



**Australian Government**

**Department of Education, Employment and Workplace Relations**

# **AVIY5020A Conduct full instrument panel manoeuvres**

**Revision Number: 1**

## AVIY5020A Conduct full instrument panel manoeuvres

### Modification History

Not applicable.

### Unit Descriptor

#### Unit Descriptor

This unit involves the skills and knowledge required to perform all normal flight manoeuvres and recover from unusual attitudes using the full instrument panel under IMC. Licensing, legislative, regulatory or certification requirements are applicable to this unit.

### Application of the Unit

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Work must be carried out in compliance with the relevant licence and aircraft rating requirements of the Civil Aviation Safety Authority (CASA); relevant airspace control requirements and Instrument Flight Rules (IFR); and aircraft control principles, regulations, safety codes, protocols and procedures required to control an aircraft solely by reference to the full instrument panel as part of commercial aircraft activities.

Use for ADF Aviation is to be in accordance with relevant Defence Orders and Instructions and applicable CASA compliance.

Operations are conducted across a variety of operational contexts within the Australian aviation industry.

Work is performed under limited supervision.

This unit of competency is packaged at AQF V.

### Licensing/Regulatory Information

Not applicable.

### Pre-Requisites

Not applicable.

## **Employability Skills Information**

**Employability Skills**                      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

ELEMENT	PERFORMANCE CRITERIA
<b>1 Determine and monitor serviceability of flight instruments and instrument power sources</b>	1.1 Serviceability of flight instrument, pitot/static system and instrument power sources is determined before flight 1.2 Functional checks of turn, heading and attitude indicators are performed while taxiing 1.3 Flight instrument and instrument power source are monitored and any warnings, unserviceabilities or erroneous indications are reacted to appropriately
<b>2 Perform manoeuvres using full instrument panel</b>	2.1 Flight instrument indications are interpreted and reacted to appropriately in the time available to achieve and maintain specified flight profiles using full instrument panel 2.2 Power and attitude are set and maintained by reference to the full instrument panel to achieve straight and level performance during normal cruise 2.3 Power and attitude are set and maintained by reference to the full instrument panel to achieve straight and level performance in an aircraft approach configuration 2.4 Power and attitude are set and maintained by reference to the full instrument panel to achieve nominated climb performance 2.5 Power and attitude are set and maintained by reference to the full instrument panel to achieve nominated descent performance 2.6 Power, attitude and bank during climb, descent and straight and level flight are set and maintained by reference to the full instrument panel to achieve rate one turns onto a nominated heading 2.7 Aircraft is balanced 2.8 Aircraft is trimmed 2.9 Aircraft is levelled at a nominated altitude, from climb or descent during straight or turning flight
<b>3 Perform steep turns</b>	3.1 Power, attitude and bank are set to maintain level flight by reference to full instrument panel that achieves a steep turn 3.2 Nominated angle of bank is maintained 3.3 Turn is exited onto a nominated heading 3.4 Aircraft is balanced
<b>4 Recover from unusual attitudes</b>	4.1 Unusual attitude is identified 4.2 Controlled flight is resumed by reference to flight instruments using a full instrument panel 4.3 Straight and level attitude is achieved without excessive oscillations at the horizon 4.4 Aircraft is recovered to above LSALT



## Required Skills and Knowledge

### REQUIRED KNOWLEDGE AND SKILLS

This describes the essential knowledge and skills and their level required for this unit.

#### Required knowledge:

- Relevant sections of Civil Aviation Safety Regulations and Civil Aviation Orders
- Relevant OH&S and environmental procedures and regulations
- Principles of aerodynamics
- Operation of the flight instruments and pitot/static system
- Flight instrument performance tolerances for IMC flights
- Functions and effects of all aircraft controls
- The function and limitations of flight instruments
- Pitot, airframe and carburettor icing and prevention/removal procedures
- Instrument failure warning flags and indications
- The physiological factors which may affect pilots during instrument flight
- The attitude and power requirements for respective conditions of flight
- Meteorological conditions impacting flight in IMC
- Instrument scan techniques
- Hazards that exist when controlling an aircraft by reference to the full instrument panel and related hazard control procedures and precaution
- Problems that may occur when controlling an aircraft by reference to the full instrument panel and action that should be taken in each case

