

National Aeronautics and Space Administration

Office of Infrastructure
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Shuttle Artifact Determination

Preparation:
Logistics Management Division, HQ LMD
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White Paper What is a Shuttle Artifact?

Background

The Space Shuttle Program (SSP) is scheduled to end in 2010. As part of the transition to the Constellation Program and retirement of this 30-year American icon, NASA must begin to dispose of Shuttle-related property in a highly disciplined fashion. Given the rich and unique history of the Shuttle, the careful assessment of the historical significance of Shuttle-related property as potential artifacts is critical to the success of this effort. HQ's Logistics Management Division (LMD) has been asked to provide guidance to SSP, its project elements, prime and sub contractors, and Center offices as soon as possible.

NPR 4310.1F, "Identification and Disposition of NASA Artifacts," Appendix A defines a NASA artifact as *"unique objects that document the history of the science and technology of aeronautics and astronautics. Their significance and interest stem mainly from their relation to the following: historic flights, programs, activities, or incidents; achievements or improvements in technology; our understanding of the universe; and important or well-known personalities."*

Museums and academic definitions for the term "artifact" vary, generally agreeing that an artifact is an object (as opposed to a structure) and that it is man-made. Other common characteristics of "an artifact:" it may be a portable object, represent a particular period in time, must have been used (as opposed to simply evidence of existence) in the past.

Current records indicate that approximately 1.2 million Shuttle line items will enter the property disposition process as a result of the program retirement. Of these, an estimated 500,000 line items will transfer to Constellation for programmatic use. Approximately 700,000 line items of excess Shuttle personal property will enter NASA's Property Disposal system between FY10 and FY13. The number of potential artifacts among these excess items has yet to be determined.

PDOs should leverage the expertise of their Center History Offices, Public Affairs, Academic Affairs and program experts to determine the significance of SSP items.

NASA has identified three broad categories of shuttle property that have the greatest likelihood of actually being an artifact:

- ***Wish List Items*** - A preliminary Agency-wide "wish list" of Shuttle hardware has been compiled. This list is intended to serve as a baseline of what is considered a desirable "potential artifact" among the museum and NASA Visitor Center communities and NASA education and public outreach functions. Hardware identified in the list will be transferred, donated or sold as appropriate through existing NASA and GSA disposal procedures *as the property becomes available*.

- ***Space Flown Hardware*** - Additional space-flown hardware identified through the Transition Property Assessment (TPA) and certain non-flight but historically significant items are anticipated to have higher-than-normal public interest and placement potential.
- ***Non-flight Historically Significant Items*** - Shuttle ground equipment or institutional assets (for example: communications and control consoles, handling and processing equipment, special purpose vehicles) and commemorative public affairs assets (for example: paintings, drawings, one-of-a-kind models or displays) of special significance and interest per the NPR 4310.1F artifact definition.

Examples of potential Space Shuttle Program artifacts included in these broad categories are:

- Flight-flown items of particular *historic* significance, i.e., items flown on Enterprise OV-101, SSP First Launch, Returns to Flight, and Last Launch, etc.;
- Unique hardware significantly associated with *broad* advances in technology, mission success, or major program milestones
 - Examples might include but are not limited to items that help convey the challenges associated with SSP First Launch, Return to Flight, and Last Launch, etc.
 - Test hardware responsible for significant breakthroughs during Space Shuttle Main Engine (SSME), External Tank (ET), Solid Rocket Booster (SRB), and Reusable Solid Rocket Motor (RSRM) development
 - Major evolutionary advancements in flight hardware operations and safety, for example SSME low and high pressure turbo pumps, ET components or SRB or RSRM hardware.
- Hardware associated with *historic figures or significant space events*, including flight failures
 - Event examples might include but not be limited to items associated with major tests; major flights; or mission in-flight anomalies, such as those associated with Challenger or Columbia missions. NOTE: Recovered flight hardware from the Columbia and Challenger accidents are not considered eligible for transfer or sale.
 - Personal items such as diaries or logs, personalized clothing or gear
- Hardware associated with significant *ideas or concepts* that were tried but never implemented in SSP flight program, one-of-a-kind development or test articles
- *One-of-a-kind* hand drawings, artist concepts, artwork/paintings, sculpture or sketches
- Hardware associated with the *introduction of new or termination of obsolete technologies* or methods
- Unique vehicles and components designed for Shuttle Program use of potential interest to transportation museums (for example: parts from crawlers, barges, astronaut transport vehicles, aircraft, etc.)

