**Instructor rating**

**Aerobatics training endorsement**

#### Version 1.0

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Revision history

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# Syllabus Notes

## Overview of training course

The holder of the aerobatics training endorsement is authorised to conduct the following activities;

* + - Conduct flight training for an aerobatics endorsement (CASR 61.1175(1)) The aerobatics training endorsement is item 19 of table 61.1235 of CASR Part 61. For the purposes of this document, TE means training endorsement.

A course of training for the aerobatics TE provides training and guidance to the applicant on conducting the activities mentioned above as well as ensuring that the applicant has the requisite knowledge and skills.

An applicant for an aerobatics TE is required to demonstrate competency conducting instruction in a flight test conducted by a fight examiner to the standards in the Part 61 Manual of Standards (MOS). These standards are prescribed in the following units that are found in Schedule 2 of the Part 61MOS:

* + - NTS1 – Non-technical skills 1
    - NTS2 – Non-technical skills 2
    - FIR4 – Conduct aeronautical knowledge training and flight training
    - FIR-TE19 – Aerobatics Training Endorsement

The applicant must also demonstrate extensive knowledge of the units of competency published in the Part 61 MOS for the grant of an aerobatics endorsement – refer to subpart 61T of CASR.

The ground and flight training summary for FIR TE19 aerobatics training endorsement, assumes the applicant already holds a flight instructor rating with at least one other training endorsement. The summary addresses instructor training to deliver training for an initial aerobatics endorsement.

However, if this is the first training endorsement to be granted, the applicant will require extensive additional ground and flight training to prepare them for airborne instructional activities. Any additional training is outside the scope of this sample syllabus and reference should be made to AC 61-07 for training material that cover topics related to an initial flight instructor rating. These will include instruction addressing the content of unit FIRC preparatory to undertaking the FIR examination and the suite of FIR tutorials detailed in the annexes to AC 61-07. The applicant will also be required to be flight tested for grant of the rating

Reference to the FIR tutorials may be useful for revision purposes even if this training is not for an initial rating.

The instructor should be mindful that the applicant for this training endorsement may be the holder of a PPL.

A training record must be completed for all ground and flight training undertaken by the applicant for the aerobatics training endorsement.

A course completion certificate must be issued to the applicant by the operator when the training has been successfully completed.

The following notes provide guidance to operators on conducting training for the aerobatics training endorsement. Training in these topics should adequately prepare an applicant for the flight test for the aerobatics training endorsement. It is not exhaustive and operators may choose to include additional lessons in their syllabus. The duration will also vary depending on the aerobatic experience of the applicant; operators should be prepared to provide additional lessons.

The focus of every lesson in the syllabus is flight instructor training and uses the operator’s applicable ground or airborne training events as a blueprint for the training.

All flying for the applicant should be in the instructor control seat. It is vital that the applicant instructor is able to demonstrate competency in performing manoeuvres from the instructor control seat, particularly if the aircraft has tandem seating or restricted access to controls from that seat. Practice prior to commencing the course is recommended.

Appropriate fault analysis and intervention/recovery techniques should be included in flight training.

Consideration will need to be given to any requirement for additional resources required to complete the operation.

## Course content

* + - Aeronautical knowledge review
    - Ground training
    - Flight training (including post-flight debriefing and administration)

### Aeronautical Knowledge - Review

#### Lessons TE19-1 and TE19-2

* + - Review the applicant’s knowledge of the structure, content and context of the Part 61 licence and rating standards as they apply to training for the aerobatics endorsement.
    - Review the applicant’s underpinning knowledge described in units of competency FAE-8 and FIR-TE19.

