Transmittal E-mail Issuing the Interim Revision to Chapter 3 of NPR 7900.3, Aircraft Operations Management

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Sent: Wed Sep 28 15:05:04 2005
Subject: FW: Interim Revision to Chapter 3 NPR 7900 (MMA)

Colleagues,

The attached interim revision to NPR 7900 is effective October 1, 2005. This revision replaces Chapter 3 and Appendix D in their entirety, and also updates NASA Form 1653, "Mission Management Flight Request." This interim revision will be issued by letter, then through a formal NPR revision, but is effective with this email. It is imperative that you begin using this policy and the updated form on October 1st. The major change reflected in this revision is delegation of legal review for senior Federal official travel on MMA from the Office of General Counsel to the Center Chief Counsel. Henceforth, the only time HQ review and approval is required is for classification of Mission Required flights where passenger transport is the primary purpose of the flight.

We apologize for issuing two full revisions to this policy within a month, but the attached version has been approved by OMB, and it is important that we begin using that approved policy now. As a reminder, please insure that your MMA variable cost rates are updated for FY06 for use in cost comparisons, and report those new rates to the Aircraft Management Division. Please contact Joseph Walker, Director of the Aircraft Management Division, if you have any questions.

Jeff Sutton
Assistant Administrator for
Infrastructure and Administration

3: Mission Management Aircraft Flight Operations

3.1. Purpose

This chapter establishes policies and procedures for management, use, operation and control of government aircraft when used or controlled by NASA to transport **passengers or cargo**. The definition of passengers does not include crew members or qualified non-crew members that are directly associated with the conduct or purpose of the flight. For example, researchers conducting or observing their experiments aboard the DC-8 are qualified non-crew members. A media representative aboard a Shuttle Training Aircraft observing NASA's flight operations for Public Affairs purposes would also be a qualified non-crew member. NASA aircraft are defined herein as aircraft owned, leased, chartered or rented by NASA, in accordance with NPD 7900.4, Aircraft Operations Management, and OMB Circular A-126, *Improving the Management and Use of Government Aircraft*. Mission Management Aircraft (MMA) Flight Operations are defined as the use of NASA aircraft to transport passengers or cargo.

3.2. Policy

3.2.1. In compliance with OMB Circular A-126, NASA will not own aircraft exceeding the number, size and capacity necessary to meet documented mission requirements. NASA aircraft are public aircraft as defined by 49 U.S.C. § 40102 (37), but shall be operated as civil aircraft when carrying passengers. NASA aircraft are prohibited from carrying passengers when operating as a public aircraft. When operated as civil aircraft, maintenance and aircrew standards shall meet those required for retention of Federal Aviation Administration (FAA) airworthiness certification and operation, and shall be followed for any NASA Mission Management Flight that carries passengers. The Airworthiness Certificate shall be displayed per FAR 91.203 (a) and (b). Mission Management Flights shall be operated and maintained in accordance with FAR Parts 21, 39, 43, 61, and 91 subparts A and B,, and shall be operated in accordance with the procedures specified in OMB Circular A-126, 41 CFR Chapter 101-36.4, as well as the provisions of this chapter. Procedures of the International Civil Aviation Organization (ICAO) shall apply in lieu of FAR Part 91 on international flights.

3.2.2. Mission Management Flights shall only be conducted in support of activities that constitute the discharge of NASA's official responsibilities, and only when the aircraft is not otherwise scheduled for Mission Required or Required Use flight operations. NASA employees shall not use Mission Management Flights if commercial airline, charter aircraft service, or ground transportation is reasonably available to meet the mission need, unless the flight is cost justified in accordance with OMB Circular A-126 and this chapter. Mission Management Flights may be conducted for the transportation of authorized personnel on official Government business in accordance with OMB Circular A-126. Such travel may be approved only after following all requirements of this chapter.

3.2.3. Flights that require excessive deadheading or involve long, unproductive layovers shall be avoided absent exceptional circumstances. Whenever practicable, inter-center airlift requirements shall be combined.

3.2.4. Each person traveling aboard NASA Mission Management Flights must be a U.S. government employee or contractor on official U.S. government business and have either a NASA travel authorization approved in accordance with NASA directives or a travel authorization approved by another Federal agency or Congressional committee. Travel authorized by another Federal agency or Congressional committee shall also be approved by an Official-in-Charge of a Headquarters Office or a NASA Center Director.

3.2.4.1 In exceptional circumstances that are approved at the Associate Administrator or Center Director level, other persons may be permitted to travel aboard NASA Mission Management Flights for emergency or humanitarian purposes or on a "space available" and cost reimbursable basis. Reimbursement by non-official travelers shall comply with Section 3.7 of this chapter.

3.2.5. All passengers shall be manifested on NASA Form 1269, *Flight Itinerary and Passenger Manifest*, or a local form that has been approved for use by the HQ Aircraft Management Division. Prior to departure of any Mission Management Flight, the pilot in command (PIC) shall certify the accuracy of the manifest and file a copy with a responsible ground agency such as a military, civil, or NASA operations office. The PIC is relieved of the requirement to provide the manifest if a NASA official has been designated as the ground coordinator for the flight with responsibility for maintaining the manifest. Specific local procedures shall be in place to ensure NASA ground coordinators possess a readily available and accurate list of personnel aboard NASA aircraft prior to the departure of any NASA flight.

3.2.6. NASA Mission Management Flight operations shall be conducted under the cognizance of the Assistant Administrator for Infrastructure and Administration, and NASA Mission Management Aircraft shall be designated by the Assistant Administrator for Infrastructure and Administration.

3.3. Classification of Aircraft Use

3.3.1. **REQUIRED USE**: Mission Management Flights may be classified as Required Use only if the use of Government aircraft is required because of *bona fide* communications or security needs or exceptional scheduling requirements. Required Use designation shall be controlled solely by the Administrator and approved according to Section 3.4.2 of this chapter.

3.3.2. **MISSION REQUIRED**: Mission Management Flights may be classified as Mission Required only when failure to use a NASA Mission Management aircraft would have a clear negative impact on a NASA operational mission, prevent timely response to an aircraft or spacecraft accident, or threaten the health and safety of NASA personnel, and only when such travel could not be conducted using commercial airlines, charter

aircraft service or ground transportation to fulfill that mission need. All passenger travel that can reasonably be performed using commercial airlines, charter aircraft service or ground transportation to meet the mission need may NOT be designated as Mission Required. **Classification of a Mission Management (passenger or cargo) Flight as Mission Required requires approval from the Assistant Administrator for Infrastructure and Administration in advance of the flight,** and shall be coordinated with the HQ Aircraft Management Division. Refer to Section 3.4 of this chapter for approval procedures. Mission Management Flights may also be designated Mission Required for non-travel activities that support NASA's official responsibilities. Such activities include, but are not limited to, training, evacuation (including medical evacuation), search and rescue, aeronautical research, space and science applications, and other such non-travel activities as cited in OMB Circular A-126. Mission Required use may NOT include official travel to give speeches, attend conferences or meetings, or make routine site visits. Cost justification in accordance with OMB Circular A-126 is not required for Mission Required flights.

3.3.3 **OTHER OFFICIAL TRAVEL**: NASA Mission Management Flights that are not classified as Required Use or Mission Required are classified as Other Official Travel. Agency official travel will normally be accomplished using commercial airlines or available means of ground transportation. Travel on Mission Management Flights that are designated as Other Official Travel must be authorized in advance on a trip-by-trip basis as detailed in Section 3.4. NASA employees shall not use Mission Management Flights for Other Official Travel if commercial airline, charter aircraft service, or ground transportation is reasonably available, unless the flight is cost justified in accordance with OMB Circular A-126 and this chapter.

Examples of Other Official Travel include, but are not limited to, the following:

- Travel for the purpose of giving speeches.
- Travel to accept awards.
- Travel to make routine site visits.
- Travel to attend NASA-sponsored meetings, including meetings for the purpose of Flight Readiness Reviews, Launch Minus-2, Launch Minus-1, launch or landing activities, launches of other NASA-related payloads, launch recovery operations, Soyuz launch and recovery operations, NASA advisory committees, councils and board meetings, professional conferences, or contractor conferences.

3.3.3.1. Other Official Travel that is not also Required Use or Mission Required as defined in 3.3.3, above, shall be authorized only when either:

3.3.3.1.1. **No commercial airline or aircraft (including charter) service is reasonably available** (i.e., able to meet the traveler's departure and/or arrival requirements within a 24-hour period), unless extraordinary circumstances require a shorter period to

effectively fulfill Agency requirements. When using "*no commercial airline or aircraft service is reasonably available*" to justify the use of Mission Management Flights, actual airline schedule information shall be provided as part of, and attached to, the aircraft request, OR

3.3.3.1.2. **The actual cost of using a government aircraft is not more than the cost of using commercial airline or aircraft (including charter service).** Such cost justification shall be computed consistent with section 3.4.4.2 of this chapter.

3.3.3.1.3. **Mission Required** or **Required Use** flights (certified under the terms of Section 3.4), may transport passengers on Other Official Travel when space is available and such travel is approved in strict compliance with this chapter. Under these circumstances, such Mission Management Flight use may be presumed to result in cost savings to the U.S. Government and a cost justification is not required and shall not be completed on NASA form 1653 for the flight.

