



Defence Awarding
Organisation

Qualification Handbook

**DAO Level 5 Certificate in Applied
Aviation Studies (Helicopter Crewman)**

QN: 603/0919/2

The Qualification

Overall Objective for the Qualifications

This handbook relates to the following qualification:

DAO Level 5 Certificate in Applied Aviation Studies (Helicopter Crewman)

This Level 5 Certificate provides the standards that must be achieved by individuals that are working within the Armed Forces.

Pre-entry Requirements

Learners who are taking this qualification should be employed in the Air Crewman role.

Unit Content and Rules of Combination

This qualification is made up of a total of 19 mandatory units and 1 Optional unit. To be awarded this qualification the candidate must achieve a total of 29 credits as shown in the table below.

Unit number	Unit of assessment	Level	TQT	Guided Learning Hours (GLH)	Credit value
Y/615/5053	Science and Mathematics	4		17	2
D/615/5054	Meteorology for Rotary Wing Aircraft	5		10	1
H/615/5055	Generic Aircraft Systems (Rotary Wing)	5		10	1
K/615/5056	Principles of Flight (POF) Rotary Wing	5		10	1
T/615/5058	Helicopter Operations	5		10	1
A/615/5059	Support Helicopter techniques	4		20	2
M/615/5060	Dangerous Goods Awareness	3		10	1
T/615/5061	Load an Aircraft (simulated)	4		10	1
A/615/5062	Procedural Instrument Flying (Rotary Wing Aircraft)	5		15	2

H/615/5072	Mountains and Maritime operations	5		26	3
K/615/5073	Crew resource management (CRM) and Airmanship	4		8	1
A/615/5076	Voice Marshalling	4		9	1
F/615/5077	Aircraft Emergencies	4		7	1
L/615/5079	Helicopter Navigation	5		20	2
F/615/5080	Instrument and Night Flying	5		28	3
L/615/5082	Tactical Formation Flying (Trail)	5		7	1
Y/615/5084	Fly with loads	4		10	1
D/615/5099	Mission Management	5		7	1
J/615/5100	Assist the pilot to fly in undulating, confined and hazardous terrain	5		25	3
				Total Credits	29
L/615/5101	Maritime Rotary Wing Crewman (OPTIONAL UNIT for RN)	5	○	10	1

Age Restriction

This qualification is available to learners aged 16-18 years and 19+.

Opportunities for Progression

This qualification creates a number of opportunities for progression through career development and promotion.

Exemption

No exemptions have been identified.

Glossary

For the purposes of this qualification the definitions below apply.

Advise	Consults with; gives advice to; counsels; gives information or notice to; recommends course of action
Assist	Aids, helps, supports; assists in performing a task
Calculate	Determines by mathematical processes, implies highly intricate processes as against computes, which implies simple arithmetical process and exact results; forecast

Carry out	Takes action on basis of
Define	Determines or sets down the boundaries of, sets down or show the precise outlines of; determines and states the limits and nature of; describes exactly
Demonstrate	Gives evidence of, displays; shows with the intent of proving explains or illustrates; demonstrates results an analysis
Describe	Tells or writes about; gives a detailed account of; describes symptoms of a problem
Determine	Sets bounds or limits to, comes to a decision concerning, obtains definite and first-hand knowledge
Devise	Contrives; forms new methods or possibilities of; implies using ingenuity under difficult circumstances when regular technical assistance or standard materials are not available
Discuss	Talks with others. Particularly in considering a question of problem requiring examination and debate preparatory to decision because of uncertainty and lack of precedence. Can be in writing
Extracts	Draws out, pulls out; deduces, derives, manages to obtain; copies out, makes a selection or quotation; extracts portions of a plan
Identify	Establishes the identity of, distinguishes or discriminates
Monitor	Keeps watch over; reports on; keeps in order
Plan	Represents as by a diagram; devises or projects as a method or course of action; prearranges the details of, as to plan a campaign; intends, proposes to do; plans an assignment
State	Say or express, fully or clearly, in speech or writing
Use	Employ; partakes of; exploits

Qualification Units

URN:	Y/615/5053	
Title:	Science and Mathematics	
Level:	4	
Credit value:	2	
GLH:	17	
TQT:		
Learning outcomes	Assessment criteria	
The learner will:	The learner can:	
1. Carry out mathematical processes	1.1 Solve mathematical problems	
2. Perform numerical conversions	2.1 Carry out conversions by calculation 2.2 Carry out conversions using flight publications	
3. Use Formulae, Tables, Graphs	3.1 Extract information from tables 3.2 Apply interpolation techniques to aviation tables 3.3 Describe graph coordinate systems 3.4 Extract information from straight line graphs 3.5 Extract information from non-linear graphs 3.6 Extract information from families of graphs 3.7 Substitute values into the Lift Formula	
4. Carry out basic internal loading calculations	4.1 State the rules of Ready Access 4.2 List the minimum clearances around a load 4.3 List the principles of restraint 4.4 Calculate the restraint required to secure an item of cargo 4.5 List the factors to be considered when securing a vehicle	
5. Describe weight and balance as applied to Rotary Wing aircraft	5.1 State the terms used when calculating the weight of an aircraft 5.2 State the factors that affect the balance of a beam 5.3 Discuss how the balance of a beam can be calculated 5.4 Discuss the methods of calculating CoG positions available 5.5 State the effects of incorrect load conditions	
6. Carry out speed, time and distance calculations	6.1 State the relationship between speed, time and distance 6.2 Manipulate the formula in simple problems at speeds relevant to helicopters	
7. Carry out mental calculations	7.1 List a variety of methods to help mental calculations 7.2 Complete mental maths exercises	
8. Describe Basic Physical Laws,	8.1 State Newton's 3 Laws	

Vectors, Terms	<p>8.2 Understand the difference between speed, velocity, acceleration and equilibrium</p> <p>8.3 Understand gravitational forces</p> <p>8.4 Define a vector</p> <p>8.5 Explain direction, magnitude and sense in relation to vectors</p> <p>8.6 Show how to resolve vectors</p> <p>8.7 Show how to add vectors together</p>
9. Describe Electricity Magnetism and Generators	<p>9.1 State the definitions of units of electricity</p> <p>9.2 State Ohms law</p> <p>9.3 Calculate current and voltage in a circuit containing resistors</p> <p>9.4 Define terms related to magnetism</p> <p>9.5 Explain The magnetic effect of an electric current</p> <p>9.6 Define the term magnetomotive force</p> <p>9.7 Define the term field strength</p> <p>9.8 Explain Ferromagnetism</p> <p>9.9 Explain Terrestrial magnetism and it's importance to aviation</p>
Additional information about the unit	
Unit aim(s)	On completion of this unit learners will be able to carry out calculations and explain scientific principles related to rotary wing flight.
Unit expiry date	2 years
Assessment requirements specified by a sector or regulatory body (if appropriate)	This unit requires the workplace assessment of occupational competence wherever practicable. For the knowledge and understanding component of the unit, assessment from a learning and development environment is allowed.
Name of the organisation submitting the unit	Defence Awarding Organisation
Availability for use	Restricted

