Civil Aviation Authority – DofE Skill Activity Logbook

Air Traffic Control

Participant name: _____

Participant age: _____

eDofE ID: _____

DofE Level (Bronze, Silver, Gold): _____

Start Date: _____

DURATION
3 months

MATERIAL REQUIRED
Pen and paper (optional)

Help and support for this program may also be provided through our STEM team at the CAA (DofE@caa.co.uk).

The Duke of Edinburgh's Award Air Traffic Control

Thank you for choosing the Air Traffic Control course through the UK Civil Aviation Authority. We are passionate about 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 learning about Air Traffic Control Officers (ATCO) and the training they do along with medicals, Air Traffic Control Towers, Radio Frequencies and more!

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** with your eDofE ID so we can process your skills award.

Week	Activity Name	Page
1	Air Traffic Control Officer (ATCO)	3
2	ATCO Training Part 1	4
3	ATCO Training Part 2	4
4	ATCO Medical	5
5	Air Traffic Control Towers Part 1	6
6	Air Traffic Control Towers Part 2	7
7	Air Traffic Control Towers Part 3	8
8	Radio Frequencies	9
9	Aircraft Registrations Part 1	10
10	Aircraft Registrations Part 2	10
11	Air Traffic Control Radiotelephony	11
12	Flight Tracking Part 1	12
13	Flight Tracking Part 2	13

1

Air Traffic Control Officer (ATCO)

Air Traffic Controllers help to keep aircraft flying and the skies above us safe. This includes passengers travelling on aircraft, cargo moving around the world on aircraft and military operations.

What is ATC? 5 Minutes

Air Traffic Control | National Air and Space Museum

https://recruitment.raf.mod.uk/air-operations

1. Research the purpose of an air traffic control service and provide a summary of what you have learnt.

2. Research what personal qualities are needed to become an Air Traffic Controller. Make a list of what you find, and in your opinion what you consider the most important quality and why.

3. Note what sources you use for your research.

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

2 ATCO Training Part 1

Before a person starts to provide an Air Traffic Control service, they must be properly trained and qualified.

NATS are a UK based organisation that employ Air Traffic Controllers and provide Air Traffic Control Services at many UK airports.

https://www.nats.aero/careers/operations/trainee-air-traffic-controllers/

https://www.global-ats.com/about-global-ats/

1. Research what Air traffic Control training consists of.

2. Note what you think are the key steps in the application process.

3 ATCO Training Part 2

Use this link to access a series of mini games that are set to help test a range of basic skills required by Air Traffic Controllers NATS Games - NATS.

1. Why do you think NATS set these tests for potential applicants?

2. Why are they relevant to being an ATCO?

3. Write which game is your favourite and why.

4

ATCO Medical

To become an Air Traffic Control Officer, you must have a medical examination by a registered doctor and have been issued a medical certificate to say you are in good health.

https://www.caa.co.uk/commercial-industry/airspace/air-traffic-management-and-air-navigational-services/licences/medical-requirements/

1. Research the medical requirements to become an Air Traffic Controller.

2. Make a note of what you find from your research.

3. Can you find what is included in the initial medical examination?

4. How long are these medical certificates valid? How often does an examination need to be repeated?

5

Air Traffic Control Towers Part 1

Each airport's Air Traffic Control Tower is unique in shape and size.

Using the link below open the fact sheet to help research airports where NATS provide an Air Traffic Control service.

https://www.nats.aero/wp-content/uploads/2023/03/AirportFactsheets-March23.pdf

1. Can you list the Airports and Air Traffic Control Tower heights in order from tallest to shortest?

2. Why do you think ATC Towers are designed in this way?

3. From your research can you list a fact you find interesting about 5 of the airports in the factsheet? Log your answers alongside which airport the fact is about.

4. For fun – watch this video of Manchester Airport Control Tower being built in under 2 minutes: https://shorturl.at/BtBec

6

Air Traffic Control Towers Part 2

Refer back to the link in Air Traffic Control Towers Part 1, you may have noticed something different about London City Airport.

The section called 'Tower Services' on the London City Airport factsheet might help you.

