

GRAND CANYON NATIONAL PARK

INTERNAL

AVIATION MANAGEMENT PLAN

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I. Policy

It is the policy of Grand Canyon National Park (GRCA) to limit the use of its aircraft to activities involving life- or health-threatening emergencies, the administration and/or protection of resources, and for individually approved special purpose missions. GRCA aviation activities shall be performed in accordance with applicable Federal Aviation Administration (FAA) regulations and Department of the Interior (DOI) policies to insure a safe, economical, and efficient method of performing the required task. All aviation activities shall be accomplished with the least possible impact to park and neighboring resources and visitors.

Everyone is responsible for becoming familiar with and applying correct procedures in all phases of aircraft use. Specialists in air operations should take the lead in providing examples and knowledge of such procedures. The number one concern at all times is SAFETY!

II. Purpose

The purpose of the Internal Aviation Management Plan (IAMP) is to establish general guidelines for the official and professional use of aircraft on park business. It also attempts to provide specific direction for those individuals involved in the use of aircraft as a significant portion of their position description. This plan will ensure (1) safety, (2) protection of park resources (including natural quiet) and facilities, (3) compliance with the National Park Service mission, and, as stated in the policy, (4) that each flight considers efficiency, economy, and effectiveness.

The IAMP only applies to aircraft on DOI business and is not meant to cover private, commercial, or military aviation operations in and around GRCA.

This plan also provides the following:

- A. Definitive expansion (but not a replacement) of guidelines set forth in National Park Service (NPS) Management Policies and other pertinent, park-specific documents. In cases of conflicting statements, NPS Management Policies will be followed.
- B. Reference for GRCA personnel engaged in internal aviation management so they can understand GRCA aviation procedures.

In summary, the purpose of this plan is to document accepted procedures for official use, to reduce and minimize the number of NPS flights, and to establish a safe operation while protecting the natural quiet and experience of the park.

GRCA's IAMP will be reviewed annually in January and revised if necessary. The policies and procedures outlined in this plan supercede the IAMP of January 1986 and any other local policy documents which reference GRCA aviation management.

III. Introduction

- A. Aviation Workload. GRCA has a large aviation workload. Aircraft are involved in nearly every function within the park. Projects requiring DOI aircraft assistance include construction and maintenance of facilities, basic transportation of persons and cargo for managerial and administrative purposes, search and rescue (SAR) efforts, emergency medical response and evacuation, cultural and natural resources management, law enforcement, and wildland fire detection/suppression.
- B. Geographical Considerations. GRCA encompasses an amazing diversity of topography and climate. The park extends from close to the Utah-Arizona line (near Lees Ferry in the north-central part of Arizona) west to within a few miles of the Nevada-Arizona border (Snap Point, Pierce Ferry, and the Grand Wash Cliffs). The park is up to 25 miles wide in places, and provides protection for some 277 miles of the Colorado River.

Topography can be grouped into two broad categories: relatively flat/mildly sloping regions on the rims, Esplanade, Tonto Plateau, and Colorado River beach levels, and extremely steep slopes and cliffs in most other areas. Elevations range from about 1200 feet mean sea level in the western part of the park to over 9000 feet on the North Rim. Precipitation patterns vary accordingly, and vegetation is consequently sparse and desert-like in some areas while being very dense forests in others. Temperatures are likewise diverse, varying seasonally from 130+ degrees F. along the river in the summer to well below 0 degrees F. on the North Rim in the winter. Temperatures encountered within the same hour or day may also be very different, as on a helicopter flight from the South Rim to Phantom Ranch and then on to the North Rim. As can be imagined, density altitude becomes a serious factor in all warm-weather flight planning, especially when operating on either rim in the middle of a hot summer's day.

A combination of the preceding factors may make ground travel impractical or difficult. For example, hot dry summers create burning conditions that require rapid suppression techniques on wildland fires; heavy snowfall accumulations prevent winter and spring travel to many areas, except by air. In many instances, tasks can be performed using ground transportation, but the time necessary to accomplish the job as well as the potential for increased resource damage or loss must be carefully compared to the advantages and/or disadvantages of air support.

- C. Types of Aircraft and Use. Aircraft currently used include (1) light turbine helicopter(s) under exclusive contract, (2) rented single- and twin-engine airplanes and medium- to heavy-category helicopters, and (3) retardant bombers.

From 1981 to 1985 helicopter use averaged about 650 hours per year. After implementation of this plan in 1986, that use was cut by 47%, but has since stabilized between 450 and 500 hours per year. Rental airplanes are generally used between 100 and 200 hours per year, and there is only an occasional need for retardant bombers.

- D. Aircraft Procurement. Aircraft are procured in a variety of ways. The DOI's Office of Aircraft Services (OAS) writes all contracts, such as for the year-round use of the Bell 206 helicopter. OAS is responsible for the acquisition of aircraft (whether contracted, chartered, or rented) and aircraft-related services in support of DOI programs. Air tankers or other wildland fire suppression aircraft are requisitioned as needed, and may be part of an OAS or Forest Service national contract. Military and Civil Air Patrol aircraft are occasionally utilized during SAR and major incident operations, and these are requested through the Air Force Rescue Coordination Center.
- E. Park Aviation Organization and Staff Responsibilities. Refer to Appendix A of this plan.

F. Terminology. The following conventions are used in this document:

1. Airplanes, Helicopters, and Aircraft. The term "airplane" refers to an engine-driven fixed-wing aircraft heavier than air, that is supported in flight by the dynamic reaction of the air against its wings. A "helicopter" is a rotorcraft that, for its horizontal motion, depends principally on its engine-driven rotors. For clarification, a "rotorcraft" is a heavier-than-air aircraft that depends principally for its support in flight, on the lift generated by one or more rotors. The term "aircraft" refers to an airplane (fixed-wing), helicopter (rotary-wing), or both.
2. Airports and Airstrips. An "airport" means an improved (normally paved) area used or intended to be used for the landing and takeoff of aircraft (usually airplanes), and includes any buildings and facilities. An "airstrip" refers to an area authorized for use by airplanes and/or helicopters, but which is normally unpaved and has no facilities.
3. Air Service or Air Support Personnel and Managers. GRCA personnel involved in the use or management of aircraft on DOI/NPS business are referred to in this document as "air service" or "air support" personnel or managers. This term is used to identify helibase/helispot and/or airport/airstrip managers. When a specific individual or position must be indicated, it is done so by stating "South Rim Helibase Manager" or "Phantom Ranch Helispot Manager" and so forth.
4. Helibases, Helipads, Heliports, and Helispots.
 - (a) A "helipad" is a small designated area, usually with a prepared surface, on a heliport, airport, landing/takeoff area, apron/ramp, or movement area used for takeoff, landing, or parking of helicopters. However, the term "helipad" can be confused with "landing pad" which refers to that specific area where a helicopter lands; that is, the touchdown pad contained within the safety circle at developed helibases or heliports. Therefore, the term "helipad" is not used in this document.
 - (b) A "helibase" or "base heliport" means an area used for the landing and takeoff of helicopters, and includes buildings and facilities. This is a permanent facility for helicopter operations; that is, it is usually the "home base" of assigned helicopters and personnel. It is normally large enough to accommodate more than one helicopter, and has fueling facilities, a reliable wind indicator, signs, fire extinguishers, paved pads, vehicle parking areas, and dependable telephone and/or radio communications. Only two helibases are recognized at GRCA: the South Rim Helibase (the primary park helibase, located in Grand Canyon Village), and the North Rim Helibase (the secondary park helibase located in the North Rim developed area).
 - (c) A "helispot" is any natural or improved takeoff and landing area intended for helicopter use. It may or may not have road access. In most cases, helispots do not meet the basic requirements of a helibase or heliport. Landing or takeoff sites routinely used by helicopters on GRCA missions, besides the South Rim or North Rim Helibases, are referred to as "helispots" in this document.
5. Public Aircraft. Grand Canyon National Park specifically requires that aircraft operators and aircraft (fixed- and rotary-wing) providing services to/for the park, shall hold the requisite FAA licenses and certificates (that is, FAR Part 133, 135, and/or 137) to conduct all necessary missions. In addition, all operators shall be required to furnish proof that they hold applicable FAA authority. Whether or not aircraft are temporarily considered "public aircraft" does not exempt or release them from possessing appropriate FAA authority. However, aircraft owned by DOI are excepted from the requirements in this paragraph.

