Morse Code Part 2

Using morse code, learn to code your full name.  
[Morse Code Translator](#) | [Morse Decoder](#)

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## Morse Code Part 3

Write a message to be translated by your Assessor or link up with a friend and send messages to each other using a torch or light. Record a video of the message sent or provide screenshots on an app of your choice.

Using one of the many morse code aps available for Android and iPhone:

App 'Morse Code Keyer'

App 'Morse Code Telegraph Keyer'

App 'Morse Keyer'



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## Frequencies

1. Track through a FM radio and note down the operational frequency. You could use a phone, car stereo, portable wireless radio.
2. Provide a 'signal strength and readability report' for each station you can receive. Link with more details provided below.
3. Investigate how you can improve reception. Try different rooms in the house, being outside or different locations such as the top of hills. Ensure to note down your locations.

[Signal strength and readability report - HandWiki](#)

Please undertake each element of this task and clearly detail:

Create a list of FM and AM radio stations you can receive. Include the name, operational frequency, and signal strength/readability report. To create the list you may use word, excel, PowerPoint or video recording if you prefer to speak.

Create a second list using a different location and see if there are available stations, or if the quality of signal has improved.

Describe the change that has been made, e.g higher ground, different room, closer to window etc.

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## Radio Survey

Put your map reading skills into practice with this one. Ask to borrow a local OS map (available from most libraries) or use Microsoft Bing maps. ([see OS Maps on Bing - Internet Geography](#))

Using a map of your local area, source the locations of live stations. Try to identify the frequency the radio systems operate on.

Radio masts are typically indicated on an OS map using the symbol below, these will be larger masts such as TV or radio transmitters.



This might include different technologies such as mobile phone, tv masts etc. You can look up TV and radio antennas here:

[Check transmitter faults | Help receiving TV and radio \(bbc.co.uk\)](#)

You can also use mobile phone network coverage checkers to see where masts are located.

[O2 Network Coverage Checker | 2G, 3G, 4G and 5G Coverage](#)

[Radio Frequency Spectrum \(Radio Frequency Chart\) - Electronics Desk](#)

[Radio Frequency List - How the Radio Spectrum Works | HowStuffWorks](#)

Draw a map of your local area and indicate the radio systems that are in use and their location.

Provide true OS 6-figure grid references – do not make up your own. 6-figure grid reference and map symbols are one-star map and compass (navigation) subjects, you will need this knowledge for your bronze expedition (*equivalent to 2\* Exped*).

From your OS map include a height the station is installed. For example, on top of a hill.

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## Looking at Antennas

Identify different antennas around and outside your home. Take a photo of the antenna or device and keep a log of its location (6-figure grid reference, what3words or description).

This could include TV aerials, satellite dishes etc. It might also include devices where you cannot see the antenna, such as wireless buttons, Wi-Fi devices etc.

Consider devices that are wireless and how they might work.

Create a wireless equipment site log including picture, locations, what it is doing and the frequency of operation.

You may fill the sheet digitally, or handwrite answers before scanning them for submission.

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## Radio Telephony Part 1

Learn about distress calls and how to make one.

[Distress and Diversion Cell: A Practical Guide to Practice Pan and Training Fix | Get Into Flying](#)

Large empty rounded rectangular box for handwritten notes or answers.



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## Radio Telephony Part 2

Record yourself making a distress call using the information and research you have learned in Radio Telephony Part 1.

You can ask a friend or family member to play the part of recipient.

Congratulations on completing the logbook!