Scientific Committee for Oceanographic Aircraft Research (SCOAR)
Web/Telephone Conference Meeting
November 12, 2004

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Executive Summary

The UNOLS Scientific Committee for Oceanographic Aircraft Research (SCOAR) held a one day meeting using telephone and web conferencing through the UNOLS Office on November 12th, 2004. This was the fourth meeting of the committee with a focus on Safety Standards and Operating procedures for UNOLS National Oceanographic Aircraft Facilities (NOAF). Reports by Agency representatives and CIRPAS included progress with NSF's HIAPER aircraft, changes in NASA's structure for aircraft utilization and NOAA's aircraft operations. NOAA and CIRPAS provided extensive information on their safety standards and operating procedures. The committee also reviewed draft guidelines for becoming a UNOLS NOAF. Besides the safety standards, other UNOLS aircraft operations procedures were reviewed, including the aircraft request form, scheduling and funding mechanisms. The committee agreed to nominate Dick Zimmerman of Old Dominion University as a new member of the Committee.

Recommendations

o Develop more information on instrumentation development and how the ocean science community can effectively use the SBIR program.

Committee Action Items:

Letter to the community about the need for a long-range assessment of aircraft/satellite requirements	SCOAR - Bane
Draft an outline for a set of safety Standards-SCOAR to draft as a group	led by Charlie Flagg
Reorganization of request form with suggestions from committee.CIRPAS add detail/explanation pages for some (or all) of the sensors.	Haf and UNOLS Office
Final review of standard instrumentation to be sure ocean sciences are covered	SCOAR
John to send a message to Peter Wiebe recommending Dick Zimmerman for new member	John Bane - (done)

Mike Prince and Haf Jonsson to prepare a draft schedule and post on SCOAR Website.	Haf and Mike

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VIII. Draft National Oceanographic Aircraft Facility (NOAF) Guidelines
IX. Standard Instrumentation List for UNOLS Aircraft

Proceeding of the meetings

Welcome and Introductions
The UNOLS Scientific Oceanographic Aircraft Committee (SCOAR) meeting was held via Web and telephone conference on Friday, November 12, 2004. At 0810 attendees began logging into the meeting. John Bane, SCOAR Chair, called the meeting to order. Introductions were made. Meeting participants were John Bane, Ken Melville, Charlie Flagg, Dan Riemer, Haf Jonsson, Beth White, Cheryl Yuhas, Deb Barr, Rob Poston and Mike Prince

Accept the minutes of the March 2004 SCOAR Meeting
A motion was made and approved to accept the minutes of the March 2004 meeting.

Agency Reports

NOAA – Beth White
• Beth reports that it was a very busy year at NOAA's Aircraft Operations Center (AOC) as a result of the very active hurricane season this year. The P-3s and G-IV completed many surveillance and reconnaissance missions, even though their base of operations was moved to New Orleans International Airport on several occasions because of mandatory evacuations of MacDill AFB and Tampa. Fortunately there were no injuries or damage to NOAA's employees, aircraft or aircraft facilities. Dr. McFadden is not able to attend this meeting because he is in Canada preparing for a NESDIS project called Ocean Winds in February. Ocean Winds is a satellite scatterometer calibration/validation mission. Although possibly previously reported, NOAA acquired a third Twin Otter, which is used primarily for marine mammal surveys. NOAA also acquired a replacement Turbo Commander which is based in Chanhassen, Minnesota and is used for snow surveys. NOAA is continuing to instrument the G-IV jet to enhance and

increase data acquisition during hurricane season surveillance missions and winter storm surveys. A budget request is currently in place to hire personnel who will be able to perform sensor maintenance on the new instrumentation, to do data assimilation and reduction, perform data quality control, etc. for ingestion in hurricane and storm forecast models.

• Question from John Bane about how much time might be available to university investigators to use the Twin Otters.

• There are times when planned projects drop out and there is time available on relatively short notice. Otherwise the Twin Otters are normally fully scheduled. Many of NOAA's lighter aircraft are primarily operated as reimbursable assets and therefore the Aircraft Operations Center would welcome outside utilization when they can't fully utilize the airframe. A figure of 250 flight hours per year on an airframe is sometimes used as a minimum benchmark to determine whether an airframe is being effectively utilized or should be excessed.

• One NOAA Shrike and two helicopters (MD-500 and Bell 212) are currently not being utilized to this capacity.

• There are scientists in NOAA who would like to see a Twin Otter permanently stationed on the west coast, perhaps somewhere mid-way between Alaska and Southern California. This would reduce ferry costs they currently pay to get an aircraft from Tampa and back. Charlie Flagg suggested the possibility of stationing an aircraft at the CIRPAS facility in Monterey. There was a brief discussion on the benefits of a co-location of facilities, including the benefits to NOAA for working with people involved in UAV operations.

• On November 1, a Change of Command ceremony took place at NOAA's Aircraft Operations Center. Captain Bob Maxson retired and Captain Steve Kozak assumed command of AOC.

• John asked if NOAA could provide a summary of FY 04 Scientific missions. Beth and Lieutenant Commander Deb Barr will try to put together prior to the next meeting.

NASA/ICCAGRA – Cheryl Yuhas

• Exploration vision from the President has become an over-riding emphasis for all areas of NASA. Aeronautics and Earth Science projects are examined to determine how they contribute to the Exploration mission.

• Earth Science and Space Science enterprises were merged in August to form the Science Mission Directorate, which comprises approximately half the agency's budget.

• The catalogue approach to providing aircraft is going forward. This approach provides NASA investigators with a variety of aircraft services:

o ER2, WB57, DC8, P3B are the NASA aircraft that will be available in FY05 as base-funded Science aircraft. There are also a Lear Jet outfitted for remote sensing, and an S-3 and Twin Otter outfitted for icing research.
o Non-NASA aircraft which will be available in FY05 include a commercial Twin Otter based in Las Vegas and outfitted for remote sensing, Oregon-based Sky Research Cessna Caravan and J-31, Dynamic Aviation KingAir based in Virginia and the Aerosonde UAV.
o Federal Aircraft: We have or are developing MOA's for the NRL P3 , DOE King Air, and NOAA citation. Rob says that the Citation has some corrosion problems and will be getting some avionics upgrades and will not be available until spring 2005.

• Experimental platform project is working with both advanced aircraft such the Scaled Composites Proteus and White Knight (the Rutan aircraft which launched X-Prize winner SpaceShipOne), as well as UAVs such as Altair, Predator B and Globalhawk. NASA anticipates starting to use UAVs more routinely in field experiments as early as FY2005.

• Cheryl reviewed some of the science missions over the past year: Aura Validation, INTEX (part of ICARTT), Antarctic Sea Ice, Central & South America AirSAR, and Soil Moisture Experiment. Their P3 has been down and they have used the NRL P3 for 2 missions.

• Missions in FY2005 include the ongoing Aura validation, the Tropical Clouds Systems and Processes experiment as our priority campaigns. We anticipate additional missions for the Hydrology program, such as Soil Moisture, but no specifics are planned yet.

• Non-NASA reimbursable cost for the ER2 and WB57 is $6500/hour. For other aircraft, NASA-sponsored investigations will be charged $2500/hour for high-altitude missions, $4000/hour for heavy-lift missions, and light aircraft (e.g. Twin Otters, KingAirs) whatever the operator charges.

• NASA is experiencing the same Catch-22 as many other aircraft operators: Not enough money to fully utilize aircraft, which makes them more expensive per hour, which in turn reduces utilization further.

• Explained the exploration mission. Exploration is human presence outside of the earth's orbit to other planets, etc. Science component would be understanding the environment where humans would go.

- **ICCAGRA**

• Has not met since last SCOAR meeting.

• Charter has not been changed, suggestions for update were very minor.

• NSF hosted a community workshop on use of aircraft for Antarctic research, and most ICCAGRA agencies participated. The community is most interested in acquiring an LC-130 (ski-equipped C130), although multiple aircraft options were under consideration.

• The costs of maintaining the aircraft are becoming so expensive that in some cases the agency can only afford one mission a year after paying for just having the aircraft. The idea of having a UNOLS model for aircraft was discussed. This means that we have a national clearing house of requirements.

• Discussion about how this would work with federal agency operators and university run aircraft. Does not seem to matter whom operates the aircraft if they agree to cooperatively schedule the aircraft to fully utilize the available aircraft and get as many projects into the field as possible.

• What is the utilization data for the existing fleet of aircraft and what are the requirements for the future use of aircraft. What mix and number of assets are required. We will need some uniformity of sensors, airworthiness standards, etc. for this to work.

• Need a fleet renewal plan to for aircraft…this would be a joint effort between the university communities and the agencies.

• How would you get this started? Perhaps the NRC could ask that this be done, identify the needs for earth observing using aircraft and satellites.

• NOAA is hosting a workshop in Boulder regarding the use of UAV's for Earth science, jointly sponsored with DOE and NASA. The primary science objectives are based on the Climate Change Science Program's observing strategy, and the objective of the workshop is to formulate requirements for an interagency initiative.

- **SCOAR Action Item**: letter to the community about the need for a long range assessment of aircraft/satellite requirements.

NSF report – A brief summary of Jim Hunning's written report was read. (Appendix III)

• http://www.hiaper.ucar.edu/index.html

• There are some issues with regards to the budget for operating the aircraft that may come at the expense of other programs. They have not increased the number of FTE's to fully utilize two aircraft. This may limit the number of field experiments that can be supported. The number of crews available may not be adequate to fully utilize all of the aircraft.

• This is a top priority for NCAR for the next couple of years and they really feel the need to make it a success.

UNOLS - Mike Prince

• Mike gave a brief report on UNOLS fleet renewal efforts for new research vessels including:

o a new 3-D seismic vessel to replace Ewing,
o the design of the Alaska Region Research Vessel,
o the construction of a replacement vessel for the University of Delaware's Cape Henlopen at Dakota Creek Industries in Anacortes, Washington,
o the design and acquisition process by NSF for three new Regional Class vessels,
o the process of evaluating the Navy's X-Craft (high speed catamaran) against mono-hull and SWATH designs as a potential hull type for new Ocean Class vessels,
o the design of a replacement Human Occupied Vehicle with greater depth capability than Alvin.

• There was some discussion about the helicopter and UAV support that the X-Craft might provide.

• FIC Website has more detail: http://www.unols.org/committees/fic/index.html

CIRPAS – Haf Jonsson

• Five missions with twin otter, lots of missions with both Pelicans and missions with the AUV's.

• Ocean Survey flights for Steve Ramp: Bi-weekly flights mapping sea surface temperature and taking atmospheric measurements all through 2003 through March 2004.

• NASA-sponsored measurements – photometer measurements (EVE) as far out as possible, coordinated with Satellite measurements.

• Cloud measurements out of Monterey through July for Dean Hegg.

• Down for a couple of days during Dean's mission due to a bad regulator and loss of power.

• August went to Cleveland in a huge experiment called ICART with John Seinfeld, air chemistry and cloud formation. Had 11 aircraft and a number of vessels and ground measurements.

• This ended the year and the plane went to Carlsbad for maintenance to repair corrosion and repainting

• Next year they have a proposal into ONR with four projects. They are hearing from DOE and NASA. [Draft Schedule]

• ONR projects included a towed platform that will be tested.

• Series of short engineering flights in March for new instruments.

• Approximate budget of $1.3M. Flew about 270 hours last year, which is marginal for keeping their people employed but with Pelican flight hours they were fully employed. Looking at around 300 hours of

flying which keeps the science side of the house busy, but is a little light for the ops people. It has been useful to move the ops people to the Pelican's to keep them busy. More than 300 hours and four missions would be beyond the science support capability. May need to shift some of the science workload to the science users. They are hoping they can get more science support from CALTECH.

• CALTECH contract is coming up for renewal next year. Thinking about getting CALTECH out of flying the aircraft and more into payload and instrument development activities. They would use contractors for operations support.

• John Bane asked how we could strengthen the interaction and support from SCOAR for CIRPAS. What would make the situation better for CIRPAS:

  • Some guidance regarding the SBIR instrument development schemes that would be useful to Ocean Sciences. Find people that would have the expertise to develop and mentor sensors for ocean sciences.
  • John Bane, thought that the development of useful expendable in-situ sensors that are easy to use and obtain would be valuable. Might MEMS (Micro Electro-Mechanical Systems) devices be a factor? Very small, inexpensive sensors that would be off the shelf. Current launch chutes require large canisters with a lot of wasted space.
  • Letter to the community can include information about instrument development, SBIR's and the need for ocean science input. There is a lot of money available, but it is not always effectively used, because too much is left up to the companies.

Safety Standards

• SCOAR goal is to provide guidance regarding safety standards for UNOLS NOAF.

• John Bane introduced the concept. Talked about the nature of safety standards for UNOLS vessels that are uninspected. With aircraft, most are already operating under Federal Regulations or Agency regulations for public aircraft. John's sense is that there are sufficient safety and operations regulations in place already for most aircraft. The UNOLS standards could merely indicate the level of regulations that should be adhered to.

• Rob Poston, NOAA Corps CDR, AOC in Tampa Operations Division. Flies G4 for NOAA and is Dept. Chief for Operations Division.

• Generally follows FAA Part 91 of the aviation regulations. They are inspected by the local FAA Flight Standards District Office (FSDO) inspectors. Most of the NOAA aircraft, except the P3's have airworthiness certificates. Their procedures are contained in the AOC Aircraft Operations Manual (Appendix IV)

• They follow all the procedures for making modifications as if they were going to ask for a Supplemental Type Certificate for a single aircraft or for a class of aircraft. They could devise a kit that

could be applicable to other aircraft operators. They could get a field approval from the FAA with a simple form (337 form). They will always do the 337 form, even if FAA does not require it.

• P3's are not certificated by the FAA and so they can do what ever they want. However they try to adhere to Navy inspectors.

• If NOAA does not adhere to the FAA airworthiness programs, then they would have to maintain their own. They use the FAA inspection methods, but they conduct their own inspections. They meet or exceed all the manufacturers' guidelines.

• Ken Melville asked what developments the Federal Government is looking at with regards to low level flight rules/inspections. A big concern was salt/water ingestion into the engine and the possibility of corrosion and engine failure. They now do an engine wash after every low level flight. They are all authorized for flights down to 500 feet, but the Commanding officer can authorize flights below 500 feet, down to 200 feet.

• The towed sled would allow getting lower to the surface, but would probably not be useful in getting data in high winds or turbulent air.

• NASA's program grew out of Air Force procedures, they have their own internal air-worthiness program. The NASA aircraft are not maintaining the Aircraft Type Certificates. They are operating as Public (State) aircraft.

• NOAA has found that it is simpler sometimes to maintain the ATC when going to foreign operating areas. The P3's could be certificated, but it would take a lot of money and time. NASA's DC8, P3's. NASA maintains their own airworthiness programs for their DC-8 and P-3s.

• Discussed how it is determined what regulations would apply to various operations.

• Standards for Scientists – safety issues that apply to bringing scientists on board. Allows scientists planning to use aircraft to know whether or not it is safe to send people on board the aircraft.

• Department of Interior Aviation Management Directorate (AMD) inspections and standards are used for chartering aircraft. AMD in Interior maintains a list of qualified aircraft. This could be a clearing house for safe aircraft or a set of standards to adhere to.

• In addition to DOI/AMD other agencies/organizations such as DOE, NASA and ICAP are all capable of looking at programs at operating institutions.

• CIRPAS operates their aircraft as Public Aircraft and they have a process using an engineering firm to create a modification to an airframe. They then use another engineering firm to test post modification to ensure it is safe and to determine what the operating parameters should be. This is a wholly internal

airworthiness process. They have a separate maintenance certification program. They adhere to FAA regulations for operations. They use a Navy flight certification person from NPS to certify the aircraft.

• Comment from Bob Bluth after meeting: CIRPAS operates their aircraft as Public Use - State (Department of State). Since NPS is part of the DoD, when we contract out for flight services, we use a D-FAR (Defense Federal Acquisition Regulation) clause. This is the only way any DoD entity can operate aircraft under contract. Bob sent two documents, first is the Flight Risk Clause (Appendix V) and the other is the DoD manual referenced in this clause (Appendix VI). These two documents along with the CIRPAS flight procedures govern all flight safety issues. He'll pass on a copy of their procedures later.

• Bob ended up getting in touch with the FAA's Western Pacific Region Counsel, Monroe Balton on this awhile back (as directed in AC 20-132, the advisory circular that points out public aircraft cannot operate outside of US without a valid airworthiness certificate). In AC 20-132, "State Aircraft" are given a broad definition. In fact, an update to AC 20-132 (AC 00-1.1) tries to better define aircraft that qualify as public/state aircraft and references changes to public law to do the same. State aircraft are excluded from the airworthiness certificate requirement to operate outside US per Article 3 of Convention on International Civil Aviation (to which the US is a party). It was the determination of the West-Pac Counsel that the CIRPAS Otter and Pelican aircraft qualify as state aircraft. He was very clear.

• Standards:

• Use existing regulations and standards to the extent possible. Charlie Flagg provided a list of Federal Regulations that might apply to UNOLS aircraft operations (Appendix VII)
• Have a method for verifying that public use standards and airworthiness programs meet or exceed FAA and/or ICAP regulations or guidelines.

• Airworthiness, modification, maintenance, equipment.

    o Private and commercial aircraft

• Operated under FAA air-worthiness certification guidelines

• Could be checked by the OAF/Interior and/or FAA

• North Dakota aircraft operate under part 135? How do they operate? Review standards, flight readiness review and preflight review. Cheryl will provide the written NASA instructions.

• Private aircraft like John Bane’s use FAR Part 91.

• Need rules on chartering private aircraft.

o Public owned aircraft

• Public Use – surrenders ATC and operates under their own air-worthiness certification programs.

• Burden for safety on operator

• Might present problems for operations in foreign air-space.

• Maintained under FAA air-worthiness programs and certification.

o Operations, flight rules

• Flight rules

• Flight training – not necessarily required by Federal Aviation Regulations (FAR)

• Water survival and egress training

o Scientific personnel safety and rules

• Basic guidelines for safe working habits around aircraft.

• Personal survival, emergency procedures training or orientation

• Medical requirements for scientists based on elevation of operations or a signed statement.

• Flight Crew, Air Crew, Mission Crew

• Flight Crew – Employees that fly plane

• Air Crew – Employees that work the plane, have emergency tasks

• Mission Crew – No emergency tasks, but get orientation and emergency training.

• Action Item – Draft an outline for a set of safety standards – SCOAR draft as a group, led by Charlie Flagg.

Draft Guidelines for NOAF.

• Draft document was circulated (Appendix VIII). Some minor changes are still needed to convert from

ships to aircraft. Major stumbling block at this point is the lack of safety standards. We could change the references to specific safety regulations and insert UNOLS safety standards as the benchmark. We would then wait until the UNOLS Operations and Safety Standards are complete.

CIRPAS Aircraft Request Form – Haf

• Described the simple form which has two basic parts: I) who, when, where; and II) a section on what sensors and services they would need.

• So far, Haf has emailed the word document version of the form and no one has used the online form.

• Talked about the need to break the sensor suites into standard sensors and then specialized sensors by category or plane configuration, reorganized on the form. SCOAR needs to review the list of standard instrumentation one more time to be sure it meets the needs of ocean scientists (Appendix IX)

• Questions asked about whether checking off on a certain sensor would affect the cost, should costs be shown.

• Instruments, deployable sensors, etc. that need to be integrated into the aircraft. This is covered by the last block on the form.

• Discussed the need for mentors for all these instruments and are all instruments really necessary on this request form/list.

• **ACTION ITEM:** Reorganize form using suggestions from committee and CIRPAS. Add detail/explanation pages form for some (or all) of the sensors.

• **RECOMMENDATION:** Develop more information on instrumentation development and how the ocean science community can effectively use the SBIR program.

• **ACTION ITEM:** Final review of standard instrumentation to be sure ocean sciences are covered. (Appendix IX)

Candidates for SCOAR

• Reviewed the candidates

• MSA to invite Zimmerman to join the committee.

• **ACTION ITEM:** John to send a message to Peter Wiebe

Funding mechanisms

• John reviewed the concept of facilities funding for NOAF facilities and his discussions with Jim Yoder and Mike Reeve.

• Mike Reeve indicated that just because the facility is designated by UNOLS does not mean that NSF is obligated to fund that in a certain way.

• Discussed the impacts of funding facilities as a line item in your budget.

• Proposal pressure may be necessary before any real change in made in funding mechanisms.

Scheduling

• Action item: Mike and Haf prepare a draft schedule and post on SCOAR web site.

Adjourned at 5:00 pm

Scientific Committee for Oceanographic Aircraft Research (SCOAR)

DRAFT Meeting Agenda – Nov 12, 2004

To be held via web/telephone conference – Times are *Eastern Standard Time*

11:00 to 11:30 - Welcome and Introduction

- Welcome by SCOAR Chair and UNOLS Executive Secretary
- Introduction of participants
- Accept minutes of the March 2003 meeting
- Review Agenda for this meeting

11:30 to 12:30 - Agency and CIRPAS Reports

- UNOLS report - Mike Prince
- CIRPAS report - Bob Bluth and/or Haf Jonsson
- Overviews from federal agency representatives
  - ONR - John Freitag
  - NSF - Jim Huning (see attached report)
  - NOAA - Beth White and/or Jim McFadden
  - NASA/ICCAGRA - Cheryl Yuhas

12:30 to 1:15 - NOAF Safety Regulations & Inspections - White/Barr and CIRPAS

- **Link to ICAP Safety Standards Guidelines**
- NOAA Aircraft Operations Center Operations Manual (269K PDF file)

1:15 to 2:00 - *Break*

2:00 to 3:00 - Discussion of Guidelines for Becoming a NOAF - Flagg and Prince

- **Draft Guidelines PDF or DOC file**
- **Federal Regs that might apply to UNOLS NOAF (PDF)**

3:00 to 4:00 - SCOAR Activity Reports and Discussion

- CIRPAS Aircraft Request Form - Jonsson
- Standard instrumentation suite - Bane and Jonsson
- Scheduling and funding mechanisms - Bane and Prince

4:00 to 5:00 - Future Business

- Committee membership - SCOAR
- Action item list and assignment - SCOAR
- Next meeting - SCOAR

5:00 - Adjourn

SCOAR Meeting Participants – Appendix II
November 12, 2004
Phone/Web Conference Meeting

Participant	*Institution/Agency*	*Email Address*
John Bane.	UNC, Chapel Hill	bane@unc.edu
Charles Flagg	SUNY, Stonybrook	cflagg@ms.cc.sunysb.edu
Mike Prince	UNOLS	office@unols.org
Elizabeth White	NOAA	elizabeth.white@noaa.gov
Haf Jonsson	CALTECH/CIRPAS	hjonsson@nps.navy.mil
Daniel Riemer	University of Miami/RSMAS	driemer@rsmas.miami.edu
Ken Melville	UCSD/SIO	kmelville@ucsd.edu
Cheryl Yuhas	NASA	cheryl.yuhas@hq.nasa.gov
Deb Barr	NOAA	debora.r.barr@noaa.gov
Rob Poston	NOAA	rob.poston@noaa.gov.

From: "Huning, James R." <jhuning@nsf.gov>
Date: Wed, 27 Oct 2004 08:35:49 -0400
To: "'bane@unc.edu'" <bane@unc.edu>
Subject: FW: HIAPER status

John,

UPDATE to below:

HIAPER was ferried to SAV on October 22nd. 3+ hour flight (lots of testing), to 51,000 feet and checked out systems. There were a total of 32 squaks that have to be worked off, none are significant. Pilots reported thatt the plane flew extremely well; they were somewhat surprized considering the magnitude of structural mods that were made.

PAT = Project Advisory Team; internal to NSF

HIAPER PAT Members:

It has been quite a while since I have sent a HIAPER status report. Attached to this email is a recent MREFC status report, modified and updated, that I hope you will find of interest. I am extremely pleased to report that HIAPER has now been removed from the hangar at Lockheed, Greenville SC and a few final nits are being taken care before its ferry flight back to Savannah (SAV), GA where it will be painted and the interior work completed. It will then be flown to JEFFCO airport in Colorado where the ICS and SATCOM will be installed as well as the research system infrastructure.

HIAPER was to have been ferried to SAV on Monday but it had several delays and was rescheduled for today. However, some paperwork (certification issue) has yet to be finalized and so the ferry fight has been rescheduled for tomorrow. That flight will also include several flight hours to insure system and aircraft performance.

I want to congratulate the UCAR/NCAR, GAC, LMAC and NSF teams for a job well done.

Jim

ps I have included some pictures, including the basic paint job, riveting for a nadir port, and pictures of HIAPER being prepared for and exiting the hangar at Lockheed Martin. The last two pictures are of the hangar, taken in August. One is from the tarmac and the other inside. The hangar is almost completed as of today. The hangar was not part of the MREFC project but still a rather important piece of the overall activity.

If you have any questions please feel free to call, x4703. Thanks for your help in the past.

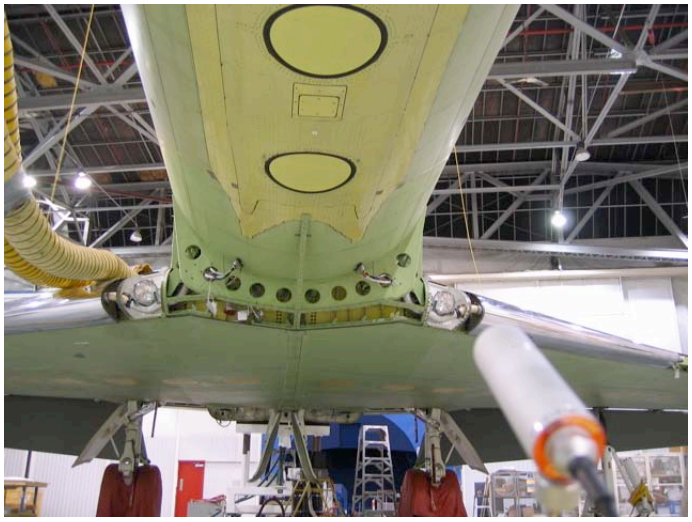
HIAPER STATUS

Schedule

HIAPER will be ferried back to Savannah for painting and final interior installation on Thursday, October 21. 2004. It has been removed from the hangar and some final (and minor) loose ends had to be completed before the ferry flight, which will also include system and aircraft performance verification.