IV. Federal Policies, Guidelines, and Regulations

As stated in the policy, GRCA aviation activities shall be performed in accordance with applicable Federal Aviation Regulations (FARs) and Department of the Interior policies. Deviations from established policy are permitted only where specific waiver procedures have been identified in this policy. Therefore, all aviation operations except emergencies (see Section V) will be conducted in accordance with the following:

- A. Federal Aviation Administration Federal Aviation Regulations (applicable sections of Parts 1, 13, 61, 71, 73, 91, 133 and 135). This includes Special Federal Aviation Regulation (SFAR) 50-2 which created the Grand Canyon National Park Special Flight Rules Area in November 1988.
- B. DOI Office of Aircraft Services Departmental Manual (Parts 110, 112, and 350-354), Operational Procedures Memoranda (OPMs), Information Bulletins (IBs), and miscellaneous Handbooks. Users should remember that OPMs are updated yearly, while Departmental Manuals (DMs) may last longer. Aviation operations will comply with all items in contracts (drawn up by OAS) between the park and commercial aircraft operators.
- C. The NPS Organic Act of 1916, and the National Parks Overflights Act of 1987 (Public Law 100-91).
- D. The following National Park Service Management Policies (December 1988):

Chapter 1, Introduction (page 3). "The individual parks contain various tangible natural and cultural features such as animals, plants, waters, geologic features, historic buildings and monuments, and archeological sites. They also have intangible qualities such as natural quiet, solitude, space, scenery, a sense of history, sounds of nature, and clear night skies that have received congressional recognition and are important components of people's enjoyment of parks. These NPS Management Policies use the terms resources and values to mean the full spectrum of tangible and intangible attributes for which parks have been established and are being managed." (Emphasis added.)

Chapter 4, Natural Resource Management (page 1). "The natural resources and values that the Park Service protects . . . include plants, animals, water, air, soils, topographic features, geologic features, paleontological resources, and aesthetic values, such as scenic vistas, natural quiet, and clear night skies." (Emphasis added.)

Chapter 4, Natural Resource Management (page 18): Noise. "The National Park Service will strive to preserve the natural quiet and the natural sounds associated with the physical and biological resources of the parks (for example, the sounds of the wind in the trees or of the waves breaking on the shore, the howl of the wolf, or the call of the loon). Activities causing excessive or unnecessary unnatural sounds in and adjacent to parks, including low-elevation aircraft overflights, will be monitored, and action will be taken to prevent or minimize unnatural sounds that adversely affect park resources or values or visitors' enjoyment of them." (Emphasis added.)

Chapter 6, Wilderness Preservation And Management (page 3): "The National Park Service will manage areas of potential wilderness as wilderness, to the extent that existing nonconforming uses will allow, and will seek to eliminate the temporary conditions that preclude wilderness designation."

"The Park Service will take no action that would diminish the wilderness suitability of an area recommended for wilderness study or for wilderness designation until the legislative process has been completed. Until that process has been completed, management decisions pertaining to recommended wilderness and wilderness study areas will be made in expectation of eventual wilderness designation."

(page 4): "In protecting wilderness character and resources and in managing wilderness use in accordance with the Wilderness Act, the National Park Service will adhere closely to the "minimum tool" concept. Superintendents . . . will select the minimum tool or administrative practice necessary to successfully and safely accomplish the management objective with the least adverse impact on wilderness character and resources."

"Administrative use of motorized equipment or mechanical transport, including motorboats and aircraft, will be authorized . . . only (1) if determined by the superintendent to be the minimum tool needed by management to achieve the purposes of the area, or (2) in emergency situations involving human health or safety or the protection of wilderness values."

(page 6): "No permanent heliports, helipads, or airstrips will be allowed in wilderness. Temporary landing facilities may be used to meet the minimum requirements of emergency situations. Site improvements determined to be essential for safety reasons during individual emergency situations may be authorized, but the site will be restored to natural conditions after the emergency has ended. Natural openings may be used for authorized nonemergency aircraft landings, but no site markings or improvements of any kind may be installed to support nonemergency use."

Chapter 8, Use of the Parks (page 8): "Noise and sonic booms resulting from overflights have the potential to adversely affect park resources and values such as fragile cultural resources, sensitive wildlife species, and the natural quiet of park settings and to interfere with their enjoyment by visitors. The National Park Service will monitor the effects of aircraft overflights on park resources and values and on visitor enjoyment. Since the National Park Service has no direct authority or jurisdiction over airspace above parks, it will actively seek the assistance of the Federal Aviation Administration and appropriate agencies of the Department of Defense to resolve overflight concerns and to prevent, eliminate, or minimize the derogation of park resources and values associated with overflight activity." (Emphasis added.)

Chapter 8, Use of the Parks (page 8). "Official NPS use of aircraft in and over parks will be limited to flights needed to support or carry out emergency operations or essential management activities in cases when there are no practical alternatives and when alternative methods would be unreasonable considering such factors as safety, effects on resources and visitor enjoyment, availability of personnel and equipment, impacts on other administrative activities, and overall cost-effectiveness.

To the extent practicable, NPS use of aircraft will be planned and scheduled to consolidate flights and to avoid or minimize adverse impacts on park resources and values and visitor enjoyment." (Emphasis added.)

- E. The purpose and scope of this plan have been examined in relation to the National Environmental Protection Act of 1969 (NEPA). The park has determined that revision and implementation of the plan is eligible for a Categorical Exclusion based on 516 DM 2, Appendix 2, Section 7.4 B(1), which allows for changes or amendments to an approved plan, when such changes cause no environmental impact. See Appendix B.
- F. National Park Service Aviation Management Guidelines (NPS-60, May 1989).

G. Other relevant NPS Guidelines, such as NPS-9, NPS-15, NPS-18, NPS-20, NPS-51, and NPS-56.

H. Departmental Rules 20.735-15:

1. General Responsibility. Employees shall be held accountable for Government property and moneys entrusted to them in connection with their official duties. It is each employee's responsibility to protect and conserve Government property, and to use it economically and for official purposes only.
2. Misuse Of Government Motor Vehicles Or Aircraft. Employees shall not willfully use or authorize the use of a Government-owned or leased passenger motor vehicle (aircraft) for other than official purposes. Violation of this provision shall automatically result in suspension from duty without compensation for not less than one month.

I. All aviation operations (unless a true emergency dictates otherwise) will also comply with:

-Appendix C-1: Low-Flying Aircraft: Interagency Agreement Between NPS, Fish and Wildlife Service, and FAA; Appendix C-2: GRCA Law Enforcement Directive "Low-Flying Aircraft: Documentation and Reporting"; and Appendix C-3: FAA Advisory Circular No. 91-36C Entitled "VISUAL FLIGHT RULES (VFR) FLIGHT NEAR NOISE-SENSITIVE AREAS."

-Titles 36 and 41 of the Code of Federal Regulations (CFR):

-Title 36 of the CFR, Chapter 1, Part 2 (Section 2.17: Aircraft) will be observed whenever possible.

-Title 41, Section 114-38.5003 as it pertains to the use of motor vehicles (aircraft) by employees other than while on official travel:

"The accomplishment of official business is the sole reason for acquiring and operating a Government motor vehicle (aircraft). It is for official purposes when a Government motor vehicle (aircraft) is:

- a. Used to carry out authorized programs, including program work under cooperative agreements or other contractual arrangements made pursuant to authority vested in the Department (see 41 CFR 101-25.100).
- b. Used to render assistance in major disasters or emergency situations as provided in 905 DM 1.
- c. Used by an officer or employee to travel between his/her residence and place of employment when such use is authorized as provided in 31 USC 638a and in accordance with the procedures set forth in 114-38.5005."

-Title 41 also prescribes the following penalties for unauthorized use:

"As provided in 31 USC 638a(c)(2), any officer or employee of the Government who willfully uses or authorizes the use of any Government-owned passenger motor vehicle, or of any passenger motor vehicle leased by the Government, for other than official purposes or otherwise violates the provisions of that statute shall be suspended from duty by the head of the Department concerned, without compensation, for not less than one month, and shall be suspended for a longer period or summarily removed from office if circumstances warrant."