URN:	D/615/5054	
Title:	Meteorology for Rotary Wing Aircraft	
Level:	5	
Credit value:	1	
GLH:	9	
TQT:		
Learning outcomes	Assessment criteria	
The learner will:	The learner can:	
1. Know about atmosphere, pressure and altimeter settings for rotary wing aircraft	1.1 Describe the Standard Atmosphere 1.2 Define isothermals, inversions and the tropopause 1.3 List some of the principle hazards to helicopters in flight and on the ground 1.4 Identify pressure units used 1.5 Define an isobar 1.6 Define instrumentation terms 1.7 Calculate the effect of changes in horizontal pressure on altimeter readings	
2. Know about Temperature, Humidity, Stability, Cloud	2.1 Explain the processes by which the atmosphere is heated 2.2 Define Saturation, Dew Point & Relative Humidity 2.3 Describe the process of cloud formation 2.4 Identify the 4 trigger actions by which air can be set in vertical motion 2.5 Explain the implications of a stable and unstable atmosphere 2.6 State the 10 main cloud types and their abbreviations 2.7 Identify the cloud types likely to give severe turbulence	
3. Know about TAFs, METARs, MOMIDS	3.1 Decode a METAR and TAF message 3.2 Identify and access various MET documents provided by the Met Office Military Information Display System (MOMIDS)	
4. Know about Wind and Visibility applicable to Rotary Wing Aircraft	4.1 Identify the forces that control the surface wind 4.2 Describe the differences between a wind at the surface and 2000 ft 4.3 Describe various local wind effects 4.4 State the 2 main causes of atmospheric turbulence 4.5 List the three causes of reduced visibility 4.6 Explain how slant visibility can be misleading 4.7 Describe how the main types of precipitation affect visibility 4.8 Explain the processes by which Radiation and Advection fog are formed and dispersed	
5. Know about Air masses, Pressure systems	5.1 Define an Air mass 5.2 List the main Air masses affecting the UK 5.3 Describe the weather associated with Polar Maritime and Tropical Maritime Air masses 5.4 Identify the five pressure systems to be found on a synoptic chart 5.5 State the weather associated with each of the above	
6. Know about Frontal	6.1 Identify warm, cold and occluded fronts	

Systems	6.2 Describe the cloud structure on a warm/cold front cross section 6.3 Describe the changes to various weather elements associated with the passage of warm, cold and occluded fronts
7. Know about Icing	7.1 Identify the factors giving rise to icing conditions in the air and on the ground 7.2 Name 5 types of airframe icing and the general conditions under which each of them form 7.3 State hazards from icing on various a/c parts 7.4 Describe the particular dangers to helicopters from icing on the rotor blades
8. Know about Density at Altitude	8.1 Identify the conditions under which an aircraft would experience low atmospheric density 8.2 Describe the effect on aircraft performance from a change in density altitude 8.3 Calculate pressure and density altitude with or without graphs
9. Know about Frontal theory	9.1 State the limitations of Classical Frontal theory & the major variations used to address these limitations 9.2 Identify Frontal and other symbols on synoptic charts
10. Know about Low Weather Hazards	10.1 Identify from synoptic charts the synoptic features, including air masses and their associated weather, likely to give low level weather hazards relevant to helicopter operations 10.2 Identify the factors most likely to produce or exacerbate those low level weather hazards
11. Interpret Meteorological Information	11.1 Decode and utilise information from METARs, TAFs and colour states 11.2 Extract and utilise information from various forecast documents 11.3 State the weather trends and likely zones of hazardous conditions along intended routes 11.4 Interpret the met information received in flight, and update the forecast
Additional information about the unit	
Unit aim(s)	On completion of this unit learners will be able to describe meteorological information and factors relating to and affecting rotary wing aircraft.
Unit expiry date	2 years
Details of the relationship between the unit and relevant national occupational standards (if appropriate)	This unit has some synergy with the following NOS PPLFDC09 - Handle aircraft during take-off and landing COS18 - Advise customers how to interpret meteorological information
Assessment requirements specified by a sector or regulatory body (if appropriate)	This unit requires the workplace assessment of occupational competence wherever practicable. For the knowledge and understanding component of the unit, assessment from a learning and development environment is allowed.
Name of the organisation submitting the unit	Defence Awarding Organisation

Availability for use	Restricted
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URN:	H/615/5055	
Title:	Generic Aircraft Systems (Rotary Wing)	
Level:	5	
Credit value:	1	
GLH:	9	
TQT:		
Learning outcomes	Assessment criteria	
The learner will:	The learner can:	
1. Explain Engine principles applied to Rotary Wing Aircraft	1.1 State Newton's third law of motion 1.2 State the changes that occur to pressure, temperature and velocity of a gas, in a convergent/divergent duct 1.3 List the two main types of compressor 1.4 State the purpose of the power turbine and free power turbine 1.5 List the main engine accessories, air bleeds and cockpit indications	
2. Explain Airframe components on Rotary Wing Aircraft	2.1 Identify airframe structural components 2.2 Calculate the Pressure Exerted by components 2.3 State the structural effects a load has on the aircraft floor and how this can be calculated	
3. Explain Fuel Systems on Rotary Wing Aircraft	3.1 List the turbine fuels 3.2 Describe the construction of a simple and typical airframe and engine fuel system 3.3 Explain the function of fuel system components 3.4 Explain the effects of component failure	
4. Explain Rotary Wing Aircraft Electrical Systems	4.1 List and explain the types of electrical power 4.2 Describe the construction of a DC and AC based electrical system 4.3 Explain the function of electrical system components 4.4 Explain the effects of	

	component failure	
5. Explain Transmissions, Controls and Hydraulics on Rotary Wing Aircraft	5.1 State the purpose of the transmission system 5.2 Describe the arrangement and the function of the components of a single and tandem rotor helicopter transmission system 5.3 Describe the arrangement and the function of the components of a single and tandem rotor helicopter control system	
6. Explain Navigational aids on Rotary Wing Aircraft	6.1 Describe the operation of Navigational aids	•
7. Explain Pressure, Gyro and Magnetic Instruments	7.1 Describe the construction and operation of helicopter flight instruments 7.2 State the inputs for pressure instruments 7.3 State the effects of a static blockage on each pressure instrument	
8. Explain the effects of vibration on Rotary wing aircraft	8.1 List Airframe Sub-Sections 8.2 State the Causes of Vibration 8.3 List Detrimental Effects of Vibration on the airframe 8.4 8.3 List Detrimental Effects of Vibration on the crew	
Additional information about the unit		
Unit aim(s)	On completion of this unit learners will be able to explain the systems, controls and instruments that are on board rotary wing aircraft.	
Unit expiry date	2 Years	
Details of the relationship between the unit and other standards or curricula (if appropriate)	Multi Engine Advanced Rotary Wing (MEARW) Flying Training Course (WSOp) Crewman)	
Assessment requirements specified by a sector or regulatory body (if appropriate)	This unit requires the workplace assessment of occupational competence wherever practicable. For the knowledge and understanding component of the unit, assessment from a learning and development environment is allowed.	
Name of the organisation submitting the unit	Defence Awarding Organisation	
Availability for use	Restricted	

URN:	K/615/5056	
Title:	Principles of Flight (POF) Rotary Wing	
Level:	5	
Credit value:	1	
GLH:	9	
TQT:		
Learning outcomes	Assessment criteria	
The learner will:	The learner can:	
1. Know about lift applied to rotary wing aircraft	1.1 Explain the Lift equation 1.2 Explain potential lift along a rotating wing 1.3 Describe how a rotating wing is modified to make its lift distribution more ideal	
2. Describe Hinges and Controls	2.1 Explain rotary wing aircraft lift terms 2.2 Explain why feathering, flapping and dragging hinges are required 2.3 Describe the effect of cyclic stick and collective lever movement on the pitch operating arms 2.4 State what the yaw pedals are used for	
3. Know about the Vector Diagram	3.1 Draw and explain the basic vector diagram	
4. Know about Ground Effect	4.1 Draw and explain ground effect using the vector diagram 4.2 State 4 factors that eliminate ground effect	
5. Know about Recirculation	5.1 Draw and explain re-circulation using the vector diagram 5.2 State 3 circumstances when helicopters are at risk from recirculation	
6. Know about the Vortex Ring	6.1 Explain how vortex ring develops 6.2 State the 3 requirements for vortex ring to develop 6.3 Describe the indications of vortex ring 6.4 State the recovery actions to be taken by the pilot 6.5 State the high risk flight profiles where vortex ring might occur	
7. Know how to avoid Curve and Blade Sail	7.1 Explain the combination of speed and height where operating helicopters would be hazardous 7.2 State 2 pre-conditions for blade sail to occur 7.3 State 4 remedial measures that might eliminate blade sail	
8. Know about Ground Resonance	8.1 Define ground resonance 8.2 State 4 causes of rotor and fuselage initiated vibration 8.3 State 2 recovery actions in order of preference	
9. Know about Rollover	9.1 Explain the causes of static rollover 9.2 State the factors that can make static rollover more likely when a helicopter is in the flying configuration 9.3 Explain the cause of dynamic rollover 9.4 State the preventative/recovery actions for dynamic rollover	
10. Explain Flapping to Equality of Lift and Flapback	10.1 Explain the term flapping to equality of lift and the requirement for it 10.2 Explain, with the aid of drawings "Flapback"	