Modifications and Wing Pod Design

Structural modifications are completed at Lockheed Martin (LMAC), Greenville, S.C., and HIAPER recently passed a major milestone: the high blow test (*photo*). The fuselage was pressurized to 17.5 PSI and the pressure held the full 60 seconds required by the FAA for certification. GAC and LMAC officials will conduct a full review of the data collected to insure the integrity of the aircraft and to prepare paperwork for submission to the FAA.



HIAPER undergoing High Blow Test (17.5 PSI)
Note nadir ports with plate covers.

GAC engineering has also determined that the NCAR wing pod design (diameter, size and position) falls within the aerodynamic envelope of the GV. The successful design of a wing pod also is a major milestone because a number of instruments under development and planned for future development require use of a wing pod. There are some issues that require additional study (the fairing and pylon design), but the major hurdle has been passed. In addition, the wing may require some beefing up. The engineering loads IPT has not completed its study.

The electrical systems are complete and aircraft power has been re-established. The LCS is effectively completed.

In June it was reported that due to vendor supply problems that the ferry date to JEFFCO from SAV will be December. There was a slip in the original ferry date back to SAV and it was, in part, due to some very critical testing for FAA certification and, understandably, some issues had to be worked. For example, prior to the official High Blow Test, initial pressurization indicated leaks. These had to be corrected prior to continuing any testing. I do want to emphasize that this is not uncommon. There were 2 large nadir ports and one large zenith port installed in the airframe, in addition to many aperture plates. Each of these had to be tested separately for leaks, and, as expected, some did leak. This then required additional re-enforcement.

The critical point is the start up period for our progressive science missions has not been compromised. Sufficient work arounds have been implemented.

While there will be a HIAPER reception ceremony at NCAR when the plane arrives, the main reception will occur after the progressive science missions begin. The location and timing of that reception is still under discussion between UCAR/NCAR and NSF.

Infrastructure

The infrastructure for the GV continues to be designed and fabricated by NCAR, primarily the Design and Fabrication Services group within ATD.

Instrumentation Solicitation

Fifteen instruments were selected for the initial suite of instrumentation for HIAPER, and UCAR Contracts Office has almost concluded the contracts with the winning institutions. The instruments selected are:

Small Ice Detector (SID);
HIAPER Atmospheric Radiation Package;
Fast Ozone Instrument;
Trace Organic Gas Analyzer;
HIAPER Advanced Whole Air Sampler;
Quantum Cascade Laser Spectrometer;
Autonomous Airborne Ozone Photometer;
High Spectral Resolution Lidar;
GPS Multistatic and Occultation Instrument;
Vertical Cavity Surface Emitting Laser Hygrometer;
Time of Flight Aerosol Mass Spectrometer;
Microwave Temperature Profiler;
HIAPER Cloud Radar;
Chemical Ionization Mass Spectrometer;

2D-S (stereo) and Cloud Particle Imager Probe

As previously reported, these instruments cut across all the major scientific thrusts identified during the instrumentation workshop and reviewed by the HIAPER Advisory Committee.

New Hangar

Although its not part of the HIAPER MREFC project, a new hangar was required to house the GV and our other aircraft, especially the interagency aircraft. The new hangar is basically completed – the physical structure, fire suppression and fire alarm system are all completed. Paving for vehicle parking and aircraft ramps are finished.

Landscaping and HVAC work is in progress.

Meetings

The next meeting of the HIAPER Advisory Committee is 8 November 2004. I will participate in that meeting.

Budget

All funds have been sent to UCAR.

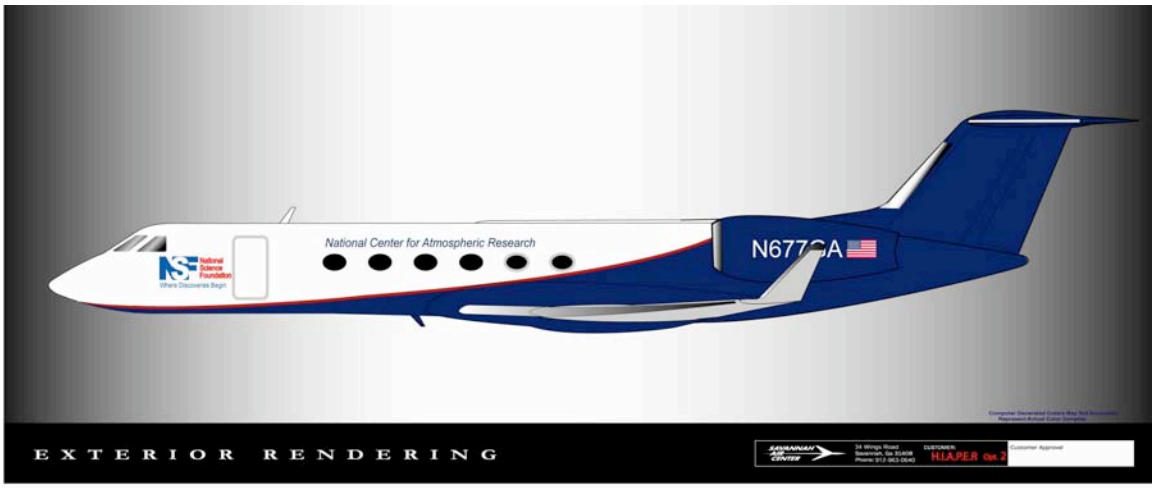
Schedule

Program has recommended, and the Large Facilities Manager has concurred, that the HIAPER MREFC should be concluded after the first successful progressive science flight in summer FY2005.

Issues

None

Jim Huning
ATM/ULAFOS


National Center for Atmospheric Research
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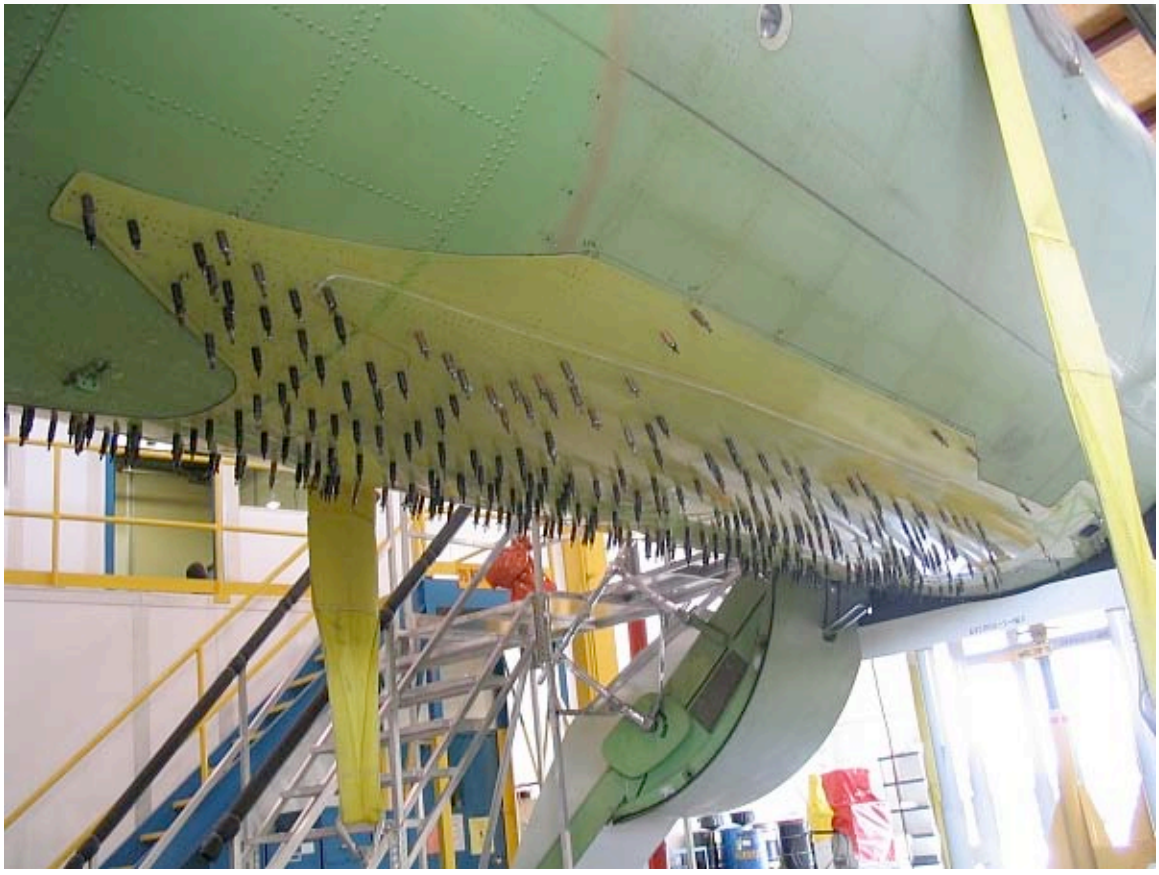
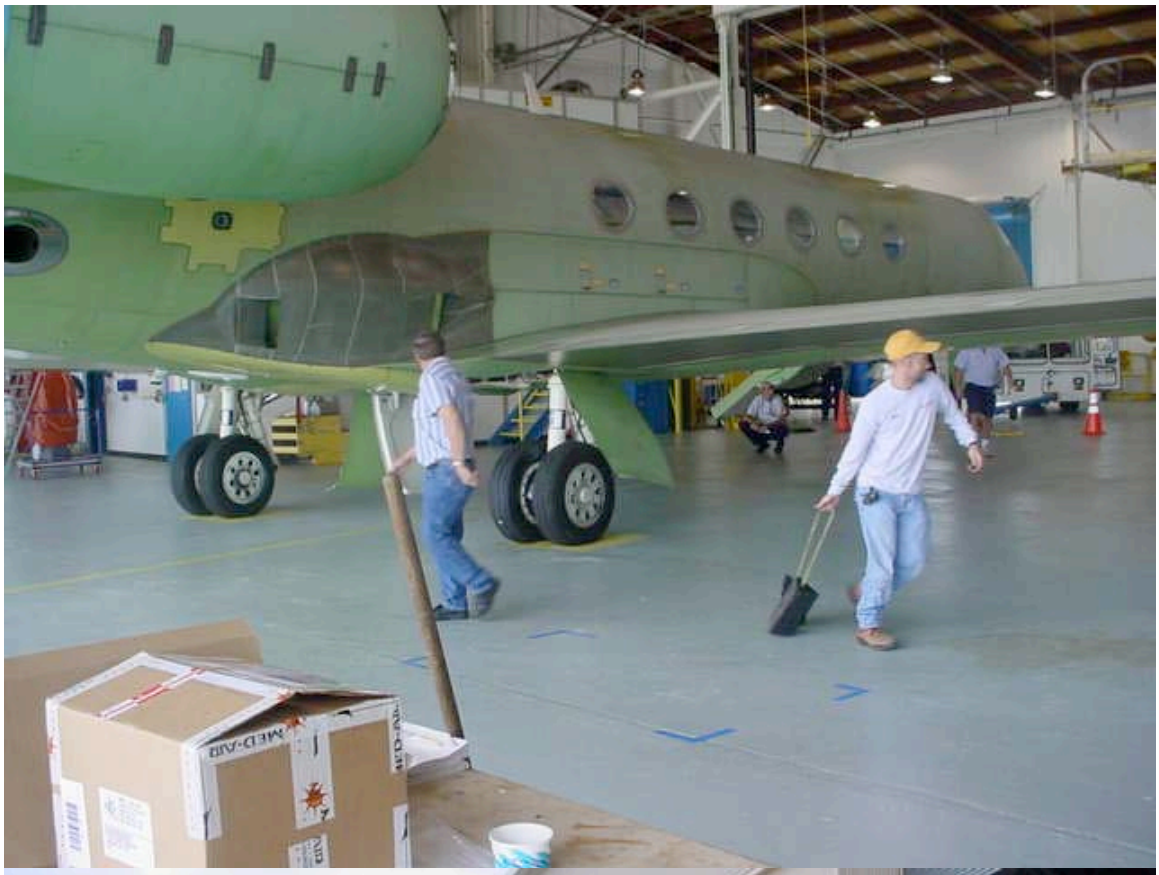
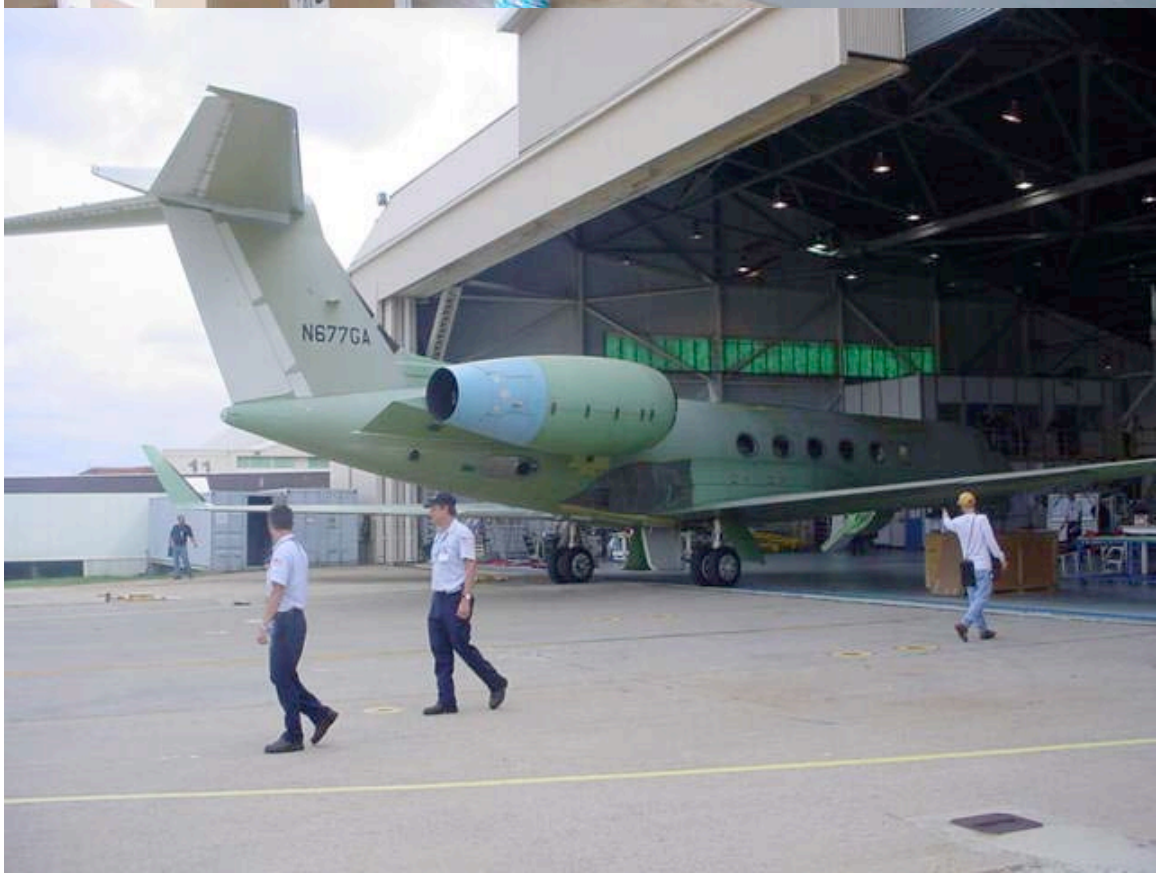
EXTERIOR RENDERING



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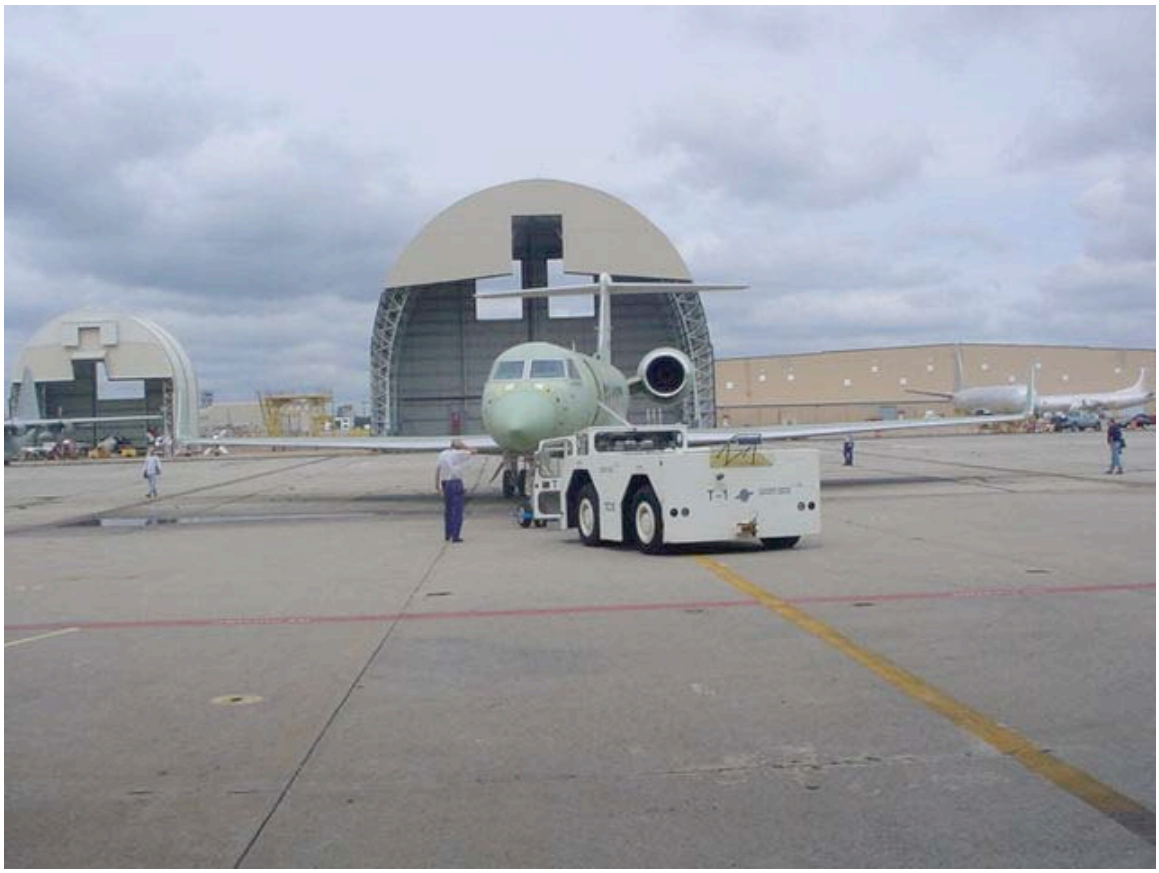
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CHANGE NUMBER	DATE OF CHANGE	PAGES EFFECTED	CHANGE VERIFIED (SIGNATURE)

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CHAPTER I INTRODUCTION

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AIRCRAFT OPERATIONS MANUAL

CHAPTER I INTRODUCTION

1. AIRCRAFT OPERATIONS CENTER

A. MISSION

The Aircraft Operations Center (AOC) exists to supply NOAA programs and other activities with mission-ready airborne platforms and personnel while ensuring availability of all services commensurate with a safe, efficient and cost effective aviation operation.

B. AUTHORIZATION

AOC was established under the U.S. Department of Commerce, NOAA, by Department Organization Order 25-5B, Amendment 2, July 27, 1983. AOC was transferred to the Office of NOAA Corps Operations by Department Organization Order 25-5, March 3, 1989, and further defined under NOAA Circular 89-15, June 16, 1989, and NOAA Administrative Order 216-103, July 3, 1991.

Sections of the aforementioned Orders appear throughout this manual and are available in their entirety in the office of the Director, AOC.

C. REGULATORY AUTHORITY

Aircraft operated by the U. S. government are public aircraft and, as such, are not subject to the Federal Aviation Regulations, except for those regulations prescribed under the authority of Section 307(a), 307(c), and 501 of the Federal Aviation Act of 1958 pertaining to the use of airspace, the control of air traffic, and aircraft registration, respectively. Public aircraft status, however, does not permit operations outside the territorial limits of the U.S. without a valid airworthiness certificate (AC 20-132). NOAA aircraft operated internationally may be considered in the same category as Department of State and Department of Defense aircraft, and, as such, are subject to the same general policies which may apply to these agencies aircraft. To avoid diplomatic incidents, formal diplomatic clearance shall be obtained for any country which requires such clearance prior to conducting flight operations in that country or its airspace.

Regardless of the area of operation, it is NOAA policy that aircraft shall be certified, maintained, and operated in accordance with all pertinent regulations and guidelines set forth by the AOC, FAA, ICAO, DOD and Aircraft Manufacturers to the fullest practical extent.

CHAPTER I INTRODUCTION

For purposes of this manual, the term "NOAA aircraft" means any aircraft used exclusively in the service of NOAA and includes aircraft owned, leased, rented, under military bailment, or otherwise in possession of the agency for the purpose of flight or ground test.

2. AOC AIRCRAFT OPERATIONS MANUAL

A. PURPOSE

This manual contains basic policy for standardized operations within the Aircraft Operations Center and supersedes previously issued editions of the Operations Manual.

This publication is not intended to cover every contingency which may arise nor every rule of safety and good practice. It is designed to furnish policy guidance, enhance safety, and promote operational readiness by addressing general operating procedures for all aircraft operated by AOC. Specific operating instructions for each aircraft or mission can be found in the applicable Aircraft Flight Manuals.

B. WAIVER REQUESTS

The procedures and standards contained in this manual constitute criteria necessary to promote the safe and efficient operation of NOAA aircraft. Crewmembers shall not be scheduled for, nor shall they engage in, aviation activities unless they satisfy the requirements of this manual. Requests for waivers to these procedures, standards, and requirements may be approved only by the Director, AOC.

Waivers shall be requested in writing and forwarded through the appropriate supervisors. Waivers are intended to allow aircraft or crewmembers to perform flight missions when conditions exist that are temporary in nature or that can be corrected in a specified time.

CHAPTER I INTRODUCTION

C. DISTRIBUTION

A current copy of the Aircraft Operations Manual shall be posted on AOC's network and be available for viewing by anyone at anytime. A hard copy of this manual shall be distributed to each Flight Crewmember and AOC Division Chief. Other interested parties may receive a copy upon request. Aircraft Commanders are responsible for ensuring a copy of this manual is onboard their aircraft for flight. It is the responsibility of each individual assigned a manual to keep it up to date.

D. REVISIONS

Revisions to this manual shall consist of a revised page which will be substituted for a corresponding page. New or revised text will be marked by a vertical bar on the left margin adjoining the text. This change symbol indicates the addition of new information, a changed procedure, the correction of an error, or rephrasing of the previous text. Substantial revisions to the Aircraft Operations Manual will be issued as a completely new edition.

Recommendations for revisions or additions to this manual are welcome and should be forwarded directly to the Chief, Operations Division. A review meeting will be conducted as necessary to consider recommended changes. The review meeting should consist of all available aircrew affected by the revision. The Director, AOC, has the final approval authority for any change recommendations.

E. WORDING

Words used in this manual to denote mandatory or permissive actions are defined as follows:

(1). "Shall" or "must" means the procedure or standard is mandatory.

(2). "Should" means the procedure or standard is recommended.

(3). "May" and "need not" means that the procedure or standard is optional.

(4). "Will" means futurity of action only and does not indicate any degree of requirement for application of a procedure or meeting a standard.

CHAPTER I INTRODUCTION

The use of masculine pronouns throughout this manual is to be construed as inclusive of both male and female gender.

3. AOC AIRCRAFT FLIGHT MANUALS

A. PURPOSE

Aircraft Flight Manuals are promulgated for specific aircraft and contain detailed instructions and operating limitations for the aircraft type and mission concerned.

These manuals are not intended to duplicate instructions and procedures found in other manuals, but to address differences between how AOC operates a particular aircraft and the procedures called for in other approved aircraft operating manuals or instructions.

Procedures and requirements shall be at least as stringent as the general standards set forth in the AOC Aircraft Operations Manual and shall be strictly observed in operating NOAA aircraft. Where an AOC Aircraft Flight Manual indicates a deviation from any other operating manual, the provisions of the AOC Aircraft Flight Manual take precedent.

4. OTHER AIRCRAFT OPERATING MANUALS

A. GENERAL

Where an AOC Aircraft Flight Manual has not been published or a particular procedure has not been addressed, the FAA, DOD, or Manufacturers approved Operating Manual shall govern the operation of that NOAA aircraft, together with the AOC Aircraft Operations Manual and any standard operating procedures approved by the Director.

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CHAPTER II MANAGEMENT

CHAPTER II MANAGEMENT

1. MANAGEMENT QUALIFICATIONS AND DUTIES

A. DIRECTOR

The Director, AOC, is responsible for managing the acquisition, operation, maintenance, modification and utilization of NOAA aircraft and has overall management authority for meeting the needs of NOAA for aircraft support services.

The Director develops policies, standards, and procedures which govern the safe, efficient, and economical use of NOAA aircraft. He identifies those regulations under which NOAA aircraft will be certified, maintained, and operated and has the authority to waive such regulations when compliance would be impractical or would unduly impede or prevent the safe, efficient, and economical accomplishment of the AOC mission.

The Director designates aircraft for special purpose uses and specifies the crew complements and duty assignments necessary to operate these aircraft. He promulgates as necessary the forms, records, and reports required to ensure the effective implementation and administration of the policies, standards, and guidelines contained in this manual.

B. SAFETY STAFF

The Safety Staff is responsible for developing, implementing, and evaluating the AOC Safety Program (published as AOC Directive 64-1 series). Its purpose is the preservation of human and material resources through the prevention of damage and injury by eliminating or reducing hazards to an acceptable level. The Safety Program is applicable to all personnel involved in the support or operation of NOAA aircraft, therefore all aviation-related activities shall be conducted so as to meet the standards and requirements contained in this manual.

