

NATIONAL TEST PILOT SCHOOL




FLIGHT TEST OPERATIONS MANUAL

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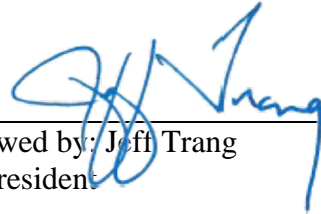
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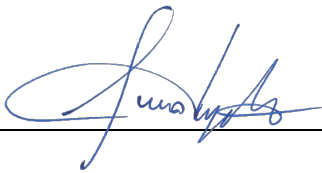
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Distribution List

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Master Copy	M:_NTPS Approved Documents	Electronic Copy
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Printed copy for “Reference Use Only”

List of acronyms

AFM	Airplane Flight Manual
ATO	Approved Training Organization
ATP	Airline Transport Pilot
CEO	Chief Executive Officer
CP	Commercial Pilot
COO	Chief Operations Officer
CFI	Certified Flight Instructor
CFR	Code of Federal Regulations
CRM	Crew Resource Management
DGPS	Differential Global Positioning System
EASA	European Aviation Safety Agency
ETPS	Empire Test Pilot School
EPNER	École du Personnel Navigant d'Essais et Réception
FAA	Federal Aviation Administration
FTE	Flight Test Engineer
FTE	Flight Test Engineer Instructors
FTOM	Flight Test Operations Manual
FTR	Flight Test Rating
FTT	Flight Test Technique
FW	Fixed Wing
LFTE	Lead Flight Test Engineer
IP	Instructor Pilot
OM	Operations Manual
OMM	Organizational Management Manual
OPA	Optionally Piloted Aircraft
OT&E	Operational & Test Evaluation
OT&EI	Operational & Test Evaluation Instructors
OT&ES	Operational & Test Evaluation Students
P&FQ	Performance and Flying Qualities
P&FQI	Performance and Flying Qualities Instructors
PIC	Pilot In Command
RFM	Rotorcraft Flight Manual
RW	Rotary Wing
SFTE	Student Flight Test Engineer
SMM	Safety Management Manual
STP	Student Test Pilot
SI	System Instructors

SP	Safety Pilot
THA	Test Hazard Analysis
TP	Test Pilot
TPI	Test Pilot Instructor
TM	Training Manual
TRB/SRB	Technical Review Board and Safety Review Board
USAFTPS	United States Air Force Test Pilot School
USNTPS	United States Naval Test Pilot School

Overview

This document covers flight test operations at the National Test Pilot School (NTPS). It is required within the scope of NTPS EASA approval as an Approved Training Organization providing flight test training. It supplements the NTPS Operations Manual by expanding on the flight test specific procedures.

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1. EXPOSITION

1.1. Purpose

This Flight Test Operations Manual (FTOM) covers flight test operations at the National Test Pilot School (NTPS).

1.2. Scope

NTPS is one of the few organizations that deliver Test Pilot (TP) and Flight Test Engineer (FTE) training. Commission regulation (EU) 2015/1039 of 30 June 2015 amending Regulation (EU) No 748/2012 (EASA Part-21) considers flight test training as a category of flight test. Within the scope of its EASA approval as an Approved Training Organization (ATO) providing flight test training, NTPS flight test activity is limited to flight test training only.

This FTOM must be complied with for all flight test training flights at NTPS that are part of an EASA approved course: Category 1, Category 2, or bridging course. For consistency, compliance with this FTOM will be sought as much as possible for other NTPS sorties.

When flight test training is performed by sub-contractors for NTPS students:

- sub-contractor compliance with the NTPS FTOM is mandatory and must be included in the contract between NTPS and the sub-contractor; or
- the sub-contractor has their own EASA-approved FTOM in compliance with EASA Part-21 and its use has been agreed and included in the contract between NTPS and the sub-contractor. In that case, the subcontractor's FTOM can be used for the subcontracted flight test training flights.

NTPS does not currently employ any EASA Category 2 Test Pilots or Test Pilot Instructors. As a result, this FTOM does not address Cat 2 individuals. In the event that Cat 2 personnel are hired by NTPS, this FTOM will be modified to encompass the appropriate procedures.

1.3. Organizational structure

NTPS organizational management structure is in the NTPS Organizational Management Manual (OMM).

