Australian Government
Civil Aviation Safety Authority

ADVISORY CIRCULAR
AC 119-12 v2.0

Human factors principles and non-technical skills training and assessment for air transport operations

Date	March 2026
Project number	OS 99/43
File ref	D21/26005

Advisory Circulars are intended to provide advice and guidance to illustrate a means, but not necessarily the only means, of complying with the Regulations, or to explain certain regulatory requirements by providing informative, interpretative and explanatory material.

Advisory Circulars are to be read in conjunction with the relevant regulations.

Audience

This advisory circular (AC) applies to:

- air operator's certificate holders that are subject to the conditions of Part 119 of CASR
- flight crew
- air crew
- cabin crew
- operational safety-critical personnel.

A reader is not necessarily required to completely read this AC; they may choose to refer to specific sections when developing their own program. Using the example programs described within the appendices will assist an operator to develop their own program.

Purpose

CASA recognises that this AC will apply to operators with widely differing capabilities. This AC provides advice in the form of guidance material (GM) and, where relevant, suggests an acceptable means of compliance (AMC) with Part 119 of the *Civil Aviation Safety Regulations 1998* (CASR) pertaining to the requirement for human factors and non-technical skills (HF and NTS) training programs. The intention is to translate the regulatory requirements into language that is easily understood and, where necessary, expand the information to ensure the intent of the legislation is clear. Any AMC outlined will allow an air operators certificate (AOC) holder to satisfy CASA of the regulatory requirement if they choose to use and follow the AMC material; however, they may also propose alternative means of compliance to the AMC if they so desire. This alternative means will need to be assessed and found acceptable for the purpose by CASA.

For further information

For further information, contact CASA's Flight Standards Branch (telephone 131 757).

Unless specified otherwise, all subregulations, regulations, divisions, subparts and parts referenced in this AC are references to the *Civil Aviation Safety Regulations 1998 (CASR)*.

Status

This version of the AC is approved by the Manager, Flight Standards Branch.

Version	Date	Details
v2.0	March 2026	Major revision - please read document in its entirety.
v1.0	November 2020	This AC replaces AC SMS-3(1) - Non-technical skills training and assessment for regular public transport operations. to AC 119-12 Human factors principles and non-technical skills training and assessment for air transport operations

Contents

1   Reference material

1.1   Acronyms

The acronyms and abbreviations used in this AC are listed in the table below.

Acronym	Description
AC	advisory circular
AOC	Air operator's certificate
CASA	Civil Aviation Safety Authority
CASR	*Civil Aviation Safety Regulations 1998*
CRM	crew resource management
FOQA	flight operations quality assurance
HF	human factors
HF/NTS TAP	human factors and non-technical skills training and assessment program
HP	human performance
ICAO	International Civil Aviation Organization
LOSA	line operations safety audit
NTS	non-technical skills
SMS	safety management system

1.2   Definitions

Terms that have specific meaning within this AC are defined in the table below. Where definitions from the civil aviation legislation have been reproduced for ease of reference, these are identified by 'grey shading'. If there be a discrepancy between a definition given in this AC and the civil aviation legislation, the definition in the legislation prevails.

Term	Definition
assessment	The process of observing, recording, and interpreting individual knowledge and performance against a required standard.
air crew member	A crew member for a flight of an aircraft (other than a flight crew member) who carries out a function during the flight relating to the safety of the operation of the aircraft, or the safety of the use of the aircraft.
behavioural marker	A single non-technical skill or competency within a work environment that contributes to effective or ineffective performance.
behavioural marker	An organised set of competency descriptors, collectively representing the

Term	Definition
system	domain of non-technical skills required for successful performance in a specified role.
cabin crew member	A crew member who performs, in the interests of the safety of an aircraft's passengers, duties assigned by the operator or the pilot in command of the aircraft but is not a flight crew member.
cognitive task analysis	An analysis applied to cognitive aspects of human–machine interaction that are not directly observable. Through this type of analysis insight into the knowledge representations, thought processes, mental strategies, and goal structures that underlie task performance are possible.
competency	A combination of skills, knowledge and attitudes required to perform a task to a prescribed standard.
crew resource management (CRM)	A team training and operational philosophy with the objective of ensuring the effective use of all available resources to achieve safe and efficient flight operations.
facilitator	A person who enables learning in a student-centred environment by guiding participants through discussions, interactions, structured exercises and experiences.
flight crew member	A crew member who is a pilot or flight engineer assigned to carry out duties essential to the operation of an aircraft during flight time.
flight dispatcher	for an Australian air transport operator, means a person designated by the operator to control and supervise flight operations, including supporting, briefing and assisting pilots in command in the safe conduct of flights. **Note:** A flight dispatcher is also known as a flight operations officer.
human factors (HF)	The minimisation of human error and its consequences by optimising the relationships within systems between people, activities and equipment.
human factors principles	means principles concerned with the minimisation of human error and its consequences by optimising the relationships within systems between people, activities and equipment.
human performance (HP)	Refers to how people perform their tasks, represents the human contribution to system performance.
learning outcome	An objective action that a student demonstrates as a result of learning. A learning outcome can be a demonstration of knowledge, a skill, or an attitude. Generally, learning outcomes are assessed at the course and/or program levels.
line-oriented flight training (LOFT)	Refers to aircrew training which involves a full mission simulation of situations which are representative of line operations, with special emphasis on situations which involve communications, management and leadership.
line operations safety audit (LOSA)	A behavioural observation data gathering technique, which aims to capture data on the performance of flight crews during normal operations.
medical transport specialist	means: a. a crew member for a flight who carries out a specified function during the flight relating to a medical transport operation, and who is

Term	Definition

	not:
	  i a flight crew member for the flight; or
	  ii an air crew member for the flight; or
	  b. a crew member, for a flight, of a kind prescribed by the Part 119 Manual of Standards for the purposes of this paragraph.
	
	Note: At the time of publishing v3.0 of this AC, no crew members were prescribed in the Part 119 Manual of Standards for paragraph (b) of this definition.

non-technical skills (NTS)	The mental, social, and personal-management abilities that complement the technical skills of workers and contribute to safe and effective performance in complex work systems. They are specific human factors competencies such as critical decision-making, workload management, team communication, situation awareness, and stress management, which may minimise human error in complex systems.

operational safety-critical personnel	for an Australian air transport operator, an aerial work operator or a balloon transport operator:
	  a. means personnel carrying out, or responsible for, safety-related work, including:
	    i personnel carrying out roles that have direct contact with the physical operation of aeroplanes, rotorcraft or Part 131 aircraft used in the operator's Australian air transport operations, aerial work operations or balloon transport operations; and
	    ii personnel carrying out roles that have operational contact with personnel who operate aeroplanes, rotorcraft or Part 131 aircraft used in those operations; and
	    iii personnel described as operational safety-critical personnel in the operator's exposition or operations manual; but
	  b. (b) does not include personnel who are employed or engaged by the operator (whether by contract or other arrangement) and are engaged in:
	    i the provision of continuing airworthiness management services for aeroplanes, rotorcraft or Part 131 aircraft used in the operator's Australian air transport operations, aerial work operations or balloon transport operations; or
	    ii carrying out maintenance on an aeroplane, rotorcraft, Part 131 aircraft or aeronautical product on behalf of an approved maintenance organisation.

safety culture	People's values, attitudes, beliefs and behaviours relating to safety. Organisations with a positive safety culture are characterised by a genuine commitment, by communications founded on mutual trust, by shared perceptions of the importance of safety, and by confidence in the efficacy of preventive measures.
safety management system (SMS)	A systematic approach to managing safety, including the necessary organisational structures, accountabilities, policies and procedures.
safety-related work	Any task or role that has the potential to influence the safe conduct of aviation operations, through error identification, error mitigation, and/or responses to emergency situations. Aviation occupations engaged in safety-related work

Term	Definition
	would include flight crew, cabin crew, aircraft and crew dispatchers, load control staff, and planning and management roles, such as safety management and flight operations.
task analysis	The analysis of how a task is accomplished, including a detailed description of both manual and mental activities, task duration, frequency, allocation, complexity, environmental conditions, necessary clothing and equipment, and any other unique factors involved in or required for one or more people to perform a given task. Information from a task analysis is used for purposes such as personnel selection and training, the design of tools, equipment and automated systems, and the refinement of procedures such as checklists and decision support processes.
training	The process of bringing a person to an agreed standard of proficiency by practice and instruction.
training needs analysis	The identification of training needs at employee, departmental, or organisational level, in order for the organisation to perform effectively.

1.3   References

Legislation

Legislation is available on the Federal Register of Legislation website https://www.legislation.gov.au/

Document	Title
CASA EX73/24	Flight Operations Regulations – SMS, HFP&NTS and T&C Systems – Supplementary Exemptions and Directions Instrument 2024
	Note: This instrument replaced *CASA EX87/21 Flight Operations Regulations – SMS, HFP&NTS and T&C Systems – Supplementary Exemptions and Directions Instrument 2021* from 2 December 2024.
CASR dictionary	**Note:** The CASR dictionary is in Volume 5 of the CASR.
Part 61 of CASR	Flight crew licensing
Part 119 of CASR	Australian air transport operators - certification and management
Part 121 of CASR	Australian air transport operations - larger aeroplanes
Part 133 of CASR	Australian air transport operations - rotorcraft
Part 135 of CASR	Australian air transport operations - smaller aeroplanes
Regulation 119.175 of CASR	Program for training and assessment in human factors principles and non-technical skills
Regulation 119.180 of CASR	Training in human factors principles and non-technical skills for flight crew etc
	Note: This regulation contains specific requirements for 5 particular types of operational safety-critical personnel: flight crew members, cabin crew

Document	Title
	members, air crew members, medical transport specialists and flight dispatchers.
Regulation 119.185 of CASR	Training in human factors principles and non-technical skills for other operational safety-critical personnel
	Note: This regulation contains specific requirements for all other operator operational safety-critical personnel not included in the scope of regulation 119.180.