The Safety Staff performs inspections of facilities, equipment, and operations to assure safety and to meet occupational health requirements. They may direct immediate action to ensure compliance with requirements, such as grounding of aircraft, removal of equipment, or changing of practices or procedures.

CHAPTER II MANAGEMENT

C. SCIENCE AND ENGINEERING DIVISION

The Science and Engineering Division designs, develops, installs, calibrates, modifies, maintains and operates sophisticated and varied research measurement systems for in-situ and remote measurements from aircraft. The division specifies hardware and software for onboard and ground based diagnostic systems and analysis of data quality in response to the requirements of user research systems. It develops calibration facilities for aircraft system evaluation. It acquires, installs and operates ground based equipment for research involving AOC aircraft and/or other program efforts. The division provides engineering expertise, planning, and development for AOC supported projects and operating requirements. The division is responsible for contract oversight of all AOC engineering contracts.

D. OPERATIONS DIVISION

The Chief, Operations Division, is responsible to the Director, AOC, for conducting standardization, maintenance, training, scheduling, and planning activities necessary to ensure that NOAA aircraft are operated in accordance with prescribed standards. He administers an aircraft operations standardization program for all NOAA flight personnel. Through a curriculum of flight and ground training and periodic aircrew proficiency flight evaluations, the Operations Division Chief promotes aviation safety, operational efficiency, and mission accomplishment. The Chief assigns an Aircraft Commander to support all flights, projects and programs. The Aircraft Commander is responsible to the Director for the safety of the aircraft and the personnel on the aircraft.

The Operations Division consists of the Aircraft Flight Branch and the Aircraft Maintenance Branch. The Aircraft Flight Branch consists of the Aircraft Management Section and the Project Coordination Section.

The Aircraft Management Section provides operationally ready aircrews for AOC-supported projects. It is responsible for preparing flight schedules, maintaining continuous records of aircraft locations, aircraft flight time, and pilot flight time as well as ensuring availability of appropriate aircraft operating manuals. It maintains the AOC Aircraft Operations Manual and establishes and maintains regulatory flight data and qualifications for all crewmembers. It establishes and coordinates aircrew training and ensures establishment and maintenance of appropriate training records.

CHAPTER II MANAGEMENT

The Aircraft Management Section personnel continuously review publications, information, and regulations relevant to NOAA aircraft operations. The staff disseminates pertinent regulatory material and, in conjunction with the Safety Officer, distributes safety information to flight personnel.

The Project Coordination Section serves as the liaison between the AOC components and the user organizations to coordinate, plan and execute the multi disciplinary AOC effort in support of programs requesting AOC airborne platforms. The section develops and implements strategies, including studies to ensure the credibility and validity of the data collected with the AOC provided instrumentation.

The Aircraft Maintenance Branch formulates and administers the aircraft maintenance program for AOC and controls availability of all AOC aircraft. The staff ensures that all aircraft operated and maintained by AOC are in a continuous airworthy condition and that they are maintained in accordance with the applicable maintenance procedures. The Maintenance Branch is responsible for oversight of all phases of contract aircraft maintenance that is required by AOC. It ensures the accuracy and timeliness of AOC aircraft logbook forms and records and ensures that all maintenance test flights are conducted and recorded in accordance with applicable regulations.

The Aircraft Maintenance Officer is responsible to the Chief, Operations Division and Director, AOC, for maintaining NOAA aircraft and related equipment according to the standards and procedures established in the Aircraft Maintenance Operating Instructions.

E. RESOURCE MANAGEMENT STAFF

The Resource Management Staff administers budget and finance, procurement, personnel management and other administrative support areas for the Aircraft Operations Center. The staff provides the Director, AOC, with advice, options and alternatives after assessing the financial management of operations as well as other aspects of the aircraft program. It prepares and justifies the budget and initiates reprogramming and adjustments to financial operation plans. The staff develops and maintains management information systems to provide financial and technical data for strategic planning, cost accounting, personnel management and other decision-making purposes. It provides management guidance with respect to the technical propriety, procedural adequacy, and funding impacts of procurement. It acts as the AOC business manager with respect to post-award contract administration. It serves as a focal point

for management and liaison for Administrative Support Center specialists on administrative payments, procurement, and a variety of personnel administration matters including salary, administration, classification, staffing, awards, performance evaluation and grievances. The staff establishes and monitors travel authorizations and billing procedures, and determines funding availability. It is responsible for property management.

The Resource Management Staff provides the AOC supply function. It oversees requisition, warehousing, supply and distribution of equipment, aircraft parts and supplies, special purchase equipment, computer and electronic items to flight base and field locations. The Resource Management Staff provides statistical analysis and recommendations necessary for the Director to apply or alter controls as necessary to insure the quality and cost effectiveness of essential products and services provided by the elements of AOC or contractual services providing essential products and services in lieu of an AOC in-house operation.

F. MISSION COMMANDER

The Mission Commander, sometimes known as the Project Manager, is the direct representative of the Director, AOC, during all field phases of a project. The Mission Commander monitors and controls all funds and budgets for the project, is the prime liaison with user organization(s) principle investigators and manages all field services for aircraft and personnel. The Mission Commander sets work schedules, approves overtime and approves Time and Attendance Forms during all field operations. The Mission Commander reports to the Director, AOC, and liaisons with the AOC Division Chiefs.

A Mission Commander (MC) will be assigned to each project. The Mission Commander can delegate their authorities and responsibilities to an Aircraft Commander when the MC is absent from the field operations location. On flights without a designated Mission Commander, the Aircraft Commander will assume the Mission Commander's duties and responsibilities as stated throughout this manual.

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CHAPTER III POLICIES AND PROCEDURES

CHAPTER III POLICIES AND PROCEDURES

1. OPERATIONAL POLICIES

A. OFFICIAL USE

NOAA aircraft shall be used for official purposes only. In determining whether a use is official, all pertinent factors will be considered, including whether the use is essential to the completion of an operation, mission, or other legitimate NOAA function or activity, and is consistent with the purpose for which the aircraft was acquired. In the absence of the Director, the Mission Commander shall act for the Director and have the responsibility and authority to determine official flight status. Aircraft Commanders have the responsibility and authority to deny passage on their aircraft of any persons, crewmembers or passengers, that they determine to be unofficial. Each flight of a NOAA aircraft shall have an appropriate task or accounting number assigned by the aircraft user or AOC.

B. NONESSENTIAL FLIGHTS

The use of NOAA aircraft for nonessential flights shall not be authorized. Any flight which could be so construed is prohibited. Examples of flights which are nonessential include:

(1). Flights of a routine business nature for which other transportation, commercial or military, could be more economically substituted.

(2). Flights by any official pilot or groups thereof, the sole purpose of which is the convenience or enjoyment of the persons concerned and which are not essential for the performance of official duties or the accomplishment of bona fide training.

(3). Flights not scheduled or approved by AOC.

C. PASSENGERS

Persons who have no official function aboard NOAA aircraft, are not part of the normal crewmember complement, are not AOC personnel or are not needed in a programmatic capacity are not authorized to fly on NOAA aircraft. Media representatives may be authorized to fly in certain situations but must first have approval from the Director, AOC, in order to be cleared for flight aboard NOAA aircraft. All flights associated with hurricanes will be approved

by the Director, AOC. All other AOC mission flights must receive approval from the NOAA General Counsel's office through the Director, AOC.

D. CELEBRATIONS AND PUBLIC DISPLAYS

Participation in celebrations and public displays in an official capacity shall be approved only by the Director, AOC.

2. COMMAND AND CONTROL

A. COMMAND

The Chief, Operations Division, shall designate an Aircraft Commander for each flight, group of flights, or mission on NOAA aircraft. The Aircraft Commander has command authority over all crewmembers and passengers in flight, and he has command responsibility for ensuring the safe conduct of the mission and compliance with all AOC safety policies and procedures. In the absence of a Mission Commander, the Aircraft Commander shall represent the Director, AOC, during field phases of the operation by monitoring and controlling project aircraft support costs, establishing and maintaining liaison with the user organizations' field investigators, and managing all AOC field personnel and aircraft services.

B. CONTROL

A designated Aircraft Commander or Copilot shall be in control of the aircraft at all times during flight. The Aircraft Commander and all other Flight Crewmembers shall be in their seats during takeoff, climb to initial cruising altitude, descent, and landing. A pilot in training may occupy either seat on AOC missions when under the direct supervision of an Aircraft Commander, Instructor Pilot or Flight Examiner Pilot, and in compliance with Part D of this Section. A Navigator in training may occupy the Navigator's seat on AOC missions when under the direct supervision of an Instructor Navigator. A Flight Engineer in training may occupy the Flight Engineer position on AOC missions when under the direct supervision of an Instructor Flight Engineer. Except during emergencies or adverse weather conditions, and at the discretion of the Aircraft Commander, crewmembers or passengers may briefly occupy Flight Crewmember seats to develop an understanding of the duties and responsibilities of those positions. Aircraft Commanders shall occupy the left or right seat during these brief periods and shall oversee control of the aircraft at all times.

C. PERSONNEL AUTHORIZED TO OPERATE NOAA AIRCRAFT

The following personnel may act as Flight Crewmembers on NOAA aircraft:

(1). NOAA aviators who are:

(a). NOAA Corps or Civil Service employees who are designated as NOAA Aviators and in aviation service or approved by the Director, AOC.

(b). Qualified and current in the aircraft to be flown.

(2). Non-NOAA aviators who are:

(a). Authorized by the Director, AOC, to operate NOAA aircraft.

(b). In possession of appropriate FAA Airman and Medical certifications and ratings or military aviators holding the equivalent.

(c). Qualified and current in the aircraft to be flown.

(3). Personnel listed in (1) and (2) above who have been previously designated in the aircraft to be flown but are not current, when a qualified and current Aircraft Commander in the aircraft to be flown occupies the left or right seat.

D. LIMITATIONS

The following restriction applies until a candidate is designated a Copilot in the aircraft to be flown: The candidate may not fly the aircraft at any time below 200' AGL except during designated training flights. Candidates for Copilot designation of an aircraft requiring a type rating, or heavy aircraft, must be graduates of an AOC approved school in that aircraft before flying below 200 feet. Upon designation, a Copilot is authorized to perform all duties in either pilot seat as assigned by an Aircraft Commander.

3. AIRCREW SCHEDULING AND COMPLEMENT

A. EQUITABLE DISTRIBUTION OF FLIGHT TIME

Flight Crewmembers shall be scheduled by the Operations Division so that flight time and periods of deployment are equitably distributed among those in the same crewmember positions. Flight schedules will be structured to ensure that training and proficiency requirements are met.

B. BASIC AIRCREW COMPLEMENT

To effectively meet AOC mission requirements, operational aircrews shall consist of the following personnel:

Aircrew Position	Aircraft Type
Aircraft Commander	All AOC aircraft
Copilot (a)	Multiengine fixed-wing
Navigator (b)	Heavy Turboprop Aircraft
Flight Engineer	Heavy Turboprop Aircraft
Observer (c)(d)	Heavy Aircraft, Helicopter Aircraft
Flight Director (b)	Heavy Aircraft

Notes: (a) An additional pilot is not required on twin-engine aircraft day VFR ferry flights if the aircraft is FAA certified for single-pilot operation and approval is received from the Director, AOC.

(b). Requirement for Navigator and/or Flight Director is determined by the Chief, Operations Division or Aircraft Commander.

(c). Single-pilot helicopter operations shall be conducted with a qualified Crew Chief or Observer in the cockpit to assist the pilot. This requirement may be waived by the Chief, Operations Division.

(d). Helicopter and light aircraft operations conducted to remote locations may require a qualified mechanic as the Observer.

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CHAPTER IV QUALIFICATION, EVALUATION AND DESIGNATION

CHAPTER IV QUALIFICATION, EVALUATION AND DESIGNATION

1. INTRODUCTION

A. GENERAL

This chapter establishes policy and provides guidance for the qualification, evaluation and designation of personnel involved in the operation of NOAA Aircraft. The AOC Operations Division shall ensure that crewmembers are trained to achieve the stated qualifications and to maintain the level of proficiency and currency necessary to safely and effectively accomplish their assigned duties. The requirements shown in this manual, along with each aircraft's crewmember training syllabus, shall be regarded as the minimum standards relating to crewmember qualifications.

B. CATEGORIES OF CREWMEMBER DESIGNATIONS

(1). Flight Crewmembers

Personnel who are assigned to perform duties involving the operation of an aircraft in flight shall be designated as Flight Crewmembers upon meeting the training and qualification requirements for a specific aircraft. Flight Crewmembers may hold one or more designations such as Aircraft Commander, Copilot, Flight Engineer or Navigator.

(2). Air Crewmembers

Personnel who are assigned to perform emergency procedure duties in flight, not involving the operation of the aircraft, shall be designated as Air Crewmembers upon meeting the Observer training and qualification requirements for a specific aircraft. Air Crewmembers may hold one or more designations such as Flight Director, Observer, Crew Chief, Aerial Photographer or Electronics Technician.

(3). Mission Crewmembers

Personnel assigned to perform a particular function either in flight or on the ground, not directly involving the operation of the aircraft or its emergency procedures, but involving the assigned mission, shall be designated as Mission Crewmembers. Such positions may include Data Recorders, Mechanics, Principle Investigators, Program Managers or

various non-designated mission support personnel. Mission Crewmembers do not qualify under AOC specification as Flight or Air Crewmembers.

C. AOC AIRCRAFT CATEGORIES AND TYPES

Due to the variety of missions performed by AOC personnel and the different aircraft involved, crewmembers are designated in specific aircraft by the following AOC aircraft categories and types:

AOC Category	AOC Type
Heavy Aircraft	Multi-Engine Turboprop Multi-Engine Turbojet
Light Aircraft	Single Engine Multi-Engine Piston Multi-Engine Turboprop Multi-Engine Turbojet
Helicopter Aircraft	Single Engine Multi-Engine

Aircraft may also be referred to as Fixed Wing or Rotary Wing aircraft. Aircraft having a zero fuel weight over 20,000 pounds are categorized as AOC Heavy Aircraft.

2. CREWMEMBER QUALIFICATION

A. GENERAL

Crewmember candidates shall be required to progress through a qualification process and meet the criteria listed in this section before being recommended for designation in any crewmember position. This will normally require qualification in subordinate positions before being designated in a command or supervisory position. In other words, a candidate would normally be qualified first as a Copilot before obtaining an Aircraft Commander designation. In any case, criteria listed for lower positions must be met prior to designation in a higher position.

CHAPTER IV QUALIFICATION, EVALUATION AND DESIGNATION

B. TRAINING SCHOOL REQUIREMENTS

Crewmember Position	Training School Requirement
Copilot Aircraft Commander	Graduated from an FAA Fixed Wing or Rotary Wing Flight Training Program (as appropriate) or hold an equivalent certificate of training.
Flight Engineer	Graduated from a DOD Flight Engineer school or hold an equivalent certification of training.
Navigator	Graduated from the U.S. Air Force aviation navigation school or hold an equivalent certification of training.
Air Crewmember	No initial training school requirement.

C. TRAINING SYLLABUS REQUIREMENTS

Flight and Air Crewmembers shall progress through a written training syllabus for each position held on aircraft to which they are assigned prior to evaluation or designation. Training syllabus sheets and their requirements for sign off may be found in the applicable Aircraft Flight Manuals.

D. PHYSIOLOGY, SURVIVAL AND WEAPONS TRAINING REQUIREMENTS

Requirements for crewmember physiology, survival and weapons qualification training and currency are listed in Chapter VII, “Flight Safety and Survival”, of this manual.

E. FLIGHT SIMULATOR TRAINING REQUIREMENTS

Flight Crewmembers shall complete an approved simulator course for the aircraft to which they are assigned as soon as practicable during the first year of an aviation assignment in that aircraft.

CHAPTER IV QUALIFICATION, EVALUATION AND DESIGNATION

F. FAA CERTIFICATE, RATING AND EXAM REQUIREMENTS*

Crewmember Position	FAA Certificate, Rating and Exam Requirements
Heavy Aircraft	
Flight Engineer	FAA Flight Engineer Certificate, Turbo Propeller Rating FAA Airframe and Powerplant License
Navigator	FAA Flight Navigator Certificate
Copilot	FAA Commercial Pilot Certificate, Instrument Airplane Multi-Engine Land Airline Transport Pilot written examination
Aircraft Commander	Airline Transport Pilot, Appropriate Type Rating
Light Aircraft	
Copilot, Aircraft Commander	FAA Commercial Pilot Certificate, Instrument Airplane Single & Multi-Engine Land Airplane Single Engine Sea (as appropriate) Type Rating (as appropriate)
Helicopter Aircraft	
Copilot, Aircraft Commander	FAA Commercial Pilot Certificate, Rotorcraft-Helicopter Instrument Helicopter
Air Crewmember	No Certificates or Ratings required

CHAPTER IV QUALIFICATION, EVALUATION AND DESIGNATION

* NOTE This does not include required FAA Medical Certificates or equivalent. See Chapter VIII, "Aeromedical Policy" for medical requirements.

G. MINIMUM FLIGHT EXPERIENCE REQUIREMENTS

Position	Total Time	PIC Time	Cross Country Time	Night Time	Instrument Time
Heavy Turboprop					
Flight Engineer	500 [300]*				
Flight Navigator	500 [200]				
Copilot	1500 [10]	500	500	100	75
Aircraft Commander	2500 [450]	1250 [250]	500 [100]	100 [40]	150 [40]
Hurricane AC**	2800 [500]	1250 [250]	500 [100]	100 [40]	150 [40]
Heavy Turbojet					
Copilot	1500 [25]	500 [10]	500	100	75
Aircraft Commander	2500 [500]	1250 [250]	500 [100]	100 [40]	150 [40]
Light Single Engine					
Aircraft Commander	250 [15]	100 [10]	50	10	40
Light Piston					
Copilot	250 [10]	100 [10]	50	10	40
Aircraft Commander	500 [300]	200 [150]	100 [50]	25 [20]	50 [20]
Light Turboprop					
Copilot	250 [10]	100 [10]	50	10	40
Aircraft Commander	600 [300]	250 [150]	100 [50]	25 [20]	50 [20]
Light Turbojet					
Copilot	500 [10]	200 [5]	100	25	40
Aircraft Commander	1000 [200]	450 [100]	150 [50]	45 [20]	75 [20]
Helicopter Aircraft					
Copilot	600 [25] (75)	300 [10]	75	25 (10)	40
Aircraft Commander	1000 [400] (500)	500 [200]	150 (75)	50 (25)	50 (25)

CHAPTER IV QUALIFICATION, EVALUATION AND DESIGNATION

NOTES *Time in brackets [ ] denotes time in a specific AOC Category and Type aircraft. Time in parentheses () denotes helicopter time.
**Hurricane qualified Aircraft Commanders additionally require two full hurricane seasons and fifty hurricane penetrations in a pilot position.

H. WRITTEN EXAMINATION REQUIREMENTS

Flight Crewmembers shall pass a written examination for each aircraft to which they are assigned prior to evaluation or designation. Written examinations should cover both aircraft systems and emergency procedures. These written examinations may be taken as part of an approved simulator course.

3. CREWMEMBER EVALUATION, DESIGNATION AND REQUALIFICATION

A. GENERAL

Crewmember qualification is based on a combination of different training requirements including syllabus flights, proficiency flights, simulator training, instrument currency requirements, ground training and aviator experience.

A crewmember is ready for an evaluation checkflight when, at a minimum, he has satisfied the requirements in the "Crewmember Qualification" section above along with any additional requirements listed in the applicable Aircraft Flight Manual.

B. AOC FLIGHT INSTRUCTORS

The Director, AOC, shall designate a Flight Instructor for each AOC aircraft. As such, they will administer all evaluation flight-checks for the appropriate crew position in which they are qualified.

Further, it is AOC policy to have the Chief of Training administer evaluation checkflights to the AOC Flight Instructors annually for standardization and safety. The Chief of Training shall receive an annual check from an outside source. This evaluation may be administered in an approved simulator or aircraft and may be given by an evaluator approved by the Chief, Operations Division.

CHAPTER IV QUALIFICATION, EVALUATION AND DESIGNATION

CHAPTER IV QUALIFICATION, EVALUATION AND DESIGNATION

C. S/E REPORTS

Upon completion of an evaluation checkflight, the Flight Instructor shall complete an aircrew standardization/evaluation report. The report shall include a recommendation for designation, or for additional training, as appropriate. The report shall be submitted to the Chief , Operations Division.

D. CREWMEMBER DESIGNATION

Crewmember designation shall be determined as follows:

(1). Passed an oral examination and an evaluation checkflight given by an AOC approved Instructor Pilot.

(2). Qualified in all other respects as to ground and flight currency requirements, written examinations and training syllabus.

(3). As determined by the Chief of Training, the candidate is fully qualified to perform the duties of the designated position.

E. REQUALIFICATION

Flight Crewmembers returning to an aviation billet will not normally have to progress through the initial qualification process after having been designated in a Crewmember position. Such requalification shall consist of an appropriate checkout including a flight familiarization syllabus and demonstration of the knowledge, proficiency, and capabilities commensurate with the crew position involved. Progression through subordinate Crewmember positions may be required if it is determined that such progression is necessary to ensure adequate qualification.

4. CURRENCY REQUIREMENTS

A. ANNUAL CHECKFLIGHTS

Flight Crewmembers shall complete an annual checkflight in each aircraft to which the Flight Crewmember is assigned. Annual checkflights for Flight Instructors may be considered complete at annual simulator training with approval from the Chief, Operations Division.

CHAPTER IV QUALIFICATION, EVALUATION AND DESIGNATION

B. ANNUAL SIMULATOR TRAINING

Flight Crewmembers shall complete an approved simulator course annually in the primary aircraft to which the Flight Crewmember is assigned.

C. ANNUAL CHECKFLIGHT/SIMULATOR TRAINING OVERLAP

Flight Crewmembers shall make every effort to complete annual checkflight and simulator training requirements. However, if operational requirements, cost considerations, etc. prevent this from occurring, one will suffice for the other for a maximum period of six months. In no event will a Flight Crewmember remain current if both requirements have lapsed.

Flight Instructors are responsible for monitoring annual checkflight requirements and arranging for evaluations to be completed. They shall make every effort to meet the annual requirement.

D. DATE OF STANDARDIZATION/EVALUATION CHECKFLIGHT

The S/E checkflight should be completed within the 12 calendar months from the last S/E check. Pilots, navigators, and flight engineers shall be considered delinquent if the check is not completed by the end of the twelfth calendar month following the previous checkflight.

5. FLIGHT CURRENCY REQUIREMENTS

A. LANDINGS

Within the preceding 90 days, each pilot will complete three day landings and three night landings. Pilots of heavy aircraft who hold an Airline Transport Pilot Certificate are exempt from the night landing requirement.

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B. INSTRUMENTS

Within the preceding six months, each pilot shall complete instrument recency of flight requirements as outlined in FAR 61.57. In addition, each pilot shall maintain a minimum of six hours of actual or simulated instrument time, three hours of which must be accrued in the appropriate aircraft platform.

6. DELINQUENCY

A. GENERAL

A crewmember shall be considered delinquent and will be restricted from flight duties for their designated aircraft if the following requirements have not been met in accordance with the appropriate sections of this Manual:

(1). Have a valid FAA Airman's Certificate.

(2). Possess a current FAA Medical Certificate or equivalent.

(3). Is current in physiological training, if required.

(4). Is current in water survival training.

(5). Is current in arctic survival training, if required.

(6). Has passed required written examinations.

(7). Has passed required checkflights and simulator training.

(8). Has maintained currency in accordance with FAR Part 61 in reference to landings, and instrument requirements.

CHAPTER IV QUALIFICATION, EVALUATION AND DESIGNATION

B. NOTICE OF DUE DATES

The Aircraft Management Section shall inform crewmembers when due dates for currency requirements are approaching. Advance notification will begin according to the following schedule and reminders will be issued each month until the due date:

(1). FAA Medical Certificate or equivalent: Two months

(2). Physiological Training: Three months

(3). Water Survival Training: Three months

(4). Annual checkflights and simulator training: Two months

(5). Landings, Night Time, and Instruments: Monthly

Crewmembers are responsible for their qualification and currency. Each crewmember will request training to ensure their qualification and currency through the Chief, Operations Division, as soon as possible upon notification of impending delinquency. Failure of the Aircraft Management Section to notify a crewmember of an approaching currency requirement does not relieve the individual of the responsibility to maintain his currency.

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1. PREFLIGHT

A. CREW REPORTING

Crewmembers for each flight shall report to the Mission Commander and/or Aircraft Commander at a specified time and place prior to each departure. Crewmembers shall not be required to report more than one and one-half hours prior to the planned departure time unless weather, maintenance, or unique mission requirements dictate an earlier arrival. Early reporting shall be approved by the Division Chief, Mission Commander, or Aircraft Commander.

B. PERSONNEL ITEMS

Crewmembers shall carry the following items with them on flights: FAA Airman's Certificate, FAA Medical Certificate or equivalent, Official Passport (outside CONUS), Immunization Record (outside CONUS), Government Credit Cards, Travel Orders/Trip Authorization.

C. MISSION BRIEFING

At the request of the Aircraft Commander, the Mission Commander shall conduct a pre-mission briefing. In some cases the Mission Commander will request the lead scientist for the mission to brief the Aircraft Commander and any additional crewmembers deemed necessary of the requirements for the upcoming mission. The mission briefing shall be conducted far enough in advance to enable the aircrew to do a thorough and professional job of flight planning and mission preparation. Normally, the briefing should occur no later than one hour before scheduled blockout time. For missions requiring more than a 15 minute briefing, the preflight reporting time shall be adjusted to allow for necessary planning, staging and preflight.

D. WEATHER BRIEFING

Aircraft Commanders are responsible for reviewing and being familiar with weather conditions for the area in which the flight is planned. The Aircraft Commander shall obtain a briefing by a qualified meteorological forecaster, when available, or by the Flight Director and/or ARTCC or Flight Service Station concerning current weather, trends, and forecasts for the departure point, proposed route, destination, and alternates.

