NATIONAL TEST PILOT SCHOOL ENTERPRISE

SAFETY MANAGEMENT MANUAL

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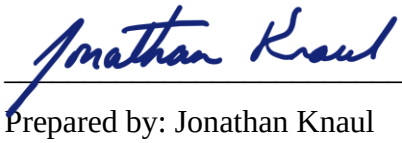
Signature Sheet



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Record of Changes

Change Number	Change Filed (Name)	Date
Initial issue	**Rigel Hebmann**	**13 March 2016**
Revision 1	**Rigel Hebmann**	**18 August 2016**
Revision 2	**Rigel Hebmann**	**26 May 2017**
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Change Summary

Rev.	Date	Summary of Changes
	13 March 2016	Initial Issue
1	**18 August 2016**	Overview added Changed paragraph 6.3.7.4 a)
2	**26 May 2017**	Changed list of acronyms Changed paragraph 6.3.7.6 Changed paragraph 9.5.3.2 j) Added Appendix m
3	**5 April 2018**	Added Accountable Manager signature in Appendix E Added document control tables in Appendix F and Appendix G
4	**15 July 2018**	Chapter 13 add a procedure for monitoring subcontractor verified by their national authority to have active safety programs Added and updated Appendix J, K, L and M Added Accountable Manager and CMM signature in Appendix J
5	**1 June 2019**	Amended paragraph 6.3.1.1 to incorporate Flight Hazard Analysis and moved the General Hazard Analysis to the OMM. Clarified reference in paragraph 6.3.7.2, replaced 6.2.1 by 6.2. Added paragraph 8.3.3.6: occurrences per 100 hours by aircraft type multi-annual indicator. Amended paragraph 9.5.3.2 on occurrences analysis to include other organizations that may contribute to the analysis. Changed Chapter 13. Modified Appendix C to reflect the change in Paragraph 6.3.1.1. Changed Appendix G to reflect the change in Paragraph 9.5.3.2 and added numbers for each box. Removed Appendix J/K/L and rename Appendix M in J
6	**15 April 2021**	Amended paragraph 6.3.1.1 c) to link the OMM GHA to SMM. Amended paragraph 6.3.2 to align with ICAO SMS probability definitions. Added sub-paragraph 6.3.7.4 c) to address GHA process. Amended paragraph 7.4 to reflect changes in drafting of Safety Action Plans Amend paragraph 8.4.4 to identify if risk mitigation strategies. /safety recommendations are effective Amend paragraph 8.4.5 to align with NTPS Policy Manual Amended paragraph 12.4 to delineate safety training between staff, professional students, and short course students
7	**1 October 2021**	Amended document to remove ‘President and CEO” from Accountable Manager duties. Chapter 9 amended to streamline Safety Occurrence reporting and investigations. Appendix G amended to reflect changes made to Chapter 9.
8	**1 November 2023**	Amended document to include Flight Research International (FRI) acquisition from NTPS and the creation of NTPS Enterprise.
9	**1 July 2024**	Updates made to Chapter 6 - Hazard Identification and reporting, Chapter 8 - Safety Performance Monitoring, Chapter 9 - Occurrence Reporting and Investigating, Chapter 12 - Safety Promotion, REFERENCES section, and minor spelling & grammar updates throughout.

Distribution List

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Printed copy for "Reference Use Only"

List of acronyms

AIM	Airman's Information Manual
ASRS	Aviation Safety Reporting System
ATO	Approved Training Organization
CEO	Chief Executive Officer
CFR	Code of Federal Regulations
COO	Chief Operating Officer
EASA	European Aviation Safety Agency
FAA	Federal Aviation Administration
FRI	Flight Research International
FTE	Flight Test Engineer
FTOM	Flight Test Operations Manual
FTT	Flight Test Technique
FHA	Flight Hazard Analysis
GHA	General Hazard Analysis
ICAO	International Civil Aviation Organization
IR	Initial Report
KPI	Key Performance Indicator
NASA	National Aeronautics and Space Administration
NTSB	National Transportation Safety Board
NTPS	National Test Pilot School
OMM	Organizational Management Manual
PM	Preventative Measure
STC	Supplemental Type Certificate
SMM	Safety Management Manual
SMS	Safety Management System
SP	Safety Pilot
SR	Supplemental Report
TC	Type Certificate
THA	Test Hazard Analysis
TP	Test Pilot

TPI	Test Pilot Instructor
USG	United States Government

Overview

This Safety Management Manual defines the safety policy, processes and procedures that govern the “NTPS Enterprise”, including both National Test Pilot School (NTPS) and Flight Research International (FRI) activities. To achieve NTPS Enterprise commitment to continuously improve towards the highest safety standards, this document describes the integration within all NTPS and FRI effort on the four components of the Safety Management System, which are the safety policy and objectives, the safety risk management, the safety performance monitoring and the safety promotion.

Table of Contents

1. SCOPE INTEGRATION OF THE SAFETY MANAGEMENT SYSTEM

1.1 Purpose

This Safety Management Manual (SMM) defines the safety policy, processes and procedures that govern the "NTPS Enterprise" Safety Management System (SMS), including both National Test Pilot School (NTPS) and Flight Research International (FRI) activities. It is designed as an effective SMS that enhances NTPS Enterprise operations and should not limit them.

1.2 Scope

NTPS is one of the few organizations in the world that deliver Test Pilots (TP) and Flight Test Engineers (FTE) training and as such is quite unique. FRI is a world leader in aircraft maintenance, advanced flight training specializing in upset prevention and recovery training, flight test support, preparation for space travel, and custom high performance aircraft support and flight training. The objective of the SMS is to identify associated hazards, assess the related risks, develop appropriate mitigations and control their effectiveness within the scope of this training, including any sub-contracted activity. This SMM applies to all NTPS Enterprise activities.

1.3 Integration

The four components of the NTPS Enterprise SMS, which are integrated within all NTPS and FRI activities, are:

a) safety policy and objectives (Paragraph 2);

b) safety risk management (Paragraph 6.3);

c) safety performance monitoring (Paragraph 8); and

d) safety promotion (Paragraph 12).

2. SAFETY POLICY AND OBJECTIVES

2.1 Purpose

This chapter describes NTPS Enterprise safety objectives and the policy that NTPS and FRI implements to achieve these objectives.

2.2 Objective

NTPS Enterprise objective is to continuously improve towards the highest safety standards when delivering TP and FTE training.

2.3 Applicable legislation

NTPS and FRI conduct operations in accordance with Chapter 14 of the US Code of Federal Regulations (CFRs) Part 61 and 91, FAA approved aircraft Flight Manuals, FAA relevant Letter of Deviation Authorization, FAA relevant Airworthiness Directives, National Transportation Safety Board (NTSB) 49 CFR Part 830, the Airman's Information Manual (AIM) and EASA regulations applicable to Approved Training Organizations providing Flight Test Training. Safety measures and any relevant mandatory safety information mandated by EASA for Approved Training Organizations are implemented by NTPS.

2.4 Policy

To achieve NTPS Enterprise commitment to continuously improve towards the highest safety standards, NTPS and FRI senior management will strive to:

a) promote the safety policy to all personnel and demonstrate their commitment to it;

b) establish safety objectives and required performance standards;

c) provide the necessary human and financial resources for implementation;

d) actively enforce a proactive and systematic management of safety with the same attention to results as other management areas;

e) establish safety as a primary responsibility of all managers and employees;

f) encourage safety occurrence reporting and communication;

g) not blame someone for reporting a safety concern or potential safety concern which would not have otherwise been detected;

h) ensure that no action will be taken against any employee or student who discloses a safety concern through appropriate NTPS and FRI channels and justly deal with employees and students who report safety occurrences;

i) comply with all applicable legislation, meet all applicable standards and consider best practices.

j) not tolerate any illegal or intentional violation.

2.5 Review

NTPS Enterprise safety policy will be periodically reviewed to ensure it remains relevant and appropriate.

2.6 Endorsement

The current safety policy is to be signed by the CEO. A current version, in a format optimized for framing (see Appendix A), is to be signed the CEO and placarded in the following locations:

a) Operations room;

b) NTPS lobby;

c) FRI lobby;

d) all classrooms;

e) each break room,

f) hangar 72, next to the entrance to the Operations room;

g) hangar 64 (main maintenance building);

h) FRI hangar (161).

3. SAFETY ACCOUNTABILITY OF THE ACCOUNTABLE MANAGER

3.1 Purpose

This chapter describes the safety responsibilities and accountabilities of the Accountable Manager.

3.2 Safety accountability

The Accountable Manager has ultimate responsibility and accountability for the implementation and maintenance of the SMS. This ensures that the responsibility for the overall NTPS Enterprise safety performance is placed at a level in the organization having the authority and resources to take action to ensure that the SMS is effective.

3.3 Scope

The Accountable Manager responsibilities include, but are not limited to:

a) provision and allocation of human, technical, financial or other resources necessary for the effective and efficient performance of the SMS;

b) direct responsibility for the conduct of NTPS Enterprise affairs;

c) final authority over operations;

d) establishment and promotion of the safety policy;

e) establishment of NTPS Enterprise safety objectives;

f) final responsibility for the resolution of all safety issues;

g) establishing and maintaining NTPS Enterprise competence to learn from the analysis of data collected through its safety reporting system;

h) clearly establishing a safety accountability and authority flow between NTPS Enterprise and any sub-contractor.

3.4 Cross references

- Organizational Management Manual

4. SAFETY RESPONSIBILITIES OF KEY SAFETY PERSONNEL

4.1 Purpose

This chapter describes the safety responsibilities for the following key safety personnel:

a) the NTPS Safety Manager;

b) the FRI Director of Quality & Safety;

c) the Compliance Monitoring Manager;

d) Head of Training;

e) The Chief Flying Instructor;

f) the Chief Theoretical Knowledge Instructor;

g) the Management Safety Review Board;

h) the Safety Team Members.

The safety responsibilities of the Accountable Manager are defined in Chapter 3 of this Safety Management Manual.

4.2 NTPS Safety Manager

4.2.1 Functions of the Safety Manager

The NTPS Safety Manager acts as the focal point for all safety matters and is responsible for the development, administration and maintenance of an effective SMS.

The functions of the NTPS Safety Manager are to:

a) facilitate hazard identification, risk analysis and management;

b) monitor the implementation of actions taken to mitigate risks;

c) updates and maintains the NTPS Safety Risk Register, as detailed in Paragraph 6.3.8;

d) informs all NTPS staff and students each time a Test Hazard Analysis (THA) or a Flight Hazard Analysis (FHA) worksheet is created or updated in the NTPS Safety Risk Register;

e) provide periodic reports on NTPS safety performance;

f) ensure maintenance of safety management documentation and safety records;

g) ensure that periodic safety training is conducted and that it meets acceptable standards;

h) provide advice on safety matters;

i) ensure initiation and follow-up corrective actions of internal occurrence / accident investigations;

j) monitor safety concerns in the aviation industry and assess their possible impact on NTPS operations.

4.2.2 Qualification and experience of the Safety Manager

To qualify as NTPS Safety Manager a person should have:

a) not less than one year of full-time experience at NTPS as a Test Pilot Instructor or Flight Test Engineer Instructor, to ensure sound knowledge of NTPS operations, procedures and activities;

b) excellent safety behavior and attitude, which includes following regulatory practices and rules, recognizing and reporting hazards and promoting effective safety reporting;

c) experience in aviation safety;

d) an extensive knowledge of safety management systems;

e) an understanding of risk management principles and techniques to support the SMS;

f) experience in safety/quality audits;

g) sound knowledge of aviation regulatory frameworks (FAA and EASA) as well as ICAO Standards and Recommended Practices (SARPS);

h) the ability to communicate at all levels both inside and outside NTPS;

i) the ability to be firm in conviction, promote a just and fair culture and an open and non-punitive atmosphere for reporting;

j) the ability and confidence to communicate directly to the Accountable Manager;

k) well-developed communication skills and demonstrated interpersonal skills, with the ability to liaise with a variety of individuals and organizational representatives, including those from differing cultural backgrounds.

4.3 FRI Director of Quality & Safety

The FRI Director of Quality & Safety is responsible, with specific reference to FRI activities, for:

a) safety culture improvements;
b) oversight and guidance in implementing the SMS;
c) SMS and Quality Programs e Objective, Goal, Strategies, and Measures (OGSM) contributions;
d) updates on the Occurrence Reporting systems;
e) ensuring that the processes needed for the SMS are established, implemented, and maintained;
f) reporting to top management on the performance of the SMS and specific areas in need of improvement;
g) promotion of awareness of the SMS throughout the FRI organization;
h) ensuring that the SMS meets the standards of quality assurance.

It is also the responsibility of the FRI Director of Quality & Safety to coordinate with the Safety Team and assist supervisors and management in the initiation, education, and execution of an effective SMS. This includes:

a) introduce the SMS to new employees;
b) assistance in the implementation and management of the quality program;

c) develop specific goals related to health and safety for the organization and track them on a regular basis;
d) be thoroughly familiar with the company SMS and ensure implementation of the program elements;
e) address all hazards or potential hazards as needed;
f) review and act upon all safety reports and investigations;
g) ensure adequate stock of first aid supplies and other safety equipment to ensure their immediate availability;
h) communicate safety issues via bulletin board, company meetings, and quarterly newsletters Enforce accountability on necessary safety issues;
i) ensure compliance with applicable rules, regulations, and organizational standards;
j) identify deficiencies, develop, implement, and verify preventive and corrective measures;
k) communicate as appropriate with appropriate regulatory authorities regarding issues related to safety and quality.

The FRI Director of Quality & Safety is a member of the NTPS Enterprise Safety Review Board.

4.4 Compliance Monitoring Manager

The Compliance Monitoring Manager ensures NTPS meets high standards of TP and FTE training and continuously improves towards the highest safety standards, in compliance with EASA requirements for Approved Training Organizations providing Flight Test Training.

Regarding safety, the Compliance Monitoring Manager is responsible for:

a) identifying corrective actions in the event of non-compliances;

b) recording of corrective actions;

c) follow-up of corrective actions within the agreed time frame;

d) evaluation of the safety standards in internal audits;

e) reporting outcomes to the Accountable Manager and to the Safety Manager.

4.4 Head of Training

The Head of Training is ultimately responsible for ensuring the quality and standards of TP and FTE flight and academic training. As such, the Head of Training plays a key role for NTPS to continuously improve towards the highest safety standards. The Head of Training is a member of the NTPS Enterprise Safety Review Board.

4.5 Chief Flying Instructor and Chief Theoretical Knowledge Instructor

The Chief Flying Instructor and the Chief Theoretical Knowledge Instructor are responsible for ensuring quality and standards of TP and FTE training, respectively in the fields of flight training and theoretical knowledge training. As such, they both play a key role for NTPS to continuously improve towards the highest safety standards. The Chief Flying Instructor and the Chief Theoretical Knowledge Instructor are members of the NTPS Enterprise Safety Review Board.

4.6 NTPS Enterprise Safety Review Board

The NTPS Enterprise Safety Review Board is a high-level committee that considers matters of strategic safety in support of the Accountable Manager safety accountability.

The Management Safety Review board is chaired by the Accountable Manager and is composed of:

a) CEO

b) NTPS President;

c) FRI President;

d) Head of Training;

e) Chief Flying Instructor;

f) Chief Theoretical Knowledge Instructor;

g) Chief Operating Officer;

h) NTPS Safety Manager;

i) FRI Director of Quality & Safety.

The Safety Review Board meets at least once a year and monitors:

a) NTPS Enterprise safety performance against the safety policy and objectives;

b) that any safety action is taken in a timely manner;

c) the effectiveness of the organization's safety management processes;

d) that appropriate resources are allocated to achieve the established safety performance.

All the above points are traced in writing in the Safety Review Board meeting minutes.

4.7 Safety Team

4.7.1 Functions of the Safety Team

The NTPS Enterprise Safety Team is the Safety Action Group and assists the NTPS Safety Manager and the FRI Director of Quality & Safety in all aspects of his/her duties. The NTPS Safety Manager is ultimately responsible for any document issued by and any action performed by the Safety Team.

The role of the Safety Team members includes, but is not limited to:

a) monitor operational safety;

b) assess the impact on safety of operational changes;

c) attend Safety Team meetings, which should happen at least once per quarter;

d) assist the NTPS Safety Manager and the FRI Director of Quality & Safety in hazard identification and risk management;

e) assist the NTPS Safety Manager and the FRI Director of Quality & Safety in occurrence investigation, analysis and recommendations;

f) assist the NTPS Safety Manager and the FRI Director of Quality & Safety in safety report production;

g) assist the NTPS Safety Manager and the FRI Director of Quality & Safety in safety promotion through training, education, communication and sharing of safety information;

h) assist the NTPS Safety Manager and the FRI Director of Quality & Safety in promoting the NTPS Enterprise Safety Policy;

i) be proactive in suggesting improvements towards the highest safety standards;

j) gain the confidence of NTPS Enterprise employees and students so that they report any safety concern to the Safety Team;

k) assist the NTPS Safety Manager and the FRI Director of Quality & Safety in the initiation and follow-up corrective actions of internal occurrence / accident investigations;

l) assist the NTPS Safety Manager and the FRI Director of Quality & Safety in ensuring that safety actions are implemented within agreed time scales;

m) assist the NTPS Safety Manager and the FRI Director of Quality & Safety in monitoring safety concerns in the aviation industry and assessing their possible impact on NTPS Enterprise operations.

4.7.2 Qualification and experience of the Safety Team members

The Safety Team members are appointed by the Accountable Manager, considering:

a) experience in aircraft operations and in-flight test;

b) seniority and knowledge of NTPS Enterprise operations;

c) excellent safety behavior and attitude, which includes following regulatory practices and rules, recognizing and reporting hazards and promoting effective safety reporting;

d) understanding of risk management principles and techniques to support the SMS.

It is desirable, as far as practicable, that all aspects of NTPS Enterprise operations are represented within the Safety Team:

a) fixed wing;

b) rotary wing;

c) test pilots;

d) flight test engineers;

e) performance and flying qualities specialists;

f) systems specialists;

g) aircraft maintenance specialists;

h) operations.

4.8 Cross references

- NTPS Enterprise Organizational Management Manual

5. SAFETY RESPONSIBILITIES OF KEY SAFETY PERSONNEL

5.1 Purpose

This chapter defines the NTPS Enterprise SMS document control procedures. All SMS documentation will follow the NTPS Enterprise documentation control procedure that is in the NTPS Enterprise policies and that is cross referenced in Paragraph 5.2 below.

5.2 Cross reference

- NTPS Enterprise Policy

6. HAZARD IDENTIFICATION AND SAFETY RISK MANAGEMENT

6.1 Purpose

This chapter defines NTPS Enterprise hazard identification and risk management process. NTPS Enterprise must ensure that the safety risks encountered in TP and FTE training, and in advanced training, are controlled to achieve its safety performance targets.

This process is known as safety risk management and includes:

a) hazard identification;

b) safety risk assessment;

c) implementation of appropriate mitigation measures.

6.2 Hazard identification

6.2.1 Hazard definition

A hazard is defined as a condition or an object with the potential to contribute to unsafe TP and FTE training, or advanced training, by causing death, injuries to personnel, damage to equipment or structures, loss of material, or reduction of the ability to perform the training.

Potential hazards include, but are not limited to:

a) design factors, including equipment and task design;

b) procedures and operating practices, including their documentation and checklists;

c) communications, including the medium, terminology and language;

d) personnel factors, such as company policies for recruitment, training and remuneration;

e) organizational factors, such as the compatibility of production and safety goals, the allocation of resources, operating pressures and the safety culture;

f) work environment factors, such as temperature and the availability of protective equipment;

g) regulatory oversight factors, including the applicability and enforceability of regulations; the certification of equipment, personnel and procedures; and the adequacy of surveillance audits;

h) defenses, including such factors as the provision of adequate warning systems, the error tolerance of equipment and the extent to which the equipment is hardened against failures.

Hazard identification must be a continuous and integral part of NTPS Enterprise organizational processes.

6.2.2 Methods of hazard identification

Hazard identification is the first step in the safety risk management process. A clear understanding of hazards and their related consequences is essential to the implementation of sound safety risk management.

Hazard identification is based on the following ways of collecting data:

a) reactive;

b) proactive;

c) predictive.

6.2.2.1 Reactive hazard identification

Reactive hazard identification involves analysis of past outcomes or events. Hazards are identified through investigation of safety occurrences. Incidents and accidents are clear indicators of system deficiencies and therefore can be used to determine the hazards that either contributed to the event or that are latent.

The sources that can provide reactive hazard identification include, but are not limited to:

a) accident reports (NTPS Enterprise and external);

b) mandatory occurrence reports;

c) other occurrence reports;

d) professional symposiums and workshops (e.g. Society of Experimental Test Pilots, Society of Flight Test Engineers, etc.);

e) annual safety reports from aviation Authorities (FAA, EASA) or ICAO;

f) other safety publications from aviation Authorities, ICAO, armed forces and industry.

6.2.2.2 Proactive hazard identification

Proactive hazard identification involves analysis of existing or real-time situations, with special emphasis on their possible consequences. This is the primary task of the safety performance monitoring function. Proactive hazard identification shall be the preferred way to identify potential hazards at NTPS Enterprise.

The sources that can provide proactive hazard identification include, but are not limited to:

a) identification following an analysis performed by the Safety Team;

b) identification following an analysis performed during an instructor standardization meeting;

c) voluntary reporting by any NTPS Enterprise employee, student or sub-contractor. At any time, an NTPS Enterprise employee, student or sub-contractor may submit an Initial Report of a perceived hazard using the same methods of reporting as in the case of a safety occurrence (see para 9.3);

d) identification during an audit (internal or external).

The sources above will only generate hazard identification when associated with appropriate analysis and assessment processes. Proactive hazard identification involves actively seeking hazards in the existing processes. Each time a hazard is proactively identified, it is important that the identification is formalized for traceability and for ensuring that a follow up action will be carried out to highlight, eliminate or mitigate the hazard. This is achieved either by filing out an NTPS Enterprise Occurrence Report Form (see Paragraph 9.3.1), by reporting the identified hazard in the relevant meeting's minutes or by filing out an audit finding report.