11. Know about Yaw control, Tail Rotor Drift and Roll	<p>11.1 State the purposes of a tail rotor.</p> <p>11.2 Use diagrams to explain tail rotor drift</p> <p>11.3 Use diagrams to explain tail rotor roll</p> <p>11.4 Explain how tail rotor position affects tail rotor roll in the hover and in forward flight</p> <p>11.5 Describe the purpose of the stabiliser</p>
12. Explain Translational lift and power required curve	<p>12.1 Explain why translational lift reduces the amount of power a helicopter requires to maintain height as airspeed increases</p> <p>12.2 Explain how translational lift is subsequently decreased as the disc is tilted and airspeed further increases</p> <p>12.3 Derive and draw the power required curve</p> <p>12.4 Explain helicopter performance characteristics with reference to the power required curve</p>
13. Explain Autorotation and Avoid Curve	<p>13.1 Draw and explain the power on and power off condition, with reference to a vector diagram</p> <p>13.2 Explain how the inboard section of a rotor blade provides an autorotative force</p> <p>13.3 Explain how the outboard section of a rotor blade provides a dragging force</p> <p>13.4 Draw and explain how these forces balance to produce a steady state</p> <p>13.5 Explain the combination of speed and height where operating helicopters would be hazardous</p>
14. Explain limits to Forward Speed	<p>14.1 State 4 factors that limit the forward speed of a conventional helicopter</p> <p>14.2 Describe the symptoms of retreating blade stall</p> <p>14.3 State the recovery actions if retreating blade stall is experienced</p> <p>14.4 Describe the high risk areas</p>
Additional information about the unit	
Unit aim(s)	On completion of this unit learners will be able to explain the technical details of lift and its effects on rotary wing aircraft.
Unit expiry date	2 years
Details of the relationship between the unit and other standards or curricula (if appropriate)	Multi Engine Advanced Rotary Wing (MEARW) Flying Training Course (WSOp) Crewman)
Assessment requirements specified by a sector or regulatory body (if appropriate)	This unit requires the workplace assessment of occupational competence wherever practicable. For the knowledge and understanding component of the unit, assessment from a learning and development environment is allowed.
Name of the organisation submitting the unit	Defence Awarding Organisation
Availability for use	Restricted

URN:	T/615/5058	
Title:	Helicopter Operations	
Level:	5	
Credit value:	1	
GLH:	9	
TQT:		
Learning outcomes	Assessment criteria	
The learner will:	The learner can:	
1. Explain Flight Publications	1.1 State Flight Information Publications available to the UK Military aviator 1.2 Explain the information contained in each Flight Information book 1.3 Explain information displayed in TAPs, instrument approaches	
2. Describe Airfields	2.1 Describe the layout and functions of aviation facilities at a typical airfield 2.2 State the typical radar and radio services provided 2.3 List typical safety measures employed on the ground	
3. Define Airspace	3.1 List the Classifications of Airspace within the UK with the Aid of the Flight Information Handbook (FIH) 3.2 State how airspace classification is applied in the UK FIRs 3.3 Explain crewman responsibilities when flying VFR and IFR within the United Kingdom (UK) Flight Information Regions (FIRs)	
4. Explain Radio Telephony	4.1 Explain Radio telephony terms 4.2 Explain how to make a radio call 4.3 Explain how to transmit a message 4.4 Explain how to receive a message 4.5 Request the repeat of whole or part of a message 4.6 Explain the Meaning of Distress and Urgency 4.7 Explain the format of military R/T distress message 4.8 Format a military distress message 4.9 Use AVP iaw SH SOPs 4.10 List the applicable areas of the electromagnetic spectrum and the services available 4.11 List measures to maintain accuracy when transmitting on R/T 4.12 State the relevant helicopter specific terminology at an aerodrome 4.13 Define Distress and Urgency 4.14 List the information in an emergency call	
5. Explain the Dalton Navigation Computer	5.1 Explain the concept of the rotary slide rule 5.2 Carry out calculations using the back of the Dalton Navigation Computer 5.3 Carry out calculations using the front of the Dalton Navigation Computer	
6. Explain maps and grids	6.1 Explain the Earth's magnetic field 6.2 Describe the difference between True and Magnetic north	

	<p>6.3 Explain why the difference is important to aircraft navigation</p> <p>6.4 Describe the different systems used to define position</p> <p>6.5 State the maps used at DHFS</p> <p>6.6 List the documents used to amend each map</p> <p>6.7 State map marking techniques</p> <p>6.8 Decode common symbols found on the OS, ¼ mil, ½ mil and ERC maps</p> <p>6.9 List the requirements for successful low level navigation</p> <p>6.10 Carry out familiarisation exercise using accurate ERC information and symbology</p>
7. Describe Marshalling	7.1 Explain USL and winch terminology
8. Explain Local area orientation	<p>8.1 Identify local area features, including aviation sites, built-up areas and high ground</p> <p>8.2 Identify and describe the gate system at military bases and where this information can be found</p> <p>8.3 Identify and describe the main features, operating areas and restricted areas of military bases and the relief landing grounds</p>
9. Explain Load Carrying Jerkin (LCJ) and Global Positioning System	<p>9.1 Describe the before flight checks of the Aircrew Jerkin and Life Preserver</p> <p>9.2 Identify, locate and describe the operation of the contents of the Aircrew Jerkin and Life Preserver</p> <p>9.3 List the handling precautions of the Aircrew Jerkin and Life Preserver</p> <p>9.4 Describe the components and principles of operation of the Global Positioning System (GPS)</p>
10. Describe Spot Navigation	<p>10.1 State a sequence of vital actions to be taken when re-tasked in flight.</p> <p>10.2 Describe methods of estimating factors to be considered</p> <p>10.3 List actions to be taken in different circumstances</p>
11. Explain UK Low Flying system	<p>11.1 Define “Low Flying” in a helicopter</p> <p>11.2 Describe the different types of low flying airspace within the UKLFS</p> <p>11.3 List the information required to book into the UKLFS</p> <p>11.4 State the R/T and SSR requirements for operating in the UKLFS</p> <p>11.5 State the method of authorisation used by DHFS helicopters for low flying training</p> <p>11.6 Extract relevant information from LF Handbook</p>
12. Explain IFR transits	<p>12.1 List FLIPS to plan an IFR flight</p> <p>12.2 Describe the planning process</p> <p>12.3 Calculate fuel required for a IFR diversion</p> <p>12.4 Calculate Instrument Approach Minima</p>
13. Explain Altimetry	<p>13.1 Define relevant altimetry terms</p> <p>13.2 Calculate Safety altitude</p> <p>13.3 Calculate Minimum Safe Flight level</p>
14. Explain Flight Plans	<p>14.1 State when a Flight Plan must be submitted</p> <p>14.2 State the agencies through which a Flight Plan may be submitted</p> <p>14.3 State the minimum times by which a Flight Plan must be submitted</p> <p>14.4 State the information required for the compilation of a Flight Plan</p> <p>14.5 State when an aircraft may deviate from it's Flight Plan</p>
15. Explain airfield signals	<p>15.1 State the meaning of flare and light signals displayed by ATC on the airfield</p> <p>15.2 State the actions to be taken</p>

Additional information about the unit	
Unit aim(s)	On completion of this unit learners will be able to explain flight information documents and plans, use the Dalton Navigation Computer and use maps and grids.
Unit expiry date	2 years
Details of the relationship between the unit and other standards or curricula (if appropriate)	Multi Engine Advanced Rotary Wing (MEARW) Flying Training Course (WSOp) Crewman)
Assessment requirements specified by a sector or regulatory body (if appropriate)	This unit requires the workplace assessment of occupational competence wherever practicable. For the knowledge and understanding component of the unit, assessment from a learning and development environment is allowed.
Name of the organisation submitting the unit	Defence Awarding Organisation
Availability for use	Restricted

