DoD Instruction 6055.19

Aviation Hazard Identification and Risk Assessment Programs (AHIRAPs)

Originating Component:	Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics
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Incorporates and Cancels:	Under Secretary of Defense for Acquisition, Technology, and Logistics and Under Secretary of Defense for Personnel and Readiness Memorandum, "Military Flight Operations Quality Assurance (MFOQA) Process Implementation," October 11, 2005
Approved by:	James A. MacStravic, Performing the Duties of the Under Secretary of Defense for Acquisition, Technology, and Logistics

Purpose: This issuance establishes policy, assigns responsibilities, and provides direction for developing, implementing, and maintaining the AHIRAPs of military flight operations quality assurance (MFOQA), Aviation Safety Action Program (ASAP), and line operations safety audit (LOSA) in accordance with the authority in Department of Defense Directive (DoDD) 5134.01 and the guidance in DoDD 4715.1E. AHIRAPs prevent mishaps and strengthen a culture of accomplishing missions safely and effectively by:

- Allowing commanders and aircrew to identify and quantify risks and threats to flight operations that were previously unrecognized.
- Analyzing recorded aircraft systems data, flight performance data, self-reported data, and objective observations to identify threats and errors and develop solutions to mitigate those risks.

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SECTION 1: GENERAL ISSUANCE INFORMATION

1.1. APPLICABILITY. This issuance applies to OSD, the Military Departments, the Office of the Chairman of the Joint Chiefs of Staff and the Joint Staff, the National Guard Bureau, the Combatant Commands, the Office of the Inspector General of the Department of Defense, the Defense Agencies, the DoD Field Activities, and all other organizational entities within the DoD (referred to collectively in this issuance as the "DoD Components").

1.2. POLICY. DoD will:

a. Protect DoD property from damage and DoD personnel from accidental death, injury, or occupational illness.

b. Apply risk management strategies to protect DoD property and personnel, and eliminate loss of mission capability.

c. Use AHIRAPs to identify hazards, quantify risks, and mitigate hazards associated with flight operations.

SECTION 2: RESPONSIBILITIES

2.1. UNDER SECRETARY OF DEFENSE FOR ACQUISITION, TECHNOLOGY, AND LOGISTICS (USD(AT&L)). The USD(AT&L) oversees the implementation of this issuance.

2.2. ASSISTANT SECRETARY OF DEFENSE FOR ENERGY, INSTALLATIONS, AND ENVIRONMENT (ASD(EI&E)). Under the authority, direction, and control of the USD(AT&L) and in consultation with the Under Secretary of Defense for Personnel and Readiness (USD(P&R)), the ASD(EI&E)) provides strategic direction and oversight for AHIRAPs.

2.3. DoD COMPONENT HEADS. DoD Component heads:

a. Establish AHIRAPs that implement the requirements and procedures described in Section 3.

b. Include AHIRAP capabilities and attributes in Joint Capabilities Integration and Development System documents for all manned aircraft, and for unmanned aircraft systems (UASs) classified as Group 3 or higher in accordance with DoD Instruction (DoDI) 6055.07.

c. Include a planning, programming, budgeting, and execution process in their planning with sufficient resources to effectively implement the AHIRAPs in accordance with this issuance.

d. Develop a process for excluding MFOQA implementation for aircraft where a cost-benefit analysis determines that this program is not cost effective.

e. Collaborate with other DoD Components on mutual AHIRAPs in joint operating environments.

f. Guide, educate, and train commanders, leaders, safety professionals, pilots, aircrews, and maintenance personnel to execute AHIRAPs.

g. Create a cultural climate that promotes reporting hazards, works to solve problems quickly without fear of adverse action, and is willing to change to address risk so AHIRAPs are implemented effectively.

h. Establish procedures to protect DoD personnel from coercion, discrimination, or reprisal for participating in an ASAP.

i. Communicate AHIRAP successes and failures and best practices to other DoD Components.

SECTION 3: PROCEDURES

3.1. AHIRAP BACKGROUND. The AHIRAPs of MFOQA, ASAP, and LOSA:

a. Use data from flight recorders, observations, self-reporting, and other sources to make flight operations safer.

(1) Recorded flight data used for MFOQA analysis identifies and quantifies a baseline for day-to-day operations, identifies deviations from this baseline and hazardous flight environments, and helps monitor the effectiveness of control measures.