6.2.2.3 Predictive hazard identification

Predictive hazard identification involves data gathering to identify possible negative future outcomes or events, analyzing system processes and the environment to identify potential future

hazards and initiating mitigating actions. Predictive hazard identification is achieved by detecting trends from safety performance indicators.

6.3 Safety risk management

6.3.1 Definitions

6.3.1.1 Safety risk

Safety risk is the projected probability and severity of the outcome for an existing hazard.

6.3.1.1 Safety risk management

Safety risk management at NTPS Enterprise encompasses the assessment and mitigation of all known or potential aviation safety risks, whether related to the safety of flight or to the efficiency of the training affecting the future capabilities and skills of the students. The objective of safety risk management is to assess the risks associated with identified hazards, develop and implement appropriate mitigations; and check that these mitigations are effective. Safety risk management is therefore a key component of the NTPS Enterprise safety management process.

Safety risk management applies to all hazards identified by NTPS Enterprise, which include:

a) any hazard associated with the in-flight performance of a specific Flight Test Technique (FTT). In that case, the associated process is called Test Hazard Analysis (THA). This process is both used in all NTPS Enterprise instruction flights and taught to NTPS Enterprise student Test Pilots, Flight Test Engineers, and during any advanced training, as part of their curriculum.

b) any identified flight hazard other than what is described in point a) above, which may have an impact on TP and FTE training or on any other NTPS Enterprise flight training/activity. In that case, the associated process is called Flight Hazard Analysis (FHA). Consideration must be given to any flight hazard that has potential flight safety consequences.

c) hazards that may have medium to long term consequences on the student's future flight test career and on the overall NTPS Enterprise activity. This should include all reasonably foreseeable consequences, such as the effect of inappropriate student training generating a lack of skills, which could have some effect later, after the Test Pilot or Flight Test Engineer has graduated and when he/she is employed in a flight test organization; or hazards to NTPS Enterprise as a business entity. In that case, the associated process is called General Hazard Analysis (GHA). GHA's are further addressed in the NTPS Enterprise Organization Management Manual.

The THA, FHA, and GHA follow the same general process, which is described below in Paragraphs 6.3.2 through 6.3.7.

6.3.2 Safety risk probability

The process of controlling safety risks starts by assessing the probability that the consequences of hazards will materialize during activities performed by NTPS Enterprise. Safety risk probability is defined as the likelihood or frequency that a safety consequence or outcome might occur.

The determination of likelihood can be aided by questions such as:

a) Is there a history of occurrences similar to the one under consideration, or is this an isolated occurrence?

b) What other equipment of the same type might have similar defects?

c) How many personnel are following, or are subject to, the procedures in question?

d) How frequently is the suspect equipment or the questionable procedure in use?

Any factors underlying these questions will help in assessing the likelihood that a hazard may exist, taking into consideration all potentially valid scenarios. At NTPS Enterprise, safety risk probability is assessed qualitatively, as presented in Table 6-1. The table includes five categories to denote the probability related to an unsafe event or condition, the description of each category, and an assignment of a value to each category.

Probability of occurrence	Definition	Value
High	Likely to occur many times (has occurred frequently at NTPS)	5
Probable	Likely to occur sometimes (Has occurred infrequently at NTPS)	4
Uncertain	Unlikely to occur (has occurred rarely at NTPS)	3
Remote	Very unlikely to occur (not known to have occurred at NTPS)	2
Improbable	Almost inconceivable that the event will occur	1

Table 6-1: NTPS Enterprise Safety risk probability of occurrence

6.3.3 Safety risk severity

Safety risk severity considers the potential consequences related to the hazard. Safety risk severity is defined as the extent of harm that might reasonably occur as a consequence or outcome of the identified hazard.

The severity assessment is based upon:

a) Fatalities/injury. What is the potential for loss of life or serious injury (employees, students, observers and the general public)?

b) Damage. What is the likely extent of aircraft, property or equipment damage?

The severity assessment considers all possible consequences related to an unsafe condition, considering the worst foreseeable situation. NTPS Enterprise safety risk severity is in Table 6-2. It includes four categories to denote the level of severity, the description of each category, and the assignment of a value to each category.

Severity	Definition	Value
Catastrophic	Equipment destroyed Death Student TP / FTE non-proficient to the point of generating an accident	4
Critical	Serious injury Serious incident Major equipment damage Significant reduction in safety margins Workload such that the operators cannot be relied upon to perform their tasks accurately or completely Student TP / FTE non-proficient to the point of generating a serious incident	3
Marginal	Additional operating limitations Use of emergency procedures Incident Student TP / FTE non-proficient to the point of generating an incident Inconsistent student TP / FTE training	2
Negligible	No consequences	1

Table 6-2: NTPS Enterprise Safety risk severity table

6.3.4 Safety risk index

The safety risk probability and severity assessment process is used to derive a safety risk index, indicating the combined results of the probability and severity assessments. The index is calculated by multiplying the values of the safety risk probability by the value of the safety risk severity. A color code is attributed to the computed safety risk index, and the respective probability and severity combinations are presented in the NTPS Enterprise safety risk assessment matrix in Figure 6-1.

		Risk probability of occurrence				
		High	Probable	Uncertain	Remote	Improbable
Risk severity	**Value**	**5**	**4**	**3**	**2**	**1**
Catastrophic	**4**	**20**	**16**	**12**	**8**	**4**
Critical	**3**	**15**	**12**	**9**	**6**	**3**
Marginal	**2**	**10**	**8**	**6**	**4**	**2**
Negligible	**1**	**5**	**4**	**3**	**2**	**1**

Risk index	Risk level
12 or more:	HIGH
6 to 11:	MEDIUM
5 or less:	LOW

Figure 6-1: NTPS Enterprise safety risk assessment matrix

6.3.5 Safety risk tolerability

The index obtained from the NTPS Enterprise safety risk assessment matrix is then exported to the NTPS Enterprise safety risk tolerability matrix. The matrix, which is in Table 6-3, describes the tolerability criteria for NTPS Enterprise.

Safety risk index	Criteria	Tolerability
12 or more	Unacceptable for NTPS under the current conditions	Intolerable
6 to 11	Acceptable for NTPS with risk mitigation measures	Tolerable
5 or less	Acceptable for NTPS as it is	Acceptable

Table 6-3: NTPS safety risk tolerability matrix

6.3.6 Safety risk mitigation

6.3.6.1 Intolerable risk

Risks initially assessed as falling in the intolerable region are unacceptable to NTPS Enterprise under any circumstances. The probability and/or severity of the consequences of the hazards are of such a magnitude, and the damaging potential of the hazard poses such a threat to safety, that the activity must be stopped immediately and shall only be resumed after either the risk is eliminated, or appropriate mitigation measures have been implemented to bring the residual risk back to the tolerable or acceptable region.

6.3.6.2 Tolerable risk

Safety risks assessed as initially falling into the tolerable region are acceptable provided that the appropriate risk mitigation measures have been implemented by NTPS Enterprise.

6.3.6.3 Acceptable risk

Safety risks assessed as initially falling in the acceptable region are acceptable as they currently stand.

6.3.6.4 Monitoring of risk mitigation measures

It is essential that any mitigating measures to bring back a risk index to the acceptable region be assessed for effectiveness. This is achieved by the NTPS Safety Manager monitoring any occurrence report involving the risk mitigation measure. If an occurrence report is received and analysis by the Safety Team shows that the risk mitigation measure was not sufficient, the Safety Team shall start the risk management process again and recommend appropriate additional risk mitigation measures, which are in turn monitored for efficiency.

6.3.7 NTPS safety risk management process

6.3.7.1 General

The NTPS Enterprise safety risk management process consists of input data, processing, output data and a feedback loop to check efficiency. The steps are described in Paragraphs 6.3.7.2 to 6.3.7.5 and in Figure 6-2 below.

6.3.7.2 Input data

The input data of the NTPS Enterprise safety risk management process is any hazard that was identified by NTPS as described in Paragraph 6.2.

6.3.7.3 Processing

The input data are analyzed by the Safety Team under the responsibility of the NTPS Safety Manager. For each hazard, the associated risk probability and severity are assessed, and a safety risk index is computed, as described in Paragraph 6.3.4.

Depending on the risk index, the NTPS Safety Manager recommends:

a) in case of intolerable risk (risk index 12 or more): the activity to be stopped and, if the activity is essential for TP and FTE training, and for advanced training, mitigating measures to be implemented to bring the resulting risk in the acceptable region;

b) in case of tolerable risk (risk index 6 to 11): mitigation measures to be implemented to bring the resulting risk in the acceptable region;

c) in case of acceptable risk (risk index 5 or less): activity to be continued and monitored without any additional mitigation.

6.3.7.4 Output data

The output data of the NTPS Enterprise safety risk management process is a decision by the Accountable Manager, based on the NTPS Safety Manager and FRI Director of Quality & Safety recommendations, to implement measures for bringing the residual risk into the acceptable region.

The process is formalized by:

a) for a hazard related to the execution in flight of a specific Flight Test Technique, the issue of a Test Hazard Analysis (THA) worksheet. A THA must be approved and signed by any member of the Management Safety Review Board, as described in Paragraph 4.6 of this SMM. An example is in Appendix B. The signed THA worksheet is incorporated in the NTPS Enterprise risk register, and a copy is placed in the NTPS Handbook, Volume X, in the relevant Flight Test Technique chapter. A THA worksheet may apply to several Flight Test Techniques. When a THA is generated by an NTPS Enterprise student as part of a training exercise, it can be approved by the NTPS Enterprise instructor who is responsible for conducting the Data Card Review or Technical Review Board and Safety Review Board, as defined in NTPS Enterprise Flight Test Operations Manual (FTOM) Paragraph 6.5.4 and 6.5.5; the THA must apply to an NTPS Enterprise fleet aircraft and must be at least as conservative as the THAs that already exist in the NTPS Enterprise risk register.

b) Note: the hazards associated with "Low-Risk" type flight tests, such as for example avionics-related flight testing, may not require a dedicated THA. Such hazards have been addressed in the *Low-Risk Testing* table (Table K-1) found at Appendix K of this document. Other systems test not mentioned may also qualify, under Table K-1, so long as safe limitations under the following conditions are addressed in the Risk Assessment section of the applicable test planning document: environment, weather, operating area, operating altitude, aircraft configuration, and other applicable items considered germane by the test crew and/or test plan reviewing authority.

c) for a hazard related to any other aspect of NTPS Enterprise flight activity, the issue of a Flight Hazard Analysis (FHA) worksheet. An FHA must be approved and signed by any member of the Management Safety Review Board, as described in Paragraph 4.6 of this SMM. An example is in Appendix C. The signed FHA worksheet is incorporated in the NTPS Enterprise risk register.

All NTPS Enterprise staff, students and, when applicable, sub-contractors, must be informed when a new THA or FHA is created or when an existing THA or FHA is updated. The NTPS Safety Manager sends an E-mail of the update to all NTPS Enterprise staff and makes a reminder of the update at the morning briefing. The Safety Manager also informs all students of the update. When applicable, the Accountable Manager informs all sub-contractors of the update.

6.3.7.5 Process feed-back

The implemented risk mitigation measures are checked for efficiency as described in Paragraph 6.3.6.4.

6.3.7.6 Record keeping

For any risk that is managed with the NTPS Enterprise risk management process, the following must be recorded in writing in an NTPS Enterprise risk management process report:

a) the input data;

b) the analysis carried out during the processing;

c) the output data;

d) the check for efficiency of the risk mitigation measures.

The records are archived:

1) an NTPS Enterprise risk management process report is documented and inserted in the relevant Safety Team meeting minutes; a template for the NTPS Enterprise risk management process report is in Appendix M;

2) all FHA and THA worksheets are kept in an electronic file called the NTPS Enterprise Safety Risk Register. The NTPS Enterprise Safety Risk Register is updated and maintained by the NTPS Safety Manager, and a paper copy is kept in NTPS Enterprise Operations;

3) in the NTPS Enterprise Safety Database to ease implementation follow up. An example for the NTPS Enterprise Safety Database is in Appendix D.

6.3.8 NTPS Enterprise Safety Risk Register

A Safety Risk Register file is established on the NTPS M drive as a repository for identified risks of all categories. All FHAs, THAs and Occurrence Reports must be filed in the Safety Risk Register for maintenance and review. The Risk Register also includes the NTPS Enterprise Safety Database. The NTPS Safety Manager is responsible for contents, maintenance and update of the NTPS Enterprise Safety Risk Register.

6.4 Cross references

- NTPS Enterprise Organizational Management Manual

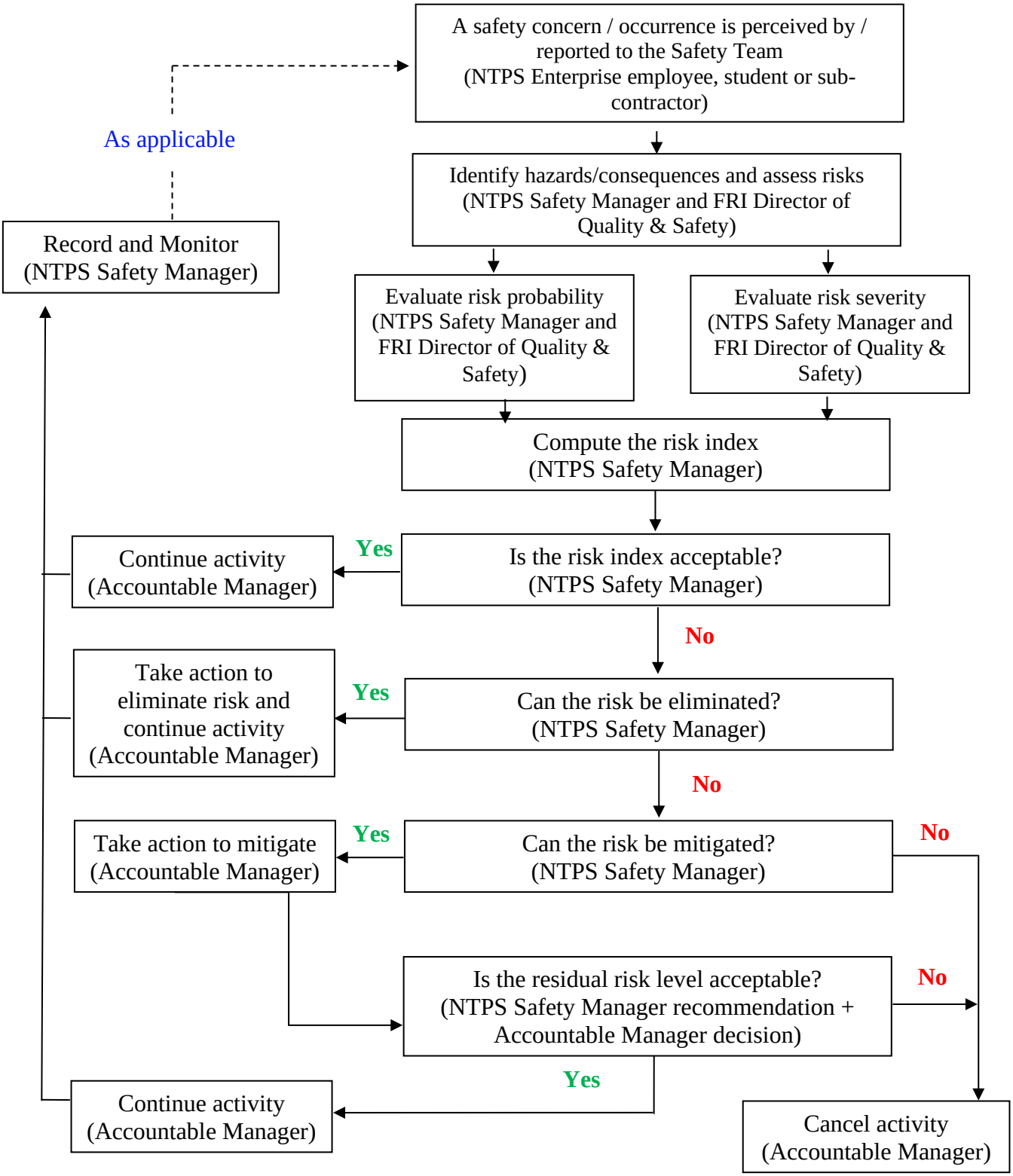


Figure 6-2: NTPS Enterprise safety risk management process

7. SAFETY ACTION PLANNING

7.1 Purpose

This chapter describes the process to prepare and execute the NTPS Enterprise Safety Action Plan.

7.2 Scope

NTPS Enterprise must establish a Safety Action Plan for each calendar year.

The goal of the Safety Action Plan is to enhance safety at NTPS Enterprise through:

a) the prevention of accidents and incidents;

b) the identification of potential precursors to safety issues and the implementation of adequate mitigation.

7.3 Input data

The NTPS Enterprise Management Safety Review Board, which is described in Paragraph 4.6 of this Safety Management Manual, must define the NTPS Enterprise safety objectives for each calendar year based on:

a) past year incidents and accidents;

b) identified potential precursor of safety issues (includes any degradation of existing risk control measures);

c) analysis of past year safety trends;

d) NTPS Enterprise senior management objectives and priorities.

7.4 Processing

The NTPS Enterprise Safety Action Plan is prepared by the NTPS Safety Manager, assisted as required by the FRI Director of Quality & Safety and the Safety Team. It shall be based on safety objectives and guidance provided by the Management Safety Review Board. The Safety Action Plan is then reviewed and approved by the Accountable Manager. A template for the Safety Action Plan is in Appendix E.

7.5 Output data

The NTPS Enterprise Safety Action Plan is approved in writing by the Accountable Manager and implemented by all NTPS employees, students and, if applicable, sub-contractors.

7.6 Process feed-back

The execution of the Safety Action Plan is monitored by the Safety Manager through the Safety Performance Monitoring Process. If needed, the Management Safety Review Board may request amendment of the Safety Action Plan during execution to incorporate new data or to mitigate unexpected adverse effects.

Any amendment of the Safety Action Plan follows the same process as the initial approval, in that case the output data is a document approved in writing by the Accountable Manager and stating:

a) why the amendment was required;

b) what changes are made to the initial Safety Action Plan.

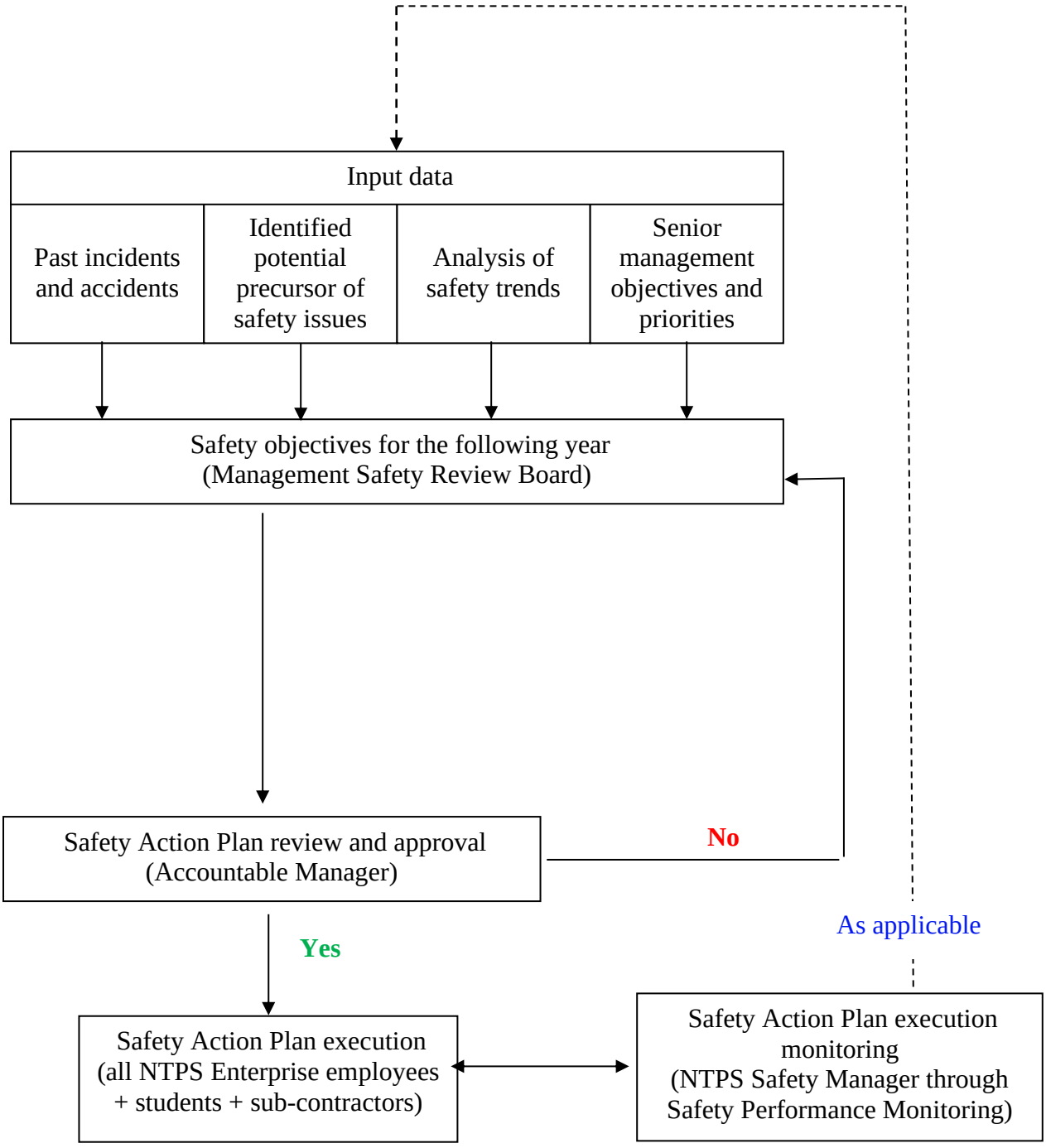


Figure 7-1: NTPS safety action planning process

8. SAFETY PERFORMANCE MONITORING

8.1 Purpose

This chapter describes the process to monitor NTPS Enterprise safety performance.

