

ARMSTRONG FLIGHT POLICY DIRECTIVE (AFPD) Directive: Effective Date: Expiration Date: AFPD-8700.1-001E March 22, 2021 March 22, 2026

Compliance is mandatory.

SUBJECT: Organizational & Individual Safety Responsibilities

RESPONSIBLE OFFICE: Safety & Mission Assurance Directorate

1. POLICY

a. This directive establishes policy for Armstrong Flight Research Center (AFRC, hereinafter referenced as Center) to execute safety responsibilities consistent with National Aeronautics and Space Administration (NASA) Procedural Requirement (NPR) 8715.3, NASA General Safety Program Requirements, and NPR 8715.1, NASA Occupational Safety and Health Programs, through the establishment and implementation of safety programs for operations that entail risk to personnel and equipment.

b. The Center's overall safety objective is zero mishaps and close call events that could have or did result in serious injury or death.

c. Safety programs will be implemented employing the following key principles:

(1) Individual employee involvement and accountability.

(2) Visible and strong management support and leadership.

(3) Disciplined safety controls recognizing the potential human failure in all safety-critical flight and ground activities.

(4) Proactive, non-punitive feedback mechanisms for employee identification of potential hazards.

(5) Periodic proactive analysis of potential and existing hazards.

(6) Compliance with existing direction from controlling government agencies and higher NASA authorities.

(7) Independent quality assurance of safety-critical activities performed by personnel outside the primary organization having functional responsibility.

(8) Process, document, and inspect sufficiently to maintain process health and enable root cause identification of mishaps and close calls.

(9) Formulation and institutionalization of lessons learned resulting from both positive and negative outcomes impacting safety.

(10) Award recognition for achievements that have yielded safe operations, heightened awareness of hazards and safety issues, and/or improvements in safety culture.

d. Safety programs will include the following three key elements: leadership, planning, and risk management. These elements represent the minimum standard for a program; however, they are not

intended to limit the inclusion of other risk management concepts or techniques that may be necessary for an effective program. Explanation of these elements follows:

(1) Leadership: This element consists of those activities that ensure clear leadership support and accountability for safety of operations. The objective of such activities is to develop and sustain a viable and positive safety culture within the assigned workforce and supporting elements; create the environment for the implementation of volunteer work area safety teams; provide visible and tangible support for Center-level safety program activities; and create and maintain an effective and nonattribution feedback mechanism for raising safety concerns from the lowest employee to upper management.

(2) Planning: This element includes all activities necessary to establish and maintain the safety program's strategy, organizational structure, and communication between elements within the respective organization and mission responsibility. These include, but are not limited to, establishing clear lines of authority and responsibility for safety program execution; establishing a program to assess the health and, where deficient, remedy shortfalls of safety program activities; establishing annual safety goals and objectives consistent with Center-level objectives and goals; ensuring contractors conducting or supporting NASA operations are complying with the requirements of this and other pertinent safety directives and procedures; and establishing an activity-wide forum involving all organizations/offices that conduct or directly support operations to coordinate the administration of the safety program.

(3) Risk Management: This element includes activities directed at identifying and mitigating risks to the operation. Essential to this element is a systematic approach involving individuals who conduct the processes, and track and document the results and related information.

e. Safety program documentation will be used to implement the required elements and document the program's progress/results. Documentation may be scaled to complement the size, duration, and complexity of the operation.

f. Noncompliance with this policy or the resulting safety program requirements as well as the responsibility for a safety incident as a result of negligence, misuse, or intentional failure to adhere to established requirements, may result in lower employee performance ratings, lower contract performance ratings, and/or other management action as appropriate.