3.3.4. Use of Program Support or Research aircraft for passenger transportation purposes, regardless of travel classification category, shall follow the same requirements as use of all other Mission Management Flights, to include compliance with 41 CFR 101-37 and OMB Circular A-126, flight request and approval using NASA Form 1653, cost justification on NASA Form 1653 as required, and obtaining travel authorization approvals. Refer to Section 3.9 of this chapter for specific policies and procedures for flying passengers on research or program support aircraft.

3.3.5. Non-Official Travel use of NASA Mission Management Flights is the use of remaining aircraft seating capacity for non-official purposes on a flight that is scheduled for official government business. Non-Official Travel Use of Mission Management Flights shall only be authorized when:

(i) the aircraft is already scheduled for use for an official purpose; and
(ii) such Non-Official Travel use does not require a larger aircraft than needed or alteration of flight itinerary for the official purpose; and
(iii) Non-Official Travel Use results only in minor additional cost to the government; and
(iv) reimbursement to the U.S. Treasury ~~IAW~~ in accordance with Section 3.7.

The Center Director shall certify in writing before the Non-Official Travel Use of a scheduled flight that the above conditions have been satisfied. The Center shall retain this certification for a minimum of 2 years. In an emergency situation, prior verbal approval by Center Director with an after-the-fact written certification is permitted.

3.4. **Approval of Flights**.

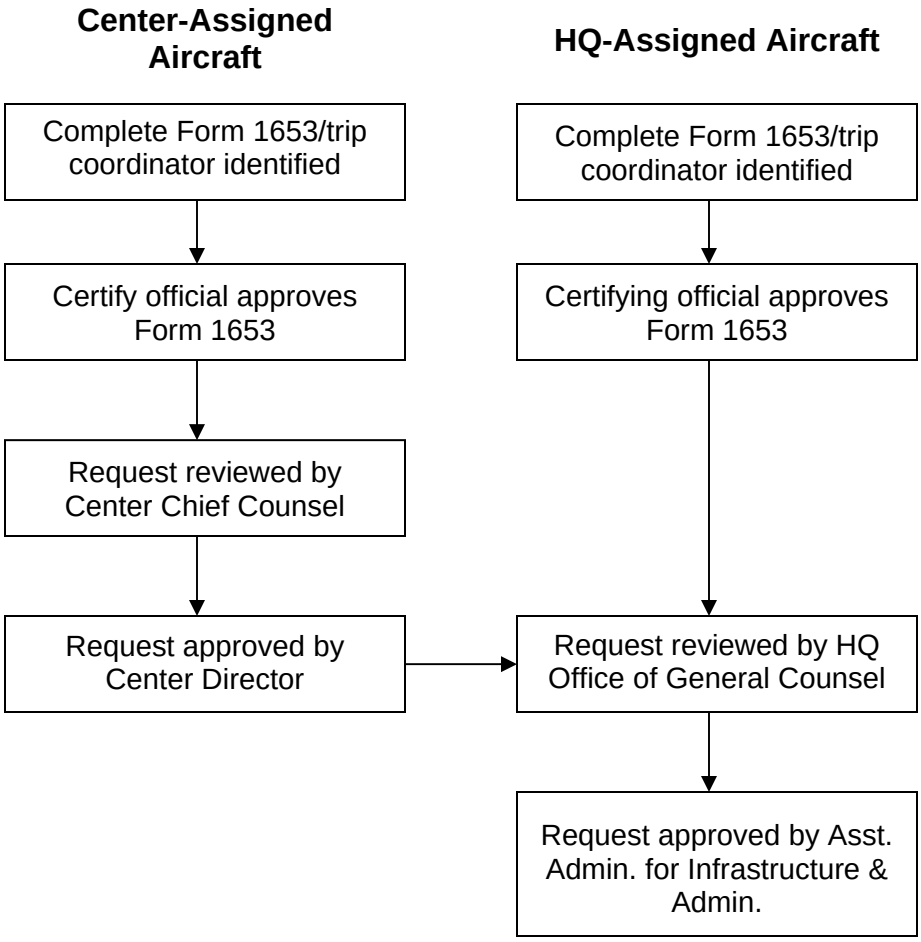
3.4.1 All flights with passengers aboard NASA aircraft assigned to a Center shall be reviewed by the Center Chief Counsel for compliance with 41 CFR 101-37 and OMB Circular A-126, and approved in advance by the Center Director. In the case of aircraft

assigned to HQ, those flights shall be reviewed by the General Counsel or the Principal Deputy General Counsel (Administration and Management) and approved in advance by the Assistant Administrator for Infrastructure and Administration. This review and approval authority may not be delegated

3.4.2. **Required Use**. **Required Use** Mission Management Flights shall also be approved in advance, in writing, and generally on a trip-by-trip basis. The Administrator will in each instance determine the appropriateness of "required use" flights following a finding of compliance with OMB Circular A-126 requirements by the General Counsel or Principal Deputy General Counsel (Administration and Management). While the Administrator may make a blanket determination that all use of NASA aircraft by certain employees, or travel in specified categories qualifies as Required Use travel, such determinations must likewise be in writing, be determined compliant with OMB Circular A-126 requirements by the General Counsel or Principal Deputy General Counsel (Administration and Management), and set forth the justification for the determination.

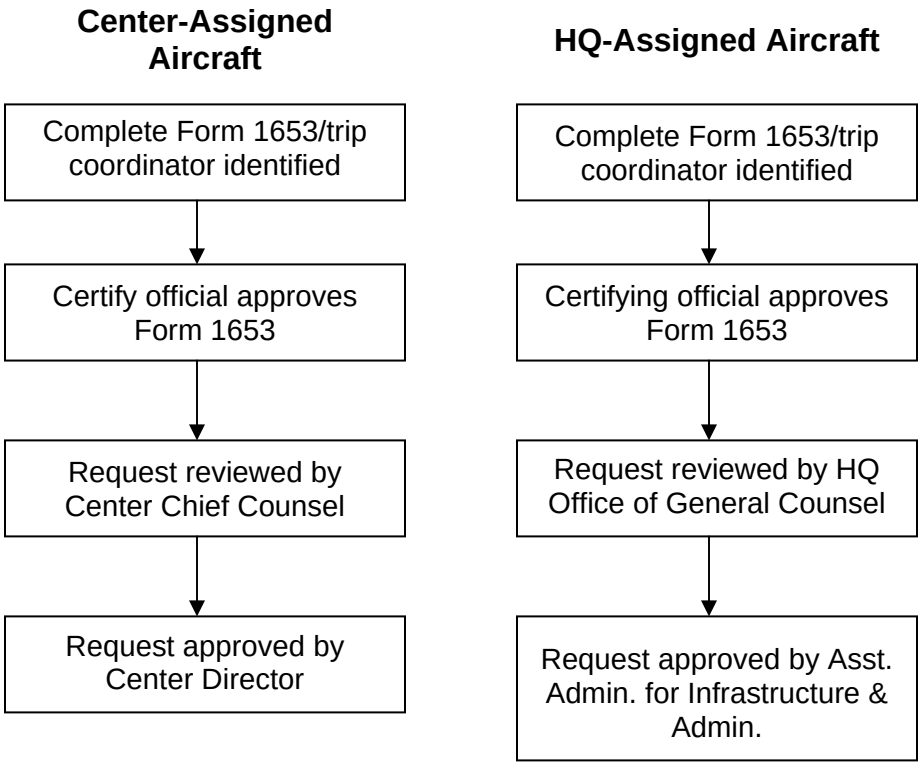
3.4.3 **Mission Required.** Flights classified as Mission Required where NASA personnel are traveling to meet mission requirements shall also be reviewed by the General Counsel or Principal Deputy General Counsel (Administration and Management) and approved in advance by the Assistant Administrator for Infrastructure and Administration. Refer to figure 3.4.3.1 for the approval process flow chart. The Assistant Administrator for Infrastructure and Administration shall ascertain, prior to authorizing the flight, that the purpose of the trip is for **Mission Required** travel as described in Section 3.3.2. Should exceptional circumstances preclude pre-flight review and approval, immediate action to review and approve the flight shall be taken as soon as practicable following the flight.

Figure 3.4.3.1: Mission required travel where passenger transportation is the primary purpose of the flight.



3.4.3.1 Flights classified as Mission Required conducted on Research or Program Support aircraft where passengers are aboard but **the primary purpose of the flight is NOT passenger transport,** may be approved at the Center Director level with Center Counsel review. Refer to figure 3.4.3.2 for approval process flow chart. Cost justification is not required. Centers shall obtain initial authorization for such use from the Assistant Administrator for Infrastructure and Administration prior to Center approval of passenger transport on program support or research aircraft. Authorization shall be coordinated with the HQ Aircraft Management Division. An example of such a flight would be a Program Support flight to provide photographic chase on a research object, or aircrew training to meet minimum proficiency standards. In this example, the primary purpose of the flight is NOT passenger transport. However, in addition to the crew members and qualified non-crew members directly involved with the flight's primary mission, support personnel or other official travelers may be carried as passengers providing that all other applicable provisions of this chapter have been met. An MMA Flight Request (NASA Form 1653) is required, and the passenger manifest (NASA Form 1269) shall clearly distinguish aircrew from passengers. The remarks section of the NASA Form 1653 shall indicate what training and for whom the flight is being conducted. **NOTE**: If minimum aircrew proficiency standards have been met prior to the commencement of the flight, for all of the aircrew assigned to a flight, aircrew training shall not be the primary purpose of a flight when carrying passengers.

Figure 3.4.3.2: Mission required travel where passenger transportation is NOT the primary purpose of the flight.