Advisory material

CASA's advisory materials are available at https://www.casa.gov.au/resources-and-education/publications-and-resources/guidance-material

Document	Title
AC 1-02	Guide to the development of expositions and operations manuals
AC 61-08	Teaching and assessing non-technical skills for single-pilot operations
AC 61-09	Competency-based training and assessment for flight crew
AC 61-16	Spin avoidance and stall recovery training
AC 119-01	Safety management systems for air transport operations
AMC/GM Part 119	Acceptable means of compliance and guidance material - Australian air transport operators—certification and management
CASA HF/NTS resource kit	Safety Behaviours: Human Factors for Pilots

Other material

International Civil Aviation Organization (ICAO) documents are available for purchase from http://store1.icao.int/

Document	Title
ICAO Annex 6 Part I	Operation of Aircraft - International Commercial Air Transport — Aeroplanes
ICAO Annex 6 Part III Section II	Operation of Aircraft - International Commercial Air Transport — Helicopters
ICAO Annex 19	Safety Management
ICAO Doc 9683	Human Factors Training Manual
ICAO Doc 9859	Safety Management Manual
ICAO Doc 9870	Manual on the Prevention of Runway Incursions
ICAO Doc 10002	Cabin Crew Safety Training Manual
ICAO Doc 10151	Manual on Human Performance for Regulators

2 Background information

2.1 Scope and structure of this AC

2.1.1 This AC provides guidance for operators when developing a human factors principles and non-technical skills training and assessment program (HF/NTS TAP) by discussing the following matters:

- underlying principles
- development of content
- implementing a program
- evaluating program effectiveness.

2.1.2 The AC is structured as follows:

- sections 1 to 4 contain broad information relevant to all HF/NTS TAP
- sections 5 to 8 discuss in detail the elements of an HF/NTS TAP
- Appendix A provides the following 3 examples of HF/NTS TAPs for a combined Part 133 and Part 135 operator with 10 or less operational safety-critical personnel:
  - o content developed and delivered using a named external HF/NTS training provider
  - o content developed and delivered using an un-named external HF/NTS training provider (for example, the operator might chose to change providers and prefer not to change their exposition when this occurs)
  - o supervised self-learning using CASA's Safety behaviours: Human factors for pilots resource kit, supported by an instructor or third-party provider as required
- Appendix B provides an example of a self-developed HF/NTS TAP for a small airline of 70 operational safety-critical personnel.

Operators may use the sample text in the appendices and tailor it to meet their HF/NTS TAP requirements.

2.2 Safety purpose

2.2.1 For individuals and teams to perform effectively in safety-critical environments, they must be proficient in technical skills (such as manipulation of aircraft controls, arming aircraft doors, marshalling, loading baggage, refuelling), and non-technical skills (such as communication, decision making, maintaining situational awareness and managing stress).

2.2.2 ICAO and leading aviation safety organisations have identified 'system' related activities as the greatest contributor to improved aviation safety. This includes safety management systems (SMS), human factors (HF) and 'data-driven oversight'.

2.2.3 Developing and maintaining human factors awareness and strengthening non-technical skills helps personnel recognise how human capabilities, limitations and interactions

shape operational performance, supporting safe, effective task performance and reducing the potential for human error.

2.3 Basic requirements

2.3.1 Part 119 of CASR requires air transport operators[1] to have a program for training and assessing operational safety-critical personnel in human factors principles and non-technical skills (regulation 119.175 of CASR)[2]. This is representative of a systems approach to HF and is reflective of the broader CASRs. Regulations 119.180 and 119.185 of CASR specify the requirements for when the initial training and assessment program must be completed for different kinds of operational safety-critical personnel.

2.3.2 Operators must ensure their HF/NTS TAP covers both fundamental HF principles and NTS elements. The term 'human factors training' is commonly used in parts of the aviation industry to describe training in topics such as threat and error management (TEM), crew resource management (CRM) and NTS. However, HF and NTS are different training elements. The distinction between the two is explained sections 2.4 and 2.5 of this AC.

2.3.3 Historically, CRM has been the most widely used strategy to train non-technical skills in aviation. Because many safety-related roles within aviation do not work as 'crews', the broader term 'NTS training' was introduced as a more general and inclusive term for this form of training. Operators may continue to use established terminology such as CRM or team resource management when describing HF and NTS training and assessment. For the purposes of this AC, NTS training and CRM training can be considered synonymous.

2.4 What are human factors principles?

2.4.1 The broad domain of human factors is an applied science that examines the physical, cognitive and organisational aspects of how people interact with their environment. *Human factors principles* are defined as the principles concerned with minimising human error and its consequences by optimising the relationships within systems between people, activities and equipment. These principles form the knowledge elements that explain how human performance (HP) is influenced and support an understanding of human capabilities, limitations and influences within the broader operational system.

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[1] At the time of publishing v2.0 of this AC, Australian air transport operators taking advantage of the exemptions in Part 6 of CASA EX73/24 are not yet required to have an HF/NTS TAP. These exemptions end on 1 December 2026, by which time operators must have implemented their HF/NTS TAP.
[2] As indicated in communications to Australian air transport operators using the CASA EX73/24 Part 6 HF/NTS exemptions in February 2026 and March 2026, CASA intends to issue an exemption clarifying the intended scope of regulation 119.175 of CASR. At the time of publishing v2.0 of this AC, this exemption had not yet been issued. This AC will be updated once this exemption is issued.

2.4.2   Knowledge and awareness of HF principles enable personnel to recognise how these
factors shape performance. Understanding and application of this knowledge helps
strengthen and optimise HP, supports effective decision-making, and contributes to
reducing the potential for error across the aviation system.

2.4.3   ICAO identifies five HP principles[3], which highlight different aspects of people's
performance. These principles are:

Principle 1: People's performance is shaped by their capabilities and limitations

Principle 2: People interpret situations differently and perform in ways that make sense
to them

Principle 3: People adapt to meet the demands of a complex and dynamic work
environment

Principle 4: People assess risks and make trade-offs

Principle 5: People's performance is influenced by working with other people,
technology, and the environment.

2.4.4   These five HP principles are interactive and overlapping. Together, they offer differing
insights and perspectives that form a multi-dimensional picture of human performance.
They apply generally to all people involved in aviation activities, at the individual, team,
and organisational levels.

2.4.5   Training in HF principles gives personnel the knowledge they need to understand the
HP principles and apply this knowledge to support safe and efficient operations. It
includes the three aspects of how people interact with their environment: physical,
cognitive, and organisational. Training in HF principles also provides an 'awareness'
level of understanding across a broad range of HF topics, forming the foundation for
other safety risk management activities, including NTS training.

2.5   What are non-technical skills?

2.5.1   NTS, sometimes referred to as NOTECHS, are the cognitive, social and self-
management skills that complement technical skills and support safe and effective task
performance. They relate to applied HP competencies via behavioural skills or
techniques that ensure individuals and teams can function effectively to mitigate threats
and errors within the operating environment. They are essential for optimising safety
and performance during routine work conditions, as well as managing critical situations
or emergencies.

2.5.2   Examples of cognitive skills are situational awareness (attention to changes in the work
environment) and decision-making. Social or interpersonal skills include
communication, teamwork, and leadership. Skills in self-management (personal
adaptation) include the management of stress and fatigue, being able to manage and

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[3] International Civil Aviation Organization. (2021). Manual on Human Performance (HP) for Regulators
(Doc 10151).

sustain one's motivational levels and emotions, as well as possessing or accessing available resources to prevent performance decline.

2.5.3   NTS training is a generic term which encompasses a range of human performance awareness, knowledge, and skills programs. In contrast to knowledge-based HF courses, NTS training provides personnel with the understanding and skills required to manage all available resources (including themselves) more safely and effectively.

3   HF/NTS TAP considerations

3.1   Program scalability and operational size / complexity

3.1.1   The aviation industry is characterised by a diverse range of operating environments and activities. The legislation requiring Australian air transport operators to have an HF/NTS TAP is 'outcome-based', thereby placing the responsibility and opportunity for delivering a suitable program with the operator.

3.1.2   It is reasonable and expected that operators would appropriately scale their program for their organisation and operations. Scalability considerations include the:

- size of the organisation's workforce
- organisational structure
- complexity of operational demands
- nature and number of interfaces
- nature and number of operating locations.

3.1.3   Operators must describe how they manage their program in their exposition[4]. Large, complex organisations may need a dedicated group of HF and NTS personnel, whereas smaller organisations may only need the services of an HF and NTS consultant or coordinator on a part time or contractual basis. Appendices A and B provide examples of HF/NTS TAP for different kinds of operators.

3.1.4   It is recommended that operators evaluate their activities to determine the appropriate level of resources to manage their HF/NTS TAP. Managing this program, like any other operator activity, involves having appropriate organisational policies, structures, personnel, and resources. The following sections provide more details.

3.2   Integration with a safety management system

3.2.1   An SMS can provide valuable input into shaping an HF/NTS TAP to meet operational demands and strengthen safety and operational performance[5].

3.2.2   Operators may find it efficient to integrate SMS and HF/NTS training programs, thereby reducing duplication, as there is overlap between these topics. For example, if aligning with CASA's acceptable means of compliance, both training programs encompass safety culture (including just culture) and human performance elements that support safety, and how these matters interrelate to promote reporting and reduce error.

3.2.3   The personnel responsible for managing and operating an SMS are operational safety-critical personnel as they conduct safety-related work. Regulation 119.185 requires these personnel to complete the operator's HF/NTS TAP. For such personnel, the

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[4] See paragraph 119.205(1)(h) of CASR.
[5] Also refer to AC 119-01 Safety Management Systems for Air Transport Operations.

program is recommended to include, but not be limited to, HF considerations relating to the following matters:

– hazard identification and safety investigations
– the development of risk controls
– the conduct and design of change management processes.

3.3 Integration with a training and checking system

3.3.1 For flight crew members and cabin crew members, the HF/NTS TAP must form part of the organisation's existing training and checking system[6]. For other operational safety-critical personnel that are required to complete an HF/NTS TAP, the program must be part of the training and checking system if the operator is required to comply with subregulation 119.170(4) of CASR.

3.3.2 It is recommended for all operators that the HF/NTS TAP be integrated into other competency events, as this enables the practical application of HF and NTS theory and enables contextual assessment of skills, attitudes, and behaviours.

3.3.3 For flight crew members this could involve assessing NTS during simulator and/or line proficiency checks (where line checks are required). For operators whose proficiency checks are combined with Part 61 of CASR events (such flight reviews or instrument proficiency checks), integrating the HF/NTS TAP with the training and checking system improves training effectiveness and efficiency, as Part 61 requires NTS to be assessed during these events.

3.3.4 For operators who did not originally integrate the HF/NTS TAP with other training and checking events, integration would involve the redevelopment of existing training programs and manuals, but this has the benefit of increasing future training efficiency. If NTS assessments were previously conducted, integration would involve adding HF principles training that complements the existing NTS aspects.

3.4 Using a third-party training provider

3.4.1 Operators may use third-party providers for some or all aspects of their HF/NTS TAP. However, the operator (including relevant key personnel) remains responsible for the implementation, relevance and performance of the HF/NTS TAP. The TAP is 'their TAP' even if it is developed and/or delivered by another party. The HF/NTS TAP must be conducted in accordance with the operator's exposition.

3.4.2 The operator is responsible for determining that all aspects of a third party delivered HF/NTS TAP are appropriate to their operation. Operators are recommended to have conducted a training needs analysis (TNA) (see section 5) appropriate to their operation's size and complexity, and ensure that HF/NTS TAP content addresses their specific operational risks and safety performance.