URN:	A/615/5059	
Title:	Support Helicopter techniques	
Level:	4	
Credit value:	2	
GLH:	15	
TQT:		
Learning outcomes	Assessment criteria	
The learner will:	The learner can:	
1. Explain the Movements Organisation	1.1 State the air movements structure 1.2 List the helicopter based units 1.3 List the air cargo categories and the crewman's responsibilities	
2. Explain customs regulations	2.1 List the restrictions applicable to crew and passengers entering the UK 2.2 List the allowances 2.3 List the documentation required	
3. Explain Medical regulations	3.1 Define the function of the World Health Organisation (WHO) 3.2 State the considerations when operating in a defined malaria area 3.3 List medical restrictions applied to aircrew 3.4 State the restrictions pertaining to alcohol 3.5 List the types of first aid kits fitted	
4. Explain Catering regulations	4.1 State the regulations governing in-flight feeding of crews and passengers 4.2 State the procedures for rationing from RAF and non-RAF sources 4.3 Compile the various paperwork associated with in-flight catering 4.4 List the health considerations to be applied to in-flight catering	
5. Explain External Loads	5.1 State the advantages and disadvantages of carrying underslung loads (USLs) 5.2 Describe Helicopter Underslung Load Equipment (HUSLE) and generic checks for use 5.3 State and explain the three categories of USL 5.4 List and use generic USL documentation 5.5 State the content of a USL scheme	
6. Explain Restraint equipment	6.1 State the limitations and restrictions governing the use of restraint equipment 6.2 State the limitations and restrictions governing the use of Nets 6.3 State the content of a tie down scheme 6.4 Describe the differences between white and pink tie down schemes	
7. Explain Trim in a Rotary Wing Aircraft	7.1 Calculate the C of G position of an aircraft	
Additional information about the unit		
Unit aim(s)	On completion of this unit learners will be able to regulations and load restraint applicable to rotary wing flights.	

Unit expiry date	2 years
Details of the relationship between the unit and relevant national occupational standards (if appropriate)	This unit has some synergy with the following NOS: PPLAOG52 Plan the loading of helicopters SEMAE3302 Levelling and weighing aircraft
Assessment requirements specified by a sector or regulatory body (if appropriate)	This unit requires the workplace assessment of occupational competence wherever practicable. For the knowledge and understanding component of the unit, assessment from a learning and development environment is allowed.
Name of the organisation submitting the unit	Defence Awarding Organisation
Availability for use	Restricted

URN:	M/615/5060	
Title:	Dangerous Goods Awareness	
Level:	3	
Credit value:	1	
GLH:	9	
TQT:		
Learning outcomes	Assessment criteria	
The learner will:	The learner can:	
1. Describe Dangerous Goods Regulations in respect of Rotary Wing Aircraft	1.1 Explain the general philosophy of DG regulations 1.2 State which publications are used for Carriage of DG by RW aircraft 1.3 State the currency for Awareness Training for RW Aircrew	
2. Explain Dangerous Goods Classifications	2.1 Identify the 9 classes of Dangerous Goods by their principal criteria 2.2 Explain and apply the principles of Packing Groups	
3. Explain the carriage of explosives	3.1 Identify the hazard divisions and compatibility groups of UN class 1 3.2 Explain the term NEQ 3.3 Identify packaging requirements for UN class 1 3.4 State the considerations when handling UN class 1 3.5 Identify the limitations of carrying passengers with UN class 1	
4. Explain Limitations	4.1 Describe limitations for the carriage of DG by crew and passengers 4.2 Define the meaning of a limited quantity and excepted quantity	
5. Explain the Identification of dangerous Goods	5.1 Identify a dangerous good by using its proper shipping name 5.2 Identify a dangerous good by its UN Number 5.3 Identify a dangerous good by using the Not Otherwise Specified system	
6. Explain the packing of dangerous Goods	6.1 State the types of packing used for transporting DG by air 6.2 State the purpose of a packing instruction	
7. Explain the Labelling and Marking of Dangerous Goods	7.1 Identify the Hazard Labels used to Identify UN Classes 7.2 Identify the Handling Labels used when handling DG 7.3 State what information should be on a package	
8. Describe the Handling of Dangerous Goods	8.1 State the purpose of a F/Mov/933 acceptance checklist 8.2 State the storage and loading procedures for DG 8.3 State when the segregation of DG is required 8.4 Acknowledge the information for and on a NOTOC 8.5 Identify the actions required in an emergency involving DG	
Additional information about the unit		
Unit aim(s)	On completion of this unit learners will have an awareness of the regulations associated with the carriage of dangerous good on helicopters.	

Unit expiry date	2 years
Details of the relationship between the unit and relevant national occupational standards (if appropriate)	This unit has some synergy with the following NOS: PPLAOG32 Plan the loading of aircraft
Assessment requirements specified by a sector or regulatory body (if appropriate)	This unit requires the workplace assessment of occupational competence wherever practicable. For the knowledge and understanding component of the unit, assessment from a learning and development environment is allowed.
Name of the organisation submitting the unit	Defence Awarding Organisation
Availability for use	Restricted

URN:	T/615/5061	
Title:	Load an Aircraft (simulated)	
Level:	4	
Credit value:	1	
GLH:	9	
TQT:		
Learning outcomes	Assessment criteria	
The learner will:	The learner can:	
1. Carry out lashing procedures	1.1 Secure general cargo to a mock aircraft floor 1.2 Secure a vehicle to a mock aircraft floor 1.3 Secure a trailer to a mock aircraft floor	
2. Carry out a rigging exercise	2.1 Prepare and rig a netted USL 2.2 Prepare and rig a USL iaw a USL scheme	
3. Carry out a Advanced Restraint procedure	3.1 Demonstrate a rapid on-load of a vehicle	
4. Inspect a load	4.1 Check a prepared load for accuracy and conformity	
Additional information about the unit		
Unit aim(s)	On completion of this unit learners will be able to Load a vehicle onto a helicopter (simulated) and rig a netted underslung load, then inspect the load.	
Unit expiry date	2 years	
Details of the relationship between the unit and relevant national occupational standards (if appropriate)	This unit has some synergy with the following NOS: PPLAOG32 Plan the loading of aircraft PPLAOG52 Plan the loading of helicopters SEMAE3302 Levelling and weighing aircraft	
Assessment requirements specified by a sector or regulatory body (if appropriate)	This unit requires the workplace assessment of occupational competence wherever practicable. For the knowledge and understanding component of the unit, assessment from a learning and development environment is allowed.	
Name of the organisation submitting the unit	Defence Awarding Organisation	
Availability for use	Restricted	