3.4.4 **Other Official Travel. Refer to figure 3.4.4.1 for approval process flow chart.** Travel by the following categories of people must be authorized in advance and in writing when traveling aboard Mission Management Flights on "other official travel", and their senior Federal official status shall be annotated on the flight request and manifest: (i) senior Federal officials; (ii) members and families of such senior Federal officials; and (iii) non-Federal travelers.

3.4.4.1 Senior Federal Officials are defined as persons:

(i) employed at a rate of pay specified in or fixed according to subchapter II of chapter 53 of title 5 of the U.S. Code;

(ii) employed in a position in an Executive Agency, including any independent agency, at a rate of pay payable for level I of the Executive Schedule or employed in the Executive Office of the President at a rate of pay payable for level II of the Executive Schedule;

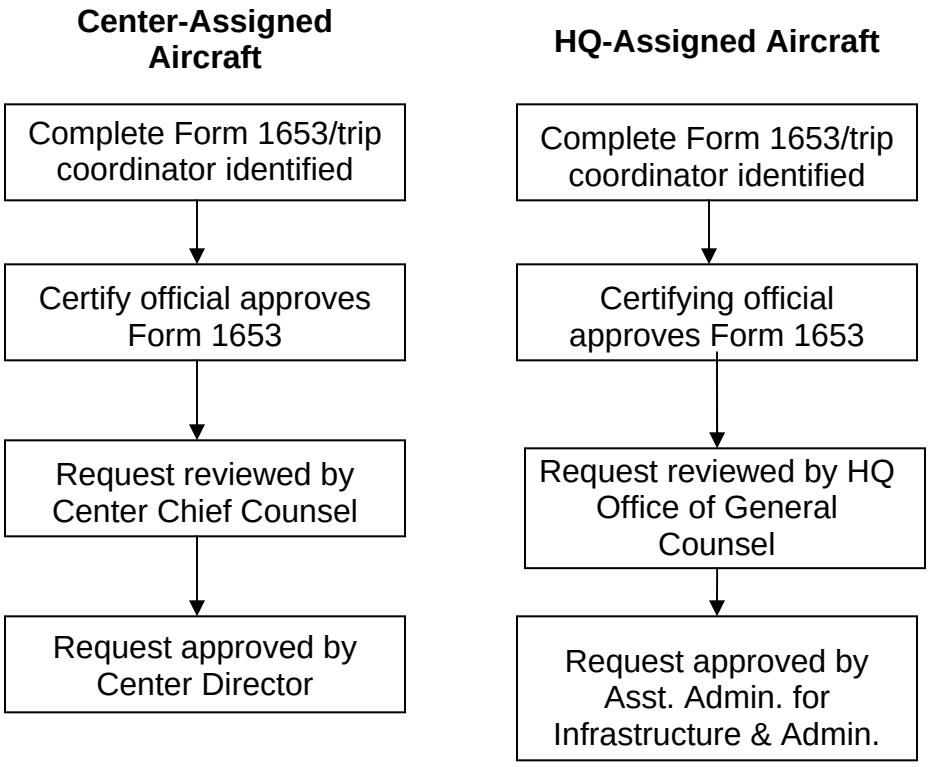
(iii) employed in a position in an Executive Agency that is not referred to in clause (i) (other than a position that is subject to pay adjustment under Section 1009 of Title 37 of the U.S. Code) and for which the basic rate of pay, exclusive of any locality-based pay adjustment under section 5304 of title 5 of the U.S. Code (or any comparable adjustment pursuant to interim authority of the President), is equal to or greater than the rate of basic pay payable for the Senior Executive Service under Section 5382 of title 5 of the U.S. Code; or

(iv) appointed by the President to a position under section 105(a)(2)(A), (B), or (C) of title 3 of the U.S. Code or by the Vice President to a position under section 106(a) (1) (A), (B), or (C) of title 3 of the U.S. Code.

(v) including Senior Executive Branch Officials: civilian officials appointed by the President with the advice and consent of the Senate, and civilian employees of the Executive Office of the President (EOP).

Generally, these are persons employed by the White House and executive agencies, including independent agencies, at a rate of pay equal to or greater than the minimum rate of basic pay for the Senior Executive Service. Active duty military officers are exempted from this definition.

Figure 3.4.4.1: Approval flow for "other official travel" with or without senior Federal officials aboard.



3.4.4.2. Authorizations for Other Official Travel Flights, with senior Federal Officials aboard, shall be reviewed in advance on a trip-by-trip basis by the Center Chief Counsel and approved by the Center Director. At NASA HQ, this review shall be conducted by the General Counsel or Principal Deputy General Counsel (Administration and Management). In special emergency situations, an after-the-fact written certification is permitted. The Office of Management and Budget has approved this review process. Other Official Travel Flights with **no** senior Federal Officials aboard shall be reviewed by the Center Chief Counsel and approved by the Center Director without further HQ review.

3.4.5 When the Mission Management Flight is Other Official Travel, the approving official shall determine that one of the following criteria is satisfied:

3.4.5.1. **No commercial aircraft or airline service is reasonably available** in accordance with paragraph 3.3.4.1; OR

3.4.5.2. The **actual cost** of Mission Management Flights **does not exceed the cost of using commercial airline or aircraft** (including charter service) ("cost-justified" flights). The cost of using commercial airline or aircraft services for the purposes of justifying the use of government aircraft must:

3.4.5.2.1. Be the current government contract fare or price or the lowest fare or price known to be available for the trip(s) in question;

3.4.4.2.2 Include, as appropriate, any differences in the costs of any additional ground or air travel, per diem and miscellaneous travel (e.g., taxis, parking, etc), and lost employee work time (computed at gross hourly costs to the Government including benefits) between commercial air, charter air service and government aircraft. To capture the cost, including fringe benefits, of the employee's lost work time, a multiplier of 1.3285 shall be applied to the locality-adjusted hourly salaries of the individual travelers for the additional travel time. The hourly salaries of the travelers shall be determined by dividing the applicable current average annual salaries that are provided by the NASA Workforce web site at http://nasapeople.nasa.gov/workforce/data/page8.htm by 2087. Selecting the "Average Salaries by Occupation and Center (table)" view will provide the necessary data to determine average salaries by occupation and grade for each Center. While Federal salary data can be found at many other locations, the NASA Workforce web site is the official NASA source. Travel time is defined as the time required to travel from the office or home until arrival at the business location or hotel, whichever is earliest.

3.5. **Responsibilities Associated with Mission Management Flight Operations**

3.5.1. The **Assistant Administrator for Infrastructure and Administration** is responsible for the following:

3.5.1.1. Approving policies and other matters involving NASA Mission Management Flights (except those specifically outlined above) and ensuring that the number of NASA-owned aircraft and their capacity to carry passengers and cargo does not exceed the level necessary to meet NASA's mission requirements.

3.5.1.2. Coordinating acquisition, assignment or disposition of aircraft whose primary purpose is the conduct of Mission Management Flights with the appropriate Associate Administrators and Center Directors in accordance with OMB Circular A-76.

3.5.1.3. Annually reviewing Mission Management Flight requirements, use and associated costs, including variable cost rates for each aircraft used to conduct Mission Management Flights.

3.5.1.4. Periodically reviewing the need for all NASA aircraft whose primary purpose is Mission Management Flight Operations, and the cost effectiveness of NASA Mission Management Flight operations in accordance with the requirements of OMB Circular A-76. Each such review of NASA-owned aircraft whose primary purpose is Mission Management Flight Operations shall be submitted to GSA when completed and to OMB with NASA's next budget submission.

3.5.1.5. Ensuring that current (by fiscal year) variable cost rate for each aircraft utilized to conduct Mission Management Flights is used by all NASA officials who operate and account for NASA Mission Management Flights to calculate the flight-by-flight cost justification required by OMB Circular A-126.

3.5.2. **Center Directors are responsible** for the safe and efficient operation of Mission Management Flights conducted by their assigned aircraft, and specifically for:

3.5.2.1 Ensuring that aircraft are used properly and that the functions, including contract functions, performed by their aircraft comply at a minimum with NASA, FAA, OMB, and other Federal requirements, policies, and procedures. Center Directors may establish more restrictive local standards where circumstances warrant, following coordination with the Assistant Administrator for Infrastructure and Administration.

3.5.2.2. Ensuring compliance with 41 CFR 101-37 and OMB Circular A-126.

3.5.2.3. Approving the use of their assigned aircraft to conduct Mission Management Flights where passenger transport is not the primary mission.

3.5.2.3. Designating aircrew to conduct Mission Management Flights and ensuring continuing compliance with all governing regulations.

3.5.2.4. Establishment of variable cost rates for aircraft under their control that are, or may be, used for passenger transportation. The rate shall be established based on the past fiscal year's costs, but accounting for inflation and known emerging cost changes, for each aircraft or aircraft type before the beginning of each fiscal year in accordance with OMB Circular A-126 guidance. This rate is to be used for determination of cost justification for MMA flight requests, and shall be reported to the Aircraft Management Division not later than October 31st of each year.

3.5.2.5. Annually reviewing and documenting the Center's continuing need for aircraft whose primary purpose is the transport of passengers and the cost-effectiveness of such aircraft operations as required by OMB Circular A-126 and reflected in the NASA Financial Management Manual and guidance from the Headquarters Aircraft Management Division. Content of this review should include, in narrative format, a comparison of the past years' use with future requirements. Upon completion of the annual review, a copy shall be forwarded to the HQ Aircraft Management Division not later than October 31st of each year. When Government ownership of an aircraft is no longer justified, Center Directors shall identify such aircraft to the Assistant Administrator for Infrastructure and Administration for reassignment or disposal, as appropriate.