1.4. Cross references

- Commission regulation (EU) 2015/1039 of 30 June 2015 amending Regulation (EU) No 748/2012, Appendix XII, Paragraph B.3.4
- NTPS Organizational Management Manual

2. RISK AND SAFETY MANAGEMENT

2.1. Purpose

The purpose of this chapter is to address NTPS hazard identification and risk management process. NTPS must ensure that the safety risks encountered in TP and FTE training are controlled in order to achieve its safety performance targets. The full NTPS hazard identification and risk management process is in the NTPS Safety Management Manual (SMM).

2.2. Cross references

- NTPS Safety Management Manual

3. CREW MEMBERS

3.1. Purpose

The purpose of this chapter is to describe NTPS policy on the composition of the crew for flight test training and the competency of its flight test crew members, including procedures for appointing crew members for each specific flight.

3.2. Scope

This paragraph defines crew composition, competency and currency for TP and FTE training within the scope of NTPS EASA approval as an ATO providing flight test training.

3.3. Crew Member Designations

The categories of crew members for NTPS operations within the scope of flight test training are the following:

- Test Pilot Instructor Cat 1 (TPI Cat1);
- Safety Pilot (SP);
- Flight Test Engineer Instructor (FTEI);
- Systems Instructor (SI);
- P&FQ Instructor (P&FQI);
- Academic Instructor;
- OT&E Instructor (OT&EI);
- Student Test Pilot (STP);
- Student Flight Test Engineer (SFTE);
- OT&E Student (OT&ES).

3.4. General definitions

3.4.1. Instructor Pilot (IP): generic term that designates a TPI Cat 1.

3.4.2. Flying instructor: generic term that designates a TPI Cat 1, FTEI, SI, P&FQI and OT&EI.

3.4.3. Pilot In Command (PIC): according to 14 CFR Part 1, Paragraph 1.1, the PIC is the pilot who:

- has final authority and responsibility for the operation and safety of the flight;
- has been designated as pilot in command before or during the flight; and
- holds the appropriate category, class, and type rating, if appropriate, for the conduct of the flight.

In the context of NTPS, in all cases this will be a TPI Cat 1 or SP.

3.4.4. FTE, when used at NTPS, means a crew member assigned for duties in an aircraft for the purpose of conducting flight tests or assisting the pilot in the operation of the aircraft and its systems during flight test activities. At NTPS, the term FTE has

the same meaning as the term Lead Flight Test Engineer (LFTE), as defined in Paragraph B.2 of Appendix XII of EASA Part-21.

- 3.4.5. Category of aircraft: means a categorization of aircraft according to specified basic characteristics. Categories of aircraft used at NTPS are airplane (or Fixed Wing, abbreviated as FW), rotorcraft (or Rotary Wing, abbreviated as RW) and glider. This definition is consistent with the definitions in both 14 CFR Part 1 and EASA Part FCL.
- 3.4.6. Class of aircraft means, with respect to FAA pilot certification, ratings, privileges and limitations, a classification of aircraft within a category having similar operating characteristics, as defined in 14 CFR Part 1 (EASA FCL.010 / GM to FCL.010 B. Definitions). The classes of aircraft used at NTPS are:
- in the airplane category: airplane single engine land, airplane multiengine land, airplane multiengine sea;
 - in the rotorcraft category: helicopter.

3.5. Test Pilot Instructor Cat 1 (TPI Cat 1)

3.5.1. TPI Cat 1 requirements

TPIs are FW or RW IPs who should comply with the following requirements:

- a. bachelor's degree (required) or Master's degree in engineering or higher (desired);
- b. be a graduate of a Category 1 course (or equivalent one year long course) as an experimental test pilot in the appropriate aircraft category from one of the SETP approved school;
- c. hold an FAA Commercial Pilot (CP) certificate or an FAA Airline Transport Pilot (ATP) certificate in the appropriate aircraft category, with the appropriate type rating, class rating and, if applicable, FAA experimental aircraft authorization, for the aircraft being operated;
- d. hold an FAA Certified Flight Instructor (CFI) certificate in the appropriate aircraft category for the class of aircraft being operated;
- e. hold, in the appropriate aircraft category, an EASA Category 1 Flight Test Rating (FTR) in compliance with FCL.820 and a current EASA Flight Test Pilot Instructor (FTPI Cat 2) rating in compliance with FCL. 905.FTPI Cat 2; or hold an FTPI Cat 2 certificate issued in compliance with FCL.900(c);
- f. have a minimum of 3 years of experience as a TP in the field of flight testing that they will be giving in-flight instruction.