(2) Qualitative data from LOSA-observed flight operations and ASAP self-reporting identifies threats, errors, and hazards that could create errors, and helps identify measures for mitigating these hazards, errors, and threats.

b. Collect identity-protected, aggregate data to identify trends, human factor issues, material deficiencies, mishap precursors, and the effectiveness of corrective actions. Manage personally identifiable information in accordance with DoDD 5400.11 and DoD 5400.11-R.

c. Provide information for commanders to:

(1) Manage risk at an appropriate level for accomplishing their mission.

(2) Carry out the risk management process in accordance with DoDI 6055.01.

(3) Assess the risk associated with flight operations and develop controls by:

(a) Adjusting policy, training, or operations procedures;

(b) Identifying material requirements; or

(c) Accepting the risk as necessary for mission accomplishment.

3.2. AHIRAP IMPLEMENTATION.

a. Implement AHIRAPs to identify hazards and assess risks to flight operations.

b. Implement the multifaceted MFOQA process on DoD aircraft.

(1) Develop and implement flight data recording capabilities consistent with MFOQA data analysis.

(a) Collaborate on revisions to military standardization documents that:

1. Incorporate and supplement international civilian flight data recording standards.

2. Provide the minimum performance requirements of military enhanced flight recorders.

3. Specify the number and quality of parameters collected.

(b) Collect the data required in Paragraph 3.2.b.(1)(a) for all new, modification, and retrofit acquisition efforts.

(2) Develop a data collection and distribution process that supports MFOQA capability as a standard requirement for acquisition of all manned and unmanned aircraft including UAS Groups 3, 4, and 5, as defined in DoDI 6055.07.

(3) Program for MFOQA capability for existing aircraft, unless DoD Component cost-benefit analysis demonstrates a need for exclusion. Exclusions will be determined by DoD Component heads.

(4) Download and analyze aircraft data to identify negative trends and mishap precursors. Download data on a schedule that allows for regular analysis and results in minimal loss of flight operations data due to recorder capacity limitations.

(5) Distribute trend analysis results to representatives from operations, training, maintenance, safety, and engineering functions.

(6) Assess risk, identify mitigation measures, and monitor the effectiveness of implemented mitigation.

(a) Identify hazards using MFOQA alone and in conjunction with other data analysis processes.

(b) Identify, evaluate, and select mitigation measures including modifying procedures, aircraft limitations, tactics, or training syllabuses, and aircrew, maintenance crew, or commander awareness.

(c) Use MFOQA analyses to monitor effectiveness and determine if further modifications or additional measures are necessary.

c. Develop and implement ASAP reporting procedures.

(1) Establish reporting procedures for collecting hazard, error, and lessons learned information.

(2) Establish procedures to protect the submitter's identity before making the report available for action. Ensure personally identifiable information is managed in accordance with DoDD 5400.11 and DoD 5400.11-R.

(3) Identify hazards, either using an ASAP alone or in conjunction with other data analysis processes.

(4) Address hazards identified through ASAP reports, and analyze those hazards to identify threat and error trends and precursors.

(5) Develop mitigation measures. When feasible, use other data analysis processes to assess effectiveness of the mitigation measures.

d. Consider establishing procedures for LOSA observations and analyses.

(1) Document personnel behavior and strategies for managing threats, errors, and undesirable aircraft states, and use that information to identify threats to aviation safety.

(2) Use LOSA observations to identify aviation hazards and negative trends by collecting and analyzing external threats and internal errors, as well as personnel responses to the threats and errors. Use these observations and the resulting analyses to mitigate the threats and errors identified by LOSAs. LOSAs contribute to proactive safety by identifying threats and common errors made, as well as the best practices used by personnel to trap, mitigate, and manage those threats and errors.

(3) Develop a plan for implementing LOSA programs using a commercial vendor or following the guidelines found in Federal Aviation Administration Advisory Circular 120-90 to:

(a) Create an observation form that captures multiple aspects of standard operations, including the operating environment and expected performance.

(b) Select and train LOSA observers to standardize their observation and collection methods for reliability and validity of the data they collect.

(c) Gather threat and error data on a predetermined number of daily sorties or activities.

(4) Determine the prevalence and management of different threats and errors.

e. Establish procedures to handle data collected for AHIRAPs and release the analysis results based on:

(1) Consideration of the security implications of aggregating data and actions taken to correctly handle the data and protect it from release, when necessary, in accordance with Volume 1 of DoD Manual 5200.01.