3.5.2.6. Monthly submission of Mission Management Flight data to the HQ Aircraft Management Division not later than the 20th of the succeeding month. This data shall be comprised of all available Mission Management Flight and request records for NASA aircraft under the control of the Center Director, and shall reflect every flight flown by aircraft that have been, or may be, approved to transport passengers regardless whether passengers were aboard that flight At a minimum: the following shall be provided: NASA Form 1653, *Mission Management Flight Request*, NASA Form 1269, *Flight Itinerary and Manifest*, or local equivalent for all Mission Management Flights, and NASA Form 1257, *Aircraft Log*, or local equivalent, for all aircraft used for Mission Management Flights. Certification documentation demonstrating compliance with 3.3.5 for any Non-Official Travel Use and a copy of the required reimbursement shall be included in the monthly Mission Management Flight data submission. This responsibility may be delegated.

3.5.3. **The Director of the HQ Aircraft Management Division is responsible for the following**:

3.5.3.1. Providing oversight, functional management, and direct staff support to the Administrator concerning Agency wide policies, procedures, and guidelines for the management and conduct of Mission Management Flights, and Center compliance with NASA and OMB requirements.

3.5.3.2. Developing and coordinating plans for the acquisition, assignment, and disposition of NASA aircraft whose primary purpose is passenger transport.

3.5.3.3. Developing standard Agency wide maintenance and operating requirements and policies, including minimum training and qualification requirements for aircrew and maintenance personnel.

3.5.3.4. Coordinating periodic meetings with Center Aircraft Operations Chiefs and Maintenance Chiefs to review and update Agency wide operations and maintenance requirements, policies, and procedures.

3.5.3.5. In conjunction with the Chairman, Inter center Aircraft Operations Panel, coordinating and participating in the conduct of operational reviews to ensure the adequacy and standardization of procedures, aircrew training and qualification programs, and aircraft maintenance and inspection programs at Centers operating Mission Management Flights.

3.5.3.6. Evaluating cost and utilization data for NASA aircraft used to conduct passenger transport, and for providing an annual summary analysis of all cost and utilization data for Mission Management Flight Operations to the Assistant Administrator for Infrastructure and Administration.

3.5.3.7. Providing Centers with guidance and assistance in the development of aircraft variable cost rates for use in accomplishing cost comparisons.

3.5.3.8. Maintaining a centralized data base of Mission Management Flight operations documentation to monitor usage, aircraft costs and compliance with NASA and OMB requirements.

3.5.3.9. Providing a quarterly report to the Assistant Administrator for Infrastructure and Administration on the quality of agency wide compliance with NASA and OMB requirements for Mission Management Flight operations.

3.5.3.10. Conducting annual audits of Center Mission Management Flight operations documentation.

3.5.4. **The Inter center Aircraft Operations Panel (IAOP)**

3.5.4.1. The IAOP performs an agency wide coordination and communication function to recommend requirements, policies, and operational improvements that can be used by the NASA Centers to improve local operations policies and procedures, and by the Aircraft Management Division to improve Agency policies, procedures, and guidelines.

3.5.4.2. For each aircraft type used to conduct Mission Management Flights, the Chairperson may establish Operations and Maintenance Sub panels with responsibility for standardizing aircrew and maintenance procedures, for establishing aircrew and maintenance training/qualification standards, and for conducting airworthiness reviews.

3.5.4.3. Sub panel membership shall be composed of appropriate Chiefs of Aircraft Operations and Chiefs of Aircraft Maintenance or their designees, as well as a representative from the NASA Headquarters Aircraft Management Division who shall act as permanent Executive Secretary.

3.5.4.4. Sub panels shall be convened in formal meetings at least annually; however, the sub panels shall act as standing committees subject to call by the Chairperson to review urgent business. Informal meetings may be conducted by teleconference.

3.5.4.5. Sub panels, with IAOP Chairperson concurrence, shall forward their recommendations through the Aircraft Management Division to the Assistant Administrator for Infrastructure and Administration for final approval. Headquarters-approved recommendations shall be considered directive in nature and shall be reflected in NASA policy documents.

3.5.5. Flight Crew Members

3.5.5.1. Maintaining the highest standards of safety shall be the primary concern of all crew members. Other concerns, such as passenger service, courtesy, promptness, and reliability are important but must always be secondary to safety. All crew members shall comply with the provisions set forth in this NPR and with FAA, Original Equipment Manufacturer (OEM) publications for their aircraft, and other applicable directives, regulations, and instructions.

3.5.6. A fully-qualified pilot ~~PIC~~ shall be designated as pilot in command (PIC) and charged with the responsibility of conducting each NASA mission management flight.

3.5.6.1. The PIC is responsible for exercising complete authority, without limitation, over the command and supervision of assigned crew members during flight and crew duty time.

3.5.6.2. The PIC is solely responsible for accomplishing the mission assigned to the aircraft, for all facets of its operations, and for exercising final authority over the safety of the aircraft and its passengers. The PIC shall make the decision to delay or divert a flight for operational reasons such as weather, aircraft conditions, or pilot fatigue. The PIC shall not be overruled by other persons embarked. A decision by the PIC to delay or divert a flight for the above reasons on the grounds of safety shall not be the basis for disciplinary action.

3.5.7. Second-in-Command (SIC). The pilot assigned to duty as SIC during flight shall be qualified as either a PIC or SIC. It is the SIC's responsibility to assist the PIC and to be able to assume command in the event of the PIC's absence or incapacitation.

3.5.7.1. A SIC shall be a fully-qualified copilot who may, at the discretion of the PIC, fly from the left seat or right seat on missions when no passengers are on board, such as ferry or training missions. An SIC may not make takeoffs or landings from either seat with

passengers on board. However, Center Chiefs of Flight Operations may grant a PIC the authority to allow a SIC to execute landings with passengers aboard, and shall do so in writing. The final approval authority for such operations remains with the PIC for each flight.

3.6. **Reporting Requirements.**

3.6.1 **The HQ Aircraft Management Division is charged with ensuring strict compliance with the following reporting requirements**.

3.6.1. 2 NASA's aircraft programs shall be included in NASA's Management Control Plan and shall comply with the internal control requirements of OMB Circular A-123. Any material weaknesses found shall be reported in the next annual internal control reports to the President and Congress.

3.6.1.3 OMB Circular A-76 Reviews shall be completed when required and submitted to GSA as required by regulation and to OMB with the Agency's next budget submission. These reports will include appropriate plans for disposition of any aircraft not justified in the review or identification of such additional aircraft as may be required.

3.6.1.4 NASA will report to GSA each Mission Management Flight for "other official travel' by senior Federal officials, staff of the Executive Office of the President, members of the families of such officials, and any non-Federal travelers (except as authorized under 10 U.S.C. 4744 and regulations implementing that statute) on a semi-annual basis. Such reports shall be in a format specified by GSA and shall list all such travel conducted during the preceding six month period. The report shall include, at a minimum: (i) the name of each such traveler, (ii) the official purpose of the trip, (iii) destination(s); and (iv) for travel in which it was stated that a Mission Management Flights would be less expensive than a commercial carrier, the appropriate allocated share of the full operating cost of each trip and the corresponding commercial cost for the trip. (Reports on classified trips shall not be reported to GSA but must be maintained by the agency using the Mission Management Flights and available for review as authorized.)

3.6.1.5. Records of all Mission Management Flight operations shall be retained for at least 2 years, and shall include, at a minimum: the tail number of the plane used; the date(s) used; the name(s) of the pilot(s) and flight crew; the purpose(s) of the flight; the route(s) flown; and the names and status of all passengers on all legs of the mission. When Mission Management Flights are used to support "other official travel," evidence that the applicable provisions of OMB Circular A-126 have been satisfied is likewise required.

3.6.2 **Center Directors are charged with ensuring strict compliance with the following reporting requirements**.

3.6.2.1 Monthly submission of Mission Management Flight data to the HQ Aircraft Management Division not later than the 20th of the succeeding month. This data shall be

comprised of all available Mission Management Flight and request records for NASA aircraft under the control of the Center Director, and shall reflect every flight flown by aircraft that have been, or may be, approved to transport passengers regardless whether passengers were aboard that flight At a minimum: the following shall be provided: NASA Form 1653, *Mission Management Flight Request*, NASA Form 1269, *Flight Itinerary and Manifest*, or local equivalent for all Mission Management Flights, and NASA Form 1257, *Aircraft Log*, or local equivalent, for all aircraft used for Mission Management Flights. Certification documentation demonstrating compliance with section 3.7 for any Non-Official Travel Use and a copy of the required reimbursement shall be included in the monthly Mission Management Flight data submission.

3.6.2.2 Annually reviewing and documenting the Center's continuing need for aircraft whose primary purpose is the transport of passengers and the cost-effectiveness of such aircraft operations as required by OMB Circular A-126 and reflected in the NASA Financial Management Manual and guidance from the Headquarters Aircraft Management Division. Content of this review should include, in narrative format, a comparison of the past years' use with future requirements. Upon completion of the annual review, a copy shall be forwarded to the HQ Aircraft Management Division not later than October 31st of each year.

3.6.2.3 Establishment of variable cost rates for each fiscal year for aircraft under their control that are, or may be, used for passenger transportation. This rate is to be used for determination of cost justification for Mission Management Aircraft flight requests, and shall be reported to the Aircraft Management Division not later than October 31st of each year

3.7 Reimbursement for Non-Official Travel Use

3.7.1 Non-Official travel Use reimbursement shall be made in advance of the flight for travel on FAA aircraft, consistent with current FAA procedures.