3.5.2. TPI privileges

To provide flight test training in-flight instruction, NTPS TPIs must:

- be checked-out on the aircraft make and model in which flight test training instruction is to be given, in accordance with the procedures of the NTPS Operations Manual;
- comply with the currency and recent experience requirements that are in the NTPS Operations Manual;
- have received initial instruction with an NTPS IP on the specific Flight Test Technique (FTT) to be taught. NTPS Operations must track this initial instruction for all NTPS TPIs;
- have completed 50 flight hours per year, which must include 20 flight test hours in any flight test category.

3.5.3. Providing the conditions above are met, an NTPS TPI Cat 1 can instruct on any NTPS flight test training flight in the appropriate aircraft category. A TPI Cat 1 can also approve test cards for all student Data and Eval. flights, as defined in the NTPS Training Manual (TM). In case the flight test training instruction is subcontracted, the sub-contractor's TPI must comply with the sub-contractor's training and currency requirements, and NTPS must verify that these requirements and the overall sub-contracting of the instruction comply with Operational Management Manual (OMM) and the NTPS Safety Management Manual (SMM).

3.6. Safety Pilot (SP)

3.6.1. SP requirements

SPs are pilots who have a pilot certificate or license in the appropriate category, type and class delivered by the national authority under which the aircraft to be flown is registered. For SPs who are not NTPS SPs and who are employed by a sub-contractor, the SP must comply with the sub-contractor's training and currency requirements, and NTPS must verify that these requirements and the overall sub-contracting of the instruction comply with the NTPS Safety Management Manual (SMM).

3.6.2. SP privileges

SPs are used to meet the requirements of STP flights without an instructor on board the aircraft of AMC1 to EASA Part-FCL, which are defined as Data flights in the NTPS Training Manual. When flying an instruction sortie, the SP is the PIC. The STP should act as if he/she was the PIC and should not obtain any assistance from the SP except as required for safety of flight and effective Crew Resource Management (CRM). The STP should be the sole manipulator of the aircraft controls and be responsible for all aeronautical decision making involved with achieving the Data flight objectives. The SP should occupy a seat configured with adequate aircraft controls. In addition, the SP should not offer instruction and act only as a safety of flight monitor. In the event there is a safety of flight issue due to

improper flight conduct by the STP, the SP will assume control of the aircraft and execute mitigating actions. The STP's progress will be evaluated for potential remedial actions.

3.7. Flight Test Engineer Instructor (FTEI)

3.7.1. FTEI requirements

FTEI are NTPS flying instructors who should comply with the following requirements:

- a. bachelor's degree (required) or Master's degree in engineering or higher (desired); and
- b. be a graduate of one of the test pilot schools that are listed in Paragraph 3.5.1 b) above as an FTE from a one year long course; and
- c. have at least 3 years of professional experience as an FTE in the field of flight testing that they will be giving in-flight instruction; or
- d. have significant knowledge, professional experience and flight test skills as those described in point 3.7.1 a) and c).

3.7.2. FTEI privileges

To provide flight test training in-flight or control room instruction to SFTEs, an FTEI must have received initial instruction with an NTPS FTEI:

- a. on the specific FTT to be taught;
- b. where applicable, on the specific Flight Test Instrumentation (FTI) of the aircraft being flown;
- c. where applicable, on control room operation for the specific FTT to be instructed from the control room.

NTPS Operations must track this initial instruction for all NTPS FTEIs. Providing the conditions a) and b) above are met, a FTEI can instruct SFTEs on any NTPS flight test training flight. A FTEI can also approve test cards for student Data and Eval flights that are not P&FQ.

3.8. Systems Instructor (SI)

3.8.1. SI requirements

SI are NTPS flying instructors who should comply with the following requirements:

- a. bachelor's degree (required) or Master's degree in engineering or higher (desired); or

- b. be a graduate of the Systems phase or equivalent phase from one of the test pilot schools that are listed in Paragraph 3.5.1 b); and
- c. have at least 3 years or professional experience in a specialist field of systems flight testing that they will be giving in-flight instruction; or
- d. have significant knowledge, professional experience and flight test skills as those described in point 3.8.1 a) and c) above.

3.8.2. SI privileges

To provide flight test training in-flight or control room instruction to SFTEs, a SI must have received initial instruction with an NTPS FTEI or SI:

- a. on the specific FTT to be taught;
- b. where applicable, on the specific system of the aircraft being flown;
- c. where applicable, on control room operation for the specific FTT to be instructed from the control room.

3.8.3. NTPS Operations must track this initial instruction for all NTPS SIs. Providing the conditions a) and b) above are met, a SI can instruct SFTEs on any NTPS systems flight test training flight. A SI can approve test cards for systems student Data and Eval flights.

