Australian Government

AVIH3019A Navigate remote pilot aircraft (RPA)

Release 1

AVIH3019A Navigate remote pilot aircraft (RPA)

Modification History

Release 1. This is the first release of this unit.
This unit replaces and is equivalent to AVIH3018A Navigate remote pilot aircraft (RPA).

Unit Descriptor

This unit involves the skills and knowledge required to navigate a remote pilot aircraft (RPA) including completing pre-flight planning; navigating under normal and abnormal conditions; and carrying out emergency procedures.
Licensing, legislative, regulatory or certification requirements are applicable to this unit.

Application of the Unit

Work must be carried out in compliance with the relevant licence and RPAS rating requirements of the Civil Aviation Safety Authority (CASA); relevant airspace control requirements; Visual Metrological Conditions (VMC); regulations, safety codes, protocols and procedures related to the navigation of a RPA.
Use for Defence Aviation is to be in accordance with relevant Defence Orders and Instructions
Operations are conducted across a variety of operational contexts within the Australian aviation industry.
Work is performed under limited supervision.

Licensing/Regulatory Information

Refer to Unit Descriptor.

Pre-Requisites

Nil.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a unit of competency.	Performance criteria describe the required performance needed to demonstrate achievement of the element. Assessment of performance is to be consistent with the evidence guide.

Elements and Performance Criteria

1 Prepare charts and flight plan	1.1	Suitable maps, aeronautical charts and weather briefings for the intended operation are selected and the flight plan is prepared
	1.2	Pre-operations information and NOTAM is accessed, analysed and applied to flight plan
	1.3	Hazards are clearly indicated on charts where applicable and controls are implemented
	1.4	Effects of wind velocity, adverse environmental conditions and contingency actions are planned for as appropriate
2 Comply with airspace procedures	2.1	Air traffic clearances are accessed and compliance with air traffic regulations is maintained
	2.2	Airspace procedures and protocols are followed
	2.3	Entrance into Controlled Airspace is undertaken only in compliance regulatory requirements and workplace procedures
3 Conduct departure procedures	3.1	Remote pilot station is organised and essential information is accessed
	3.2	Departure administration tasks and communications are conducted
	3.3	Orientation to ground level is maintained
	3.4	Control of the RPA is given precedence over conducting navigation and communication tasks
	3.5	Situational awareness and lookout is maintained using a systematic scan technique
	3.6	Local and published noise abatement requirements and curfews are observed
	3.7	Separation with other air traffic is maintained

4	**Maintain RPA in operational area**	4.1	Planned route is followed in accordance with workplace procedures
		4.2	Communication tasks are completed in accordance with workplace procedures and regulatory requirements
		4.3	RPA endurance is monitored and energy reserve needs are revised
		4.4	Pre-descent or navigation turning point checks are executed in accordance with workplace procedures and regulatory requirements
		4.5	Air traffic separation is maintained at all times
		4.6	RPA is controlled according to workplace policies and procedures
		4.7	Deteriorating visual meteorological conditions are recognised and appropriate RPA corrective actions are taken
		4.8	Situational awareness and lookout is undertaken using a systematic scan technique
5	**Navigate RPA within visual line of sight**	5.1	Visual line of sight of the RPA is maintained at all times
		5.2	Awareness of current and forecast weather conditions is maintained
		5.3	Systematic scan technique is implemented at all times
		5.4	Hazards and threats are identified and appropriately controlled
		5.5	Effects of wind velocity, adverse environmental conditions and contingency actions are responded to as appropriate
		5.6	Situational awareness is maintained at all times
6	**Apply lost link procedure**	6.1	Lost link profile and routing is prepared and validated
		6.2	Fail-safe mechanism is reviewed and activated as appropriate in accordance with the RPAS flight manual
7	**Apply lost radio communication procedure**	7.1	Lost radio communications procedure and profile are prepared and validated
		7.2	Back-up radio and/or alternate communication means are confirmed as appropriate in accordance with operations manual
8	**Execute arrival procedures**	8.1	Arrivals procedures are executed in accordance with operations manual
		8.2	Lookout is maintained using a systematic scan technique
		8.3	Situation awareness is maintained at all times

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8.4   Local and published noise abatement requirements and curfews are observed

8.5   Separation with air traffic is maintained

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Required Skills and Knowledge

This section describes the knowledge and skills required for this unit.