3.7.2 Reimbursement for Non-Official Travel Use of NASA owned or controlled aircraft shall be made in advance of the flight. Such travelers are required to reimburse the agency at the full commercial coach fare for the most direct route possible between the origin and destination except (a) as authorized under 10 U.S.C. 4744 and regulations implementing the statute, and (b) by civilian personnel and their dependents in remote locations (i.e. locations not reasonably accessible to regularly scheduled commercial airline services).

3.7.3. Reimbursement shall consist of a non-cash payment by personal check made payable to “NASA” for the appropriate amount as determined by the local NASA Travel Office. The check shall be submitted to the Customer Payment Processor in the Center’s Accounts Receivable office, and receipt of the reimbursement will be fully documented and attached to the Mission Management Flight Request NF 1653. Any flight involving non-official travelers shall require notification of the HQ Aircraft Management Division prior to the flight to ensure application of the agency-wide procedures for reimbursement.

3.8. Operations

3.8.1. NASA Mission Management Flights are public aircraft, as defined by 49 U.S.C. 40102 (37), but are operated as civil aircraft when carrying passengers.

3.8.2. Research or Program Support aircraft used to conduct Mission Management Flights shall meet the FAA certification standards required of Mission Management Flights.

3.8.3. Airworthiness of NASA Mission Management Flights shall, as a minimum, meet the standards set forth in the Federal Aviation Regulations for similar business type aircraft. Aircraft whose primary or secondary purpose is the transport of passengers shall be maintained as required for retention of FAA airworthiness certification.

3.8.4. The cost of operation and the utilization of Mission Management Flights shall be reported in accordance with Financial Management Manual 9353-6 (RCS-10-0000-00271) and OMB Circular A-126.

3.9. Use of Research or Program Support Aircraft for Mission Management Flight Purposes

3.9.1. NASA owned and controlled aircraft, including lease and charter, whose primary purpose is to meet mission requirements for research or program support, are public aircraft and are not authorized to carry passengers, even if the classification of the flight is mission required, without written approval from the Assistant Administrator for Infrastructure and Administration prior to such use. Approval shall be coordinated with the HQ Aircraft Management Division. Once approval for such use has been obtained, Center Directors may approve mission required flights on those specifically authorized aircraft, subject to the reporting procedures of this chapter and the letter of authorization. Absent such specific authorization, personnel aboard aircraft operated as public aircraft shall be limited to crew members or qualified non-crew members. The use of a NASA Research or Program Support aircraft to provide passenger transportation shall be restricted to circumstances where such use shall not conflict with program support or research functions. Strict compliance with this chapter and with OMB Circular A-126 is mandatory. Such use shall only be approved subject to the following:

3.9.1.1. Use only when Mission Management Flights are not readily available or when such use would be impractical; e.g., when using an available Mission Management Flight would create excessive deadheading or would exceed crew duty restrictions.

3.9.1.2. Subject such use to the same cost comparisons required for Mission Management Flights, as required by paragraphs 3.1 through 3.4.

3.9.1.3. Use only with the approval of the Center Director and the Assistant Administrator for Infrastructure and Administration.

3.9.1.4. Centers shall document the justification for, and approval of, each Mission Management flight use and retain the documentation for 2 years. Additionally, every flight in such aircraft, including flights without passengers, must be accounted for in monthly documentation provided to the Aircraft Management Division as described in section 3.6.2.1 of this chapter.

3.10. Waivers and Supplements

3.10.1. Waivers. When deviations from this NPR are necessary, submit requests for waivers from the Center Director to the Assistant Administrator for Infrastructure and Administration. Prior written approval shall be obtained before implementing procedures that are less restrictive than those contained in this directive.

3.11. Flight Crew Qualifications

3.11.1. Designation. Prior to assigning personnel to flight crew duties on NASA MMA, the requirements contained in this chapter must be accomplished; the crew member must be designated in writing to the respective crew position; and required training must be completed and documented in the individual's training file.

3.11.2. Training File. A training file shall be maintained for each flight crew member. This file shall contain all documentation pertaining to crew qualification and training. The documents may be retained by the crew member upon termination of the crew member’s assignment. The file shall contain the following minimum documentation:

3.11.2.1. Qualifications. File shall contain copies of certificates of professional and medical qualifications; e.g., copies of pilot’s, flight engineer’s or mechanic’s licenses and shall contain a copy of the letter designating the individual to his/her current crew position.

3.11.2.2. Ground Training. File shall contain a list of ground training accomplishments (including simulator training) indicating dates, location, and amount of training. A record of refresher training must be maintained for the past 2 calendar years.

3.11.2.3. Flight Training. File shall contain a list of flight training accomplishments and flight evaluations for the past 2 calendar years.

3.11.3. Medical Prerequisites, All Pilots. PICs shall obtain a FAA First Class Medical Certificate once per year. SICs shall possess a FAA First or Second Class Medical certificate.

3.11.4. Prerequisites, PIC. Possess an FAA Airline Transport Pilot (ATP) Certificate with appropriate category and class and type rating, if appropriate, in the aircraft assigned. To be designated an aircraft commander, the pilot must meet the following minimum flight experience requirements:

3.11.4.1. 2500 pilot hours (500 hours multi-engine).

3.11.4.2. 100 pilot hours in type.

3.11.4.3. In exceptional circumstances, the 100 pilot hours in type requirement may be waived if the pilot is qualified in similar type. The waiver request shall be submitted to the Aircraft Management Division, NASA Headquarters for approval.

3.11.5. Prerequisites, SIC. Possess an FAA Commercial Pilot or ATP Certificate with appropriate category, class, and instrument rating, and have flown at least 10 hours in type, 8 of which may be in an approved simulator.

3.11.6. Instructor Pilots. Instructor pilots shall be selected by the Center Chief of Flight Operations from highly qualified PICs who have demonstrated the skill, maturity, and temperament to perform instructor duties. Instructor Pilots will conduct all pilot flight checks unless the Center designates Flight Examiners for that purpose.

3.11.7. Flight Examiner Pilots/Flight Examiner Maintenance Technicians: Centers may designate highly-qualified Instructor Pilots and Flight Maintenance Technicians as Flight Examiners to fulfill Center evaluation requirements.

3.11.8. Flight Maintenance Technician. Flight maintenance technicians must possess an FAA Airframe and Powerplant (A&P) Certificate. They must possess a valid FAA Third Class Medical Certificate or NASA medical certificate issued within the past 12 months by a NASA-approved medical examiner.

3.12 Crewmember Training

3.12.1 The MMA training program is established to ensure that each crew members is adequately trained to perform assigned duties safely and proficiently. To the extent practical, procedures training shall be standardized for each type of MMA.

3.13 Ground Training

3.13.1. Survival Training. Each primary crew member shall receive basic survival training on a one-time basis. Additional survival training shall be required by appropriate Center management for those crew members engaged in frequent over water or remote area flights. Appropriate training received prior to NASA employment, such as military survival training courses, may be credited for this requirement. Newly assigned personnel, with no previous survival training, must complete this requirement within 12 months of being assigned to flight crew duties. Pilots shall not be assigned as PIC until this requirement is satisfied.

3.13.2. Physiological Training. Prior to initial designation, primary crew members shall receive instruction in the physiological aspects of high altitude flight including altitude chamber indoctrination. Altitude chamber training received prior to initial designation

shall satisfy this requirement. Refresher training academics shall be accomplished every 5 years. Refresher altitude chamber training is optional for primary crewmembers operating non-pressure suit operations.

3.13.3. Emergency Egress Training. Prior to initial designation and annually thereafter, each crew member shall receive emergency egress training on each type of aircraft assigned. Training shall include instruction on the location and operation of normal and emergency exits and cabin emergency equipment such as fire extinguishers and life vests.

3.13.4. Aircraft Initial Training. Each primary crew member shall complete an approved formal course of instruction in the type aircraft to be flown, including a study of the systems and procedures applicable to the individual's crew position. The term formal course is defined as one that is provided by a manufacturer, a commercial activity specializing in pilot training (FAR Part 142 Training Center) or other entity approved by the Center Chief of Flight Operations.

3.13.5. Refresher Training. A formal systems training course is required every 6 months for pilots and every 18 months for flight maintenance technicians. The course shall consist of a minimum of 7 hours of academic training. At the discretion of the Center Chief of Flight Operations, this requirement may be accomplished with a 7-hour local refresher ground training course substituted for one of the two annual formal systems training courses for highly experienced pilots who are qualified in multiple aircraft and attend multiple emergency procedure training sessions per year or who are single-aircraft qualified and have at least 3 years and 300 hours experience in the specific aircraft type.

3.14. Flight Training Phase

3.14.1. Flight training is designed to provide the crew member with hands-on experience under controlled conditions. Flight training shall be conducted under the supervision of a NASA-designated flight instructor pilot or an FAA-certificated flight instructor either in an approved simulator or in an aircraft. Flight training, except that which is associated with transportation procedures, shall not be conducted while passengers are on board.

3.14.2. Initial Pilot Training. Prior to initial designation, each pilot shall receive a minimum of 10 hours of flight training, 8 hours of which may be conducted in a simulator.