8.2 Scope

NTPS Enterprise safety performance must be permanently monitored to ensure continuous improvement towards the highest safety standards.

Safety performance monitoring verifies that:

a) NTPS Enterprise Safety Policy is achieved;

b) NTPS Enterprise Safety Action Plan is implemented;

c) Safety concerns are being reported and actioned;

d) Safety risk control measures are effective;

e) Safety trends are monitored.

8.3 Safety performance indicators

8.3.1 NTPS Enterprise Safety Database indicators

The main way to collect NTPS Enterprise safety data is by safety occurrence reports. An occurrence is any safety-related event which endangers or which, if not corrected or addressed, could endanger an aircraft, its occupants or any other person and includes an accident or serious incident. The occurrence reporting and investigation process is in Chapter 9 of this Safety Management Manual. Two types of indicators are used at NTPS Enterprise:

a) Annual indicators, in which occurrences from the NTPS Enterprise Safety Database are continuously plotted against time in a graphical form for the current year. Annual indicators are used to detect any trend in real time and they are continuously updated as additional occurrence reports are provided. They are frozen when all the year's occurrences analysis has been finalized.

b) Multi-annual indicators which are used to assess the NTPS Enterprise safety performance by comparing with past years' performance. They are used to detect long term trends or to identify seasonal patterns.

8.3.2 Annual indicators

8.3.2.1 Occurrences by category

This indicator is generated by plotting the cumulated number of occurrences that happened in each category for the current year. The category of occurrence is attributed by the Safety Team when analyzing each occurrence report; it can be found at the beginning of the analysis section. An occurrence can belong to several categories simultaneously if multiple factors have caused the occurrence. The possible categories and their codes are listed in Table 8.1 below. An example of the occurrence by category indicator is in Figure 8.1 below.

Category of occurrence	Code
Air Traffic Control	ATC
Basic airframe / Aircraft systems / Mechanical problem	MEC
Bird or wildlife strike	STR
Crew Resource Management	CRM
Flight deck layout / Avionics confusion	FDL
Flight Test Instrumentation	FTI
Foreign Object	FOD
Fuel Management	FMG
Improper technique	TEC
Insufficient aircraft separation	AIR
Insufficient terrain separation	TER
Loss of control	LOC
Medical / Incapacitation	MED
Not determined	UNK
Procedures / documentation	PRO
Weather	WEA

Table 8-1: Categories of occurrences and codes

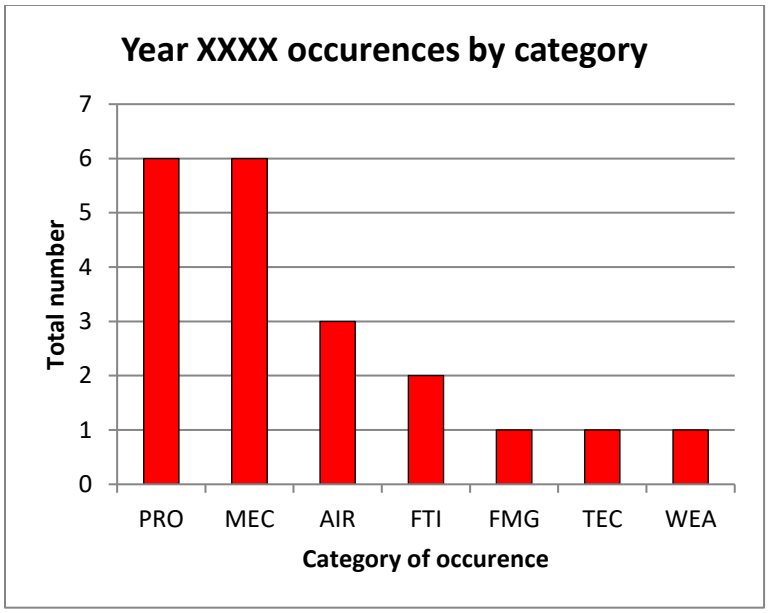


Figure 8-1: Occurrences by category indicator example

8.3.2.2 Occurrences by aircraft type

This indicator is generated by plotting the cumulated number of occurrences that happened for a given aircraft type for the current year. An example of the occurrence by aircraft type indicator is in Figure 8.2 below.

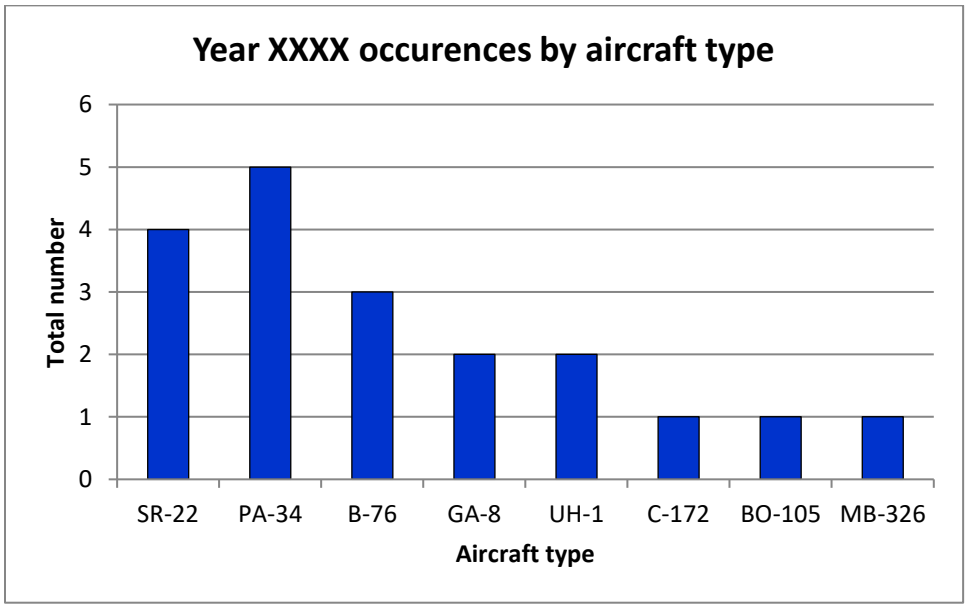


Figure 8-2: Occurrences by aircraft type indicator example

8.3.2.3 Occurrences by phase of flight

This indicator is generated by plotting the cumulated number of occurrences that happened for a given phase of flight for the current year.

The phases of flight are:

a) ground;

b) hover

c) take-off;

d) climb;

e) cruise;

f) test points;

g) descent;

h) approach;

i) landing;

j) all;

k) other.

A phase of flight is labelled “test point” each time this phase of flight was aimed at providing instruction on a Flight Test Technique or a maneuver that is part of an NTPS Enterprise course. For instance, if an occurrence happened during a climb which was just used to reach a test altitude prior to a test point, the phase of flight should be labelled ”climb”; but if the occurrence happened during a saw-tooth climb test point, it should be labelled “test point”.

An example of the occurrence by phase of flight indicator is in Figure 8.3 below.

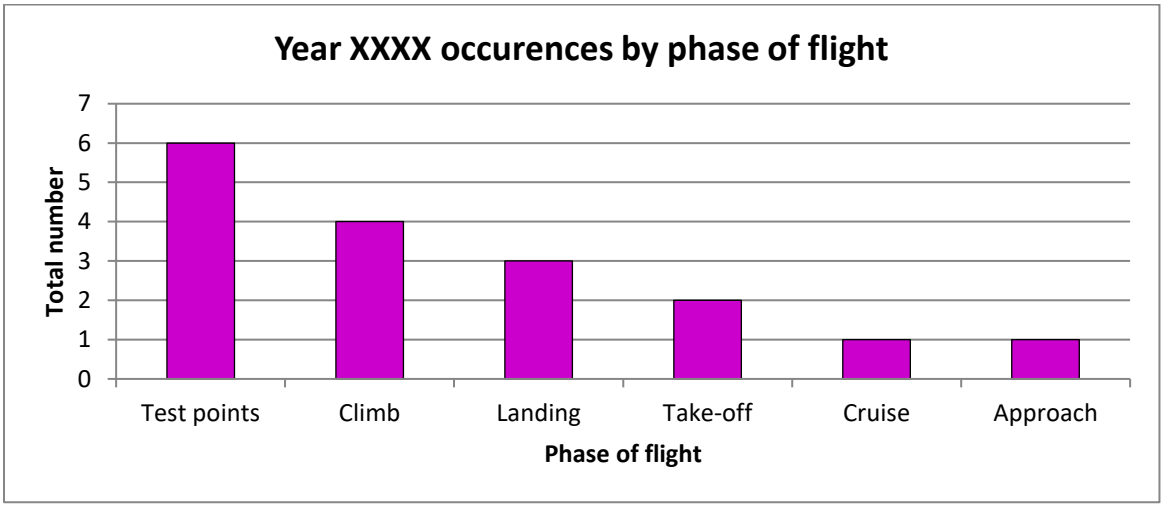


Figure 8-3: Occurrences by phase of flight indicator example

8.3.2.4 Occurrences by damage

This indicator is generated by plotting the cumulated number of occurrences that resulted in a given level of damage for the current year. The definition of substantial damage below is consistent with both US regulation 49 CFR Part 830, Paragraph 830.2 and European regulation (EU) N° 996/2010 of 20 October 2010 on the investigation and prevention of accidents and incidents in civil aviation.

The possible damage categories are:

a) None.

b) Minor: any damage that is not substantial and the aircraft is not destroyed is considered minor damage.

c) Substantial: any case where the aircraft is not destroyed but the damage or structural failure adversely affects its structural strength, performance or flight characteristics, and would normally require major repair or replacement of the affected component. The following is not considered substantial damage: engine failure or damage on a multi-engine aircraft when the damage is limited to a single engine (including its cowlings or accessories), damage to propellers, wing tips, antennas, probes, vanes, fairings, panels, windscreens, the aircraft skin (such as small dents or puncture holes) or minor damages to main rotor blades, tail rotor blades, landing gear, landing gear doors, wheels, tires, flaps, brakes; and those resulting from hail or bird strike (including holes in the radome).

d) Aircraft destroyed.

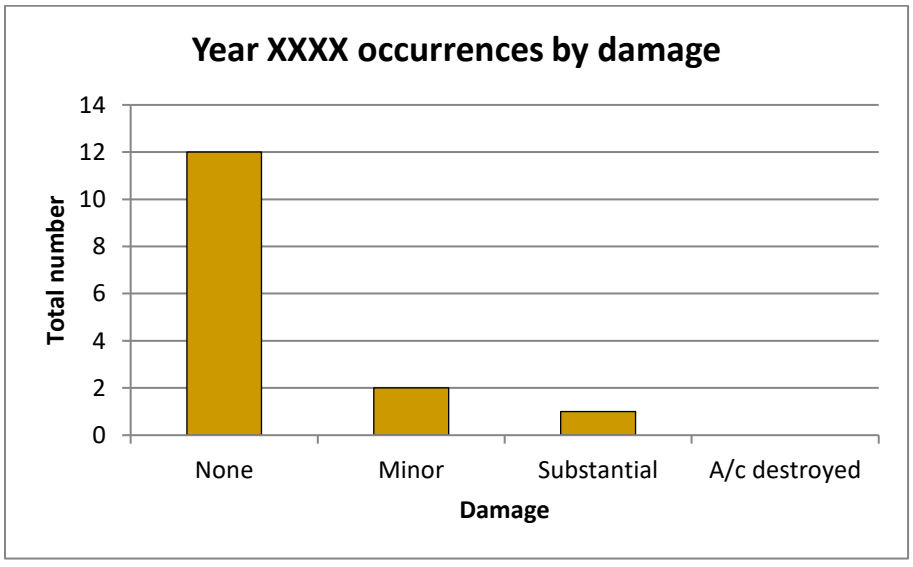


Figure 8-4: Occurrences by damage indicator example

8.3.2.5 Occurrences by severity of injuries

This indicator is generated by plotting the cumulated number of occurrences that resulted in a given severity of injuries for the current year. The definitions of serious and fatal injuries below are consistent with both US regulation 49 CFR Part 830, Paragraph 830.2 and European regulation (EU) N° 996/2010 of 20 October 2010 on the investigation and prevention of accidents and incidents in civil aviation.

The possible injury severities are:

a) None.

b) Minor: any injury that is neither serious nor fatal is considered minor.

c) Serious: an injury which is sustained by a person in an accident, and which involves one of the following:

1) hospitalization for more than 48 hours, commencing within 7 days from the date the injury was received;

2) a fracture of any bone (except simple fractures of fingers, toes, or nose);

3) lacerations which cause severe hemorrhage, nerve, muscle or tendon damage;

4) injury to any internal organ;

5) second- or third-degree burns, or any burns affecting more than 5 % of the body surface;

6) verified exposure to infectious or caustic substances or harmful radiation.

d) Fatal: an injury which is sustained by a person in an accident, and which results in his or her death within 30 days of the date of the accident.

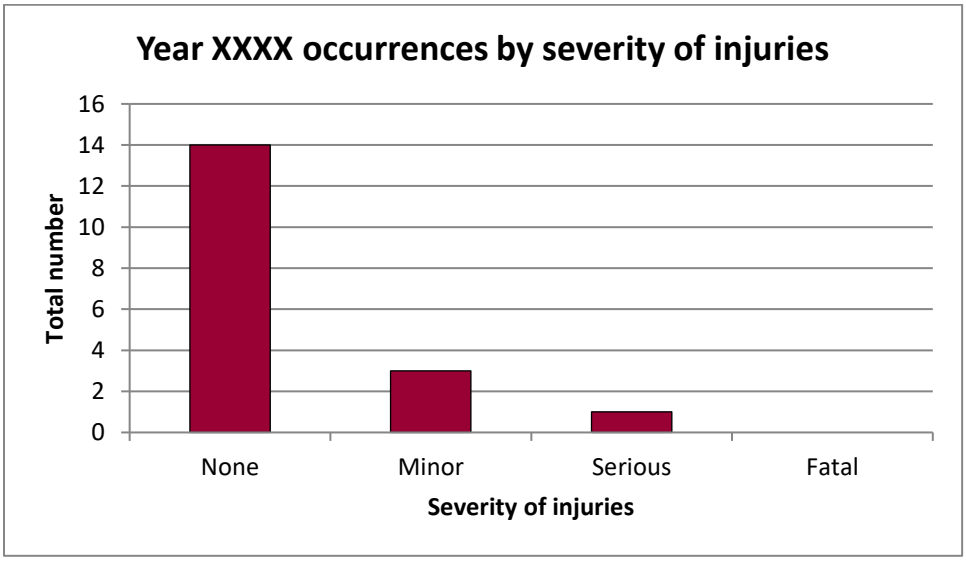


Figure 8-5: Occurrences by severity of injuries example

8.3.2.6 Occurrence by classification

This indicator is generated by plotting the cumulated number of occurrences that resulted in a given classification of occurrence for the current year. The definitions of a serious incident and of an accident below are consistent with both US regulation 49 CFR Part 830, Paragraph 830.2 and European regulation (EU) N° 996/2010 of 20 October 2010 on the investigation and prevention of accidents and incidents in civil aviation. The examples of serious incidents below are taken from European Directive 2003/42/EC of the European Parliament and of the Council of 13 June 2003 on occurrence reporting in civil aviation and from European regulation (EU) N° 996/2010 of 20 October 2010, the relevant extracts are reproduced in Appendix H and Appendix I of this Safety Management Manual.

The possible occurrence classifications are:

a) Incident: an occurrence, other than an accident or a serious incident, associated with the operation of an aircraft which affects or could affect the safety of operation.

b) Serious incident: an occurrence involving circumstances indicating that there was a high probability of an accident and is associated with the operation of an aircraft, which takes place between the time any person boards the aircraft with the intention of flight until the time when all such persons have disembarked. Serious incidents include, but are not limited to, those in the list below, which is not exhaustive and should only serve as guidance with respect to the definition of serious incident:

    1) a near collision requiring an avoidance maneuver to avoid a collision or an unsafe situation or when an avoidance action would have been appropriate;

    2) controlled flight into terrain only marginally avoided;

    3) take-off, aborted take-off, landing or attempted landing on a closed or engaged runway, on a taxiway, excluding authorized operations by helicopters, or from an unassigned runway;

    4) gross failure to achieve predicted performance during take-off or initial climb;

    5) fire and smoke in the passenger compartment, in cargo compartments or engine fires, even though such fires were extinguished using extinguishing agents;

    6) events requiring the emergency use of oxygen by the flight crew;

    7) aircraft structural failure or engine disintegration, including uncontained turbine engine failures, not classified as an accident;

    8) multiple malfunctions of one or more aircraft systems seriously affecting the operation of the aircraft;

    9) flight crew incapacitation in flight;

    10) fuel quantity requiring the declaration of an emergency by the pilot, critically low fuel quantity or inability to transfer fuel or use total quantity of usable fuel;

    11) runway incursions classified with severity A according to the Manual on the Prevention of Runway Incursions (ICAO Doc 9870) which contains information on the severity classifications;

12) take-off or landing incidents, such as undershooting, overrunning or running off the side of runways, including precautionary or forced landings;

13) system failures, weather phenomena, operation outside the approved flight envelope or other occurrences which could have caused difficulties controlling the aircraft;

14) failure of more than one system in a redundancy system mandatory for flight guidance and navigation;

15) loss of control (including partial or temporary) regardless of cause;

16) occurrences close to or above V1 resulting from or producing a hazardous or potentially hazardous situation (e.g. rejected take-off, tail strike, engine-power loss etc.);

17) descent below decision height/altitude or minimum descent height/altitude without the required visual reference;

18) heavy landing (a landing deemed to require a 'heavy landing check');

19) aircraft unintentionally departing from a paved surface;

20) collision between an aircraft and any other aircraft, vehicle or other ground object;

21) inability to achieve the intended aircraft configuration for any flight phase (e.g. landing gear and gear doors, flaps, stabilizers, slats etc.);

22) a hazard or potential hazard which arises as a consequence of any deliberate simulation of failure conditions for training, system checks or training purposes.

23) the use of any non-standard procedure by the flight crew to deal with an emergency when the procedure exists but is not used, the procedure does not exist, the procedure exists but is incomplete or inappropriate, the procedure is incorrect, or the incorrect procedure is used.

c) Accident: an occurrence associated with the operation of an aircraft which takes place between the time any person boards the aircraft with the intention of flight until the time when all such persons have disembarked, and which involves one of the following:

1) a person is fatally or seriously injured as a result of:

i. being in the aircraft, or,

ii. direct contact with any part of the aircraft, including parts which have become detached from the aircraft, or,

iii. direct exposure to jet blast,

iv. except when the injuries are from natural causes, self- inflicted or inflicted by other persons, or when the injuries are to stowaways hiding outside the areas normally available to the passengers and crew.

2) any case where the aircraft sustains damage or structural failure which adversely affects its structural strength, performance or flight characteristics, and would normally require major repair or replacement of the affected component, except for the following: engine failure or damage on a multi-engine aircraft when the damage is limited to a single engine (including its cowlings or accessories), damage to propellers, wing tips, antennas, probes, vanes, fairings, panels, windscreens, the aircraft skin (such as small dents or

puncture holes) or minor damages to main rotor blades, tail rotor blades, landing gear, landing gear doors, wheels, tires, flaps, brakes; and those resulting from hail or bird strike (including holes in the radome); or

3) the aircraft is missing or is completely inaccessible.

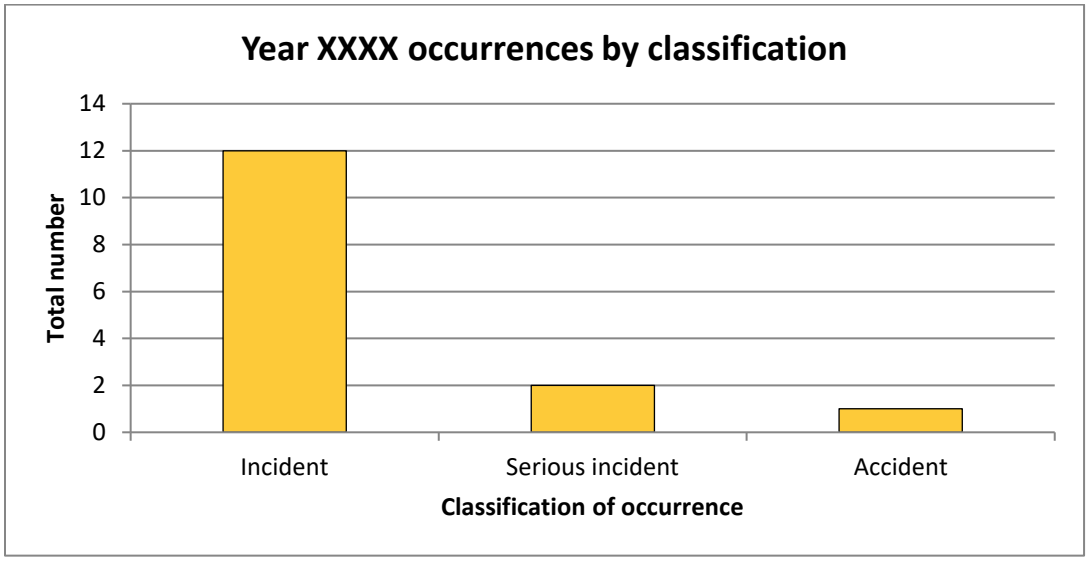


Figure 8-6: Occurrences by classification example

8.3.2.7 Occurrence by month and classification

This indicator is generated by plotting the cumulated number of occurrences that resulted in a given classification of occurrence for each month of the current year. It uses the same data and definitions as the occurrence by classification indicator described in Paragraph 8.3.2.6 above, except that the data are plotted for each month instead of cumulated for the year. Analyzing this indicator can help detect a trend of increasing number of occurrences.