- J. Users of park aircraft will be aware of and comply with aviation-related segments of these various Grand Canyon National Park acts and planning documents (arranged chronologically):
- Grand Canyon National Park (GRCA) Establishment Act of 1919
 - Grand Canyon National Monument Proclamation of 1932
 - Wilderness Act of 1964
 - Marble Canyon National Monument Proclamation of 1969
 - GRCA Enlargement Act of 1975 (Public Law 93-620, Section 8 specifically; see Appendix D-1)
 - GRCA Final Master Plan of 1976
 - GRCA Natural Resources Management Plan and Environmental Assessment, and Management Program Addendum, 1977
 - GRCA Natural/Cultural Resources Management Plan, 1984 Revision
 - National Parks Overflights Act of 1987 (Public Law 100-91; Section 3 specifically)(see Appendix D-2), and Special Federal Aviation Regulation 50-2 (Appendix D-3)
 - GRCA Backcountry Management Plan of August, 1988
 - GRCA Colorado River Management Plan, 1989

V. Grand Canyon National Park Operational Requirements

- A. Non-Routine Flights. "Non-routine" flights are for emergencies only and are exempted from the normal flight-approval process. Because of their life- or health-threatening nature, these types of flights cannot be scheduled in advance. They may occur in both approved and primitive landing zones, or at remote and isolated duty stations (also see Section VI of this document). The following projects meet the intent of the "non-routine" definition; i.e., automatic approval is given to use aircraft in the following instances (this is not a priority listing):

- Administrative Emergencies: some of which include life-threatening situations, involve public health, park closure, property protection (gross damage as from flooding or high winds), and endangered species.
- Fire Suppression or Monitoring Prescribed Natural Fires
- Law Enforcement Emergencies
- Medical Evacuations
- Pipeline Breaks
- Search and Rescue Operations
- Utility Outages

- B. Routine Flights. "Routine flights" are defined as those that can (and will be) scheduled in advance, and also meet the other requirements of this section. If a routine flight does not take place, there will be no significant threat to life, property, park resources, or services, and an alternate flight at a later time can be scheduled. Routine flights will not receive automatic approval. Section VI of this document entitled "Management Guidelines" deals with the day-to-day scheduling and conducting of routine flights.

Examples of "routine flights" are activities such as routine maintenance, special use and filming permits (if allowed), routine utility maintenance performed by utility companies, concession activities, VIP orientation, non-emergency personnel transports, administrative uses, contract work, and other similar operations.

- C. Remote/Isolated Duty Stations. "Remote duty stations" are areas not routinely serviced by public transportation and require the use of four-wheel drive vehicles or stock animals to access the work or residence site (examples are Tuweep, Indian Garden, Phantom Ranch, and Cottonwood). Routine NPS operations should be able to function effectively with minimal helicopter support in such areas.

"Isolated duty stations" are areas that are not accessible by public transportation, four-wheel drive vehicles, or stock animals, and require the use of specialized vehicles or equipment and/or extended travel by foot to access the work/residence site (North Rim or Tuweep during winter, Phantom Ranch when there is heavy trail damage, etc.). During periods of adverse weather conditions and resulting road or trail damage, remote duty stations will be considered as isolated areas, based on the limitation of access. Scheduled helicopter flights to isolated areas should only be frequent enough to provide continuity of NPS operations as well as addressing the personal needs of the area residents, such as supplying fresh foods, mail, and recreational opportunities.

Year-round weekly helicopter flights to the North Rim and Phantom Ranch have been implemented as a part of this plan. Other "blanket" flight requests (such as for routine water testing) may be implemented as needed and as authorized by the Superintendent. Flight requests approved under "blanket" use authority will have a life span of one year; i.e., they have to be reapplied for January 1 of each new year.

- D. Types of Passengers. The following categories of personnel are defined as "official passengers": (a) employees of the Federal Government traveling on official business; (b) members of Congress and employees of Congressional committee staffs whose work relates to DOI programs; and (c) non-Federal passengers when engaged in missions which enhance accomplishment of a NPS or park program, such as personnel of cooperating state, county or local agencies; representatives of foreign governments; and contractor representatives.

According to OAS 350 DM 1.7B, "unofficial passengers" are officers and employees of the Department of the Interior and other Federal agencies and members of their respective families when traveling for personal convenience. If approved by the Superintendent's office, unofficial passengers may be transported on a space available basis if the space is not needed in connection with the accomplishment of official business.

All persons who do not meet the definition of official or unofficial passengers (above) shall be considered unauthorized personnel and shall not be transported in any aircraft owned or operated by or on behalf of GRCA.

"Space Available" is defined as the use of an approved passenger seat by an unofficial person, when no higher need exists, and when the flight can still be conducted within aircraft weight and balance requirements. Although air service personnel make every effort to combine flights and maximize payload capacity (passengers and cargo), additional space will occasionally be available. Refer to the next two parts (Flight Priority and Sequencing, and The Flight-Approval Process) for additional information.

- E. Flight Priority and Sequencing. Flight priority and sequencing will be as follows:

- Non-Routine Flights
- NPS personnel and equipment on approved routine official business
- Personnel and associated work by such agencies as U.S. Fish and Wildlife Service, State Game and Fish, Sheriff's Departments, researchers, Bureau of Reclamation, U.S. Geological Survey, U.S. Marshals, U.S. West/Mountain Bell, and Arizona Public Service.
- NPS personnel and their dependents (who reside at the work site) returning from or going to assignments, furlough, or extended annual leave, and unofficial passengers.
- Concession employees (and their dependents) involved with off-season maintenance of government facilities, such as TW Recreational Services' winter caretakers on the North Rim.
- Space available passengers (who meet the applicable requirements) will be transported in the following sequence:
 1. Persons on official business or official cargo, whose mission may not be so pressing as to schedule a separate flight.
 2. Authorized Volunteers-In-Park, off-duty employees, and non-dependent family members.

F. The Flight-Approval Process

1. Non-Routine Flight Approval. Flights to accomplish activities meeting the non-routine definition (part A. 1. of this section) are automatically approved. A flight request form (see Appendix E: Miscellaneous Forms) for the non-routine mission will be completed by either the trip organizer or aviation service manager.
2. Routine Flight Approval. Trip organizers will fill out and submit the appropriate flight request form (see Appendix E: Miscellaneous Forms) to the Division Chief. Division Chiefs review routine requests and forward recommended ones to the Superintendent's Office. After review, the Superintendent's Office will send approved flight requests to the South Rim Helibase for scheduling; disapproved flight requests are returned to the division. It is the responsibility of the above named individuals to ensure flights are in compliance with this document. This procedure remains the same whether the request is for a helicopter or airplane flight.

Superintendent, GRCA, requires all routine flight requests to be submitted at least one week prior to the date of the flight. However, the Superintendent's Office may occasionally waive this requirement in special circumstances. In no instance will a routine flight be authorized unless a request has been submitted and approved at least 24 hours prior to actual flight time.

All requests for routine flights should be prepared by the individual responsible for the project using the "Routine Flight Request Form." This request will contain:

- (a) Statement of why the flight is necessary, instead of transportation by other, more traditional means (for example, walking, mules, boats, etc.). This should address what alternatives to helicopter use exist and why they are not being employed (is it due to economics or is time a factor?). Division Chiefs must certify that utilizing an aircraft is the minimum tool.
- (b) Who and/or what will be flown (if there is cargo, will it be flown internally or is a sling-load necessary?).
- (c) How many flights are necessary and the locations of all landings.

The North Rim and remote or isolated areas may make their requests via park mail or fax (if time permits) or verbally over the telephone or radio if time is relatively short but the flight is still considered routine. Review and approval/disapproval of the request will be based on the criteria in this plan and will be performed initially by the Division Chief or his/her Acting, and finally by the Superintendent's Office.

If the Division Chief is uncertain whether an activity justifies use of park aircraft, s/he should consult with the Park Air Operations Officer or employees of the Fire and Aviation Management Office for help in making a determination. Flight requests disapproved by the division can be appealed by the trip organizer through the Superintendent's Office only after the appropriate Division Chief(s) and Park Air Operations Officer have been consulted. Specific procedures for scheduling flights are contained in Section VI (Management Guidelines).

3. Space Available. Prospective space available passengers can either complete the "Space Available Passenger Request Form" (Appendix E), or they can contact the presiding aviation service manager directly to ascertain seat availability.

Employees wanting non-dependent family members to travel on a space available basis must (1) complete the "Space Available Passenger Request Form" and (2) write a cover memorandum to the Superintendent's Office explaining why this type of transportation is necessary. These two items will be sent to the appropriate supervisor at least two weeks in advance for review.

Aviation service managers should remind space available passengers that there is no guarantee of a return flight, and they should examine alternate means for returning to their duty station.

The Chief Ranger is delegated the responsibility for establishing suitability and for determining the interests of the government for any exception to the space available passengers indicated in this section.

4. Non-NPS Requests (Including Filming Permits). Non-NPS requests for DOI or non-DOI routine aircraft use will be forwarded to the appropriate Division Chief(s), and then to the Superintendent's Office for final review. Applications for filming requiring any kind of air support will be submitted to the Chief, Division of Visitor Services/Interpretation. If a DOI aircraft is to be used, the flight request will be handled like any routine request. However, if non-DOI aircraft are to be used, application to the park and to the FAA's Flight Standards District Office in Las Vegas must be made. This is due to Special Federal Aviation Regulation 50-2, which created the Grand Canyon National Park Special Flight Rules Area in November 1988.
5. Research. All research proposals indicating a need for air support will submit a Routine Flight Request Form as described below. Non-NPS researchers must make it known in their initial research proposal to the Superintendent if aircraft are needed for successful completion of their project. This information must be received by the park as a part of the researcher's initial proposal. Research requiring aircraft use will be coordinated through the Division of Resources Management and Planning. If air support is approved, researchers must be flexible in scheduling their flights, and should be prepared to stay in the field longer than planned if park emergencies arise.