(2) Restricted data use. Data collected for, or analysis generated from, AHIRAPs must not be used to:

(a) Monitor personnel performance to initiate qualification downgrade or decertification.

(b) Take adverse personnel action, except as described in paragraph 3.2.e.(4).

(3) Assigning individuals involved in events collected by AHIRAPs to complete additional training programs or requirements is not considered punitive or an adverse action.

(4) If data collected for, or analyses generated from, AHIRAPs indicate that an event involved an intentional disregard for safety, or that a false statement was made intentionally, the analysis or report no longer falls in the proactive aviation safety arena. In these cases, commanders may use MFOQA analyses and ASAP reports, as necessary, to investigate the event.

(5) Flight data files used for MFOQA analyses, ASAP reports, and LOSA observation forms and annotated data are not covered by the protection given to privileged safety information in accordance with DoDI 6055.07.

(a) Section 2254a of Title 10, United States Code (U.S.C.) provides for the possible exemption of information contained in flight data files of the MFOQA system from release pursuant to Section 552 of Title 5, U.S.C. (also known as the "Freedom of Information Act").

(b) The LOSA process collects unidentified observations and develops a consolidated report of trends and conclusions regarding day-to-day operations. The consolidated report may identify hazards or trends that warrant further analysis.

3.3. PROCESSING AND USING AHIRAP DATA.

a. Develop procedures to collect and analyze AHIRAP data, and use the results of the analysis in risk management processes. Evaluate the effectiveness of the control measures over time by using the expertise of operations, training, maintenance, and safety staff.

b. Create a command climate that:

(1) Incorporates regular and unbiased communication across all functional areas in support of aviation risk management.

(2) Uses AHIRAP information to assess and identify areas for improvement in the safety culture among leaders and aviation personnel.

(3) Encourages reporting in an environment designed to learn from errors instead of punishing crews that make them.

(4) Uses AHIRAP risk identification and analysis capabilities to modify aviation activities in unique operating environments, documents those decisions and their effect on mission accomplishment, and reevaluates those decisions and their impact on a recurring basis.

c. Establish AHIRAP policies and provide resources to:

(1) Identify hazards and errors using AHIRAPs and lead the development and implementation of risk mitigation strategies. Identify hazards and risks common to various levels of the organization, as well as DoD Components in general.

(2) Establish protocols for gatekeeper duties. Gatekeepers:

(a) Contact aircrew, report submitters, and maintenance personnel to gain additional insight into contributing factors of an event or hazard.

(b) May contact the unit or submitter associated with the ASAP report or aircrew associated with the MFOQA analysis result to obtain the information needed to resolve the issue raised by the report or data analysis when additional information is needed to fully understand a hazard.

(c) Do not associate the name of the person who submitted the ASAP or flew the aircraft with the actual ASAP report or the MFOQA analysis result when using the additional information gathered from the report submitter or aircrew.

(d) Provide quantitative aircraft systems information to maintenance personnel as part of the MFOQA process to enhance fleet-wide operations and mission readiness.

(3) Incorporate risk mitigation strategies learned from AHIRAP findings into tactics, training, and procedures for pilots, aircrew, maintenance crew, and others associated with flight operations.

(4) Educate subordinate units and organizations of AHIRAP capabilities so these units can take advantage of the program.

(5) Communicate AHIRAP lessons learned and resolution of problems to other DoD Components through a variety of media.

(6) Establish protocols for DoD Components to share AHIRAP information with other DoD Components, Federal agencies, and foreign military partners. This is especially the case for DoD Components that use the same aircraft.

GLOSSARY

G.1. ACRONYMS.

AHIRAP	Aviation Hazard Identification and Risk Assessment Program
ASAP	Aviation Safety Action Program
ASD(EI&E)	Assistant Secretary of Defense for Energy, Installations, and Environment
DoDD	DoD directive
DoDI	DoD instruction
LOSA	line operations safety audit
MFOQA	military flight operations quality assurance
UAS	unmanned aircraft system
U.S.C.	United States Code
USD(AT&L)	Under Secretary of Defense for Acquisition, Technology, and Logistics
USD(P&R)	Under Secretary of Defense for Personnel and Readiness

G.2. DEFINITIONS. Unless otherwise noted, these terms and their definitions are for the purposes of this issuance.

AHIRAPs. Proactive hazard identification and risk management programs that include, but are not limited to, ASAP, MFOQA, and LOSA.