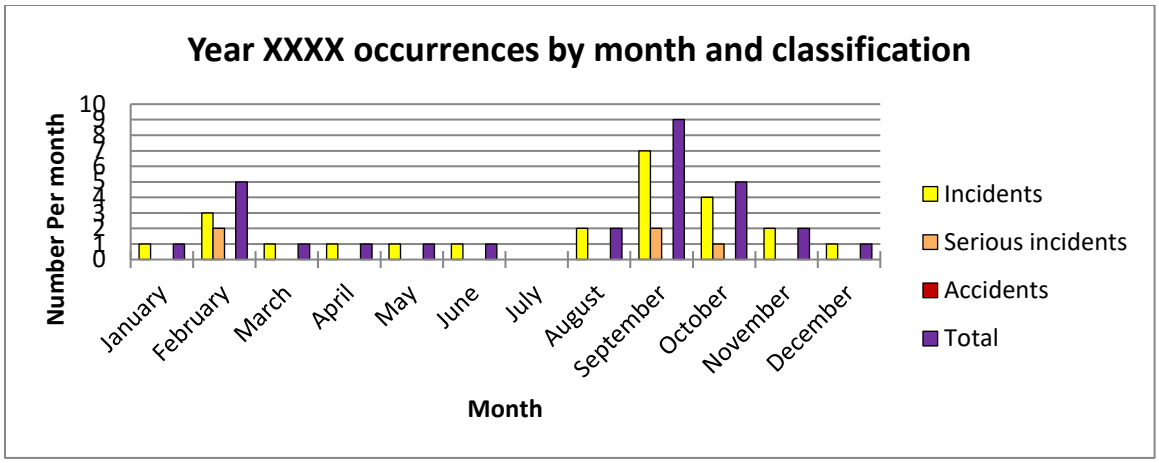


Figure 8-7: Occurrence by month and classification example

8.3.2.8 Occurrence by corrected damage

This indicator uses the same data as the occurrence by damage indicator described in Paragraph 8.3.2.4 above, but the number of occurrences in each damage category is multiplied by a coefficient to generate a corrected damage index that reflects the severity of the damage. The multiplying coefficient is:

a) 1 is the damage is none;

b) 5 if the damage is minor;

c) 10 if the damage is substantial;

d) 50 if the aircraft is destroyed.

The occurrence by corrected damage indicator is generated by plotting the corrected damage index for each category of damage for the current year. In the example below, even though there are less occurrences having resulted in substantial damage than occurrences having resulted in minor damage, the corrected index is the same for both categories: this reflects the higher severity of substantial damage compared to minor damage.

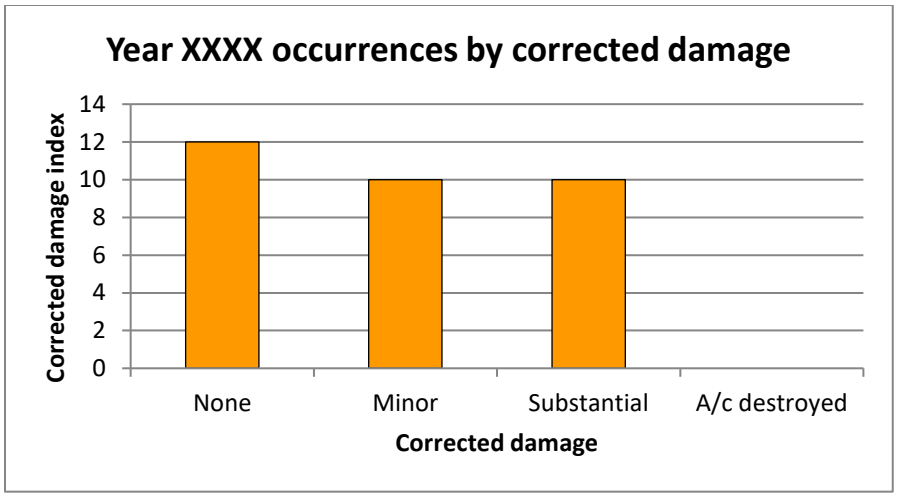


Figure 8-8: Occurrence by corrected damage example

8.3.2.9 Occurrence by corrected severity of injuries

This indicator uses the same data as the occurrence by severity of injuries indicator described in Paragraph 8.3.2.5 above, but the number of occurrences in each injury category is multiplied by a coefficient to generate a corrected injury index that reflects the severity of the injuries. The multiplying coefficient is:

a) 1 is the injuries are none;

b) 5 if the injuries are minor;

c) 10 if the injuries are serious;

d) 50 if the injuries are fatal.

The occurrence by corrected severity of injuries indicator is generated by plotting the corrected injury index for each category of injuries for the current year. In the example below, even though there are less occurrences having resulted in serious injuries than occurrences having resulted in minor injuries, the corrected index is higher for serious injuries: this reflects the higher severity of serious injuries compared to minor injuries.

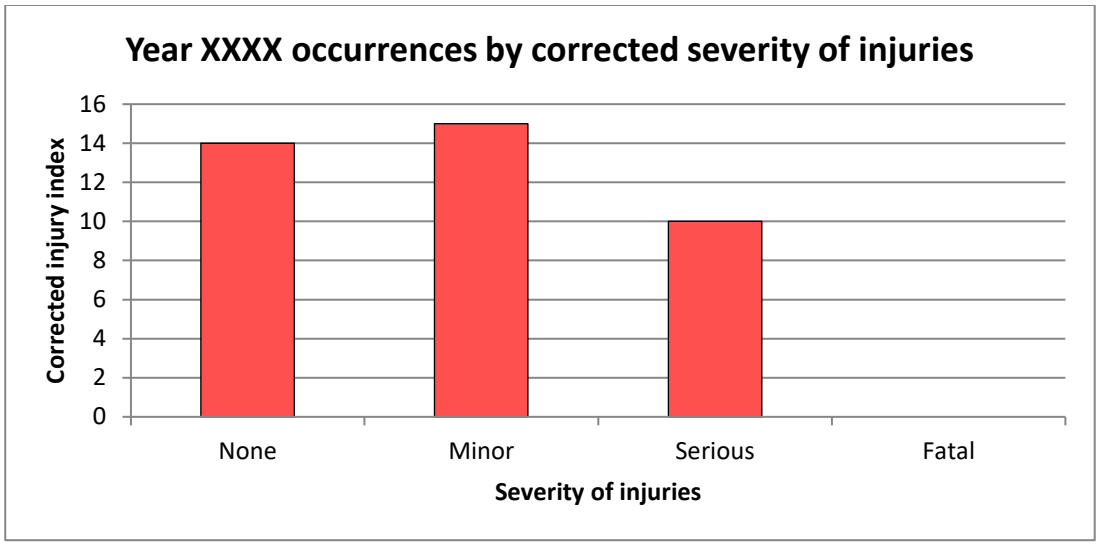


Figure 8-9: Occurrence by corrected severity of injuries example

8.3.2.10 Occurrence by corrected classification

This indicator uses the same data as the occurrence by classification indicator described in Paragraph 8.3.2.6 above, but the number of occurrences in each classification is multiplied by a coefficient to generate a corrected classification index that reflects the overall severity of the occurrence. The multiplying coefficient is:

a) 1 is occurrence is an incident;

b) 5 if the occurrence is a serious incident;

c) 50 if the occurrence is an accident.

The occurrence by corrected classification indicator is generated by plotting the corrected classification index for each classification of occurrence for the current year. In the example below, even though there is a single accident, the corrected index is higher, which reflects the higher severity of accidents compared to incidents or serious incidents.

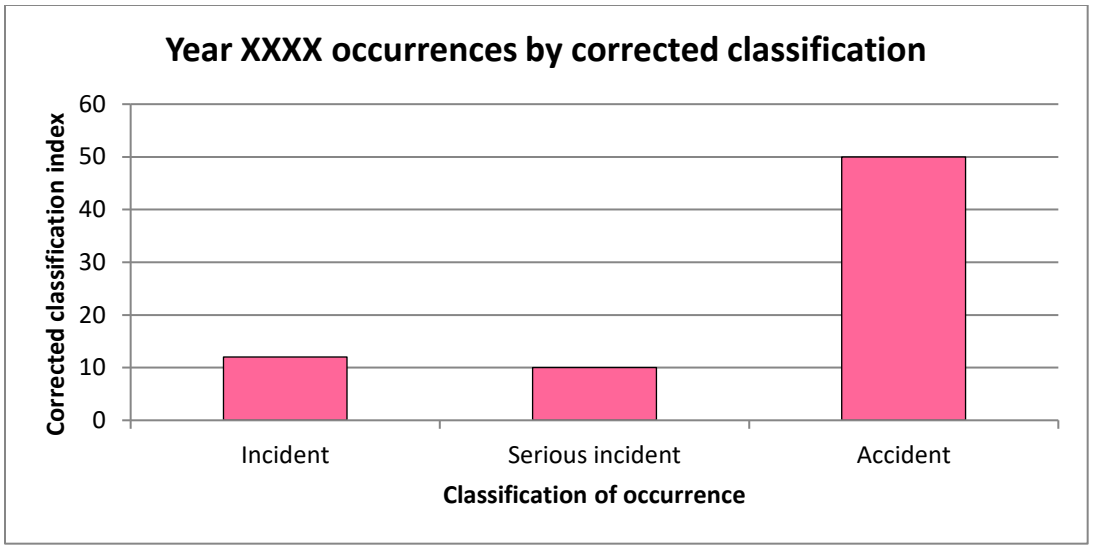


Figure 8-10: Occurrence by corrected classification example

8.3.2.11 Occurrence by month and corrected classification

This indicator is similar to the occurrence by month and classification indicator that is described in Paragraph 8.3.2.7 above, but it is designed to better reflect the severity of the occurrences. For each month of the year, the cumulated number of occurrences in a given classification (incident, serious incident or accident) is multiplied by the same coefficient as in Paragraph 8.2.10 above to generate the same corrected classification index, which reflects the overall severity of the occurrences. The corrected classification index is plotted for each month of the year. Analyzing this indicator can help detect a trend of both increasing number and severity of occurrences.

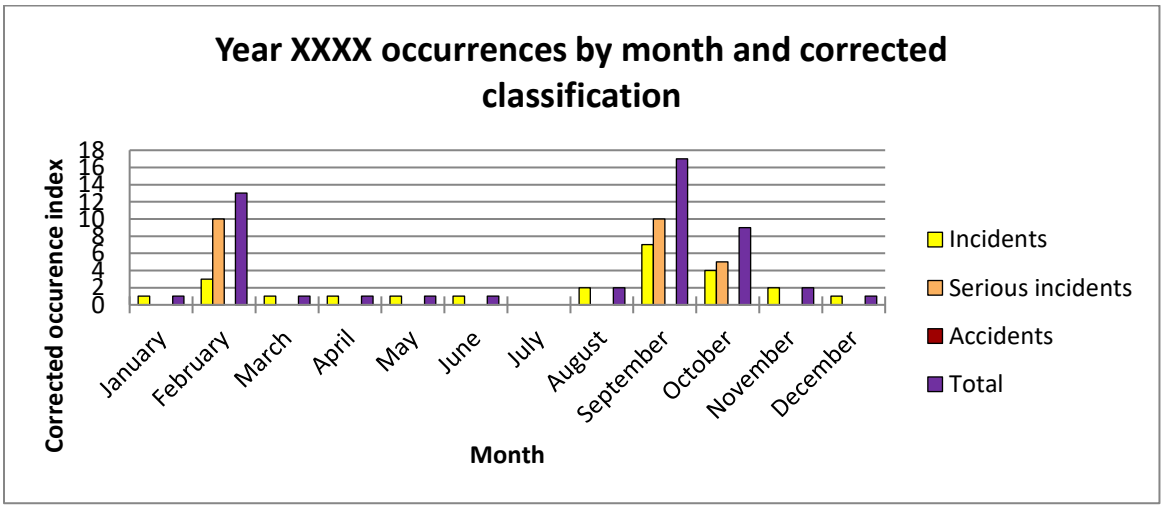


Figure 8-11: Occurrence by month and corrected classification example

8.3.3 Multi-annual indicators

8.3.3.1 Total number of occurrences multi-annual indicator

This indicator is generated by plotting the total number of occurrences that happened each year for a period covering several years.

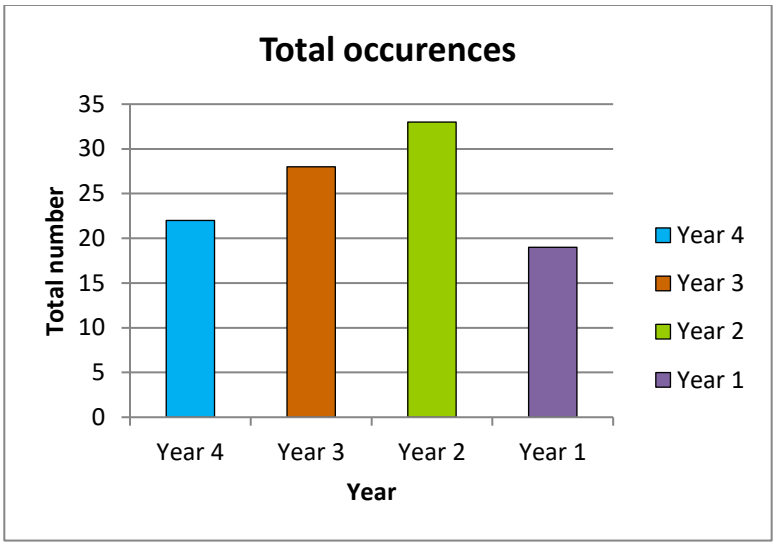


Figure 8-12: Total number of occurrences multi-annual indicator example

8.3.3.2 Corrected total occurrences multi-annual indicator

This indicator is generated by plotting the corrected classification index, as described in Paragraph 8.3.2.10 above, for the occurrences that happened each year for a period covering several years. This reflects the overall severity of the occurrences better and allows comparison of safety performance between years.

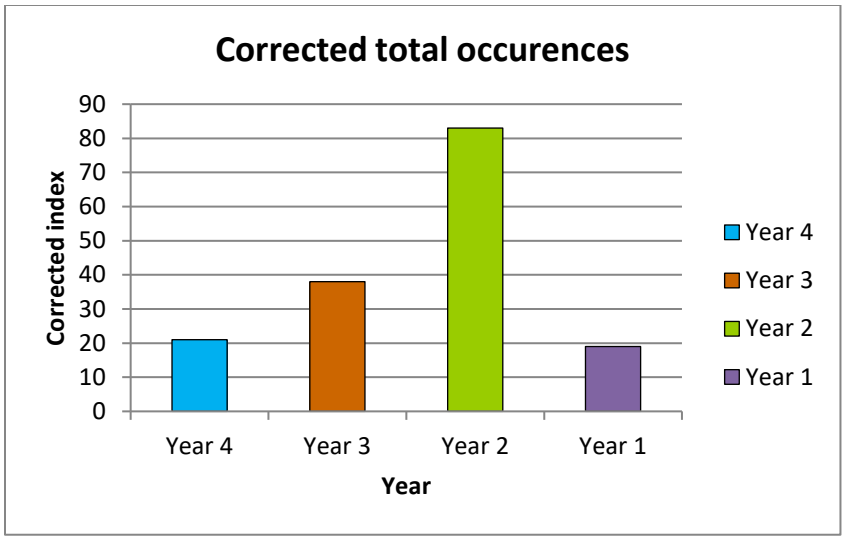


Figure 8-13: Corrected total number of occurrences multi-annual indicator example

8.3.3.4 Occurrences by category multi-annual indicator

This indicator is generated by plotting the total number of occurrences that happened in each category per year, as described in Paragraph 8.3.2.1 above, for a period covering several years.

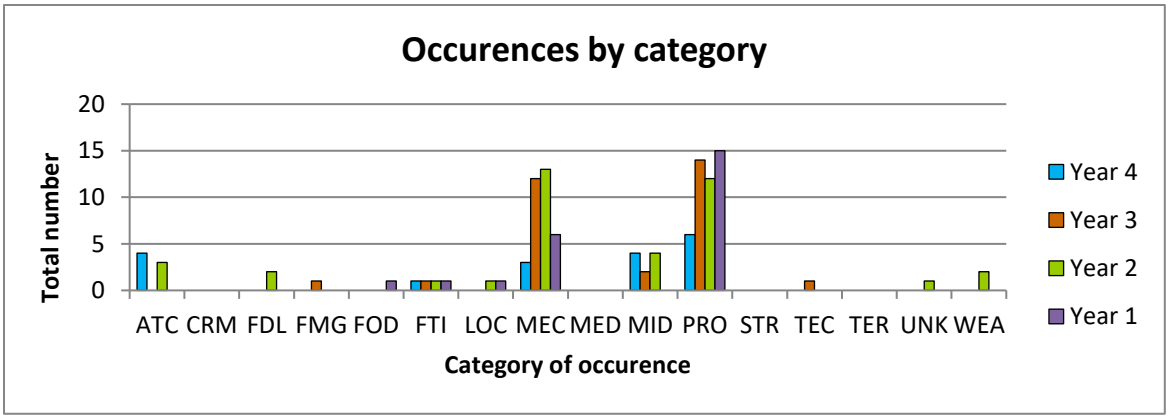


Figure 8-14: Occurrences by category multi-annual indicator example

8.3.3.5 Occurrences by aircraft type multi-annual indicator

This indicator is generated by plotting the total number of occurrences that happened for each aircraft type per year, as described in Paragraph 8.3.2.2 above, for a period covering several years.

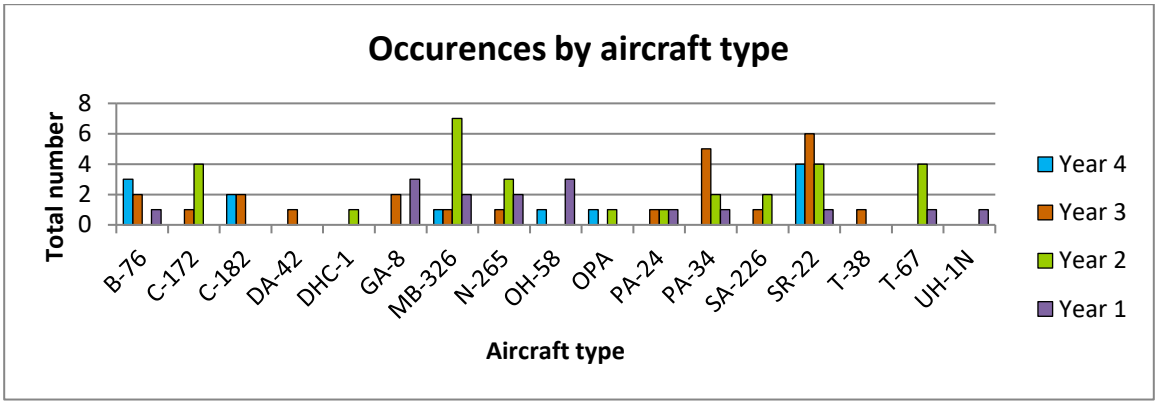


Figure 8-15: Occurrences by aircraft type multi-annual indicator example

8.3.3.6 Occurrences per 100 hours by aircraft type multi-annual indicator

This indicator is generated by dividing the total number of occurrences that happened each year for a given aircraft type by the total number of hours flown by NTPS Enterprise on this type for the year considered. The result is then multiplied by 100 and rounded to the nearest tenth before being plotted on a multi-annual graph.

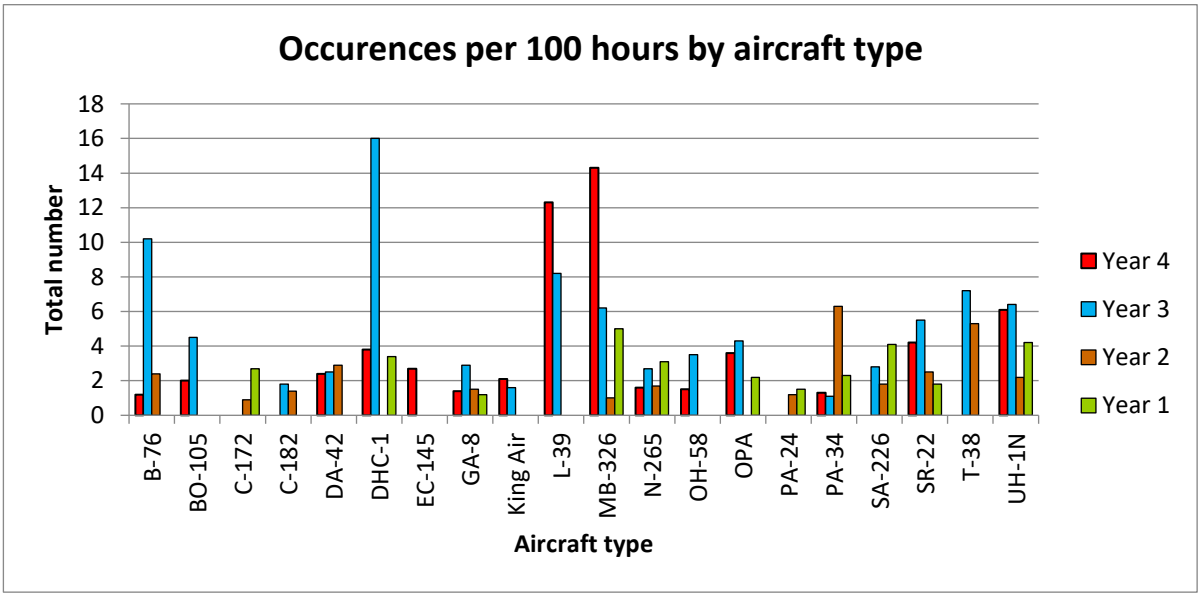


Figure 8-16: Occurrences by aircraft type multi-annual indicator example

8.3.3.7 Occurrences by phase of flight multi-annual indicator

This indicator is generated by plotting the total number of occurrences that happened for each phase of flight per year, as described in Paragraph 8.3.2.3 above, for a period covering several years.