Non-DOI pilots and aircraft must obtain authorization to operate in the Grand Canyon National Park Special Flight Rules Area from the FAA's Flight Standards District Office in Las Vegas and from the Superintendent, GRCA.

- G. Flight Abuse. Air operations personnel observing instances of flight abuse will report this information to the South Rim Helibase Manager, who will immediately inform the Park Air Operations Officer or Fire and Aviation Management Officer. Those individuals will investigate the complaint and take corrective action.
- H. Specific Activities and Applicable Policies. The following activities, procedures, and services will be guided by the indicated policy. When the explanation is more detailed than room allows, the appropriate reference is shown.
 1. Aircraft Data Cards. No aircraft will be used on NPS business unless a current aircraft data card is displayed. Note: USDA (U.S. Department of Agriculture) and DOI cards are interchangeable; i.e., aircraft carded under one agency can be used by the other.
 2. Pilot Qualification Cards. All pilots flying aircraft on official DOI business will carry a current Pilot Qualification Card.

3. Pilot Duty Limitations. Limitations will be adhered to except in cases of extreme emergency. Refer to OAS 351 DM Chapter 1, Section 1.9B(2).
4. Single-Engine Night Flights. This type of night flight will only be authorized when in compliance with Federal Aviation Regulations and OAS 351 DM Chapter 1, Section 1.3, and only when a life-threatening emergency exists. The pilot, South Rim Helibase Manager, Park Air Operations Officer, Park Emergency Medical Services (EMS) or SAR Coordinators (whomever is applicable and available) must concur in the determination that a single-engine night flight is necessary. No GRCA employee is authorized to make this decision alone.
5. Instrument Flight. Applicable OAS DMs/OPMs, and FARs will be followed.
6. Low Level Flight. Low level or special use flights will be performed in accordance with OAS DMs/OPMs and FARs.
7. Transporting Explosives and Flammables. Guidelines contained in OAS DMs (especially 351 DM Chapter 1: Flight Operations Standards and Procedures), OAS OPMs, FARs, and the DOI/OAS handbook entitled "Aviation Transport of Hazardous Materials" will be followed. Applicable OSHA recommendations (Section 1910.106-a-29) should also be considered. Transportation of flammable liquids (gasoline, acetylene, LPG, and so forth) will only occur in approved containers. Also refer to 49 CFR (Code of Federal Regulations) Part 175.
8. Transportation of Dogs and Other Animals. Transport will be done in accordance with any applicable OAS regulations or as emergency situations dictate. One example would be SAR operations with dog-handler teams being deployed during a search. All dogs and other animals will always be leashed/harnessed and attended while in the aircraft. Owners or attendants are responsible for removing litter from aircraft after such transports. Animal owners are encouraged to enclose animals in standard airplane pet carriers if they have them. Pilots should remember that the whine from an aircraft engine sometimes bothers animals (especially horses and mules, as when landing near a corral or stable).
9. Fuel Reserves. Applicable FARs and OAS DMs will be followed, whichever is stricter.
10. Procedures For Requesting Airspace Restrictions. Appendix F: Procedures For Restricting Airspace Over Grand Canyon National Park, Arizona, describes how to delineate and request temporary flight restrictions (TFR) under FAR 91.137 for airspace overlying disaster, SAR, or other major incidents. Also refer to OAS OPM 91-2 entitled "Temporary Flight Restrictions." Creating a TFR at GRCA can be very disruptive to the heavy volume of tour and other traffic over the park and must be implemented with care. TFRs will only be activated by the Park Air Operations Officer, the Fire and Aviation Management Officer, or their delegates.
11. Flight Hazard Maps. These maps will be maintained and kept current in both the South and North Rim Helibase Offices (see Appendix G). They will cover the entire park, and the information will be made available to other aviation service managers upon request. Pilots new to the area will be fully briefed by managers concerning these hazards to flight. At this same time pilots will also be made aware of all aspects of SFAR 50-2, including aerial sightseeing tour routes and aerial tour radio frequencies. Refer to OAS 352 DM Chapters 1 and 2 for additional information.

12. Pilot Briefings. All new contract/rental pilots will be briefed as soon as possible after the contract or rental agreement is activated. A significant part of this orientation will consist of a discussion of SFAR 50-2, which created the Grand Canyon National Park Special Flight Rules Area in November 1988. This briefing will also cover local communications systems (park, FAA, and other commonly agreed-upon frequencies and procedures); navigation aids; hazards to flight; military training areas and routes; legal descriptions (as used with wildland fires) and prominent landmarks (this includes common entry and exit points used by tour operators); payment procedures and administrative duties (record keeping, maintenance scheduling, etc.); safety and emergency procedures (emergency landing sites and emergency equipment available); and dispatching procedures (flight scheduling and flight following). Part of the introductory briefing for new contract/rental pilots would also include an extensive on-ground review of the information contained in Appendix H: Commonly Used Helibases/Helisports In Grand Canyon National Park. Another examination of these same helibases and helispots would take place from the air, with a knowledgeable pilot on board. The items mentioned in this paragraph are not all-inclusive, and there is more that should be covered in such an initial briefing. Daily briefings for experienced pilots can consist simply of the day's weather and flights as known at that time.
13. Authorized Passengers, Cargo, and Flights. Refer to earlier parts of this section (V) for full details.
14. Aircraft Operators. Grand Canyon National Park specifically requires that aircraft operators and aircraft (fixed- and rotary-wing) providing services to/for the park shall hold the requisite FAA licenses and certificates (that is, FAR Part 133, 135, and/or 137) to conduct all necessary missions. In addition, all operators shall be required to furnish proof that they hold applicable FAA authority. Whether or not aircraft are temporarily considered "public aircraft" does not exempt or release them from possessing appropriate FAA authority. However, aircraft owned by DOI are excepted from the requirements in this paragraph.
- I. References. Readers may find these other documents helpful:
- Air Tanker Performance Guides: General Instruction Manual (USDA Forest Service, General Technical Report INT-27)
 - U.S. Department Of Agriculture, Forest Service Manual Title 5700: Air Operations
 - Boise Interagency Fire Center's Interagency Helicopter Management Training Guide
 - OAS's Interagency Airspace Management Coordination Guide
 - The appendices of this Internal Aviation Management Plan
- J. Summary. Aircraft users will ensure that the aircraft is the minimum tool for the job (see Section IV). Flights must be combined whenever possible. It is further suggested that individuals in the field contemplate the possibility of hiking out or staying overnight, if practical. For example, if a project at Phantom Ranch lasts until late afternoon or early evening, individuals should consider spending the night, especially if it means being able to combine their trip out with a flight already scheduled for the next morning. Better work scheduling will eliminate the need for many flights.

VI. Management Guidelines

A. Aircraft: General

1. Safety. Safety will be integrated into all phases of air work. To minimize potential hazards, there will be intensive, regular inspections of air operations personnel, equipment, and techniques by the park's contract representative, air service managers, Park Air Operations and Fire Management Officers, and OAS representatives. As stated in Appendix A of this document, safety and orientation courses will be made available by the South Rim Helibase Manager.

Personnel involved in air operations activities will be instructed in the following safety requirements:

- (a) Passenger Safety. A properly briefed passenger should never be endangered by spinning rotors or propellers, yet some have lost their lives because they were not told the correct way to approach or depart aircraft. The simplest way to avoid accidents of this sort is to have the rotors and propellers stopped before passengers are enplaned and deplaned. Since this is not always possible (especially with helicopters), it is often necessary to enplane or deplane passengers while the engine, rotors, or propellers are at or near operational settings. If accidents are to be avoided, it is essential that all persons associated with aircraft operations be made aware of all possible hazards and instructed on how to avoid them.
- (b) Non-Flight Crew Personnel. Persons directly involved with loading or unloading passengers or cargo, aircraft servicing, rigging and connecting external loads, etc., must be thoroughly familiar with their duties. It is impossible to cover, in this policy, each and every type of operation or training matter related to aircraft. Two of the more obvious and common operations are:
 - Keep passengers and all unauthorized persons out of helicopter and airplane landing and take-off areas.
 - Brief passengers on the best way to approach or depart an airplane or helicopter with operating propellers or rotors.
2. Personal Protective Equipment (PPE). All personnel on board GRCA helicopters or airplanes (with the possible exception of a rescue victim) will be clothed and protected per standards contained in OAS 351 DM 1.7E and this policy.

All helicopter flights at GRCA are considered to be preplanned special use activities. Therefore, all crew members and passengers shall wear the following PPE:

- (a) aviator's protective helmets
- (b) fire-resistant clothing
- (c) leather boots (extending above the ankle)
- (d) all-leather, or leather and Nomex gloves

Additionally, all personnel will wear FAA or U.S. Coast Guard approved personal flotation devices (PFDs) when participating in flights along the Colorado River corridor (OAS 351 DM 1.7E).