3.9. P&FQ Instructor (P&FQI)

3.9.1. P&FQI requirements

P&FQIs are NTPS flying instructors who should comply with the following requirements:

- a. bachelor's degree (required) or Master's degree in engineering or higher (desired); or
- b. be a graduate of the P&FQ phase or equivalent phase from one of the test pilot schools that are listed in Paragraph 3.5.1 b); and
- c. have at least 3 years of professional experience in a specialist field of systems flight testing that they will be giving in-flight instruction; or
- d. have significant knowledge, professional experience and flight test skills as those described in point 3.9.1 a) and c) above;
- e. P&FQI privileges;
- f. to provide flight test training in-flight or control room instruction to SFTEs, a P&FQI must have received initial instruction with an NTPS FTEI or P&FQIs;
- g. on the specific FTT to be taught;
- h. where applicable, on the specific system Flight Test Instrumentation (FTI) of the aircraft being flown;

- i. where applicable, on control room operation for the specific FTT to be instructed from the control room.
- 3.9.2. NTPS Operations s track this initial instruction for all NTPS P&FQIs. Providing the conditions, a) and b) above are met, a P&FQI can instruct SFTEs on any NTPS systems flight test training flight. A P&FQI can approve test cards for P&FQ student Data and Eval flights.

3.10. Academic Instructor

3.10.1. Academic Instructor requirements

Academic Instructors are NTPS flying instructors who should comply with the following requirements:

- a. bachelor's degree (required) or Master's degree in engineering or higher (desired); or
- b. have at least 3 years of professional experience in a specialist field that they will be giving instruction.

3.10.2. NTPS Operations tracks this initial instruction for all NTPS Academic Instructor.

3.11. OT&E Instructor (OT&EI)

3.11.1. OT&EI requirements

OT&EIs are NTPS flying instructors who should comply with the following requirements:

- a. received an OT&E training; and
- b. hold a master's degree in a related field of instruction;
- c. have a significant professional experience in a specialist field of OT&E flight testing that they will be giving in-flight instruction;
- d. have significant knowledge and professional experience as those described in point 3.10.1 a) and c) above.

3.11.2. OT&EI privileges

To provide flight test training in-flight instruction to OT&ES, an OT&EI must have received initial instruction with an NTPS TPI Cat 1 or OT&EI:

- a. on the specific FTT to be taught;
- b. where applicable, on the specific system of the aircraft being flown;

NTPS Operations must track this initial instruction for all NTPS OT&EIs. Providing the conditions a) and b) above are met, an OT&EI can instruct OT&ES on any NTPS OT&E flight test training flight. An OT&EI can approve test cards for OT&E student Data and Eval flights.

3.12. Student Test Pilots and Student Flight Test Engineers

STP and SFTE act as crew members being instructed during Familiarization and Demo flight test training instruction flights. They act as if they were without an IP on board during Data and evaluation flights. The IP Cat 1 or the SP, where applicable, is always the PIC. Familiarization, Demo, Data and Evaluation flight test training flights are defined in Annex A of the NTPS Training Manual.

3.13. Graduate Assistants

Graduate Assistants are NTPS employees; their status is defined in NTPS policy. They follow Category 1 or Category 2 course modules as SFTEs. They may also be employed as FTEs on post-maintenance and instrumentation check flights, or on flights and control room operations in accordance with an approved test plan authorized by the NTPS Chief Operations Officer (COO) taking into account:

- the complexity of the flight;
- the risk level of the flight;
- the experience and skills of the Graduate Assistant.

3.14. Crew member designation for flights

NTPS operations appoint crew members for each specific flight, following the scheduling process that is in the NTPS Operations Manual. This appointment takes into account all the requirements of Chapter 3 of this FTOM and the approved course syllabus of the NTPS Training Manual.

All flights performed within the scope of an EASA approved course are considered Category 1 flight tests. As such, and with the exception of flights without an instructor on board, they must be performed by TPIs Cat 1 only.

Before the flight, the PIC initials the applicable line of the daily schedule in Operations. This means that the PIC agrees that the crew composition is adequate and meets the requirements of this FTOM for the flight to be flown.

3.15. Flight time limitations

Sortie number and duration limitations for NTPS flying instructors and students are in the NTPS Operations Manual.

3.16. Record keeping

Flying instructor records are kept by NTPS Operations in accordance with:

- NTPS Operations Manual;

- a current list of flying instructors taking part in NTPS flight test training instruction flights along with their qualifications is in Annex A of this FTOM. This list will be updated anytime a change occurs and does not constitute a substantive change to the FTOM requiring EASA review.

