NATO STANDARD

AFSP-06

NATO FLIGHT SAFETY OFFICER (FSO) TRAINING

Edition A, version 1

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NORTH ATLANTIC TREATY ORGANIZATION

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NORTH ATLANTIC TREATY ORGANIZATION (NATO)

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NATO LETTER OF PROMULGATION

30 January 2023

1. The enclosed Allied Flight Safety Publication AFSP-06, Edition A, version 1, NATO FLIGHT SAFETY OFFICER (FSO) TRAINING, which has been approved by the nations in the MILITARY COMMITTEE AIR STANDARDIZATION BOARD, is promulgated herewith. The agreement of nations to use this publication is recorded in STANAG 7238.

2. AFSP-06, Edition A, version 1, is effective upon receipt.

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4. This publication shall be handled in accordance with C-M(2002)60.

Dimitrios SIGOULAKIS
Lieutenant General, GRC (A)
Director, NATO Standardization Office

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RECORD OF RESERVATIONS

CHAPTER	RECORD OF RESERVATION BY NATIONS
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RECORD OF SPECIFIC RESERVATIONS

[nation]	[detail of reservation]
USA	AF/JAO: NATO STANAG 7238 (Ed 1) requires the United States to agree to ratify and agree to implement the following NATO Standard: Allied Flight Safety Publication, NATO Flight Safety Officer (FSO) Training (Ed A, Version 1) ("AFSP-06"). AF/JA recommends ratification of NATO STANAG 7238 (Ed 1) with reservations as follows: First, a reservation should clarify that the U.S. will not act or expend funds where there is no legal authority to exceed USAF or U.S. national standards. If AFSP-06 reflects current U.S. national standards and does not obligate the USAF to act or expend funds where there is no legal authority, then the reservation is moot. Second, a reservation should clarify that the U.S. will apply the criteria, standards and requirements in the listed "related documents" and other documents referenced within only where the U.S. is a signatory to such documents and subject to any national reservations to those documents. DoN has the following reservation: Para 2.5: The United States does not concur with the use of "nationally qualified" as a requirement for NATO FSOs. Recommend removing "nationally" in the next edition of the publication. Rationale: U.S. Navy and Marine Corps ASO/FSOs are Service trained at the Naval School of Aviation Safety and are qualified at the Service level. Although there is equivalency between U.S. Department of Defense (DOD) Service qualifications, this does not necessarily hold true at the national level. The U.S. National Transportation and Safety Board recognize DOD Service qualifications for Service related investigations but does not give ASO/FSOs NTSB qualifications. Additionally, although Service related training is sufficient to become a U.S. Federal Aviation Safety Officer, this program is not well recognized nor is a requirement to serve in the ASO/FSO role. Although the term "should" is used instead of "must" allowing for some flexibility, the fact that virtually no U.S. ASO/FSOs will be nationally qualified makes the use of "nationally" a concern.

Note: The reservations listed on this page include only those that were recorded at time of promulgation and may not be complete. Refer to the NATO Standardization Document Database for the complete list of existing reservations.

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CHAPTER 1 INTRODUCTION

1.1. AIM

The aim of this publication is to provide guidance to NATO Nations on the minimum requirements concerning the training of a Flight Safety Officer (FSO). Dissimilar training, tactics, and procedures among FSOs from NATO nations has the potential to create misunderstandings, particularly when operating in a multinational environment.

1.2. AGREEMENT

Participants agree for their national FSOs to meet the minimum requirements established in Chapter 2 of this document before serving as a FSO in support of other NATO members. For the purposes of this document, a NATO FSO is a flight safety officer who meets the minimum requirements to work in a NATO environment.

1.3. GENERAL

Recent NATO operations (i.e. ISAF) have demonstrated the need to standardize the capabilities of national FSOs working in a multinational environment. NATO exercises, evaluations, and operations require FSOs who are sufficiently trained to address ground and flight safety issues from all NATO member nations while also respecting the disparate safety rules and regulations of those same nations. Moreover, FSOs working in this context must be trained to successfully implement and manage aviation safety programs, respond to and report aviation safety incidents, as well as provide consistent aviation safety advice to Commanding Officers. Specifying baseline criterion for NATO FSOs will reduce misunderstandings, standardize aviation safety programs and procedures, and enhance interoperability.