2. APPLICABILITY

a. This Armstrong Flight Policy Directive (AFPD) is applicable to the Center's civil servants and on-site support contractors, grant recipients, and other partners to the extent specified in their contracts or agreements.

b. Safety Programs are implemented for activities that are internally controlled by the Center or are operations sponsored or supported by the Center where:

(1) The Center or its contractor personnel and its equipment are at risk,

(2) The Center has an assigned safety responsibility (i.e., flight, ground, range, environmental (until reassigned to NASA Headquarters (HQs), etc.), or

(3) The Center owns the asset and is not otherwise excluded by agreement or contract.

c. Safety programs will be implemented for the following: aviation activity, project activity and industrial activity. See Attachment A for definitions of these activities.

3. AUTHORITY

- a. NASA Policy Directive (NPD) 8700.1, NASA Policy for Safety and Mission Success
- b. NPD 7900.4, NASA Aircraft Operations Management
- c. NPR 7900.3, Aircraft Operations Management Manual
- d. NPR 8715.3, NASA General Safety Program Requirements
- e. NPR 8715.1, NASA Occupational Safety and Health Programs

4. APPLICABLE DOCUMENTS AND FORMS

- a. NPR 1800.1, NASA Occupational Health Program Procedures
- b. NPR 3451.1, NASA Awards and Recognition Program

c. NPR 8621.1, NASA Procedural Requirements for Mishap and Close Call Reporting, Investigating, and Recordkeeping

5. **RESPONSIBILITY**

a. Center Director, or designee, shall:

(1) Ensure that safety responsibilities are known and understood at all levels of the organization, are routinely assessed, and that accountability is enforced.

(2) Ensure an adequate level of safety is maintained for all activities consistent with this policy.

(3) Support the NASA Engineering and Safety Center (NESC) Chief Engineer in achieving established NESC goals and objectives.

(4) Establish and maintain a safety culture where "Knock It Off" (KIO) calls to immediately cease operations are encouraged and can be made without any fear of retribution.

b. Directors and Branch/Office Chiefs shall:

(1) Ensure safety programs are established within their organizational and operational responsibilities at a level to effect clear control of the required elements.

(2) Maintain and support knowledgeable management of associated activities.

(3) Include the pertinent requirements of this AFPD in contract, space act, or other agreements where practicable and the scope and applicability requirements are met.

c. Center Chief Engineer shall establish and direct Center-level reviews of research project airworthiness as well as flight and ground safety.

d. Safety & Mission Assurance (S&MA) Director shall:

(1) Establish and perform independent oversight of safety programs.

(2) Establish and maintain Center-wide safety processes for Mishap/Close Call investigation, reporting, and corrective action verification, Aviation Safety Management, Pressure Vessel Systems, Critical Lifts,

Occupational Safety, Institutional Risk Management, Explosive Safety, Range Safety, and Quality Assurance.

(3) Establish and direct Center-level reviews for aviation and industrial activity.

(4) Budget for the planned safety program activity.

(5) Plan and direct safety down-day(s) activities. Safety Day activities are intended to be conducted during periods when Center operations are not active to enhance participation and focus on safety.

(6) Facilitate periodic and ad hoc safety down-day activities.

(7) Report program status at least annually at an appropriate management forum.

(8) Establish and promote a Safety Awards Program. See Attachment A, Definitions.

e. Flight Research Project Managers, Facility Managers, and Construction Project Managers are responsible for the safety of their assigned activity and include the pertinent requirements of this AFPD in agreements with contract and external agencies where the scope and applicability requirements are met.

f. Supervisors shall:

(1) Notify their direct supervisor and the Safety Office immediately of a close call or mishap and assume responsibility for the operational safety of their assigned activities.

(2) Upon receiving a "KIO" indication immediately focus their attention on the safety concern and disseminate and reinforce the call by an orderly ceasing of activities until the safety concern can be properly addressed.

g. Employees shall:

(1) Plan and perform their daily work activities in a way that creates a safe and healthy work environment.

(2) Terminate operations immediately if conditions indicate that risk has exceeded the assessed level, or an unsafe condition has manifested itself. If termination language has not been established for a specific operation, employees will use the phrase "Knock It Off!" as the verbal instruction to cease operations.