E. SEAT BELT AND SAFETY BRIEFING

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Aircraft Commanders shall ensure that all passengers and crewmembers have been briefed by a Flight Crewmember regarding safety of flight information including, use of seat belts, emergency exits and any other necessary cautions or directives regarding the flight.

F. FLIGHT PLANNING

A filed flight plan is required for all flights. Pilots shall enter the AOC emergency phone number, (813) 828-4361, in the remarks section of the flight plan for notification of home base in case of emergency.

Aircraft Commanders shall ensure the accuracy of the crew and passengers manifested on AOC aircraft. The Flight Log or attached manifest shall contain all occupants that fly on AOC aircraft. The crew and passenger manifest shall be filed as follows:

(1). Home Base

For flights departing MacDill AFB, a copy of the Daily Flight Log shall be delivered to the AOC Flight Branch.

(2). Other Bases

For flights departing military bases (other than MacDill AFB), a copy of the Daily Flight Log shall be attached to the DD 175 and filed with base operations, unless all crew and passengers are listed on the DD 175 itself. At bases other than military, a copy of the Daily Flight Log shall be filed with the appropriate clearing authorities.

Any late changes to the manifest after arrival at the aircraft may be forwarded via radio to base operations at MacDill AFB or to the appropriate clearing authorities when operating away from home base.

G. INSTRUMENT FLIGHT RULES

In order to decrease the probability of midair collisions, flights in AOC aircraft shall be conducted in accordance with Instrument Flight Rules (IFR) to the maximum extent practicable. This shall be construed to include all point-to-point and round-robin flights or portions thereof, such as flights to and from operational areas that may be amenable to IFR filing. All other

portions of the flights shall be conducted under positive control to the maximum extent practicable.

H. STANDARD INSTRUMENT DEPARTURES (SID)/IFR DEPARTURE PROCEDURES

At those locations where SIDs are available, pilots are encouraged to utilize them for each IFR departure, provided no unacceptable flight delays ensue. Appropriate SID and IFR departure procedures should be reviewed and utilized for IFR departure to ensure separation from aircraft and obstacles during takeoff.

I. AIRCRAFT PERFORMANCE PLANNING

An effective takeoff plan shall be developed which allows a considered sequence of actions to be implemented without delay if an emergency arises. Performance charts can be used to compute aircraft response resulting from various types of engine failures, environmental conditions, aircraft loading, and other factors affecting aircraft performance upon takeoff. AOC aircraft must be capable of maintaining a minimum climb gradient of 200 feet per nautical mile at airports for which there are no published IFR departure procedures or nonstandard IFR takeoff minimums. The aircraft must also be capable of maintaining any climb gradient established in the SIDs or in published IFR takeoff procedures. With regard to fixed wing aircraft, takeoffs will be accomplished only when runway lengths are sufficient to provide for a balanced field condition.

J. WEIGHT AND BALANCE

The Aircraft Commander shall certify for each flight that the aircraft weight and center of gravity will be within safe limits at the time of takeoff and will remain so for the duration of the flight and that all equipment, gear, cargo, and personnel are properly secured for flight.

The Chief of the Aircraft Maintenance Branch shall ensure that a current and continuous record of changes in structures or equipment affecting aircraft weight and balance is maintained. This information shall be made a permanent part of the maintenance record of the aircraft and shall be made available to the Aircraft Commander for use in computing weight and balance.

K. FUEL PLANNING

Planning for mission fuel requirements should be based on efficiency and economy, but shall not compromise flight safety. Careful consideration must be given to the weather conditions at destination and alternates and to the distance to alternates. Icing conditions, turbulence, altitude assignments and routing by ATC can decrease range and therefore affect fuel planning.

Aircraft operations at AOC shall observe FAR Parts 91.151 and 91.167, respectively, for VFR and IFR flight minimum fuel requirements. Additional fuel planning information is available in the applicable Aircraft Flight Manuals.

The Aircraft Commander shall determine fuel load requirements. When operating from AOC, maintenance should ordinarily be notified of fuel requirements the day prior to departure, but no later than one and one-half hours prior to scheduled blockout time.

L. AIRCRAFT PREFLIGHT INSPECTION

The Aircraft Commander shall ensure that a pilot's preflight inspection of the aircraft is completed in accordance with the applicable Aircraft Flight Manual, regardless of whether maintenance personnel are performing similar functions. For light aircraft and helicopters, this will always include physically ensuring that fluid levels are correct and filler caps are secured prior to flight. He shall ensure that all requirements of Part 91 minimum equipment lists, where applicable, are met prior to flight. He shall also:

(1). Inspect the maintenance log for discrepancies which have been carried over.

(2). Check the aircraft log to ensure that discrepancies have been properly signed off.

(3). Not normally accept an aircraft which has been grounded for a mechanical or structural discrepancy until that discrepancy has been corrected.

(4). Ensure that the aircraft is properly fueled for the mission assigned.

(5). Ensure that the weight and balance has been computed for the aircraft as loaded.

(6). Ensure that each crewmember has completed his preflight duties.

(7). Ensure that each crewmember and passenger assigned is familiar with emergency procedures on the aircraft.

(8). Ensure that each crewmember and passenger is outfitted with proper flight and survival gear and is familiar with its use and storage.

2. WEATHER CRITERIA

A. FIXED-WING TAKEOFF MINIMUMS

AOC pilots holding an ATP certificate who are current Aircraft Commanders in the aircraft to be flown have no takeoff weather minimums. Otherwise-qualified Aircraft Commanders without an ATP certificate or type rating shall not take off when the departure point weather is less than the published precision approach minimums, or non-precision approach minimums if there is no precision approach, or 200 feet ceiling and one-half mile visibility, whichever is greater.

B. HELICOPTER TAKEOFF MINIMUMS

Single crewmember (pilot only) helicopter operations shall require takeoff weather minimums of 200 feet ceiling and one mile visibility. For helicopter operations offshore (extended over water or over pack ice) takeoff weather shall be at least 500 feet ceiling and three miles visibility. Helicopter Aircraft Commanders are authorized to depart under terms of a Special VFR clearance when takeoff weather is below these minimums when, in the judgment of the Aircraft Commander, such operations are necessary and can be safely accomplished. Dual-pilot helicopter operations may use Special VFR weather criteria without restriction.

C. ALTERNATE AIRPORT REQUIRED FOR DEPARTURE

When departing from an airfield that is below approach minimums, AOC aircrew shall comply with the following requirements for take off alternates in addition to the take off minimums cited above.

(1). Departure alternate shall not be more than fifteen minutes from the departure airport at normal cruising speed in still air with one engine inoperative.

(2). Weather conditions at the departure alternate must be at or above 600 feet ceiling and two miles visibility for precision approach and 800 feet ceiling and two miles visibility for non-precision approach. Where no approach procedure is published, weather reports and/or forecasts must allow descent from MEA, approach, and landing under basic VFR weather criteria. For nonstandard alternate minimums, refer to published instrument approach procedure tabulations.

D. DESTINATION WITH ALTERNATE

Missions may be cleared when prevailing ceiling and visibility at destination are forecast to be at or above published minimums for precision or non-precision approach at the estimated time of arrival if an appropriate alternate is named in the clearance.

E. DESTINATION WITH TWO ALTERNATES

Missions may be cleared to destination when prevailing ceiling and visibility are forecast to be below minimums for precision or non-precision approaches at the estimated time of arrival if two alternates are named in the clearance, and if the second alternate meets the appropriate criteria.

F. DESTINATION WITH NO ALTERNATE REQUIRED

No alternate airport is required if for at least one hour before and after the estimated time of arrival at the destination, the appropriate weather reports or forecasts, or any combination thereof, indicate that:

(1). The ceiling will be at least 2,000 feet above the airport elevation, and

(2). Visibility will be at least three miles.

G. DESTINATION WITH NO ALTERNATE AVAILABLE

The destination must meet the weather minimums stated in paragraph 2-H (1) and (2). This requirement is intended to address operations into remote, foreign, arctic or island destinations where an alternate does not exist or is beyond practical fuel range.

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H. ALTERNATE WEATHER MINIMUMS

No person may include an alternate airport in an IFR flight plan unless current weather forecasts for that alternate indicate that, at the estimated time of arrival, plus or minus one hour, the ceiling and visibility will be at or above the following alternate airport weather minimums:

(1). Alternate With Published Instrument Approach Procedure

If an instrument approach procedure has been published in FAR Part 97 for that airport, the alternate airport minimums specified in that procedure shall apply. If no alternate minimums are specified, then the following minimums apply:

(a). Precision approach procedures: ceiling 600 feet and visibility two statute miles.

(b). Non-precision approach procedures: ceiling 800 feet and visibility two statute miles.

(2). Alternate With No Published Instrument Approach Procedure

If no instrument approach procedure has been published in FAR Part 97 for the alternate airport, the ceiling and visibility minimums are those which allow for descent from the MEA, approach, and landing under basic VFR weather criteria.

CHAPTER V FLIGHT OPERATIONS PROCEDURES

I. ALTERNATE AIRPORTS OUTSIDE CONUS

For an airfield to qualify as an alternate for destination outside CONUS, Aircraft Commanders shall use the worst prevailing weather forecast for the estimated time of arrival, plus or minus one hour, but in no case may an airfield be named as an alternate if the forecast weather is below published approach minimums.

3. CLEARANCE, FLIGHT RULES, AND TAKEOFF REQUIREMENTS

A. CLEARANCE AUTHORITY

The clearance authority to fly a mission is solely the responsibility of the Aircraft Commander. Aircraft Commanders are authorized to clear flights and missions to areas outside the United States and at foreign bases.

B. FLIGHT RULES

All AOC flights and missions shall be flown in accordance with the provisions of this manual and should be flown in accordance with FAA regulations and/or ICAO procedures. Flights shall operate under Instrument Flight Rules except for the following types of operations, which may operate under VFR/DVFR or Operational Due Regard flight rules:

(1). Terminal Areas

When weather and traffic conditions allow, VFR flight is authorized when departing to a nearby reporting point or canceling IFR a short distance from destination in order to expedite arrivals and departures. However, IFR flight plans shall not be canceled under the following conditions:

(a). Day IFR

IFR flight plans shall not be canceled during daylight when weather is unknown, reported as marginal, or when scud, haze, or other restrictions to visibility are known and present a marginal VFR situation. In these cases, all available facilities shall be used to make an instrument approach up to the point of intended landing under IFR.

(b). Night IFR

IFR flight plans shall not be canceled during night operations until after an instrument approach has been initiated, and then only if the terminal airfield is in sight and VFR weather conditions are reported and verified by the pilot.

(2). Maintenance Test Flights

Prior to acceptance of an aircraft from a maintenance facility the Aircraft Commander shall insure that all paperwork including task numbers, invoices, log books and warranties are in order. The Aircraft Commander will review with the maintenance supervisor all work performed and discuss any outstanding discrepancies.

Maintenance runups and test flights will be required whenever the aircraft has received a major modification, major system repair, or was in maintenance for numerous discrepancies or inspections such as in a 100 hour inspection or a major phase inspection. All flight systems shall be tested during the flight check including hydraulic systems, electrical systems, engines, electronics, anti-ice/de-ice systems, and airframe and flight control items. The Aircraft Commander shall check with AOC Maintenance and the Science and Engineering Division when appropriate to receive any special instructions that may be necessary due to completed modifications or specific systems or items that may have been altered during the maintenance period.

An entry shall be made on both the AOC Flight Log and the AOC Maintenance Log stating that a maintenance flight was performed and any problems shall be noted on the maintenance log.

Maintenance test flights shall be conducted during daylight hours in Visual Meteorological Conditions.

(3). Mission Requirements

VFR flight plans are authorized when, in the judgment of the Aircraft Commander, mission requirements or other constraints make it impractical to file IFR and the mission can be safely accomplished under VFR. This provision shall not be used to initiate

flights or missions under VFR flight rules when weather conditions or forecasts make the safe accomplishment of the flight or mission questionable.

C. OPERATIONAL EQUIPMENT TAKEOFF REQUIREMENTS

For all IFR flight, the weather minimums at the departure point and at the departure alternate must be predicated on the full operation of aircraft components and navigational aids associated with the instrument approach. For any aircraft components or navigational aids which are inoperative, weather minimums shall be adjusted accordingly.

D. BEFORE-START CHECKLIST

The Before-Start Checklist shall be completed prior to engine start, in accordance with the aircraft operating and standardization manuals.

E. TAKEOFF AND LANDING DATA (TOLD)

Takeoff and Landing Data (TOLD) shall be completed prior to each takeoff. The Copilot shall assist the Aircraft Commander in accomplishing the planned procedures and shall report to him any deviations from the plan. Assistance will include operating the radios, radar, and other position-fixing devices, and monitoring the progress of the aircraft in accordance with the briefing. The Copilot or Navigator, if aboard, shall use appropriate FLIP, SID, and charts to monitor departure. The Copilot or Flight Engineer, if aboard, shall monitor power management and aircraft components in accordance with the Aircraft Commander's briefing and subsequent instructions. The aircraft cockpit personnel shall remain silent except for required calls or to notify crew of emergencies throughout the departure.

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F. DEPARTURE BRIEFING

Before taking the runway for takeoff, the Aircraft Commander shall brief the aircrew on the procedures he intends to follow during takeoff and climb, the cruising altitude, and instructions for returning to the airport. This briefing shall include headings, altitudes, anticipated maneuvers, hazardous terrain, and emergency instructions.

G. ATC CLEARANCE

Aircraft Commanders, Pilots or Copilots shall personally request and read back all voice ATC clearances. This will include all oral transmissions pertaining to ATC instructions involving departure, en route, and approach procedures.

H. AIRCRAFT CHECKLISTS

The pilot flying the aircraft normally calls for the appropriate checklist. These checklists shall be rigidly adhered to by crewmembers on all flights. The Copilot will normally be responsible for reading the checklist. Designated crewmembers shall respond accordingly. When reading out emergency checklists, the action to be performed and the expected response shall both be called out.

I. TAKEOFFS AND LANDINGS

The Aircraft Commander shall occupy either the left or right seat during all takeoffs and landings.

J. RADIO/ICS TRANSMISSIONS

Use of the aircraft radios and intercommunication systems shall be in accordance with the procedures and phraseology contained in the appropriate Flight Standards Manual, AIM, or appropriate operating manual. During ground operations, takeoff, approach and landing, or during any critical phase of flight, crewmembers and passengers shall limit transmissions to those which are essential for crew coordination. There will be no outside transmissions on any radio without the Aircraft Commander's permission.

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K. OPERATIONS UNDER ADVERSE CONDITIONS

Adverse conditions include, but are not limited to, ceilings or visibility at or near minimums, marginal runway conditions, marginal approach aids, aircraft emergencies, severe turbulence, near-maximum crosswind, excessive icing, low altitude flight, terrain features which present an unusual hazard, and aircraft system malfunctions.

AOC aircraft shall not be operated into known or forecast weather conditions (icing included) which will exceed aircraft limitations, with all systems operating normally. When aircraft systems are inoperative or not functioning normally, flight into known or forecast adverse weather shall not be conducted if aircraft limitations, as established in the applicable Aircraft Flight Manual, would be exceeded.

Except for heavy aircraft, AOC aircraft shall not be operated into areas of known or forecast thunderstorms unless nose radar is installed and operational, or the weather forecast indicates that the flight can be conducted through the area visually and with adequate separation from thunderstorm activity. Thunderstorms should not be penetrated even when the aircraft is equipped with weather radar.

L. SEVERE WEATHER PENETRATIONS

Procedures for severe weather penetrations are contained in the applicable Aircraft Flight Manuals. In any case, severe weather penetrations are not authorized for single-engine aircraft except when a greater threat to flight safety would result from not performing the penetration.

M. ALTIMETERS

The field barometric setting shall be obtained from a control tower or appropriate ATC facility for setting in the index window of the aircraft altimeter. The altimeter altitude reading shall be compared with the known field elevation. The maximum allowable difference between these two figures is 75 feet. If the difference exceeds this limit, the altimeter is unsatisfactory for instrument flight. At altitude, altimeter error is not considered and no correction is applied. The local reported altimeter setting is to be set in the index window without correction.

N. PITOT-STATIC SYSTEM

Aircraft equipped with two pitot-static systems will abort mission and land if one pitot-static system becomes inoperative.

4. TAKEOFF AND CLIMB

A. TAKEOFF

Fixed-wing takeoffs should normally be initiated from the beginning of the approved useable portion of the runway. Intersection takeoffs can be made only after the Aircraft Commander has insured the aircraft performance and runway condition meet takeoff requirements.

B. AFTER TAKEOFF

Fixed-wing aircraft shall not make turns after takeoff below 500 feet AGL unless specifically directed by departure control or ATC.

The after-takeoff checklist should not be initiated or called for until reaching an altitude of 500 feet AGL. This will permit Flight Crewmembers to maintain a more thorough outside watch.

C. FLIGHT STATION ENTRY

Additional crewmembers will be permitted in the flight station during takeoff, climb, descent and landing only if seats not required by primary crewmembers or Flight Examiners/Instructors are available. Passengers may be permitted in the flight station under the same conditions and at the discretion of the Aircraft Commander.

D. USE OF AUTOPILOT

The autopilot shall be operated in accordance with the applicable Aircraft Flight Manuals. Use of the autopilot is encouraged and permits a more thorough outside lookout by the Flight Crewmembers. However, the autopilot shall not be used during takeoff, landing, or operations below 200 feet AGL.

5. EN ROUTE

A. NAVIGATIONAL AIDS

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All available navigational aids shall be utilized from departure to landing to readily establish the geographical position of the aircraft.

TACAN course information should be cross-checked and verified in flight against other navigation systems to ensure that TACAN is functioning correctly. An improperly adjusted or malfunctioning component of the TACAN system may result in azimuth lock-on to a false bearing. The error will probably be plus or minus 40 degrees but may be any value which is a multiple of 40 degrees. When navigating with TACAN, the DME reading may be used without restriction, but course information shall be used as follows:

(1). In-flight, at or above the published minimum enroute altitude.

(2). Descent to initial approach altitude for published approaches

(3). Accomplish a SID or published instrument approach only when the aircraft position can be confirmed continuously by at least one other navigational aid or radar, e.g. ADF, VOR, or airborne radar.

B. WEATHER FORECASTS

The Aircraft Commander shall ensure that destination and alternate weather forecasts are obtained before reaching the equal time point (ETP) on over water missions. Weather forecasts will provide the Aircraft Commander with sufficient terminal and alternate weather information for diverting or continuing to destination. Detailed weather information may be received on METRO UHF frequencies, phone patch through USAF air/ground stations to weather reporting stations, FAA facilities, or by monitoring VOLMET, HIWAS, TWEB, or AWOS broadcasts. VOLMET weather broadcasts shall be monitored as often as possible to relieve HF frequency congestion.

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C. TERRAIN CLEARANCE

The Aircraft Commander is responsible for terrain avoidance during all phases of flight. At night or under IMC weather conditions, when terrain clearance within 25 nautical miles of the intended course is less than 3000 feet of the flight altitude, the Copilot or Navigator, if aboard, shall monitor the flight path of the aircraft to assure proper terrain clearance, as determined from appropriate charts with maximum elevation figures published.

D. USE OF OXYGEN

Crewmembers and passengers shall use oxygen as specified in the appropriate Aircraft Flight Manuals, FAR Part 91.211, or as follows:

(1). During flight when the cabin pressure altitude is above 10,000 feet for longer than one hour, Flight Crewmembers shall use supplemental oxygen for the remainder of the flight if continued at or above 10,000 feet.

(2). Unpressurized flights from 18,000 feet to 25,000 feet MSL require preflight denitrogenation breathing for 10 minutes. All crewmembers shall breathe 100 percent oxygen from the start of prebreathing until the mission above 18,000 feet MSL has been completed and the aircraft has descended below 18,000 feet MSL.

(3). Unpressurized flights from 25,000 feet MSL to 30,000 feet MSL require preflight denitrogenation for 20 minutes. All crewmembers shall breathe 100 percent oxygen from the start of prebreathing until the mission above 25,000 feet MSL has been completed and the aircraft has descended below 18,000 feet MSL.

6. DESCENT AND APPROACH

A. INSTRUMENT APPROACH MINIMUMS

Instrument approach minimums shall be adhered to as published. However, if RVR or other instrument approach components or visual aids are inoperative, consult the Inoperative Components or Visual Aids Table in the Terminal Approach Publications for increased Decision Height, Minimum Descent Altitude, or visibility minimums.

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B. APPROACH BRIEFING

Before commencing an approach, the Aircraft Commander shall brief his crew on the procedures he intends to follow during approach and landing, and missed approach intentions. This briefing shall be consistent with the aircraft's standardization/operating manual where applicable.

C. COCKPIT COORDINATION

There is no substitute for good communications between Flight Crewmembers in the execution of aircraft operations. Each must know what is expected of the other during all phases of flight. A misunderstanding or an erroneous assumption on the part of either can result in tragedy when operating near the ground in low visibility conditions or in other situations where the margin for error is small. As the result of assigning pilots with varying levels of experience and proficiency to a flight, it is an absolute necessity that each pilot respond to the other in the interest of safety and for the successful accomplishment of the mission.

D. PRACTICE APPROACHES

To maintain the required degree of proficiency in instrument flying skills, pilots are strongly encouraged to make PAR, ASR, ILS, and non-precision approaches under VFR conditions, consistent with the requirement to have a qualified safety observer in the cockpit. Aircraft Commanders will ensure that flight hours are used efficiently in order to provide adequate training for all Flight and Air Crewmembers.

7. POSTFLIGHT

A. POSTFLIGHT CHECK LISTS

Aircraft postflight checklists shall be accomplished in accordance with the appropriate Aircraft Flight Manual.

CHAPTER V FLIGHT OPERATIONS PROCEDURES

B. CUSTOMS, IMMIGRATION, AGRICULTURE AND HEALTH INSPECTIONS

At those arrival points where federal or local inspections are required, crewmembers and passengers shall proceed directly from the aircraft to Customs, Immigration, or Agricultural inspectors for processing. The Aircraft Commander shall have the necessary clearance forms completed before reporting to inspectors. For arrivals from foreign countries:

(1). Customs

Customs inspection is required at all U.S. entry airports except MacDill AFB due to a special agreement. However, the Aircraft Commander shall file with the District Director of Customs, within 48 hours after arrival, a General Declaration for the aircraft and Individual Declarations for each person aboard specifying the number and description of the pieces of baggage brought into the United States.

(2). Agriculture and Health

Agriculture and Health entry requirements shall be complied with by the appropriate foreign or domestic clearance guides. AOC aircraft must be inspected whenever arriving from a foreign country. An inspector will inspect the aircraft on the AOC ramp if the Agriculture Department is notified by telephone at least one hour in advance. Garbage must be bagged for removal and incineration. The aircraft must be attended until the inspection is completed and the aircraft is released; however, the crew may be allowed to depart. At MacDill only, all garbage may be taken to Base Operations for disposal if the agriculture agent fails to meet the aircraft.

C. MISSION DEBRIEFING

The Aircraft Commander and any other designated crewmember shall make themselves available for post-mission debriefing. This debriefing will be conducted at the request of the Mission Commander.

CHAPTER V FLIGHT OPERATIONS PROCEDURES

D. DAILY FLIGHT LOG AND MAINTENANCE LOG

The Aircraft Commander and Flight Engineer or Crew Chief shall complete all flight time entries and maintenance write-ups in the Daily Flight Log and the Aircraft Maintenance Log, respectively. The Aircraft Commander shall sign both logs upon completion. As soon as possible after arrival, the Aircraft Commander, Flight Engineer or Crew Chief, and other crewmembers as needed should debrief maintenance personnel.

E. PILOT IN COMMAND (PIC) TIME

An Aircraft Commander on an AOC aircraft which requires more than one pilot may log all his flight time as PIC. An Aircraft Commander on an AOC aircraft that does not require more than one pilot may log as PIC time only that flight time during which he is the sole manipulator of the controls, unless the Aircraft Commander holds an ATP certificate, in which case he may log all his flight time as PIC.

On all AOC aircraft requiring more than one pilot, the designated Aircraft Commander logs all his flight time as PIC, and the Copilot logs PIC time during the time he manipulates the controls. Therefore, it is possible for the total PIC time on a flight to exceed the total flight time.

F. INSTRUMENT TIME

A pilot may log as instrument time only that time during which he operates the aircraft solely by reference to instruments. Therefore, a pilot may not log instrument time while he is acting as second in command (SIC), whether or not that pilot is the designated Aircraft Commander. To log instrument time, the pilot must be the sole manipulator of the controls; therefore he is acting as PIC. Instrument flight time cannot exceed PIC time.

Simulated instrument time in the aircraft should be logged as Hood time; simulated instrument time in a simulator (for which a Daily Flight Log must be submitted) should be logged as Simulated time.

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G. LOGGING OF CREW AND PASSENGERS

Aircraft Commanders shall ensure each occupant who flies on AOC aircraft is logged on the AOC Flight Log or a supplemental manifest of the Flight Log. Without exception, all occupants who fly on AOC aircraft must be logged on the official Flight Record maintained by the AOC Operations Division.

H. DISPOSITION OF LOGS

A Daily Flight Log shall be completed for each day's flights. The original copies shall be mailed to the Flight Branch of the Operations Division on a weekly basis. At the end of the month, remaining logs shall be sent via overnight mail in order to reach AOC not later than the fifth day of the next month. The Aircraft Commander is responsible for the mailing of these logs to AOC when the aircraft is deployed.

I. DAILY STATUS REPORT

Aircraft Commanders shall ensure that a Daily Status Report is made to the Operations Division. If the Mission Commander transmits the daily status information to AOC with a copy to the Operation Division's Flight Branch, this requirement is fulfilled. The information shall include: aircraft identification, aircraft status, flight hours for the day, project hours to date, total aircraft hours, crew location (city, lodging, telephone number), FBO or military base location and telephone number, estimated time of departure, destination, schedule changes, problems or remarks.

Daily Status Reports may be transmitted by electronic mail, telephone, or facsimile machine.

J. PROJECT/MONTHLY REPORT

This report summarizes mission accomplishment, project costs, and ancillary information such as field maintenance facilities, fueling vendors, lodging, etc. The Mission Commander shall submit this report at the end of the project or on a monthly basis, whichever occurs first, through the completion of the project. The report must be forwarded in time to arrive at AOC by the fifth day of the next month.