Hardhats, eye and hearing protection are REQUIRED for helibase and helispot personnel working in the immediate vicinity (within 100 feet) of an operating helicopter. South Rim and North Rim Helibase personnel will wear an SPH-4 or similar aviator's helmet in lieu of a hardhat, eye and hearing protection. Helibase and helispot personnel will also wear Nomex or similar fire retardant clothing when working around aircraft.

Some personal protective equipment is available at the South and North Rim Helibases. It is recommended that employees do not wear nylon, dacron, polyester or other easily melted materials (synthetic or other fabrics with low temperature melting characteristics) beneath authorized protective clothing. To do so defeats the purpose of the flame retardant garments.

It is the responsibility of each crewmember, air service person and passenger to comply with these regulations. Air service managers are responsible for enforcing this section.

3. Flight Manifest and Load Calculations. Aviation service managers and pilots-in-command shall ensure that a manifest of all crew members and passengers onboard aircraft has been completed. A copy of this manifest shall remain at the point of initial departure. Manifest changes will be left at subsequent points of departure when practical.

OAS Form 67 "Helicopter Load Calculation" will be used for rotary-wing aircraft; comparable forms are used for fixed-wing flights. Applicable FARs and OAS DMs/OPMs will be observed. At the beginning of each working day, the South Rim Helibase can complete a helicopter load calculation based on the following: highest temperature expected that day, and highest elevation helicopter will land or take-off at that day. This becomes the "master" for the day and its parameters will NOT be exceeded. A new master can be created any time later in the day; those figures then become the standard. Other load calculations should be done any time air service personnel deem it prudent. Fixed-wing flights will complete a weight and balance load calculation prior to every flight.

4. Smoking. It is the policy of GRCA that smoking in and around aircraft (operating or shut down) during refueling operations is strictly prohibited. All other persons standing in the vicinity of rotor or propeller wash should not smoke because of the hazards of windblown ashes or embers. Smoking in-flight by passengers or pilot is prohibited. These smoking guidelines will be enforced by air service personnel (such as helibase or helispot managers).
5. Pilot Authority. The pilot of the aircraft will have the final say as to whether an aspect of the flight operation can be safely performed. The trip organizer also has the discretion of vetoing a trip if s/he believes that the mission cannot be successfully or safely completed.
6. General Scheduling Guidelines.
 - (a) See Section V, Part A, for specific information regarding the approval process for routine and non-routine flights.
 - (b) Actual scheduling of aircraft will be performed by the South Rim Helibase Manager or her/his acting, whether the request is for the helicopter or airplane.

- (c) Routine flights shall occur Monday through Friday, between the hours of 8 a.m. and 5 p.m. whenever possible. However, for noise abatement purposes, attempts should be made to concentrate flights toward the middle of the day. That is, if flexibility and other factors (such as density altitude) permit, the South Rim Helibase Manager will attempt to avoid early morning or late afternoon low-level flights which might disturb park visitors. Late afternoon flights must be arranged so that the helicopter is back at the South Rim Helibase by approximately 4:45 p.m. Routine flights in park aircraft will NOT be scheduled to take place on weekends at any time during the year. Unless special arrangements are made, these same conditions apply to airplane flights.
- (d) Non-routine flights will be scheduled as necessary and given appropriate priority. If a non-routine flight must be conducted on a weekend, and there is some flexibility as to the time of day the flight can go, it will occur between the hours of 10 a.m. and 3 p.m. This is a park-wide, year-round policy.
- (e) Scheduling will not be done through pilots. It is recognized that deviations from a routine flight are occasionally necessary to accomplish another mission of a routine nature with little or no loss of continuity, time, or efficiency. This is largely predicated on the schedule of the aircraft, fuel on board, and weather; the feasibility of such a deviation may be determined by the pilot or helibase manager. An example would be to arrange a stop at Roaring Springs while on a flight from the South Rim to the North Rim. Air support or dispatch personnel performing flight-following must be notified of any deviation of flight.
- (f) Combining trips and planning flights back-to-back will be a major objective in the scheduling process. Single occupancy flights will seldom be approved or scheduled unless there is an overwhelming reason why multiple seating or combining is not feasible. Flights scheduled to occur before or after normal working hours will include the appropriate overtime for helibase personnel and Park Ranger/Pilots (if the airplane is utilized and a DOI employee pilots it). Overtime and flight-time will be charged to the benefitting account. South Rim Helibase personnel should inform schedulers when it looks like overtime will have to be paid.
- (g) Helibase managers may check account numbers (provided by users) with the appropriate program manager and may also verify those numbers against the park's account chart. At present, helicopter charges are established every three years when the park helicopter contract is negotiated. However, the contract does allow minor adjustments in hourly rates if fuel prices change significantly. As stated in (f) above, flights for a single user or mission are charged to the benefitting account. However, when multiple users, divisions or missions are accommodated by a single flight, flight-time for each user is estimated by the South Rim Helibase Manager and each account is charged accordingly. That is, each user is only charged for that portion of the flight that was dedicated to their specific mission.

Also, under the current contract, individuals evacuated by the park helicopter for medical reasons must pay \$248 or actual flight-time, whichever is greater. These individuals are billed directly by the contractor. Helibase personnel and medical attendants will assist the contractor in obtaining billing information.

Airplane flights will be paid for in a manner similar to that outlined above. Airplanes are procured from a variety of sources and rates vary considerably.

- (h) For helicopter transports, passengers should arrive at the helibase/helispot at least 15 to 20 minutes prior to flight time; this allows time for manifesting, donning personal protective equipment, and verifying space available passengers. For airplane trips, passengers should arrive at the Grand Canyon National Park Airport 20 minutes prior to flight time. To arrive less than 15 or 20 minutes early may, at the very least, cause the flight to depart late, or may even cause the flight to be postponed. Helibase managers will make every effort to contact passengers if departure times are significantly delayed or postponed.
- (i) Items to be shipped by helicopter must arrive at the helibase or helispot so that air service personnel have adequate time to prepare cargo for each flight (e.g., weighing, loading cargo into slings, etc.). Shippers should realize that each helibase or helispot has limited storage space and there is always the possibility of loss of materials. Cargo accompanying passengers on an airplane or helicopter flight should be brought to the airport/helibase just prior to departure. Costs for cargo unavoidably damaged or lost during external ("sling") load operations must be borne by the benefitting account.
- (j) Small items of more than \$100 value, or particular parcels or documents of special non-monetary significance, should not be left at the South Rim Helibase without the formal acknowledgment of the South Rim Helibase Manager. When special arrangements have not been made, air service personnel are not responsible for the loss of items stored at the helibase.
- (k) Concessioners (as Fred Harvey and TWRS) or utility companies (as Arizona Public Service or U.S. West) wanting to use the park helicopter for transports (such as Fred Harvey cargo taken from the South Rim to Phantom Ranch) will submit a routine flight request form to the park's Division of Concessions Management for review. These companies should try to coordinate their needs with flights already scheduled. If approved, the flight request is sent to the Superintendent's Office for final authorization. Concessioners or utility company personnel can appeal disapproved flight requests through the Superintendent's Office. Companies will be billed for their portion of each flight.

Except in severe emergency situations, concessioners or utility companies will always use DOI aircraft when responding to GRCA service requests. This action is necessary because of the strict requirements and safety concerns of SFAR 50-2. However, during such emergencies, non-DOI aircraft may occasionally be utilized or contracted by NPS to operate in the SFAR 50-2 Special Flight Rules Area under authorization issued DOI by FAA. These aircraft and pilots will only receive DOI authorization to enter the SFAR 50-2 airspace after receiving a full safety briefing by GRCA aviation management personnel. GRCA air service personnel and/or other DOI employees may accompany the flight only if the aircraft and pilot possess current OAS certification. The request and use of non-DOI aircraft for park-related missions must be coordinated with GRCA aviation management personnel (such as the South Rim Helibase).

7. Environmental Impact Mitigation and Noise Abatement.
NPS Aviation Management Guideline (NPS-60) states that:

"There is often a fine line between accomplishing a goal and adversely affecting the resources we are obligated to protect. Our commitment to protecting park resources will undoubtedly be judged by how well we mitigate the impacts of our own aircraft use."

"Noise and visual pollution and their effect on solitude are of significant concern to both visitors and to management. Impacts to wildlife, cultural sites, and other area resources need to be weighed against benefits. There are also resource related statutory provisions which may apply in some areas, such as designated and/or recommended wilderness, which must be adhered to and understood."