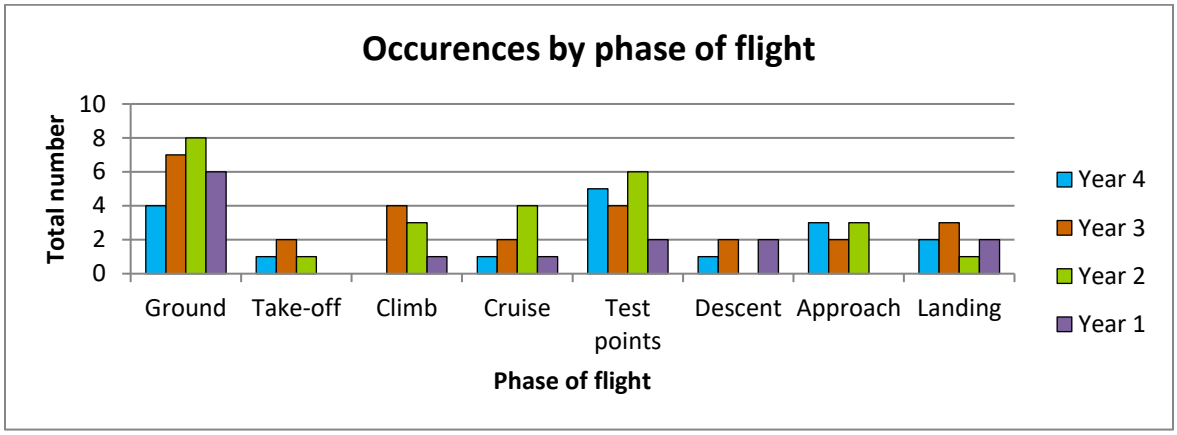


Figure 8-17: Occurrences by phase of flight multi-annual indicator example

8.3.3.8 Occurrences by month multi-annual indicator

This indicator is generated by plotting the number of occurrences that happened per month each year for a period covering several years.

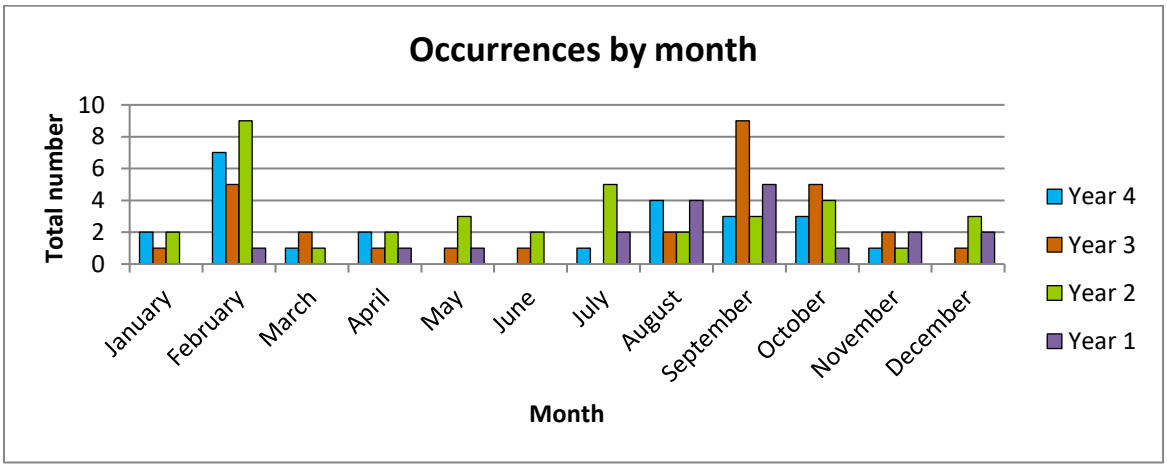


Figure 8-18: Occurrences by month multi-annual indicator example

8.3.3.9 Corrected occurrences by month multi-annual indicator

This indicator is similar to the occurrence by month multi-annual indicator that is described in Paragraph 8.3.3.8 above, but it is designed to better reflect the severity of the occurrences. For each month of the year, the cumulated number of occurrences in a given classification (incident, serious incident or accident) is multiplied by the same coefficient as in Paragraph 8.2.10 above to generate the same corrected classification index, which reflects the overall severity of the occurrences. The corrected classification index is plotted for each month of the year for a period covering several years. Analyzing this indicator can help detect a trend of both increasing number and severity of occurrences over several years.

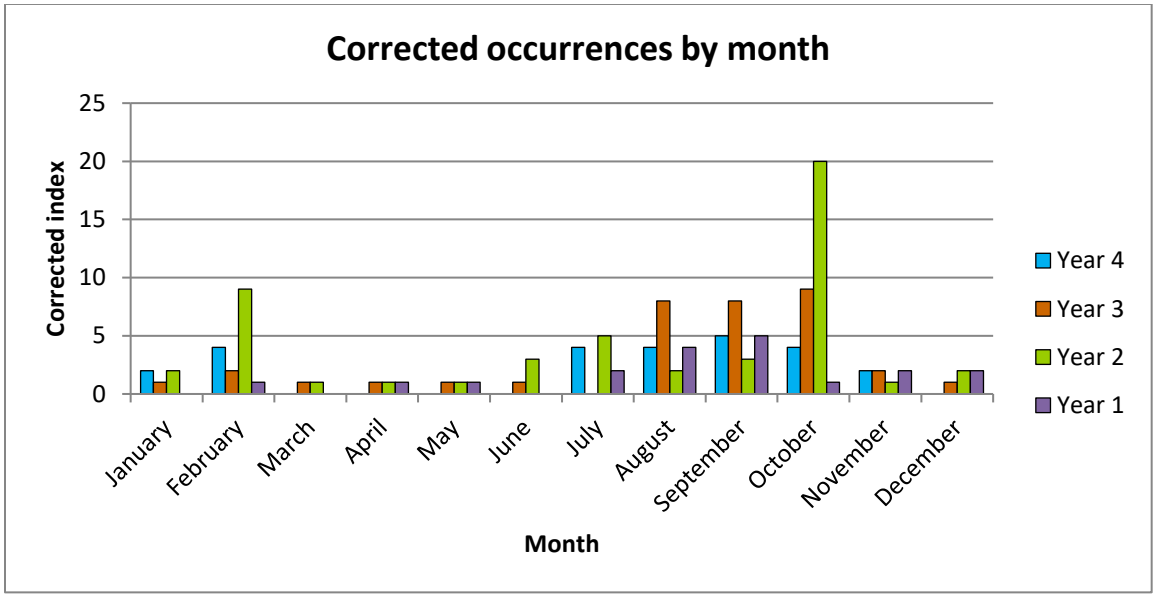


Figure 8-19: Corrected occurrences by month multi-annual indicator example

8.4 Safety performance monitoring process

8.4.1 General

NTPS Enterprise safety performance monitoring is achieved by:

a) regular monitoring of the NTPS Enterprise Safety Database indicators;

b) execution of the NTPS Enterprise Safety Action plan;

c) implementation of Safety recommendations. The implementation of recommendations, also known as *Preventative Measures* (PM), from each Occurrence (*Supplemental*) Report (see para 9.5.3.3), may be used by the NTPS Enterprise Executive Team as a Key Performance Indicator of the overall health of the NTPS Enterprise Safety Management System.

8.4.2 Safety performance monitoring through the NTPS Enterprise Safety Database indicators

The NTPS Safety Manager, assisted by the FRI Director of Quality & Safety and the Safety Team, regularly monitors the NTPS Enterprise Safety Database data and indicators (refer 8.4.4). Anytime the NTPS Enterprise Safety Database indicators exhibit a trend that indicates a safety risk, the NTPS Safety Manager input the data into the NTPS Enterprise safety risk management process that is described in Paragraph 6.3.7 and in Figure 6.2 above. The safety risk management process is executed until a solution is found to either eliminate the risk or implement mitigation measures that bring the risk to an acceptable level.

8.4.3 Safety performance monitoring through the Safety Action Plan

During the execution of the current year Safety Action Plan, the NTPS Safety Manager, the FRI Director of Quality & Safety and NTPS Enterprise management follow the implementation of all the specific objectives of the Safety Action Plan, as described in Paragraph 7 and Appendix E. All the specific objectives are detailed in the Safety Action Plan, which includes, for each of them:

a) actions to be performed to meet the objective;

b) responsible person;

c) time limit to implement;

d) indicators to be used to monitor implementation;

e) success criteria for successfully reaching the objective.

Each time a difficulty is experienced to execute the Safety Action Plan, the NTPS Safety Manager informs the Accountable Manager, who will decide:

1. to allocate additional resources; or
2. to convene a meeting of the Management Safety Review Board in order to review the Safety Action Plan and run the safety risk management process to evaluate the impact of any amendment.

8.4.4 Safety performance indicators

Safety performance indicators are assessed yearly and include the following:

a) Trends identified from the NTPS Enterprise safety database that negatively affect safety shall be actioned IAW paragraph 8.4.2, and as a minimum show a neutral growth rate within 12 months of risk mitigation implementation.

b) The highest rate of safety occurrences by category type shall have a neutral growth rate during the following 12 months and have a negative growth rate during the subsequent 24 months.

8.4.5 Implementation of Safety recommendations

The NTPS Enterprise may issue safety recommendations that are not related to an occurrence report or to the Safety Action Plan. Such recommendations may originate from day-to-day monitoring of NTPS Enterprise activities and/or from the observation of safety practices from

other organizations. These recommendations may be raised by any NTPS Enterprise Staff and/or student and passed to the NTPS Safety Manager and FRI Director of Quality & Safety for review. The recommendations shall be passed to the COO and AM as required. The recommendations may follow any format as detailed within the NTPS Enterprise SMM (e.g. Safety Team meeting minutes - Appendix F), NTPS Safety Manger or FRI Director of Quality & Safety notes, etc., and incorporated in the NTPS Enterprise Safety Database for tracking purposes.

8.5 Cross references

- 49 CFR Part 830, Paragraph 830.2;
- European regulation (EU) N° 996/2010 of 20 October 2010 on the investigation and prevention of accidents and incidents in civil aviation;
- European regulation (EU) N° 376/2014 of 3 April 2014 on the reporting, analysis and follow-up of occurrences in civil aviation, amending Regulation (EU) No 996/2010.

9. OCCURRENCE REPORTING AND INVESTIGATION

9.1 Purpose

This chapter describes the process to report and investigate occurrences at NTPS Enterprise.

9.2 Scope

Information used to measure NTPS Enterprise safety performance is collected through its safety reporting systems. Once collected, the information is analyzed, and recommendations are provided to improve safety. There are two types of reporting systems:

a) voluntary incident reporting systems; and

b) mandatory incident reporting systems.

9.3 Voluntary occurrence reporting systems

9.3.1 NTPS Enterprise "Initial" Occurrence Report Form

Any NTPS Enterprise employee or student can report an aviation safety concern using the NTPS Enterprise Occurrence Report Form, which is in Appendix G. This is the "initial" report and while it should be brief, the reporter is encouraged to include as much detail as possible. **This "initial" report must be made within 12 hours of the occurrence having taken place.** This should be the preferred means to report safety occurrences at NTPS Enterprise, and if any other means is used, it should be duplicated with an NTPS Enterprise Occurrence Report Form to enhance traceability.

The following options are available to obtain the form:

a) an electronic version on the NTPS M drive (M/Safety/ Safety Issues Log Digital Backup);

b) a paper version in Operations;

c) a Web version on the NTPS Enterprise Website, which is automatically sent to the NTPS Safety Manager, FRI Director of Quality & Safety, all Safety Team members and all Instructors.

This form should be completed in the event of an occurrence that was unsafe, or in other circumstances that could have resulted in an unsafe situation. As stated in the NTPS Enterprise safety policy, reporting occurrences is encouraged and the occurrence report will not be used to apportion blame or liability, but will be used in the interest of aviation safety to determine factors that will allow action to be taken to prevent a repeat occurrence. The name of the reporter and other data boxes can be omitted if desired, nevertheless the reporter should bear in mind that the report should be as detailed as possible regarding the circumstances of the event to allow meaningful analysis. Once completed, copies should be sent as follows:

a) one copy to the NTPS Safety Manager;

b) one copy to Operations; and

c) one copy to the Safety Team.

If the reporter wishes to remain anonymous, a single paper copy to any Safety Team member is sufficient; use of the Web version via the NTPS Enterprise Website also guarantees the reporter's anonymity.

9.3.2 FAA/NASA Aviation Safety Reporting System (ASRS)

The ASRS is an important facet of the continuing effort by government, industry, and individuals to maintain and improve aviation safety. Pilots, aircrew, air traffic controllers, mechanics, ground personnel, and others involved in aviation operations can submit reports to the ASRS when they are involved in, or observe, an incident or situation in which aviation safety may have been compromised. All submissions are voluntary.

Reports sent to the ASRS are held in strict confidence (except in case of criminal activity). The ASRS de-identifies reports before entering them into the incident database. All personal and organizational names are removed. Dates, times, and related information, which could be used to infer an identity, are either generalized or eliminated.

Incident reports are read and analyzed by ASRS's corps of aviation safety analysts. The analyst staff is composed entirely of experienced pilots, air traffic controllers, and mechanics. Their first mission is to identify any aviation hazards which are discussed in reports and flag that information for immediate action. When such hazards are identified, an alerting message is issued to the appropriate FAA office or aviation authority. The analysts' second mission is to classify reports and diagnose the causes underlying each reported event. Their observations, and the original de-identified report, are then incorporated into the ASRS's database.

To report an occurrence with the ASRS, use the link provided in Paragraph 9.6 a) and follow the directions. An ASRS report can only be made after an NTPS Occurrence Report has been written and dissemination outside NTPS via the ASRS system has been approved by the Accountable Manager.

9.3.3 European Coordination Centre for Accident and Incident Reporting Systems (ECCAIRS 2)

The ECCAIRS 2 Portal is a digital platform established to assist aviation stakeholders in collecting, sharing, and analyzing their safety aviation information. Is designed for mandatory occurrence reporting, nevertheless it includes a provision for any individual to report on a voluntary basis. The process voluntary reporting is the same as mandatory reporting and is described in Paragraph 9.4.3 below.

A report via ECCAIRS 2 can only be made after an NTPS Enterprise Occurrence Report has been written and dissemination outside NTPS Enterprise via the ECCAIRS 2 platform must been approved by the Accountable Manager.

9.4 Mandatory occurrence reporting systems

9.4.1 General

As a US organization, NTPS Enterprise must report certain occurrences to the National Transportation Safety Board (NTSB) in compliance with 49 CFR 830. As an EASA Approved

Training Organization, NTPS must also report certain occurrences to EASA as per Commission Regulation 96/2010 and 76/2014, and to the organization responsible for the design of the aircraft. When an occurrence related to any NTPS Enterprise operation happens, the NTPS Safety Manager, assisted by the FRI Director of Quality and Safety and the Safety Team, analyzes the occurrence to determine if it needs to be mandatorily reported:

a) to the NTSB;

b) to EASA;

c) to the organization responsible for the design of the aircraft.

If the answer is affirmative, the NTPS Safety Manager informs the Accountable Manager and directly reports the event using the appropriate mandatory reporting system.

9.4.2 Mandatory reporting to the NTSB

9.4.2.1 Occurrences to be reported to the NTSB

The events to be reported to the NTSB are listed in 49 CFR 830.5. This regulation requires that the operator of any civil aircraft shall immediately, and by the most expeditious means available, notify the nearest NTSB office when an aircraft accident or any of the following listed serious incidents occur or when an aircraft is overdue and is believed to have been involved in an accident. An aircraft accident is defined in 8.3.2.6 c) above and in 49 CFR 830.2. The list serious incident that must be reported to the NTSB is the following:

a) flight control system malfunction or failure;

b) inability of any required flight crewmember to perform normal flight duties as a result of injury or illness;

c) failure of any internal turbine engine component that results in the escape of debris other than out the exhaust path;

d) in-flight fire;

e) aircraft collision in flight;

f) damage to property, other than the aircraft, estimated to exceed $25,000 for repair (including materials and labor) or fair market value in the event of total loss, whichever is less;

g) for large multiengine aircraft (more than 12,500 pounds maximum certificated takeoff weight):

(i) in-flight failure of electrical systems which requires the sustained use of an emergency bus powered by a back-up source such as a battery, auxiliary power unit, or air-driven generator to retain flight control or essential instruments;

(ii) in-flight failure of hydraulic systems that results in sustained reliance on the sole remaining hydraulic or mechanical system for movement of flight control surfaces;

(iii) sustained loss of the power or thrust produced by two or more engines; and

(iv) an evacuation of an aircraft in which an emergency egress system is utilized.

h) release of all or a portion of a propeller blade from an aircraft, excluding release caused solely by ground contact;

i) a complete loss of information, excluding flickering, from more than 50 percent of an aircraft's cockpit displays known as:

(i) Electronic Flight Instrument System (EFIS) displays;

(ii) Engine Indication and Crew Alerting System (EICAS) displays;

(iii) Electronic Centralized Aircraft Monitor (ECAM) displays; or

(iv) other displays of this type, which generally include a Primary Flight Display (PFD), a Primary Navigation Display (PND), and other integrated displays;

j) Airborne Collision and Avoidance System (ACAS) resolution advisories issued either:

(i) when an aircraft is being operated on an instrument flight rules flight plan and compliance with the advisory is necessary to avert a substantial risk of collision between two or more aircraft; or

(ii) to an aircraft operating in class A airspace.

k) damage to helicopter tail or main rotor blades, including ground damage, that requires major repair or replacement of the blade(s);

l) any event in which an operator, when operating an airplane as an air carrier at a public-use airport on land:

(i) lands or departs on a taxiway, incorrect runway, or other area not designed as a runway; or

(ii) experiences a runway incursion that requires the operator or the crew of another aircraft or vehicle to take immediate corrective action to avoid a collision.

Before a report is made to the NTSB, an NTPS Occurrence Report Form must be written.

9.4.2.2 Procedure to report an occurrence to the NTSB

The events listed in Paragraph 9.4.2.1 above must be reported to the NTSB by the most expeditious means available. This is achieved by calling a Watch Officer at the NTSB Response Operations Center (ROC) in Washington DC, open 24/7, at 1-844-373-9922 or 1-202-314-6290, the contact number can also be found on the NTSB Website. The call should be made by the NTPS Accountable Manager or by the person designated to replace the Accountable Manager in case of unavailability, as described in NTPS Organizational Management Manual Paragraph 1.4. 49 CFR 830.6 details the notification required in 49 CFR 830.5, which shall contain the following information, if available:

a) type, nationality, and registration marks of the aircraft;

b) name of owner, and operator of the aircraft;

c) name of the pilot-in-command;

d) date and time of the accident;

e) last point of departure and point of intended landing of the aircraft;

f) position of the aircraft with reference to some easily defined geographical point;

g) number of persons aboard, number killed, and number seriously injured;

h) nature of the accident, the weather and the extent of damage to the aircraft, so far as is known; and

i) a description of any explosives, radioactive materials, or other dangerous articles carried.

The report to be subsequently sent to the NTSB is detailed in 49 CFR 830.15. NTPS shall file a report within 10 days after an accident, or after 7 days if an overdue aircraft is still missing. A report on an incident for which immediate notification is required by 49 CFR 830.5 shall be filed only as requested by an authorized representative of the NTSB. Each crewmember, if physically able at the time the report is submitted, shall attach a statement setting forth the facts, conditions, and circumstances relating to the accident or incident as they appear to him. If the crewmember is incapacitated, he shall submit the statement as soon as he is physically able. NTPS shall file any report with the NTSB field office nearest to the accident or incident site. The NTSB Form 6120.1 can be obtained with the link in Paragraph 9.6 d) below.

Before sending the completed NTSB Form 6120.1, it must be approved by the NTPS Accountable Manager or by the person designated to replace the Accountable Manager in case of unavailability, as described in NTPS Organizational Management Manual Paragraph 1.4.

9.4.3 Mandatory reporting to EASA

9.4.3.1 Occurrences to be reported to EASA

To comply with European regulation (EU) N° 290/2012, Appendix VII, Paragraph ORA.GEN 160 within the scope of its EASA ATO approval, NTPS must report to EASA:

a) any event listed in Appendix I to European Directive 2003/42/EC of the European Parliament and of the Council of 13 June 2003 on occurrence reporting in civil aviation; and,

b) any event listed in the Appendix to European regulation (EU) N° 996/2010 of 20 October 2010 on the investigation and prevention of accidents and incidents in civil aviation; and

c) any incident, malfunction, technical defect, exceeding of technical limitations, occurrence that would highlight inaccurate, incomplete or ambiguous information contained in data established in accordance with European regulation (EU) No 748/2012 of 3 August 2012 or other irregular circumstance that has or may have endangered the safe operation of the aircraft and that has not resulted in an accident or serious incident. In this case, NTPS must also report the event to the organization responsible for the design of the aircraft.

The list of occurrences to be reported must be consulted in the documents above to determine whether an occurrence happening at NTPS Enterprise must be mandatorily reported to EASA. The occurrences addressed in points a) and b) above are reproduced in Appendix H and Appendix I of this Safety Management Manual. Before a report is made to EASA, an NTPS Enterprise Occurrence Report Form must be written.

9.4.3.2 Procedure to report an occurrence to EASA

The events described in Paragraph 9.4.3.1 above must be reported to the EASA as soon as practicable, but in any case, within 72 hours of NTPS Enterprise identifying the condition to which the report relates. The ECCAIRS 2 Portal must be used to report such events, using the link in Paragraph 9.6 o) below to access the ECCAIRS 2 Website, perform the login using the NTPS Safety Manager credentials, click on the "Report an occurrence" icon and follow the directions.

