

National Aeronautics and Space Administration
Headquarters
Washington, DC 20546-0001



November 5, 2013

NID 7500.1

Reply to Attn of:

Logistics Management Division

TO: Directors, NASA Centers

FROM: Assistant Administrator for Strategic Infrastructure

SUBJECT: NASA Interim Directive (NID) for NPD 7500.1C, Program and Project Life Cycle Logistics Support Policy

The Office of Procurement has decided to cancel NPR 5900.1, NASA Spare Parts Acquisition. The Logistics Management Division has determined that content within NPR 5900.1 that defines the responsibility of Program managers for acquisition of spare parts to support their programs is important and should be retained within the body of NASA policy. Accordingly, the Logistics Management Division has decided to incorporate this definition of responsibility for spares acquisition into NPD 7500.1C.



Olga M. Dominguez

1. POLICY

- a. It is NASA's policy for Agency-funded programs and projects that develop or procure reusable or maintainable flight hardware or programmatic/mission-specific ground hardware to define and implement measures that provide life-cycle logistics support through applicable phases to increase the probability of mission success, and to control and reduce life-cycle costs and risks. Resources applied to life-cycle logistics support may be scaled to fit the scope and needs of the individual program or project.
- b. It is NASA's policy for programs and projects to include supportability as part of the system's design characteristics to assist in ensuring system availability and affordability.
- c. It is NASA's policy for programs and projects to define and implement measures to identify and mitigate product availability risks arising from obsolescence, regulatory prohibitions, supplier loss, procurement lead times, or other supply disruptions through applicable life-cycle phases.

2. APPLICABILITY

- a. This NPD is applicable to NASA Headquarters, NASA Centers, including Component Facilities, and Technical and Service Support Centers.
- b. This language applies to JPL, other contractors, grant recipients, or parties to agreements only to the extent specified or referenced in the appropriate contracts, grants, or agreements.
- c. This policy includes major modifications of systems already in full production or operational as of the effective date of this directive.
- d. This includes Government Furnished Property, Government-developed systems and hardware, and programmatic/mission-specific facilities.
- e. Hardware leased by NASA or loaned to NASA by other Federal agencies and technology development or demonstration programs that do not provide mission, flight, or systems hardware are exempt.
- f. In this directive, all document citations are assumed to be the latest version unless otherwise noted.
- g. In this directive, all mandatory actions (i.e., requirements) are denoted by statements containing the term "shall." The terms "may" or "can" denote discretionary privilege or permission, "should" denotes a good practice and is recommended but not required, "will" denotes expected outcome, and "are/is" denotes descriptive material.

3. AUTHORITY

- a. The National Aeronautics and Space Act, as amended 51 U.S.C. § 20101 et seq.
- b. NPD 1000.0, NASA Governance and Strategic Management Handbook.

4. APPLICABLE DOCUMENTS AND FORMS

- a. NPR 7120.5, NASA Space Flight Program and Project Management Requirements.
- b. NPR 8735.1, Procedures For Exchanging Parts, Materials, and Safety Problem Data Utilizing the Government-Industry Data Exchange Program and NASA Advisories.
- c. AeroSpace and Defense Industries Association of Europe (ASD) S3000L, International Procedure Specification for Logistics Support Analysis (available at <http://www.asd-stan.org/s3000L.html>).
- d. Government Electronics Industry Association (GEIA) GEIA-STD-0007, Logistics Product Data (available at <https://standards.nasa.gov>).

5. RESPONSIBILITY

- a. The Assistant Administrator, Office of Strategic Infrastructure shall establish program and project life-cycle logistics support policies and guidance, provide functional leadership in life-cycle logistics support, and provide oversight and review of life-cycle logistics support policy implementation and effectiveness.
- b. Associate Administrators shall ensure compliance with NASA program and project life-cycle logistics support policies within their respective organizations and provide specific policies and standards as required.
- c. Center Directors shall ensure that the programs and projects for which they are responsible (including Government-furnished property and Government-developed hardware and systems) comply with the life-cycle logistics support policies detailed herein. Also, they are accountable for managing and controlling

NASA property, supplies, equipment, and transportation services acquired or utilized by their programs and projects.

d. Program Managers and Project Managers shall:

- (1) Ensure compliance with life-cycle logistics support policies.
- (2) Determine the nature and scope of life-cycle logistics support necessary for the program/project to minimize life-cycle cost while achieving required operational effectiveness.
- (3) Ensure that Integrated Logistics Support (ILS) elements (see Appendix A) are addressed for applicable life-cycle phases from program/project conception through final disposition.
- (4) Ensure that life-cycle logistics support is addressed as a component of the acquisition strategy.
- (5) Direct and manage the acquisition of adequate quantities of spare parts required to support their assigned system throughout the system's life cycle.
- (6) Determine the most appropriate allocation of responsibilities between the Government and contractor for performing life-cycle logistics support functions.
- (7) Perform periodic reviews to monitor compliance with NASA's Life-Cycle Logistics Support Policy when the responsibilities defined in section 5.e. are fulfilled by a designated Life-Cycle Logistics Support Manager.
- (8) Designate a program or project Life-Cycle Logistics Support Manager at the beginning of the mission needs and conceptual studies phase, if required.
- (9) Maintain programmatic oversight of industrial base and supply chain issues that might pose a risk to the program or project.
- (10) Develop and implement processes, appropriate contract language, and mechanisms needed to identify, mitigate, monitor, and report industrial base and supply chain risks to the program or project. This may include (but is not limited to) risks such as counterfeit parts, obsolescence, regulatory prohibitions, procurement lead times, supplier loss, or other supply chain disruptions.