### Ground and Flight Training - general

* + - Long brief demonstration and read back.
      * Before demonstrating a long brief, the instructor should take time to explain the context of the lesson to the trainee instructor. Discuss the actual lesson plan for the long brief, where it fits into the aerobatics syllabus and any training aids that will be used.
      * The instructor demonstration of the long brief must include the performance criteria and applicable underpinning knowledge from relevant units.
      * Encourage the trainee instructor to take notes but also participate as the student pilot would do.
      * On completion of the demonstration, summarise the stages of the lesson and allow for questions from the trainee instructor.
      * The trainee read back should be conducted after they have had the opportunity to prepare and practice. The instructor should role play a student pilot during the read back.
      * On completion of the read back, the instructor must de-brief the trainee instructor on their performance against the performance criteria.
      * Where the trainee has not achieved the required standard, the performance criteria must be covered during an additional long brief lesson.
    - Pre-flight briefing demonstration and read back.
      * Before demonstrating a pre-flight brief, the instructor should take time to explain the context of the lesson to the trainee instructor. Discuss the actual content of the pre-flight brief, and any training aids that will be used.
      * The pre-flight brief should introduce reference to elements/performance criteria from units C1 through C5, as appropriate to the lesson and NTS1 and NTS2 where applicable.
      * On completion of the demonstration, summarise the structure and delivery method of the pre-flight brief and allow for questions from the trainee instructor.
      * The trainee read back should be conducted after they have had the opportunity to prepare. The instructor should role play a student pilot during the read back. The read back should be followed by a de-brief from the instructor against the performance criteria.
    - In-flight demonstration and read back
      * Before demonstrating the in-flight lessons, the instructor should explain the sequence of the training elements and provide insight into appropriate delivery techniques. The in-flight demonstrations should be broken into logical elements with each demonstration followed by an opportunity to read back by the applicant. On completion of the in-flight lessons, the instructor should debrief the applicant against the performance criteria being cognisant that this may the first time the applicant has delivered a lesson.

### Ground Training

#### Lessons TE19-3 to TE19-5

* + - Provide an overview of the privileges, limitations and obligations of the training endorsement
    - Provide guidance on the administration requirements, including use the correct documentation, relating to the grant of the aerobatics endorsement
    - Review the principles of competency-based training and assessment
    - Provide guidance on preparing lesson plans and pre-flight briefs for aerobatics training

#### Lessons TE19-6 to TE19-7

* + - The instructor should demonstrate a long brief on the loop manoeuvre followed by a read back by the trainee instructor.
    - The instructor should consider that if this is the first time a trainee has delivered a long brief (their first training endorsement), a second opportunity to demonstrate the long brief must be scheduled if the delivery was not to the required standard.

#### Lesson TE19-8

* + - This lesson is a discussion and demonstration enabling the trainee instructor to understand the context and criteria for development of an in-flight lesson on aerobatics and the associated pre- flight briefing. The instructor should guide the trainee through the development of the lesson and brief following the theory introduced in lesson TE19-5.
    - The instructor should include general discussion and guidance to the trainee around the limitations and characteristics of different aircraft types and emphasise that the trainee must ensure they are competent (have the knowledge and skills) to conduct aerobatics training on the different types before attempting to deliver that training.

### Ground and Flight Training

#### Lesson TE19-9 – Instructor control seat familiarisation

* + - Experience shows trainee instructors require recent and competent handling skills in the instructor control seat before they are introduced to learning new skills associated with airborne instructional technique (AIT). This is best achieved during isolated training in the instructor control seat without the complication of AIT learning. One flight has been included in the training course, operators may assess an applicant as requiring more than this one flight on a case by case basis.
    - The flight should include briefings and flight covering aircraft basic, advanced and emergency handling from the instructor control seat with a focus on the aerobatic manoeuvres associated with the rating. There should be some emphasis on recognition and recovery from undesired aircraft state.

#### Lesson TE-19-10

* + - The trainee instructor will read back the pre-flight brief developed and demonstrated in lesson TE19-8.