(3) Be empowered to call "Knock It Off" if an unsafe condition or act is taking place and requires immediate attention.

(4) When the phrase "Knock It Off" is used, suspend all activities until the safety concern can be mitigated and the unsafe conditions or actions are addressed to the satisfaction of the person calling "Knock It Off" and/or Center senior management.

(5) Repeat "Knock It Off" until it is heard and understood.

(6) Not Ignore a KIO call.

(7) Abate risk of further damage or injury.

(8) Call the Armstrong Safety Office (661) 276-2500 as soon as possible. After working hours, call Protective Services Post 1 (661) 276-3256. At Bldg 703, Protective Services may be contacted. (661) 947-4803.

(9) Notify their supervisor as soon as possible.

6. DELEGATION OF AUTHORITY

a. The Center Chief Engineer is delegated the air vehicle airworthiness and engineering technical authority for activity which is assessed to be at or below an everyday risk level.

7. MEASUREMENTS/VERIFICATION

Safety programs develop, collect, and report on the top-level metrics indicating the health of their respective program and progress toward the S&MA Directorate's safety goals and objectives. Top-level metrics are presented quarterly at the Center Council, and at a minimum include the following:

a. Lost time injury rates

(1) Total case incident rate – total number of injuries/illness cases that require treatment beyond first aid (data used is number of incidents per total number of hours worked per 1,000 employees)

(2) Lost time incident rate – non-fatal injury/illness that caused a loss of time or restricted duty from work, beyond the day or shift it occurred (data used is number of incidents per total number of hours worked per 1,000 employees)

(3) Lost time incident severity rate – number of days of lost or restricted duty (data used is number of days per total number of hours worked per 1,000 employees)

- b. Mishap and close call occurrences and rates
- c. Status of open audit findings (both internal and external audits) where S&MA Directorate is responsible for the development and implementation of the Corrective Action Plan
- d. Inspection findings and closure status
- e. Procurement quality assurance waivers issued (as a percentage of total aircraft parts purchased)

f. Defective aircraft parts received (includes number of defective items received and the defect by category)

8. CANCELLATION

AFPD-8700.1-001D-4, Organizational & Individual Safety Responsibilities, dated October 1, 2015.

/s/ Glenn L. Graham Director, Safety & Mission Assurance Directorate

03.22.2021

ATTACHMENT A. DEFINITIONS

Activity Definitions: These definitions are provided to delineate safety responsibilities for major operations at AFRC.

Aviation Activity: Those nominal aircraft operations and maintenance activities that are not project unique involving flight and flight preparation activity to include, but not limited to, airworthiness of the vehicle and life support equipment; vehicle upgrade and modification; vehicle maintenance and release; launch and recovery activities; qualification and readiness of aircrew; qualification and readiness of maintenance personnel; taxi and flight operation; range operations; and ground tests.

Industrial Activity: Activity that establishes and maintains the general Armstrong infrastructure to including building construction and maintenance; utility construction and maintenance; and physical security infrastructure.

Project Activity: Activity that results from the modification and test of a project-unique end item or subsystem. It is those project-unique activities that are not part of the aircraft's nominal flight and maintenance operations defined by its technical orders or the Center's operational guidance. This includes, but is not limited to, fabrication and installation of test modifications; airworthiness of project unique equipment/modifications; ground test of project-unique equipment; ground training for flight test; flight test operations; range operations; and deployed operations.

Non-Programmatic Activity: Activity that supports non-programmatic functions, including but not limited to, on or off site education programs; student robotic events; NASA exhibits at public events; NASA gift shop and museum; and NASA cafeteria.

Safety Awards Program consists of:

Safety Star: Recognition of a significant event or task that reflected or promoted the awareness or essence of a healthy safety culture, awarded by supervisors to employees. The supervisor forwards recognition in the Armstrong Monday Morning Meeting notes for the week. There is no formal process for submittal or approval. Safety Stars are available at the S&MA Directorate Office.