URN:	A/615/5062	
Title:	Procedural Instrument Flying (Rotary Wing Aircraft)	
Level:	5	
Credit value:	2	
GLH:	13	
TQT:		
Learning outcomes	Assessment criteria	
The learner will:	The learner can:	
1. Explain Flight rules, Airspace and Air Traffic Control	1.1 Explain your responsibilities when flying VFR and IFR within the United Kingdom (UK) Flight Information Regions (FIRs) 1.2 List the Classifications of Airspace within the UK 1.3 State how airspace classification is applied in the UK FIRs 1.4 Explain the application of Air Traffic Services within the UK FIRs	
2. Explain "Nav aids"	2.1 State the propagation characteristics for NDB, VOR and DME Beacons 2.2 List the errors applicable to NDB, VOR and DME Beacon. 2.3 Describe the location and use of the point source navigation controllers in the current in-service helicopter 2.4 State how point source navigational information is displayed on the current in-service helicopter HSI and OBS 2.5 Describe the use of the Marker System in the current in-service helicopter	
3. Explain En Route Charts	3.1 Demonstrate the use of the En-Route Bulletin to ascertain the area coverage, currency and amendment of UK(L) En-Route Charts (ERCs) 3.2 Extract, without error, aeronautical information from the ERC tables 3.3 Plan a procedural route using the UK(L)1 and UK(L)2 ERCs	
4. Explain Weather Factors	4.1 State the published weather minima for departure, destination and alternate airfields 4.2 List the published fuel allowances to be carried on an IFR transit 4.3 State the major weather considerations when planning an IFR transit 4.4 Calculate the temperature error correction to be applied for transit flying	
5. Explain SIDs Stars and Instrument approaches	5.1 State the functions of a Standard Instrument Departure (SID), Standard Instrument Arrival (STAR) and Instrument Approach Procedure (IAP) 5.2 State the significance of the symbology for a SID 5.3 State the significance of the symbology for a STAR 5.4 State the significance of the symbology for an IAP 5.5 Utilising information from TAPs and BINA, correctly calculate DH	

	and MDH for precision and non-precision approaches
6. Explain Flight Plans	<p>6.1 List the 6 occasions when filing a Flight Plan is Mandatory</p> <p>6.2 List the 2 occasions when filing a Flight Plan is Advisory</p> <p>6.3 State the time scales for filing a Flight Plan</p> <p>6.4 With the aid of the FIH, BINA and UK(L) 1 complete Fields 7 to 18 of the Flight Plan, without error</p> <p>6.5 Explain the function and content of the Supplementary Information Section</p>
7. Explain Tracking	<p>7.1 Utilising the Navigation Training Emulation, state the information displayed on the HSI, OBS and DME Indicator</p> <p>7.2 Utilising the Navigation Training Emulation, demonstrate the use of P1s Nav Switching Unit</p> <p>7.3 Utilising the Navigation Training Emulation, demonstrate the use of the No1 Bearing Pointer and CDI Bar to achieve and maintain an NDB track</p> <p>7.4 Utilising the Navigation Training Emulation, demonstrate the use of the Nos 1 & 2 Bearing Pointers, CDI Bar and OBS to achieve and maintain a VOR radial</p> <p>7.5 Utilising the Navigation Training Emulation, demonstrate the use of DME indications</p> <p>7.6 Utilising the Navigation Training Emulation, carry out a short navigation exercise, using VOR, DME and NDB</p>
8. Explain Mental Dead Reckoning (MDR)	<p>8.1 Calculate heading using MDR Principles, given Track, Wind Velocity and True Airspeed</p> <p>8.2 Calculate Ground speed using MDR Principles, given: Track, Wind velocity and True airspeed</p>
9. Explain Holding Patterns	<p>9.1 Draw and label the standard and non-standard holding patterns</p> <p>9.2 Draw and label the joining procedures for Sector 1, 2 and 3 joins</p> <p>9.3 Using MDR, calculate the required headings and timings for the 3 joining procedures</p> <p>9.4 Using MDR, calculate the required headings and timings for the holding pattern</p> <p>9.5 Given errors in the inbound course and timings, calculate and apply the necessary corrections</p>
10. Explain R/T calls	<p>10.1 State the major components of a route clearance</p> <p>10.2 List the components of a handover on completion of a SID and en-route</p> <p>10.3 Demonstrate a position report overhead an airways reporting point</p> <p>10.4 State the RT Emergency Procedures for both VMC and IMC conditions when in Controlled Airspace</p>
Additional information about the unit	
Unit aim(s)	On completion of this unit learners will be able to explain the need for flight rules and air traffic control, navigation aids, charts and flight plans related to a flight.
Unit expiry date	2 years
Details of the relationship between	This unit has some synergy with the following NOS:

the unit and relevant national occupational standards (if appropriate)	PPLFDC08 Handle aircraft on site PPLFDC10 Control aircraft during flight
Assessment requirements specified by a sector or regulatory body (if appropriate)	This unit requires the workplace assessment of occupational competence wherever practicable. For the knowledge and understanding component of the unit, assessment from a learning and development environment is allowed.
Name of the organisation submitting the unit	Defence Awarding Organisation
Availability for use	Restricted

URN:	H/615/5072	
Title:	Mountains and Maritime operations	
Level:	5	
Credit value:	3	
GLH:	26	
TQT:		
Learning outcomes	Assessment criteria	
The learner will:	The learner can:	
1. Conduct Drum Winching to include standard circuits	1.1 Complete a standard circuit, providing accurate clock codes 1.2 Correctly control the AC on the approach and in the hover 1.3 Give accurate Direction, Range and Tendency during the approach, run in and to remain in the overhead whilst in the hover 1.4 Ensure accurate overhead for lift	
2. Conduct Drum Winching to include a standard circuit, an extended cable circuit and the application of Parachute attached techniques	2.1 Carry out lookout procedures and coasting out checks 2.2 Control the height on approach to the winching out point 2.3 Climb to the required height 2.4 Identify the problems associated with an intercom malfunction 2.5 Assess the wind direction and effects 2.6 Fire smoke	
3. Conduct Drum Winching, to include a Standard and Extended Cable circuit, Parachute attached techniques and a Simulated hoist malfunction	3.1 Control the height on the approach to the winching out point, maintain AC at fixed height on run in and subsequent hover 3.2 Identify the problems associated with a hoist malfunction	
4. Conduct Dry Double Lifts over level ground	4.1 Check Winchman's equipment 4.2 Control cabin exit 4.3 Carry out all required checks 4.4 Control AC iaw the winchman's hand signals 4.5 Control cabin entry of winchman and survivor 4.6 Maintain AC at operating height 4.7 Give accurate Direction, Range and Tendency (DRT) during the approach, run in and hover 4.8 Ensure accurate overhead for each lift	
5. Conduct Dry Double Lifts over level ground controlling errors as required	5.1 Direct the AC from various start points; 12 o'clock to 3 o'clock and 15 to 40 units 5.2 Control the AC to position accurately using 2m units	
6. Conduct Dry Double Lifts over level ground including a	6.1 Conduct a landing/sloping ground recce as required 6.2 Maintain the AC at a safe height above obstructions 6.3 Carry / recover the Winchman/Survivor at a safe height 6.4 Carry out a cabin entry with stretcher	

Stretcher lift	
7. Conduct lifts over undulating ground, to include Dry Double Lifts and Stretcher lifts whilst controlling multiple and continuous errors	<p>7.1 Maintain the safety of the AC and crew throughout all lifts</p> <p>7.2 Give accurate DRT during the run in and hover</p> <p>7.3 Use the backdrop technique to maintain a fixed operating height</p>
8. Monitor and assist other Crew Members while operating in a Mountain environment	<p>8.1 Describe the effect of terrain and meteorology on the operation of a helicopter in mountainous areas</p> <p>8.2 Carry out the required ground briefings</p> <p>8.3 Monitor and demonstrate the en route radio procedures</p> <p>8.4 Monitor and demonstrate the en route navigation procedures</p> <p>8.5 Observe and select the SOP for mountain transit, pinnacle, ridge valley and bowl approaches</p> <p>8.6 Calculate chicken fuel at various locations and advise when fuel checks are required</p> <p>8.7 Monitor the progress of aircraft between exercise areas</p>
9. Navigate while operating in a Mountain environment	<p>9.1 Assist in the preparation of the route to a specified location</p> <p>9.2 Monitor the progress of THE AC using a 1:50,000 map and advise the pilot as to the location of specific points</p> <p>9.3 Advise the pilot on relevant mountain flying SOP</p> <p>9.4 Direct the AC to various locations within the exercise area warning of obstructions and hazards</p> <p>9.5 Monitor the increase in workloads of the pilot when the Hydraulics malfunctions</p>
10. Plan, Brief and Control a Maritime and MNTS mission	<p>10.1 Plan a sortie to a Maritime and MNTS scenario using all relevant documents</p> <p>10.2 Brief a Maritime and MNTS crew on sortie format details</p> <p>10.3 Devise and execute simple and appropriate search procedures</p> <p>10.4 Plan and execute mountain situations</p> <p>10.5 Display airmanship by advising the pilot of fuel, meteorology and hazards en route and on scene during Maritime and MNTS operation</p>
Additional information about the unit	
Unit aim(s)	On completion of this unit learners will be able to operate a winch from a helicopter in a range of hazardous conditions
Unit expiry date	2 years
Details of the relationship between the unit and relevant national occupational standards (if appropriate)	This unit has some synergy with the following NOS: COGODR6 Contribute to helicopter handling operations (Low % match)
Assessment requirements specified by a sector or regulatory body (if appropriate)	This unit requires the workplace assessment of occupational competence wherever practicable. For the knowledge and understanding component of the unit, assessment from a learning and development environment is allowed.