#### Lesson TE19-11

* + - Demonstration
      * Before demonstrating the in-flight lesson, the instructor should explain the sequence of the training elements and provide insight into appropriate delivery techniques. The in-flight demonstration should be broken into logical elements emphasising the appropriate airborne instructional technique for aerobatics operations and this manoeuvre. Normal, abnormal and emergency procedures must be covered in the airex.
    - Read back
      * The trainee instructor should read back the lesson following the blueprint provided during the demonstration. On completion of the in-flight lesson, the instructor should debrief the applicant against the performance criteria being cognisant that this may the first time the applicant has delivered an in-flight lesson.

#### Lessons TE19-12 to TE19-17

* + - Long and pre-flight briefs – the trainee instructor should prepare a long brief and pre-flight brief on the particular manoeuvre and read back to the instructor. A thorough debrief is required from the instructor. If the delivery of any of the long or pre-flight briefs is not satisfactory, a second opportunity for read back should be scheduled or the instructor should demonstrate as required.
    - Air exercise – the trainee instructor should read back the pre-flight brief prior to the flight. The instructor should ensure that the pre-flight brief is aligned with the proposed in-flight demonstration. The in-flight read back should replicate the demonstrated lesson. Where the trainee performance is not satisfactory another flight should be scheduled prior to continuing to the next manoeuvre.
    - Each lesson should include a read back of selected elements from the previous manoeuvre lesson.

#### Lesson TE19-18 and TE19-19

* + - Tutorial TE19-18 should be used to guide the trainee in the common faults that a student under training for an aerobatics flight activity endorsement can make and their common root cause. The discussion should provide guidance on how to deal with the faults in relation to repeat

demonstrations and direction techniques with emphasis on ensuring the continuing safety of flight.

* + - Tutorial TE19-19 should be used to guide the trainee on the more common aircraft mismanagement occurrences in aerobatics training that result in an undesired aircraft state with emphasis on recognition and recovery from aircraft upset. Common student actions that can lead to an upset should be discussed along with early recognition and intervention techniques to manage.

#### Lesson TE19-20

* + - The trainee instructor will read back elements of previous lessons to consolidate their learning.
    - Once satisfied with the trainee instructor’s performance, the instructor should, when role playing a student, introduce common student faults to re-inforce the learning in the tutorial at lesson TE19-18.
    - The instructor must ensure the trainee instructor fully understands the importance of recognition, management and recovery from undesired aircraft states and when the recovery should be initiated. This should be demonstrated as can be done within the limitations of the aircraft. This should follow the principles discussed in the tutorial at lesson TE19-19.
    - The trainee instructor must demonstrate the correct level of aircraft handling and lesson management during their read back.
    - If the trainee instructor is unable to read back this lesson satisfactorily, further opportunity to consolidate must be provided before assessment for issue of the training endorsement.
    - On completion of the in-flight lesson, the instructor should debrief the applicant against the performance criteria.

The applicant for the aerobatics training endorsement should demonstrate flying techniques and procedures to the standard, prescribed in Appendix 8 of the Part 61 MOS, at all times during flight training sessions and be cognisant of the elements specified in units NTS1 and NTS2.

# Guidance for all training courses

This training course covers the relevant aeronautical knowledge, practical flight skills and underpinning knowledge units and elements that are prescribed in the Part 61 MOS.

Each training course should be tailored to the needs of the applicant, taking into account the applicant’s entry level competencies and knowledge and any previous training.

Appropriate recognition of prior learning and current skills should be applied to the content of the training and documented accurately in the training records.

The training course has the following components:

* ground and flight training summary
* planning matrix
* progress and achievement record
* lesson plans and training record (combined)
* course completion certificate.

### Ground and flight training summary

The summary table lists each training session with a reference, its description and the allocated time.

The summary table includes sufficient flight training to meet the requirements that would otherwise be required for the grant of the rating and endorsement in accordance with Part 61. It is a template and can be adjusted according to the entry level of the applicant and the training he or she needs to undertake to satisfy the prescribed competency standards in Schedule 2 of the Part 61 MOS.