Impacts to park resources (including natural quiet) by aircraft overflights are a serious consideration in flight planning at GRCA. There was enough concern regarding these impacts that Congress passed Public Law 100-91, the National Parks Overflights Act (August 1987; see Appendix D-2). Section 3 of this act required the Secretary of the Interior to submit recommendations to the FAA "regarding actions necessary for the protection of resources in the Grand Canyon from adverse impacts associated with aircraft overflights. The recommendations shall provide for substantial restoration of the natural quiet and experience of the park and protection of public health and safety from adverse effects associated with aircraft overflight."

Aircraft to be considered include all aircraft: DOI, private, commercial, military, and so forth. By November 1988 the FAA converted the NPS recommendations into Special Federal Aviation Regulation (SFAR) 50-2, which created the Grand Canyon National Park Special Flight Rules Area. In 1992 the NPS is required to submit a report to Congress "discussing whether the plan [SFAR 50-2] has succeeded in substantially restoring the natural quiet in the park . . ."

Although exempted from many of the requirements of SFAR 50-2 and Public Law 100-91, aircraft on DOI missions over GRCA will comply with applicable public laws, regulations, and noise abatement procedures as much as each mission allows. For example, when en route to emergencies or work locations on the Colorado River, flights will be at such altitudes so as to prevent unnecessary disturbance to park visitors along the flight route.

Pilots and air support personnel will have a good working knowledge of the requirements of SFAR 50-2. Refer to Section IV, part D, for other NPS policy mandates regarding aircraft operations and overflights.

B. Helicopter Guidelines

Helibase, heliport, and helispot size, construction, facilities, equipment, visual landing aids, and activities not specifically mentioned in this section will comply with the OAS 351 DM 2 Handbook entitled "Heliport Installation." Helicopter and safety guidelines contained in this document will be posted at every park helibase and developed helispot.

1. Personal Protective Equipment. Protective clothing for pilots, ground or helitack crew, and passengers will be in accordance with this policy (Part VI, section A 2) and OAS DMs/OPMs.
2. Load Calculations and Loading. Refer to previous parts of this section (Part VI, section A 3). The helibase/helispot manager has the responsibility for loading manifested personnel and cargo. Internal cargo will be packaged in the most compact and secure form possible.
3. Enplaning/Deplaning. The following rules apply to passenger activity around a helicopter:
 - STAY AWAY from the rear of the helicopter.
 - Approach from the front or side, but never out of the pilot's line of vision.

- Do not approach the helicopter until the pilot or air service personnel indicate that you should do so.
 - DO NOT APPROACH A HELICOPTER FROM ANY SIDE WHERE THE GROUND IS HIGHER than where the helicopter is standing or hovering. To do so could be fatal: you might walk into the tail or main rotor. If in an unimproved landing area, it may be necessary to crouch.
 - Hold on firmly to hats and loose articles. If your hard hat does not have a chin strap, carry it under your arm until in the aircraft. Baseball-type caps will NEVER be worn in or around the helicopter.
 - Never reach up or run after a hat or other object that may have been blown off or away.
 - Protect your eyes from blowing dust and debris by shielding them with your hand, by squinting, by looking away or (best of all) by wearing protective goggles. Unless equipped with eye goggles or glasses, or at least 200 feet from the helicopter, do NOT watch landing, take-off or hovering operations.
 - If you are suddenly blinded by dust or debris, STOP!! CROUCH LOW OR SIT DOWN AND AWAIT HELP. NEVER GROPE OR FEEL YOUR WAY TOWARD OR AWAY FROM THE HELICOPTER.
 - Allow helibase/helispot personnel to load your tools. Do not carry them with you to the helicopter.
 - If in a situation where you have to load long tools, KEEP THEM HORIZONTAL, parallel to the ground. NEVER CARRY THEM UPRIGHT! Stow items gently: windows have been broken or holes punched in the thin aluminum of the cargo compartment by rough handling.
 - When unloading cargo, never throw things! Make every action or movement slow and deliberate.
 - Keep clear of all helicopter rotors (main and tail). They are moving scythes and ARE FATAL! Unless you have business and are cleared by the pilot or helibase personnel, do not approach any helicopter (operating or not) closer than 150 feet.
 - Before take-off, secure all seatbelts and shoulder harnesses. Keep belts and harnesses fastened until instructed otherwise.
 - When leaving the helicopter, snap your seatbelt together behind you; this insures that it will not be hanging outside when you close the door (rotor wash makes seatbelts pound against the fuselage, causing extensive damage). Close the helicopter door slowly and firmly (don't slam it!).
4. External Loads. All external loads will be flown by a pilot appropriately carded. All parts of the flight will be in accordance with OAS procedures. External loads will be carefully prepared under the supervision of the helibase or helispot manager. All hookups will be by qualified personnel wearing the proper personal protective equipment.

Costs for cargo unavoidably damaged or lost during external ("sling") load operations must be borne by the benefitting account.

5. Fuel Storage and Handling. All aspects of fuel storage and handling will be in compliance with the OAS 351 DM 1 Handbook entitled "Aviation Fuel Handling." Hot refueling is prohibited at any park helibase. If this type of refueling must occur, it will take place at the contractor's heliport with all passengers off-loaded.
6. General Project Work. The same requirements will be in effect as when performing any other flight. Administrative, maintenance, or other project flights will either have helibase/helispot managers at departure/arrival points or personnel on board who are skilled in working with helicopters. The term "skilled" in this instance means that individuals have completed the appropriate OAS course(s) in the required time frame. The ultimate goal is for all operations on the ground and in the air to be conducted in the safest possible manner.
7. Initial Wildland Fire Attack Transportation and Support. The helicopter may be used by firefighting crews in support of suppression activities. Landing zones may be in remote areas and on non-approved sites. A helispot manager (who may be part of the firefighting crew) will accompany all initial attack flights to fires. Air support personnel and/or managers need not ride on support flights, but they do need to be at all departure points to handle load calculations.
8. Search and Rescue. The helicopter may be used to support SAR incidents. Landing zones may be in remote areas and on non-approved sites. Safety in all aspects of this endeavor will be paramount.
9. Winter Operations. The same procedures and requirements will be followed as during other times of the year. All landings in the snow may tentatively be approved by the South Rim Helibase Manager or Park Air Operations Officer, but the pilot has final authority. Deep snow will necessitate putting snowshoes on the ship and/or compaction of the helibase/helispot by ground personnel. (See OAS 351 DM 1.6 and 1.7, and NPS-60 Chapter 3, Section D, subsection 4.)
10. Wind Indicators. Standard international orange windsocks will be provided at all permanent helibases and developed helispots. Hand signals, flagging, smoke, or radio instructions may be sufficient at temporary helispots. When possible, windsocks are preferred.
11. Arrests/Law Enforcement Transports. Arrests and law enforcement transports requiring the use of the helicopter will comply with this document and with the GRCA operational procedure directive entitled "Helicopter Evacuation of Arrestee," dated February 8, 1983 (Appendix I).
12. Helicopter Toe-In, Single-Skid And Step-Out Landings. Due to the hazardous nature of these types of landings, toe-in, single-skid and step-out landings are prohibited. See OAS Operational Procedures Memorandum No. 91-5 for further information.
13. Short-Haul Operations. Guidelines set forth in applicable OAS DMs, IBs and OPMs, and in the GRCA Short-Haul Plan will be strictly complied with.
14. Landing Zones. The following locations are approved helibases and developed helispots used on a regular basis:

South Rim Helibase
North Rim Helibase
Desert View Helispot

Tuweep Helispot
 Phantom Ranch: Delta and Microwave Helispots
 Indian Garden: Residence and Pumphouse Helispots
 Roaring Springs: Pumphouse and Residence Helispots
 Cottonwood Helispot

Ground support can be anticipated at the above locations if prior contact is made. With few exceptions, aircraft will be met by qualified personnel for all routine and non-routine flights. The term "qualified" in this instance means that individuals have completed the appropriate OAS course(s) in the required time frame. As has been stated previously, the ultimate goal is for all operations on the ground and in the air to be conducted in the safest possible manner.

It will be the responsibility of the South Rim Helibase Manager to notify the appropriate ground support personnel prior to each flight. In addition, other more remote or isolated landing zones may be used in cases of emergencies or if administratively necessary for efficient completion of the park's mission. Since little or no improvement and no ground support may be available in these areas, pilot discretion is the overriding factor.

This policy prohibits landings at the Grand Canyon Clinic. Such landings present an unacceptable level of risk to personnel on the ground and in the air.

Attendants (Emergency Medical Technician level or higher) will always be provided on medical services flights. The EMS coordinator or project air operations officer may assign attendants commensurate with the needs of the patient. Refer to memorandums and plans issued by the GRCA EMS Coordinator regarding personnel and equipment to be dispatched on helicopter EMS calls. Also see Appendix J-1: GRCA Medevac Plan.