K. AIRCRAFT DAILY LOG

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The Aircraft Commander shall ensure that an Aircraft Daily Log is completed at the end of each month for his aircraft and submitted in time to arrive at AOC by the fifth day of the next month.

L. PERSONNEL DAILY LOG

AOC personnel shall ensure that a Personnel Daily Log is completed at the end of each month and is submitted in time to arrive at AOC by the fifth day of the next month.

M. OTHER REPORTING REQUIREMENTS

In addition to the above reports, the Mission Commander shall ensure that the following documents are forwarded to AOC in time to arrive by the fifth day of the next month:

(1). Travel vouchers for all AOC personnel assigned to the mission.

(2). Fuel receipts, marked with the project task number, date and flight number.

(3). All IMPAC card receipts.

(4). CD 81 and time and attendance sheets signed by the Mission Commander.

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1. CREW DUTY

A. GENERAL

The following times are considered to be the AOC standard which will provide an acceptable level of physical and mental performance for flight operations. The Mission Commander shall operate within these requirements and shall ensure that crewmembers properly utilize the authorized crew rest periods to alleviate the cumulative effects of fatigue.

B. CREW DUTY TIME

Crew duty time begins when a Flight or Air Crewmember reports to a designated place to begin the preparation for a scheduled flight. In the case of an unscheduled flight, crew duty time begins when the first Flight or Air Crewmember reports for their workday. At a minimum, crew duty time will start one hour prior to scheduled takeoff time. Crew duty time ends one hour after block-in time or upon completion of aircraft post-flight duties, whichever is later.

Maximum crew duty time for multi-piloted aircraft is 16 hours. Maximum crew duty time for an aircraft with an inoperative autopilot, an aircraft not equipped with an autopilot, or a single-piloted aircraft is 12 hours.

C. CREW REST

Flight and Air Crewmembers shall be given a 12 hour crew rest period prior to reporting for flights. This policy is not intended to prevent crewmembers from arriving at work until it is time to begin preparation for flight, but rather to ensure crewmembers have had sufficient time for uninterrupted rest plus time for meals, transportation, etc., prior to or between crew duty time(s). Mission Commanders should dictate a “no earlier than” reporting time if they are concerned crew duty time could be impacted by a crewmember reporting early for work.

For non-mission, single leg flights of less than 4 hours duration, Aircraft Commanders may use their discretion in determining an appropriate crew rest period of less than 12 hours. This deviation from the standard crew rest period should allow Aircraft Commanders some flexibility for flights such as, but not limited to, ferry flights, adverse weather repositioning and short notice transits to a maintenance facility.

While deployed, AOC personnel shall be relieved from their normal duties for at least one day (down day) during any seven consecutive work and/or standby days. However, short meetings for mission planning and briefings may be scheduled if they do not interfere with the 12 hour crew rest period.

D. STANDBY DUTY

Standby duty when deployed will be defined by the Mission Commander in the project instructions as approved by the Director, AOC. Normally standby duty will require crewmembers to be at a specific location at a specified time.

E. MAXIMUM FLYING TIME

Flight and Air Crewmembers shall not exceed the following block time limits:

Period (Days)	Single-Pilot Operations	Multi-Pilot Operations
1	8	12
7	30	60
30	100	120
90	160	320
365	600	1200

In addition to these limits, pilots assigned to single-pilot operations away from their permanent duty station shall not be scheduled for deployment periods exceeding 60 consecutive days.

F. TIME ZONE CHANGES

Changing time zones disrupts circadian rhythms and can cause a marked decrease in performance. This condition, called “jet lag”, is compounded by fatigue and is resolved only by accommodation to the new local time zone. Mission Commanders should take time zone changes into account and lengthen crew rest periods as necessary.

2. PHYSIOLOGICAL RESTRICTIONS

CHAPTER VI FLIGHT DUTY LIMITATIONS

Crewmembers shall not be scheduled for flight duty if any of the following categories occur:

A. ALCOHOL, DRUGS, NARCOTICS

Within 12 hours of having consumed alcoholic beverages, narcotic or flight grounding drugs, crewmembers are prohibited from performing their duties. Crewmembers shall not consume alcoholic beverages during the 12 hour period prior to scheduled takeoff time. Any crewmember or passenger who, in the opinion of the Aircraft Commander, is under the influence of alcohol, drugs, or narcotics, will not be permitted aboard the aircraft.

B. IMMUNIZATION

Within 24 hours of receiving immunization, other than smallpox or oral poliomyelitis vaccines, or after receiving anesthetics for dental or surgical procedures.

C. BLOOD LOSS

Within 72 hours of losing or donating blood in an amount of 200 c.c. or more.

D. MEDICATION

When taking oral or injected medication, unless a waiver has been granted by an FAA medical examiner or military flight surgeon. Mild analgesics such as aspirin and similar non-aspirin types of medication may be used during flight duty if prescribed by an FAA medical examiner or military flight surgeon and if the underlying ailment is not cause for grounding.

E. PHYSIOLOGICAL TRAINING

Within 24 hours of having attended a pressure chamber.

F. SCUBA DIVING

Within 48 hours of engaging in diving activity using SCUBA where controlled ascent (decompression) is required. For diving activity using SCUBA, but not requiring decompression stops, crewmembers shall not be scheduled within 24 hours.

G. PREGNANCY

Flight restrictions during pregnancy will be handled on a case-by-case basis. Following pregnancy and recovery, clearance to return to flight status shall be granted by the Director, AOC, upon medical certification of fitness for flight duty.

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CHAPTER VII FLIGHT SAFETY AND SURVIVAL

CHAPTER VII FLIGHT SAFETY AND SURVIVAL

1. FLIGHT SAFETY

A. CONDUCT OF FLIGHT

Aircraft Commanders shall conduct their flights in such a manner as to avoid unjustified hazards. Flight Crewmembers must exercise prudent judgment and take proper action when dictated by emergencies that endanger life or property. No person may serve as a crewmember on AOC aircraft if his physical or psychological condition could impair the safe conduct of flight operations.

B. MINIMUM CREW RESTRICTION

When an AOC aircraft is engaged in flight operations such as a pilot checkout, night familiarization, functional check flight, evaluation check flight, or reduced operating engines or systems, personnel authorized onboard shall be limited to the minimum crew required to accomplish the assigned mission. At the discretion of the Aircraft Commander, minimum crew may include Flight Crewmembers or appropriate maintenance personnel onboard to observe the evolution, Flight or Air Crewmembers onboard for training purposes, or Mission Crewmembers onboard for evaluation of scientific equipment.

C. SIMULATED EMERGENCIES RESTRICTION

Simulated emergencies that may affect the controllability of the aircraft or that may alarm crewmembers should be performed on training flights only.

D. LOADING AND OFF-LOADING

When fixed-wing aircraft are engaged in the loading or off-loading of personnel or cargo, the engine(s) on the side of the aircraft where loading or off-loading is taking place shall be shut down if the turning engine(s) or their exhaust pose a threat to personnel or property in the area.

When helicopters are loading or off-loading personnel or cargo, the Aircraft Commander shall ensure that personnel and equipment approach and depart from the front of the aircraft. Special attention should be given to possible hazards due to sloping terrain.

E. STERILE COCKPIT

Sterile cockpit procedures shall be in effect during critical phases of flight. Critical phases of flight are defined as all operations involving engine start, taxi, takeoff, and landing, as well as flight operations conducted below 500 feet AGL or in severe weather. No crewmember may engage in, or any Aircraft Commander permit, any activity during a critical phase of flight which could distract any Flight Crewmember from the performance of their duties or which could interfere in any way with the proper conduct of those duties. Prohibited activities include: nonessential communications between the cabin and the cockpit, nonessential conversation between Flight Crewmembers, and reading publications not related to the conduct of the flight. Conversations relative to training/check flights are considered essential.

F. SMOKING RESTRICTIONS

Smoking is prohibited at all times aboard AOC aircraft. Smoking is also prohibited within 50 feet of aircraft on the ground, or within 100 feet of aircraft on the ground during fueling operations.

G. ENGINE START AUTHORIZED PERSONNEL

Aircraft engines shall not be started without a qualified pilot, flight engineer, or mechanic in the pilot's seat. These personnel shall be authorized, in writing, by the Chief, Operations Division.

H. STARTING PROCEDURES

Before starting an engine, the parking brake shall be set and the Flight Crewmember in the cockpit shall ascertain that the area around the engine to be started is clear. Whenever an engine is started, personnel with adequate fire extinguishing equipment, if available, shall be stationed in the immediate vicinity of the engine but safely clear of propellers or rotors and must remain in visual contact with one of the Flight Crewmembers monitoring the start.

When starting an aircraft engine, all challenges and signals between the ground attendant and the person at the engine controls shall be clearly understood and so indicated by repetition before action is taken by either person. When the engine is started entirely from the cockpit, the person at the engine controls shall exchange signals with a person observing the engine from outside the aircraft or an aft observer if no outside observer is available. If available, radio contact should be made with the ground crew prior to starting any engine.

Hearing protection shall be worn by all ramp personnel during engine or auxiliary power unit operations.

I. TAXIING AND TOWING

Aircraft should not be taxied or towed at speeds faster than a brisk walk. When taxiing in close proximity to obstructions or other aircraft, a qualified taxi director shall attend the taxiing aircraft along with other ground personnel as necessary to ensure safe taxiing or towing.

Taxi training will only be conducted by designated personnel. When conducting training, the designated instructor shall be in a position to assume control of the aircraft at all times. Seat belts shall be worn when conducting taxi training.

J. SAFETY BELTS

Aircraft Commanders shall ensure that passengers and crewmembers have safety belts securely fastened prior to and during all takeoffs and landings, when turbulence is encountered or anticipated, and while flying through areas of forecast clear air turbulence. During helicopter operations, each person's safety belt shall be worn from takeoff until after landing, except when the Aircraft Commander approves temporary removal for necessary activities.

K. OBSTACLE CLEARANCE

Multi-engine aircraft must be capable of clearing, with one engine inoperable after refusal speed, all obstacles along the flight path or maintaining visual separation of at least 300 feet from any obstacle higher than the climb out flight path. Aircraft must also be capable of vertically clearing all obstacles within the IFR climb out area. The climb out area is defined in the DOD criteria for standard instrument departures. When applicable, all FAR Part 25 performance requirements must be met. Takeoff gross weights shall be adjusted to conform to these requirements:

(1). All Engines Operating

(a). Permit a minimum climb gradient of 150 feet per nautical mile where no climb rate is specified by the SID/IFR departure.

(b). Permit the aircraft to be at the required height over the controlling obstacle when an obstacle height and/or climb gradient is specified on the SID.

(2). One Engine Inoperative

(a). Provide minimum terrain/obstruction clearance for a distance of at least five nautical miles from the end of the runway.

(b). Permit the aircraft to clear the controlling obstacle.

L. OPERATIONS AT OR BELOW 500 FEET AGL (FIXED-WING AIRCRAFT)

When mission requirements call for flight altitudes at or below 500 feet AGL, crewmembers must be extremely alert and monitor their instruments closely. Flight Crewmembers must familiarize themselves with terrain and obstruction clearance requirements for the flight prior to conducting the mission. The following policies shall apply:

(1). The Director must approve flights below 200 feet AGL.

(2). Radar Altimeter

A fully functional pilot's radar altimeter is required for all flights below 500 feet AGL.

(3). Day VFR Turns

(a). No turns shall be made below 300 feet AGL in heavy aircraft.

(b). No turns shall be made below 200 feet AGL in light aircraft.

(c). Turns shall be limited to standard rate below 500 feet AGL.

(4). Night VFR/IFR Turns

(a). No turns shall be made below 500 feet AGL (1000 feet AGL without an operating radar altimeter.)

(b). Turns shall be limited to standard rate below 1000 feet AGL.

M. OVER WATER OPERATIONS

Over water operations shall be conducted within power off glide distance to shore with the following exceptions:

(1). Helicopters may operate off shore when equipped with floats and over water survival gear.

(2). Multi-engine fixed wing aircraft may operate off shore when equipped with a life raft and over water survival gear.

(3). Single engine aircraft may operate beyond glide distance to shore when equipped with appropriate over water survival gear. In addition, they must be in constant positive radio contact and have a rescue source available and near by.

N. MANEUVERS RESTRICTIONS

The following restrictions apply when performing nonstandard maneuvers:

(1). Simulated engine loss

No engine shall be feathered or shut down below 3000 feet AGL. For training purposes, a simulated single engine-out approach to a touch and go landing is permitted as long as all engines are used for the touchdown and for the takeoff.

V1 cuts are to be performed as a simulated power loss. Instructor Pilots shall simulate engine loss by retarding the power lever to zero thrust.

(2). No flap landing

No flap landings shall be made to a full stop unless the operating handbook approves no flap takeoffs.

(3). Stalls

All stalls and approaches to stalls shall be accomplished in VMC and at a minimum of 3000 feet AGL for 2 engine aircraft and 5000 feet AGL for 4 engine aircraft. Steep turns may be used for the FAR-required clearing turn before stall practice.

(4). Multiple Emergencies

Instructor Pilots shall not compound emergencies in the aircraft unless one simulated emergency logically leads to another (e.g., low oil pressure logically leads to power loss while an engine loss does not logically lead to a gear malfunction). Multiple emergencies may be accomplished in the aircraft simulator.

2. SURVIVAL

A. GENERAL

The items of safety and survival equipment specified in this section are the minimum required for safe operations. Additions and changes to these requirements may be necessitated by such considerations as aircraft configuration, type and duration of missions, area of operations, and availability of search and rescue facilities. Additional information on specific aircraft and missions may be found in the applicable Aircraft Flight Manual. Individual survival gear shall be placed near the crewmembers utilizing the equipment so as to be readily accessible in an emergency.

B. PERSONAL PROTECTIVE CLOTHING

Nomex flight suits shall be worn by each AOC crewmember for all missions on which they fly. Flight suits shall be worn from prior to engine start until after engine shutdown.

Due to a lack of cooling air in the Lake Aircraft which could lead to early fatigue or exhaustion, Nomex flight suits may be replaced with an alternative attire as prescribed by the Director, AOC.

C. EMERGENCY LOCATOR TRANSMITTER (ELT)

All NOAA aircraft shall be equipped with an operable ELT.

D. EMERGENCY RADIO

At least one portable emergency radio transceiver capable of communication on 121.5 MHZ or 243.0 MHZ, and not dependent on the aircraft power supply, shall be carried whenever a single engine aircraft is operated beyond power-off gliding distance from land, or whenever a multi engine aircraft is operated on an extended over water flight. The device shall be packed in a self-buoyant, water-resistant container.

E. LIFE RAFTS

Life rafts of sufficient capacity to accommodate the passengers and crew shall be provided on AOC aircraft when operating over water. Each raft shall be equipped with an attached approved survivor locator light. Survival kits shall be furnished with the life rafts which contain at least a raft repair kit, a hand pump, a first aid kit, desalting kits, a signaling mirror, emergency rations, a tarpaulin, a fishing kit, a raft knife, a compass, sunburn ointment, lip balm, oars, emergency water containers, flares, a radar reflector, a bailing bucket or sponge, a retaining line, dye marker, a flashlight, and survival manual.

CHAPTER VII FLIGHT SAFETY AND SURVIVAL

F. LIFE PRESERVERS

One approved, inflatable, dual compartment life preserver equipped with an approved survivor locator light and whistle shall be carried for each person on over water flights in AOC aircraft. Life preservers shall be worn by all occupants of the aircraft on all over water flights operating below 500 feet absolute altitude, or at any other time the Aircraft Commander so directs.

G. ANTI-EXPOSURE SUITS

An anti-exposure suit, either continuous-wear or quick-donning, shall be provided for each occupant of AOC aircraft operated over water when the following ambient conditions prevail:

(1). The water temperature is 59 degrees Fahrenheit or below, or

(2). The outside air temperature is 32 degrees Fahrenheit or below.

The final determination on wearing anti-exposure suits shall be made by the Aircraft Commander based on all pertinent factors, such as type and duration of mission, ambient outside temperatures and proximity and capability of search and rescue facilities.

H. LIFE SUPPORT AND CLOTHING EQUIPMENT

Individual life support equipment and clothing allowances are established by the AOC Safety Staff. Additions to the standard list may be authorized depending upon the nature of the mission or location of operations.

I. WEAPONS ISSUE

On certain AOC missions, such as operating in an arctic environment, there exists a need or requirement to carry a weapon onboard the aircraft. En route supplements for the area concerned should be reviewed to determine whether a weapon should be carried. Aircraft Commanders shall determine for themselves, based on the mission and areas to be overflown, whether a weapon and additional survival gear is necessary.

AOC maintains weapons for issue to Flight Crewmembers. Weapons will be assigned by the AOC Weapons Manager upon receipt of request by the assigned Aircraft Commander.

Weapon and ammunition issue is accomplished by AOC supply personnel. At least one box of ammunition should be onboard the aircraft for use in a survival situation. If handguns are carried as personal survival weapons they will be drawn from AOC Supply. Individuals shall receive qualification on the issued weapons (NC Instruction 8370). This qualification shall be good for two years. The Aircraft Commander will ensure the safe operation, cleanliness, storage and security of each weapon carried. Upon completion of the mission, weapons will be returned to Supply in a clean condition and the Weapons Manager shall be notified of their return.

Personal weapons may be authorized on AOC aircraft only by the Director, AOC.

J. PHYSIOLOGICAL TRAINING REQUIREMENTS

Physiological training instructs crewmembers on how the human body is effected in flight and how to recognize and avoid those factors which are detrimental to the safe operation of aircraft. All pressurized aircraft Flight and Air Crewmembers shall complete an AOC approved course in physiological training as soon as practicable during the first year of an aviation assignment. The course shall consist of a pressure chamber ascent (Type I for aircraft that operate above 25,000 ft, Type II for below 25,000 feet) and classroom instruction that should, at a minimum, include: anatomical effects of trapped gases and their treatment, hypoxia, use of aircraft oxygen systems, hyperventilation, disorientation, decompression phenomena, effects of explosive decompression, vertigo, flying while on medication, flying after scuba diving, night flying, and the effects of smoking.

This qualification shall be good for five years for Flight Crewmembers. Air Crewmembers have no requirement for recurrence but may request additional training.

K. WATER SURVIVAL TRAINING REQUIREMENTS

Water survival training instructs crewmembers on how to survive a ditching at sea and the proper use of emergency survival equipment. All Flight and Air Crewmembers shall complete an AOC approved course in water survival training for qualification on AOC aircraft as soon as practicable during the first year of an aviation assignment. The course should include, at a minimum, classroom instruction covering: swim techniques, drown-proofing, utilization of standard survival equipment (including life preservers, rafts, flares, signal mirrors, dye markers, and survival radios), rescue devices, and basic instruction on how to survive a ditching at sea.

This qualification shall be good for five years.

L. ARCTIC SURVIVAL TRAINING REQUIREMENTS

All Light Aircraft and Rotary Wing Aircraft Flight Crewmembers involved in flights into or within arctic areas shall attend and successfully complete an arctic survival course as soon as practicable during the first year of such assignment. The course in arctic survival shall be completed at an AOC approved military or civilian facility.

This school is an initial requirement only. No recurrence is required, however, Flight Crewmembers may request additional training.

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CHAPTER VIII AEROMEDICAL POLICY

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CHAPTER VIII AEROMEDICAL POLICY

1. PHYSICAL REQUIREMENTS

A. GENERAL

The Office of NOAA Corps Operations (NC) has the responsibility to provide operational medical support, to safeguard the health of personnel embarked on NOAA aircraft, to provide a place of employment that is free from recognized hazards that are causing or likely to cause death or serious harm to employees (29 CFR 1903.1), and to ensure the accomplishment of its mission by reducing medically related disruptions of operations to a minimum.

B. RESPONSIBILITIES

The Director, NC (with advice from the NC health staff), and the Director, AOC, establish the physical standards for personnel aboard NOAA aircraft. The Director, NC, shall ensure that these standards comply with the policies of NOAA, the Office of Personnel Management (OPM), the U.S. Coast Guard (USCG), the Federal Aviation Administration (FAA), and other appropriate Federal agencies.

NC shall ensure that AOC conducts medical examinations and tests to determine the initial and continuing fitness for duty of all AOC personnel assigned to aviation duty.

The AOC medical staff shall monitor physical examinations and tests as may be necessary to ensure the health of aviation personnel who are exposed to chemical, physical, or biological agents that could adversely affect their health, or who perform duties such that physical impairment would affect performance of duty or present undue risk directly or indirectly to the employee or to other embarked employees.

C. PHYSICAL EXAMINATION STANDARDS AND REQUIREMENTS

The standards for Government Service and Wage Grade employees will, generally, be similar to those for licensing or certification of airmen by the FAA, but may require modification to reflect operational requirements peculiar to NOAA, such as service in isolated areas, severe climatic conditions, specific hazards peculiar to operation of research aircraft, and lack of access to supporting medical facilities.

CHAPTER VIII AEROMEDICAL POLICY

Commissioned Officer standards and physical examination requirements are established by the Director, NC. Standards for Commissioned Officer aviation personnel are contained in the NOAA Corps Regulations and the USCG Medical Manual.

Air Crewmembers must satisfy certain other requirements presented in this chapter before embarkation.

Physical examinations shall be performed by a currently certified FAA examiner or a Uniformed Service flight surgeon.

D. FLIGHT CREWMEMBER CERTIFICATION

All Flight Crewmembers who are required to maintain FAA certification will comply with the minimum medical standard of medical fitness required to maintain the respective certificate. Aircraft Commanders on heavy aircraft are required to possess a valid Class I FAA medical certificate. All other Flight Crewmembers are required to possess a valid Class 2 FAA medical certificate.

E. AIR CREWMEMBER CERTIFICATION

Individuals possessing a valid Class 3 FAA medical certificate are deemed to have met the NOAA medical standards for aviation duty as Air Crewmembers for the time period that the certificate is in effect, provided no disqualifying change in medical condition occurs.

Air Crewmembers not possessing a valid Class 3 FAA medical certificate shall comply with the following requirements:

(1). Vision and Eyes

(a). Distant visual acuity of 20/50 or better in each eye separately, without correction; or at least 20/50 in each eye separately corrected to 20/30 or better with corrective lenses (contact lenses or glasses), in which case the applicant will be qualified only on the condition that he wear those corrective lenses while in the performance of duties involving aerial flight.

(b). No pathology of the eye.

(c). Ability to distinguish aviation signal red, aviation signal green, and white.

(2). Ear, Nose, Mouth, Throat, and Equilibrium

(a). Personnel must demonstrate a threshold of hearing in each ear consistent with the following American National Standards Institute (ANSI) 1969 standards:

500Hz	1000Hz	2000Hz	3000Hz	4000Hz	5000Hz
30db	30db	30db	50db	50db	50db

(b). No acute or chronic disease of the internal ear.

(c). No disease or malformation of the nose or throat that might interfere with or be aggravated by flying.

(d). No disturbance in equilibrium.

(3). Mental

(a). There shall be no established medical history or clinical diagnosis of the following:

[1]. Personality disorder that is severe enough to have repeatedly manifested itself by overt acts.

[2]. Psychosis.

[3]. Alcoholism unless there is established evidence, satisfactory to the examiner, of recovery, including sustained abstinence from alcohol for not less than the preceding 2 years. As used in this section, alcoholism means a condition in which a person's intake of alcohol is great enough to damage physical health or social functioning, or when alcohol has become a prerequisite to normal functioning.

[4]. Acute or chronic medication requirements of a nature that the medication taken results in an alteration of perception, judgment, or behavior.

[5]. Drug dependence. As used in this section, drug dependence means a condition in which the person is addicted to drugs or dependent on drugs other than alcohol, tobacco, or ordinary caffeine containing beverages as evidenced by a habitual or clear sense of need for the drugs.

(b). There shall be no other personality disorder, neurosis, or mental condition that the examiner finds that:

[1]. Makes the applicant unable to perform duties involving aerial flight.

[2]. May reasonably be expected within 2 years after the finding, to make the applicant unable to perform those duties, and the findings are based on case history, and appropriate, qualified, medical judgment relating to the condition involved.

(4). Neurologic

(a). There shall be no established medical history or clinical diagnosis of the following:

[1]. Epilepsy

[2]. A disturbance of consciousness without a satisfactory medical explanation of the cause.

(b). There shall be no other convulsive disorder, disturbance of consciousness that the examiner finds that:

[1]. Makes the individual unable to perform the duties involving aerial flight.

[2]. May reasonably be expected within 2 years after the finding, to make the applicant unable to perform those duties, and the findings are based on case history, and appropriate qualified, medical judgment relating to the condition involved.

(5). Cardiovascular

(a). There shall be no established medical history or clinical diagnosis of the following:

[1]. Myocardial infarction.

[2]. Angina pectoris.

[3]. Coronary artery disease that has required treatment, or if untreated, that has become symptomatic or clinically significant.

(6). General Medical Condition

(a). There shall be no organic, functional or structural disease, defect, or limitation that the examiner finds that:

[1]. Makes the individual unable to safely perform the duties involving aerial flight.

[2]. May reasonably be expected within 2 years after the finding, to make the applicant unable to perform those duties, and the findings are based on the case history, and appropriate, qualified medical judgment relating to the condition involved.

F. MISSION CREWMEMBER CERTIFICATION

Mission Crewmembers who fly aboard NOAA aircraft shall read and sign the AOC crewmember/passenger guidelines and information document, and return the completed sign-off sheet to the Mission Commander prior to the first departure. Individuals performing mission

duties on NOAA aircraft shall inform the Aircraft Commander of any significant medical problems prior to departure.

2. PHYSICAL DEFECTS AND WAIVERS

A. GENERAL

The term "physical defects" is intended to include all defects, disorders, disabilities, or conditions that may be of significance in determining an examinee's physical, mental, or emotional fitness to perform the duties of the specific position required in the ordinary course of events or that might reasonably be expected in emergency situations. Unless otherwise specified, the terms "physical defect" and "physically fit" include mental and emotional factors.