3.17. Cross references

- Commission regulation (EU) 2015/1039 of 30 June 2015 amending Regulation (EU) No 748/2012, Appendix XII, Paragraph B.2
- Code of Federal Regulations, Chapter 14, Part 1
- Commission Regulation (EU) No 1178/2011 of 3 November 2011 laying down technical requirements and administrative procedures related to civil aviation aircrew pursuant to Regulation (EC) No 216/2008 of the European Parliament and of the Council
- NTPS Policy Manual
- NTPS Operations Manual
- NTPS Training Manual
- NTPS Safety Management Manual

4. CARRIAGE OF PERSONS OTHER THAN CREW MEMBERS

4.1. Purpose

This Paragraph defines the conditions to carry persons other than crew members during TP and FTE training at NTPS.

4.2. Scope

The scope of this Paragraph is all flight test training flights at NTPS that are part of an EASA approved course.

4.3. Carriage of persons

No person other than crew members is allowed on board during flight test training flights that are part of an EASA approved course. An exception is EASA delegated inspectors in the execution of an EASA sanctioned audit for the purpose of monitoring the student flight.

5. INSTRUMENTATION AND EQUIPMENT

5.1. Purpose

This Paragraph defines the instruments and equipment that are required during Test Pilot (TP) and Flight Test Engineer (FTE) training at NTPS.

5.2. Scope

5.2.1. This paragraph addresses the following points:

- standard aircraft airworthiness;
- experimental aircraft airworthiness;
- Partial Flight Manual;
- Flight Test Instrumentation;
- chase aircraft;
- control room operations;
- Optionally Piloted Aircraft (OPA) operations.

5.3. Standard aircraft airworthiness

For TP and FTE training NTPS utilizes some aircraft that have a FAA standard airworthiness certificate. These are production aircraft that comply with 14 CFR 21.183 and must be operated in compliance with 14 CFR 91.203 and 91.205. For these aircraft, a Partial Flight Manual may be established, that only includes points in Paragraph 5.4.2.5, 5.4.2.6 and 5.4.2.7 of this FTOM.

5.4. Experimental aircraft airworthiness

5.4.1. General

For TP and FTE training NTPS utilizes some aircraft that have a FAA experimental airworthiness certificate. These are non-standard aircraft that comply with 14 CFR 21.191. They are generally based on a standard airframe that either is not fully production representative or has been modified. They must be operated in accordance with:

- 14 CFR 91.319, and
- the current FAA Letter of Deviation Authority (LODA), and
- the FAA experimental aircraft operating limitations that are attached to the aircraft's Special Airworthiness Certificate.

5.4.2. Partial Flight Manual

For all NTPS aircraft that have an FAA experimental airworthiness certificate, a Partial Flight Manual must be established. The Partial Flight Manual must contain the following information:

- a. precise version of the standard airframe on which the experimental aircraft is based;
- b. description of the modifications to the standard airframe on which the experimental aircraft is based;
- c. description of the normal procedures that differ from the those of the standard airframe on which the experimental aircraft is based;
- d. description of the abnormal and emergency procedures that differ from the those of the standard airframe on which the experimental aircraft is based;
- e. instrument calibration;
- f. weight and balance data;
- g. a copy of the FAA Airworthiness Certificate;
- h. a copy of the Experimental Aircraft Operating Limitations;
- i. if applicable, description of the permanent Flight Test Instrumentation, including its normal operating procedures, abnormal and emergency procedures, limitations and specific hazard identification and safety risk management.

5.5. Flight Test Instrumentation (FTI)

5.5.1. General

Appropriate FTI to meet instructional objectives will be determined by the Chief Academic Officer. This FTI will be specified by curriculum event and annotated in the Training Manual. NTPS Operations will monitor the status of Permanent FTI utilizing the discrepancy records located in the aircraft log books which are utilized to identify and track corrective actions by maintenance.

5.5.2. Permanent Flight Test Instrumentation

Permanent Flight Test Instrumentation is FTI that is permanently installed on an aircraft. Depending on the conditions of the modification, the aircraft will be operated under a Standard or Special Airworthiness Certificate. In either case, the aircraft Partial Flight Manual must describe the Permanent FTI characteristics listed in Paragraph 5.4.2.i) of this FTOM.