Extra-Mile Award: Awarded for a significant contribution to the safety of Center operations that went beyond the normal duties expected of the employee/group in that setting. Nominations are forwarded to the Safety & Mission Assurance Directorate Office for review and approval. Nominations will be a simple paragraph in bullet form explaining the individual's/team's contributions and the effect that was achieved. The S&MA Director will review and approve nominations. Disapproved nominations will be returned to the supervisor for possible resubmission with additional facts for reconsideration or recognition through the award of the Safety Star. All recipients will receive a certificate. Civil servant recipients may receive monetary compensation under the NASA award category of an "On the Spot" Award as outlined in NPR 3451.1. The S&MA Directorate will manage the logistics, civil servant funding and coordination of these awards. The S&MA Directorate will advertise award recipients at appropriate forums and on the Center's internal web pages to encourage submission and promote a healthy safety culture. Support contractors are encouraged to award in kind to their employees who receive the award.

Annual Safety Awards: This recognition is for individuals and teams that have demonstrated exceptional safety contributions over the past calendar year. Awards will be given for four categories, Civil Servant, Contractor, Safety Representative and Team of the Year (includes a potential mix of civil servant and contractors). Safety Representative(s) will be an individual who is assigned as the safety representative for an office/branch or higher organization and for which safety responsibilities represent collateral duties not to exceed 50% of their assigned responsibilities. The appropriate Organizational Director will submit nominations and will be a one-page nomination, in bullet format specifying the accomplishments and their impact to safety at the Center. Extra Mile Awards for the nomination year will be automatically entered into the annual award nomination process. Team nominations will include a separate page listing the individuals considered as part of the team. These nominations will be submitted directly to S&MA

Director's Office by January 31 of the following calendar year. Winners will be announced and presented a certificate. Civil servants will be given a "Time-Off Award" as outlined in NPR 3451.1. Recognition will be made at the Center annual Safety Day. Support contractors are encouraged to award in kind to their employees who receive the award. The S&MA Directorate will manage the logistics of award preparation and coordination to include the development and maintenance of a permanent record of past winners to encourage recognition and promote a healthy safety culture. Submission and/or recognition here do not preclude or guarantee submission for other Agency safety awards.

Safety Definitions: These definitions augment those found in NPR 8715.2 and provide logical segmentation of safety domains within the above activities and are graphically represented in the diagram below. This will further allow assignment of safety responsibility within internal activities and with external organizations.

Safety: Activity such as hazard analysis, mishap investigation and reporting, hazard awareness, occupational training, and inspections that is intended to prevent or reduce the risk of injury or damage to equipment.

Aviation Safety: Safety efforts targeted at hazards associated with aviation activity.

Flight Safety: Safety efforts targeted at air vehicle operations that occur between the initiation of the takeoff and completion of the landing.

Ground Safety: Safety efforts targeted at activity not included within the definition of flight safety.

Ground Test Safety: Ground safety efforts targeted at project-unique ground/operations.

Range Safety: Safety efforts targeted at flight operations that threaten personnel and property to ensure that the risk of casualty/damage from an out-of-control impact is at or below an acceptable threshold. There is a recognized conceptual overlap with "Flight Safety." It is generally recognized that aircrew are not included within the responsibility of range safety.

Facility Safety: Safety efforts targeted at industrial activity associated with the access to and operation of all facilities, including special support capabilities that are resident within these facilities.

Occupational Safety and Health: Safety efforts to achieve a safe and healthful working environment.