Name of the organisation submitting the unit	Defence Awarding Organisation
Availability for use	Restricted

URN:	K/615/5073	
Title:	Crew resource management (CRM) and Airmanship	
Level:	4	
Credit value:	1	
GLH:	7	
TQT:		
Learning outcomes	Assessment criteria	
The learner will:	The learner can:	
1. Demonstrate crew resource management	1.1 Demonstrate pre-flight preparation 1.2 Demonstrate pre-flight briefing 1.3 Demonstrate pre-flight checks 1.4 Demonstrate radio procedures 1.5 Demonstrate lookout 1.6 Demonstrate adherence to procedures and parameters 1.7 Demonstrate compliance of regulations and aircraft limitations 1.8 Demonstrate flexibility 1.9 Demonstrate ability to prioritise 1.10 Demonstrate awareness 1.11 Demonstrate ability to be stable 1.12 Demonstrate the ability to have foresight 1.13 Demonstrate decision making within the crew 1.14 Demonstrate communication within the crew	
Additional information about the unit		
Unit aim(s)	On completion of this unit learners will be able to demonstrate the ability to operate as a helicopter crewman on the ground and in the air.	
Unit expiry date	2 years	
Details of the relationship between the unit and relevant national occupational standards (if appropriate)	This unit has some synergy with the following NOS PPLFDC16 Create, maintain and enhance effective flight crew communication and working relations through Crew Resource Management	
Assessment requirements specified by a sector or regulatory body (if appropriate)	This unit requires the workplace assessment of occupational competence wherever practicable. For the knowledge and understanding component of the unit, assessment from a learning and development environment is allowed.	
Name of the organisation submitting	Defence Awarding Organisation	

the unit	
Availability for use	Restricted

URN:	A/615/5076	
Title:	Voice Marshalling	
Level:	4	
Credit value:	1	
GLH:	7	
TQT:		
Learning outcomes	Assessment criteria	
The learner will:	The learner can:	
1. Know how to conduct voice marshalling	1.1 State the need for voice marshalling 1.2 State the requirements for KEY WORDS in voice marshalling 1.3 State the meaning of Key Words 1.4 State how the DIRECTION, RANGE AND TENDENCY (DRT) method is used to voice marshal an aircraft 1.5 State the size of the units used in voice marshalling 1.6 State how the aircraft speed is indicated in voice marshalling 1.7 State the need for voice marshalling in height only 1.8 State the application of the DRT method when voice marshalling in height only	
2. Display Airmanship	2.1 State the need for lookout 2.2 State the clearance required between the aircraft and obstructions	
3. Conduct voice marshalling	3.1 Voice marshal the aircraft during phases of flight	
Additional information about the unit		
Unit aim(s)	On completion of this unit learners will be able to carry out voice marshalling to assist the pilot in a range of circumstances.	
Unit expiry date	2 years	
Details of the relationship between the unit and relevant national occupational standards (if appropriate)	This unit has some synergy with the following NOS PPLAOG48 Marshal aircraft (fixed and rotary wing)	
Assessment requirements specified by a sector or regulatory body (if appropriate)	This unit requires the workplace assessment of occupational competence wherever practicable. For the knowledge and understanding component of the unit, assessment from a learning and development environment is allowed.	

Name of the organisation submitting the unit	Defence Awarding Organisation
Availability for use	Restricted

URN:	F/615/5077	
Title:	Aircraft Emergencies	
Level:	4	
Credit value:	1	
GLH:	6	
TQT:		
Learning outcomes	Assessment criteria	
The learner will:	The learner can:	
1. Know how to / state the appropriate action in the event of an emergency or malfunction	1.1 State how to respond to emergencies allocated to a specific sortie	
2. Know how to display airmanship in an emergency	2.1 State the type of emergency call to be used for each malfunction 2.2 Explain how effective lookout can be degraded when crew attention is concentrated on an emergency 2.3 Explain how the crew can be used to good effect when dealing with an emergency	
3. Take the appropriate action in the event of an emergency or malfunction	3.1 Take the correct actions in the event of a transmission or double engine failure 3.2 Take the correct actions for power limiting failures during take-off, landing or confined space area operations 3.3 Monitor the appropriate actions in the event of any other emergency or malfunction 3.4 Abandon the aircraft	
Additional information about the unit		
Unit aim(s)	On completion of this unit learners will be able to respond in an emergency situation with the aircraft and take the appropriate action/s.	
Unit expiry date	2 years	
Details of the relationship between the unit and relevant national occupational standards (if appropriate)	This unit has some synergy with the following NOS PPLFDC14 Manage abnormal situations	
Assessment requirements specified by a sector or regulatory body (if appropriate)	This unit requires the workplace assessment of occupational competence wherever practicable. For the knowledge and understanding component of the unit, assessment from a learning and development environment is allowed.	
Name of the organisation submitting	Defence Awarding Organisation	

the unit	
Availability for use	Restricted

URN:	L/615/5079	
Title:	Helicopter Navigation	
Level:	5	
Credit value:	2	
GLH:	19	
TQT:		
Learning outcomes	Assessment criteria	
The learner will:	The learner can:	
1. Know how to plan a specified route	1.1 State the general principles of route planning 1.2 Explain the principles of map selection 1.3 State the principles of map marking 1.4 List the navigation information that is to be marked on the map 1.5 Explain the selection and use of Initial Points (IPs) 1.6 Describe the timing methods used at DHFS 1.7 State what meteorological information is required to plan a navigation sortie 1.8 Explain the principles of sortie fuel planning, referring to performance data, where applicable	
2. Know how to navigate a pre-planned route at low level	2.1 State the general principles of navigation 2.2 Discuss differences between the 'Event' technique and the 'Leap-Frog' technique 2.3 State the additional considerations at low level 2.4 List the procedures used on DHFS sorties 2.5 Discuss the method of correcting track errors. 2.6 Discuss the method of correcting timing errors 2.7 State the principles for effective directive commentary	
3. Know how to plan a route in response to an airborne re-tasking and navigate a diversion	3.1 Describe the procedure for navigating to an unplanned diversion (Spot Nav)	
4. Know how to display airmanship when providing navigation assistance	4.1 Explain the principles of good CRM 4.2 List the survival equipment that should be carried on navigation sorties 4.3 Describe the special helicopter joining procedures at airfields 4.4 Describe the requirements for entering controlled airspace 4.5 Describe the procedures to be adopted when lost 4.6 Describe the procedures to be adopted when failing to positively identify a turning point or target 4.7 Describe the procedure to be adopted when encountering bad weather or turbulence	
5. Provide navigation assistance to the pilot of a helicopter	5.1 Plan a specified route 5.2 Navigate a pre-planned low level route 5.3 Navigate in respect to an airborne re-tasking / weather direction	

	5.4 Provide navigation assistance to achieve a multi target tactical sortie
Additional information about the unit	
Unit aim(s)	On completion of this unit learners will be able to assist with the route planning and navigation of the aircraft.
Unit expiry date	2 years
Details of the relationship between the unit and relevant national occupational standards (if appropriate)	This unit has some synergy with the following NOS PPLFDC01 - Prepare and implement a flight plan Prepare and implement a flight plan
Assessment requirements specified by a sector or regulatory body (if appropriate)	This unit requires the workplace assessment of occupational competence wherever practicable. For the knowledge and understanding component of the unit, assessment from a learning and development environment is allowed.
Name of the organisation submitting the unit	Defence Awarding Organisation
Availability for use	Restricted