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[6] See paragraph 119.170(2)(a) of CASR.

Note: Appendices A and B provide examples of HF/NTS TAP for different kinds of operators.

3.4.3 Operators are recommended to brief third-party providers on their operational environment and organisational and safety culture to ensure that the HF/NTS TAP, as delivered, is appropriate for the operator and their operations.

3.4.4 HF/NTS training and assessment may be delivered to operational safety-critical personnel from multiple operators. However, each operator is responsible for ensuring that the content is relevant and appropriate to their own operations and personnel, and the specific duties and responsibilities those personnel perform for that operator.

3.4.5 When using a third-party provider, it is the responsibility of the operator to ensure the third-party provide evidence that they have relevant knowledge and experience of HF and NTS and training and assessment. It is recommended that operators have a documented process to ensure third-party training providers have appropriately trained and competent staff in relation to HF/NTS course delivery.

3.5 Steps to develop an HF/NTS TAP

3.5.1 There are four steps to develop an effective HF and NTS training and assessment program. These steps, which are explained in sections 5, 6, 7 and 8 of this AC, are:

a. Identify the training and assessment needs.
b. Develop the training and assessment content.
c. Deliver the program requirements.
d. Evaluate the program effectiveness.

Figure 1: Steps to develop an HF and NTS training and assessment program

4 HF/NTS TAP governance

4.1 Definition

4.1.1 Governance is the overall framework within an organisation that supports the making of decisions to meet the organisation's goals and objectives. Program governance refers to the rules and procedures that are used to control its delivery and provides the overall framework for making decisions. This decision framework comprises roles and responsibilities, approval processes, work deliverables, and the workflow that ties the overall decision-making steps together.

4.1.2 Operators can document the governance structure for their HF/NTS TAP in order to articulate the program's framework from courseware development through to delivery and continuous improvement. The HF/NTS TAP governance can identify key roles and responsibilities, including integration with the SMS and training and checking system.

4.2 Program objectives

4.2.1 Objectives are brief, high-level statements of desired achievements. They are either process or outcome based, and give direction to the organisation consistent with the organisation's safety policy[7].

4.2.2 Operators are responsible to define objectives for their HF/NTS TAP. They reflect the strategic achievements or desired outcomes related to safety concerns around HF and NTS specific to the organisation's operational context. They may be integrated into the objectives defined as part of the operator's SMS (refer to section 3.2 of this AC) or training and checking system (refer to section 3.3 of this AC).

4.2.3 HF/NTS TAP objectives consider specific outcomes relating to human performance safety considerations and post-training competency expectations. That is, HF/NTS TAP objectives state intended safety outcomes such as the effective management of error, improved human performance, and increased procedural compliance. The objectives also consider any outcomes of previous evaluations of the operator's HF/NTS TAP.

4.2.4 As an example, some objectives for an HF/NTS TAP[8] could be to:

– demonstrate measurable improvements in safety performance
– develop and strengthen personnel knowledge, skills, attitudes and behaviours to reduce human-error potential and enhance error detection and capture
– reduce errors associated with human performance limitations
– mitigate the adverse effects of external influences on human performance
– ensure all identified personnel complete the required HF and NTS training and assessment and maintain the required currency.

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[7] Also refer to *AC 119-01 – Safety Management Systems for Air Transport Operations*
[8] Also, refer to *SMS for Aviation – A Practical Guide: Safety Policy and Objectives* (Booklet 2) available on the page titled 'Safety management system resource kit' on CASA's website.

4.3   Responsibilities

4.3.1   To ensure any training and assessment program remains effective, ongoing
commitment to program objectives is essential and must be demonstrated by
management. Management commitment to the HF/NTS TAP can be demonstrated
through approved HF and NTS policies and the allocation of resources necessary for
the program's design, delivery, evaluation and continuous improvement.

4.3.2   HF/NTS TAP policies set out the expectations for identifying and managing human
factors influences within operations and across the organisation. Accountabilities,
authorities and responsibilities for the HF/NTS TAP are defined, documented and
communicated, so personnel at all levels understand their role in achieving program
objectives.

4.3.3   Adequate resourcing is essential for the effective design, delivery and administration of
all training and checking activities. The chief executive officer (CEO) is responsible for
ensuring that appropriate resources are available, and for ensuring that training and
checking of the operator's operational safety-critical personnel (other than flight crew) is
conducted in accordance with the operator's exposition.

4.3.4   The head of training and checking (HOTC) is responsible for ensuring that training and
checking of flight crew conducted by or for the operator is carried out in accordance with
the operator's exposition.

4.3.5   An HF/ NTS TAP manager or coordinator role may be described by other titles and
does not need to be a dedicated position; its responsibilities may be undertaken as a
secondary role by, for example, the head of training and checking or the safety
manager.

4.3.6   It is recommended that the HF/NTS TAP manager/coordinator's responsibilities,
irrespective of other duties, include:

–   planning and facilitation of the HF/NTS TAP
–   coordinating the promotion of HF/NTS TAP requirements through induction and
recurrent training
–   identifying ongoing HF and NTS training needs to support program objectives.

4.3.7   Facilitators are responsible for maintaining their currency in HF/NTS knowledge and
training and for delivering the HF/NTS TAP in accordance the operator's exposition
(refer to section 7.4 of this AC).

4.4   Record keeping

4.4.1   Operators must maintain personnel training and checking records[9] relating to their
HF/NTS TAP. This includes:

–   when the TAP activity was undertaken

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[9] Regulation 119.225 of CASR.

- the TAP qualification or certificate obtained
- whether the TAP was successfully completed.

4.4.2 Records may be kept separately or as part of another system, for example, as part of a training and checking system or an SMS.

4.4.3 Operators are responsible to detail how records of HF/NTS training and assessment will be managed, including how they are documented, recorded and retained for the minimum required periods.[10]

4.4.4 Records must be made for all HF/NTS training and assessments within 21 days after the person undertakes the training and assessment.[9]

4.4.5 An HF/NTS TAP includes robust documentation and records that will assist and enable effective delivery and administration of the program. Examples of effective HF/NTS TAP records and documentation include:

- a listing of the personnel who require HF/NTS training
- a means of determining when each person is due to undergo a specific HF/NTS training course
- a method of recording the HF/NTS training provided, and the completion and assessment outcomes for each participant
- a schedule and records of recurrent HF/NTS courses for all operational safety-critical personnel
- the assessment means used to determine the effectiveness of the HF/NTS TAP.

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[10] Regulation 119.240 of CASR.

5 Identifying training needs

5.1.1 To determine the training to be included in an HF/NTS TAP, operators need to consider the program's objectives (see section 4.2 of this AC), which define the desired outcomes and competencies of personnel. Comparing these objectives against current capabilities will identify who requires training and what level of training is appropriate. This process is often referred to as a training needs analysis (TNA)[11].

5.1.2 AN effective TNA considers the different roles and operating environments within the organisation, and its outcomes inform the development and selection of training content.

5.1.3 An operator's HF/NTS TAP documentation is ideally recommended to include a summary of the TNA, outlining the training needs identified for each relevant role and operating environment (i.e. the hazards and other internal or external factors that influence human performance), such that this information is available to the operator if CASA asks the operator how they determined their HF/NTS TAP was appropriate to their needs.

5.2 Program participants

5.2.1 Personnel requiring HF/NTS training and assessment are specified in regulation 119.175 of CASR. Operators must ensure all required operational safety-critical personnel are included in the TNA.[12]

5.2.2 Understanding the roles and responsibilities of the personnel that are required to participate in the HF/NTS TAP will help further define the training competencies. Operators might consider:

– the types of operations undertaken
– the work environment (e.g., office, flight line, aircraft)
– not limiting the scope to direct employees or operational safety-critical personnel only.

5.3 Identifying competencies

5.3.1 Once the personnel requiring HF and NTS training and assessment have been identified, the operator can then determine their required HF and NTS competencies, even if training is to be provided by a third-party provider. The operator while

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[11] Also refer to AC 119-01 – Safety Management Systems for Air Transport Operations, and SMS for Aviation – A Practical Guide, booklet 5

[12] Refer to the AMC/GM Part 119 document for guidance on which operational safety-critical personnel are encompassed by regulation 119.175 of CASR. As indicated in communications to Australian air transport operators using the CASA EX73/24 Part 6 HF/NTS exemptions in February 2026 and March 2026, CASA intends to issue an exemption clarifying the intended scope of regulation 119.175 of CASR. At the time of publishing v2.0 of this AC, this exemption had not yet been issued. This AC will be updated once this exemption is issued.

considering any relevant known risks (e.g., incidents involving a breakdown in team communication) to ensure they are appropriately incorporated into the training.

5.3.2   An effective TNA will identify what level of human factors competence is required for each of the various HF/NTS syllabus elements. This may vary depending on the person's level of authority and the environment in which they operate.

5.3.3   It is strongly recommended that operators consider hazards and operational risks identified by their SMS when undertaking an analysis of the HF and NTS competencies their personnel require. Ideally, this analysis would be undertaken by someone who:

–   is familiar with the nature and objectives of HF and NTS training
–   has current knowledge of the job requirements and context of the roles being analysed
–   understands the human factors associated with the operational safety risks and safety events in the organisation.

5.3.4   Identifying issues within specific roles or operational tasks using 'in-house' information strengthens the relevance and effectiveness of the HF/NTS TAP. Routine sources, such as job task assessments, audit reports, technical training evaluations, performance appraisals, and SMS outputs (e.g., safety and occurrence reports, LOSA observations and FOQA trends) can provide valuable insight into human performance issues within the organisation.

5.4   Tools to identify training needs

5.4.1   There are several tools and techniques that an operator might choose to use to help examine existing information or to generate new information to assist in the identification of training needs. These tools vary in their sophistication from basic to quite complex - the complexity and variety of the tools chosen depend on the size, complexity and diversity of the operations undertaken by the organisation. Broadly, these tools can be categorised into three types: event-based, questioning, and observation. Table 1 shows some examples of each type.

Table 1: Popular types of tools and techniques used to identify important non-technical skills

Type	Tools/Techniques
Event-based analyses (Examining safety reports to identify patterns)	• Accident/incident analysis in one's own or similar operations. • Analysis of confidential reporting systems.
Questioning techniques (Seeking information directly from workers)	• Interviews: structured, unstructured and semi-structured. • Focus groups. • Questionnaires and surveys.
Observational techniques	• Direct: observation by trainer/researcher not

Type	Tools/Techniques
(Watching individuals and teams at work)	engaged in the work at hand. • Participant: observation by a co-worker. • Remote (e.g., live or recorded video and audio).