### Planning matrix

The planning matrix sets out the order in which the units and elements of training are presented as well as the anticipated performance standards for each lesson. It is a model plan and can be adjusted according to the needs of the applicant at the time the training is being conducted.

### Achievement record

The achievement record is a record of the applicant achieving the practical flight standards prescribed for the rating and endorsement. The record should be progressively completed when the applicant has satisfactorily demonstrated competency for the unit and element on at least two occasions.

Applicants must achieve competency at performance standard 1 in each element of each unit in this achievement record. The performance criteria for the elements are prescribed in Schedule 2 of the Part 61 MOS.

The applicant may demonstrate competency using a combination of training course assessments and assessments of current competency achieved through prior training and operational experience.

The instructor conducting the training and assessments must certify that competency has been achieved by entering the details in achievement record entering their ARN, signature and the date when the applicant achieved the required competency performance standard.

### Lesson plans and training record

A lesson plan is provided for each lesson listed in the planning matrix. Each lesson plan details the aeronautical knowledge topics and relevant underpinning knowledge topics that should be covered. The lesson plans include a breakdown of the estimated time required for the long briefing and pre-flight briefing, where applicable.

The resources described in the lesson plan can be modified with suitable equivalent resources.

The underpinning knowledge topics are taken from the relevant sections of the units of competency.

The practical flight training section details the units and elements covered by the lesson that are prescribed in Schedule 2 of the Part 61 MOS. The relevant general instructor units are FIR1, 2 and 3; however, these have been consolidated into a new draft unit FIR4 that is attached at Appendix A along with unit FIR-TE19 at Appendix B. FIR-TE19 is the unit for the aerobatics training endorsement. The underpinning knowledge topics are also taken from this draft unit. Reference is also made to applicable units in Schedule 2 of the Part 61 MOS.

The lesson comments and outcomes section of the lesson plan and training record should record the performance of the trainee in the particular lesson. Where the applicant has not achieved the standard in any or all of the elements, particular note must be made of the elements or performance criteria where the applicant requires further or remedial training. Additionally, the instructor trainer must clearly indicate that the applicant can proceed to the next lesson sequence.

### Course completion certificate

A sample course completion certificate is included.