1.4 IMPLEMENTATION OF THE STANDARD

This standard is implemented when a nation has issued the necessary orders/instructions to ensure that the minimum requirements established herein are included in their national FSO training programs. This standard is not intended to dictate how NATO countries train their FSOs for national activities. It does however establish minimum requirements that must be met for nationally trained FSOs to work in a multinational environment involving two or more NATO nations.

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CHAPTER 2 NATO FLIGHT SAFETY OFFICER MINIMUM REQUIREMENTS

2.1. MINIMUM REQUIREMENTS

The chapter establishes the minimum requirements for a FSO to serve in a NATO environment involving two or more NATO nations. A NATO FSO must be able to:

a. act as an aviation safety advisor to a NATO Commanding Officer (CO);

b. implement and manage aviation safety programs for a deployed unit;

c. develop a comprehensive aviation safety plan as discussed in section 2.4;

d. manage flight and ground safety incidents;

e. assume first responder responsibilities;

f. record flight and ground flight safety incidents and report this information to the respective nations involved.

2.2 AVIATION SAFETY ADVISOR

A NATO FSO should be trained to act as an aviation safety advisor for a Commanding Officer throughout the spectrum of NATO activities. As such, a NATO FSO must be specifically instructed on the varying safety cultures of NATO nations, the importance of anonymity to NATO Nations, and the differing national safety regulations such as safety privilege. Moreover, NATO FSOs should be familiar with and able to convey the information presented in AFSP-01, AFSP-1.1, AFSP-1.2, AFSP-1.3, and AFSP-1.4.

2.3. AVIATION SAFETY MANAGEMENT

A NATO FSO should be capable of implementing aviation safety management programs both at home and at a deployed unit. Understanding the practical aspects of effective cooperation between a host nation and other NATO forces is critical for NATO FSOs. This information is delineated in the “Checklist for Common Air/Ground Operations” section of AFSP-1.2.

2.4. AVIATION SAFETY PLAN

An aviation safety plan (ASP) establishes the strategy to ensure long term management of flight safety risks. As such, a NATO FSOs must be able to construct

and implement an ASP in a multinational environment. The Aviation Safety Plan should include the following:

a. identification of aviation hazards and reporting to the Commanding Officer;

b. recommended control measures and corrective actions to mitigate unacceptable risk;

c. a plan to implement SMS in the organization as well as provide instructions on the tools of SMS;

c. guidance on how to develop, implement, conduct and co-ordinate an Aviation Emergency Response plan;

d. directions on how to manage aviation occurrence reporting;

e. instructions on the responsibility to investigate or act as an investigation advisor;

f. identification of cause factors and provide recommendations.

2.5. MANAGEMENT OF FLIGHT AND GROUND INCIDENTS

A NATO FSO should be nationally qualified, competent, and capable of briefing flight safety recommendations to Commanding Officers on how to manage both flight and ground safety incidents. They should understand how to investigate flight and ground safety incidents using tools such as the Software, Hardware, Environment, Liveware (SHELL) model and the Human Factors Analysis and Classification System (HFACS). Additionally, a NATO FSO should know how to identify and implement the safety recommendations resulting from such investigations.

2.6. FIRST RESPONDER RESPONSIBILITIES

A NATO FSO should be able to assume first responder responsibilities in the event of an accident and be trained to recognize potential evidence that may be beneficial for the accident investigation team. The FSO must understand the need to protect and preserve on site evidence and apply fundamental preservation actions.

2.7. FLIGHT AND GROUND SAFETY INCIDENTS REPORTING SYSTEM

A NATO FSO should be able to establish a unit/detachment reporting system and ensure that all incidents are recorded. The system must ensure anonymity to persons reporting events. The FSO must also ensure that NATO nations whose property and/or personnel were involved in the event are notified as soon as practical.

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CHAPTER 3 FLIGHT SAFETY OFFICER TRAINING AND COMPETENCIES

3.1. FSO TRAINING AND COMPETENCIES

This chapter provides a recommended template for Flight Safety Officer training programs and identifies key competencies of FSOs.

3.2. FSO TRAINING PROGRAMS

1. FSO training programs are intended for personnel who already perform duties or is expected to perform duties in a unit or detachment as a FSO. Training should support the following areas:

a. use of aircraft (vessels);

b. flight safety;

c. maintenance;

d. air traffic control;

e. air defence operational control;

f. airport infrastructure maintenance;

g. meteorological service;

h. flight medicine.