5.5.3. Temporary Flight Test Instrumentation

Temporary Flight Test Instrumentation may be installed on any NTPS aircraft for some specific flights. These include:

- a Differential Global Positioning System (DGPS);
- GoPro video camera;
- Stand Alone Instrumentation System

Installation of the Temporary FTI listed above must follow the procedure described in the Operations Manual which is available in NTPS Operations. Installation of

measurement devices as such control displacement marks or a yaw string on the windshield are also authorized, providing these devices do not add any hardware other than tape placed on the aircraft structure and the yaw string. In all other cases, the Temporary FTI must follow the hazard identification and safety risk management process that is in the NTPS SMM.

5.6. Chase aircraft

Chase aircraft are used at NTPS within the scope of TP and FTE training, as such an asset may be used in actual testing (spins, first flight, etc.). For of TP and FTE training at NTPS, the chase aircraft is a training asset and is not a requirement for safety of flight. Only TPIs who received the training that is in Paragraph 3.5 of this FTOM can instruct on chase sorties. Any training sortie that uses a chase aircraft must have a dedicated Test Hazard Analysis (THA) worksheet to address the sortie's specific safety risk management. Areas to consider for chase aircraft sorties safety risk management include, but are not limited to:

- TPI overall experience and recent experience in flying formation;
- STP overall experience and recent experience in flying formation;
- TPI overall experience and recent experience on the specific make and model of aircraft being flown and on the specific make and model of aircraft being chased;
- TPI overall experience and recent experience on the specific FTT that is flown by the aircraft being chased;
- aircrew responsibilities within the flight and within each aircraft;
- minimum clearance between aircraft;
- flight join up procedures;
- flight separation procedures;
- radio procedures;
- loss of communication procedures;
- visual signal procedures;
- procedure to apply so as to ensure aircraft separation in case visual is lost;
- abnormal and emergency procedures;
- consult the Operations Manual for Chase aircraft operations and Formation Procedure.

5.7. Control room operations

Control room is used at NTPS within the scope of TP and FTE training. In that case, the control room is a training asset and is not a requirement for safety of flight.

5.8. Optionally Piloted Aircraft (OPA) operations

OPA operations are addressed in the NTPS Operations Manual.

5.9. Cross references

- Code of Federal Regulations, Chapter 14, Part 21, Paragraphs 21.183 and 21.191
- Code of Federal Regulations, Chapter 14, Part 91, Paragraphs 91.203, 91.205 and 91.319
- FAA Letter of Deviation Authority (LODA) for NTPS
- NTPS Safety Management Manual
- NTPS Operations Manual

6. DOCUMENTS

6.1. Purpose

This Paragraph defines the documents that are required for a flight within the scope of TP and FTE training at NTPS.

6.2. Scope

This section contains the following points:

- FAA regulatory documents;
- NTPS Operations documents;
- flight test specific documents.

6.3. FAA regulatory documents

Before any flight, the PIC must verify that the following documents are available on board:

- the appropriate and current airworthiness certificate, as per 14 CFR 91.203 (a)(1);
- the effective U.S. registration certificate as per 14 CFR 91.203 (a)(2);
- the Airplane Flight Manual (AFM) or Rotorcraft Flight Manual (RFM) as per 14 CFR 91.9 (b). Note that for aircraft equipped with advanced avionics, the AFM or RFM mandates that the avionics manual must be available to the pilot in the aircraft as well
- the weight and balance information for the flight, as per 14 CFR 91.9 (a). A print of the appropriate aircraft weight and balance Excel spreadsheet, which can be found on the NTPS M drive at M\Data\Library\Aircraft Data\CG's, containing the appropriate loading and that has been verified by the PIC, is an acceptable way to comply;
- the current pilot certificate, the medical certificate and a photo identification of the PIC, as per 14 CFR 61.3. In case of multi-pilot aircraft, this also applies to the copilot.

6.4. Daily schedule in NTPS Operations

Before the flight, the PIC initials the applicable line of the daily schedule in NTPS Operations. This means that the PIC:

- agrees that the crew composition is adequate and meets the requirements of this FTOM for the flight to be flown;
- will use the NTPS standard test cards or has approved the test cards for the flight to be flown, as described in Paragraph 6.5 below.

6.5. Flight test specific documents

6.5.1. General

The flight test specific documents for TP and FTE training at NTPS are:

- the test cards;
- the test plan.

6.5.2. Test cards

For the purposes of an EASA Flight Order, the combination of the NTPS Daily Schedule and Test Cards fulfill this requirement. The following elements are contained in this combination:

- a. a list of the tests to be performed and associated conditions;
- b. safety considerations relevant to the flight;
- c. category of the flight (e.g. Category 1);
- d. composition of the crew;
- e. names of persons other than crew members;
- f. aircraft configuration items relevant to the test to be highlighted to the crew;
- g. loading of the aircraft;
- h. reference to approved flight conditions; and
- i. restrictions relevant to the flight to be highlighted to the crew.