e. Program Managers and Project Managers or their designated Life-Cycle Logistics Support Managers shall:

- (1) Integrate life-cycle logistics support considerations beginning with program/project conception, including:
 - (a) Applying and integrating the fundamental elements of ILS to the specific characteristics and needs of each program or project.
 - (b) Managing the development and implementation of plans and processes for ILS, supply chain management related to logistics support functions, and obsolescence risk management.
 - (c) Identifying risks associated with Diminishing Manufacturing Sources and Material Shortages (DMSMS).
- (2) Conduct Logistic Support Analysis (LSA) activities to identify and address life-cycle cost drivers, define system support needs and resources throughout the system's life cycle in accordance with ASD S3000L (International Procedure Specification for Logistics Support Analysis) or equivalent concurrent with systems design and development, or major modification. Results are documented in a format compatible with GEIA-STD-0007 (Logistics Product Data). The LSA process may be scaled based on the scope and complexity of the specific program or project and individual program or project needs.
- (3) Document Life-Cycle Logistics Support approaches in an Integrated Logistics Support Plan (ILSP) as required by NPR 7120.5. The ILSP is typically a stand-alone document. In cases of very simple programs and projects or other situations in which the ILSP will be of minimal complexity, it can be incorporated into the Program Plan or Project Plan. A preliminary version of the plan is required at System Definition Review (SDR) for programs and at System Requirements Review (SRR) for Projects. A Baseline version of the plan is required at Preliminary Design Review (PDR) for both programs and projects. The ILSP is updated at Critical Design Review (CDR) for both programs and projects. The ILSP addresses the topics listed below that are applicable to the specific program or project:
 - (a) Participation in the design process beginning at program/project conception to ensure that systems are supportable.
 - (b) Logistics infrastructure and information systems management.
 - (c) Flight and ground systems hardware maintenance.
 - (d) Supply support, including spares procurement and replenishment, resupply and return, and supply chain management related to logistics support functions.

- (e) Technical data and documentation to support logistics, maintenance, and repair functions (such as maintenance procedures and work instructions).
- (f) Maintenance tools and test and support equipment.
- (g) Packaging, storage, material transportation, and handling.
- (h) Maintenance training.
- (i) Postproduction support.
- (j) Disposition at end of life.
- (k) Logistics support performance measurements for the life of the program or project.
- (l) Software maintenance.
- (4) Identify procurement strategies to obtain optimum quantities of spare parts based on predicted usage, need, initial cost, and life-cycle cost.
- (5) Support program and project management and work with other relevant NASA organizations to develop and implement processes, appropriate contract language, and mechanisms needed to identify, mitigate, monitor, and report industrial base and supply chain risks to the program or project. This may include (but is not limited to) risks such as counterfeit parts, obsolescence, regulatory prohibitions, procurement lead times, supplier loss, or other supply chain disruptions.
- (6) Participate in the Government-Industry Data Exchange Program (GIDEP), which includes baselining of parts lists to check for historical and future GIDEP notices and NASA Advisories and significant DMSMS information, in accordance with NPR 8735.1, Procedures For Exchanging Parts, Materials, and Safety Problem Data Utilizing the Government-Industry Data Exchange Program and NASA Advisories.

6. DELEGATION OF AUTHORITY

None.

7. MEASUREMENT/VERIFICATION

- a. Program/Project Managers establish performance-based metrics based on the scope and complexity of the specific program or project to determine if systems and processes are in place within applicable programs and projects to address the Integrated Logistics Support elements shown in section 5.e.3 and to assess life-cycle costs and system operational availability.
- b. At a minimum, program and project plans, requirement documents, and resources budgeted or applied to operations and maintenance support will be examined through formal reviews (e.g., program and project milestone reviews and Standing Review Board Reviews as defined in NPR 7120.5) and informal reviews.
- c. Metrics should be reviewed periodically (at least once every five years) to ensure continued applicability.

8. CANCELLATION

NPD 7500.1B, Program and Project Logistics Policy, dated September 12, 1997 (Revalidated February 2, 2006).

/s/ Charlie F. Bolden
Administrator

ATTACHMENT A: Definitions

Industrial Base - The capabilities residing in either the commercial or Government sector required to design, develop, manufacture, launch, and service the program or project. This encompasses related manufacturing facilities, supply chain operations and management, a skilled workforce, launch infrastructure, research and development, and support services.