3.14.3. Refresher Pilot Training. In each 6-month period, pilots shall receive a minimum of 6 hours flight or simulator training. At least one-half of this training shall be completed in the pilot's (left seat) position. Because of the safety and efficiency provided by modern visual simulators, maximum use should be made of these facilities to satisfy this training requirement. With the approval of the Center Chief of Flight Operations, one of the semiannual flight or simulator training requirements may be waived for pilots with 3 years and 300 hours' experience in type and for temporary pilots serving in a SIC capacity. This can be done only after all other applicable requirements of this directive

are met and that the temporary pilot successfully completes a proficiency and instrument proficiency check in type given by a designated NASA flight instructor.

3.14.4. Flight Maintenance Technician Training. Maintenance technicians perform in-flight duties involving passenger safety aboard certain NASA mission management aircraft, such as Gulfstream aircraft. Prior to initial designation, each maintenance technician shall receive training in such areas as traffic awareness and "see-and-avoid" techniques, aircraft servicing, weight and balance, and passenger care. This training may be conducted on a regular passenger mission under the supervision of a fully qualified flight maintenance technician or aircraft commander. Initial training shall consist of at least two passenger missions. At least one mission shall include an overnight stop away from home station.

3.15. Overdue Training

With the exception of systems and simulator training, which shall have a 2-month grace period, refresher flight training shall be considered overdue if not completed by the end of the month in which it is due. Crew members with overdue training shall not be used as a required crew member on any passenger missions until the required training is completed.

3.16 Minimum Proficiency Requirements

In the interest of flight safety and to ensure all crew members have the opportunity to exercise their aeronautical skills and thereby maintain the proficiency level to which they have been trained, the following minimum recent experience requirements are established (Table 3.16.1):

3.16.1. Pilots - Recent Experience. Table 3.16 (below) sets forth the recent pilot flight experience requirements: Requirement All Pilots

Previous 90 Days:	All Types	In Type
Flight Hours	25	
Takeoffs and Landings (Day)	6	3
Takeoffs and Landings (Night)	3	1
Approaches	6	3

Notes: 1. Requirements under "All Types are not limited to MMA.
2. Total "Flight Hours" may include simulator hours.
3. Instrument hours, approaches, takeoffs and landings (including night takeoffs and landings) may be accomplished in an FAA or military approved (Level C/D) Simulator. Approaches shall include both precision and non-precision types.

3.16.2. Pilots with current qualifications in a program support aircraft that is also FAA-certified for MMA use, but infrequently used for that purpose, may perform the duties of PIC and SIC on that aircraft if they meet the currency requirements stated herein. At Centers that operate multiple aircraft of higher performance than the MMA, and where such aircraft have annual or semiannual simulator and other similar requirements (night

landings, approaches, and hours), pilots shall be considered to have met the recent experience requirements of paragraph 3.16.1

3.16.2.2. Total "Pilot/Co-pilot Hours" may include simulator hours.

3.16.2.3. Instrument hours, approaches, and landings (including night landings) may be accomplished in an approved visual, motion simulator. Approaches should be evenly balanced between precision and non-precision.

3.16.2.4. Pilots with current qualifications in a program support aircraft that is also FAA-certified for MMA use, but infrequently used for that purpose, may perform the duties of PIC and SIC on that aircraft.

3.16.2.5. At Centers that operate multiple aircraft of higher performance than the MMA, and where such aircraft have annual or semiannual simulator and other similar requirements (night landings, approaches, and hours), pilots shall be considered to have met the recent experience requirements of paragraph 3.14.1.

3.16.3. Flight Maintenance Technician. To maintain currency, flight maintenance technicians must have flown at least three passenger missions each calendar quarter or they shall be accompanied by a current flight maintenance technician.

3.17. Overdue Recent Experience

The following applies to pilots overdue the recent experience provisions of table 3.16:

3.17.1. Increased Minimums. The pilot at the controls who does not meet the 90-day total hour requirements, but is otherwise current, shall increase all instrument approach minimums by 200 feet and 1/2 mile visibility (or the Runway Visual Range equivalent). In no case may the resulting minimums be less than a 400-foot ceiling and 1 mile visibility.

3.17.2. Step-down Qualifications. PIC who are otherwise current but fail to meet the requirements of table 3.16 may revert to SIC status, if they are current in their respective positions, until the “recent experience” provisions for aircraft commander are satisfied.

3.17.3. Multiple Currency. Pilots flying multiple types of aircraft who satisfy “all types” requirements may satisfy the “in type” currency requirement by flying a training flight with a flight instructor at the discretion of the Chief Pilot. This training flight must include a minimum of two instrument approaches, three takeoffs and three landings.

3.17.4. Night Landing Currency. Pilots not meeting the night-landing currency requirements of table 3.16 shall not conduct night landings with passengers on board, but

may be otherwise utilized, until the night-landing requirements are satisfied. Night-landing requirements may be accomplished in an approved visual simulator.

3.17.5. Lapse in qualification. Crew members overdue in any recent experience requirement, except as modified above, are disqualified for assignment as PIC or SIC on passenger flights. Lapse in qualification up to 90 days requires requalification in items deficient or a proficiency flight check with an instructor pilot. Lapse in qualification over 90 days requires retraining of at least six hours dedicated flight or simulator training as determined by the Center Chief of Flight Operations and a formal flight evaluation by an instructor pilot.

3.18. Evaluation Phase

3.18.1. The intent of the NASA flight crew evaluation program is to objectively evaluate aircrew performance and thereby measure the effectiveness of the training program. Designated instructor pilots (IPs) shall administer all flight checks.

3.18.2. Annual Proficiency Check. Prior to being designated in their crew position, and annually thereafter, pilots must complete a proficiency evaluation flight conducted by a NASA-designated Instructor Pilot (IP) or FAA-designated flight instructor pilot. When maintaining qualifications in more than one type of aircraft, an annual proficiency evaluation flight in each aircraft is required. Except for the initial check, proficiency checks may be accomplished in an approved simulator by a NASA IP or an FAA-designated examiner. Flight checks are considered overdue if not completed by the end of the month in which they are due. Pilots with overdue proficiency checks shall be scheduled only on training flights (i.e., non-passenger flights) with an instructor pilot.

3.18.3. Line Checks. Prior to being designated an aircraft commander and annually thereafter, pilots must complete a line evaluation flight conducted by an Instructor Pilot. When maintaining qualification in more than one type MMA, a line evaluation in each aircraft is required annually. The annual line check requirement may be conducted on typical passenger missions or in a Line Oriented Flight Training (LOFT) program in an approved simulator. Pilots with overdue line checks shall not be scheduled as PIC until a check is completed.

3.18.4. Documentation. Flight checks conducted by NASA Instructor Pilots shall be recorded on NASA Form 1615 or Center equivalent, reviewed by the Center Chief of Flight Operations, and filed in the individual's training file. All appropriate items indicated on the Form 1615 or Center equivalent shall be evaluated during the flight checks. Flight instructors are urged to include meaningful remarks and recommendations on the check ride form. This shall aid in focusing future training on appropriate areas.

3.19. Coordination and Scheduling

3.19.1. The Assistant Administrator for Infrastructure and Administration and Center Directors, in addition to approving the use of MMA, shall:

3.19.1.1. Ensure that the most cost-effective MMA is used to satisfy approved requirements. Exceptions to this usage shall be documented in writing.

3.19.1.2. Coordinate trip itineraries and requirements with other NASA activities that could benefit from the use of available seats on each trip.

3.20 Crew Complement

3.20.1. General. All personnel scheduled as primary flight crew members on NASA MMA passenger flights shall be trained and qualified in accordance with paragraphs 5.9 through 5.15 inclusive, of this NPR. Crew assignment, including identification of PIC, shall be designated in writing for each flight.

3.20.2. Basic Crew. No aircraft carrying passengers shall be operated with less than the minimum basic crew specified below. Exception: G-II / III aircraft may be operated with three pilots, one of whom functions as the FMT, or the flight may be operated without an FMT at the direction of the Center Chief of Flight Operations

3.20.2.1 Gulfstream G-II/III – PIC, SIC. Flight Maintenance Technician (optional)
3.20.2.2 King Air B-200 – PIC and SIC

3.21. Crew Duty Time

3.21.1. Crew duty time is the total time a crew is on duty before the final termination of a flight. Crew duty time accrues consecutively and begins when a crew reports to a designated place of duty to start preparation for a flight and ends when the engines are cut at the end of the flight or series of flights. This does not preclude using personnel as crew members who commenced other duties before reporting for a flight; however, in this case the crew duty time for the entire crew begins when those other duties commenced.

3.21.2. Duty Time Limitations. Basic crew duty time shall not be scheduled to exceed 14 consecutive hours except as set forth below.

3.21.2.1. The Center Chief of Flight Operations may, for a particular flight, extend the basic crew duty time to 16 hours if the total time of crew duty is confined to the period between 4 a.m. and 12 midnight (local time at departure point). The aircraft must be pressurized and have a functional autopilot.

3.21.2.2. Augmented crews shall be used only as a last resort when all other options, such as rescheduling or pre-positioning other crews, are not possible. Consideration shall be given to limiting passenger load to ensure that an adequate crew rest capability is available. Augmented crew duty time shall not be scheduled to exceed 18 consecutive hours. The aircraft must be pressurized and have a functional autopilot. Flights requiring

augmentation shall be approved by the Center Chief of Flight Operations and documented and maintained on file for a period of 12 months.

3.21.2.3. Relief crews shall be pre-positioned if the mission schedule cannot be supported within the duty time limitations specified for a single or augmented crew.