5.4.2   It is recommended that multiple sources of information and multiple tools/techniques be used in efforts to identify required competencies. Observational techniques have the added benefit of being useful when developing 'desk-top like' assessment measures. Complex operators may benefit from the use of analytical tools, such as occupation analysis and cognitive task analysis. Typically, HF specialists would be engaged to undertake these sorts of analyses.

5.4.3   Regardless of the tools used, a TNA supporting gap analysis identifies, documents, and details the deficiencies of any current training against the identified training needs. This is achieved with either a checklist or matrix with training needs, current training and identified gaps/deficiencies readily identified. This assists the operator to form an accurate understanding of the basis for course content development.

6 Developing training content

6.1 How to develop training content

6.1.1 Once the operator has identified the required competencies, training content that addresses these needs can be developed. As an HF/NTS TAP must include both HF principles and NTS[13], to be effective the training content will cover both fundamental HF principles and NTS elements that are relevant to the operator's activities and operational risks. The content supports the achievement of the HF/NTS TAP objectives (refer to section 4.2). Where appropriate, HF and NTS content may be integrated with other training, such as SMS-related training, and training and checking events as outlined in section 3.3. In practice, most operators will develop an integrated HF and NTS training program.

6.1.2 CASA has developed a suite of human factors learning resources that include booklets, videos, a workbook and a facilitator guide, available in the Safety Behaviours: Human Factors for Pilots resource kit on CASA's website. These resources provide foundational HF knowledge and may be incorporated into an operator's HF/NTS TAP where appropriate. The relevant HF and NTS topics supported by this kit are outlined in sections 6.3 and 6.4 of this AC.

6.1.3 When developing training content, operators may consider opportunities to design material that supports training efficiencies. Provided suitable training and assessment standards can be achieved and maintained, content development may take into account factors such as:

– structuring material so it can be delivered to 'mixed' employee groups, enabling shared learning and encouraging cross-functional understanding
– sharing of training content and resources with other operators where appropriate
– negotiating the use of a larger operator's training programs and resources
– utilising an 'off-the-shelf' training product
– modularising content to allow flexible delivery while ensuring learning continuity and minimising the risk of knowledge erosion
– identifying HF/NTS topics that overlap with other existing training (e.g. SMS) and designing materials to duplication through integrated modules
– utilising an external service provider if internal expertise in training delivery is limited (see section 3.4 of this AC).

6.2 Depth of content

6.2.1 The goals of training programs are accomplished through multiple phases of training. For example, phases of training may include orientation training[14], initial or awareness

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[13] Refer to regulation 119.175 of CASR.
[14] Also referred to as induction training.

training, conversion training, upgrade training and ongoing recurrent or refresher training. Regarding HF and NTS training, the depth of training (developmental phases) and teaching methods will vary across phases and can be tailored to suit to the size, nature, and complexity of the organisation.

6.2.2   The outputs from a TNA will assist in the selection of HF and NTS topics to meet the operator's identified needs. To be suitable, the content of NTS training will have direct relevance to the operational safety issues encountered by participants.

6.2.3   Due to the 'systems' nature of HF, the topics covered in HF and NTS programs are interrelated. This means that even if a topic is not identified through a TNA, the topic may still provide relevant background knowledge to support other topics identified in the TNA. Operators are responsible for ensuring that foundational topics are not omitted from their HF/NTS TAP if these foundational topics are required to support other relevant topics.

6.2.4   Competency may not be achieved through attendance, participation, assessment in a single training activity, and may require and benefit from integration into relevant aspects of training and operations. Integration reinforces the key principles detailed in the following sections.

6.2.5   Both initial and recurrent HF and NTS training and assessment contribute to the depth of content within the program. Recurrent training reinforces previously introduced concepts and skills, allowing key knowledge to be revisited to maintain relevance, strengthen understanding, and support ongoing performance improvements.

6.3   Content relating to human factors principles

6.3.1   An operator's HF/NTS TAP must include training and assessment related to HF principles to maximise operational safety outcomes. These training elements provide basic knowledge and the formation or consolidation of attitudes likely to promote appropriate safety behaviours within the workplace, along with advanced understanding of important concepts. The focus of the HF knowledge phase is the development of practical knowledge relevant to skilled performance.

6.3.2   HF principles training includes:

–   safety culture
–   human performance principles basics
–   stress and its management
–   fatigue and its management
–   workload management.

6.3.3   The Safety Behaviours: Human Factors for Pilots resource kit introduced earlier in this AC includes material that can support HF principles program content. The most relevant booklets (and supporting videos) for training in HF principles include:

–   Resource booklet 1 Introduction

- [Resource booklet 2 Safety culture](#)
- [Resource booklet 3 Human performance](#)
- [Resource booklet 10 Design and automation.](#)

6.3.4   Teaching methods commonly used to achieve the HF knowledge phase include pre-course readings, presentations, practical exercises, detailed case studies and documentaries.

6.4   Non-technical skills content

6.4.1   While the initial emphasis in HF/NTS training is knowledge and comprehension of HF principles, the NTS element of the program includes appropriate operational behaviours and skills training and assessment.

6.4.2   This phase develops the practical non-technical skills needed to perform tasks safely, by building on the knowledge gained in the previous phase and applying it in an operational context.

6.4.3   NTS are the applied specific human competencies which may minimise human error in aviation. These include but are not limited to:

- communication
- teamwork
- leadership
- situational awareness
- judgement and decision making
- threat and error management
- human information processing.

6.4.4   The content of these NTS elements may be contained within different training module titles. For example, situational awareness may be within an information processing module.

6.4.5   To be retained, skills (and concepts covered in previous training phases) must be regularly reinforced through direct application or via refresher training.

6.4.6   The most relevant sections of The Safety Behaviours: Human Factors for Pilots resource kit for training in NTS include:

- [Resource booklet 4 Communication](#)
- [Resource booklet 5 Teamwork](#)
- [Resource booklet 6 Situational awareness](#)
- [Resource booklet 7 Decision making](#)
- [Resource booklet 8 Threat and error management](#)
- [Resource booklet 9 Human information processing.](#)

Note: Also refer to UK CAA CAP 737: Flight-crew human factors handbook.

6.4.7   Teaching methods commonly used to achieve the skills phase typically include
classroom-based learning with practical exercises and detailed case studies. When
using a case study from within their organisation, consider the relevance of the scenario
(i.e., is it still valid?), the contributing factors in the event (i.e., does it contain issues
identified in the training?), and the culture of the organisation (i.e., the event is used as
a learning exercise, not to apportion blame).

6.5   Training outcomes

6.5.1   The knowledge and skills developed through the HF and NTS training program aim to
establish and foster specific attitudes and behaviours in personnel. The attitude is
formed by the knowledge gained combined with the individual's feelings and values.
These attitudes, when combined with the organisational culture, foster achieving the
desired behaviours. These behaviours are reinforced within daily operations, and during
periodic training and checking activities.

6.5.2   Overall training outcomes focus on ensuring personnel understand the operational
implications of the HF and HP principles in performing their day-to-day duties. This
knowledge and awareness are used to monitor and adjust their behaviour to engage
preventative or early corrective actions to address hazards as part of everyday
functions.

6.5.3   Courseware supports and promotes understanding and awareness of the influence of
various factors that may limit and bias how they make sense of the world. Course
materials also provide skills and tools to mitigate the negative effects of these factors
and understand and apply alternative perspectives to promote maximal performance.

6.5.4   To achieve the HF/NTS TAP objectives and levels of human performance
competencies required, consider the different categories of trainee competence which
can be achieved:

– Awareness: introduces the basic HF concepts and provides a common language
and frame of reference for knowledge and skill development.
– Knowledge: development of knowledge focuses on HF knowledge relevant to
specific practical applications and skilled performance.
– Skills: the tools and techniques focused on treating or mitigating areas of increased
error potential or severe consequences. They are initially developed through
practice and feedback, followed with reinforcement at a later stage through
recurrent training and assessment.
– Attitudes: play an important part in determining overall behaviours and
performance. Aspects relating to operational practices, desirable professional
attributes, and dispositions conducive to professional performance can be
considered under this heading. Attitudes have been strongly emphasised in the role
of appropriate attitudes in sustaining and implementing safe and effective
operational practices.

7 Training and assessment requirements

7.1 Program strategy

7.1.1 The HF and NTS TAP strategy define the training methods, objectives, and resources related to HF and NTS training within the context of the organisation. The strategy also defines the duration of HF/NTS training based on a TNA, as well as considering initial and recurrent timeframes.

7.1.2 In developing an HF/NTS training and assessment strategy, operators may consider:

– how training is to be conducted (i.e., delivery methods)
– when training is to be conducted
– standards and competencies expected to be achieved at training completion
– processes to ensure all required personnel complete required HF/NTS training
– how to address unsatisfactory performance or failure to achieve assessment outcomes
– process for development of training and assessment plans, including course outlines and syllabi
– processes and training required for new staff
– processes and training required on a recurrent basis
– processes for evaluating the relevance and effectiveness of the training materials, methods, and facilitators.

7.1.3 Theory-based training and assessment provide an efficient way to introduce HF principles and NTS concepts, establishing and reinforcing the foundational knowledge required before practical application.

7.1.4 Practical NTS training and assessment for flight crew could be incorporated in flight and/or simulator training, or systematic observation of on-the-job performance by specialist trainers with the goal of enhancing skills. Though the use of high-fidelity simulation is common with larger operators, there is compelling evidence to suggest that the use of low-fidelity simulation affords inexpensive and effective approaches to skills-based training which may be of value to smaller, less complex operations.

7.1.5 Practical NTS training for cabin crew and other operational safety-critical personnel could be incorporated into existing initial and ongoing training and checks, and technical tasks. For example, training and assessing air crew members in winching operations could focus on the technical task of operating the winch, but would also include NTS, such as communications and teamwork requirements to safely complete the task.

7.2 Duration of training and assessments

7.2.1 Operators define the duration of the HF and NTS training and assessments based on their TNA and business requirements. In determining an appropriate duration, operators will need to consider the most effective way to deliver the training to the required

personnel. Training could be delivered in a single consolidated training event, especially for induction training, or over a longer period via separate modules.

7.2.2   Where HF and NTS training or assessment requirements are integrated into existing technical training, operators are responsible to ensure the nature and duration of the training and assessment is suitable to the level of skill and proficiency required.

7.3   Training delivery

7.3.1   Efficient training delivery is designed to optimise knowledge and skills acquisition through a variety of learning approaches, including cognitive rehearsals, simulations, and real-world scenarios.

7.3.2   <u>Knowledge training</u> – consider what training and assessment methods are most appropriate for the nature of the operations. Knowledge training could be completed via:

– a traditional classroom setting
– online training
– virtual classroom
– self-paced learning
– case study briefings / presentation
– a combination of any or all the above.