URN:	F/615/5080	
Title:	Instrument and Night Flying	
Level:	5	
Credit value:	3	
GLH:	26	
TQT:		
Learning outcomes	Assessment criteria	
The learner will:	The learner can:	
1. Assist the helicopter pilot in instrument flying	1.1 Monitor crew activity and aircraft instruments 1.2 Carry out lookout duties during Instrument Flying manoeuvres	
2. Assist the helicopter pilot in procedural instrument flying	2.1 Monitor crew activity and aircraft instruments 2.2 Monitor crew activity and aircraft instruments during in VOR/NDB hold and approach	
3. Know how to assist the pilot during reversionary night flying	3.1 List night SOPs 3.2 State when the landing/search lights are switched OFF 3.3 Describe the night landing aids used 3.4 Describe how to carry out an approach to these night landing aids 3.5 Describe when and how a go around is to be carried out 3.6 Describe the procedure for returning to dispersal	
4. Know how to carry out the correct actions in the event of a simulated emergency	4.1 Describe the actions in the event of equipment failure 4.2 Describe recovery action to lit runway or NATO "T"	
5. Assist the pilot during reversionary night flying	5.1 Carry out procedures for the circuits, approach and departures to a NATO "T" 5.2 Carry out the procedure during a practice forced landing 5.3 Assist the pilot during an RNF USL circuit 5.4 Assist the pilot during the event of a simulated emergency	
6. Fly using night vision goggles	6.1 Assist the pilot with crewman duties during a circuit and approach to a night recce 6.2 Assist the pilot with crewman duties in order to fly and navigate a pre-planned Navex 6.3 Assist the pilot with crewman duties in order to pick up an under slung load, fly a circuit and release the load at a specified point 6.4 Carry out the correct actions in the event of a simulated aircraft or NVG malfunction	
Additional information about the unit		
Unit aim(s)	On completion of this unit learners will be able to assist the pilot in instrument and night flying conditions.	
Unit expiry date	2 years	

Details of the relationship between the unit and relevant national occupational standards (if appropriate)	No comparable NOS found
Assessment requirements specified by a sector or regulatory body (if appropriate)	This unit requires the workplace assessment of occupational competence wherever practicable. For the knowledge and understanding component of the unit, assessment from a learning and development environment is allowed.
Name of the organisation submitting the unit	Defence Awarding Organisation
Availability for use	Restricted

URN:	L/615/5082	
Title:	Tactical Formation Flying (Trail)	
Level:	5	
Credit value:	1	
GLH:	6	
TQT:		
Learning outcomes	Assessment criteria	
The learner will:	The learner can:	
1. Know about Tactical Formation Flying	1.1 State the dangers of flying below and behind preceding aircraft during the transition 1.2 Describe how tactical formation is achieved after transition into forward flight 1.3 Describe the composition of a tactical formation 1.4 State the formation member normally designated deputy leader 1.5 Describe how to maintain station in tactical formation 1.6 State the R/T call used if insufficient power is available to keep up with the lead	
2. Know how to carry out an approach to a specified landing site	2.1 Describe the characteristics of an LS suitable for use by a tactical formation 2.2 State the R/T calls made during the approach to an LS 2.3 Describe the formation change made during the approach 2.4 Describe the normal landing positions adopted and how these may be modified	
3. Know how to carry out emergency drills	3.1 Describe the emergency drills and procedures to be carried out in the event of emergencies	
4. Operate the aircraft in Trail formation	4.1 Assist the pilot in order to follow and lead in a trail formation 4.2 Monitor the change of formation position 4.3 Carry out emergency drills	
Additional information about the unit		
Unit aim(s)	On completion of this unit learners will be able to carry out the crewman role when flying in a formation as directed by the pilot.	
Unit expiry date	2 years	
Details of the relationship between the unit and relevant national occupational standards (if	No comparable NOS found	

appropriate)	
Assessment requirements specified by a sector or regulatory body (if appropriate)	This unit requires the workplace assessment of occupational competence wherever practicable. For the knowledge and understanding component of the unit, assessment from a learning and development environment is allowed.
Name of the organisation submitting the unit	Defence Awarding Organisation
Availability for use	Restricted

URN:	Y/615/5084	
Title:	Fly with loads	
Level:	4	
Credit value:	1	
GLH:	9	
TQT:		
Learning outcomes	Assessment criteria	
The learner will:	The learner can:	
1. Carry out a check of the Cargo Release Unit (CRU)	1.1 State the external checks to be carried out on the CRU 1.2 State the methods by which the load beam of the CRU can be opened 1.3 State the cockpit indications of an open load beam 1.4 State the sequence in which the CRU releases are checked	
2. Know how to pick up a Under Slung Load (USL), fly a circuit and release the USL at a specified point	2.1 State the operational limits concerning USL 2.2 State the meaning of key phrases 2.3 Describe the procedure for picking up an USL 2.4 Describe the USL training circuit 2.5 State why it is important to avoid over flying buildings etc 2.6 State the checks carried out above 200ft AGL 2.7 Describe the procedure for releasing an USL at a specified point 2.8 Discuss the methods available for damping out USL oscillations	
3. Know how to carry out the correct actions in the event of an emergency	3.1 State the procedure carried out for emergencies 3.2 State the occasions in which the crewman's emergency release is used	
4. Know how to display airmanship when flying under slung loads	4.1 State the necessity for good lookout 4.2 State the minimum clearance required between USLs and obstructions 4.3 State the basic principles to be applied in controlling the stability of USLs 4.4 State the safety precautions to be carried out before carrying out the safe area checks	
5. Fly an under slung load	5.1 Carry out a check of the cargo release unit 5.2 Pick up of an underslung, fly a circuit and release the load at a specified point 5.3 Carry out the correct actions in the event of a simulated emergency 5.4 Display airmanship	
6. Load the cabin of the aircraft	6.1 Secure internal load stores 6.2 Secure personnel into the aircraft cabin	
Additional information about the unit		
Unit aim(s)	On completion of this unit learners will be able to carry out the crewman role on board a helicopter that is flying a variety of load types.	

Unit expiry date	2 years
Details of the relationship between the unit and relevant national occupational standards (if appropriate)	This unit has some synergy with the following NOS COGODR6 Contribute to helicopter handling operations (minimal match)
Assessment requirements specified by a sector or regulatory body (if appropriate)	This unit requires the workplace assessment of occupational competence wherever practicable. For the knowledge and understanding component of the unit, assessment from a learning and development environment is allowed.
Name of the organisation submitting the unit	Defence Awarding Organisation
Availability for use	Restricted

URN:	D/615/5099	
Title:	Mission Management	
Level:	5	
Credit value:	1	
GLH:	7	
TQT:		
Learning outcomes	Assessment criteria	
The learner will:	The learner can:	
1. Know how to assist in the planning of single and multi-aircraft tasks	1.1 Interpret a HELTASK 1.2 State the limitations on routeing imposed by ACOs 1.3 Decode simple military map markings	
2. Know how to brief single and multi-aircraft tasks	2.1 Brief a multi-aircraft formation sortie pre-flight 2.2 Debrief a multi-aircraft formation sortie post-flight	
3. Display airmanship	3.1 Explain how to display good airmanship	
4. Assist in the planning, briefing and debriefing of single and multi aircraft tasks	4.1 Assist in the planning, briefing and debriefing of single and multi-aircraft tactical tasks 4.2 Operate as crewman and assist in the management of single and multi-aircraft tactical tasks 4.3 Assist in the planning, briefing and debriefing of short notice single and multi-aircraft tactical tasks	
Additional information about the unit		
Unit aim(s)	On completion of this unit learners will be able to assist as appropriate to role with the planning of helicopter tasks.	
Unit expiry date	2 years	
Details of the relationship between the unit and relevant national occupational standards (if appropriate)	This unit has some synergy with the following NOS PPLFDC01 - Prepare and implement a flight plan	
Assessment requirements specified by a sector or regulatory body (if appropriate)	This unit requires the workplace assessment of occupational competence wherever practicable. For the knowledge and understanding component of the unit, assessment from a learning and development environment is allowed.	
Name of the organisation submitting the unit	Defence Awarding Organisation	