For each sortie performed in TP and FTE training at NTPS, it is mandatory to have approved test cards. There are two cases for the approval of test cards:

- Fam and Demo sorties;
- Data and Eval sorties.

Fam, Demo, Data and Eval sorties are defined in the NTPS Training Manual.

6.5.3. Fam and Demo sorties

For these sorties, the test cards are available:

- a. for the Fam sorties in the NTPS Training Manual, Appendix A, and in NTPS server in a protected folder
M:\Library\Aircraft Data\Familiarization Cards
- b. for Demo sorties in the NTPS server in a protected folder
M:\Courses\Professional\Handbook\Vol. 10 Flight Test Techniques\2 - Excel Data Cards\Current Excel Data Card.

The test cards described above are approved and must be used for these sorties. There is no requirement to leave a set of test cards in Operations prior to the flight, as the NTPS Operations Daily Schedule mentions the type of Demo sortie and the test cards referenced above are known and unique to this flight.

6.5.4. Data and Eval sorties

For these sorties, the test cards and relevant THAs are designed by the STP and SFTE as part of their training. A Data Card Review (DCR) is scheduled at the latest the day before the flight, during which both the sortie's test cards and THAs must be approved by a TPI. As far as practicable, NTPS Operations will ensure that the IP who conducted the DCR and approved the test cards is the IP flying with the students. If the students are flying with a Safety Pilot for an Eval sortie, the Safety Pilot must either attend the DCR or, prior to the flight, review the test cards with the accompanying NTPS IP who conducted the DCR.

A copy of the last update of the test cards must be left in NTPS Operations before the flight. If the flight is not conducted from Mojave, a copy of the last update of the test cards must be kept by the accompanying IP in a secure location.

6.5.5. Test plans

For TP and FTE training at NTPS, a test plan is required only if specified in the students' assignment for the specific exercise, this is generally the case for major exercises, such as the capstone project. The test plan is developed by the STP and SFTE as part of their training; it must include test cards for all the exercise's flights and relevant THAs. A Technical Review Board and Safety Review Board (TRB/SRB) should be scheduled at least the day before the first flight of the exercise, during which the test plan must be approved by a TPI. In extreme circumstances, the Head of Training can authorize a deviation. The following factors need to be considered before authorizing the deviations:

- Reasons of the request;
- Type of lights
- Impact on the syllabus.

A copy of the last update of the test plan must be left in NTPS Operations before the flight. If the flight is not conducted from Mojave, a copy of the last update of the test plan must be kept by the accompanying IP in a secure location.

6.6. Cross references

- Code of Federal Regulations, Chapter 14, Part 91, Paragraphs 91.9 and 91.203
- Code of Federal Regulations, Chapter 14, Part 61, Paragraph 61.3
- NTPS Training Manual
- NTPS Handbook, Volume 10, Flight Test Techniques

7. PERMIT TO FLY

Not applicable to EASA. All NTPS aircraft are operated utilizing a Standard FAA Airworthiness Certificate. Some aircraft are operated with a FAA issued Special Airworthiness Certificate and Experimental Authorization. See paragraph 5.4.

8. CURRENCY AND TRAINING

8.1. Purpose

This Paragraph defines the currency and training requirements for NTPS IPs.

8.2. Scope

The scope of this Paragraph is to define or reference the NTPS IPs currency and training requirements for all flight test training flights at NTPS that are part of an EASA approved course.

8.3. Currency requirements

8.3.1. General currency requirements

The general currency and recent experience requirements for all NTPS IPs are in the NTPS Operations Manual.

8.3.2. Specific module currency requirements

When planning any of the modules that are in the Training Manual, Chapter 1, the NTPS flying instructor who has been designated as course coordinator must provide to NTPS Operations the currency flights that are required for that module. These currency flights should be designed for flying instructors instructing in that module to regain proficiency and recent experience on specific FTTs. The need for currency flights should be based on:

- the complexity of the FTT to be taught;
- the risk level of the FTT;
- the experience of the instructor in both the FTT to be taught and the make and model of aircraft used;
- Low Margin For Error Sorties.