Attachment B. Acronyms

AFPD	Armstrong Flight Policy Directive	
AFRC	Armstrong Flight Research Center	
ASO	Aviation Safety Officer	
CAP	Corrective Action Plan	
CD	Center Director	
CIP	Center Implementation Plan	
DCP	Center-wide Procedure	
DPD	Policy Directive	
HQ	Headquarters	
KIO	Knock It Off	
LLIS	Lessons Learned Information System	
NASA	National Aeronautics and Space Administration	
NESC	NASA Engineering and Safety Center	
NPD	NASA Policy Directive	
NPR	NASA Procedural Requirements	
S&MA	Safety & Mission Assurance	

Attachment E. Requirement Verification Matrix

PARAGRAPH	REQUIREMENT	COMPLIANT	NON-COMPLIANT
5. a. (1)	Center Director, or designee, shall ensure that safety responsibilities are known and understood at all levels of the organization, are routinely assessed, and that accountability is enforced.		
5. a. (2)	Center Director, or designee, shall ensure an adequate level of safety is maintained for all activities consistent with this policy.		
5. a. (3)	Center Director, or designee, shall support the NASA Engineering and Safety Center (NESC) Chief Engineer in achieving established NESC goals and objectives.		
5. a. (4)	Center Director, or designee, shall establish and maintain a safety culture where "Knock It Off" (KIO) calls to immediately cease operations are encouraged and can be made without any fear of retribution.		
5. b. (1)	Directors and Office Chiefs shall ensure safety programs are established within their organizational and operational responsibilities at a level to effect clear control of the required elements.		
5. b. (2)	Directors and Office Chiefs shall maintain and support knowledgeable management of associated activities.		
5. b. (3)	Directors and Office Chiefs shall include the pertinent requirements of this AFPD in contract, space act, or other agreements where practicable and the scope and applicability requirements are met.		
5. c.	Center Chief Engineer shall establish and direct Center-level reviews of research project airworthiness as well as flight and ground safety.		
5. d. (1)	Safety & Mission Assurance (S&MA) Director shall establish and perform independent oversight of safety programs.		
5. d. (2)	Safety & Mission Assurance (S&MA) Director shall establish and maintain Center-wide safety processes for Mishap/Close Call investigation, reporting, and corrective action		

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	verification, Aviation Safety Management, Pressure Vessel Systems, Critical Lifts, Occupational Safety, Institutional Risk Management, Explosive Safety, Range Safety, and Quality Assurance.	
5. d. (3)	Safety & Mission Assurance (S&MA) Director shall establish and direct Center-level reviews for aviation and industrial activity.	
5. d. (4)	Safety & Mission Assurance (S&MA) Director shall budget for the planned safety program activity.	
5. d. (5)	Safety & Mission Assurance (S&MA) Director shall plan and direct safety down-day(s) activities.	
5. d. (6)	Safety & Mission Assurance (S&MA) Director shall facilitate periodic and ad hoc safety down-day activities.	
5. d. (7)	Safety & Mission Assurance (S&MA) Director shall report program status at least annually at an appropriate management forum.	
5. d. (8)	Safety & Mission Assurance (S&MA) Director shall establish and promote a Safety Awards Program.	
5. f. (1)	Supervisors shall notify their direct supervisor and the Safety Office immediately of a close call or mishap and assume responsibility for the operational safety of their assigned activities.	
5. f. (2)	Supervisors shall upon receiving a "KIO" indication immediately focus their attention on the safety concern and disseminate and reinforce the call by an orderly ceasing of activities until the safety concern can be properly addressed.	
5. g. (1)	Employees shall plan and perform their daily work activities in a way that creates a safe and healthy work environment.	
5. g. (2)	Employees shall terminate operations immediately if conditions indicate that risk has exceeded the assessed level, or an unsafe condition has manifested itself.	
5. g. (3)	Employees shall be empowered to call "Knock It Off" if an unsafe condition or	