#### Required skills:

- Perform manoeuvres and procedures solely by use of the full instrument panel
- Use instrument scan techniques applicable to the condition of flight
- Compensate for the secondary effects of controls
- Maintain orientation under simulated instrument flight conditions
- Control the aircraft by reference to the artificial horizon and gyro compass
- Maintain compliance with regulatory requirements
- Communicate effectively with others when controlling an aircraft by reference to full instrument panel
- Read and interpret instructions, regulations, procedures and other information relevant to controlling an aircraft by reference to full instrument panel
- Interpret and follow operational instructions and prioritise work
- Complete documentation related to controlling an aircraft by reference to full instrument panel
- Operate electronic communication equipment to required protocol

## REQUIRED KNOWLEDGE AND SKILLS

- Work collaboratively with others when controlling an aircraft by reference to full instrument panel
- 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 controlling an aircraft by reference to full instrument panel in accordance with regulatory requirements and workplace procedures
- Implement contingency plans for unexpected events that may arise when controlling an aircraft by reference to full instrument panel
- Apply precautions and required action to minimise, control or eliminate hazards that may exist when controlling an aircraft by reference to full instrument panel
- 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 OH&S standards
- Implement OH&S procedures and relevant regulations
- Identify and correctly use equipment required to when controlling an aircraft by reference to full instrument panel

# Evidence Guide

## 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 competency in this unit must be relevant to and satisfy all of the requirements of the elements and performance criteria of this unit and include demonstration of applying:
  - the underpinning 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 a period of time and in a suitable range of contexts
- Resources for assessment include:
  - 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**

- Assessment of this unit must be undertaken by a registered training organisation
- As a minimum, assessment of knowledge must be conducted through appropriate written/oral tests
- Practical assessment must occur:
  - through activities in an appropriately simulated environment at the registered training organisation, and/or
  - in an appropriate range of situations in the workplace



## Range Statement

### 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:
- IMC
  - VMC with simulated IMC conditions
- Performance may be demonstrated in:
- single engine aircraft
  - multi engine aircraft
  - synthetic training device approved by the appropriate authority
  - variable air traffic conditions
  - variable weather conditions
  - variable flight situations
  - abnormal situations
  - classes of airspace as designated by the Civil Aviation Safety Authority
- Aircraft may include:
- fixed wing
  - helicopter
  - other commercial or military aircraft
- Crew may include:
- single pilot
  - multi crew
- Instruments may be:
- flight instruments suitable for instrument flight
  - head up display suitable for instrument flight
- Limitations may be imposed by:
- local noise abatement requirements and curfews
  - airspace endorsements
- Classes of airspace may be:
- as designated by the regulator
  - restricted and danger areas
  - military control zones
  - Air Defence Identification Zones
- Conditions may include:
- a method of simulating IMC
  - simulated icing conditions
  - moderate turbulence
  - simulated hazardous weather
  - Autopilot/Flight Director
  - FMS/other NAV system
  - simulation of emergency and abnormal procedures
- Nominated descent may include:
- continual at a defined rate
  - standard-rate
- Unusual attitudes may include
- nose high and low
  - varying angles of bank and power settings

## RANGE STATEMENT

Dependent on the type of organisation concerned and the local terminology used, workplace procedures may include:

- unbalanced flight
- 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
- in Defence context, relevant Defence Orders and Instructions
- Flight Manual/Pilot's Operating Handbook (POH)
- Manual of Standards - Pilot Licensing (MOS-PL)
- Aeronautical Information Publication (AIP)
- En Route Supplement Australia (ERSA)
- 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

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 OH&S legislation
- relevant state/territory environmental protection legislation
- relevant Australian Standards

Performance includes tolerances specified in either of:

- relevant licence and aircraft rating requirements of the Civil Aviation Safety Authority (CASA) such as:
  - Manual of Standards
  - relevant Defence documentation such as:
    - Defence Orders and Instructions
    - approved curricula and training documentation

## Unit Sector(s)

Not applicable.

## **Competency field**

### **Competency Field**

Y - Aircraft Operation and Traffic Management