2. FSO training should provide substantive preparation and professional development of military personnel in the field of prevention with respect to aviation accidents and incidents. This training should also enable FSOs to properly assume first responder tasks for the benefit of the mishap investigation team and to manage the reporting system.

3. The following personnel represent the intended targets of flight safety training:

a. personnel dedicated to occupy positions in flight safety management;

b. personnel currently performing tasks (full/part time) as unit flight safety staff;

c. personnel assigned to air safety investigation boards.

4. Graduates of a flight safety training program should be able to demonstrate the following skills:

a. Knowledge:

(1) explain the key role of flight safety, characterize and define the elements of the flight safety system;

(2) provide the principles of risk management in aviation;

(3) explain the role of the flight safety management system at the unit level;

(4) explain the principles of the flight safety system in military aviation;

(5) recognize flight safety hazard trends at the home unit and implement proper tools to control them;

(6) explain fundamentals of flight safety;

(7) explain methods of investigating aviation mishaps and incidents and ways of determining their causes;

(8) present basic knowledge of legal aspects of safety investigations;

(9) identify preventive actions in order to mitigate the risk of aviation mishaps.

b. Skills:

(1) recognize factors posing risks for aviation safety and identify their origins in particular reference to human factors;

(2) document the risk management process;

(3) able to provide guidance on risk management and indicate ways of mitigating risks for aviation operations;

(4) able to assess the level of flight safety at the home unit, perform analysis of negative trends, and provide corrective actions;

(5) able to utilize available software tools for current flight safety assessment;

(6) able to recognize the causes of aviation mishaps and incidents and able to implement corrective preventive actions;

(7) able to coordinate and supervise preventive actions at a single unit level;

(8) able to follow applicable publications and regulations regarding safety investigation and reporting;

(9) able to properly perform tasks of a Flight Safety Officer (FSO) at the occupied position in the organizational unit of the flight safety system in the Armed Forces.

c. Personal skills:

(1) works independently supporting the mishap investigation team;

(2) demonstrates creativity in shaping flight safety policy and implementing Just Culture principles;

(3) prove his/her commitment to promotion of flight safety;

(4) coordinate preventive actions at the home unit;

(5) supervises compliance of established reporting standards by personnel directly involved in flight operations;

(6) recognizes threats to flight safety and suggest risk mitigation measures;

(7) acts as an advisory body for the Commander and other personnel at the home unit.

3.3. NATO FSO TRAINING

In addition to the items listed above, it is recommended that NATO FSOs receive specific training on the following:

a. safety cultures of NATO nations;

b. just culture philosophy;

c. ground/flight safety legal regulations of NATO nations;

d. means to communicate flight safety information as discussed in AFSP-1.1;

e. “Checklist for Common Ground/Air Operations” in AFSP-1.2;

f. procedures identified in AFSP-1.3 regarding safety investigations;

g. wildlife strike prevention program as detailed in AFSP-1.4.

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CHAPTER 4 GENERAL TRAINING OBJECTIVES

4.1. ORGANIZATIONAL RECOMMENDATIONS

1. A Flight/Ground Safety Training Course should preferably consist of three separate modules.

a. theoretical flight and ground safety concepts;

b. practical requirements of FSOs;

c. mishap investigation techniques and requirements.

2. Classes on theoretical flight and ground safety should introduce the following subjects:

a. safety management in military aviation;

b. the role and tasks of the Safety Management System (SMS);

c. mishap prevention program;

d. Operational Flight Data Monitoring (OFDM);

e. influence of technical, human, environmental and organizational conditions on flight operations;

f. safety culture;

g. legal aspects of mishap investigations;

h. methods of mishap and incident investigation;

i. recognition of main safety risks related with execution of military aviation operations and risk management.

3. Classes covering practical FSO requirements should discuss the following topics:

a. assessment of flight safety and recognition of current trends at home unit;

b. safety risk evaluation of flight operations and process of implementing corrective actions;

c. safety risk management process;

d. setting up and managing aviation safety threat reporting system;

d. mishap investigating methods;

e. determining factors and causals of mishaps;

f. establishing recommendations for future mishap prevention;

g. investigation board responsibilities at the crash site;

h. use of dedicated flight safety IT systems.

4. Classes on mishap investigating techniques should consist of the following:

a. academic discussions, using examples, on previous aviation incidents and investigations;

b. practical, hands-on learning at a site intended to mimic a real aircraft incident.