Before sending the completed Technical Occurrence Report Form, it must be reviewed by the NTPS Accountable Manager or by the person designated to replace the Accountable Manager in case of unavailability, as described in NTPS Enterprise Organizational Management Manual Paragraph 1.4.

9.4.3.3 Occurrences to be reported to the organization responsible for the design of the aircraft

Any occurrence described in Paragraph 9.4.3.1 c) above must be reported to the organization responsible for the design of the aircraft. The design organization's reporting procedure should be followed and, before sending, the report must be reviewed by the Accountable Manager or by the person designated to replace the Accountable Manager in case of unavailability, as described in NTPS Enterprise Organizational Management Manual Paragraph 1.4.

9.5 NTPS Enterprise occurrence reporting and investigation process

9.5.1 General

The NTPS Enterprise occurrence reporting and investigation process consists of input data, processing, output data and a feedback loop to check efficiency. The steps are described literally in Paragraphs 9.5.2 to 9.5.5 and in Figure 9-1 below.

9.5.2 Input data

The input is an NTPS Enterprise Occurrence Report Form, as described in Paragraph 9.3.1 above.

9.5.3 Processing

9.5.3.1 General and Reporting Timelines

The input data are analyzed by the Safety Team under the responsibility of the NTPS Safety Manager. If the NTPS Safety Manager determines that the occurrence must be mandatorily reported to the NTSB or to EASA, then the procedures in Paragraphs 9.4.2 and 9.4.3 above apply immediately. Two types of safety reports exist at National Test Pilot School Enterprises:

a) The *Initial Report*, as referenced in para 9.3.1. The aim of this report is to announce and establish that a safety-related event has occurred and provide initial details ahead of a detailed investigation. **The Initial Report (IR) must be submitted within 12 hours of the occurrence having taken place.**

b) The *Supplement Report*. This report forms the detailed investigation complete with cause factors and recommendations. **The Supplement Report (SR) should be completed within 30 days of the occurrence having taken place.** In the case of an accident, it is understood that the SR may take significantly longer to complete.

9.5.3.2 Analysis

The Safety Team analysis, also known as the *Supplemental Report (SR)* should aim at determining the root causes of the occurrence and relevant contributing factors. To achieve that, the Safety Team, when applicable, shall seek additional data and analysis from other organizations involved in the occurrence, such as but not limited to maintenance organizations, air traffic control or any other organization that may contribute to analyzing the event. If the occurrence was also reported in one of the voluntary reporting systems that are in Paragraph 9.3, this is noted in the Safety Team analysis, and feedback from these reporting systems is used to augment the Safety Team analysis. Additional references, that can be used as guides in reporting, are found in the *REFERENCES* section following Section 13. Information from the Supplemental Report should be augmented, where applicable, with additional information from, but not limited to, the following sources:

a) author of the occurrence report;

b) other witnesses of the occurrence;

c) aircraft technical documentation (Flight Manual, Maintenance Manual, etc.);

d) other organizations involved in the occurrence, such as, but not limited to, maintenance organization in charge of the aircraft's maintenance or air traffic control;

e) FAA and EASA regulatory guidance;

f) FAA, EASA and ICAO technical guidance;

g) aircraft or engine type certificate or supplemental type certificate holder;

h) air traffic control facilities involved at the time of the occurrence;

i) airport services and management;

j) sub-contractor involved in the occurrence. In that case, the NTPS Enterprise Chief Operating Officer (COO) sends a copy of the occurrence report to the sub-contractor and requests the sub-contractor to provide the necessary additional information.

9.5.3.3 Recommendations

After the analysis is completed and the likely root causes are determined, the Safety Team provides recommendations that they believe will eliminate the root cause and prevent a similar occurrence to be repeated in the future. The NTPS Enterprise Safety Database and its indicators are updated by the NTPS Safety Manager, assisted by the FRI Director of Quality & Safety. The analysis and recommendations are traced in writing in the relevant field of the NTPS Enterprise Occurrence Report Form and they are signed by the NTPS Safety Manager, who presents the recommendations to the Accountable Manager. The recommendations, also known as *Preventative Measures* (PM), are to be tracked by the Safety Manager. The implementation

of the *Recommendations/Preventative Measures* will be used by the Accountable Manager as the *Key Performance Indicator* (KPI) of the overall safety-health of National Test Pilot School Enterprise on an annual basis.

9.5.4 Output data

The output data of the occurrence reporting and investigation process is a decision from the Accountable Manager to take actions to implement the NTPS Safety Manager and FRI Director of Quality & Safety recommendations and any additional measure that NTPS Enterprise management believe are in the interest of safety.

The Accountable Manager:

a) decides the actions to be taken to implement the NTPS Safety Manager and FRI Director of Quality & Safety recommendations and any additional measure; and,

b) designates a responsible individual for implementing each decision; and,

c) defines a time limit for implementing each decision.

All the data from points a), b) and c) above are traced in writing in the “actions taken” field of the NTPS Enterprise Occurrence Report Form.

9.5.5 Process feed-back and record keeping

For each occurrence, the occurrence reporting and investigation process feedback is achieved by:

a) the NTPS Safety Manager informing NTPS Enterprise staff, students, and the reporter about the occurrence and actions in progress; and,

b) the NTPS Safety Manager regularly reviews the implementation progress of all decisions taken by the Accountable Manager.

Any delay or difficulty in implementing the decisions is reviewed for corrective action by the NTPS Safety Manager and the Accountable Manager and traced on the Occurrence Report Form and in the NTPS Enterprise Safety Database. The occurrence reporting and investigation records are kept by archiving all occurrence reports digitally on the NTPS M drive (M/Safety/ Safety Occurrences Digital Backup). A hard copy of each occurrence report is also kept in NTPS Enterprise Operations in the Occurrence Report Log.

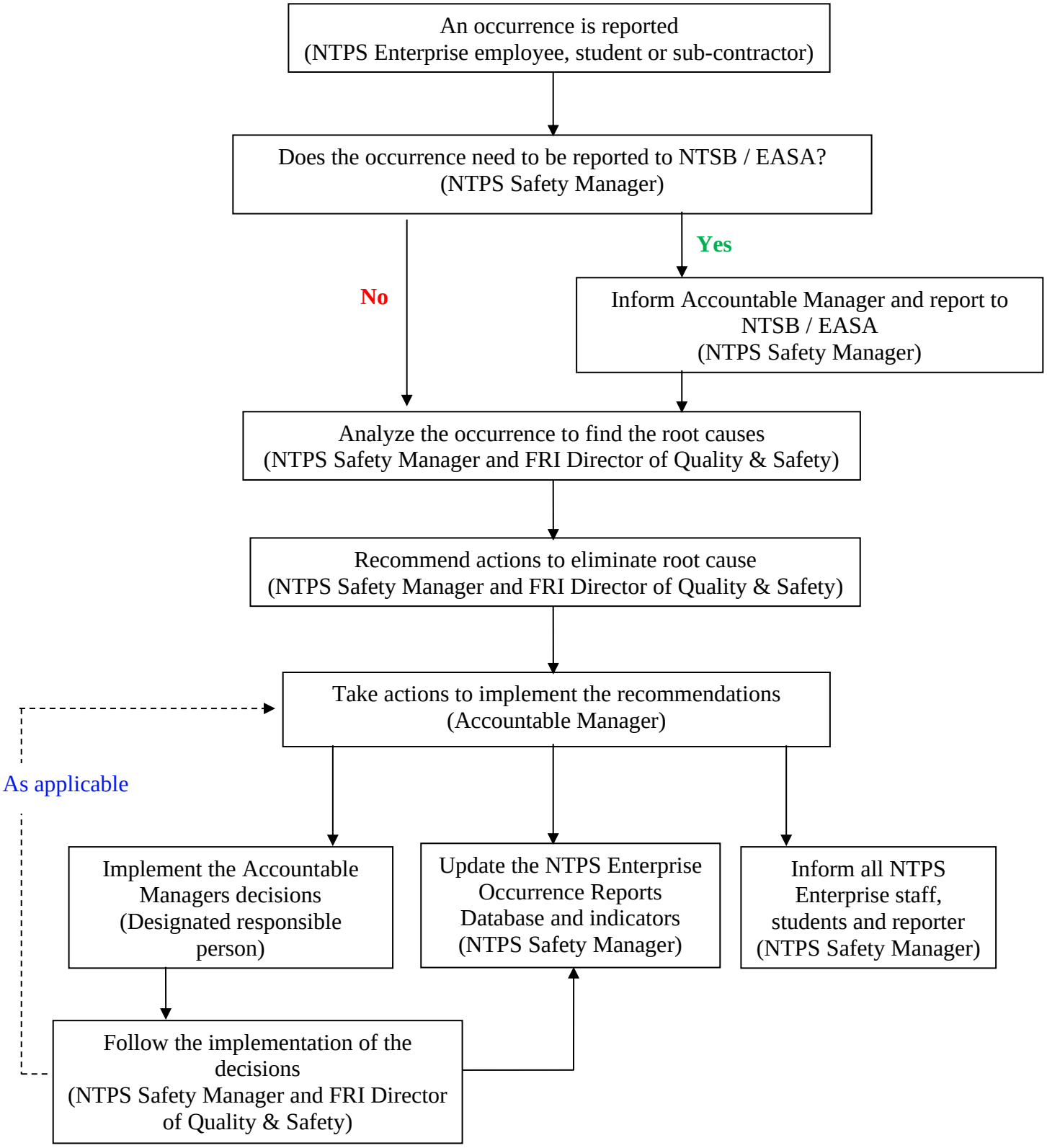


Figure 9-1: NTPS occurrence reporting and investigation process

9.6 Cross references

a) FAA/NASA Aviation Safety Reporting System.

b) http://asrs.arc.nasa.gov/report/electronic.html

c) 49 CFR Part 830: notification and reporting of aircraft accidents or incidents and overdue aircraft, and preservation of aircraft wreckage, mail, cargo, and records.

d) http://www.ecfr.gov/cgibin/retrieveECFR?gp=&SID=7046919891faf5c79555062a8eccf1d9&mc=true&n=pt49.7.830&r=PART&ty=HTML%20-%20se49.7.830_12

e) NTSB Response Operations Center.

f) http://www.ntsb.gov/Pages/default.aspx

g) NTSB Form 6120.1.

h) http://www.ntsb.gov/Documents/6120_1web_Reader.pdf

i) European Directive 2003/42/EC of the European Parliament and of the Council of 13 June 2003 on occurrence reporting in civil aviation.

j) European regulation (EU) N° 290/2012 of 30 March 2012 amending European regulation (EU) N° 1178/2011 laying down technical requirements and administrative procedures related to civil aviation aircrew pursuant to European regulation (EC) N° 216/2008 of the European Parliament and of the Council.

k) European regulation (EU) N° 996/2010 of 20 October 2010 on the investigation and prevention of accidents and incidents in civil aviation.

l) European regulation (EU) N° 376/2014 of 3 April 2014 on the reporting, analysis and follow-up of occurrences in civil aviation, amending Regulation (EU) No 996/2010.

m) European regulation (EU) No 748/2012 of 3 August 2012 laying down implementing rules for the airworthiness and environmental certification of aircraft and related products, parts and appliances, as well as for the certification of design and production organization.

n) European Aviation Reporting Portal (https://aviationreporting.eu).

o) NTPS Enterprise Organizational Management Manual Paragraph 1.4.

10. EMERGENCY RESPONSE PLANNING

10.1 Purpose

This chapter defines the NTPS Enterprise SMS emergency response planning. Response to emergency situations must follow the procedures established in the NTPS Enterprise Emergency Response Plan, which is cross-referenced in Paragraph 10.2 below. NTPS
Enterprise Emergency Response Plan includes the "Off-site Mishap Plan" as an appendix, to ensure that NTPS Enterprise receives timely and accurate information if NTPS Enterprise personnel are involved in a mishap when operating remote to the NTPS Enterprise campus.

10.2 Cross reference

- NTPS Enterprise Emergency Response Plan.

11. MANAGEMENT OF CHANGE

11.1 Purpose

This chapter describes how changes that may impact aviation safety are managed at NTPS Enterprise.

11.2 Objective

The objective is to establish a formal process to manage changes within NTPS Enterprise in a systematic manner, so that changes which may impact identified hazards and risk mitigation strategies are accounted for, before the implementation of such changes.

11.3 Scope

NTPS Enterprise may experience changes in any of the following areas:

a) size;

b) organization;

c) policies;

d) procedures;

e) personnel;

f) equipment, including but not limited to aircraft;

g) staff experience, training and qualifications;

h) course programs;

i) students experience and background;

j) operating environment;

k) customer requirements;

l) sub-contracted activities;

m) applicable regulations.

Hazards may inadvertently be introduced into NTPS Enterprise activities whenever a change occurs. Existing baseline safety risk mitigation processes may also be impacted. Hazards resulting from change shall be systematically identified, and strategies to manage the consequential safety risks must be developed, implemented and subsequently evaluated.

11.4 NTPS Enterprise Management of change process

11.4.1 General

The NTPS Enterprise management of change process consists of input data, processing, output data and a feedback loop to check efficiency. The steps are described in Paragraphs 11.4.2 to 11.4.5 and in Figure 11-1 below.

11.4.2 Input data

When a change is planned or foreseen to happen at NTPS Enterprise, and whenever possible before implementation, the reasons for the change and the conditions for implementation must be determined:

a) objective of the change;

b) nature of the change;

c) timeframe of the change;

d) effects on projected probability and severity of the outcome from any existing hazards;

e) if the change generates a new risk.

11.4.3 Processing

11.4.3.1 General

The input data shall be drafted by the person/s proposing the change and reviewed by the NTPS Safety Manager. The Accountable Manager is responsible for the approval of the proposed changes. The Accountable Manager shall assign implementation of the approved change to an NTPS Enterprise staff member. This member is responsible for informing all persons affected by the change, and the implementation of the change.

11.4.3.2 Impact of change on identified risks

Determination of the impact of a change on risks that have already been identified and mitigated is achieved by reviewing all Flight Hazard Analysis (FHA) and Test Hazard Analysis (THA) worksheet from the NTPS Enterprise Risk Register. If the review concludes that the change will not impact on any of the existing risks, it can be implemented. If the review concludes that the change will impact existing risks, the NTPS Enterprise safety risk management process of Paragraph 6.3.7 is performed until the risk is lowered to an acceptable level.

11.4.3.3 New risks induced by change

The potential for a change to generate new risks is assessed by reviewing the consequences of the change along with the criticality, vulnerability, stability and past performance of the affected areas. The areas listed in Paragraph 11.3 above should be considered. If the review concludes that the change will not create new risks, it can be implemented. If the review concludes that the change will generate new risks, the NTPS Enterprise safety risk

management process of Paragraph 6.3.7 is performed until the risk is lowered to an acceptable level.

11.4.4 Output data

The output data of the management of change process is the same as the output data from the NTPS Enterprise risk management process: either an updated or a new Flight Hazard Analysis (FHA) or Test Hazard Analysis (THA) worksheet to be incorporated in the NTPS Enterprise Risk Register and disseminated to all NTPS Enterprise staff, students and, when applicable, sub-contractors, following the procedure that is in Paragraph 6.3.7.4.

11.4.5 Process feed-back and record keeping

The management of change process feed-back and record keeping is identical to those of the NTPS Enterprise safety risk management process of Paragraph 6.3.7.6.

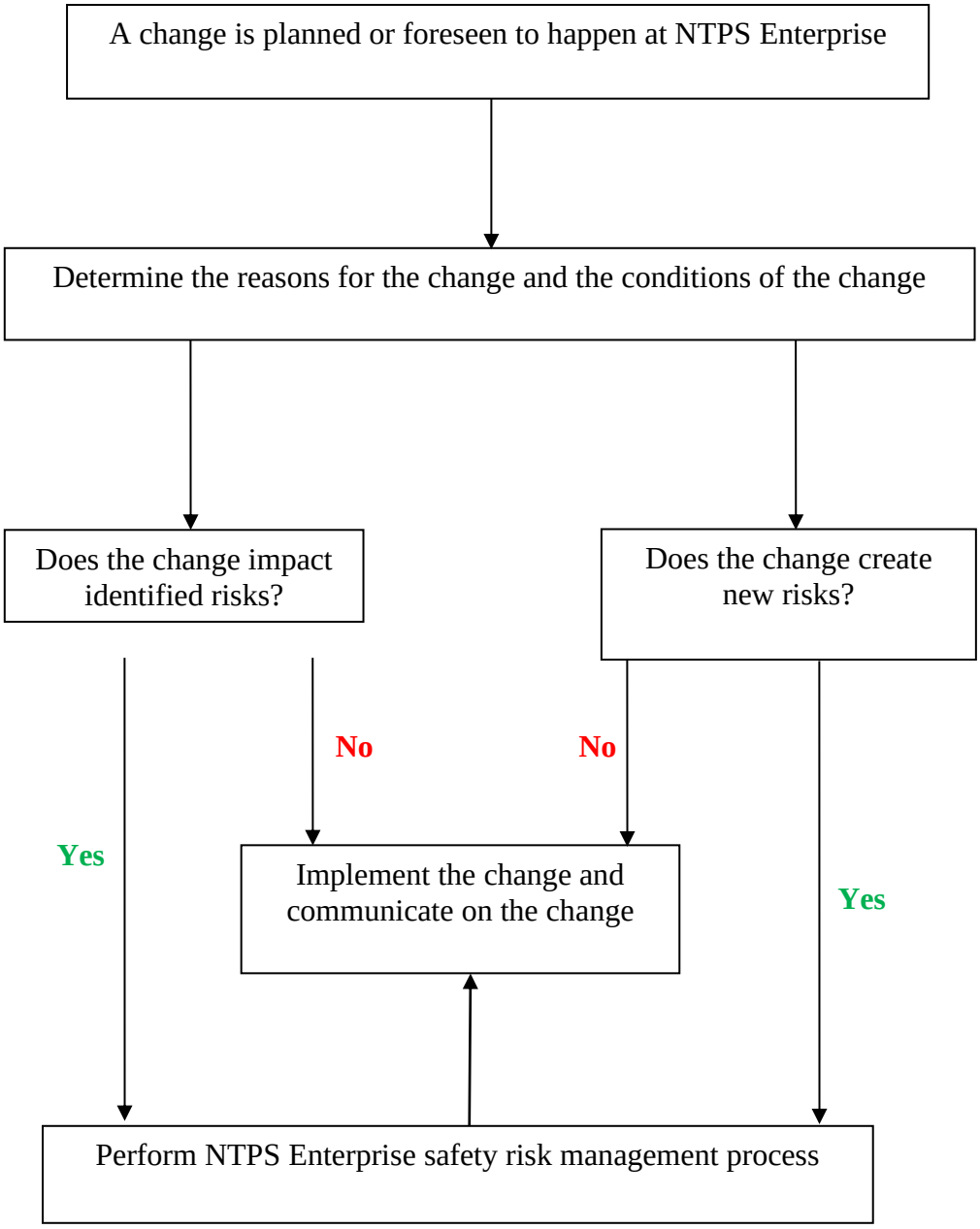


Figure 11-1: Overview of the NTPS Enterprise management of change process

12. SAFETY PROMOTION

12.1 Purpose

This chapter describes how safety is promoted at NTPS Enterprise.

12.2 Objective

The objective is to establish a formal process to promote safety within NTPS Enterprise in a systematic and efficient manner. NTPS Enterprise management encourages a positive safety culture and creates an environment that is conducive to the improvement towards the highest safety standards when delivering TP and FTE training, or any advanced training. A positive safety culture means that all safety related recommendations and suggestions are considered with an open mind but does not mean all are adopted or implemented. In general, a "positive safety culture" is defined by five key pillars which include: reporting, informed, learning, flexibility and a just culture. NTPS Enterprise safety culture must be characterized by values, attitudes and behavior that are committed to the organization's safety efforts. This is achieved through the combination of technical competence that is continually enhanced through training, education, effective communications and information sharing. NTPS Enterprise senior management provides the leadership to promote the safety culture throughout an organization.

12.3 Scope

Safety is promoted within NTPS Enterprise by the following means:

a) training and education;

b) communication and sharing of safety information.

12.4 Safety training and education

For NTPS Enterprise staff and students, safety training and education is achieved through the following programs:

a) initial safety training (general and specific);

b) recurrent safety training (general and specific).

For NTPS Enterprise staff, all training attendance records are archived by NTPS Enterprise Operations.

For NTPS Enterprise students, the training is part of each specific course training program.

12.4.1 Initial general safety training – NTPS Enterprise staff and professional course students

NTPS Enterprise staff and professional course student initial general safety training consists of a training program that covers the following points:

a) scope and integration of the safety management system;

b) safety policy and objectives;

c) safety accountability of the Accountable Manager;

d) safety responsibilities of key safety personnel;

e) hazard identification and safety risk management;

f) safety action planning;

g) safety performance monitoring;

h) occurrence reporting and investigation;

i) emergency response planning;

j) management of change;

k) safety promotion.

The initial general safety training is delivered to all NTPS Enterprise staff members when joining NTPS Enterprise, and to all professional course students during the "T&E 4001 Introduction to Flight Test" module.

The NTPS Safety Manager and the FRI Director of Safety & Quality are responsible for ensuring NTPS Enterprise Staff members receive the initial general safety training.

The "T&E 4001 Introduction to Flight Test" course coordinator is responsible for ensuring professional course students receive the initial general safety training.

12.4.2 Initial general safety training – Short course students

NTPS Enterprise short course student initial general safety training consists of a training program that covers the following points:

a) safety policy and objectives;

b) safety accountability of the Accountable Manager;

c) safety responsibilities of key safety personnel;

d) occurrence reporting and investigation; and

e) emergency response planning.

The initial general safety training for short course students is delivered during the short course "Introduction" lecture. The applicable short course coordinator is responsible for ensuring short course students receive the initial general safety training.