ASAP. An identity-protected, self-reporting system designed to encourage voluntary reporting of hazards and errors that increase risk to flight operations, and the sharing of lessons learned from these reports. This voluntary self-reporting supports the risk process in DoDI 6055.01 through proactive analysis of individual reports, trend analysis of aggregated reports, and the effectiveness of mitigation measures in reducing risk.

DoD aircraft. A device that is used or intended to be used for flight in the air, including UASs.

For the purposes of MFOQA analysis process implementation, DoD aircraft include aircraft owned or leased by the DoD Components (including their Reserve Components) that are:

Operated and exclusively controlled or directed by a DoD Component.

Furnished by the Government, loaned, or on bailment to a non-DoD organization for modification, maintenance, repair, test, contract training, or experimental project for a DoD Component, when the Government has assumed ground and flight risk.

It does **not** include aircraft that are:

Under test by a DoD Component. (This includes aircraft furnished by a contractor or another Government agency when operated by a DoD aircrew in official status and a DD Form 250,

"Material Inspection and Receiving Report," has been executed to certify that the DoD has accepted the aircraft.)

Leased, on bailment, or loaned to contractors, commercial airlines, other Government agencies, or foreign governments, when the lessee has assumed risk of loss

Civil aircraft owned by civil operators and accomplishing contract air missions for a DoD Component

Flying club aircraft or privately owned aircraft stored in a hangar on a DoD installation.

enhanced flight recorder. An aircraft recording capability that captures data parameters at a rate and resolution that enables individual and aggregate flight analysis to measure the safe and efficient operation of an aircraft. Flight data analysis includes aircrew performance, operational and maintenance trending, flight playback and debrief, training enhancements, and mishap investigation.

gatekeeper. An individual who is authorized access to unit and aircrew information, if available, to gather the details necessary to adequately assess and mitigate a hazard or error.

identity-protected data. AHIRAP data that has been disassociated from personally identifying information. This includes a flight data file disassociated with the flight orders, and an ASAP report with names redacted.

intentional disregard for safety. When a crew or pilot makes a conscious decision to take actions or handle the aircraft in a manner not consistent with directives or flight manual guidance for purposes other than preservation of the aircraft or personnel.

LOSA. A data collection program that uses highly trained observers to collect data about aircrew behavior and situational factors on normal flights. The observer monitors the flight from the cockpit, documenting aircrew behavior and strategies for managing threats, errors, and undesirable states.

MFOQA. Proactive analysis and trending of aircraft system and flight performance data to establish a baseline for normal operations, detect precursors to aviation mishaps, quantify risk, and identify and monitor mitigation strategies. MFOQA allows commanders to quantify risk inherent in flight operations and manage the risk at a level appropriate for mission accomplishment.

privileged safety information. Defined in DoDI 6055.07.

risk management. Defined in DoDI 6055.01.

safety culture. The attitudes, beliefs, perceptions, and values that a group of people share in relation to safety.

UAS. Defined in DoDI 6055.07.

undesirable aircraft state. A position, condition, or attitude of an aircraft that clearly reduces safety margins and is a result of actions by the aircrew. It is a safety-compromising state that results from ineffective error management.

REFERENCES

DoD 5400.11-R, "Department of Defense Privacy Program," May 14, 2007

DoD Directive 4715.1E, "Environment, Safety, and Occupational Health (ESOH)," March 19, 2005

DoD Directive 5134.01, "Under Secretary of Defense for Acquisition, Technology, and Logistics (USD(AT&L))," December 9, 2005, as amended

DoD Directive 5400.11, "DoD Privacy Program," October 29, 2014

DoD Instruction 6055.01, "DoD Safety and Occupational Health (SOH) Program," October 14, 2014

DoD Instruction 6055.07, "Mishap Notification, Investigation, Reporting, and Record Keeping," June 6, 2011

DoD Manual 5200.01, Volume 1, "DoD Information Security Program: Overview, Classification, and Declassification," February 24, 2012

Federal Aviation Administration Advisory Circular 120-90, "Line Operations Safety Audits," April 27, 2006[1]

United States Code, Title 5, Section 552 (also known as the "Freedom of Information Act")

United States Code, Title 10, Section 2254a

[1] Copies may be obtained from the Internet at http://www.faa.gov/documentLibrary/media/Advisory_Circular/AC_120-90.pdf