3.22. Crew Rest

3.22.1. Crew rest includes crew transportation prior to participating in flight crew duties, and shall be provided prior to departure from the home station as well as at enroute stops when mission schedule or crew duty limitations prevent the aircraft from returning to the home station.

3.22.2. Crew Rest Limitations

3.22.2.1. Crew rest shall normally provide at least 10 consecutive hours free of all official duties.

3.22.2.2. At enroute stops, crew rest shall not commence until 1 hour after termination of the mission in order to allow for necessary postflight duties.

3.22.2.3. The crew rest period shall end 1 hour prior to the crew beginning official duties in preparation for departure, normally at least 1 hour prior to scheduled takeoff time.

3.22.2.4. The Center Chief of Flight Operations may approve a reduced crew rest of no less that 8 hours total ground time, provided this time is confined between the hours of 8 p.m. and 8 a.m. local time. Approvals for reduced crew rest shall be limited to one occurrence per crew member during any 7-day period. Such approvals shall be documented and maintained on file for a period of 12 months.

3.22.2.5. Time accrued by any flight crew member traveling as passenger on an aircraft may not be credited to meet any of the crew rest requirements of this chapter.

3.23. Maximum Flight Time Limitations

3.23.1. Flight crew members shall not be scheduled, nor permitted to function as members of MMA flight crews, if their total professional flying time exceeds the following flight hours:

Period	Flight Hours
7 consecutive days	35 hours
30 consecutive days	100 hours
90 consecutive days	300 hours
365 consecutive day	1,000 hours

Table 3.23

3.24. Hazardous Cargo

Hazardous material as defined in 49 CFR 171.8 shall not be transported aboard NASA MMA. Cargo to be shipped shall be routed through the Center's transportation office before acceptance or, if enroute, cargo shall normally only be accepted from a certified shipper or freight forwarding agency. Unaccompanied baggage shall be treated as cargo.

3.25. Sterile Cockpit Procedures

During all critical flight operations, cockpit activities and conversation shall be limited to those involved with the direct operation of the aircraft. This "Sterile Cockpit" environment shall be maintained when below 10,000' AGL except during prolonged cruise at an altitude below 10,000' AGL.

3.26. Crew Briefings

Before departure, the PIC shall brief the crew on all essential information concerning the flight including weather, restrictions and the duties and responsibilities of each flight crew member.

3.27 Plight Planning Considerations

3.27.1. Passenger Loading. Normally, all engines and propellers shall be completely stopped when loading and unloading passengers or cargo from MMA. In those instances when, in the determination of the PIC, an extenuating circumstance requires the loading or unloading of passengers or cargo with an engine running, the following minimum precautions shall be followed:

3.27.1.1. Only the engine on the opposite side of the aircraft from the loading door shall be operating and shall be operated at as low a power setting as practical.

3.27.1.2. A flight crew member shall be positioned on the ground to ensure that passengers do not approach close to an operating engine or windmilling propeller.

3.27.2. Passenger Briefings. The PIC shall ensure that all passengers have been briefed on the no smoking policy, use of seat belts, location and operation of appropriate emergency and survival equipment, operation of doors and exits and any other federally-required information. This information shall be supplemented by printed passenger information cards. Pre-recorded passenger briefings may be used, provided the sound reproduction is of high quality and provided a crew member is present in the cabin during the briefing to answer passenger questions.

3.27.3. Flight Planning. Thorough flight planning is essential to the safe and efficient conduct of mission management passenger flights. A flight plan shall be filed for each flight. Passenger flights shall be operated under instrument flight rules and, to the maximum extent possible, in controlled airspace; however, daylight flights of less than

100 nautical miles may be operated under visual flight rules if weather conditions permit. These flights must utilize radar advisory service to the maximum extent possible.

3.27.4. Fuel Planning. Considering weather forecasts and any known enroute delays, the minimum amount of useable fuel required at takeoff shall be sufficient to:

3.27.4.1. Complete the flight to the destination airport.

3.27.4.2. Fly from that airport to the alternate airport, if required.

3.27.4.3. Fly after that for 1 additional hour using cruise fuel consumption at 10,000 feet MSL

3.27.5. Weather Planning. Prior to takeoff, the PIC shall receive a thorough weather briefing concerning current weather and forecasts for the proposed route, destination, and alternate.

3.27.5.1. Departure Weather. Weather minimums for takeoff shall be not less than landing minimums unless a takeoff alternate is available. A takeoff may be made when the weather is below landing minimums but not less than 1/8 mile visibility or Runway Visual Range (RVR) of 800 feet and provided a suitable departure alternate is available within 30 minutes flight time with an engine inoperative. The weather reported at the departure alternate must be above landing minimums and forecast to remain so for at least 2 hours after takeoff per the following: Precision Approach available: 200’ ceiling and ½ SM visibility added to the published Precision Approach minimums. Non-Precision Approach (only) available: 300’ ceiling and 1 SM visibility added to the published Non-Precision Approach minimums.

3.27.5.2. Enroute Weather. MMA shall not file a flight plan requesting clearance into areas of reported or forecast severe icing conditions. Operative airborne radar is required for any flight into areas where current weather reports or forecasts indicate that thunderstorms may reasonably be expected and flight under daylight visual meteorological conditions is not possible. All flights shall be planned to circumnavigate areas of thunderstorm activity.

3.27.5.3. Destination Weather. MMA may file for a destination that forecasts prevailing visibility equal to or greater than published landing minimums appropriate to the aircraft equipment, but not less than 1/2 mile or RVR 1800 feet for time of arrival. If the destination weather is reported and forecast to be less than 2000-foot ceiling or less than 3-mile visibility from 1 hour before until 1 hour after the estimated time of arrival (ETA), an alternate airport shall be listed on the flight plan. Airport weather minimums shall meet or exceed the requirements of FAR Part 91.

3.27.5.4. New PIC. When the pilot has less than 100 hours PIC experience in the type (make and model) aircraft being operated, the minimum descent altitude (MDA) or the Decision Altitude (DA) and visibility landing minimums are increased by 200 feet and

1/2 mile (or the RVR equivalent) for all instrument approaches conducted by that pilot. In no case may the landing minimums be less than 400-foot ceiling and 1 mile visibility. Similarly, takeoffs shall not be made if the airfield is below these adjusted landing minimums.

3.27.6. Aircraft Logs. Prior to activating any aircraft system, appropriate aircraft maintenance forms shall be reviewed and evaluated. Prior to flight, the PIC shall accept the aircraft by signing the appropriate form. DoD aircraft forms, NALCOMIS or equivalent forms may be used as a substitute for specific NASA forms.

4.23.7. Weight and Balance Data. A copy of the current weight and balance data shall be carried aboard each MMA. It shall be used to determine that the weight and center of gravity shall remain within limits for the duration of each flight.

3.28. Takeoff and Departure Procedures

3.28.1. On departure, NAVAIDS shall be set up to aid in a possible expedited emergency return as well as to aid in establishing the initial enroute course.

3.28.2. Cockpit Voice Recorder (CVR) and Flight Data Recorder (FDR). If installed and operative, the CVR and FDR shall be turned on during the entire flight. Should an incident occur the CVR and FDR power shall be removed and appropriate circuit breakers pulled following completion of the after-shutdown checklist.

3.28.3. Enhanced Ground Proximity Warning System (EGPWS) / Terrain Awareness & Warning System (TAWS). GPWS/TAWS shall be used on all flights. If the equipment tests satisfactorily prior to takeoff, it shall be assumed that any GPWS/TAWS warning is valid unless the aircraft position can immediately and positively be verified by visual reference. Immediate and appropriate action shall be taken to all valid GPWS/TAWS warning calls.

3.28.4. Landing Lights. Landing lights shall be used during all takeoffs and landings and when operating near airports or in high-density traffic areas.

3.28.5. Outside Vigilance. The PIC is responsible for ensuring that, during visual conditions, at least one person maintains a lookout for conflicting traffic at all times. Unnecessary paperwork shall not be accomplished in the cockpit during aircraft climbs or descents.

3.28.6. Outside Observer. Use of any additional crew members to aid in outside vigilance is highly encouraged, particularly while operating in visual conditions in heavy traffic areas. Flight maintenance technicians (FMT) shall remain at their duty station throughout the climb and descent. Their cabin duties shall be considered secondary in importance during these times.

3.28.7. Traffic Alert and Collision Avoidance System (TCAS/TCAD) resolution advisories (RAs) shall be followed.

3.29. Enroute Procedures

3.29.1. Passenger Considerations. The PIC is responsible for the safety and comfort of the passengers and shall make every reasonable effort to keep the senior passenger or trip coordinator apprised of any significant deviations from the itinerary or schedule. In-flight delays and readily discernible abnormal conditions shall be explained to the passengers.

3.29.1.2. Safety Belts. The PIC shall require that all passengers and crew members have safety belts securely fastened for taxiing, takeoffs, landings, and before entering an area of in-flight turbulence.

3.29.1.3. Admission To The Flight Deck. Passengers shall not be admitted to the flight deck during “sterile cockpit” phases of flight.

3.29.2. Minimum Fuel. The PIC shall notify ATC of the aircraft “minimum fuel” status at any time the fuel supply has reached a quantity where, upon reaching destination, little or no delay can be accepted. In no case may this quantity be less than that specified in table 3.32.4. If fuel remaining indicates a need for traffic priority to ensure a safe landing, the PIC shall formally declare an emergency due to low fuel and shall report fuel remaining in minutes.