B. CATEGORIES OF PHYSICAL DEFECTS AND WAIVER REQUIREMENTS

When applicants or employees are found physically fit for employment or duty, all physical defects that have been found shall be recorded. Each defect shall be recorded in sufficient detail to show clearly its character, degree, and category, so the description may serve as a baseline against which subsequent suspected changes may be assessed.

When examinees are considered not fit for employment or duty, the defects should be described in context with duties to assist nonmedical personnel in understanding why they are considered disqualifying. The reasons for the decision should be recorded so as to support the finding in the event of review by appropriate authority. Symptoms should not be listed as defects.

Employees shall notify their immediate supervisor of any change in physical condition that may affect or limit continued performance of duties involving aerial flight. The immediate supervisor will arrange for examination or consultation with medical authority for disposition of any condition.

The following are categories of physical defects and waivers:

(1). Category I - Physical Defect (Waiver not required)

When the defect is considered unlikely to interfere with performance of duties of the specific position and, therefore, not disqualifying, it should be recorded and described on the report of medical examination, SF-88, or other appropriate form, together with a notation such as: Category I, not considered disqualifying.

(2). Category II - Physical Defect (Waiver recommended)

When the defect would not preclude satisfactory performance of the duties of a specific position, a waiver should be recommended.

(3). Category III - Physical Defect (Waiver not recommended)

When the defect would preclude satisfactory performance of the duties of a specific position, or would cause unacceptable risk to the life, health, or safety of the examinee or other persons, or would be likely to jeopardize the mission of the organization to which the examinee is or would be assigned, the examinee should be considered unfit for flight duty, and an entry should be made on the form used to record the examination (or other appropriate form) that the defect is considered disqualifying and that a waiver is not recommended.

(4). Category IV - Physical Defect (Conditional waiver involving restrictions)

When the defect would not preclude performance of duties of the specific position only under certain specified conditions, a conditional waiver should be recommended, such as recommending that a waiver be granted for defective vision on condition that the examinee wear appropriate corrective lenses while on duty.

(5). Category V - Physical Defect (Considered fit for modified duty pending correction)

When the defect would interfere with performance of duties of a position but is of a temporary or correctable nature, the review officer should consult with the Director, AOC. The Director, AOC will then decide whether to hire the applicant or continue the employee in a modified flight-duty status pending improvement or correction of the defect. The reviewer should advise the command concerning the anticipated duration of modified duty status, of a specified period of time, or following action to correct the defect.

(6). Category VI - Physical Defect (Defect considered temporary or correctable)

Considered unfit for flight duty in the specific position pending improvement or correction. When the examinee is unfit for flight duty in the specific position pending improvement or correction, the Director, AOC must be notified that the examinee is considered unfit for flight duty, but that the disqualifying defect is considered to be temporary or correctable. With the concurrence of the Director, AOC, the decision as to physical fitness may be held in abeyance and arrangements may be made for the examinee to return for reevaluation either at a specified time or following action taken to correct the defect.

C. PROCEDURES FOR RECOMMENDING WAIVERS

A request for waiver of physical disability may be initiated by the examinee, the examinee's supervisor or potential supervisor, the Aircraft Commander, the Director AOC, or the flight surgeon. The request must be submitted by memorandum to the Director, NC, via the employee's supervisor and the Director, AOC. The Director, AOC should provide a recommendation. **The Director, NC shall grant or deny the waiver**. Waivers shall be granted in increments of 1 year, or for a shorter period, as recommended by the examiner, and approved or extended by the Director, NC.

D. REASONABLE ACCOMMODATION

In all waiver review processes and decisions regarding qualified handicapped employees or applicants, the employer will examine options for reasonable accommodation, in accordance with the Rehabilitation Act of 1973, as amended (Public Law 93-112, 29 CFR 1613.704).

The Director, AOC is responsible for examining options for reasonable accommodation, determining if reasonable accommodation is possible, and making Permanently Not Fit For Duty/Not Fit For Duty (PNFFD/NFFD) determinations. Applicants or employees may appeal determinations on reasonable accommodation or PNFFD/NFFD to the Director, NC in the same manner as in the waiver process.

3. HEALTH AND SAFETY

A. HEALTH SERVICES STAFF

CHAPTER VIII AEROMEDICAL POLICY

The NOAA Health Services Staff is composed of USPHS officers on assignment to NOAA and designated NOAA Corps officers or civilian personnel assigned by the Director, NC. Medical duties of health services staff personnel are described in billet and position descriptions or in additional duty memoranda. AOC personnel, when serving in health services-related collateral duties, are considered health services staff.

The Director of Health Services is a USPHS medical doctor assigned to NOAA, and is responsible for development and implementation of the AOC health care program. As such, he is the principal medical advisor to the Director, AOC, and reports to the Director. This individual serves on the AOC Mishap Board and the NOAA Aviation Advisory Board.

The AOC Safety Staff shall provide for all health and safety related inspections of NOAA aircraft and ground servicing areas.

B. OCCUPATIONAL HEALTH AND PREVENTIVE MEDICINE

AOC personnel shall ensure that standards of sanitation, industrial hygiene, radiation health, and environmental protection aboard NOAA aircraft and in NOAA-controlled ground servicing areas are maintained in accordance with AOC guidelines and directives, as set forth by the AOC Safety and NOAA Health Services staff. Additionally, crewmembers shall be alert for any threat of disease or potential health hazard which may affect embarked personnel. Information of such possibilities shall be passed to the NOAA Director of Health Services who shall provide appropriate medical advice regarding disease and injury prevention.

C. MEDICAL TREATMENT

The Director, AOC, Division Chiefs, Project Managers and Aircraft Commanders shall provide for necessary care and treatment of all personnel embarked aboard NOAA aircraft. Mission Commanders shall be responsible for consulting with the NOAA Medical Staff and other appropriate services to obtain the necessary care and treatment for personnel at deployment sites.

D. USE OF MEDICAL CARE FACILITIES

Commissioned Officers requiring treatment shall be referred to a Military Treatment Facility (MTF) or a Uniformed Services Treatment Facility (USTF) whenever practical. Where this is

not practical, and for civilian employees and embarked persons, referral may be made to any appropriate medical/dental facility.

E. PAYMENT FOR MEDICAL CARE

Payment for care of Commissioned Officers will be made by USPHS, but the PHS Beneficiary Medical Program office must be notified within 72 hours of emergency care (800-368-2777 or 301-443-1943 in Alaska, Hawaii, and Maryland). Payment for care of civilian personnel shall be through their personal medical insurance program or in accordance with OPM and OWCP regulations, as appropriate.

F. MEDICAL RECORDS

All medical records and memoranda, letters, etc., related to personal medical matters contain confidential information and, as such, are regulated by the Privacy Act. Such information shall not be divulged to anyone without the written consent of the individual. The only exceptions to this rule are the NOAA Health Services staff, consulting/referring providers, the Director and Deputy Director, AOC and the Director, NC. Fitness or non-fitness for duty and projected date of return to duty may be given to appropriate line supervisors, but without other identifying medical information.

G. POINT OF CONTACT

The first point of contact for medical or health issues is the NOAA Medical Staff. If he is unavailable for any reason, another USPHS medical officer assigned to NOAA may be consulted. There is one USPHS medical officer based at each of NOAA's Marine Centers. In the event no NOAA/USPHS Flight Surgeon is available, an appropriate FAA medical examiner, DOD flight surgeon, or USCG/USPHS shall be consulted. In remote or foreign areas where none of the above contacts are possible, the supervisor shall consult the best available source of medical expertise and advise the NOAA Medical USPHS Medical Officer when able. Points of contact for various services are listed below.

NOAA USPHS HEALTH SERVICES OFFICERS

CDR TOM FAHRES, (301) 713-3440, SILVER SPRING, MD
PRIMARY CONTACT

CDR ED McNERNEY, (813) 828-3310 ext. 3002, TAMPA, FL
SECONDARY CONTACT

REGIONAL FAA FLIGHT SURGEONS

FAA/Alaskan Region AAL-300 (AK)
COMM: (907) 271-5431
COMM: (907) 271-5435
222 West 7th Avenue
Anchorage, AK 99513

FAA/Central Region ACE-300 (KS, MO, NE, IA)
COMM: (816) 426-5096
COMM: (816) 426-5097
Federal Building
601 East 12th Street
Kansas City, MO 64106

FAA/Eastern Region AEA-300 (NY, PA, VA, WV, MD, DE, NJ, DC)
COMM: (718) 917-1152
COMM: (718) 917-1994
Federal Building
JFK International Airport
Jamaica, NY 11430

FAA/Great Lakes Region AGL-300 (ND, SD, MN, WI, MI, IL, IN, OH)
COMM: (312) 694-7491
COMM: (312) 694-7712
2300 East Devon Avenue
Des Plaines, IL 60018

FAA/New England Region ANE-300 (ME, VT, NH, MA, RI, CT)
COMM: (617) 270-2421
COMM: (617) 273-7282
12 New England Executive Park
Burlington, MA 01803

FAA/Northwest Mountain Region ANM-300 (WA, OR, ID, MT, WY, UT, CO)
COMM: (206) 392-2304
17900 Pacific Highway, South
Seattle, WA 98168

FAA/Southern Region ASO-300 (NC, SC, GA, FL, KY, TN, AL, MS, PR)
COMM: (404) 763-7251
COMM: (404) 763-7335
3400 Norman Berry Drive
East Point, GA 30344

FAA/Southwest Region ASW-300 (TX, OK, LA, NM, AR)
COMM: (817) 624-5300
COMM: (817) 624-5314
4400 Blue Mound Road
Ft Worth, TX 76193

FAA/Western-Pacific Region AWP-300 (CA, NV, AZ, HI)
COMM: (213) 297-1300
COMM: (213) 297-1301
15000 Aviation Boulevard
Hawthorne, CA 9026
FAA Medical Certificate

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CHAPTER IX EMERGENCY PROCEDURES

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CHAPTER IX EMERGENCY PROCEDURES

1. GENERAL

A. RESPONSIBILITY

When an Aircraft Commander experiences an in-flight difficulty or emergency, or believes a situation exists that will create an emergency, he must take action to ensure the safety of flight. The Aircraft Commander is encouraged to use all personnel on the aircraft in a judicious manner to assist in responding to the emergency. The proper operating and emergency procedures for each aircraft are contained in the applicable Aircraft Flight Manuals. The Aircraft Commander may deviate from approved procedures when a greater emergency would result from following approved procedures.

B. EMERGENCY DRILLS

Aircraft Commanders shall hold emergency drills to maintain crew proficiency in emergency procedures. Drills should be realistic and participation by all crewmembers is mandatory. Ditching drills shall be conducted while airborne to train all personnel in donning their survival equipment expeditiously. Drills shall be held at times which will not interfere with the conduct of the assigned mission. Emergency drills shall be logged in the remarks section of the AOC daily flight log.

2. IN-FLIGHT EMERGENCY PROCEDURES

A.. EMERGENCY COMMUNICATIONS

As soon as practicable after completing the aircraft emergency action checklist, the Aircraft Commander shall furnish the controlling agency with a description and assessment of the difficulty, assistance required, intentions, and any information on other causes which may endanger the mission. Time permitting, the Aircraft Commander should request that this information be relayed to AOC.

If the primary radio is VHF, the UHF radio (if installed) shall be tuned to 243.0 MHZ. The secondary VHF radio shall be tuned to 121.5 MHZ. The HF radio (if installed) shall be tuned to 2182 kHz unless communications have already been established on another frequency.

(1). Urgency phase

The Aircraft Commander experiencing an in-flight difficulty requiring timely but not immediate assistance, not an emergency, shall transmit a message prefaced with "PAN-PAN-PAN".

NOTE

An urgency condition exists anytime the Pilot becomes doubtful about position, fuel endurance, weather, or any other condition that could adversely affect flight safety.

(2). Distress phase

The Aircraft Commander encountering an in-flight condition that poses serious and imminent danger to the aircraft requiring immediate assistance shall transmit a message prefaced with "MAYDAY-MAYDAY-MAYDAY". Controlling agencies and search and rescue forces are required to provide every assistance possible, including intercept and escort, during this phase.

The transponder shall be set to squawk Mode 3/A, Code 7700 and Mode C altitude reporting.

(3). Turnaround procedures

When a turnaround becomes necessary in order to return to base or proceed to landing due to an emergency, the Aircraft Commander shall maintain VFR if possible, reverse course, and request ATC clearance. If unable to maintain VFR and an amended ATC clearance has not been received to reverse course, climb, if possible, for improved communications and radar detection, and reverse course if necessary. The Aircraft Commander must not execute an unauthorized climb or descent under IFR conditions within controlled airspace, except when compelled to do so in the event of an emergency.

(4). Termination of emergency

Upon termination of the emergency or when the condition of the aircraft improves so no further special assistance is required, the Aircraft Commander shall notify the appropriate controlling agencies.

B. ENGINE INOPERATIVE, HEAVY TURBOPROP AIRCRAFT

(1). Single Engine Failure

In the event of a single engine failure, or whenever not more than one engine is stopped as a precaution on a four-engine aircraft, the Aircraft Commander may proceed to a destination that he selects if he determines that proceeding to that destination is as safe as landing at the nearest suitable airport. In making this decision, the Aircraft Commander shall consider the following:

(a). The nature of the malfunction and the possible mechanical difficulties that may occur if flight is continued.

(b). The altitude, weight, and useable fuel at the time of engine stoppage.

(c). The terrain and weather conditions en route and suitable landing points.

(d). Possible air traffic congestion at suitable landing points.

(e). Pilot familiarity with the airport to be used.

(f). Availability of adequate repair facilities.

(g). Availability of adequate emergency equipment.

(2). Dual Engine Failure

In the event that two engines fail or are shut down as a precaution, the Aircraft Commander shall land at the nearest suitable airport, in point of time, at which a safe landing can be made.

CHAPTER IX EMERGENCY PROCEDURES

C. ENGINE INOPERATIVE, TWIN-ENGINE AIRCRAFT

Whenever an engine of a twin-engine aircraft fails or whenever the rotation of an engine is stopped as a precaution, the Aircraft Commander shall land the aircraft at the nearest suitable airport, in point of time, at which a safe landing can be made.

D. FAILURE TO LAND AT NEAREST SUITABLE AIRPORT

If the Aircraft Commander lands at an airfield other than the nearest suitable airfield, in point of time, he shall report to the Director, AOC, stating his reasons for determining that his selection of an airfield other than the nearest airfield was as safe a course of action as landing at the nearest suitable airfield.

E. DITCHING

When an aircraft must be crash landed on either land or water, the sudden shifting of cargo, equipment, and other heavy items may cause injury or loss of life. All personnel shall arrange and secure this equipment in their aircraft to guard against such dangers. Emergency gear such as life rafts should be placed for ready access. The responsibility for proper security of cargo and equipment lies with the Aircraft Commander of each aircraft. The responsibility for proper storage of personal and mission essential equipment or tools lies with the Flight Director on Heavy Aircraft.

It is essential that each crewmember be thoroughly familiar with the ditching procedures, his duties, and the duties of all other crewmembers, so that in case of injury to one member, his duties may be assigned to or assumed by another. Responsibility for each piece of equipment to be removed from the aircraft is assigned to the specific crew position.

NOTE

In the event of an emergency situation or drill, each person is responsible for carrying out the duties of his assigned ditching station. In the event of an immediate ditching, each person shall take the nearest ditching station and perform the duties assigned during the pre-takeoff brief for that duty station.

(1). Ditching Procedures

Ditching procedures shall be prominently displayed in all appropriate AOC aircraft. Ditching signals shall be accompanied by simultaneous announcements on the intercommunication or public address system whenever practicable.

(2). Ditching Checklist

Ditching checklists shall be used and the applicable Aircraft Flight Manual emergency procedures followed.

NOAA aircraft that do not have an established and approved ditching procedure shall be operated in accordance with the following checklist in the event of a ditch:

1-announce intention to ditch and time to impact	complete
2-ELT	as required
3-transponder	7700
4-MAYDAY report	complete
5-pressurization	dump
6-life vests	don
7-seat belts/shoulder harness	fastened
8-baro/radar altimeter	set
9-ditch heading	parallel swells
10-ditch speed/descent rate	checked
11-flaps	as required
12-landing gear	up

Ditch speed should be determined using the following criteria: 1.3-1.35 Vso for the approach then slow to 1.15 Vso for the touch down. Rate of descent should be no more than 100'/min for the touch down. Multi-engine aircraft should be cautious of flap settings when asymmetrical thrust is a factor.

CHAPTER IX EMERGENCY PROCEDURES

F. HIJACKING

Hijackings are delicate situations where the actions of the crew must be carefully executed in a manner that does not further jeopardize crewmember or aircraft safety.

Safety of flight is essential. The demands of the hijacker shall be complied with and no attempt to capture or disarm the hijacker should be made by a crewmember unless in the Aircraft Commander's opinion it can be accomplished without endangering other persons.

It is impossible to specify in detail the conduct and procedures for a crew which is being hijacked; their best judgement must prevail. It is suggested, however, that a landing be made as soon as practicable at a suitable airport. The first consideration is for the safety of passengers, crew and aircraft. Pilot personnel should remain familiar with existing procedures so that proper precautionary and corrective measures can be taken as soon as possible.

Experience shows that hijackers normally allow pilots to advise that they are being hijacked, especially as fueling stops become necessary. However, if a situation should arise where pilots must advise ground stations of the predicament without being allowed to state that they are being hijacked, the FAA has designated the word "Trip" as the official hijacking code word. The word "Trip" can be used in any manner the pilot desires. The word "Trip" should be used when in radio contact with any FAA air traffic control facility. The trip number used should correspond to the N number of the aircraft.

Hijacking threats may be received by other than Flight Crewmembers and must be evaluated by responsible personnel. The Aircraft Commander must be notified, then will be instructed and guided further by ATC (if in flight), or by the FBI (if on the ground).

(1). FAA standard hijacking signals.

Pilot Signals	Pilot Message
Set transponder to Mode 3/A Code 7500, or orally transmit (Call Sign), "N (Trip Number) Transponder "Seven Five Zero Zero".	Am being hijacked/subjected to interference (when unable to change transponder or when not under radar service).
Transponder Code 7500 followed by Code 7700 (or transmit orally).	Situation grave; imminent danger anticipated; require immediate assistance.
Leave full flaps down after landing, or lower full flaps while on the ground.	Situation still grave. Want armed intervention and aircraft immobilized.
Retract flaps after landing.	Leave alone - do not intervene.

(2). Use of transponder codes.

Controllers shall acknowledge receipt of Code 7500 (or Code 7700) by transmitting the following:"(Call Sign), this is (Name of Facility). Verifying squawking 7500. Is this intentional? An affirmative reply from the pilot indicates confirmation and proper authorities will be notified.

Pilots who decide to change from Code 7500 to Code 7700 should remain on Code 7500 until three minutes have elapsed, or until an acknowledgment of Code 7500 has been received from the controller (as above), whichever is sooner.

Pilots who retract flaps after having squawked Code 7700 should return to Code 7500 and remain on Code 7500 for the next leg of the hijacked flight, unless the situation changes, or orally transmit "Seven Five Zero Zero".

Aircraft squawking Code 7700 and not in radio contact with the ground will be considered by ATC to have an inflight emergency (in addition to hijacking), and the emergency procedures in appropriate ATC Handbooks will be followed.

Transponder Code 7500 is assigned for the specific purpose of alerting ATC facilities that the aircraft is being hijacked.

Whenever a normally assigned beacon code disappears, radar controllers shall check for the hijack code responses. Should the aircraft be on the hijack code, control personnel shall not question the pilot, but be responsive to his requests.

The aircraft shall be flight followed with normal hand-off procedures used. The receiving facility shall be advised of the actions that have been taken to safeguard the hijacked aircraft; e.g., escort aircraft, search-and-rescue facilities, etc.

If aircraft are dispatched to intercept and escort the hijacked aircraft, all possible assistance should be provided the intercepting aircraft to aid in placing them in a position behind the hijacked aircraft.

An aircraft operating VFR observed on the hijack code shall be afforded the same control service prescribed above to the extent possible.

(3). Considerations during a hijacking.

All crewmembers should understand the entire situation with which they are confronted. There should be as much coordination among crewmembers as the situation permits.

Each crewmember should see that information that could affect the security of safety of the flight is brought to the attention of the Aircraft Commander.

The actions of the crew in coping with an act of aerial piracy is determined largely by the degree of risk or potential risk created by the hijacker.

Every effort should be made to keep the pirate out of the cockpit. This not only reduces the immediate danger to the crew, but also permits fuller communications with the ground stations.

An attempt should be made to confirm the pirate's resources. He may have bogus weapons or explosives, or he may be heavily armed with real weapons.

As much information as possible, including pertinent conversation, should be transmitted to the ground stations. These stations have been advised to limit response to such transmissions as much as possible. From this information and information from other sources, national security agents can evaluate the threats.

Each Flight Crewmember is urged to be cautious but to make every reasonable attempt to thwart the act of aerial piracy by taking advantage of opportunities as they are presented. Any possible action should be considered in light of everyone's overall exposure to danger.

(4). Volatile fuels in passenger cabin.

Air carrier hijackers have involved the use of containers filled with volatile mixtures such as gasoline. There exists a threat of a flash ignition and explosion of a gasoline vapor/air mixture causing possible structural or system failure, as well as personnel casualties. In order to reduce or eliminate the threat of such as occurrence, the following emergency procedures should be adhered to:

(a). Keep the cockpit door/curtain closed to provide some protection to the cockpit from the effects of a flash fire, and to reduce the chance of gasoline vapors getting into the cockpit where many sources of ignition are present.

(b). Institute maximum air flow in the cockpit and cabin to remove as much of the gasoline vapors as possible.

(c). In the event a fire has already started, air flow should be kept to a minimum to starve the fire as much as possible for oxygen.

(d). Lower the aircraft's cabin temperature as much as possible to lessen vapor emissions from the volatile liquid, thus reducing the chance of ignition.

(e). Alert all crewmembers to have fire extinguishers ready so they can combat a fire problem early enough to keep it under control.

CHAPTER IX EMERGENCY PROCEDURES

G. SABOTAGE OR BOMB THREAT

(1). Situations and procedures

Every sabotage or bomb threat will be treated as though the possibility is real. If the threat is received while on the ground, depart the aircraft as quickly as possible. If taxiing, proceed to the nearest safe area clear of other aircraft or buildings and deplane.

If a sabotage threat is received in flight, the Aircraft Commander shall:

(a). Prepare for landing at the nearest suitable airport. When possible, advise ATC of estimated time of arrival.

(b). Declare an emergency - transponder code 7700. Request emergency equipment at the intended airport to stand by.

(c). Request that ATC notify the FBI and local authorities at the intended airport.

(d). Notify the tower of intentions and request them to keep vehicles away from aircraft doors.

(e). Brief the crewmembers to the effect that "We have received a message that a sabotage threat has been made against one of our aircraft. We intend to take all possible precautions, and therefore, we will be landing at ___ airport in approximately __ minutes. After landing, we will evacuate the aircraft. Please follow the flight crew's instructions".

(f). Brief the passengers on the planned emergency landing.

(g). About 250 feet, make PA: "Please assume the braced position".

(h). After landing, proceed to designated or nearest safe area for evacuation.

If a bomb threat is received in flight, the Aircraft Commander shall:

(a). Prepare for landing at the nearest suitable airport.

(b). Declare an emergency - transponder code 7700.

(c). Notify ATC - "Bomb on board". Request ATC to contact FAA bomb expert.

(d). Brief the passengers.

(e). Seat Belt Signs - ON.

(f). Airspeed - decrease. To lessen stresses on aircraft.

(g). Landing gear - lower. Reduces possibility of damage.

(h). Cabin Pressure Altitude - Maintain at existing cabin altitude. Minimizes possibility of detonating an altitude-sensitive device.

(i). Descend to same altitude as cabin. Maintain cabin altitude while decreasing aircraft altitude to establish zero differential. This will minimize blast effect.

(j). After landing, proceed to designated or nearest area for evacuation.

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CHAPTER X ACCIDENT, INCIDENT PROCEDURE

CHAPTER X ACCIDENT, INCIDENT PROCEDURE

1. SAFETY AND MISHAPS

A. GENERAL

The highest priority in the operation of AOC aircraft is to operate them safely. Aircraft performance characteristics and human limitations, combined with the many variables and hazards inherent in AOC flight operations, tends to complicate the task of managing aviation resources effectively and efficiently. If hazards are not recognized and either eliminated or mitigated to a satisfactory level, mishap potential will remain high, and the operational effectiveness of the organization will be diminished. A strong program for identifying, reporting, and resolving hazards will enhance the conservation and utilization of manpower, equipment, and funds, through a reduction in mishap potential.

2. HAZARD REPORTS

A. GENERAL

A hazard is a potential cause of damage or injury. The purpose of the Hazard Report is to identify and eliminate (or to reduce to an acceptable level) hazards before they cause mishaps. Hazard detection may be accomplished by analysis of data, observation of near mishaps, safety surveys, and reviews of plans, policies, procedures and instructions. Hazards are most often identified by individuals within each Division who have first-hand knowledge of shop practices and aircraft operations. A part of the hazard detection process is to assess the severity of potential damage and injury and to estimate the probability of occurrence.

B. PURPOSE

A Hazard Report (HAZREP) is initiated to:

(1). Report a hazard and the remedial action taken so that others may take similar action.

(2). Report a hazard and recommend corrective action to be taken by others at AOC.

(3). Report a hazard so that some other organization may determine appropriate corrective action.

CHAPTER X ACCIDENT, INCIDENT PROCEDURE

C. FORMAT

The Hazard Report should include as much of the following information as is applicable. Form CD351 should be completed and filed as soon as possible.

(1). Initial Statement, "This is an AOC Hazard Report".

(2). Risk Assessment. An analysis of the severity of the damage or injury and its probability of occurrence.

(3). Type of Equipment. The aircraft type and side number, or description of equipment and parts.

(4). Environment. The date, time (day or night), location, weather, altitude, and any other pertinent information.

(5). Hazard Description. Include how the hazard could result in damage or injury.

(6). Corrective Action. What has been done, what should be done by someone else, or who should determine what should be done.