NASA is working with the General Services Administration (GSA) to pre-screen potential Space Shuttle Program artifacts in anticipation of this unprecedented surge of excess Federal property to ensure that NASA's property disposition process is sensitive to the identification and placement of historically significant Shuttle hardware. The artifact prescreening process will provide eligible recipients an early opportunity to request shuttle artifacts for their collections. Artifact prescreening will occur prior to the item being declared excess and will be followed by a pre-decisional determination for placement with a particular recipient. Notification that a pre-decisional determination has been made enables a potential recipient to design a collection theme, build a support infrastructure as needed and plan the ultimate receipt of the artifact post program close out.

SSP Property that is prescreened through the NASA/GSA SSP Prescreening portal and that is **not** requested by a recipient will no longer be treated as a potential artifact. In this case, the property will be declared excess when the program ends, enter the disposal process as Exchange Sale property, and be disposed of in accordance with NPR 4310.1. The NPR states that the Center Property Disposal Officers, working with their respective Public Affairs offices, will assist program and project managers to determine which items may qualify as artifacts during the disposal process. As a result, the excess and exchange sale process will permit a second opportunity to identify SSP artifacts; however because this effort will happen after the property is declared excess (when the program ends) it minimizes the strategic planning opportunities for potential recipients.

Finally, Per NPD 4300.4D, hardware identified to be given as an official NASA memento must not have been designated as an artifact.

Applicable Regulations

NPD 4300.4D, "Use of Space Shuttle and Aerospace Vehicle Materials as Mementos."
14 CFR Subpart 1214.6, "Mementos Aboard Space Shuttle Flights."
NPR 4310.1, "Identification and Disposition of NASA Artifacts."
NPD 4300.1, "NASA Personal Property Disposal Policy."
NPR 4300.1, "NASA Personal Property Disposal Procedural Requirements."

Responsible Authorities

42 U.S.C. 2473 (a) (3) and 2473 (c) (1), Sections 203 (a) (3) and 203 (c) (1) of the National Aeronautics and Space Act of 1958, as amended.

Guidance

This guidance has been requested by the HQ Office of Infrastructure, Logistics Management Division, in order to provide a uniform baseline understanding of the terms "artifact and "Shuttle artifact" and to clarify basic policy pertaining to the disposition of artifacts.

Policy

It is in NASA's long-term best interest to properly preserve evidence of its activities, successes and discoveries. But the resources and level of effort should be kept proportional and in balance with the execution of NASA's mission: artifact identification and management should not interfere with NASA's ability to execute its Shuttle and Constellation Programs. Not everything in SSP will be identified and saved for posterity; some historically important items may not be identified in the early prescreening process as a potential artifact. NASA's current property tracking and property disposal systems, however, are adequate and responsive to the preservation of artifacts and will provide a second opportunity to disposition Shuttle artifacts not identified during prescreening.

Documentation

To the extent practical, complete descriptions and background documentation, manuals, photographs, and drawings should accompany potential artifacts being excessed. NPR 4310.1, Chapter 3.1 requires that turn-in documentation for items considered artifacts contain adequate descriptions and accompanying documentation.

Export Control Review

The Space Shuttle and much of its associated hardware are considered controlled items under the International Traffic in Arms Regulations (ITAR), specifically under Category IV (Launch Vehicle) and Category XV (Spacecraft Systems). Because items considered sensitive under (ITAR) may only be given or sold to a U.S. citizen or company, distribution of a large amount of Shuttle artifacts also will be limited to U.S. citizens.

Part 121 of the ITAR Munitions List describes specific restricted hardware. Applicable under Category IV, for example, would be Shuttle technical data, ablative materials (tiles) and power plants. Category XV applies to Shuttle systems and ground equipment associated with spacecraft (i.e. on-orbit) capabilities including telemetry and navigation equipment, radiation- hardened circuitry and space qualified electronics. Potential artifacts should be cross-referenced with the ITAR to determine which items require special attention.

Once an item is slated for donation to an eligible recipient as an artifact, NASA's span of control and responsibility for export control ends with the artifact's transfer to the potential recipient; this understanding must be clearly documented and understood by the recipient prior to execution of the transfer of property.

Implementation Process

The mechanism by which potential artifacts are screened and pre-decisional determinations made will be documented in a separate SSP Transition white paper entitled "SSP Personal Property Shuttle Potential Artifact Prescreening Process."