4.2. SUGGESTIONS

1. Training may be conducted in the form of lectures and group exercises using multimedia techniques.

2. During seminars students should be encouraged to present their own conclusions and thoughts regarding a discussed subject.

3. Real life scenarios of military aviation mishaps and incidents should be used as examples during the training.

ANNEX A – RECOMMENDED FSO TRAINING SYLLABUS

A.1. FLIGHT SAFETY THEORY

A.1.1. Fundamentals

a. principles and aim of a SMS;
b. basic regulations of flight safety system in the Armed Forces;
c. fundamentals of cause-and-effect sequence analysis;
d. aviation mishap prevention methods;
e. flight safety culture philosophy;
f. HFACS classification system in mishap investigation;
g. identification of threats for aviation safety;
h. mishap factors and causals.

A.1.2. Flight safety management

a. principles of flight safety management system;
b. fundamentals of flight safety in military aviation;
c. flight safety priorities and objectives;
d. safety culture.

A.1.3. Cause and effect sequence analysis

a. identification of causals and factors;
b. cause-effect chain of events;
c. identification of causes of the mishap;
d. implementation of prevention policy after mishap occurrence.

A.1.4. Mishap prevention

a. implementation of prevention policy after mishap occurrence;
b. preventive and corrective actions required to restore desired level of flight safety;
c. evaluation of undertaken preventive actions effectiveness;
d. cause-effect chain of events;
e. identification of a potential cause of the mishap.

A.1.5. Safety Management System in Armed Forces

a. management of SMS in the organization;
b. basic model of SMS structure in the Armed Forces;
c. role of SMS on each level of command;
d. implementation of prevention policy after mishap occurrence.

A.1.6. SMS information management

a. sources of information in SMS.

A.1.7. Flight safety level assessment

a. methods of flight safety level assessment;
b. utilization of flight safety statistics as a valuable tool of flight safety level improvement.

A.1.8. Implementing information technology (IT) in safety management system

Basic functionality of IT safety management system:

a. incident reporting;
b. exchange of flight safety sensitive data;
c. database of flight safety events construction;
d. utilizing collected data for statistics;
e. assessment of current level of flight safety in organization;
f. establishing privileges and access for each level of command.

A.1.9. Promotion of just culture philosophy in an organization

a. principles of just culture philosophy;
b. key features for developing and maintaining just culture model.

A.2. FLIGHT DATA

A.2.1. Flight data acquisition

Basic knowledge in the following areas:

a. types of flight data recorders (FDR);
b. types of cockpit voice recorders (CVR);
c. other sources of flight data;

d. limitations of FDR and CVR systems;
e. flight data analysis.

A.3. RISK MANAGEMENT

a. risk management principles;
b. core concept and processes;
c. steps of risk management process;
d. limitations of safety risk management;
e. risk assessment matrix.

A.3.1. Methods of mitigating risk in aviation

a. identification of safety risks;
b. application of control mechanisms;
c. evaluation of effectiveness.

A.4. MISHAP INVESTIGATION

Information regarding safety investigations is covered in AFSP-1.3.

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ANNEX B – AVIATION SAFETY PLAN/AVIATION EMERGENCY RESPONSE PLAN

B.1. AVIATION SAFETY PLAN

The aviation safety plan (ASP) is the planning document containing the main direction of Armed Forces for the management of aviation safety for a set time period. An ASP should contain general safety issues, set aviation safety goals and targets, and present safety enhancement initiatives directing identified safety deficiencies to achieve safety goals and targets.

B.2. AVIATION EMERGENCY RESPONSE PLAN

The aviation emergency response plan (ERP) is a document containing procedures to be followed in the event of a mishap. It should describe actions at all levels of command, with corresponding levels of detail. It should be produced in a hard copy format and include a wide range of emergency situations based on probability and severity of the potential event.

Principle information to cover includes:

a. who to contact;
b. how to act;
c. resources to use.

ERPs should prioritize actions in the following order:

a. protection;
b. safe conduct;
c. mitigation/stabilization of the dangerous condition;
d. cleanup of the incident, whether this is physical or conceptual;
e. return to normal operations.

To expedite actions, the first EPR organization should direct their actions towards the situation representing the highest risk. Once critical risks are mitigated to a satisfactory level, the organization is encouraged to direct follow-on actions towards less significant areas.

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