# Ground and flight training summary

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **LESSON NUMBER** | **MOS REF** | **LESSON DESCRIPTION** | **GROUND HOURS** | **DUAL HOURS** | **TOTAL PROG FLIGHT TIME** |
| **For Initial issue of Flight instructor Rating (if required)** | | | | | |
|  |  | FIRC - Principles and Methods of Instruction and Legislation | 12.0 |  |  |
|  |  | Short Theory Lessons (Aviation based - refer to course notes) | 12.0 |  |  |
| **Aeronautical Knowledge - Review** | | |  |  |  |
| TE19-1 | FIR-TE19.1; | Review - Part 61 & Part 61 MOS flight activity endorsement standards for the aerobatics flight activity endorsement | 1.2 |  |  |
| TE19-2 | FIR-TE19.3; FAE-1 | Review – Underpinning knowledge required for unit FAE-1 and FIR-TE19 | 2.0 |  |  |
| **Ground Training** | | |  |  |  |
| TE19-3 | Part 61T & FIR- TE19; | Briefing - Privileges and limitations of the aerobatic operations training endorsement. Administration procedures and responsibilities including issue of endorsements | 1.0 |  |  |
| TE19-4 | FIR-TE19.1 | Review – Knowledge of competency based training as applied to aerobatics training | 1.0 |  |  |
| TE19-5 | FIR-TE19.2; FIR- TE19.4; FAE-1 | Tutorial – Preparing lesson plans and pre-flight briefs for aerobatics training lessons | 1.0 |  |  |
| TE19-6 | FIR-TE19.2; FIR- TE19.3;FIR- TE19.4; FAE-1 | Looping manoeuvre – Long Brief - Demonstration | 1.5 |  |  |
| TE19-7 | FIR-TE19.2; FIR- TE19.3;FIR- TE19.4; FAE-1 | Looping manoeuvre – Long Brief – Read back | 1.5 |  |  |
| TE19-8 | FIR-TE19.2; FIR- TE19.4; FAE-1 | Plan an aerobatics training flight including pre-flight brief – demonstration and discussion | 1.5 |  |  |
| **Flight Training** | | |  |  |  |
| TE19-9 | FIR-TE19.6 | Conduct aircraft basic, advanced and emergency handling from instructor control seat with focus on aerobatics | 1.0 | 1.5 | 1.5 |
| TE19-10 | FIR4.3; LL-SO; FIR-TE19.2; FIR- TE19.5 | Looping manoeuvre – Pre-flight brief – read back | 1.0 |  |  |
| TE19-11 | FIR-TE19.2; FIR- TE19.5;FIR- TE19.6; FIR- TE19.7; FIR- TE19.8; FAE-1 | Conduct looping manoeuvre – pre-flight brief read back; air exercise - demonstration and read back | 1.0 | 1.0 | 2.5 |
| TE19-12 | FIR-TE19.2; FIR- TE19.3;FIR- TE19.4; FAE-1 | Rolling manoeuvre – Long Brief and pre-flight brief – Read back | 2.0 |  |  |
| TE19-13 | FIR-TE19.2; FIR- TE19.5;FIR- TE19.6; FIR- | Conduct rolling manoeuvre – pre-flight brief read back; air exercise - demonstration and read back; read back looping manoeuvre | 1.0 | 1.0 | 3.5 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **LESSON NUMBER** | **MOS REF** | **LESSON DESCRIPTION** | **GROUND HOURS** | **DUAL HOURS** | **TOTAL PROG FLIGHT TIME** |
|  | TE19.7; FIR- TE19.8; FAE-1 |  |  |  |  |
| TE19-14 | FIR-TE19.2; FIR- TE19.3;FIR- TE19.4; FAE-1 | Stall turn manoeuvre – Long Brief and pre-flight brief  – Read back | 2.0 |  |  |
| TE19-15 | FIR-TE19.2; FIR- TE19.5;FIR- TE19.6; FIR- TE19.7; FIR- TE19.8; FAE-1 | Conduct stall turn manoeuvre – pre-flight brief read back; air exercise - demonstration and read back; read back rolling manoeuvre | 1.0 | 1.0 | 4.5 |
| TE19-16 | FIR-TE19.2; FIR- TE19.3;FIR- TE19.4; FAE-1 | Stall turn manoeuvre – Long Brief and pre-flight brief  – Read back | 2.0 |  |  |
| TE19-17 | FIR-TE19.2; FIR- TE19.5;FIR- TE19.6; FIR- TE19.7; FIR- TE19.8; FAE-1 | Conduct spinning manoeuvre – pre-flight brief read back; air exercise - demonstration and read back; read back stall turn manoeuvre | 1.0 | 1.0 | 5.5 |
| TE19-18 | FIR4 | FIR Tutorial – Fault analysis and correction | 1.0 |  |  |
| TE19-19 | FIR4 | FIR Tutorial – intervention and recovery techniques | 1.0 |  |  |
| TE19-20 | FIR-TE19.2; FIR- TE19.5;FIR- TE19.6; FIR- TE19.7; FIR- TE19.8; FAE-1 | Conduct aerobatics training – read back | 1.0 | 1.0 | 6.5 |
|  |  | **Flight Test** | **2.0** | **1.0** | **7.5** |

# Progress and achievement record

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Trainee’s name** |  | | **Trainee’s ARN** |  |  |
| **Date training commenced** |  | | **Date of assessment of prior learning and current competency (if applicable)** |  |  |
| **Date of Aeronautical Knowledge Examination pass (if applicable)** | |  | **Date of Knowledge Deficiency Report assessment (if applicable)** | |  |