(7). Other comments.

D. DISPOSITION

(1). Hazard Reports for hazards which apply only to the Division writing the report and for which no remedial action from other organizations is required should be filed with the Division Safety Representative.

(2). Hazard Reports for hazards which affect more than one Division or which require remedial action from another Division or organization should be addressed to the AOC Safety Officer.

(3). Hazard Reports for all hazards involving AOC aircraft in flight should be sent by the Aircraft Commander through the Chief, Operations Division to the Director, AOC. A

telephone message or telex including all the applicable information in the format shown above is sufficient.

3. MISHAP REPORTS

A. GENERAL

An AOC Mishap Report shall be sent to the Director, AOC, by the most expeditious means. During non-duty hours the report shall first be sent by telephone to the AOC emergency phone number listed in section V-1-F, and then to the AOC Safety Division voice mail. When time permits, the report (CD-137) should be faxed to AOC, attention Director and all Division Chiefs. The intent is to inform as many people as possible at AOC that a mishap has occurred. Leaving a message on either voice or E-mail will not suffice. You should make positive contact with a responsible person who will contact others at AOC. The Division Chief of the person in charge of the deployed aircraft involved in the mishap is responsible for transmission of the AOC Mishap Report to the Director. The Mishap Report is not to be used for reporting hazards, hazard cause factors, or hazard elimination recommendations.

B. PURPOSE

A Mishap Report is initiated to:

(1). Notify the Director, AOC, that a NOAA aircraft has been involved in a mishap.

(2). Activate the Mishap Contingency Plan.

C. CRITERIA

The Mishap Report shall be sent immediately in the event of any of the following situations:

(1). An aircraft mishap. An AOC aircraft mishap is defined as any personal injury or aircraft damage which exceeds $100 in cost to repair or replace.

(2). Flight control system malfunction or failure.

CHAPTER X ACCIDENT, INCIDENT PROCEDURE

(3). Inability of any required Flight Crewmember to perform normal flight duties as a result of an injury or illness.

(4). Failure of structural components of a turbine engine excluding compressor and turbine blades and vanes.

(5). In-flight fire.

(6). Aircraft in-flight collision.

(7). An overdue aircraft believed to have been involved in a mishap.

(8). A work-related fatality.

(9). An impact of any aircraft or vehicle with any object which is not considered to be part of normal or planned operations. If damage incurred as a result of the impact is considered to be "within limits", the impact is still reportable as a mishap.

(10). Any property damage sustained as a result of NOAA aircraft flight or ground operations.

(11). Any deviation from established AOC policy or procedures.

D. FORMAT

This format must be used. If the information required by this format is not applicable to the mishap, the report must so state. In addition, form CD137, Report of Accident/Illness shall be filed if applicable.

(1). Statement, "This is an AOC Mishap Report".

(2). Summary. Summarize the content of the report in two lines or less including a brief description of the mishap, such as "aircraft collided with ground, fuel truck exploded next to NOAA supply building", etc.

CHAPTER X ACCIDENT, INCIDENT PROCEDURE

(3). Equipment. List aircraft or vehicle type, registration number, and other equipment involved in mishap.

(4). Pilot In Command for aircraft mishaps, or work supervisor for other mishaps.

(5). Environment.

(a). Date and time of mishap.

(b). Location of the aircraft or other equipment with reference to some easily defined geographical point. If the mishap occurred aboard a ship or on an airfield, provide the name of the ship or airfield and the location on the ship or airfield.

(c). Altitude of the mishap above mean sea level.

(d). Weather at the location and time of mishap.

(6). Circumstances.

(a). Aircraft origin.

(b). Aircraft mission and evolution or activity of organization involved in mishap.

(c). Aircraft destination.

(d). Extent of damage so far as is known.

(e). Number of persons aboard, number killed, and number seriously injured.

(f). List crewmembers by crew position and name, and whether killed, seriously injured, slightly injured, or not injured.

(7). Point of contact. List name and telephone number of individual sending the report.

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CHAPTER XI HAZARDOUS MATERIALS

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CHAPTER XI HAZARDOUS MATERIALS

1. GENERAL

A. DEFINITION

Hazardous Material (HM) means a substance or material which has been determined by the U.S. Secretary or Transportation to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce, and which has been so designated in CFR Title 49 Parts 100-177.

Hazardous Material shall not be carried aboard NOAA aircraft unless there is a mission requirement for it and it is a material accepted and transported in accordance with CFR Title 49 175.10, NC Instruction 6280 B, and NOAA AOC Hazardous Materials Manual Section 11.

B. RESPONSIBILITIES

(1). The Aircraft Commander is responsible for ensuring that no unauthorized HM is aboard the aircraft prior to take off.

(2). The Chief of Resource Management is responsible for insuring that a current copy of CFR Title 49, Parts 100-177 is maintained in AOC supply.

(3). The Safety Officer is responsible for ensuring that each Flight and Air Crewmember completes an annual HM training program.

2. HAZARDOUS MATERIALS CLASSIFICATIONS AND HANDLING

A. HAZARDOUS MATERIALS CLASSIFICATIONS

For the purposes of this manual, Hazardous Materials shall include any item classified as hazardous materials (HM) or hazardous substances, dangerous materials or goods, regulated materials, or restricted articles.

B. HAZARDOUS MATERIAL COMMON ITEMS

Common items which are in the HM category include but are not limited to gasoline, paints, lighter fluid, lighters with flammable liquid reservoirs, fireworks, tear gas/mace, celluloid film, or compressed gas.

C. HAZARDOUS MATERIAL HANDLING

The Aircraft Commander or designated crewmember shall inspect each carton, box, drum, or other container placed aboard the aircraft, and determine the type of material in the container through actual observation of the contents or appropriate shipping or identification documents.

If it is determined to be inappropriate to open a sealed container when doing so is necessary to determine its contents, the Aircraft Commander or designated crewmember shall contact the office of origin of the container and obtain verbal verification of the contents from a manager or other responsible person.

When there is any doubt as to whether a substance or material in a container to be placed on the aircraft is an HM, the material or substance shall be considered an HM and shall not be carried aboard the aircraft.

Crewmembers must be briefed by the Aircraft Commander or designated crewmember concerning the prohibition against the carriage of HM.

3. REQUIRED REPORTS

A. DISCREPANCIES

A discrepancy is an occurrence involving hazardous materials which are improperly described, certified, labeled, marked or packaged including the following:

(1). Baggage, cargo or packages found to contain HM after being accepted as a non-hazardous shipment.

(2). Shipments which contain HM other than described or certified, in quantities exceeding authorization, in unauthorized containers or with improper closures, in inside containers

which are not oriented in accordance with outer markings, or with insufficient or improper absorption materials, when required.

Any person who discovers a discrepancy as listed above shall, as soon as practicable, notify the AOC Safety Staff.

B. INCIDENTS

An incident is an event, including accident, discharge, or spillage, which occurs as a direct result of transporting (including loading, unloading or temporarily storing) hazardous materials which:

(1). Results in a death.

(2). Causes injuries requiring hospitalization.

(3). Causes over $50,000 estimated property damage.

(4). Causes an evacuation of the general public lasting one or more hours.

(5). Causes one or more major transportation arteries or facilities to close or shut down for one hour or more.

(6). Requires an aircraft to alter it's operational flight pattern or routine.

(7). Results in fire, spillage or breakage.

(8). Generates suspected contamination from a shipment of radioactive material or etiologic agents.

(9). In the judgement of the person at the scene, a situation of such a nature exists that it should be reported even though it doesn't meet the criteria listed above.

Any person who has knowledge of an incident as listed above shall, as soon as practicable, notify the AOC Safety Staff providing the following information:

(1). Name and telephone number of the person reporting the incident.

(2). Date, time and location of the incident.

(3). The extent of injuries, if any.

(4). The classification, name and quantity of hazardous material involved in the incident, if such information is available.

(5). Type of incident and nature of HM involvement.

(6). Whether or not a continuing danger to life exists at the scene, if such can be reasonably ascertained.

The Safety Staff, when notified, makes additional reports to the FAA, NTSB, Department of Commerce, and other agencies as required.

4. HAZARDOUS MATERIALS LABELS AND PLACARDS

A. GENERAL

Hazardous materials markings, labels, placards and shipping papers serve to communicate the hazards posed by materials in transportation. Hazard communication is the key to effective emergency response, and is also used to alert transportation workers and the general public to the presence of hazardous materials, insure that non-compatible materials are not loaded together in the same transportation vehicle, and provide the necessary information for reporting hazardous materials incidents.

Marking regulations (49 CFR section 172.300) require information specific to the hazardous material to be marked on the outside of the package. Examples of the information required to be marked on the package are the proper shipping name, identification number and consigner's name.

The labeling of a package of hazardous material is specific to the hazard class of the material. The hazardous material tables identify the proper label(s) for the materials listed.

B. IDENTIFICATION OF HAZARDOUS MATERIALS

CHAPTER XI HAZARDOUS MATERIALS

CFR Title 49, parts 100-177 govern identification of hazardous materials. There are 8 classes of hazardous materials that require placarding. Examples of placard requirements are found in the color chart included at the end of this chapter. Components of each class are:

(1).	Class 1	Class A explosives, Class B explosives, blasting agents
(2).	Class 2	Poison gas, flammable gas, nonflammable gas, oxygen, chlorine gas
(3).	Class 3	Flammable liquids, combustible liquids
(4).	Class 4	Flammable solids, spontaneously combustible solids
(5).	Class 5	Oxidizers, organic peroxides
(6).	Class 6	Poisonous materials
(7).	Class 7	Radioactive materials
(8).	Class 8	Corrosives
DANGEROUS		Other materials or a combination of two or more of the above

C. INFORMATION SOURCES

The supplier of the hazardous material is required to provide a Material safety Data Sheet (MSDS) with each hazardous item offered. Consult the MSDS for information concerning DOT class and labeling requirements. A phone number is included with each MSDS to provide additional information.

AOC's primary source for HAZMAT labeling and handling requirements is Supply at phone number 813-828-3310 ext. 3084/3085. AOC Supply is the custodian of the applicable regulations including lists and tables covering transportation of HAZMAT.

Outside normal duty hours, information can be obtained from the MacDill AFB fire dispatch office at 813-828-3630. The Fire Department and the hazmat response team maintain a comprehensive guide to hazardous materials including spill response.

CHAPTER XI HAZARDOUS MATERIALS

NOAA Hazmat in Seattle, 206-525-6317, can provide information including emergency spill response information on hazardous materials and waste.

Chemtrec, 800-494-9300, is an association of chemical manufacturing companies that provides technical information relative to the evaluation and analysis of approximately 18,000 chemicals, substance, and other trade products (including possible effects on the environment and suggested methods of control and/or containment in the event of an accident). Chemtrec also maintains a directory of experts and industry cooperatives that can be contacted to provide additional advice. Calls to Chemtrec should be limited to emergencies.

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HAZARDOUS MATERIALS WARNING LABEL AND PLACARD HERE

DOC/NOAA/AOC
AIRCRAFT OPERATIONS MANUAL

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252.228-7002 Aircraft Flight Risk.
As prescribed in 228.370(c), use the following clause:

AIRCRAFT FLIGHT RISK (SEP 1996)

(a) *Definitions.* As used in this clause—

(1) "Aircraft," unless otherwise provided in the Schedule, means—

(i) Aircraft furnished by the Contractor under this contract (either before or after Government acceptance); or

(ii) Aircraft furnished by the Government to the Contractor, including all Government property placed on, installed or attached to the aircraft; provided that the aircraft and property are not covered by a separate bailment agreement.

(2) "Flight" means any flight demonstration, flight test, taxi test, or other flight made in the performance of this contract, or for the purpose of safeguarding the aircraft, or previously approved in writing by the Contracting Officer.

(i) For land-based aircraft, "flight" begins with the taxi roll from a flight line and continues until the aircraft has completed the taxi roll to a flight line.

(ii) For seaplanes, "flight" begins with the launching from a ramp and continues until the aircraft has completed its landing run and is beached at a ramp.

(iii) For helicopters, "flight" begins upon engagement of the rotors for the purpose of take-off and continues until the aircraft has returned to the ground and rotors are disengaged.

(iv) For vertical take-off aircraft, "flight" begins upon disengagement from any launching platform or device and continues until the aircraft has been reengaged to any launching platform or device.

(3) "Flight crew members" means the pilot, co-pilot, and unless otherwise provided in the Schedule, the flight engineer, navigator, bombadier-navigator, and defense systems operator as required, when assigned to their respective crew positions to conduct any flight on behalf of the Contractor.

(b) This clause takes precedence over any other provision of this contract (particularly paragraph (g) of the Government Property (Cost-Reimbursement, Time-and-Materials, or Labor-Hour Contracts) clause and paragraph (c) of the Insurance—Liability to Third Persons clause).

(c) Unless the flight crew members previously have been approved in writing by the Government Flight Representative, who has been authorized in accordance with the combined regulation entitled "Contractor's Flight and Ground Operations" (Air Force Regulation 55-22, Army Regulation 95-20, NAVAIR Instruction 3710.1C, and Defense Logistics Agency Manual 8210.1), the Contractor shall not be—

(1) Relieved of liability for damage, loss, or destruction of aircraft sustained during flight; or

(2) Reimbursed for liabilities to third persons for loss or damage to property or for death or bodily injury caused by aircraft during flight.

(d)(1) The loss, damage, or destruction of aircraft during flight in an amount exceeding $100,000 or 20 percent of the estimated cost of this contract, whichever is less, is subject to an equitable adjustment when the Contractor is not liable under—

(i) The Government Property (Cost-Reimbursement, Time-and-Materials, or Labor-Hour Contracts) clause, and

(ii) Paragraph (c) of this clause.

(2) The equitable adjustment under this contract for the resulting repair, restoration, or replacement of aircraft shall be made—

(i) In the estimated cost, the delivery schedule, or both; and

(ii) In the amount of any fee to be paid to the Contractor.

(3) In determining the amount of equitable adjustment in the fee, the Contracting Officer will consider any fault of the Contractor, its employees, or any subcontractor that materially contributed to the damage, loss, or destruction.

(4) Failure to agree on any adjustment shall be a dispute concerning a question of fact within the meaning of the Disputes clause of this contract.

(e) The Contractor agrees to be bound by the operating procedures contained in the combined regulation entitled "Contractor's Flight and Ground Operations" in effect on the date of contract award.

(End of clause)

DLA Instruction – Contractor's Flight and Ground Operations

DLAI 8210.1
AFJI 10-220
AR 95-20
NAVAIRINST
3710.1D

DCMC-AF

26 OCT 99

CONTRACTOR'S FLIGHT AND GROUND OPERATIONS

[This publication has been revised significantly and must be reviewed in its entirety.]

A. REFERENCE. DLAM 8210.1/AFR 55-22(AFJI 10-220)/AR 95-20/NAVAIRINST 3710.1C, 22 Nov 91, Volumes 1 and 2 superseded.

B. PURPOSE. This instruction:

1. Supersedes reference A.

2. Establishes requirements for all ground and flight operations involving all contracted work performed on aircraft where the Government has assumed some of the risk of loss for aircraft as well as procedures to be followed by Government Flight Representatives (GFRs). Enclosure 4 establishes policy and procedures to be followed by GFRs and establishes no contractor requirements. Service contracting activities shall include this instruction and applicable supplements in all contracts involving Government aircraft for which the Government is assuming some of the risk of loss or damage. This

instruction describes the content of the contractor's aircraft ground and flight operations procedures (hereafter identified as Contractor's Procedures) and approval for these Contractor's Procedures. It provides for the delegation of authority for such approvals, regardless of Service affiliation.

C. APPLICABILITY AND SCOPE. This instruction applies to contractors and their personnel whose duties pertain to the operation of any aircraft for which the Government is assuming some of the risk of loss or damage and to all Army, Navy, Air Force, and DLA GFRs. This instruction has been coordinated with and concurred in by the Military Services (hereafter referred to as the Services). References in this instruction to FAA certifications or requirements may be substituted with applicable host nation equivalent certifications or procedures. Recommendations for new policies or procedures should be submitted through channels to HQ DLA, ATTN: DCMC-AF (the Office of Primary Interest (OPI) for this joint military regulation/instruction) for review.

Changes shall be coordinated with all Services and DLA prior to incorporation into this instruction. For specific guidance from each DoD Component, contact the following:

HQ DLA: DCMC-AF, 8725 John J. Kingman Road, Suite 2533, 703-767-3430, Fort Belvoir, VA 22060-6221

Army: Commander, U.S. Army Material Command (703) 617-9891
ATTN: AMCLG-OP (AVN), 5001 Eisenhower Avenue
Alexandria, VA 22333-0001

Navy: NAVAIRSYSCOM (AIR-09) (301) 757-2246
Patuxent River, MD 20670

Air Force: HQ AFMC/DOO, 4225 Logistics Avenue, Suite 2, 513-257-8222, Wright Patterson AFB, OH 45433

D. DEFINITIONS

1. Aircraft. When, by contract, the Government is assuming some of the risk of loss or damage, the term aircraft means:

a. Aircraft to be delivered to the Government under contract (either before or after Government acceptance), including complete aircraft and aircraft in the process of being manufactured, disassembled, or reassembled; provided that an engine, portion of a wing or a wing is attached to a fuselage of the aircraft; or,

b. Aircraft, whether in a state of disassembly or reassembly, furnished by the Government to the contractor under contract, including all property installed, in the process of installation, or temporarily removed.

2. Approving Authority. The commander or designee of one of the

following organizations having the administrative responsibility for a particular contractor facility in accordance with the Federal Directory of Contract Administration Services (CAS) Components, found at www.dcmc.hq.dla.mil/CASBOOK/casbook.htm.

a. Commander, Procuring Activity MACOM
b. Commander, Naval Air Systems Command (COMNAVAIRSYSCOM)
c. Air Force Heads of Contracting Activities (HCA)
d. Commander, Defense Contract Management Command Contract Administration Office or District Commanders (may not be delegated)

3. Army Nonstandard Aircraft. Any aircraft not listed in AR 700-138, plus aircraft furnished by the contractor (Turnkey operations).

4. Army Standard Aircraft. Those aircraft listed in AR 700-138.

5. Aviation Safety Official (ASO). The individual assigned primary responsibility for developing and administering the contractor's aviation safety program. This individual should be a qualified crewmember who has related aviation safety administration experience.

6. Bailed Aircraft. Any Government-owned aircraft provided to a contractor under a Bailment Agreement for use in conjunction with a specific contractual requirement. Aircraft are usually bailed to a contractor to perform Government contract work. Aircraft are usually leased to a contractor for the contractor's use.

7. CASC Chief, Flight Operations (FO). This individual is appointed by the approving authority and supervises all assigned GFRs within the CASC. Each District in the Defense Contract Management Command (DCMC) performing CAS should appoint a Chief, FO, to supervise flying and ground operations.

8. Check Flights. Flights to determine compliance with contractual requirements, such as ACFs and FCFs, which include:

a. Any flight performed to accept or check new aircraft production.
b. Any flight performed to accept or check accomplishment of depot maintenance, contract maintenance, or modification.
c. Any flight performed to determine whether an aircraft or its various components are functioning according to predetermined specifications when subjected to the flight environment.
d. Maintenance Test Flight
(1) Any flight performed to accept or check accomplishment of depot maintenance, contract maintenance, or modification.
(2) Flights performed to determine whether aircraft and its various components are functioning according to predetermined specifications while subjected to the flight environment.

9. Crewmember. Any instructor/flight examiner, pilot, copilot,

flight engineer, navigator, weapons system operator, bombardier navigator, radar intercept operator, boom operator, crew chief, loadmaster, remote piloted vehicle operator, defensive/offensive system operator, and other flight manual or applicable document handbook identified crewmember when assigned to their respective crew positions to conduct any flight under the contract.

10. Component. The Service Component that is the approving authority as defined above.

11. Contract Administration Office (CAO). The office which performs assigned functions related to the administration of contracts and preaward functions. The focal point is the Administrative Contracting Officer (ACO).

12. Contract Administration Services (CAS). Those actions accomplished in or near a contractor's facility for the benefit of the Government which are necessary to the performance of a contract. Contract administration services include (among others): quality assurance (QA), safety, and flight operations. Federal Acquisition Regulation (FAR) 42.302, Contract Administration Functions, lists these functions.

13. Contract Administration Services Component (CASC). A CAO of DLA or a Service which performs CAS in a designated geographical area or a specific contractor's facility as listed in the Federal Directory of Contract Administration Services (CAS) Components, found at (www.dcmc.hq.dla.mil/CASBOOK/casbook.htm).

14. Contractor. Any individual, corporation, or other entity whose personnel may operate aircraft; or perform aircraft maintenance, modification or production; for which the Government assumes at least some contractual liability for loss or damage to the aircraft.

15. Engineering Test Flights

a. Subsystem development flights (e.g., autopilot, fire control, bombing/navigation systems).
b. Component development and reliability flights not included under subparagraph 16, below.
c. Flights where the aircraft serves as the vehicle carrying the item to be checked (e.g., electronic countermeasure stores, checking a radar system, or firing of a missile).

16. Experimental Test Flights. Flights that are conducted to determine or demonstrate critical operating characteristics of an aircraft. These flights often involve greater than normal risk. These include, but are not limited to:

a. Initial flights of a new mission, type/design or series aircraft, high angle of attack tests, flutter and loads tests, and

critical stores separation tests.

b. Flights to determine or expand flight or propulsion system envelopes.

c. Flights to initially determine the performance, flight characteristics, and handling qualities.

d. Flights of experimental and research aircraft.

e. Flights of an aircraft whose flight characteristics may have been altered by configuration changes.

f. Initial flights of the first production aircraft of a new mission, type/design, or series.

g. Initial flights of the first of those aircraft which have undergone "major modification," as determined by the Program Manager.

h. Component development flights where failure of the test component would make the flight hazardous in nature and/or involve greater than normal risk as determined by the Program Manager, with advice from the contractor and GFR.

17. FAR and DoD FAR Supplement (DFARS) References. This manual is issued under the joint authorities of the Administrator of General Services, the Secretary of Defense, and the Administrator for NASA, under the broad policy guidelines of the Administrator for Federal Procurement Policy. It establishes uniform policy and procedures relating to the procurement of supplies and services. The DFARS, issued by the Office of Deputy Assistant Secretary of Defense (Procurement), provides DoD implementation guidance and policies and procedures unique to DoD. The FAR and DFARS are composed of policy guidance for contracting officers and clauses for use in contracts. Policy guidance includes instructions to contracting officers on Government policy and when to use the contract clauses contained in Part 52 of the FAR and Part 252 of the DFARS. Contract clauses set forth agreements between the Government and the contractor. Some of the pertinent clauses that relate to aircraft contracts follow:

a. DFARS 228.306(a)(1), Insurance Under Fixed-Price Contracts

b. DFARS 288.370-2, Liability

c. DFARS 252.228-7001, Ground and Flight Risk

d. DFARS 252.228-7002, Flight Risks

e. DFARS 252.228-7005, Accident Reporting and Investigating Involving Aircraft, Missiles, and Space Launch Vehicles

f. FAR 42.1, Interagency Contract Administration and Audit Services

g. FAR 42.2, Assignment of Contract Administration

h. FAR 42.204, Supporting Contract Administration

i. FAR 42.302, Contract Administration Functions

18. Flight Operations (FO). Those aircraft operations where intent for flight exists for aircraft which the Government assumes at least some of the risk of loss or damage under the DoD Federal Acquisition Regulation Supplement (DFARS), Part 252.228-7001/7002, Ground and Flight Risk/Flight Risks.

19. Foreign Object (FO). An article or substance alien to the

aircraft or assembly that has been allowed to invade the product. Also called Foreign Object Debris (FOD).

20. Foreign Object Damage (FOD). Any damage attributed to a foreign object that may be expressed in physical or economic terms which may or may not degrade the product's required safety and/or performance characteristics. Also Foreign Object Debris (see above).

21. Government Flight Representative (GFR). A rated U. S. Military officer, or Government civilian in an aviation position, to whom the approving authority has delegated responsibility for approval of contractor flights, Contractor's Procedures, crewmembers/personnel, and ensuring contractor compliance with applicable provisions of this instruction. Enclosure 2, attachment 2, of this instruction describes GFR duties.

22. Government-Furnished Equipment (GFE)/Property (GFP). Any Government-owned aircraft part, or Ground Support Equipment (GSE) provided to a contractor for use in conjunction with a specific contractual requirement.

23. Ground Operations. Those aircraft operations, which are not flight operations, for which the Government assumes at least some of the risks of loss or damage under the ground and flight risk clause or flight risk clause of the contract. Specific operations include, but are not limited to, aircraft maintenance, towing, subsystem warm-up/checkout, taxiing, engine run, or other operation of installed engines, and/or propeller(s) or rotor(s), as appropriate; preflight/postflight and operation of associated aerospace ground support equipment to include Aircraft Rescue and Firefighting (ARFF) operations and operation of any Ground Test Vehicle (GTV).

24. Ground Personnel. Personnel designated by the contractor to perform ground operations in support of flight operations, to include aircraft rescue and fire fighting.

25. Hardware Control. A method for control of loose hardware such as nuts, bolts, cotters pins, rivet heads, etc., used to prevent FOD.

26. Leased Aircraft. Any Government-owned aircraft provided to a contractor under a Lease Agreement for use in conjunction with a specific contractor need. Aircraft are usually leased to a contractor for the contractor's use. Aircraft are usually bailed to a contractor to perform Government contract work. DoD Directive 7230.8, Leases and Demonstrations of DoD Equipment, further clarifies leased aircraft procedures and requirements.

27. May. Denotes the permissive. However, the words "no person may..." mean that no person is required, authorized, or permitted to do the act described.

28. Mission of Aircraft. Mission is denoted by the first letter

when two letters are used to identify type/design aircraft. The first letter is used to identify the normal mission role of the aircraft. Examples of mission/type/design are for reconnaissance aircraft, RF-4C; for tanker aircraft, KC-135; for cargo helicopters, the CH-47.