3.29.3. Emergency Procedures. When an emergency or in-flight difficulty arises, the crew shall complete the appropriate checklists and report the nature and extent of the difficulty, intentions, assistance required to the controlling ground agency. In the event of an engine failure or shut down, the aircraft shall land at the nearest suitable airport at which a safe landing can be made.

3.30. Arrival, Approach, and Landing Procedures

3.30.1. General. During instrument arrivals, all available navigational aids shall be used. When available, precision approach guidance (Instrument Landing System or Precision Approach Radar) shall be used for all night arrivals except for specific events during training flights.

3.30.2. Weather Minimums. No pilot operating an aircraft may land that aircraft when the flight visibility is less than the visibility prescribed in the standard instrument approach procedure being used.

3.30.3. Destination Below Minimums. If the destination weather is marginal or below minimums, the PIC may proceed to a suitable alternate or may hold if the destination weather is forecast to improve and fuel for alternate and reserve requirements shall not be

compromised. The weather at the alternate must be at or above alternate minimums and forecast to remain so until the new ETA plus 1 hour.

3.30.4. Approach Briefing. Before starting an approach, the pilot flying shall brief the crew on the procedures to be followed during the approach and landing and in the event of a missed approach. The briefing shall include a review of the procedure to be flown, including key altitudes and restrictions as well as specific crew duties during the approach and landing.

3.30.5. Approach Progress. The pilot flying the approach shall announce his/her progress and intentions periodically. The pilot monitoring shall observe the approach and provide a continual cross-check of the navigational aids, instruments, air traffic control instructions, and approach procedures. Any deviations from the prescribed procedure shall immediately be brought to the attention of the pilot flying. The pilot monitoring shall call out, "1000 feet above," and "100 feet above," all key altitudes as well as "minimums" upon reaching the appropriate Missed Approach position. When the runway is in sight, the pilot monitoring shall state, "runway in sight." If the runway is not in sight when the aircraft reaches the missed approach point, the pilot monitoring shall state, "go around."

3.30.6. Use of Autopilot. Use of the autopilot during arrivals, descents, and approaches is encouraged particularly during visual flight conditions as an aid in collision avoidance. In order to prevent excessive loss of altitude in the event of an autopilot failure, the pilot directing the aircraft shall maintain flight control contact throughout the final portion of an automatic coupler approach. Full manual control shall be assumed at or above published minimum altitude.

3.30.7. Canceling Instrument Flight Plans. Normally, instrument flight plans shall not be canceled prior to landing.

3.31. Postflight Procedures

3.31.1. Closing Flight Plan. On completion of the flight, the PIC shall ensure the flight plan is closed with the appropriate facility.

3.31.2. Aircraft Security. The PIC shall take prudent measures to secure and protect the aircraft at enroute stops. These measures shall preclude unnecessary exposure to inclement weather, such as high winds and freezing precipitation, and shall also provide a reasonable degree of security from such activities as vandalism, theft, or terrorism. State Department Advisories and the DOD FCG shall be consulted for out-of-CONUS operations.

3.31.3. Aircraft Flight Logs. The Flight Crew shall enter in the aircraft flight log each mechanical irregularity discovered during the flight. All unusual events (e.g., overweight or hard landings, lightning or bird strike, static discharge, and flight through hail or severe turbulence) shall be recorded in the aircraft log.

3.32. Specific Operational Restrictions

3.32.1. Appropriate aircraft flight manual data shall be utilized to assure adequate takeoff, climb, approach, and landing performance is available for the actual conditions to be encountered. Additional restrictions, as outlined in the tables below, are established to assure a prudent level of safety during routine line operations.

3.32.2 Following are the minimum runway lengths to be used for the aircraft shown in the table. Headquarters waiver is required to operate in/out of lesser length runways.

Table 3.32.2 Minimum Runway Length for MMA operations

Aircraft	Runway
King Air B200	3500 ft.
Gulfstream II/III	6000 ft.

3.32.3. Wind Restrictions. For normal operations, airfields shall be considered below minimums for takeoff and landing when winds, including gusts, are greater than those established below:

Table 3.32.3 Wind Restrictions

Aircraft	Maximum Component	Tailwind Component	Crosswind
King Air B200	45 kts	10 kts	25 kts
Gulfstream - II/III	40 kts	10 kts	20 kts

3.32.4. Minimum Fuel For Landing. Minimum fuel for landing is established in recognition of three factors: (1) fuel required to execute an unanticipated go-around and traffic pattern; (2) Fuel required for landing, rollout; and (3) allowance for fuel quantity measuring system error. All flights shall be planned so as to have no less than the following minimum indicated fuel available at touchdown on the final landing:

Table 3.32.4 Minimum Landing Fuel

Aircraft	Minimum Landing Fuel
King Air B200	400 pounds
Gulfstream-II/III	3000 pounds

Appendix D. Directions for the use of NASA Form 1653, Mission Management Flight Request

1. The NASA Form 1653 shall be used to document approval of Mission Management Flights and the cost-comparison requirements specified by OMB Circular A-126. Use is mandatory. This form will be used for Mission Management Flights records in all cases and for all travel classifications. The retention period for completed forms is two (2) years.

2. The 1653 Form shall be completed as follows:

a. **Requester**: the Trip Coordinator.

b. **Office/Phone**: Requester/Trip Coordinator data.

c. **Aircraft Requested**: Type (G-III, King Air) or call sign (NASA-1, NASA-8).

d. **Trip Information/Purpose**: Explain purpose, criticality, and urgency of trip, and why travel cannot be accommodated by commercial air or ground transportation.

e. **Itinerary**: list cities or airports if known.

1. Plan departure times to permit arrival in time for commitments, allowing for delays.

2. Use the remarks section to show special requirements or needs.

f. **Passenger List**: “status/legs” columns provide critical information for determining cost comparisons and are essential for reports to OMB. Accuracy is essential. *See* OMB Circular A-126 for additional guidance if needed. “Legs” refer to the trip segments outlined in the itinerary section.

g. "**Approving Official of Requesting Organization**" – should be one managerial level above the Senior Passenger on the trip where possible. Certification here is that the trip, its purpose, and the status of and requirements for all passengers who will travel are in accordance with NPR 7900.3. **The Approving Official of Requesting Organization does *not* approve the use of the Mission Management Aircraft – merely certifies the trip and passengers meet the stated data as to purpose, legs traveled, official status and requirement to travel.**

h. **Mission Management Flight Request Number**: Center Flight Operations personnel will sequentially number each request and enter the number on pages 1 and 2.

i. **Cost Comparison**: Center Flight Operations personnel shall compare costs of requested MMA flight with commercial travel alternatives.

1. Commercial travel, hotel and rental costs can be obtained from the servicing travel office. **Note**: Contractors do not qualify for Government rates.

2. Line 8 should reflect the total cost incurred in commercial travel.

3. In transit salary costs (line 4) should be calculated as follows: Include any differences in the costs of any additional ground or air travel, per diem and miscellaneous travel (e.g., taxis, parking, etc), and lost employee work time (computed at gross hourly costs to the Government including benefits) between commercial air, charter air service and government aircraft.. To capture the cost, including fringe benefits, of the employee's lost work time, a multiplier of 1.3285 shall be applied to the locality-adjusted hourly salaries of the individual travelers for the additional travel time. The hourly salaries of the travelers shall be determined by dividing the applicable current average annual salaries that are provided by the NASA Workforce web site at http://nasapeople.nasa.gov/workforce/data/page8.htm by 2087. Selecting the "Average Salaries by Occupation and Center (table)" view will provide the necessary data to determine average salaries by occupation and grade for each Center. Travel time is defined as the time required to travel from the office or home until arrival at the business location or hotel.

j. **Variable Costs Per Hour** on NASA Mission Management Flights shall be verified as accurate for the current Fiscal Year by the official approving the flight (Center Director or Assistant Administrator for Infrastructure and Administration).

k. **Justification**.

l. **Mission Required**. This designation requires approval in advance of the flight by the Assistant Administrator for Infrastructure and Administration if the primary purpose of the flight is passenger transport.

m. **Other Official Travel** mandates completion of the "justification" section.

1. **If the justification is that no commercial transportation is available, information on the non-availability of commercial air service shall be attached to substantiate that no commercial air service is reasonably available to satisfy this requirement within 24 hours (or less, where necessary for critical mission needs)**.

2. If the flight is "cost-justified," complete information concerning the cost justification shall be attached to substantiate that the use of government aircraft is not more than the cost of commercial air service.

n. The Center Chief Counsel shall review for compliance, in advance and in writing, any travel classified as "**Other Official Travel**" if a senior Federal Official is a passenger. At HQ, this review will be conducted by the General Counsel or Principal Deputy General Counsel (Administration and Management).

o. **Approval:**

1. For other official travel, with or without senior Federal officials aboard: Center Chief Counsel must review all requests for MMA flights by Center aircraft for compliance with this NPR and OMB Circular A-126 prior to approval by the cognizant Center Director. For all HQ flights, the General Counsel or Principal Deputy General Counsel for Administration and Management shall review and indicate A-126 compliance prior to approval by the Assistant Administrator for Infrastructure and Administration. This review and approval may not be delegated. Should exceptional circumstances preclude pre-flight approval, immediate action to review and approve the flight shall be taken as soon as practicable following the flight.

2. For flights where NASA personnel are traveling to meet mission requirements: Review by the General Counsel or Principal Deputy General Counsel for Administration and Management and advance approval by the Assistant Administrator for Infrastructure and Administration are required. .