7.3.3   <u>Delivery to different occupational groups</u> – HF and NTS knowledge training provides a valuable opportunity to bring together participants with different experience, backgrounds, knowledge, beliefs and opinions. Such diversity is generally considered to have many advantages and operators may consider including different occupational groups in an HF and NTS training course. Where appropriate, members of extended or dispersed teams may be involved in combined training, reinforcing the 'one team / one culture concept' and increasing mutual understanding and respect. It is possible that not all team members are part of the same organisation, for example aerodrome staff, refuellers, or contracted ground handlers.

7.4   Facilitators

7.4.1   Effective facilitation, and selecting the right individuals to serve as facilitators, is essential to the acceptance and overall success of HF and NTS training. The skills and credibility of HF/NTS facilitators is a vital component to effectively achieving desired training outcomes.

7.4.2   Operators' HF/NTS TAP documentation may describe how facilitators are trained and assessed to ensure they are suitably qualified to deliver HF and NTS training. This could include clearly identified core competencies for HF/NTS facilitators and outlining any selection, training, and assessment processes used for facilitators and assessors. A training and standardisation program for HF/NTS facilitators and assessors may be established to further enhance training outcomes.

7.4.3   It is recommended that facilitator assessment processes include methods for observing, recording, interpreting and debriefing facilitator performance. This could provide a means for facilitators to demonstrate appropriate communication skills and their ability to deliver HF and NTS course elements effectively. Attributes such as group management, group dynamics, personal awareness, and the ability to relate examples of good and poor HF/NTS behaviours to operational contexts may be considered.

7.4.4   Generally, delivery of HF and NTS training benefits from 'peer' facilitators who also have undergone specialised HF and NTS training. Peer facilitators know the operational context, they speak the language, and they are usually someone respected by the participant cohort. Facilitators with recent or current operational experience usually understand the professional and safety cultures of their organisation.

7.4.5   HF and NTS facilitators are not necessarily required to hold formal qualifications in HF or NTS. However, they will have an interest (the right attitude and behaviours) in HF and NTS, possess suitable communication, instructional and presentation skills, and hold sufficient operational experience to facilitate conversations around operational issues (the right knowledge and skills).

7.4.6   Facilitators may require additional training to ensure they:

–   have adequate knowledge of human performance and limitations within safety critical operations
–   have sufficient depth of knowledge in human factors principles to respond with authority to questions that may arise during HF and NTS training
–   understand effective facilitation and adult learning principles and the training of small groups
–   present course material in a variety of ways and conduct exercises, administer activities, and initiate, direct and maintain group discussions.

7.4.7   Training for HF/NTS facilitators may involve both theoretical and practical components. Practical training may include development of specific trainer skills such as integration of HF principles and NTS into day-to-day operational requirements. Refresher training may be used to cover any new course materials, evolving HF/NTS methodologies, research, organisational procedures and lessons learned. Facilitator currency requirements may be defined to ensure they maintain suitable instructional skills and relevant HF and NTS knowledge.

7.4.8   If an operator chooses to use a third-party provider to deliver their HF/NTS training, they will need to ensure that the third-party provider's facilitators are suitably qualified and experienced, know the operator's operational context, and speak the language used by the cohort being trained[15].

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[15] Relevant resources include AC 61-08 Teaching and assessing non-technical skills for single pilot operations; AC 61-09 Competency-based training and assessment for flight crew; and Safety Behaviours: Human Factors for Pilots.

7.5   Assessing program participants

7.5.1   The HF/NTS TAP must include assessment in HF principles and NTS. An operator must include in its HF/NTS TAP documentation the method by which personnel are assessed against their awareness, knowledge, and skills in both HF principles and NTS.

7.5.2   ICAO identifies any training assessment of personnel to focus on finding evidence that the student:

– understands how they contribute to system performance within their role and the operational implications of HF principles in performing their day-to-day duties, and
– can demonstrate they can use this knowledge to monitor and adjust their own behaviour to improve operational safety outcomes.

7.5.3   Consider conducting both theoretical and practical assessments for HF principles and NTS. Theoretical assessments can be best suited to assessing the awareness and knowledge uptake of HF principles and introduction of NTS. Practical assessments allow for incorporation into routine performance evaluations during actual or simulated workplace environments for assessing skills.

7.5.4   Ideally, a practical assessment of NTS will be integrated into the routine performance evaluation activities and processes established for technical skills. This evaluation is best conducted in the actual or simulated workplace e.g., aircraft, cabin, hangar, ramp, etc.

7.5.5   Where practical elements have been incorporated into classroom training, facilitators could assess participants through observation of the participant's interaction and/or participation in group activities or discussions. Another technique is direct assessment of practical skills, which includes task-based evaluation, process creation (checklists) and completion (performance).[16]

7.5.6   The assessment method used will allow the operator to identify both the achievement of required HF and NTS awareness, knowledge, and skills, and any areas of deficiency in the uptake of training competencies. This supports confirmation of achievement of learning outcomes and highlights areas requiring further development for each participant.

7.5.7   Operators when establishing procedures, include additional training, and how it is applied if personnel do not achieve or maintain the required assessment standards.

7.5.8   Assessment could occur during and/or shortly after instruction to encourage consolidation and retention of knowledge and skills. Assessment may be carried out using various methods, such as:

– short answer (selected response)
– multiple choice exams (selected response)

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[16] Also refer to UK CAA Standards Document 29: Guidance on the requirements for the training and testing of Human Factors for Flight crew under EASA Part ORO and EASA Part FCL.

– scenario assessment evaluation essay (constructed response)
– observation of tasks (this may form part of competency assessment)
– demonstration during practical exercises
– informal assessment of participation by the instructor.

7.5.9   Assessment methods used must match the depth and level of learning and the required outcomes against both HF principles and NTS. Assessment of HF knowledge and NTS are most effective when integrated into routine performance assessment.

7.5.10 It is important that HF/NTS training program assessors maintain recent or current operational knowledge and suitable qualifications or training in assessment techniques.

7.6   Using behavioural markers

7.6.1   Behavioural markers in aviation are commonly used in training and assessing NTS. While behavioural markers are not essential for the assessment of NTS, incorporating behavioural markers into technical training is an effective method to assess NTS outcomes.

7.6.2   Behavioural markers are designed to assess at the skills level outcome of the training program and may not provide an accurate assessment of the awareness and knowledge of HF principles level outcomes. Where behavioural markers are used by an operator to assess NTS competencies, they are ideally supported by other methods to assess HF principles competencies.

7.6.3   Behavioural markers were initially developed as a by-product of CRM training. They are descriptions of observable, non-technical behaviours that are present in teams or individuals, and which contribute to effective or ineffective performance in operational environments. Behavioural markers do not describe attitudes or personality traits, and not all behavioural markers will be observable in every situation.

7.6.4   Behavioural markers can be incorporated into practical, technical training and assessment to assess a participant's NTS and behaviours as they apply to the technical task. They are usually structured into a set of categories with various sub-components.

7.6.5   Line operations safety audit (LOSA[17]) is a well-known safety tool that utilises a behavioural maker system to support an understanding of flight crew behaviour and its situational context during normal operations. Where in place, LOSA is a useful program that can be used to support development and continuous improvement of an operator's HF/NTS TAP.

7.6.6   Less complex operators may not need to use a stand-alone behavioural marker system but could instead simplify appropriate markers for their own use and integrate them into existing activities where possible.

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[17] International Civil Aviation Organization. (2002). *Line Operations Safety Audit (LOSA)* (Doc 9803 AN/761). Montreal: ICAO.

7.6.7   If behavioural markers are utilised, it is recommended that assessing personnel receive specialised training to accurately identify required behaviours. Consistent training for assessors is essential to ensure accurate and reliable use of the behavioural marker system.

7.7   Training and assessment currency

7.7.1   An operator's HF/NTS TAP documentation can state that operational safety-critical personnel are required to complete initial HF and NTS training and assessment in accordance with regulations 119.180 and 119.185 of CASR[18]. The requirements for such training and assessment must be included in the exposition.

7.7.2   Operators determine their currency requirements for both HF and NTS knowledge and practical training and assessment and describe these requirements in their HF/NTS TAP exposition content. An operator's currency requirements may differ across different types of safety critical personnel. Consider the function and roles of each position when determining an appropriate interval between training and assessment events. Currency requirements are then developed at appropriate intervals to address any knowledge or skills degradation.

7.7.3   A simple currency schedule, at the operator's discretion, where all knowledge training content is required to be covered and assessed at defined intervals (e.g., once every two years) might suffice. Alternatively, operators may choose other currency schedules, such as a cyclic training and assessment schedule. A cyclical training schedule would cover a sub-set of the course content at more frequent intervals, with the intent that all content is covered over an extended period (e.g., annual refresher training where all course content is covered over a three-year period).

7.7.4   The operator's HF/NTS TAP is responsible to detail the required actions if personnel become uncurrent, including the limitations on the performance of safety critical duties.

7.8   Recognition of prior learning

7.8.1   If an operator chooses to recognise a person's previous HF and NTS training and assessment, the operator is responsible to document the process to identify any gaps through a TNA, and to determine the additional training or assessment needed to meet the operator's HF/NTS TAP requirements for the person's role and operational context. RPL decisions can then be based on verifiable evidence of prior learning, with each decision documented in the person's training records.

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[18] As indicated in communications to Australian air transport operators using the CASA EX73/24 Part 6 HF/NTS exemptions in February 2026 and March 2026, CASA intends to issue an exemption clarifying the intended scope of regulation 119.175 of CASR. At the time of publishing v2.0 of this AC, this exemption had not yet been issued. This AC will be updated once this exemption is issued.

8 Evaluation and continuous improvement

8.1 Program evaluation

8.1.1 Robust operator frameworks evaluate the effectiveness of the HF/NTS TAP by determining whether their objectives have been achieved. Where possible, the evaluation of the program's quality and effectiveness are conducted as part of the operator's SMS assurance processes. They are based on recognised and systematic sources of information, such as pre- and post-training surveys examining the safety-related attitudes and behaviours of employees, as well as operational or simulator performance data.

8.1.2 Each of the three development phases of effective HF and NTS training will require resources to evaluate the effectiveness of the program as personnel progress within the training continuum (i.e., from being aware, to becoming knowledgeable and through to achieving skilled performance).

8.1.3 One useful framework for evaluating the effectiveness of an HF/NTS TAP consists of four parts:

- the **reaction** of students – what they thought and believe about the training
- degree of **learning** – the resulting increase in knowledge and skills
- **behaviour** change – the extent learning is being applied back on the job, and
- **organisational results** – the effects on the business or the operating environment due to the participant's performance.