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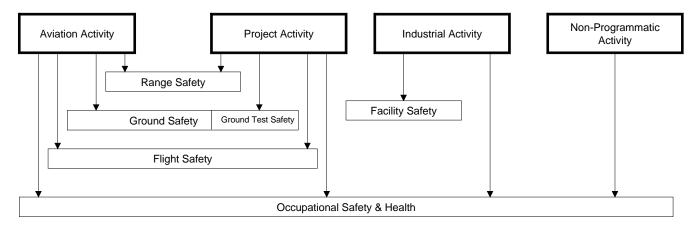
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	act is taking place and requires immediate attention.	
5. g. (4)	Employees shall, when the phrase "Knock It Off" is used, suspend all activities until the safety concern can be mitigated and the unsafe conditions or actions are addressed to the satisfaction of the person calling "Knock It Off" and/or Center senior management.	
5. g. (5)	Employees shall repeat "Knock It Off" until it is heard and understood.	
5. g. (6)	Employees shall not Ignore a KIO call.	
5. g. (7)	Employees shall abate risk of further damage or injury.	
5. g. (8)	Employees shall call the Armstrong Safety Office (661) 276-2500 as soon as possible. After working hours, call Protective Services Post 1 (661) 276- 3256. At Bldg 703, Protective Services may be contacted. (661) 947-4803.	
5. g. (9)	Employees shall notify their supervisor as soon as possible.	

Attachment D. References

- a. NPD 1800.2, NASA Occupational Health Program
- b. NPR 8553.1, NASA Environmental Management System

Attachment E



Activity and Safety Domain Relationships

Document History Log

This page is for informational purposes and does not have to be retained with the document.

Baseline, 08-19-05

Admin Change Baseline-1, 07-23-09

• Added serial number to document name. Name changed from DPD-8700.1 to DPD-8700.1-001. The content did not change.

Revision A, 08-31-10

• Extended expiration date by 6 months.

Revision B, 10-20-10

- Updates responsibilities of various organizations / managers based on changes to organizational structure and assignment of responsibilities by HQ NASA.
- Assigns investigation authority and responsibilities to Code O Director for close call investigations related to aviation activity.
- Refined metric areas
- Removed reference to cancelled NPD 1820.1
- Moved NPD 1800.2, NASA Occupational Health Program from applicable documents to reference documents since it is not referenced in the DPD
- Formatted to comply with Agency requirements

Admin Change Revision B-1, 02-17-11

Pages 1, 2, 3, 6:

- Added to 1. Policy, "NPR 8715.1, NASA Occupational Safety and Health Programs"
- Added to 3. Authority NPR 8715.1, NASA Occupational Safety and Health Programs
- Added to 5. Responsibility, e. "Environmental Management, Occupational Safety and Health"
- Added to Attachment C, References, NPR 1800.1, NASA Occupational Health Program Procedures and NPR 8553.1, NASA Environmental Management System

Revision C, 02-01-14

- Section 4 Applicable Documents and Section 5, paragraph h (2) referenced DPD-8700.1-002, Knock it Off Policy
- Section 5, paragraph a delegates responsibility from Center Director to Deputy and Associate Directors
- Section 5, paragraph b delegates responsibility from Deputy and Associate Directors to Directors and Office Chiefs
- Section 5, paragraph e (6) formally establishes a Safety Award Program documenting the existing "Safety Star" and "Extra Mile Award" and initiating an annual safety award for civil servants, contractors, and teams.
- Attachment A. Definitions A.6 (1) (2) (3) added description of Safety Award Programs

Revision D, 10-01-15

- Addresses finding SA-01c, Audit Shell 14-P-11 IAOP (internal), Issue number 635-61
- Clarified assignment of Agency-level aviation safety requirements for test activity to the Center Chief Engineer; Section 5, paragraph c (1)
- Incorporated DPD 8700.1-002; Section 5
- Added safety award category for Center Safety Representative; Attachment A

Revision D-1, 06-27-17

- Admin update
- Changed Revision D to Revision D-1
- DPD-8700.1 renumbered in accordance with Center instructions

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Revision D-2, Admin Change, 06-05-18

- Admin update
- Deleted Section 7.b from MEASUREMENTS/VERIFICATION
- Updated organization codes to new

Revision D-3, 09-10-18

• Admin Change

Revision D-4, 09-28-20

- Admin Change
- Document expiration date extended

Revision E, 02-17-21

- Admin changes
- Added Attachment C, Requirement Verification Matrix
- Moved Attachments C and D to D and E.