Sorties for which an error could have critical consequences are called Low Margin For Error Sorties. They must be identified using the risk management that is in the NTPS SMM, Chapter 6. For such sorties, the risk is mitigated by adopting exercise-specific training and/or recency of experience. Currency on training sorties that possess a low margin for error is defined in OM. Recovery from common student errors must be emphasized in practice.

The Fixed Wing Low Margin For Error Sorties are:

- a. Ground Course, GPS PEC & Tower Flyby;
- b. Chase (pace and spins);
- c. Engine Out Drag Polar;
- d. Engine Out (Vmca);
- e. Stall Characteristics;
- f. All Spins;

- g. High Speed Taxi;
- h. Icing Effects;
- i. TAWS Systems;
- j. NVG.

The Rotary Wing Low Margin for Error Sorties are:

- a. H-V Diagram;
- b. NVG;
- c. Trailing Bomb;
- d. Tethered Hover;
- e. Autorotation.

8.4. Training requirements

8.4.1. General training requirements

The general training requirements for all NTPS IPs are in the NTPS Operations Manual.

8.4.2. Test Pilot/FTE training requirements

NTPS flying instructors must meet the specific requirements on this FTOM, which can be found:

- in Paragraph 3.5 for TPIs;
- in Paragraph 3.7 for FTEIs.

8.4.3. Specific Training Requirements

NTPS Instructors will be trained to proficiency in all specific FTTs prior to the conduct of student training. This training will be completed as directed by the CFTI in the same category and class aircraft as the intended training. Training activities are documented on a grade sheet which, following completion, is filed in the instructor's Training Folder located in Operations.

8.5. Cross references

- NTPS Operations Manual
- Training Manual

REFERENCES

- Commission regulation (EU) 2015/1039 of 30 June 2015 amending Regulation (EU) No 748/2012, Appendix XII, Paragraph B.3.4. Commission regulation (EU) 2015/1039 of 30 June 2015 amending Regulation (EU) No 748/2012, Appendix XII, Paragraph B.2 Commission Regulation (EU) No 1178/2011 of 3 November 2011 laying down technical requirements and administrative procedures related to civil aviation aircrew pursuant to Regulation (EC) No 216/2008 of the European Parliament and of the Council.
- Code of Federal Regulations, Chapter 14, Part 1.
- Code of Federal Regulations, Chapter 14, Part 21, Paragraphs 21.183 and 21.191.
- Code of Federal Regulations, Chapter 14, Part 61, Paragraph 61.3.
- Code of Federal Regulations, Chapter 14, Part 91, Paragraphs 91.9 and 91.203, 91.205 and 91.319.
- NTPS Policy Manual.
- NTPS Organizational Management Manual.
- NTPS Safety Management Manual.
- NTPS Operations Manual.
- NTPS Training Manual.
- NTPS Handbook, Volume X, Flight Test Techniques.
- FAA Letter of Deviation Authority (LODA) for NTPS.

ANNEX A - FLIGHT DATA CARD DEVELOPMENT

For EASA purposes, the Flight Order consists of the Flight Data Cards combined with the NTPS Daily Schedule. The terminology Flight Data Card, Test Card and Data Card are used interchangeably.

NOTE

If the Data Card is not standard as presented in Handbook Volume 10, then it must be approved and a copy will be placed in the box at the operations desk prior to flight.

Data Card Development Checklist

All items must be included in the card “deck”. Items applicable to all cards EXCEPT FOR SAFETY MITIGATION PROCEDURES may be included in a Cover Sheet/Dance Card. Flight Test Card Decks will contain as a minimum:

- Personnel:
 - Crew Members Cover Sheet
 - Non-crew members Cover Sheet
- Aircraft Loading Cover Sheet
- Flight Conditions Cover Sheet and/or Data Card
- Procedures to be Performed Test and associated procedures.
- Test Conditions with Tolerance Criteria
- Safety Considerations
 - Knock-it-off criteria, recovery altitudes, recovery procedures, etc.
- Aircraft Configuration
- Restrictions Relevant to the Flight.
 - Applicable Aircraft Limits, GHA/THA limitations.

Test Card Validation Test:

- Are ALL Test Cards page numbered?
- Does the Test Card sequence follow a logical and efficient flow?
- Is the Test Card legible?
 - o Are font sizes appropriate?

- Is a sans-serif font used?
- Is ALL CAPS over-utilized?
- ☐ Is the card crowded?
 - Is there adequate space for the recording of data?
 - Is the Test Card order presented in a logical sequence?
- ☐ Are all test procedures:
 - Technically correct?
 - In the correct order?
 - Numbered for reference?
 - Organized for one action per line?
 - Unambiguous?