## Trainee progress record

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **LESSON** | **DATE** | **STD ACHIEVED?1** | **DATE2** | **\*STD ACHIEVED?** | **DATE2** | **STD ACHIEVED?1** | **FLIGHT HOURS** | **PROG HOURS** | **INSTRUCTOR ARN AND SIGNATURE** |
| TE19-1 |  |  |  |  |  |  |  |  |  |
| TE19-2 |  |  |  |  |  |  |  |  |  |
| TE19-3 |  |  |  |  |  |  |  |  |  |
| TE19-4 |  |  |  |  |  |  |  |  |  |
| TE19-5 |  |  |  |  |  |  |  |  |  |
| TE19-6 |  |  |  |  |  |  |  |  |  |
| TE19-7 |  |  |  |  |  |  |  |  |  |
| TE19-8 |  |  |  |  |  |  |  |  |  |
| TE19-9 |  |  |  |  |  |  |  |  |  |
| TE19-10 |  |  |  |  |  |  |  |  |  |
| TE19-11 |  |  |  |  |  |  |  |  |  |
| TE19-12 |  |  |  |  |  |  |  |  |  |
| TE19-13 |  |  |  |  |  |  |  |  |  |
| TE19-14 |  |  |  |  |  |  |  |  |  |
| TE19-15 |  |  |  |  |  |  |  |  |  |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **LESSON** | **DATE** | **STD ACHIEVED?1** | **DATE2** | **\*STD ACHIEVED?** | **DATE2** | **STD ACHIEVED?1** | **FLIGHT HOURS** | **PROG HOURS** | **INSTRUCTOR ARN AND SIGNATURE** |
| TE19-16 |  |  |  |  |  |  |  |  |  |
| TE19-17 |  |  |  |  |  |  |  |  |  |
| TE19-18 |  |  |  |  |  |  |  |  |  |
| TE19-19 |  |  |  |  |  |  |  |  |  |
| TE19-20 |  |  |  |  |  |  |  |  |  |

1: Indicate YES if trainee has achieved competency in accordance with the lesson plan and can progress to next lesson, indicate NO if trainee to repeat this lesson 2: Complete when trainee repeats lesson

## Trainee competency achievement record

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ELEMENT** | **DATE** | **INSTRUCTOR NAME (PRINTED)** | **INSTRUCTOR ARN** | **INSTRUCTOR’S SIGNATURE** |
| FIR-TE19.1 - Demonstrate knowledge of competency based training as applied to aerobatics endorsement training |  |  |  |  |
| FIR-TE19.2 - Demonstrate understanding of principles and methods of instruction |  |  |  |  |
| FIR-TE19.3 - Conduct aeronautical knowledge training |  |  |  |  |
| FIR-TE19.4 - Develop briefings and plan flight training |  |  |  |  |
| FIR-TE19.5 - Conduct pre-flight briefing |  |  |  |  |
| FIR-TE19.6 - Conduct airborne training |  |  |  |  |
| FIR-TE19.7 - Conduct post-flight briefing |  |  |  |  |
| FIR-TE19.8 - Complete post-training administration |  |  |  |  |

### Trainee’s confirmation

|  |  |  |  |
| --- | --- | --- | --- |
| I have received the training specified above and have been certified as competent and ready for flight test. | | | |
| **Trainee’s signature** |  | **Date** |  |

# Course completion certificate

|  |  |
| --- | --- |
| **Name of course** | Aerobatics training endorsement |
| **Training provider name** |  |
| **Training provider ARN** |  |
| **Trainee name** |  |
| **Trainee ARN** |  |
| **Date commenced training** |  |
| **Date of final assessment** |  |
| **Certification** |  |
| **Head of Operations name or approved Course Manager** |  |
| **Signature** |  |
| **Date** |  |

**Appendix A**

**Draft competency unit – FIR4**

**{Insert copy of unit from**

**Part 61 Manual of Standards Schedule 2}**

**Appendix B**

**Draft unit – Aerobatics training endorsement - FIR- TE19**

**{Insert copy of unit from**

**Part 61 Manual of Standards Schedule 2}**