Required knowledge:

- Risk identification, analysis and control
- Relevant sections of Civil Aviation Safety Regulations and Civil Aviation Orders
- In Defence context, relevant Defence Orders and Instructions
- Relevant work health and safety (WHS)/occupational health and safety (OHS) and environmental procedures and regulations
- The characteristics of different chart types
- Factors affecting RPAS endurance
- Air navigation techniques, as applicable to RPAS
- Chart reading techniques
- Identification and navigational tolerances of CTA, CTR, Prohibited, Restricted and Danger areas
- The principles of operation of navigation systems
- The limitations of navigation systems
- Controlled airspace requirements
- The potential impacts of specific weather phenomena on RPAS operations
- Error management, including error types, causes and consequences as relevant to this unit
- Human performance and its limitations, including the senses, memory and situational awareness as relevant to this unit
- The decision making process as relevant to this unit
- Management of fatigue as relevant to this unit
- Stress, workload and time pressure management in relation to this unit
- Effective communication as relevant to this unit

Required skills:

- Perform the navigational functions within the parameters of the applicable regulations, orders and operations manual procedures
- Prepare charts, as required
- Maintain compliance with regulatory requirements
- Source and interpret aviation weather forecast products and services as appropriate
- Monitor endurance
- Apply air safety practices and regulations
- Interpret and follow operational instructions and prioritise workload
- Operate radio communication equipment to required protocol

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- Work collaboratively with others when navigating RPA

- Adapt appropriately to cultural differences in the workplace, including modes of behaviour and interactions with others

- Promptly report and/or rectify any identified problems that may occur when navigating RPA in accordance with regulatory requirements and workplace procedures

- Implement contingency plans for unexpected events that may arise when navigating RPA

- Apply precautions and required action to minimise, control or eliminate hazards that may exist during the navigation of a RPA

- Monitor and anticipate operational problems and hazards and take appropriate action

- Monitor work activities in terms of planned schedule

- Modify activities dependent on differing workplace contingencies, situations and environments

- Work systematically with required attention to detail without injury to self or others, or damage to goods or equipment

- Adapt to differences in equipment and operating environment in accordance with standard operating procedures

- Select and use required personal protective equipment conforming to industry and WHS/OHS standards

- Implement WHS/OHS procedures and relevant regulations

- Identify and correctly use equipment required to navigate a RPA

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and skills, the range statement and the assessment guidelines for this Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit	The evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the Elements, Performance Criteria, Required Skills, Required Knowledge and include: • risk management • human factors • safety management systems and: • required knowledge and skills • relevant legislation and workplace procedures • other relevant aspects of the range statement
Context of and specific resources for assessment	Performance is demonstrated consistently over time and in a suitable range of contexts. Resources for assessment include access to: • a range of relevant exercises, case studies and/or other simulated practical and knowledge assessment, and/or • access to an appropriate range of relevant operational situations in the workplace. In both real and simulated environments, access is required to: • relevant and appropriate materials and equipment, and • applicable documentation including workplace procedures, regulations, codes of practice and operation manuals.
Method of assessment	Practical assessment must occur in a: • real or appropriately simulated environment. A range of assessment methods should be used to assess practical skills and knowledge. The following examples are appropriate to this unit: • knowledge and performance questions and direct observation.

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Range Statement

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance.

Tasks may be undertaken in:	• visual line of sight (VLOS) • visual meteorological conditions • extended line of sight (E-LOS)
Performance may be demonstrated in:	• single engine RPA • multi engine RPA • variable flight situations • abnormal situations
Aircraft may include:	• remotely piloted aircraft (RPA)/unmanned aircraft
Crew may include:	• remote pilot • payload or sensor operator or technicians • remote observers • other ground crew
Instruments may be:	• fitted flight instruments • those included in the applicable ground control station
Limitations may be imposed by:	• airspace endorsements
Class of airspace must be:	• Class G airspace as designated by the regulator and may be in: • restricted an danger areas • military control zones
Navigation aids may include electronic, mechanical and/or radio systems such as:	• Surface Radar • GPS (Global Positioning System) • FMS (Flight Management Systems) • Computer based map displays
Operation of navigation aids/systems may include:	• normal mode • degraded mode
Circuit procedures may include:	• those applicable to launch and recovery of an RPA
Dependent on the type of organisation concerned and the local terminology used, workplace procedures may include:	• company procedures • enterprise procedures • organisational procedures • established procedures • standard operating procedures
Information/documents may include:	• relevant sections of Civil Aviation Safety Regulations and Civil Aviation Orders pertaining to the navigation of an RPA

	• in Defence context, relevant Defence Orders and Instructions
	• flight manual
	• Manual of Standards
	• Australian Aeronautical Publication (AIP)
	• En Route Supplement Australia (ERSA) or equivalent
	• charts
	• operations manuals
	• approved checklists
	• workplace procedures and instructions and job specification
	• induction and training materials
	• conditions of service, legislation and industrial agreements including workplace agreements and awards
	• relevant Bureau of Meteorology, International Civil Aviation Organization (ICAO) and/or World Meteorology Organization (WMO) publications
Applicable regulations and legislation may include:	• relevant Civil Aviation Safety Regulations and Civil Aviation Orders
	• in Defence context, relevant Defence Orders and Instructions
	• relevant state/territory WHS/OHS legislation
	• relevant state/territory environmental protection legislation
	• relevant Australian Standards
Performance includes tolerances specified in either of:	• relevant licence and RPAS rating requirements of the Civil Aviation Safety Authority (CASA) such as:
	• Manual of Standards
	• relevant Defence documentation such as:
	• Defence Orders and Instructions

Unit Sector(s)

Not applicable.

Competency Field

H - Route Planning and Navigation

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