Availability for use	Restricted
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URN:	J/615/5100	
Title:	Assist the pilot to fly in undulating, confined and hazardous terrain	
Level:	5	
Credit value:	3	
GLH:	25	
TQT:		
Learning outcomes	Assessment criteria	
The learner will:	The learner can:	
1. Plan a Concealed Approach and Departure (CAD)	1.1 State the general principles of the CAD 1.2 Explain the principles of route selection 1.3 State the principles of map marking	
2. Know how to fly a Concealed approach and Departure	2.1 Explain the techniques of flying the selected route 2.2 State the principles of landing at or near the LS 2.3 State the principle of departing the LS 2.4 Explain the differences in the lost procedure used during a CAD 2.5 Explain the techniques used to navigate the selected route	
3. Know how to direct the Helicopter pilot during a Concealed Approach and Departure	3.1 Explain the differences in the lost procedure used during a CAD	
4. Know how to display airmanship during a Concealed Approach and Departure	4.1 Explain the key points of good airmanship during CAD sorties	
5. Operate as a crewman during a concealed approach and departure to a pre nominated landing site	5.1 Plan a concealed approach and departure from a nominated landing site 5.2 Operate as a crewman during a concealed approach and departure from a nominated landing site	
6. Know how to carry out a reconnaissance of a confined area	6.1 State the reason for carrying out a reconnaissance of a confined area 6.2 State the format of the reconnaissance 6.3 State the main points to be debriefed 6.4 State the need for the careful choice of markers during the reconnaissance	
7. Know how to carry out the procedure required to approach, manoeuvre in and depart from a confined area	7.1 State the power requirements for entering and exiting a confined area and when a power assessment should be carried out 7.2 State the methods used to assess wind direction 7.3 State the meaning of the "committed"/safe single and "transitioning" call on entry to/exit from a CA 7.4 State the meaning of the "tail clear" call entering a confined area 7.5 State the importance of scan on entering a confined area	

	<p>7.6 State the reasons for using the sloping ground techniques when operating in confined areas</p> <p>7.7 State the principles to be followed when manoeuvring within a confined area</p> <p>7.8 State the problems associated with engine malfunctions during confined area operations</p> <p>7.9 State the procedure to be used following an engine malfunction, on the entry/exit of a confined area after the “committed”/safe single and “transitioning” call</p>
8. Know how to display airmanship when operating in confined spaces	<p>8.1 State the clearance required between the aircraft and obstructions when operating in confined areas</p> <p>8.2 State the R/T considerations when operating in confined areas</p> <p>8.3 State the importance of lookout when exiting a confined area</p> <p>8.4 State the reason for voice-marshalling after an engine malfunction when landing in a confined area</p> <p>8.5 State the reason why the pilot may not be able to follow the voice marshalling given, after an engine malfunction, when landing in a confined area</p>
9. Assist the pilot to land and take off from a confined area	<p>9.1 Carry out a reconnaissance and debrief of the confined area</p> <p>9.2 Carry out the appropriate procedure during the confined area circuit</p> <p>9.3 Provide voice marshalling direction during the landing, take off and transition from the confined area</p> <p>9.4 Carry out crewman duties to assist manoeuvring in a confined area</p>
10. Know the characteristics of landing on sloping ground	<p>10.1 State what factors should be considered when manoeuvring close to a slope.</p> <p>10.2 Describe how the reconnaissance of the sloping ground area is carried out</p> <p>10.3 State what factors influence the selection of landing point and landing direction</p> <p>10.4 Describe how the stages of a sloping ground landing are carried out</p> <p>10.5 State when landing should be discontinued and the hover re-established</p> <p>10.6 State how the landing left skid upslope differs from the landing right skid upslope</p> <p>10.7 State the extra points to be considered when landing nose upslope</p>
11. Know how to assist the pilot to land and take off from sloping ground	<p>11.1 State the conditions for aircraft on sloping ground</p> <p>11.2 State where and when the pre-landing and after take-off checks should be completed</p> <p>11.3 State the maximum acceptable degree of slope for take-off and landing</p> <p>11.4 Know command to commence voice marshalling</p>
12. Assist the pilot to land and take off from sloping ground	<p>12.1 Carry out a reconnaissance of a sloping ground area</p> <p>12.2 Provide voice marshalling direction to affect a landing on sloping ground</p> <p>12.3 Identify a missed landing and carryout the missed landing</p> <p>12.4 When taking off and landing on sloping ground, ensure ancillary equipment is clear of the ground</p>
13. Know how to carry out flight under High	<p>13.1 State the reasons for flight under HT wires</p> <p>13.2 Explain the regulations covering flight under HT wires</p>

Tension wires	13.3 State the principles of selecting a suitable crossing area 13.4 Describe the procedure used to carry out flight under HT wires
14. Display airmanship when flying under High Tension wires	14.1 Adhere to GASOs / FOB regulations 14.2 Select correct markers 14.3 Select crossing point during travel to avoid public annoyance or concern
15. Assist the pilot in order to fly under High Tension cables	15.1 Carry out recce and VM to assist the pilot with flight under wires 15.2 Provide commentary patter of left/right clearance, disc and tail position relative to the wires 15.3 Confirm clear above and behind for transition
Additional information about the unit	
Unit aim(s)	On completion of this unit learners will be able to carry out the crewman role to assist the pilot when manoeuvring in and out of dangerous / difficult terrain.
Unit expiry date	2 years
Details of the relationship between the unit and relevant national occupational standards (if appropriate)	This unit has some synergy with the following NOS: PPLFDC12 Handle aircraft during arrival, approach and landing
Assessment requirements specified by a sector or regulatory body (if appropriate)	This unit requires the workplace assessment of occupational competence wherever practicable. For the knowledge and understanding component of the unit, assessment from a learning and development environment is allowed.
Name of the organisation submitting the unit	Defence Awarding Organisation
Availability for use	Restricted

URN:	L/615/5101	
Title:	Maritime Rotary Wing Crewman (OPTIONAL UNIT for RN)	
Level:	5	
Credit value:	1	
GLH:	10	
TQT:		
Learning outcomes	Assessment criteria	Guidance and unit amplification
The learner will:	The learner can:	
1. Describe Velocity triangle plotting symbols	1.1 Explain the components of the velocity triangle 1.2 Explain the symbology associated with the velocity triangle 1.3 Draw and label a velocity triangle 1.4 Explain the various symbols used for plotting in DR navigation	
2. Describe Navigation techniques	2.1 State the procedure for lead navigation 2.2 State the procedure for follow navigation	
3. Describe Wind / Find fix methods	3.1 Explain different methods of fixing a position 3.2 Describe methods of wind finding 3.3 Explain the different methods of calculating the wind	
4. Describe Minute fix depart	4.1 Use nav computer in lead and follow DR navigation 4.2 Conduct a practical plotting exercise in order to complete a wind find and fix depart using the radar fix method 4.3 Complete a log card	
5. Describe Intercepts	5.1 Explain a line of constant bearing 5.2 Explain a mean line of advance 5.3 Explain a position and intended movements 5.4 Solve an interception	
6. Explain Critical points	6.1 Define and calculate critical point 6.2 Define and calculate point of no return 6.3 Define and calculate radius of action	
Additional information about the unit		
Unit aim(s)	On completion of this unit learners will be able to operate as a helicopter crewman in a maritime environment.	
Unit expiry date	2 years	
Details of the relationship between the unit and relevant national occupational standards (if appropriate)	No comparable NOS found.	
Assessment requirements specified by a sector or regulatory	This unit requires the workplace assessment of occupational competence wherever practicable. For the knowledge and understanding component of the unit, assessment from a learning and	

body (if appropriate)	development environment is allowed.
Name of the organisation submitting the unit	Defence Awarding Organisation
Availability for use	Restricted