8.1.4 All four parts are measured to determine the extent of learning outcomes. The challenge of such an evaluation is that complexity and cost of measurement tend to increase as more components are adopted. For each part, consider:

- **Reactions –** Participants' reactions to the training can be gauged via a simple questionnaire. This typically involves simple questions about interest in the training, its relevance, quality of presentation and materials, its effectiveness, and general comments about any aspect of the course.
- **Learning –** This refers to how well the concepts were understood and retained – have the participants acquired the relevant knowledge and skills? This can be assessed using pre- and post-course administration of a knowledge quiz, through practical examples and evaluation tasks during HF and NTS training. Assessment performed after potential use of the learning in the workplace will provide a practical application and retention of knowledge/skill element to an evaluation process.
- **Behaviour –** Evaluations at this level assess whether knowledge and skills learnt in training transfer to on-the-job behaviour. A widely used technique for assessing non-technical skills in flight crew is the use of observational rating scales using behavioural markers such as LOSA (also, refer to section 7.6).
- **Organisational results –** This is typically measured by an operator's achievement towards the objectives of the HF and NTS program. Activities which can provide

information about this include analyses of organisational safety data, safety surveys conducted on a periodical basis, and outcomes of behavioural markers or LOSA programs.[19]

8.1.5   When evaluating an HF/NTS TAP, consider implementing methods for monitoring the program's effectiveness. This may include sampling day-to-day behaviours demonstrated by their staff, and examining whether safety reports include feedback on HP issues, etc. Any records used to review and modify an HF/NTS TAP are evidence based, such as altering training content to address aviation industry or the operator's own identified risks associated with human performance.

8.2   Continuous improvement of the program

8.2.1   The HF/NTS TAP documented processes outlining the mechanisms are used to both maintain and improve the effectiveness of the program.

8.2.2   The objective of HF/NTS TAP maintenance is to ensure the program's ongoing effectiveness and relevance to the operational context, whereas program improvement aims to enhance HF/NTS TAP outcomes in terms of awareness, knowledge, and skill development.

8.2.3   Continuous improvement can be a very useful tool in what is known as 'washback', in which operators use the data from the evaluation of the program to feed back into the design, to improve it by adjusting it to make it more suitable, effective, up-to-date, and possibly more economical (time and cost saving).

8.2.4   Maintaining and continuously improving the HF/NTS TAP is an ongoing process as the organisation and operational environment constantly change. Operators when evaluating their program will determine whether their objectives have been achieved in the manner expected. The evaluation considers "Where are we at present?", "Is this where we expected to be at this time?" and "Where do we want to be at point "X"?".

8.2.5   The continuous improvement process is designed to be responsive to feedback from participants. Feedback is used to improve the syllabus, instructor/facilitator performance and training techniques, ensuring the program remains current and relevant to changing organisational and operational risk needs.

8.2.6   Continuous improvement exists when operators proactively:

–   use deficiencies identified during training and assessment to set future training topics
–   identify and use demonstrated strengths to support improvement in weaker performance areas
–   use data on human performance issues, hazards and risks in daily operations to determine training and assessment needs and develop realistic operational scenarios for training content.

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[19] Also refer to AC 119-01 – Safety Management Systems for Air Transport Operations.

Appendix A

Human factors principles & non-technical skills (HF/NTS) training and assessment program: Sample Aviation

Appendix A: Overview

Sample Aviation - scope of operations

Sample Aviation conducts Part 133 and Part 135 operations, employing less than 10 operational safety-critical personnel.

Operations are conducted in the following aircraft:

- Robinson R22/R44
- Airbus AS350
- Cessna 182, 206 and 210
- Beechcraft Baron BE55/ BE58
- Piper PA-31 Navajo.

Sample Aviation's headquarters and main operating base are collocated, with additional operational facilities at several locations.

HF/NTS training and assessment program - sample text options

Appendix A contains three sample HF/NTS program options, tailored to different approaches for developing and delivering Sample Aviation's HF/NTS program:

- content developed and delivered by a named third-party HF/NTS provider
- content developed and delivered by one or more third-party provider/s (provider yet to be determined)
- supervised self-learning using CASA's *Safety behaviours: Human factors for pilots* resource kit, supported by an instructor or third-party provider as required.

Sample program 1: {Named external provider}

Program purpose and objectives

The purpose of this HF/NTS training and assessment program is to enhance the HF knowledge and non-technical skills of the operational safety-critical personnel listed below.

The objectives of the program are to:

- ensure personnel develop and maintain the HF and NTS knowledge, skills and behaviours required to safely carry out their duties
- strengthen personnel capability to identify, manage and mitigate HF-related risks
- minimise errors arising from human performance limitations and enhance the capture of potential errors
- mitigate the adverse effects of external influences on human performance
- support continuous improvement in operational safety performance through the application of HF and NTS principles.

The knowledge and competencies developed through this program support the assessment of NTS and threat and error management competencies during the checks specified in {insert training and checking manual volume or document title}.

Personnel required to participate in the program

Flight crew

Flight crew must not carry out their duties unless they have completed the HF/NTS initial and recurrent training and assessment as required under this program.

Other personnel

The following personnel must complete the HF/NTS training and assessment program within three months of appointment and meet all recurrent training requirements.

{Insert list of personnel}

- {Job title 1}
- {Job title 2}
- {Job title 3}
-

Program responsibilities

The program is managed by the HOTC, who is responsible for ensuring that:

- program content remains operationally relevant and addresses our specific HF and NTS risks
- all identified personnel complete initial and recurrent training and assessment in accordance with program requirements

- the selected HF/NTS third-party training provider meets {Sample Aviation}'s requirements
- {insert additional responsibilities}

HF/NTS third party provider

{Sample Aviation} uses {insert name of provider} as the provider for the HF/NTS program.

The HOTC will ensure that the HF/NTS third party provider, in accordance with the program outline:

- develop and deliver syllabuses for both initial and recurrent training and assessment, ensuring all required course topics are covered and program timelines are met
- tailor training and assessment content as necessary to address the needs of specific operational safety-critical personnel and their roles
- adapt training and assessment content when requested, to address {Sample Aviation}'s current, emerging and newly identified HF and HP risks
- ensure all instructors are suitably qualified and competent
- provide assessment outcomes and completion records in a format compatible with {Sample Aviation}'s training records and currency tracking system
- provide access to lesson plans, learning materials, assessment tools and instructor details upon request.

Program outline

	Initial training course	Recurrent training course
Recency	As per section {insert document reference}	{x} year/s
Delivery method	Face-to face or online	Face-to face or online
Instructor qualifications	Refer to section {insert document reference} from {insert the name of the provider}	Refer to section {insert document reference} from {insert the name of the provider}
Student instructor ratio	{insert} e.g.10:1	{insert} e.g.10:1
Duration	{2} days {insert length from provider}	{1} day {insert length from provider}
Assessment method	Written exam {insert method from provider}	Written exam {insert method from provider}
Record of completion	Records of completion and currency are tracked in {Sample Aviation}'s currency tracking system	Records of completion and currency are tracked in {Sample Aviation}'s currency tracking system
Course topics	Example only – insert topics from provider, ensuring the topics and content are tailored to and appropriate for your operations and personnel • {History of human factors and HF/NTS training • Human performance and limitations • Threat and error management • Communication • Conflict resolution • Safety culture • Leadership and teamwork • Fatigue and fatigue management • Stress and stress management • Information processing • Workload management • Automation • Situational awareness • Decision making • The anatomy of an accident / case studies tailored to reflect {Sample Aviation}'s operational environment and safety risk profile and used to reinforce key HF/NTS learning outcomes}	Example only – insert topics and cycle from provider, ensuring the topics and content are tailored to and appropriate for your operations and personnel • {Recurrent training will revisit all major modules of the initial training course, with topics distributed as evenly as possible across a 3-year cycle • Training content will address current, emerging and newly identified HF and HP risks • Case studies will be tailored to reflect {Sample Aviation}'s operational environment and safety risk profile and used to reinforce key HF/NTS learning outcomes}

Record keeping

Records of completion and currency are tracked in {Sample Aviation}'s currency tracking system.

Program evaluation and continuous improvement

The CEO and the HOTC will review the HF/NTS program annually to ensure its content and method of delivery remain appropriate for {Sample Aviation}'s operations.

In addition to the scheduled annual review, opportunities for improvement may be identified through {Sample Aviation}'s training and checking and safety management systems, where deficiencies in HF/NTS knowledge or performance, or identification of HF-related hazards, trends or safety risks may indicate a need for enhanced or new program content.

Outcomes are to be recorded in the {insert document or location, e.g. Continuous Improvement Register (Form A03)} and retained in accordance with section {insert record keeping and management section}.

Following the annual HF/NTS program evaluation, or more frequently if a requirement for updated or new course content is identified, the HOTC will brief {insert name of third-party provider} to ensure the course content and delivery remain aligned with our operational needs and identified HF/NTS risks.

Any identified improvements or required changes are implemented in accordance with {Sample Aviation}'s management of change procedures in the Management of Change section of this exposition.

Recognition of HF/NTS training and assessment completed with another operator

{Sample Aviation} may recognise HF/NTS training completed with another operator (e.g., Part 121, Part 135 or Part 141 operator) where the following conditions are met:

- the training was completed within the previous 2 years
- the person provides a certificate or evidence of completion
- the HF/NTS course content aligns with CASA HF/NTS advisory material, including AC 119-12 and the CASA Safety Behaviours: Human factors for pilots resource kit
- the content is substantially equivalent to the topics used in this program
- the HOTC reviews the evidence, undertakes an assessment to determine its validity and identifies any gaps between the completed training and this program
- the HOTC accepts the previously completed training as meeting, or partially meeting, the requirements of this program.

Where gaps in training and/or assessment are identified, the HOTC will determine the additional training and/or assessment needed to ensure the person meets the requirements of this program.

All recognition of prior learning evidence and decisions made, including details of the recognised equivalent training and any additional training and assessment undertaken, will be recorded in the person's training record.

Where equivalence cannot be confirmed, the person must complete the training and assessment as required by this program.

Sample program 2: {Unnamed external provider}

Program purpose and objectives

The purpose of this HF/NTS training and assessment program is to enhance the HF knowledge and non-technical skills of the operational safety-critical personnel listed below.

The objectives of the program are to:

- ensure personnel develop and maintain the HF and NTS knowledge, skills and behaviours required to safely carry out their duties
- strengthen personnel capability to identify, manage and mitigate HF-related risks
- minimise errors arising from human performance limitations and enhance the capture of potential errors
- mitigate the adverse effects of external influences on human performance
- support continuous improvement in operational safety performance through the application of HF and NTS principles.

The knowledge and competencies developed through this program support the assessment of NTS and threat and error management competencies during the checks specified in {insert training and checking manual volume or document title}.