12.4.3 Recurrent general safety training

NTPS Enterprise staff and professional course student recurrent general safety training consists of sample of the initial general safety training of Paragraph 12.4.1 above. The sample is chosen by the NTPS Safety Manager to emphasize areas that are critical or for which staff understanding and knowledge can be improved. Recurrent general safety training is conducted on a bi-monthly basis for NTPS Enterprise staff and students.

12.4.4 Initial specific safety training

NTPS Enterprise staff and student initial specific safety training consists of a training program that covers points that are unique to an aircraft type, to an equipment type or to a specific type of operation.

12.4.4.1 Instructor initial specific safety training

The instructor initial specific safety training consists of:

a) self-studying of technical documentation;

b) aircraft specific transition sorties with an instructor qualified on the type and, if applicable, a practical test with an FAA examiner. These sorties are either defined in the NTPS Enterprise Operations Manual, Appendix A, or comply with 14 CFR Part 61 type rating requirements. During all transition sorties, all aircraft specific safety points (limitations, emergency and abnormal procedures, crew resource management) are discussed in depth with the training instructor;

c) aircraft simulator training: if an approved simulator exists for the specific aircraft type, a session reviewing critical emergencies should be arranged, if practical, before a new instructor acts as pilot in command;

d) specific instruction on life support equipment such as parachutes or specific FAA approved training program ejection seats. Instruction must combine classroom instruction and on-aircraft training.

12.4.4.2 Student initial specific safety training

The student initial specific safety training consists of:

a) self-studying of technical documentation;

b) classroom lectures by an instructor qualified on the type, where all aircraft specific safety points (limitations, emergency and abnormal procedures, crew resource management) are discussed in depth with the training instructor. These lectures are followed by on-aircraft training to enhance the student's familiarity with the aircraft's controls and displays;

c) specific instruction on life support equipment such as parachutes or FAA approved ejection seat training program. Instruction must combine classroom instruction and on-aircraft training.

12.4.5 Recurrent specific safety training

12.4.5.1 Instructor recurrent specific safety training

The instructor recurrent specific safety training consists of:

a) continuous refreshment by self-studying of technical documentation;

b) aircraft specific FAA annual recurrent training, where specific safety points (limitations, emergency and abnormal procedures, crew resource management) are reviewed with the examiner during the briefing, during the flight and during the flight debriefing;

c) aircraft simulator training: if an approved simulator exists for the specific aircraft type, a session reviewing critical emergencies must be arranged for each instructor at least once a year. The session must include at least two hours of pilot flying and two hours of pilot monitoring;

d) group review of aircraft / equipment safety procedures and emergencies. Instructor recurrent specific safety training is organized every month. A list of subjects is established by the Safety Manager, who designates an instructor to make a short presentation of the topic. The list should incorporate aircraft specific emergencies, ATC emergency procedures (e.g. loss of communications), reminder of safety regulations (e.g. oxygen requirements, inoperative equipment), operation of life support systems and any other specific safety related subject.

12.4.5.2 Student recurrent specific safety training

The student recurrent specific safety training consists of:

a) refresher on ejection seats and life support equipment, which applies to one-year professional course students. This is a review of what is in Paragraph 12.4.3.2 c) above;

b) group review of aircraft / equipment safety procedures and emergencies. NTPS Enterprise students attend the instructor recurrent specific safety training of Paragraph 12.4.4.1 d) above.

12.4.6 Process feed-back and record keeping

For NTPS Enterprise staff, all safety training attendance records are archived by NTPS Enterprise Operations. For NTPS Enterprise students, the safety training records are kept by NTPS Enterprise Operations when the student is present at NTPS Enterprise and after the course they are archived with other student records as described in NTPS policy 6.2.6.

12.5 Communication and sharing of safety information

NTPS Enterprise should communicate its SMS objectives and procedures to all staff and students.

The NTPS Safety Manager should regularly:

a) ensure that staff and students are fully aware of the SMS;

b) remind that safety performance will be more efficient if NTPS Enterprise staff and students are actively encouraged to identify and report hazards;

c) convey safety-critical information;

d) raise awareness of corrective actions;

e) provide information regarding new or amended safety procedures;

f) communicate information regarding the safety performance trends and specific safety issues through E-mails and briefings;

g) ensure that lessons learned from investigations and case histories or experiences, both internally and from other organizations, are distributed widely.

The NTPS Safety Manger may communicate and share safety related information through emails, briefings, the NTPS Enterprise Safety notice board (currently located outside of Operations), or any other means deemed appropriate.

12.6 Awards

12.6.1 Objective

Awards are an excellent way of recognizing actions performed in the spirit of the Safety Management System that are worthy of recognition by peers and the whole of the NTPS Enterprise. Originators and reviewing authorities must give careful thought to which form of recognition would be most appropriate. The awarding of such recognitions should demand a high level of scrutiny and must be rare. To qualify for an SMS award, the action(s) of the nominee(s) must exceed the standard of professional conduct expected of our personnel or be outside the scope of duties relative to their qualifications and position.

To be most effective, the SMS nominations shall be staffed in a timely manner and the awards should then be awarded ideally within 60 days after the event took place.

12.6.2 Types of Awards

The SMS awards available through NTPS Enterprise include the *Good Show* and the *For Professionalism* awards.

12.6.3 Good Show Award

The *Good Show* award is given for an outstanding action or series of actions that averted in extremis a serious accident or reduced its severity. The actions of the individual(s) nominated are such that without their involvement an aircraft would have been lost or much greater injuries or damage would have been sustained. A *Good Show* will be awarded when one or more of the following conditions have been met by an individual, crew or team:

a) actions directly prevented loss of life or loss of an aviation resource;
b) actions directly reduced the severity of an accident in terms of damages and/or injuries; or
c) actions demonstrated outstanding perseverance, skill, knowledge, judgment or situational awareness to identify or rectify a critical hazard that would have, in all probability, led to an accident or loss of aviation resources.

The recipient of a *Good Show* award will receive a letter co-signed by the CEO and Chairman of the Board of Trustees of NTPS Enterprise. Additional recognition should be included at the discretion of the Executive team.

12.6.4 For Professionalism Award

The *For Professionalism* award recognizes acts that may not qualify for the *Good Show* award yet reflect a superior professional attitude that averted an aircraft accident or significantly reduced the threat posed by a hazard. Acts in the completion of normal duties may qualify if clearly indicative of commendable extra effort. A *For Professionalism* award will be awarded when one or more of the following conditions have been met by an individual, crew or team:

a) actions demonstrated superior skill or perseverance in identifying and rectifying a significant hazard to flight safety; or
b) actions exhibited a superior display of skill, knowledge, situation awareness or judgment that resulted in an important contribution that enhanced significantly Flight Safety.

The recipient of a *For Professionalism* award will receive a letter from the NTPS or FRI President (as applicable). Additional recognition should be included at the discretion of the Executive team.

12.6.5 Awards Staffing Procedures

12.6.5.1 Length of Nominations

The nominations shall describe unequivocally why the nominee(s) deserve(s) an award. The relevant facts and circumstances must be included. Although flexible, the recommended text length is as follows:

a) *Good Show*: max of 500 words; and

b) *For Professionalism*: max of 300 words.

12.6.5.2 Quality of Nomination Narrative

The proposed nomination shall be accurate and well researched by the originating unit. It shall be clear, well written and free of abbreviations. The text shall be succinct and avoid using highly technical terms understandable only to professionally trained personnel. The nomination must describe the explicit actions and related facts demonstrating why the individual(s) is/are deserving of a SMS award.

12.6.6 Submission of Nomination

The submission shall include a signed letter from the originator and must include detailed text describing why the employee merits the award. The nomination package should also include any document supporting the nomination (occurrence report, technical references, images, etc.) and an explicit narrative suitable for use as the award citation in keeping with the maximum length noted above in para 12.6.5.1. Nominations shall be staffed electronically to the Safety Manager, who will vet the award submission prior to onward forwarding to the COO.

12.6.7 Approval of SMS Nomination

The Good Show nomination is reviewed by the employee(s)'s NTPS or FRI COO (as applicable) for completeness then forwarded to NTPS or FRI President (as applicable) for consideration, followed next by forwarding to the CEO for consideration. If endorsed, the CEO and Chairman of the Board of Trustees shall co-sign the award letter. The For Professionalism nomination will be reviewed by the NTPS or FRI COO (as applicable) for completeness and then forwarded to the NTPS or FRI President (as applicable) for consideration. If endorsed, the letter shall be signed by the NTPS or FRI President (as applicable) only.

12.6.8 Presentation of FS Award

The award will be given publicly to the recipient at the next All Hands Bi-Monthly Safety Training Meeting, by the CEO and/or FRI or NTPS President.

13. CONTRACTED ACTIVITIES

13.1 Purpose

Contracted activities cover a broad range of business relationships spanning from a short-term hourly lease (purchase order) for aircraft usage to multi-year contracts for the utilization and/or maintenance of a fleet of aircraft.

NTPS Enterprise manages contracted activities regarding the safety aspect in accordance with Operations Manual Chapter A-9.

The Accountable Manager is responsible for determining if an activity can be contracted and approving a contractor.

NTPS Safety Manager should review reports of the contracted activities and the Accountable Manager is responsible for approving/disapproving further utilization of the Contractor.

13.2 Cross reference

- Operations Manual Chapter Part A Chapter 9

REFERENCES

- 49 CFR Part 830: notification and reporting of aircraft accidents or incidents and overdue aircraft, and preservation of aircraft wreckage, mail, cargo, and records.
- 49 CFR Part 830, paragraph 830.2.
- *Aircraft Certification Service Flight Test Risk Management Program*, FAA Order 4040.26C, (5 October 2021).
- European regulation (EU) N° 290/2012 of 30 March 2012 amending European regulation (EU) N° 1178/2011 laying down technical requirements and administrative procedures related to civil aviation aircrew pursuant to European regulation (EC) N° 216/2008 of the European Parliament and of the Council.
- European regulation (EU) N° 376/2014 of 3 April 2014 on the reporting, analysis and follow-up of occurrences in civil aviation, amending Regulation (EU) No 996/2010.
- European regulation (EU) No 748/2012 of 3 August 2012 laying down implementing rules for the airworthiness and environmental certification of aircraft and related products, parts and appliances, as well as for the certification of design and production organization.
- European regulation (EU) N° 996/2010 of 20 October 2010 on the investigation and prevention of accidents and incidents in civil aviation.
- European Aviation Reporting Portal: http://www.aviationreporting.eu.
- European Directive 2003/42/EC of the European Parliament and of the Council of 13 June 2003 on occurrence reporting in civil aviation.
- FAA/NASA Aviation Safety Reporting System.
- *Flight Safety for the Canadian Forces*, A-GA-135-001/AA-001 (6 July 2015).
- http://asrs.arc.nasa.gov/report/electronic.html.
- http://www.ecfr.gov/cgibin/retrieveECFR?gp=&SID=7046919891faf5c79555062a8eccf1d9&mc=true&n=pt49.7.830&r=PART&ty=HTML%20-%20se49.7.830_12.
- http://www.ntsb.gov/Pages/default.aspx.
- http://www.ntsb.gov/Documents/6120_1web_Reader.pdf.
- NTPS Enterprise Organizational Management Manual, Paragraphs.
- NTPS Enterprise Policy.
- NTPS Enterprise Organizational Management Manual.
- NTPS Enterprise Emergency Response Plan.
- NTSB Response Operations Center.
- NTSB Form 6120.1.
- Organizational Management Manual.

APPENDIX A: NTPS ENTERPRISE SAFETY POLICY

NATIONAL TEST PILOT SCHOOL ENTERPRISE SAFETY POLICY

To achieve NTPS Enterprise commitment to continuously improve towards the highest safety standards, NTPS Enterprise senior management will:

a) continually promote the safety policy to all personnel and demonstrate their commitment to it;

b) establish safety objectives and performance standards;

c) provide the necessary human and financial resources for their implementation;

d) actively enforce a proactive and systematic management of safety with the same attention to results as the other management areas;

e) establish safety as one primary responsibility of all managers and employees;

f) encourage safety occurrence reporting and communication;

g) not blame someone for reporting something which would not have been otherwise detected;

h) ensure that no action will be taken against any employee or student who discloses a safety concern and justly deal with employees and students who report safety occurrences;

i) comply with all applicable legislation, meet all applicable standards and consider best practices.

j) not tolerate any illegal or intentional violation.

James E. Brown III - Accountable Manager

Date: Signature:

APPENDIX B: TEST HAZARD ANALYSIS (THA) WORKSHEET

(Delete this and Blue text when completing.)

Test Hazard Analysis worksheet

Reference: *Insert the THA reference number*

Revision date: *Insert the THA revision date*

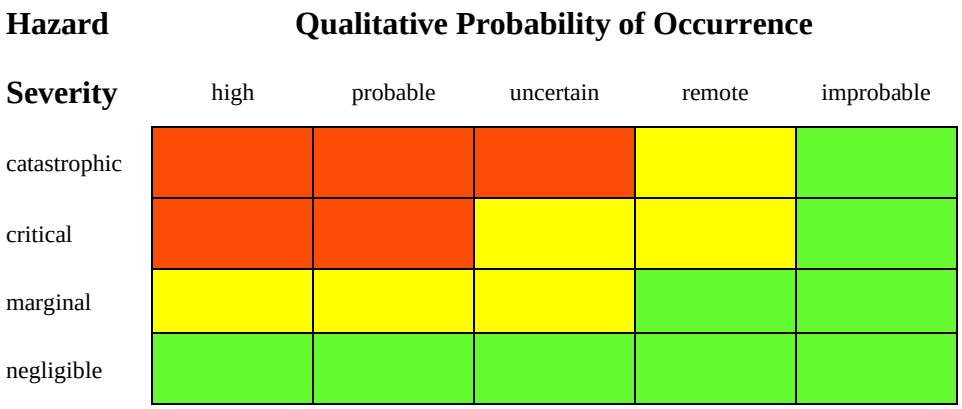
Test Title:

State the Flight Test Technique to be flown

Aircraft/System:

State the aircraft make and model. May be generic (e.g. light single engine piston) or specific (e.g. SR-22)

Initial risk assessment:



Insert a cross where the risk is before the implementation of mitigation

Hazard: *Describe the hazard that was identified.*

Cause: *Describe what generates the hazard.*

Effect: *Describe the worst-case extent of harm that might reasonably occur as a consequence or outcome of the identified hazard.*

Minimizing Procedures: *Describe accurately all the mitigating measures implemented by NTPS to bring the resulting risk in the tolerable or acceptable region.*

Emergency Procedures: *Describe the emergency procedures to be used if the mitigating measures fail.*

Residual Risk Index (after minimizing procedures are implemented):

High: Medium: Low:

Insert a cross in the box of the resulting risk level after implementation of the above minimizing procedures.

Approved by: **Date:** **Signature:**

APPENDIX C: FLIGHTHAZARD ANALYSIS (FHA) WORKSHEET

(Delete this and Blue text when completing.)

Flight Hazard Analysis worksheet

Reference: *Insert the FHA reference number*

Revision date: *Insert the FHA revision date*

Topic:

(e.g. instructor proficiency)

Activity:

State the activity that is considered (e.g. flight instruction, etc.)

Initial risk assessment:

Hazard Severity	high	probable	uncertain	remote	improbable
	Qualitative Probability of Occurrence				
catastrophic					
critical					
marginal					
negligible					

Insert a cross where the risk is before the implementation of mitigation

Hazard: *Describe the hazard that was identified.*

Cause: *Describe what generates the hazard.*

Effect: *Describe the worst-case extent of harm that might reasonably occur as a consequence or outcome of the identified hazard.*

Minimizing Procedures: *Describe accurately all the mitigating measures implemented by NTPS to bring the resulting risk in the tolerable or acceptable region.*

Emergency Procedures: *Describe the emergency procedures to be used if the mitigating measures fail.*

Residual Risk Index (after minimizing procedures are implemented):

High:		Medium:		Low:	

Insert a cross in the box of the resulting risk level after implementation of the above minimizing procedures.

Approved by: **Date:** **Signature:**

APPENDIX D: NTPS ENTERPRISE SAFETY DATABASE EXAMPLES

Occurrence reports

Update DD MMM YYYY				Year YYYY occurrence reports									
Number	**Date (DD-MM-YY)**	**Aircraft type**	**Registration**	**Reporter**	**Event**	**Category**	**Phase of flight**	**Dammage**	**Injuries**	**Classification**	**Analysis**	**Staff feedback**	**Action taken**
001-YYYY		Type 1	N1111	Reporter 1	Event 1	PRO	Descent	None	None	Incident	Completed	Completed	Completed, check-list updated
002-YYYY		Type 2	N2222	Reporter 2	Event 2	ATC	Approach	None	None	Incident	Completed	Completed	Completed, procedure amended
003-YYYY		Type 2	N2222	Reporter 3	Event 3	MID	Test point	None	None	Incident	Completed	Completed	In progress (equipement, long term)
004-YYYY		Type 3	N3333	Reporter 3	Event 4	WEA	Landing	Light	None	Serious incident	Completed	Completed	Completed, Operations Manual updated
005-YYYY		Type 1	N1111	Reporter 1	Event 5	PRO	Ground	None	None	Incident	In progress	In progress	In progress, waiting for additional data

Recommendations not related to occurrence reports

Update DD MMM YYYY		Year YYYY safety recommendations not related to occurrence reports		
Date (DD-MM-YY)	**Subject**	**Source**	**Staff feedback**	**Action taken**
	Aircraft 1 Check-list	Specific meeting	Completed	Check-list updated
	FTT 1 risk mitigation	Safety Team meeting	Completed	Risk register and NTPS Volume X updated
	Fuel tank preflight drain	Safety Team meeting	Completed	In progress
	Aircraft 2 sideslip limitation	Safety Team meeting	Pending	Waiting for TC holder input

APPENDIX E: NTPS Enterprise SAFETY ACTION PLAN TEMPLATE

NATIONAL TEST PILOT SCHOOL Enterprise

SAFETY ACTION PLAN

Insert relevant year

1 Foreword

Insert a general statement about NTPS senior management safety objectives and priorities.

2 NTPS Enterprise Safety objectives for *insert relevant year*

2.1 Safety Objective 1

2.1.1 Scope

Explain the specific safety objective.

2.1.2 Actions

Explain what actions need to be performed to meet the objective.

2.1.3 Responsible person

Explain who is responsible for ensuring the relevant actions of Paragraph 2.1.2 are performed.

2.14 Time limit to implement

State the time limit for the relevant action of Paragraph 2.1.2 to be performed.

2.1.5 Indicators

Define the indicators to be used to monitor implementation.

2.1.6 Success criteria

Describe the criteria for successfully reaching the objective.

2.X Safety Objective X

Same as above for the other safety objectives, use as many paragraphs as objectives.

3 Conclusion

Insert a closing statement and additional guidance as necessary.

Date: Accountable Manager signature:

APPENDIX F: NTPS ENTERPRISE SAFETY TEAM MEETING MINUTE TEMPLATE

MINUTES OF THE NTPS Enterprise SAFETY TEAM MEETING

HELD ON *insert date*

From: NTPS Safety Manager

To: NTPS Accountable Manager

Copies: NTPS staff

A meeting of the Safety Team was held on *insert date and time*.

Document control: The NTPS Safety Manager shall pass to the Accountable Manager for signature, comments, and recommendation approval. The Safety Manager shall make a digital copy of the completed document for the Safety Database.
Transmitted to Accountable Manager: Date: Accountable Manager signature:

1. Topics addressed

1.1 Occurrence reports

Occurrences from *insert year* were reviewed and analyzed. All *insert year* occurrences, and their analysis / review status are listed in Appendix 2. The following occurrence reports were analyzed, and recommendations were provided to the Accountable Manager:

a. *Insert occurrence report 1 reference*

b. *Insert occurrence report 2 reference*

c. *…etc.*

1.2. Topic 2:

Report here on any specific safety topic discussed

2. Safety recommendations

The safety recommendations from this meeting are in Appendix 3.

Minutes written by *insert author's name* on *insert date*.

Approved by NTPS Safety Manager (signature): Date:

Appendix 1: participants

List the meeting's participants.

Appendix 2: *insert year* occurrences analysis status

Copy here the relevant NTPS Safety Database extract as it was at the time of the Safety Team meeting.

Appendix 3: NTPS Enterprise Safety Team Meeting held on *insert date*

List of safety recommendations *use one table per recommendation for each topic, if several recommendations relate to the same topic, they may be grouped in the same table.*

Recommendation 1 from the Safety Team Meeting held on *insert date*: *Write a title for the recommendation.*
Analysis and recommendations: *Describe in detail the Safety Team analysis that led to the recommendation.* Date: NTPS Safety Manager Signature:
Action taken: *For each action to be taken, the Accountable Manager must designate the responsible individual and establish time limits.* Date: Accountable Manager signature:
Feedback provided to reporter and NTPS Enterprise staff: *Describe the feedback provided.* Date: NTPS Safety Manager signature:
Follow up actions monitoring: *Compare the actions taken against the time limits established by the Accountable Manager, explain and correct any deviations.* Date: NTPS Safety Manager Signature:

APPENDIX G: NTPS Enterprise OCCURRENCE REPORT FORM

1 October 2021 version

Complete this form in the event of an occurrence that was unsafe, or in other circumstances could have resulted in an unsafe situation. This occurrence report will not be used to apportion blame or liability but will be used in the interest of safety to determine factors that will allow action to be taken to prevent a repeat occurrence. Once completed, send one copy to the NTPS Safety Manager, one copy to Operations and one copy to the Safety Team.

1. Report			
Reporter name *(optional)*		Date	
Aircraft type and registration		Time	
Location		Phase of flight	
NTPS Enterprise occurrence report # *(attributed by the Safety Team, format 3-digit number - year)*:			
Description of Event: *Reporter should describe the occurrence with sufficient details to allow meaningful analysis.*			
Reporter recommendations: *Reporter may provide any recommendation to avoid such an occurrence in the future.*			

2. Document control:

The NTPS Risk Register shall be updated with whomever has the document for tracking purposes. Once the document is completed, the Safety Manger shall make a digital copy for the Safety database.