This interesting video may also help you with your answer: https://shorturl.at/pld5u

1. Can you explain why London City is different from the others?

2. Can you find any other towers around the world that are operated in the same way as London City?

3. Can you think of any technology that might change towers in the future and why?

4. Make a note of what you find from your research.

7

Air Traffic Control Towers Part 3

Carry out your own research on Air Traffic Control Towers from around the world.

https://newatlas.com/istanbul-new-airport-traffic-control-tower-designs/40821/

1. Make a note of any interesting towers you find and why you think they are interesting.

2. From your research, do you have a favourite tower? Can you explain why it is your favourite?

3. You could also design your own tower or sketch a picture of your favourite.

8 Radio frequencies

Air Traffic Controllers and pilots use radios with assigned frequencies to communicate. There can be several radio frequencies in use at an airport.

Each frequency is assigned for a different function. Please see below as an example.

Ground – responsible for aircraft moving around on the ground in an airport.

Tower – responsible for aircraft on runways and aircraft taking off and landing.

Approach – responsible for handling aircraft within a certain radius of the airport.

https://radioreferenceuk.co.uk/uk-airport-airfield-frequencies.php

1. Research the radio frequencies assigned at UK airports.

2. List the Tower frequencies for 10 of the NATS airports from the fact sheet used above.

3. What do the terms HF and VHF mean. Why have these been selected for ATC?

4. What future developments might there be for ATC communication?

9

Aircraft Registrations Part 1

Just like a vehicle displays a unique registration number, each aircraft has a registration code that is required to be visible on the exterior of every aircraft.

The prefix letter(s) of the registration indicate the aircraft's country of registration. As an example, the letter G signifies a UK registered aircraft as explained in the link below.

https://handwiki.org/wiki/Engineering:United%20Kingdom%20aircraft%20registration

1. Can you research aircraft registration codes from around the world. Provide some examples of aircraft registration prefixes and their country of origin.

2. Which country uses the following letters as a prefix: B, N, JA, F, and OY?

10

Aircraft Registrations Part 2

Some airlines and celebrities like to get creative when they select aircraft registrations for their aircraft.

Famous Private Jet Registration Codes

https://flywith.virginatlantic.com/gb/en/stories/g-vhow-do-we-name-our-aircraft.html

1. Carry out your research on famous people with unique aircraft registrations or look for other airlines that follow a system or a set format to come up with aircraft registrations.

2. Make a note of any examples you find.

11

Air Traffic Control Radiotelephony

The phonetic alphabet is a way of ensuring voice communications are understandable when Air Traffic Controllers and pilots of aircraft communicate with each other.

Use the links below to familiarise yourself with the phonetic alphabet.

https://skybrary.aero/articles/icao-phonetic-alphabet

https://www.youtube.com/watch?v=4p9baK8_8qo

1. Practice spelling out aircraft registration numbers and radio frequencies using the phonetic alphabet.

2. Write them down and practice saying them out loud and/or record yourself to become familiar with the pronunciation.

12

Flight Tracking Part 1

There are many global flight tracking services that provide real-time information about thousands of aircraft around the world. This technology is not used directly by Air Traffic Controllers but is similar to what some ATCOs see on their display screens.

Click on the link below to access an online flight tracker called Flightradar24 or download the app to your device.

https://www.flightradar24.com/55.97,-4.38/8

1. Spend some time scrolling to view live information of aircraft all over the world flying as you view.

2. Click on individual aeroplanes to view more information about the different aircraft and routes. Make a note of your observations from your research.

3. See if you can find and make a note of the following:

    1. An A380 aircraft – where is it going?

    2. A military aircraft – what is the aircraft type?

    3. A helicopter – what is the aircraft registration?

4. Can you note the following for 5 different aircraft of your choice?

    1. Aircraft Type

    2. Aircraft Registration

    3. Country of Registration

    4. Barometric Altitude (Flight Level)

    5. Where did it take off from and where is it going to?

13

Flight Tracking Part 2

Flight tracking has become popular in the last few years. Some special events have been tracked by millions of people from around the world.

Just for fun | Flightradar24 Blog

1. Carry out some research and detail some examples of when flight tracking has been used to capture famous flights or special events.

2. Try and include the details of 2 or 3 examples in your notes.

Congratulations on completing the logbook!