Personnel required to participate in the program

Flight crew

Flight crew personnel must not carry out their duty unless they have completed the HF/NTS initial and recurrent training required under this program.

Other personnel

The following personnel must complete the HF/NTS training program within three months of appointment and meet all recurrent training requirements.

{Insert list of personnel}

- {Job title 1}
- {Job title 2}
- {Job title 3}
-

Program responsibilities

The program is managed by the HOTC, who is responsible for ensuring that:

- program content remains operationally relevant and addresses our specific HF and NTS risks
- all identified personnel complete initial and recurrent training and assessment in accordance with program requirements

- the selected HF/NTS third-party training provider meets {Sample Aviation}'s requirements
- {insert additional responsibilities}.

HF/NTS third party providers

{Sample Aviation} uses external providers to develop and deliver the HF/NTS training and assessment program. The program is to be developed and delivered in accordance with the program outline below.

The HOTC will ensure that HF/NTS third party providers, in accordance with the program outline:

- develop and deliver syllabuses for both initial and recurrent training and assessment, ensuring all required course topics are covered and program timelines are met
- tailor training and assessment content as necessary to address the needs of specific operational safety-critical personnel and their roles
- adapt training and assessment content when requested, to address {Sample Aviation}'s current, emerging and newly identified HF and HP risks
- ensure all instructors are suitably qualified and competent
- provide assessment outcomes and completion records in a format compatible with {Sample Aviation}'s training records and currency tracking system
- provide access to lesson plans, learning materials, assessment tools and instructor details upon request.

Program outline

	Initial training course	Recurrent training course
Recency	As per section {insert document reference}	{x} year/s
Delivery method	Face-to-face or online	Face-to-face or online
Instructor qualifications/competencies	Example only - insert your required instructor/facilitator qualifications/competencies • {HF/NTS instructional competence (AC 119-12) • AVIM0005 or equivalent competency • Current aviation operational/training experience • Familiar with CASA Safety behaviours: HF for pilots kit}	Example only - insert your required instructor/facilitator qualifications/ competencies • {HF/NTS instructional competence (AC 119-12) • AVIM0005 or equivalent competency • Current aviation operational/training experience • Familiar with CASA Safety behaviours: HF for pilots kit}
Student instructor ratio	{insert} e.g.10:1	{insert} e.g.10:1
Duration	{insert length from provider} (e.g. 2 days)	{insert length from provider} (e.g. 1 day)
Assessment method	Written exam {or insert method from provider}	Written exam {or insert method from provider}
Record of completion	Records of completion and currency are tracked in {Sample Aviation}'s currency tracking system	Records of completion and currency are tracked in {Sample Aviation}'s currency tracking system
Course topics	Example only – insert topics from provider, ensuring the topics and content are tailored to and appropriate for your operations and personnel • {History of human factors and HF/NTS training • Human performance and limitations • Threat and error management • Communication • Conflict resolution • Safety culture • Leadership and teamwork • Fatigue and fatigue management • Stress and stress management • Information processing • Workload management	Example only – insert topics and cycle from provider, ensuring the topics and content are tailored to and appropriate for your operations and personnel • {Recurrent training will revisit all major modules of the initial training course, with topics distributed as evenly as possible across a 3-year cycle • Training content will address current, emerging and newly identified HF and HP risks • Case studies will be tailored to reflect {Sample Aviation}'s operational environment and safety risk profile and used to reinforce key HF/NTS learning

	Initial training course	Recurrent training course
	• Automation • Situational awareness • Decision making • The anatomy of an accident / case studies tailored to reflect {Sample Aviation}'s operational environment and safety risk profile and used to reinforce key HF/NTS learning outcomes}	outcomes}

Record keeping

Records of completion and currency will be tracked in {Sample Aviation}'s currency tracking system.

Program evaluation and continuous improvement

The CEO and the HOTC will review the HF/NTS program annually to ensure its content and method of delivery remain appropriate for {Sample Aviation}'s operations.

In addition to the scheduled annual review, opportunities for improvement may be identified through {Sample Aviation}'s training and checking and safety management systems, where deficiencies in HF/NTS knowledge or performance, or identification of HF-related hazards, trends or safety risks may indicate a need for enhanced or new program content.

Outcomes are to be recorded in the {insert document or location, e.g. Continuous Improvement Register (Form A03)} and retained in accordance with section Record keeping and management.

Following the annual HF/NTS program evaluation, or more frequently if a requirement for updated or new course content is identified, the HOTC will brief the third-party HF/NTS provider {or insert name of third-party provider} to ensure the course content and delivery remain aligned with our operational needs and identified HF/NTS risks.

Any identified improvements or required changes are implemented in accordance with {Sample Aviation}'s management of change procedures in the Management of Change section of this exposition.

Recognition of HF/NTS training and assessment completed with another operator

{Sample Aviation} may recognise HF/NTS training completed with another operator (e.g., Part 121, Part 135 or Part 141 operator) where the following conditions are met:

• the training was completed within the previous 2 years
• the person provides a certificate or evidence of completion

- the HF/NTS course content aligns with CASA HF/NTS advisory material, including AC 119-12 and the CASA Safety behaviours: Human factors for pilots resource kit
- the content is substantially equivalent to the topics used in this program
- the HOTC reviews the evidence, undertakes an assessment to determine its validity and identifies any gaps between the completed training and this program
- the HOTC accepts the previously completed training as meeting, or partially meeting, the requirements of this program.

Where gaps in training and/or assessment are identified, the HOTC will determine the additional training and/or assessment needed to ensure the person meets the requirements of this program.

All RPL evidence and decisions made, including details of the recognised equivalent training and any additional training and assessment undertaken, will be recorded in the person's training record.

Where equivalence cannot be confirmed, the person must complete the training and assessment as required by this program.

Sample program 3: {Self-learn pathway}

Program purpose and objectives

The purpose of this HF/NTS training and assessment program is to enhance the HF knowledge and non-technical skills of the operational safety-critical personnel listed below.

The objectives of the program are to:

- ensure personnel develop and maintain the HF and NTS knowledge, skills and behaviours required to safely carry out their duties
- strengthen personnel capability to identify, manage and mitigate HF-related risks
- minimise errors arising from human performance limitations and enhance the capture of potential errors
- mitigate the adverse effects of external influences on human performance
- support continuous improvement in operational safety performance through the application of HF and NTS principles.

The knowledge and competencies developed through this program support the assessment of NTS and threat and error management competencies during the checks specified in {insert training and checking manual volume or document title}.

Personnel required to participate in the program

Flight crew

Flight crew personnel must not carry out their duty unless they have completed the HF/NTS initial and recurrent training required under this program.

Other personnel

The following personnel must complete the HF/NTS training program within three months of appointment and meet all recurrent training requirements.

{Insert list of personnel}

- {Job title 1}
- {Job title 2}
- {Job title 3}

Program responsibilities

The program is managed by the HOTC, who is responsible for ensuring that:

- program content remains operationally relevant and addresses our specific HF and NTS risks
- all identified personnel complete initial and recurrent training and assessment in accordance with program requirements

- appointing an internal or external instructor to conduct HF/NTS assessments, workshops, or knowledge checks
- reviewing assessment evidence and determining whether competency requirements have been met
- {insert additional responsibilities}.

Program outline

	Initial training course	Recurrent training course
Recency	As per section {insert document reference}	{x} year/s
Delivery method	Self-learn using CASA HF/NTS kit, with oversight/testing by an approved instructor	Self-learn using CASA HF/NTS kit, with oversight/testing by an approved instructor
Instructor qualifications	Example only - insert your required instructor qualifications/competencies • {HF/NTS instructional competence (AC 119-12) • AVIM0005 or equivalent competency • Current aviation operational/training experience • Familiar with CASA Safety Behaviours kit}	Example only - insert your required instructor qualifications/competencies • {HF/NTS instructional competence (AC 119-12) • AVIM0005 or equivalent competency • Current aviation operational/training experience • Familiar with CASA Safety Behaviours kit}
Student instructor student ratio	Not applicable for self-study; for workshops or classes: {insert ratio}	Not applicable for self-study; for workshops or classes: {insert ratio}
Duration	Self-paced learning; guided review or classes {insert duration if applicable}	Self-paced learning; guided review or classes {insert duration if applicable}
Assessment method	Example only - insert your assessment methods: {Workbook activities, Q&A sessions, written responses, or selected topic testing conducted by an approved instructor}	Example only - insert your assessment methods: {Workbook activities, Q&A sessions, written responses, or selected topic testing conducted by an approved instructor}
Record of completion	Records of completion and currency are tracked in operator's currency tracking system.	Records of completion and currency are tracked in operator's currency tracking system.
Course topics	Example only – insert topics from CASA HF/NTS kit, ensuring the topics and content are tailored to and appropriate for your operations and	Example only – insert topics from CASA HF/NTS kit, ensuring the topics and content are tailored to and appropriate for your operations and personnel

	Initial training course	Recurrent training course
	personnel • {History of human factors and HF/NTS training • Human performance and limitations • Threat and error management • Communication • Conflict resolution • Safety culture • Leadership and teamwork • Fatigue and fatigue management • Stress and stress management • Information processing • Workload management • Automation • Situational awareness • Decision making • The anatomy of an accident / case studies tailored to reflect {Sample Aviation}'s operational environment and safety risk profile and used to reinforce key HF/NTS learning outcomes}	• {Recurrent training will revisit all major modules of the initial training course, with topics distributed as evenly as possible across a 3-year cycle • Training content will address current, emerging and newly identified HF and HP risks • Case studies will be tailored to reflect {Sample Aviation}'s operational environment and safety risk profile and used to reinforce key HF/NTS learning outcomes}

Record keeping

Records of completion, evidence of completion of exercises, assessment outcomes and currency will be tracked in {Sample Aviation}'s currency tracking system.

Program evaluation / continuous improvement

The CEO and the HOTC will review the HF/NTS program annually to ensure its content and method of delivery remain appropriate for {Sample Aviation}'s operations.

In addition to the scheduled annual review, opportunities for improvement may be identified through {Sample Aviation}'s training and checking and safety management systems, where deficiencies in HF/NTS knowledge or performance, or identification of HF-related hazards, trends or safety risks may indicate a need for enhanced or new program content.

Outcomes are to be recorded in the {insert document or location, e.g. Continuous Improvement Register (Form A03)} and retained in accordance with section Record keeping and management.

Following the annual HF/NTS program evaluation, or more frequently if a requirement for updated or new course content is identified, the HOTC will determine the additional course

content required to ensure the program remains aligned with our operational needs and identified HF/NTS risks, seeking the assistance of an external HF/NTS provider if necessary.