Integrated Logistics Support (ILS)(adapted from DoD Acquisition Community Connection) - A discipline associated with the design, development, test, production, fielding, sustainment, improvement modifications, and disposal of cost-effective systems. The principal objectives of ILS are to ensure that support considerations are an integral part of a system's design requirements, that the system can be cost effectively supported through its life cycle, and that the infrastructure elements necessary to the initial fielding and operational support of the system are identified, developed, and acquired. Since the majority of a system's life-cycle costs can be attributed directly to operations and support costs, it is vitally important

that system developers evaluate the potential operation and support costs of alternate designs and factor these into early design decisions. ILS activities are most effective when they are integral to both the contractor and Government's system engineering technical and management processes. The recognized elements of ILS include:

- Design Interface (participating in the design process to enhance system supportability).
- Supply Support.
- Maintenance Planning.
- Packaging, Handling, Storage, and Transportation (PHS&T).
- Technical Data.
- Support and Test Equipment.
- Training and Training Support.
- Manpower and Personnel for ILS Functions.
- Facilities Required for ILS Functions.
- Computer Resources Support.

Logistics - As used within NASA, this term encompasses the functions associated with planning for and implementation of program life-cycle logistics support (i.e., Integrated Logistics Support), transportation, supply support, supply chain management related to logistics support functions, property management, and property disposition.

Maintainable Flight Hardware - Flight hardware that is designed to be repaired and restored throughout its life cycle to nominal operating condition following failure or degraded operation. It includes both hardware that is integral to the systems of a launch vehicle, spacecraft, or other in-space system and loose equipment.

Programmatic/Mission-Specific Ground Hardware - Non-flight hardware that performs a function specifically associated with a flight program. Examples include launch facilities, ground support equipment (GSE) used in support of flight hardware, and special test equipment used in support of flight hardware.

Reusable Flight Hardware - Flight hardware that is designed to be used on multiple flights or missions. It includes both hardware that is integral to the systems of a reusable launch vehicle, spacecraft, or other in-space system and loose equipment.

Supply Chain - The specific group of suppliers and their interrelationships that is necessary to design, develop, manufacture, launch, and service a program or project. This encompasses all levels within a space system (including associated GSE) and also includes providers of raw materials, components, subsystems, systems, and services and systems integrators.

Supply Chain Management - A synergistic function performed by program management, safety and mission assurance, logistics, engineering, and other related functions that ensures systematic and strategic coordination of supply and demand management of product and service across all business functions, including NASA Centers, suppliers, third party enterprises, and other partners.

Supply Support - An element of ILS that consists of all actions, procedures, and techniques necessary for acquisition management, cataloging, receiving, storing, transferring, issuing and disposing of spares, repair parts, and supplies. The process includes provisioning for initial support, as well as acquiring, distributing, and replenishing inventories.

Supportability - The degree to which system design characteristics and planned logistics resources meet system requirements throughout the system's service life at an affordable cost.

ATTACHMENT B: Acronyms

ASD. AeroSpace and Defense Industries Association of Europe

CDR. Critical Design Review

DMSMS. Diminishing Manufacturing Sources and Material Shortages

GEIA. Government Electronics Industry Association

GSE. Ground Support Equipment

GIDEP. Government-Industry Data Exchange Program

ILS. Integrated Logistics Support

ILSP. Integrated Logistics Support Plan

JPL. Jet Propulsion Laboratory

LSA. Logistics Support Analysis

NASA. National Aeronautics and Space Administration

NPD. NASA Policy Directive

NPR. NASA Procedural Requirement
PDR. Preliminary Design Review
SDR. System Definition Review
SRR. System Requirements Review
STD. Standard

ATTACHMENT C: References

The documents listed below provide useful information and guidance to assist in the implementation of the requirements defined in this NPD.

NPD 4100.1, Supply Support and Material Management Policy.

NPD 4200.1, Equipment Management.

NPR 4200.1, NASA Equipment Management Procedural Requirements.

NPR 4300.1, NASA Personal Property Disposal Procedural Requirements.

NPR 4310.1, Identification and Disposition of NASA Artifacts.

GEIA-HB-0007, Handbook for GEIA-STD-0007- Logistic Product Data (available for purchase at <http://www.techstreet.com/techamgate.html>).

GEIA-STD-927, Common Data Schema for Complex Systems (available for purchase at <http://www.techstreet.com/techamgate.html>).

GEIA-HB-927, Handbook and Guide for GEIA-927 Common Data Schema for Complex Systems (available for purchase at <http://www.techstreet.com/techamgate.html>).

SD-22, Diminishing Manufacturing Sources and Material Shortages-A Guidebook of Best Practices and Tools for Implementing a Proactive DMSMS Management Program, September 2010 (available at <http://www.dau.mil/pubscats/Lists/GuideBook/AllItems.aspx>).

Department of Defense, Designing and Assessing Supportability in DoD Weapon Systems: A Guide to Increased Reliability and Reduced Logistics Footprint, October 2003 (available at <http://www.dau.mil/pubscats/Lists/GuideBook/AllItems.aspx>).