Received by Safety Manager:

Date: NTPS Safety Manager signature:

Notification required:

NTSB: □ Yes □ No EASA: □ Yes □ No

(if yes than inform the Accountable Manager immediately)

Date: NTPS Safety Manager Signature:

3. Data and analysis from external organizations (if applicable):

Date: Name of the person, name of the organization and signature:

4. Safety Team analysis and recommendations:

Category of Occurrence *(several boxes may be checked)*

- ☐ Air Traffic Control (ATC)
- ☐ Crew Resource Management (CRM)
- ☐ Flight deck layout / Avionics confusion (FDL)
- ☐ Fuel Management (FMG)
- ☐ Foreign Object (FOD)
- ☐ Flight Test Instrumentation / Equipment (FTI)
- ☐ Loss of control (LOC)
- ☐ Basic airframe / Aircraft systems / Mechanical problem (MEC)
- ☐ Medical / Incapacitation (MED)
- ☐ Insufficient aircraft separation (AIR)
- ☐ Procedures / documentation (PRO)
- ☐ Bird or wildlife strike (STR)
- ☐ Improper technique (TEC)
- ☐ Insufficient terrain separation (TER)
- ☐ Not determined (UNK)
- ☐ Weather (WEA)

Classification

- ☐ Incident
- ☐ Serious incident
- ☐ Accident

Phase of flight

- ☐ Ground
- ☐ Hover
- ☐ Take-off
- ☐ Climb
- ☐ Cruise
- ☐ Test points
- ☐ Descent
- ☐ Approach
- ☐ Landing
- ☐ All
- ☐ Other

Damage

- ☐ None
- ☐ Minor
- ☐ Substantial
- ☐ Aircraft destroyed

Injuries

- ☐ None
- ☐ Minor
- ☐ Serious
- ☐ Fatal

Analysis and recommendations:

Describe the Safety Team analysis in detail and provide adequate recommendations to prevent such an occurrence happening again in the future.

Date: NTPS Safety Manager Signature:

5. NTPS Enterprise Head of Training comments:

Add any relevant comments on the implications of the Safety Team recommendations on NTPS training activities.

Date: Head of Training signature:

6. NTPS Enterprise Chief Operating Officer comments:

Add any relevant comments on the implications of the Safety Team recommendations on NTPS operations.

Date: Chief Operating Officer signature:

7. Action taken:

For each action to be taken, the Accountable Manager must designate the responsible individual and establish time limits.

Date: Accountable Manager signature:

8. Feedback provided to reporter and NTPS Enterprise staff:

Describe the feedback provided.

Date: Safety Manager signature:

9. Follow up actions monitoring:

Compare the actions taken against the time limits established by the Accountable Manager, explain and correct any deviations.

Date: NTPS Safety Manager Signature:

APPENDIX H: Copy of Appendix I to European Directive 2003/42/EC of the European Parliament and of the Council of 13 June 2003 on occurrence reporting in civil aviation

4.7.2003 EN Official Journal of the European Union L 167/27

ANNEX I

List of aircraft operations, maintenance, repair, and manufacture-related occurrences to be reported

Note 1: Although this Annex lists the majority of reportable occurrences, it cannot be completely comprehensive. Any other occurrences, which are judged by those involved to meet the criteria, should also be reported.

Note 2: This Annex does not include accidents. In addition to other requirements covering the notification of accidents, they should also be recorded in the database mentioned in Article 5(2).

Note 3: This Annex contains examples of reporting requirements covering aircraft operations, maintenance, repair and manufacture.

Note 4: Occurrences to be reported are those where the safety of operation was or could have been endangered or which could have led to an unsafe condition. If in the view of the reporter an occurrence did not endanger the safety of the operation but if repeated in different but likely circumstances would create a hazard, then a report should be made. What is judged to be reportable on one class of product, part or appliance may not be so on another and the absence or presence of a single factor, human or technical, can transform an occurrence into an accident or serious incident.

Note 5: Specific operational approvals, e.g. RVSM, ETOPS, RNAV, or a design or maintenance programme, may have specific reporting requirements for failures or malfunctions associated with that approval or programme.

CONTENTS

A. AIRCRAFT FLIGHT OPERATIONS

(i) **Operation of the aircraft**

(a) avoidance manoeuvres:
- — risk of collision with another aircraft, terrain or other object or an unsafe situation when avoidance action would have been appropriate;
- — an avoidance manoeuvre required to avoid a collision with another aircraft, terrain or other object;
- — an avoidance manoeuvre to avoid other unsafe situations.

(b) Take-off or landing incidents, including precautionary or forced landings. Incidents such as under-shooting, overrunning or running off the side of runways. Take-offs, rejected take-offs, landings or attempted landings on a closed, occupied or incorrect runway. Runway incursions.

(c) Inability to achieve predicted performance during take-off or initial climb.

(d) Critically low fuel quantity or inability to transfer fuel or use total quantity of usable fuel.

(e) Loss of control (including partial or temporary) regardless of cause.

(f) Occurrences close to or above V_1 resulting from or producing a hazardous or potentially hazardous situation (e.g. rejected take-off, tail strike, engine-power loss etc.).

(g) Go around producing a hazardous or potentially hazardous situation.

(h) Unintentional significant deviation from airspeed, intended track or altitude (more than 300 ft) regardless of cause.

(i) Descent below decision height/altitude or minimum descent height/altitude without the required visual reference.

(j) Loss of position awareness relative to actual position or to other aircraft.

(k) Breakdown in communication between flight crew (CRM) or between flight crew and other parties (cabin crew, ATC, engineering).

(l) Heavy landing — a landing deemed to require a 'heavy landing check'.

(m) Exceedance of fuel imbalance limits.

(n) Incorrect setting of an SSR code or of an altimeter subscale.

(o) Incorrect programming of, or erroneous entries into, equipment used for navigation or performance calculations, or use of incorrect data.

(p) Incorrect receipt or interpretation of radio-telephony messages.

(q) Fuel system malfunctions or defects, which had an effect on fuel supply and/or distribution.

(r) Aircraft unintentionally departing from a paved surface.

(s) Collision between an aircraft and any other aircraft, vehicle or other ground object.

(t) Inadvertent and/or incorrect operation of any controls.

(u) Inability to achieve the intended aircraft configuration for any flight phase (e.g. landing gear and gear doors, flaps, stabilisers, slats etc.).

(v) A hazard or potential hazard which arises as a consequence of any deliberate simulation of failure conditions for training, system checks or training purposes.

(w) Abnormal vibration.

(x) Operation of any primary warning system associated with manoeuvring the aircraft e.g. configuration warning, stall warning (stick shaker), over-speed warning etc. unless:

1. the crew conclusively established that the indication was false and provided that the false warning did not result in difficulty or hazard arising from the crew response to the warning; or
2. operated for training or test purposes.

(y) GPWS/TAWS 'warning' when:

1. the aircraft comes into closer proximity to the ground than had been planned or anticipated; or
2. the warning is experienced in instrument meteorological conditions or at night and is established as having been triggered by a high rate of descent (mode 1); or
3. the warning results from failure to select landing gear or landing flaps by the appropriate point on the approach (mode 4); or
4. any difficulty or hazard arises or might have arisen as a result of crew response to the 'warning' e.g. possible reduced separation from other traffic. This could include warning of any mode or type i.e. genuine, nuisance or false.

(z) GPWS/TAWS 'alert' when any difficulty or hazard arises or might have arisen as a result of crew response to the 'alert'.

(aa) ACAS RAs.

(bb) Jet or prop blast incidents resulting in significant damage or serious injury.

(ii) **Emergencies**

(a) Fire, explosion, smoke or toxic or noxious fumes, even though fires were extinguished.

(b) The use of any non-standard procedure by the flight or cabin crew to deal with an emergency when:

1. the procedure exists but is not used;
2. the procedure does not exist;
3. the procedure exists but is incomplete or inappropriate;
4. the procedure is incorrect;
5. the incorrect procedure is used.

(c) Inadequacy of any procedures designed to be used in an emergency, including when being used for maintenance, training or test purposes.

(d) An event leading to an emergency evacuation.

(e) Depressurisation.

(f) The use of any emergency equipment or prescribed emergency procedures in order to deal with a situation.

(g) An event leading to the declaration of an emergency ('Mayday' or 'panne').

(h) Failure of any emergency system or equipment, including all exit doors and lighting, to perform satisfactorily, including when being used for maintenance, training or test purposes.

(i) Events requiring any use of emergency oxygen by any crew member.

(iii) **Crew incapacitation**

(a) Incapacitation of any member of the flight crew, including that which occurs prior to departure if it is considered that it could have resulted in incapacitation after take-off.

(b) Incapacitation of any member of the cabin crew which renders them unable to perform essential emergency duties.

(iv) **Injury**

Occurrences, which have or could have led to significant injury to passengers or crew but which are not considered reportable as an accident.

(v) **Meteorology**

(a) A lightning strike which resulted in damage to the aircraft or loss or malfunction of any essential service.

(b) A hail strike which resulted in damage to the aircraft or loss or malfunction of any essential service.

(c) Severe turbulence encounter, an encounter resulting in injury to occupants or deemed to require a 'turbulence check' of the aircraft.

(d) A windshear encounter.

(e) Icing encounter resulting in handling difficulties, damage to the aircraft or loss or malfunction of any essential service.

(vi) **Security**

(a) Unlawful interference with the aircraft including a bomb threat or hijack.

(b) Difficulty in controlling intoxicated, violent or unruly passengers.

(c) Discovery of a stowaway.

(vii) **Other occurrences**

(a) Repetitive instances of a specific type of occurrence which in isolation would not be considered 'reportable' but which due to the frequency with which they arise, form a potential hazard.

(b) A bird strike which resulted in damage to the aircraft or loss or malfunction of any essential service.

(c) Wake-turbulence encounters.

(d) Any other occurrence of any type considered to have endangered or which might have endangered the aircraft or its occupants on board the aircraft or on the ground.

B. AIRCRAFT TECHNICAL

(i) **Structural**

Not all structural failures need to be reported. Engineering judgment is required to decide whether a failure is serious enough to be reported. The following examples can be taken into consideration:

(a) damage to a principal structural element (PSE) that has not been designated as damage-tolerant (life-limited element). PSEs are those which contribute significantly to carrying flight, ground, and pressurisation loads, and the failure of which could result in a catastrophic failure of the aircraft;

(b) defect or damage exceeding admissible damages to a PSE that has been designated as damage-tolerant;

(c) damage to or defect exceeding allowed tolerances of a structural element, the failure of which could reduce the structural stiffness to such an extent that the required flutter, divergence or control reversal margins are no longer achieved;

(d) damage to or defect of a structural element, which could result in the liberation of items of mass that may injure occupants of the aircraft;

(e) damage to or defect of a structural element, which could jeopardise proper operation of systems. See (ii) below;

(f) loss of any part of the aircraft structure in flight.

(ii) **Systems**

The following general criteria applicable to all systems are proposed:

(a) loss, significant malfunction or defect of any system, subsystem or set of equipment when standard operating procedures, drills etc. could not be satisfactorily accomplished;

(b) inability of the crew to control the system, for example:

1. uncommanded actions,
2. incorrect and/or incomplete response, including limitation of movement or stiffness,
3. runaway,
4. mechanical disconnection or failure;

(c) failure or malfunction of the exclusive function(s) of the system (one system could integrate several functions);

(d) interference within or between systems;

(e) failure or malfunction of the protection device or emergency system associated with the system;

(f) Loss of redundancy of the system.

(g) Any occurrence resulting from unforeseen behaviour of a system.

(h) For aircraft types with single main systems, subsystems or sets of equipment:
loss, significant malfunction or defect in any main system, subsystem or set of equipment.

(i) For aircraft types with multiple independent main systems, subsystems or sets of equipment:
the loss, significant malfunction or defect of more than one main system, subsystem or set of equipment.

(j) Operation of any primary warning system associated with aircraft systems or equipment unless the crew conclusively established that the indication was false, provided that the false warning did not result in difficulty or hazard arising from the crew response to the warning.

(k) Leakage of hydraulic fluids, fuel, oil or other fluids which resulted in a fire hazard or possible hazardous contamination of aircraft structure, systems or equipment, or risk to occupants.

(l) Malfunction or defect of any indication system when this results in the possibility of misleading indications to the crew.

(m) Any failure, malfunction or defect if it occurs at a critical phase of the flight and is relevant to the system operation.

(n) Significant shortfall of the actual performances compared to the approved performance which resulted in a hazardous situation (taking into account the accuracy of the performance-calculation method) including braking action, fuel consumption etc.

(o) Asymmetry of flight controls; e.g. flaps, slats, spoilers etc.

The Appendix to this Annex gives a list of examples of reportable occurrences resulting from the application of these general criteria to specific systems.

(iii) **Propulsion (including engines, propellers and rotor systems) and auxiliary power units (APUs)**

(a) Flameout, shutdown or malfunction of any engine.

(b) Overspeed or inability to control the speed of any high-speed rotating component (for example: APU, air starter, air cycle machine, air turbine motor, propeller or rotor).

(c) Failure or malfunction of any part of an engine or powerplant resulting in any one or more of the following:

1. non-containment of components/debris;
2. uncontrolled internal or external fire, or hot gas breakout;
3. thrust in a direction different from that demanded by the pilot;
4. thrust-reversing system failing to operate or operating inadvertently;
5. inability to control power, thrust or rpm;
6. failure of the engine mount structure;
7. partial or complete loss of a major part of the powerplant;
8. dense visible fumes or concentrations of toxic products sufficient to incapacitate crew or passengers;
9. inability, by use of normal procedures, to shutdown an engine;
10. inability to restart a serviceable engine.

(d) An uncommanded thrust/power loss, change or oscillation which is classified as a loss of thrust or power control (LOTC):

1. for a single-engine aircraft; or
2. where it is considered excessive for the application; or

3. where this could affect more than one engine in a multi-engine aircraft, particularly in the case of a twin-engine aircraft; or
4. for a multi-engine aircraft where the same, or similar, engine type is used in an application where the event would be considered hazardous or critical.

(e) Any defect in a life-controlled part causing its withdrawal before completion of its full life.

(f) Defects of common origin which could cause an in-flight shut-down rate so high that there is the possibility of more than one engine being shut down on the same flight.

(g) An engine limiter or control device failing to operate when required or operating inadvertently.

(h) Exceedance of engine parameters.

(i) FOD resulting in damage.

Propellers and transmission

(j) Failure or malfunction of any part of a propeller or powerplant resulting in any one or more of the following:

1. an overspeed of the propeller;
2. the development of excessive drag;
3. a thrust in the opposite direction to that commanded by the pilot;
4. a release of the propeller or any major portion of the propeller;
5. a failure that results in excessive imbalance;
6. the unintended movement of the propeller blades below the established minimum in-flight low-pitch position;
7. an inability to feather the propeller;
8. an inability to change propeller pitch;
9. an uncommanded change in pitch;
10. an uncontrollable torque or speed fluctuation;
11. the release of low-energy parts.

Rotors and transmission

(k) Damage or defect of main rotor gearbox/attachment which could lead to in-flight separation of the rotor assembly and/or malfunctions of the rotor control.

(l) Damage to tail rotor, transmission and equivalent systems.

APUs

(m) Shut down or failure when the APU is required to be available by operational requirements, e.g. ETOPS, MEL.

(n) Inability to shut down the APU.

(o) Overspeed.

(p) Inability to start the APU when needed for operational reasons.

(iv) **Human factors**

Any incident where any feature or inadequacy of the aircraft design could have led to an error of use that could contribute to a hazardous or catastrophic effect.

(v) **Other occurrences**

(a) Any incident where any feature or inadequacy of the aircraft design could have led to an error of use that could contribute to a hazardous or catastrophic effect.

(b) An occurrence not normally considered as reportable (e.g., furnishing and cabin equipment, water systems), where the circumstances resulted in endangering the aircraft or its occupants.

(c) A fire, explosion, smoke or toxic or noxious fumes.

(d) Any other event which could endanger the aircraft, or affect the safety of the occupants of the aircraft, or people or property in the vicinity of the aircraft or on the ground.

(e) Failure or defect of passenger address system resulting in loss of, or inaudible, passenger address system.

(f) Loss of pilot seat control during flight.

APPENDIX I: Copy of Appendix to European regulation (EU) N° 996/2010 of 20 October 2010 on the investigation and prevention of accidents and incidents in civil aviation

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ANNEX

List of examples of serious incidents

The incidents listed are typical examples of incidents that are likely to be serious incidents. The list is not exhaustive and only serves as guidance with respect to the definition of 'serious incident':

— a near collision requiring an avoidance manoeuvre to avoid a collision or an unsafe situation or when an avoidance action would have been appropriate,

— controlled flight into terrain only marginally avoided,

— aborted take-offs on a closed or engaged runway, on a taxiway, excluding authorised operations by helicopters, or from an unassigned runway,

— take-offs from a closed or engaged runway, from a taxiway, excluding authorised operations by helicopters, or from an unassigned runway,

— landings or attempted landings on a closed or engaged runway, on a taxiway, excluding authorised operations by helicopters, or from an unassigned runway,

— gross failures to achieve predicted performance during take-off or initial climb,

— fires and smoke in the passenger compartment, in cargo compartments or engine fires, even though such fires were extinguished by the use of extinguishing agents,

— events requiring the emergency use of oxygen by the flight crew,

— aircraft structural failure or engine disintegration, including uncontained turbine engine failures, not classified as an accident,

— multiple malfunctions of one or more aircraft systems seriously affecting the operation of the aircraft,

— flight crew incapacitation in flight,

— fuel quantity requiring the declaration of an emergency by the pilot,

— runway incursions classified with severity A according to the Manual on the Prevention of Runway Incursions (ICAO Doc 9870) which contains information on the severity classifications,

— take-off or landing incidents. Incidents such as undershooting, overrunning or running off the side of runways,

— system failures, weather phenomena, operation outside the approved flight envelope or other occurrences which could have caused difficulties controlling the aircraft,

— failure of more than one system in a redundancy system mandatory for flight guidance and navigation.

APPENDIX J: NTPS ENTERPRISE RISK MANAGEMENT PROCESS REPORT

Safety concern	*Describe the safety concern*
Risk	*Describe the risk*
Evaluated risk probability	*See SMM Table 6.1*
Evaluated risk severity	*See SMM Table 6.2*
Computed risk index	*See SMM Figure 6.1*
Is the risk index acceptable?	*See SMM Table 6.3*
Can the risk be eliminated?	*Describe how the risk can be eliminated or state why it cannot be eliminated*
Can the risk be mitigated?	*Describe how the risk can be mitigated or state why it cannot be mitigated*
Evaluated residual risk probability	*See SMM Table 6.1*
Evaluated residual risk severity	*See SMM Table 6.2*
Computed residual risk index	*See SMM Figure 6.1*
Is the residual risk level acceptable?	*See SMM Table 6.3*
Recommendation	*State the final recommendation to the Accountable Manager after running the risk management process*

If necessary, add text to expand the analysis on any item in the right-hand column.

APPENDIX K: Table K-1 Recommendations for Low-Risk Testing

This table contains requirements for low-risk testing. Low risk does not mean there are no hazards and therefore, no appropriate mitigations. Mitigations such as build-up, day before night, high before low, etc., must be considered. The Flight Safety/Risk Management THA requirement may be satisfied by referencing the applicable INDEX from the table below for repetitive, low risk flight tests in the Risk Assessment section of flight test planning documents (e.g., a student project test plan, an instructor led flight briefing, etc.). In consideration of the above, this implies no planned or intentional flight operations outside the normal flight envelope of the test vehicle will occur and all test points will honor AFM limitations, including weight and balance considerations.

Only when flight characteristics or handling qualities are **not** altered because of modification(s) to the test vehicle, the table may be referenced. If flight characteristics or handling qualities **are** altered, then the table is **not** applicable, and a more formal risk assessment must be accomplished prior to THA signature.

Note: All operations must adhere to basic 14 CFR part 91 requirements (cloud clearance, visibility, safe altitudes, etc.)
Note: This table may only be used for the specific types of tests listed.

INDEX	TYPE OF TEST	TEST/OPERATING AREA/ALTITUDE/RANGE	WEATHER REQUIREMENTS & FLIGHT CONDITIONS	REMARKS
A	Avionics (including FMS functional GPS, TCAS II).	Within gliding distance of land for aircraft not equipped for overwater ops or not capable of sustained OEI flight.	VMC (Day or Night) (See remarks).	Where VMC requirements apply, VMC day testing should precede VMC night testing. No operations below 500’ AGL (excluding approach and landing), no high sink rates below 1500’ AGL. At discretion of test crew, rotorcraft tests may be conducted below 500' AGL where nature of test requires such exception and has been thoroughly pre-briefed. TCAS testing limited to VMC Day conditions. No flight involving formation flying or intruder/target aircraft.
B	Night evaluation of cockpit lighting.	Within the National Airspace System or test area acceptable to flight crew.	VMC Night.	Excludes emergency electrical system evaluation.

C	EMI for cabin electrical systems installations.	Within the National Airspace System or test area acceptable to flight crew.	VMC (Day or Night) (See remarks).	VMC day testing should precede VMC night testing. May be medium risk if EMI could adversely affect critical systems such as fly-by-wire flight controls or FADEC.
D	Basic systems functional tests.	In accordance with Certificate limitations.	VMC Day or Night.	Where VMC requirements apply, VMC day testing should precede VMC night testing. These tests are simple functional tests similar to production flight testing or return to service after maintenance.
E	High altitude airspeed calibration.	IAW Certificate limitations.	VMC Day.	Nil remarks.
F	Cockpit evaluation for layout or human factors issues.	IAW Certificate limitations.	VMC Day or Night.	Where VMC requirements apply, VMC day testing should precede VMC night testing.
G	Function and Reliability (F&R)	Normal operating envelope	VMC Day or Night.	