Any identified improvements or required changes are implemented in accordance with {Sample Aviation}'s management of change procedures in the Management of Change section of this exposition.

Recognition of HF/NTS training and assessment completed with another operator

{Sample Aviation} may recognise HF/NTS training completed with another operator (e.g., Part 121, Part 135 or Part 141 operator) where the following conditions are met:

- the training was completed within the previous 2 years
- the person provides a certificate or evidence of completion
- the HF/NTS course content aligns with CASA HF/NTS advisory material, including AC 119-12 and the CASA Safety behaviours: Human factors for pilots resource kit
- the content is substantially equivalent to the topics used in this program
- the HOTC reviews the evidence, undertakes an assessment to determine its validity and identifies any gaps between the completed training and this program
- the HOTC accepts the previously completed training as meeting, or partially meeting, the requirements of this program.

Where gaps in training and/or assessment are identified, the HOTC will determine the additional training and/or assessment needed to ensure the person meets the requirements of this program.

All RPL evidence and decisions made, including details of the recognised equivalent training and any additional training and assessment undertaken, will be recorded in the person's training record.

Where equivalence cannot be confirmed, the person must complete the training and assessment as required by this program.

HF/NTS third party provider

Where {Sample Aviation} appoints an external instructor or HF/NTS provider to support the self-learn program, that provider must meet the characteristics listed in section {insert document reference}.

Appendix B

Human factors principles & non-technical skills (HF/NTS) training and assessment program: Sample Airlines

Appendix B: Overview

Sample Airlines - scope of operations

Sample Airlines conducts Part 135 and Part 121 air transport operations, with a management team of less than 10, and 60 full and part-time staff.

Operations are conducted in the following aircraft:

- Example aircraft
- PA-31 Navajo (single pilot)
- Beech 1900D (multi-crew)
- Fairchild Metro (multi-crew).

Sample Airlines' headquarters and main operating base are collocated, and additional operational facilities are located at several locations.

Sample Airlines is documenting their HF/NTS training and assessment program as a dedicated chapter within their training and checking manual for their exposition.

B.1.1   Key personnel responsibilities

CEO responsibilities:

- 119.130 (1) (e) (HF/NTS training):
    - The CEO is responsible for ensuring that training and checking of Sample Airlines operational safety-critical personnel (other than flight crew) is done so in accordance with Sample Airlines' exposition.

HOTC responsibilities:

- 119.150 (2)(c) (for HF/NTS training only):
    - The HOTC is responsible for ensuring that training and checking of flight crew contracted by or for the operator is done so in accordance with Sample Airlines' exposition.

Staff member responsibilities:

- All Sample Airlines flight crew and operational-safety critical personnel are responsible for ensuring they attend and participate in HF/NTS training and assessment in accordance with Sample Airlines' exposition.

B.1.2   Program objectives

Sample Airlines requires all flight crew and operational-safety critical personnel to undergo the HF/NTS training and assessment program.

The objective of this program is to:

- enhance the human factors knowledge and non-technical skills of personnel
- assist in managing human performance and mitigating errors for the enhancement of overall safety performance
- {insert program objectives}

The program includes an initial and recurrent training courses that will be managed and provided by Sample Airlines training department.

B.1.3   Program responsibilities

- 119.130(1)(e), 119.150(2)(c):
    - The CEO is responsible for ensuring adequate resources have been allocated to the HF/NTS training and assessment program.
    - The CEO has assigned management of responsibilities for implementation and delivery of the HF/NTS program to the HOTC.

B.2   Record keeping

Records of completion and currency will be tracked in Sample Airlines' training currency tracking system.

B.3   Personnel required to participate in the program

B.3.1   Flight crew

- 119.180(3):
  - All personnel as defined by 119.180(2) must not carry out their duties unless they have completed the HF/NTS initial training course and meet annual currency requirements.

B.3.2   Other operational safety-critical personnel

- 119.185(3):
  - All other operational-safety critical personnel, as identified below, must be compliant with the HF/NTS training and assessment program within 3 months after being appointed to their position and meet annual currency requirements.
- Sample Airlines identifies operational-safety critical personnel by role or function as follows:
  - rostering and scheduling personnel
  - flight following and operations centre personnel, including personnel that conduct the preparation of weight and balance information
  - ground handling personnel, including those tasked with loading/unloading of baggage, cargo, catering, and other amenities
  - passenger check-in and boarding personnel
  - any manager/supervisor responsible for management of flight crew or operational safety-critical personnel
  - any other personnel whose role/duties require direct contact with the aircraft.

B.4   Flight crew HF/NTS training and assessment

B.4.1   Overview

HF/NTS training and assessment for flight crew members will be conducted as part of initial induction ground school training, on an annual recurrency and as part of flight crew command upgrade training.

Table B1 specifies the duration and which HF/NTS training elements are to be covered in each type of training.

B.5   Othe operational-safety critical personnel HF/NTS training and assessment

B.5.1   Overview

HF/NTS training for other operational-safety critical personnel will be conducted as part of initial induction training and on an annual recurrency basis.

Table B1 specifies the duration and which HF/NTS training elements are to be covered in each type of training.

B.6   HF/NTS training syllabus

B.6.1   Syllabus outline

Table B1 specifies which HF/NTS training elements are to be covered in each type of training. The HF/NTS training elements are tailored to the specific needs of the role and training phase being undertaken.

The levels of training in Table B1 can be described as follows:

- **In-depth**: training that is instructional or interactive in style taking full advantage of group discussions, team task analysis, team task simulation, etc., for the acquisition or consolidation of knowledge, skills, and attitudes.
- **Overview/summary**: training that is instructional or interactive in style to meet the program objectives or to refresh and strengthen knowledge gained in a previous training.

For annual recurrent HF/NTS training, all HF/NTS training elements shall be covered by distributing modular training sessions as evenly as possible over a 3-year period.

The selection of modular elements will initially be driven by HF/NTS analysis in relation to identified HF/NTS issues, hazards, or risks from the safety management system (SMS).

Where specific topic elements have been identified for inclusion via SMS risks or operational occurrences, an in-depth level of training will be undertaken for that element.

Table B1: HF/NTS training syllabus outline

HF/NTS training elements	Initial HF/NTS	Annual recurrent HF/NTS	Flight crew command upgrade
Duration	2.5 days	1 day	1 day
General Principles			

HF/NTS training elements	Initial HF/NTS	Annual recurrent HF/NTS	Flight crew command upgrade
- HF and NTS in aviation - Human performance principles and limitations - Threat and error management.	In-depth	Overview/summary	Overview/summary
Individual factors			
- Human error, reliability, attitudes, and behaviours - Stress and stress management - Fatigue and fatigue management - Situational awareness - Information acquisition and processing.	In-depth	Overview/summary	In-depth
Team factors			
- Automation and philosophy on the use of automation.	Overview/summary	Overview/summary	In-depth
- Monitoring and intervention.	Overview/summary	Overview/summary	Overview/summary
- Shared situational awareness - Shared information acquisition and processing - Workload management	In-depth	Overview/summary	In-depth

HF/NTS training elements	Initial HF/NTS	Annual recurrent HF/NTS	Flight crew command upgrade
- Effective communication and coordination within teams - Leadership and teamwork - Decision-making - Resilience development - Surprise and startle effect.			
Organisational factors			
- Safety culture and company culture - Effective communication and coordination with other operational personnel and ground services.	In-depth	Overview/summary	In-depth
- Case studies and organisational occurrences analysis	In-depth	In-depth	In-depth

B.6.2 Assessment

At the completion of each HF/NTS training course participants are required to undertake a written theory assessment, with an 80% required pass mark.

In the event of failure to achieve the required pass mark of the assessment, a re-sit of the theory assessment is required.

For face-to-face training, at the discretion of the facilitator, a verbal assessment may be undertaken to assess competency in lieu of the re-sit. This verbal assessment would include an assessment of the trainees understanding of any areas of deficiency (as identified from their initial assessment results) and their broader understanding of the training.

An informal NTS assessment is also required to be completed via facilitator observations of trainees' participation during group activities conducted within the classroom. These observations allow for informal assessment of trainees' attitudes and behaviours in relation to observable behavioural markers relating to NTS. Only in instances where deficiencies in

observable behaviours have been identified will a formal follow-up and debriefing of NTS be undertaken with individual participants.

B.7   HF/NTS facilitators

All Sample Airlines' HF/NTS facilitators are required to have undertaken an internal train the trainer upgrade program and training pathway. The training pathway requires the following steps be completed for an individual to be approved to deliver HF/NTS training courses:

- **HF/NTS initial course training:** completion of initial HF/NTS training, including course assessment.
- **Training observation:** observing specific course content observation session/s, observing an approved HF/NTS facilitator delivering the different HF/NTS courses. (Note: this and the preceding step can be undertaken concurrently, at the discretion of the HOTC.)
- **Group learning and facilitation skills**: training in group learning and facilitation skills to provide knowledge and skills for effective facilitation, training of small groups and presentation of course material in a variety of ways, training in the conduct of group exercises, administering activities, directing and maintaining group discussions and conducting HF/NTS assessments and debriefings.
- **Supervised course delivery:** delivery of course under supervision of an approved HF/NTS facilitator.
- **Facilitator sign-off:** training delivery, assessment and sign-off completed by a HOTC-approved HF/NTS facilitator.

Facilitators for HF/NTS flight crew command upgrade training must be a current flight crew member.

All HF/NTS facilitators must remain current in the delivery of courses by having delivered a course not less than once every 12 months. If this currency is not maintained, the facilitator must complete the final two steps of the training pathway to regain currency (supervised course delivery and facilitator sign-off).

Release of new HF/NTS courseware will require all HF/NTS facilitators to undergo new courseware briefings. The HOTC will determine the duration and frequency of these briefings, based on the volume and significance of new or updated course material.

B.8   HF/NTS third party provided training

For any operational safety critical roles identified in B3.2 that are fulfilled via contractors or third-party service providers, where that personnel's direct employer provides HF/NTS training a gap analysis must be undertaken to ensure that all the key HF/NTS syllabus content (identified in Table B1) has been delivered. For any identified deficiencies between the two, the personnel must complete training and assessment to a level equivalent to what would be achieved for direct employees of Sample Airlines.

Copies of HF/NTS training and assessment completion and currency records for all contractors or third-party services providers must be provided and maintained in Sample Airlines' training currency tracking system.

The HOTC will review all third party provided HF/NTS training and assessment courses annually and confirm they continue to meet the requirements of this section.

B.9   HF/NTS program evaluation/continuous improvement

The CEO and the HOTC are responsible for reviewing the HF/NTS program content annually and considering whether it remains applicable to Sample Airlines operations. Any areas identified for improvement or changes are to be made in accordance with the Sample Airlines change management procedures.