C. Airplane (Fixed-Wing) Guidelines

1. Personal Protective Equipment. Refer to this plan (Section VI A 2) and OAS DMs/OPMs.
2. Enplaning/Deplaning. On single-engine airplanes the engine will not be started until passengers are aboard and the doors are closed. At the completion of the flight, the engine will be shut down, propeller stopped, and all switches off before cabin doors are opened for passenger deplaning.
3. Transportation of Personnel and Cargo. All routine flights will be scheduled through the South Rim Helibase Manager or her/his acting, after receiving division and final approval from the Superintendent's Office. Use the Routine Flight Request Form and indicate (at the top) that you are requesting an airplane flight.
4. Reconnaissance Flights. These will be ordered through the appropriate manager using routine flight request forms. Some incidents (as SARs or wildland fires) may be categorized as emergencies, and the non-routine flight request procedures can be followed. Fire detection flights will adhere to the radio check-in requirements described later in this document, except that the time interval can be extended to 60 minutes. The time between check-ins will be arranged between the pilot or his observer and the airport/helibase manager or Park Service Dispatch before the flight gets airborne.
5. Retardant, Smokejumpers, Paracargo, Lead Plane, Air Attack, and Infra-Red Mapping/Detection. When necessary, these six types of aerial activity will be ordered by the appropriate official, and will comply with applicable OAS DMs and FARs.

VII. Dispatching and Flight Control

All flights (emergency or otherwise, airplane or helicopter) with/by park personnel in NPS, contract, rental, or donated aircraft will be scheduled through the South Rim Helibase Manager or her/his acting. Routine flights can only be scheduled once they have received all approvals and final authorization from the Superintendent's Office.

The primary responsibility for keeping track of park aircraft shall be with South Rim Helibase personnel or their designees (air service managers, the Park Air Operations Officer, etc.), and secondarily with Park Service Dispatch. This latter office very rarely knows the complete flight plan, fuel capabilities, or flight times of these aircraft. Flight-following or status checks will be performed by the South Rim Helibase Manager or his designee in accordance with this document and OAS 351 DM Chapter 1 (Flight Operations Standards and Procedures).

Pilots flying DOI aircraft away from northern Arizona will file an FAA flight plan. Other flights should have plans filed with the appropriate air service manager or Park Service Dispatch.

All flights in airspace over or surrounding the park will maintain radio contact on a predesignated frequency. On extended flights, the aircraft's status should be reported to the air service manager or to Park Service Dispatch every fifteen (15) minutes if possible. Aircraft should also call when landing at or departing from various helibases/helispots or the Grand Canyon National Park Airport. When departing a location, aircraft pilots will state their destination or purpose of the flight; the pilot or attendant also have the option of providing an ETE (Estimated Time Enroute) or ETA (Estimated Time of Arrival). In the case of a helicopter (designated as '210') leaving the North Rim for Phantom Ranch, the transmission to the South Rim Helibase Manager ('507' on the radio) might be: "507, 210 is off the North Rim enroute to Phantom Ranch". If the pilot wanted to give an ETE/ETA, he could do so after "Phantom Ranch." If the helicopter lands and shuts down at any other location other than the South Rim Helibase, the pilot or attendant will make sure the South Rim Helibase Manager or Park Service Dispatch knows where he is and how long he intends to stay there. When the pilot reports he is "shutting down" or "terminating," flight-following by helibase personnel or Park Service Dispatch has ended.

Outside agency aircraft working the park will normally have the capability to communicate on appropriate NPS frequencies. These aircraft should call "South Rim Helibase" or "Park Service Dispatch." New radio users will check with the South Rim Helibase Manager or Park Service Dispatch over the telephone prior to the flight to determine the preferred designation.

As mentioned in Section VI, fixed-wing aircraft performing reconnaissance flights over the park shall contact the correct ground liaison as soon as airborne. Airplanes have the option of using South Rim Helibase personnel or Park Service Dispatch for flight-following. If Park Service Dispatch is used, the pilot's or fire observer's transmission might be "Dispatch, Recon One is off Grand Canyon Airport at 23 past the hour for a fire recon." If desired, the transmission could contain the proposed reconnaissance route, the amount of time the aircraft is expected to be airborne, and/or the time of the next check-in.

The South Rim Helibase (or, if so directed, Park Service Dispatch) will keep a written record of aircraft position/status reports as well as the time the reports were transmitted. These individuals need to realize the critical nature of such reports. In essence, South Rim Helibase personnel and Park Service Dispatchers are fulfilling the functions of an FAA Flight Service Station. Proper notation of the aircraft's location, status, destination, and the current time will be crucial if the aircraft becomes overdue. In fact, if a pilot has no time to transmit an emergency message, this is the only way GRCA air service personnel will know an aircraft is overdue or down.

VIII. Overdue Aircraft

If an aircraft working for the NPS fails to report after (1) the estimated time en route given by the pilot or attendant, (2) the amount of time the air service manager or Park Service Dispatch estimated was necessary for the task, or (3) fifteen, thirty, or sixty minutes (whatever check-in interval was previously agreed upon for 'extended' flights, as north to Marble Canyon or west toward the Toroweap Valley and Meadview), it will be considered overdue.

Initial action will be for South Rim Helibase personnel to call the aircraft. These attempts will be continued for another fifteen minutes. If no response is received, the Park Air Operations Officer, SAR coordinator, air service manager, or (if requested) Park Service Dispatch will seek information from ground stations or personnel in the vicinity of the last report, along the expected flight path, or from other aircraft operating over the park. South Rim Helibase personnel will maintain a written log of attempts to contact the aircraft, should investigators need this information later.

After a reasonable effort to contact/locate the aircraft has failed, the aircraft will be considered missing and a search will be initiated.

IX. Search and Rescue Operations for DOI and Other Aircraft

Responsibility for initiating searches for missing GRCA-controlled (DOI) aircraft rests with the South Rim Helibase Manager or his designee (such as the SAR coordinator). Responsibility for searches of all other aircraft lost in GRCA is a combined effort of Grand Canyon National Park (usually the Park Air Operations Officer), the Coconino and Mohave County Sheriffs' Offices, the Air Force Rescue Coordination Center at Scott Air Force Base (Illinois), and the Federal Aviation Administration. The Civil Air Patrol may be involved, as well as the National Transportation Safety Board (NTSB). In extended search situations a SAR Overhead Team will probably be established. In that case, the SAR Air Operations Officer will coordinate aviation-related matters for the search.

Any Park Service employee who has reason to believe an aircraft has crash-landed in the park should immediately notify Park Service Dispatch or South Rim Helibase personnel. Those offices will take the necessary steps to initiate action.

Once the aircraft has been located and it is determined that an accident has occurred, action at the scene will follow the instructions given in OAS 352 DM 6 (Aviation Mishap Notification, Investigation and Reporting) and NPS-60 (Chapter 1, Section E, subsection 7: Accidents and Incidents). OAS conducts all accident and incident investigations involving NPS-associated aircraft, although they may defer to the NTSB when they feel it is appropriate.

As mentioned earlier, procedures for restricting airspace (when and if deemed necessary) over the search area or crash site are outlined in Appendix F.

X. Records and Reports

A. Accident and Incident Reporting

Basically, an aircraft accident (as defined by OAS) is an unplanned event that does substantial damage or causes serious injury when associated with the operation of applicable aircraft, occurring between the time the engine(s) is(are) started or rotors turning for the purpose of commencing flight, until the aircraft comes to rest with engines and propellers or rotors stopped, and the brakes set or wheel chocks in place, and all persons have disembarked. OAS 352 DM 6 and the "Aviation Mishap Notification, Investigation and Reporting Handbook" expand the definition further if the reader needs more information.

When an aircraft accident has occurred, it is imperative that the accident site be preserved much the same way a crime scene is protected. After necessary EMS activities are concluded, the accident site will be defined and a perimeter established with flagging or evidence tape. NPS personnel must make sure that everything inside the flagging remains exactly as it was found until trained aviation accident investigators arrive on the scene; this is crucial to the investigation.

An aircraft incident or malfunction (as defined by OAS) is an unplanned event that does damage which is less than aircraft accident criteria, or incurs injury requiring first aid and/or medical attention. It is a situation involving aircraft and/or personnel which results in deviation from standard aircraft operational procedures and has the potential of resulting in an accident. Examples of incidents are precautionary or forced landings (with minimal damage/injury), engine problems, bird strikes which damage some component of the aircraft, smoke in the cockpit, jettisoning or loss of cargo, and flying outside of daylight flight restrictions.

The Park Air Operations Officer or his acting will be notified immediately when either type of mishap occurs. They in turn must report accidents involving DOI aircraft immediately by phone to OAS and to the Regional Aviation Manager, who will in turn advise, in a timely manner, the National Aviation Manager.

As stated previously, the OAS conducts all accident and incident investigations involving NPS-associated aircraft, although they may defer to the NTSB when they feel it is appropriate.

The military has its own notification and reporting requirements for incidents. However, any accident involving military aircraft either in a NPS area or involving NPS personnel should also be reported to OAS and the Regional Aviation Manager.

A general or commercial aviation accident in an NPS area shall be reported to the nearest FAA facility. GRCA frequently assists the FAA and/or NTSB in conducting investigations, with help from the appropriate county sheriff's office.

It is the responsibility of the Park Air Operations Officer or his designee to insure that proper internal notification has been made. One copy of the aircraft accident report shall be retained in the originating office. Other copies will be forwarded to OAS, the Regional Aviation Manager, or the NPS National Aviation Manager as deemed appropriate. Users are encouraged to consult OAS 352 DM Chapter 6 for further instructions on report dispositions, aircraft accident or incident investigations, and follow-up actions.

The Park Air Operations Officer or his representative will also make sure that the Code Of Federal Regulations is complied with [Title 49: Transportation, Chapter VIII-National Transportation Safety Board, Part 830 (Rules Pertaining To The Notification And Reporting Of Aircraft Accidents Or Incidents And Overdue Aircraft, And Preservation Of Aircraft Wreckage, Mail, Cargo, And Records)].

Pilots and/or air service personnel are also required to report such incidents as near mid-air collisions and bird strikes. A near mid-air collision should be reported to NASA on Form ARC 277. Additional actions are required to report the incident to the FAA. That is, NASA will probably not inform the FAA about the near mid-air collision; the pilot will have to do that. Telephone calls or radio reports are not sufficient action to ensure that an investigation will occur. The pilot must submit a letter to the nearest FSDO (Flight Standards District Office) or GADO (General Aviation District Office), giving them all the information s/he has concerning the mishap.

Bird strikes should be reported on FAA Form 5200-7: Bird Strike/Incident Report (available at all FSDOs/GADOs). The nearest FSDO/GADO offices to GRCA at the time of this writing are in Scottsdale, Arizona, and Las Vegas, Nevada. Copies of most of the forms mentioned in this and the preceding paragraph are located in Appendix E: Miscellaneous Forms.

GRCA aviation support personnel and pilots should also be aware of and use OAS's Aviation Mishap Information System (AMIS). AMIS Form OAS-34 is used to report any occurrence, circumstance, or hazard which has the potential to cause an aviation accident. Incidents such as near mid-air or birdstrikes should be documented on an OAS-34. The Park Air Operations Officer and South and North Rim Helibase Managers shall ensure that the AMIS program is promoted at all levels of the park, and that AMIS forms are readily accessible to all employees.

AMIS reports can either be submitted to the Park Air Operations Officer, or mailed directly to OAS and NPS Aviation Safety Managers. If sent to the Air Operations Officer, s/he will ensure that copies are mailed to OAS (Boise) and NPS Division of Ranger Activities (Washington D.C.). Persons submitting AMIS reports should retain a copy for their records. AMIS reports are compiled and published annually by OAS and distributed to all DOI agencies. See Appendix E for a sample of the OAS-34 AMIS form.

B. Flight Plans

When pilots on park business file a flight plan, a copy can be kept on file at the South Rim Helibase or, if requested, in the Park Service Dispatch office.

C. Daily Flight Reports

The Aircraft Use Report (OAS-23), Record Of Aircraft Order, or the Daily Flight Report-Invoice (USDA-Forest Service Form 6500-122) will be used to record all flights where payment is required. Payment will be charged to the account number provided, or the user will be informed of the cost once the invoice is completed.

D. Annual Air Operations/Aviation Reports

The report will be prepared by the Park Air Operations Officer as directed by the Regional Aviation Officer or Superintendent, and among other things will include a (1) helicopter use report, (2) fixed-wing use report, and (3) air tanker use report.

XI. Coordination

A. Within Grand Canyon National Park

The operational requirements and management guidelines discussed in this document will be followed. Whenever feasible, GRCA air support personnel or EMS attendant(s) will accompany aircraft on emergency missions for the Sheriff's Office, Department of Public Safety, and so forth.

B. Away From Grand Canyon National Park

1. Release of park-controlled aircraft for out-of-park missions will only be done by the Chief Ranger, GRCA, or his Acting. The Chief Ranger may consult with the pilot, South Rim Helibase Manager, Park Air Operations Officer, and/or Park EMS/SAR Coordinators, whomever is appropriate and available. Park aircraft shall not be dispatched for temporary out-of-park assignments unless backup or standby aircraft are available for in-park missions.

Air service, EMS, SAR or other park personnel may accompany the aircraft, depending on the mission. If that individual is part of the air service function, he should record flight time and administer the contract.

2. Payments will be based on information recorded daily on the Aircraft Use Report (OAS-23), Record Of Aircraft Order, or Daily Flight Report-Invoice (USDA-Forest Service Form 6500-122). At the end of the mission, completed forms will be sent to the Park Air Operations Officer, his representative, or the contracting officer. The forms will be examined, charges entered, and then submitted for payment.
3. When feasible, GRCA air support personnel or EMS attendant(s) will accompany aircraft on emergency missions for the Sheriff's Office, Department of Public Safety, and so forth.

C. Other Federal, State, and County Agencies

Whenever an aircraft under contract to GRCA goes to work (temporarily) for other federal, state or county agencies, the same dispatching, management and payment procedures will be followed as described above in part B of this section.

D. Conditions Which Allow Temporary Release From the Contract

There are times when it may be advantageous to release aircraft from their contracts with GRCA. An example would be when a local Forest Service area would like to 'borrow' a park aircraft for a day or two for wildland fire suppression. The Park Air Operations Officer or his Acting will review such requests and approve or disapprove them. However, before aircraft are released, the park must make sure standby aircraft are available.



United States Department of the Interior

NATIONAL PARK SERVICE
GRAND CANYON NATIONAL PARK
P.O. BOX 129
GRAND CANYON, ARIZONA 86023-0129

IN REPLY REFER TO:

N3615(GRCA-8226)

JUN 7 1991

Memorandum

**GCES OFFICE COPY
DO NOT REMOVE!**

To: All Park Aircraft Users

From: Superintendent

Subject: 1991 Grand Canyon National Park Internal Aviation Management Plan

Enclosed is a copy of the 1991 Grand Canyon National Park Internal Aviation Management Plan (IAMP). Appendices to the IAMP are not included because of their bulk but are available upon request.

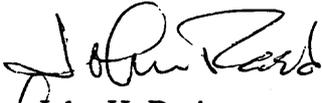
The IAMP applies only to aircraft on Department of the Interior (DOI) business and is not meant to cover private, commercial or military aviation operations in and around Grand Canyon. The IAMP is a park-wide plan that sets forth policies and procedures for all users, whether their mission is for administrative, maintenance, Emergency Medical Services, fire or other purposes, and whether they are flying in a helicopter or airplane. It is not written around any particular function or specific emergency response strategy.

With one exception, the procedures outlined in the IAMP went into effect at 0001 hours, Wednesday, May 15, 1991. The exception relates to submission of routine flight requests. Effective Monday, June 17, Routine Flight Requests must be submitted at least 7 days prior to flight-time. These types of flight requests will be held in the Superintendent's Office until each Thursday. At that time, the Air Operations Officer and Assistant Superintendent will review all routine flight requests that have accumulated over the past week. Approved requests will be signed off and forwarded to the South Rim Helibase for scheduling. Disapproved requests will be returned to the appropriate division. This procedure is the same whether the flight is for the helicopter or airplane. The process for handling Non-Routine Flight Requests remains unchanged.

The original version of the IAMP came out in January 1986 and has done an admirable job in improving the effectiveness and safety of park air operations. However, of the 10 bureaus within Interior, the National Park Service (during FY 90) was in third place for total hours flown, but was tied for second place for number of accidents. For the 5-year period of FY86 - FY90, the National Park Service (NPS) was again in third place for total hours flown, but was in first place for number of accidents. The NPS has an excellent air operations safety record at Grand Canyon. However, these operations must continue to be conducted in such a manner so as to not contribute to the national accident statistics.

Additionally, we have been mandated by Congress to limit the use of DOI/NPS aircraft over the park to emergency or essential management activities. We have also been instructed that we and the Federal Aviation Administration must manage aircraft (our own and all others) so as to "substantially restore the natural quiet" in the park. This plan, like the 1986 one, keeps us moving in that direction. The sensitivity of the aircraft issue at Grand Canyon still exists today, and will probably be with us for years to come.

Please become familiar with the 1991 IAMP. I will appreciate everyone's cooperation in complying with the standards set forth in this document. Contact Air Operations Officer/Park Pilot Mike Ebersole at (602) 638-7751 or FTS 765-7751 if you have questions.


John H. Davis

Enclosure