29. Mixed Crews. Crewmembers and/or non-crewmembers composed of both Government and contractor personnel.

30. Non-Crewmember. Personnel, other than crewmembers, designated by the Contractor's Requesting Official (CRO) to perform a function while the aircraft is in flight.

31. Orientation Flight. A flight (usually performed within the local flying area) to familiarize selected personnel with the mission of the aircraft.

32. Production Aircraft. Any aircraft being manufactured for use in the operational inventory, including aircraft produced for a Defense Security Assistance Program (also called Foreign Military Sales (FMS)) or undergoing contractor maintenance or modification.

a. Pre-Accepted Aircraft. Any aircraft for which the DD Form 250, Material Inspection and Receiving Report, for a specific contract has not been executed by the Government but for which the Government has assumed some of the risk of loss, destruction, or damage.

b. Accepted Aircraft. Any aircraft for which the DD Form 250 for a specific contract has been fully executed for the Government.

33. Requesting Official. Also known as the Contractor's Requesting Official (CRO), the member of the contractor's first level of management (president, vice president) or appointed designee authorized to sign a "Request for Approval for Qualification Training" or "Request for Approval of Contractor Crewmember" for approval by the GFR.

34. Series Aircraft. The alpha character following the type/design identification letter-number. Series denotes subsequent production or modification of the same type/design aircraft. Examples of type/design/series identification are the F-16A and the F-16C, the KC-135R and the C-135E, or the CH-47C and the CH-47D.

35. Service Guidance. Includes the procuring Service's regulations, instructions, flight manuals, and technical orders which are applicable to the specific ground and flight operations conducted by the contractor as specified in the contract. Service Guidance shall be used as the basis on which Contractor's Procedures are written. In the development of Contractor's Procedures, the contractor, GFR, and Program Office should work together closely to ensure that the correct, applicable Service Guidance is used.

36. Shall. Denotes the imperative.

37. Should. Indicates a desired, though not required, outcome.

38. Sortie. For record and reporting purposes of this instruction, a sortie is defined as a flight by one aircraft. A sortie begins when the aircraft begins to move forward on takeoff or takes off vertically from rest at any point of support. It ends after airborne flight when the aircraft returns to the surface and,

a. The engines are stopped, or
b. Aircraft has been on the surface for 5 minutes, whichever comes first between (1) and (2), or
c. Change is made in the pilot in command.

39. Support Flights. These include but are not limited to:

a. Photographic.
b. Chase.
c. Rescue and recovery.
d. Target or target towing.
e. Aircraft delivery.
f. Orientation.
g. Demonstration flights.
h. Severe weather evacuation flights.
i. Cargo and/or personnel transport flights. This includes flights of an emergency nature.
j. Aircrew evaluation, training, and currency.
k. Product or mission support flights (including deployments) as directed by the Services.

40. System Program Office (SPO)/Program Office. The office which awards or executes a contract for supplies or services and performs post award functions when these are not assigned to a contract administration office.

41. Tool Control. A method for ensuring accountability of all contractor and or personal tools at the start and finish of each maintenance task. Examples of procedures are: use of shadow boards, canvas layouts with pockets, tool counters, or composite tool kits. The method selected shall be effective in timely identification of lost or missing items.

42. Type/Design Aircraft. The type aircraft refers to the aircraft's functional role and is represented by a letter of the alphabet. The design of an aircraft is designated by a number. Examples of aircraft by type/design are for fighter aircraft, the F-16; for cargo, the C-135; for attack, the AV-8; for trainers, the T-37; for bombers, the B-1; and for helicopters, the CH-47.

43. Test Aircraft. Any aircraft used for research, development or test and evaluation purposes.

44. Waivers. A waiver is written relief from a specific

requirement of this Instruction or other Service guidance. When issued, waivers shall be valid no more than the length of the applicable contract and shall be attached to the Contractor's Procedures.

E. PROCEDURES

1. Contractor's Procedures

a. Guidance. Contractor's Procedures is a document developed by the contractor and approved by the GFR. The document delineates the procedures contractor personnel shall use while conducting operations affecting Government aircraft or other aircraft for which the Government assumes at least some of the risk of loss. Should a conflict occur between sources of guidance, the following hierarchy shall be used in descending order: the contract, this instruction, and finally Contractor's Procedures. Contractors with separate functional organizations responsible for Flight and Ground Operations, may divide their Contractor's Procedures into two parts; Flight Operations Procedures (FOPs) and Ground Operations Procedures (GOPs). If the Contractor's Procedures are divided the following applies:

(1) Combined, the FOPs and GOPs shall address all requirements of this instruction. The enclosures to this instruction, enclosure 2, Flight Operations, and enclosure 3, Ground Operations, should be addressed in the Contractor's Procedures item by item, as appropriate.

(2) Contractor functional organizations are responsible for compliance with this Instruction and the Contractor's Procedures as a whole.

b. Responsibilities. The contractor is responsible for writing, implementing and enforcing their procedures, and for identifying and correcting deficiencies.

c. Preparation. The contractor shall prepare and maintain specific written procedures, separate and distinct from industrial or quality procedures that describe aircraft, ground and flight operations at all operating facilities. If the contractor references existing company procedures, operating instructions, etc., in these procedures, the referenced document(s) shall be made readily available for review and become part of the GFR approval process. The Contractor's Procedures shall:

(1) Provide specific guidance describing activities and requirements of this instruction and contractual provisions pertaining to safety and ground/flight operations applicable to all aircraft for each specific contractor operation and location.

(2) Describe in detail how the contractor ensures that individuals perform only duties they are qualified and authorized to perform.

(3) Adequately explain all aspects of a given operation (e.g., identify the office/title of individual responsible, steps taken to accomplish activities, verification procedures, training requirements, and records/documentation required).

d. Use of Service Guidance. Contractors shall base their Contractor's Procedures on Procuring Service guidance as specified in

the contract for conducting all aircraft flight and ground operations. The Contractor's Procedures should reference specific Service documents as specified by the applicable contract(s). If Service guidance is not available for a unique aircraft, test program, or flight/ground operation, then the contractor shall recommend procedures similar to Service guidance for a like aircraft and/or operation for GFR approval.

(1) At locations with multiple service contracts, the GFR and contractor may elect to specify general guidance from a single source for basic flight rules, evaluations etc. The contractor is encouraged to develop a common set of Contractor Procedures. This may require the contractor to request common process block changes or waivers.

(2) The GFR, in concert with contractor ground and flight personnel, should ensure that existing Contractor's Procedures are modified, if required, when pertinent service guidance changes. This may require a contract change.

(3) The contractor retains responsibility for all contract requirements subcontracted or delegated to other sources. The Government's acceptance of risk of loss of an aircraft in a subcontractor's facility depends upon the terms and conditions of the contract. When the Government accepts the risk of loss of an aircraft in a subcontractor's facility, the prime contractor has the responsibility for ensuring that the subcontractor has procedures in place to implement the requirements of this instruction. NOTE: The Ground and Flight Risk Clause (DFARS 252.228-7001) and the Flight Risk Clause (DFARS 252.228-7002) do not automatically flow down to subcontractors unless specifically stated in the contract.

e. Format. Contractor's Procedures should be formatted in the same manner as this Instruction or shall include a cross reference index. All paragraphs (excluding those in enclosure 4) shall be addressed in sufficient detail to ensure compliance with this Instruction, as applicable.

f. Approval. The contractor shall:

(1) Forward the completed Contractor's Procedures for each location to the cognizant GFR for approval.

(2) Identify a single point of contact to the GFR who has cognizance over the functional organizations involved and who can coordinate approval issues.

(3) Not begin flight or ground operations until the Contractor's Procedures have been approved in writing by the GFR.

(4) Maintain current copies of the approved Contractor's Procedures at each operating location.

g. Changes. All proposed changes shall be submitted to the GFR in writing. Approved changes shall be incorporated into all copies of the Contractor's Procedures.

h. Review requirements. Contractor's shall conduct a review of their Contractor's Procedures at least every 12 months. At the completion of the review recommended changes shall be forwarded to the GFR for approval. The GFR's annual approval shall be attached to the Contractor's Procedures. A signature page in the front of the Contractor's Procedures may serve as the GFR's approval/annual review letter.

i. Deficiencies. The GFR shall notify the contractor if he/she finds deficiencies or inadequacies in Contractor's Procedures. Failure to correct the deficiency, within a time specified by the GFR, is grounds for withdrawal of the approval of the Contractor's Procedures, contractor flight operations, and/or crewmembers. Flight or ground operations conducted after such withdrawal are deemed operations without the approvals required by applicable clauses of the contract.

j. Noncompliance. Should the GFR discover noncompliance with approved Contractor's Procedures, or that dangerous practices have developed, the GFR shall notify the contractor and ACO. Oral notification by the GFR shall be followed by a formal written statement fully outlining the deficiencies. Failure to comply with approved Contractor's Procedures or continuation of a dangerous practice is unacceptable and therefore an unreasonable condition within the meaning of the clauses of the contract. This is grounds for withdrawal of the Government's assumption of risk for loss or damage to Government aircraft. The Government reserves the right to take such other action as may be necessary to preserve the safety and security of the aircraft.

k. Questions of Interpretation. If there is a difference of interpretation concerning Contractor's Procedures between the GFR, contractor, and/or local ACO, the differences should be raised progressively to the following authorities for resolution: For DLA activities, additional guidance can be received from the District and HQ Chiefs of Flight Operations. For service activities, contract waiver authority for this regulation.

2. Waiver Procedures

a. The contractor should request a waiver when specific requirements of this instruction or applicable Service guidance add cost or complexity to contract accomplishment without increasing safety or reducing Government's risk, or when alternate Contractor's Procedures or requirements can be substituted which provide equivalent levels of safety, proficiency and/or risk mitigation.

b. Waiver requests should detail justifications for the waiver and procedures for mitigating the risk to Government aircraft affected by the waiver. Send all waiver requests to the GFR. The GFR shall forward waiver requests with recommendations to the District Chief of Flight Operations, if applicable, before processing them through the ACO. The ACO shall send the waiver requests to the Waiver Authority and PCO for coordination and approval. Waivers must be in writing. Waiver requests should be processed in a timely manner to insure minimal disruption of flight operations. If granted, the specifics of the deviation shall be included in the Contractor's Procedures. Waiver authority:

(1) Army - U.S. Army Materiel Command, ATTN: AMCLG-OP (AVN), 5001 Eisenhower Avenue, Alexandria, VA 22333-0001.

(2) Air Force - Headquarters Air Force Materiel Command, Director of Operations, 4225 Logistics Avenue, Suite 2, Wright-Patterson AFB, OH 45433-5714.

(3) Navy - Commander, Naval Air Systems Command, AIR-09.

c. The use of Service guidance ensures that contractor flight and ground operation risk levels parallel the risk accepted by the Services. However, since "contractor operations" may not have been considered when Service guidance was developed, minor reasonable deviations may be required and allowed if the risk level would clearly not be affected. The method for seeking deviations from Service guidance is the same as for obtaining a waiver to this instruction. If granted, the specifics of the deviation shall be included in the Contractor's Procedures.

3. Aviation Safety Program

a. Mishap Prevention Program. The contractor shall establish a written mishap prevention program for their flight and/or ground operations which includes the following applicable elements:

(1) Designate an Aviation Safety Official and identify specific duties and responsibilities.

(2) Establish a contractor aviation safety council to promote a program of accident prevention in flight, ground, industrial, and explosive activities as they apply to flight and ground operations. The aviation safety council will accept action items, provide safety expertise, implement changes as required, and operate as a focal point for safety within the company. The council will address company mishaps for trend analysis and recommendations. Members of the council individually will provide a method to interface with their respective company organization/department. These meetings should be held on a regular basis (at least quarterly). Document and distribute minutes of the meetings to appropriate offices and the GFR. The aviation safety council members should include (but are not limited to):

(a) Safety Manager (Chair)
(b) Director of Flight Operations/Chief Pilot
(c) Quality Assurance
(d) Aviation Safety Official
(e) Department Heads
(f) FOD Manager
(g) Chief of Aircraft Rescue and Fire Fighting
(h) Environmental/Hazardous Materials Manager
(i) Aviation Maintenance Manager (contractor)
(j) GFRs
(k) Aviation Maintenance Manager (Government)
(l) Safety Specialist (Government)

(3) Conduct regular flight safety audits or assessments (at least semiannually) which incorporate all aspects of the contractor's flight and ground operations to include flight, ground, maintenance, industrial, and explosive activities. Forward copies of the report, findings and corrective actions to appropriate offices to include the GFR. The following references may be used as guidelines:

(a) Army - the U.S. Army Safety Center (USASC) Guide to Aviation Resource Management for Aircraft Mishap Prevention;

(b) Navy - the Naval Safety Center (NAVSAFCEN) 3750 P1 Safety

Review Checklist;

(c) Air Force - AFI 91-202, including Major Command (MAJCOM) supplements.

(4) Make safety publications readily available to all aircrew members.

(5) Conduct a monthly flying safety meeting. The intent of these meetings is to provide a forum for sharing contractor and government information on safety items or issues. Maintain attendance records, a summary of subject matter presented at meetings, and a method to brief absentees on the subject matter. In cases where the number of contractor flight personnel (i.e., four or less) makes a monthly meeting less effective, with GFR approval, a safety folder, updated monthly, meets this requirement. The contractor shall forward minutes of meetings to the GFR and maintain on file for a minimum of one year.

(6) Establish hazard identification and elimination procedures. As a minimum, the system/methodology should allow any contractor personnel to identify a potential hazard; provide an avenue to communicate this concern to the contractor's safety department for validation and corrective action; and document resolution of the identified hazard.

(7) Establish mishap reporting procedures. The contractor must notify the GFR of any damage to Government aircraft in a timely manner. The contractor shall provide a detailed narrative of the mishap, to include findings, causes, and recommendations/corrective actions. When requested by the Service (via contractual wording), the mishap investigation report should be submitted in the format set forth by the Service Safety Program.

(8) Establish procedures for the handling of "privileged" data. In the performance of the contract the contractor may request and receive from the Service's safety center, access to "privileged" information as defined in DoDI 6055.7, Mishap Investigation, Reporting and Recordkeeping, and the Services' safety regulations. If mishap-related privileged data is to be requested and obtained, handling procedures for the privileged data must be in place. Privileged information is defined in DoDI 6055.7 and the Service's safety regulations. Handling procedures must address the following safeguards:

(a) Limitations of company internal distribution to the minimum number of directly concerned safety or operator personnel.

(b) No release of privileged data to third parties.

(c) Training to ensure employee awareness of the sensitivity of privileged information and its restrictions for purposes of exclusive Government benefit only.

b. Pre-mishap Plan. The contractor shall develop a pre-mishap plan which establishes the policies, responsibilities, and actions to be initiated should any aircraft in the custody of the contractor become overdue, or involved in a mishap. As a minimum, this plan shall include the following:

(1) Immediate action checklist to ensure command, control and coordination of the rescue/recovery effort.

(2) A notification plan which includes a current roster of

contractor and Government personnel (including duty and non-duty phone numbers) to be notified in the event of an aircraft mishap.

(3) Procedures for contractor and subcontractor cooperation and participation in mishap investigations conducted by the Government.

(4) Provisions for search and rescue procedures.

(5) Procedures for site security and public affairs.

(6) Procedures for the preservation of evidence to include:

(a) Training records.

(b) Aircraft log books, maintenance and servicing records.

(c) Impounding all of the mishap aircraft's fluid servicing equipment and contents.

(d) Collection and impoundment of fluid samples from the mishap aircraft.

c. Medical Procedures. Establish procedures for medical examination of crewmembers, noncrewmembers, passengers, and ground personnel involved in an aircraft mishap. An FAA approved or military flight surgeon medical examination is required for those involved in a physiological incident or when the mishap causes injury to the crewmembers/personnel or causes substantial damage to the aircraft. Crewmembers and non-crewmembers involved in mishaps in which there is a loss of life, an aircraft is destroyed, property damage is expected to exceed $200,000; five or more personnel are inpatient hospitalized; or any permanent total or partial disability is sustained shall receive toxicological testing. Those individuals whose actions or inactions, in the GFR's or contractor's judgment, may have been factors in the mishap sequence shall receive toxicological testing equal to or better than procuring Service guidance.

d. Aircraft Rescue and Fire Fighting (ARFF) Procedures. Contractors may establish agreements with local civil fire departments and ambulance services. Training of personnel from these units may be required. If ARFF is provided by a third party, a written agreement must be in place that includes all necessary procedures, training, exercises, and inspections. In the absence of any Service contractual requirements (AFMCI 91-101, NAVAIR 00-80R-14, AR 420-90), the contractor's ARFF program shall contain the following minimums as applicable:

(1) ARFF Training, as applicable. As a minimum, ARFF personnel will undergo the following recurring training (excerpted from NFPA 1003 chapters 3 through 21):

(a) Annual training on aircraft crew & canopy ejection systems (if applicable) sufficient to avoid inadvertent activation during rescue operations.

(b) Monthly training on the use of specialized tools, e.g., The Jaws of Life.

(c) Monthly aircraft familiarization; including the dangers of initiators, rotary actuators, thrusters, explosive squibs, armament systems, destruct systems; location of fuel and oxygen tanks; disabling/disconnecting engines, batteries, and oxygen; forcible entry points; and installation of landing gear pins.

(d) Quarterly self-contained breathing apparatus (SCBA).

(e) Quarterly aircrew extraction exercises (to avoid possible injuries, ARFF personnel are not required to physically remove

crewmembers from the aircraft during exercises).

(f) Quarterly ARFF vehicle familiarization and operation.

(g) Quarterly pre-mishap planning for on and off site ARFF response.

(h) Quarterly ARFF tactics, strategy and command & control of ARFF to ensure prompt, efficient, and cohesive response.

(i) Quarterly First Aid and Triage.

(j) Quarterly training in communications techniques and procedures.

(k) Quarterly explosives and munitions hazards during ARFF.

(l) Annual live fire training, if allowed by local environmental laws, or GFR approved alternate training addressing methodologies outlined in NFPA 402M.

(2) ARFF Chief Responsibilities

(a) Conduct and document regular monthly communication checks with the appropriate local agencies (local police, fire department, ambulance authorities, and the State Police) to assure that the emergency communication links are current and in working order.

(b) Act as focal point for Fire Protection and Prevention, and ARFF at the contractor's facility.

(c) Ensure ARFF vehicles are maintained and checked on a daily basis.

(3) ARFF Vehicles. Shall be sufficient in number and capacity to effectively conduct aircrew rescue operations commensurate with the type aircraft at the facility and level of flight and ground operations. Should conflicts arise concerning ARFF vehicle design/capacity/ manning, the procuring Service's safety office shall determine if the contractor's ARFF capability meets the intent of this Instruction. AFMCI 91-101, incorporates NFPA and FAA requirements to describe ARFF vehicle design/capacity/manning, and may serve as a guide for the contractor and GFR in determining the number and type of ARFF vehicles needed.

F. RESPONSIBILITIES

1. GFRs are responsible for ensuring contractors establish written Contractor's Procedures IAW this Instruction, for all aircraft ground and flight operations for which the Government, by contract, has assumed some or all of the risk of loss. GFRs are bound by this Instruction for all contractor aircrew and flight approvals IAW the Ground and Flight Risk Clause (G&FRC), DFARS 252.228-7001, and/or the Flight Risk Clause (FRC), DFARS 252.228-7002. Further GFR responsibilities are described in enclosure 4.

2. Contractors are responsible for establishing and enforcing safe and effective written Contractor's Procedures IAW this Instruction, for any and all aircraft ground and flight operations for which the Government, by contract, has assumed some or all of the risk of loss. Contractor operations/flights not falling under the G&FRC or FRC, do not require GFR approval. Contractor aircrew personnel who have not been approved by the GFR for their contract, are not authorize to fly

under the G&FRC or FRC. Contractors will ensure all flights under the G&FRC or FRC are approved, in advance, and in writing, by the GFR. Enclosure 4 of this instruction does not contain contractor requirements.

3. Commanders having the administrative responsibility for any contract containing the G&FRC or FRC shall appoint a trained GFR to administer the responsibilities of this Instruction.

G. EFFECTIVE DATE. This publication is effective immediately.

H. INFORMATION REQUIREMENTS. The following forms are referenced and/or required in this instruction.

1. DD Form 250, Material Inspection and Receiving Report

2. DLA Form 644, Request for Flight Approval

3. DD Form 1716, Contract Data Package Recommendation/Deficiency Report

4. DD Form 1821, Contractor Crewmember Record

5. DD Form 2627, Request for Government Approval For Aircrew Qualifications and Training

6. DD Form 2628, Request for Approval of Contractor Crewmember

BY ORDER OF THE DIRECTOR, DEFENSE LOGISTICS AGENCY, AND THE SECRETARIES OF THE ARMY, THE AIR FORCE, AND THE NAVY

R.B. FREDERICK
Acting, Headquarters Complex Commandant

4 Enclosures
1. Glossary of Acronyms
2. Flight Operations
ATT 1 DLA Form 644, Request for Flight Approval
ATT 2 DD Form 2627, Request for Government Approval For Aircrew Qualifications and Training
ATT 3 DD Form 1821, Contractor Crewmember Record
ATT 4 DD Form 2628, Request for Approval of Contractor Crewmember
3. Ground Operations
4. Government Flight Representative Procedures
ATT 1 Sample GFR Delegation of Authority Letter
ATT 2 Sample Supporting Contract Administration (SCA) Request Format

ATT 3 Sample Survey Report
ATT 4 Sample Data Sheet

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COORDINATION: CAHS, DCMC-O, DCMC, Army (DALO-AV, AMCLG-OP (AVN), AMCSF-A), Navy (AIR-09), Air Force (HQ AFMC/DOO)

Glossary of Acronyms

ACBT	Air Combat Training
ACO	Administrative Contracting Officer
ACF	Acceptance Check Flight
ACT	Aircrew Coordination Training
AFJI	Air Force Joint Instruction
AFMC	Air Force Materiel Command

AGE	Aerospace Ground Support Equipment (also, Ground Support Equipment)
AMC	U.S. Army Materiel Command
APT	Aviation Program Team
APU	Auxiliary Power Unit
AR	Army Regulation
ARFF	Aircraft Rescue and Fire Fighting
ASO	Aviation Safety Officer/Official
ATC	Air Traffic Control
BFM	Basic Fighter Maneuvers
CAO	Contract Administration Office
CAS	Contract Administration Services
CASC	Contract Administration Services Component
COMNAVAIRSYSCOM	Commander, Naval Air Systems Command
CRM	Crew/Cockpit Resource Management
CRO	Contractor's Requesting Official
DCMC	Defense Contract Management Command
DCMD	Defense Contract Management District
DES	Directorate for Evaluation and Standardization (Army)
DFARS	DoD Federal Acquisition Regulation Supplement
DLA	Defense Logistics Agency
DLAI	Defense Logistics Agency Instruction
DLAM	Defense Logistics Agency Manual
DoD	Department of Defense
FAA	Federal Aviation Administration
FAR	Federal Acquisition Regulation
FCF	Functional Check Flight
FCIF	Flight Crew Information File
FE	Flight Examiner
FO	Flight Operations or Foreign Object
FOD	Foreign Object Debris or Damage
FOP(s)	Flight Operations Procedure(s)

GFR	Government Flight Representative
GOP(s)	Ground Operations Procedure(s)
GSE	Ground Support Equipment (also, Aerospace Ground Support Equipment)
GTV	Ground Test Vehicle
HCA	Heads of Contracting Activities
HQDA	Headquarters, Department of the Army
IE	Instrument Flight Examiner (Army)
IFR	Instrument Flight Rules
IG	Inspector General
IMC	Instrument Meteorological Conditions
IP	Instructor Pilot
MACOM	Major Command (Army)
MAJCOM	Major Command (Air Force)
MDR	Maintenance Deficiency Report
MIL-STD	Military Standard
MOA	Memorandum of Agreement
MSL	Mean Sea Level
MTP	Maintenance Test Pilot (Army)
NAVSAFECEN	Naval Safety Center
NASA	National Aeronautics and Space Administration
NOTAM	Notice to Airmen
OPI	Office of Primary Interest
PAS	Preaward Survey
PCO	Procuring Contracting Officer
QA	Quality Assurance
QAR	Quality Assurance Representative
SCA	Supporting Contract Administration
SP	Standardization Instructor Pilot (Army)
SPO	System Program Office
SSN	Social Security Number
TECH REP	Technical Representative
TDY	Temporary Duty
TPS	Test Pilot School

USAAVNC	U.S. Army Aviation Center
USASC	U.S. Army Safety Center
VFR	Visual Flight Rules

Flight Operations

1. Management. This area shall describe:

a. Contractor flight planning area. The contractor shall establish and maintain a flight planning area and provide access to current and sufficient information, including NOTAMs, weather forecasts and advisories, allowing crewmembers to properly plan and participate in flights.

b. Mission profiles. Aircrew members shall prepare specific mission profiles for each flight, and shall forward the profile with the "request for flight approval" to the GFR. These profiles shall detail all planned flight checks and events, to include proficiency training and the specific geographical areas or point-to-point routes to be used. Mission procedures shall make the maximum possible use of ground radar monitoring/advisories, radio communications (status reports at established intervals) or chase aircraft to monitor aircraft position and status.

c. Contractor Flight Approval. The GFR approves all contractor flights. Contractor's Procedures shall delineate the process whereby flight schedules are developed in advance and approvals submitted with sufficient lead time to preclude interruption to either Government or contractor operations.

d. Approved Flights. Flights approved by the GFR must be:

(1) Conducted by current and qualified contractor crewmembers and non-crewmembers, in an approved flight area, route, and specified profile.

(2) Performed according to approved mission profile or test plan, and within applicable safety and engineering limitations. Experimental and engineering test flights require a specific test plan.

(3) In accordance with all approved Contractor's Procedures.

(4) Conducted with at least the minimum required and authorized crew for aircraft type, design, series, and test plan/profile.

e. Flight Supervision. Contractor's Procedures shall:

(1) Allow for timely communication between the contractor flight operations facility and the crewmembers in flight while flying in the local area (e.g., contractor radio, phone patch through tower, etc.).

(2) As a minimum, identify the check flight area, supersonic corridor, stereo route profiles and any required/desired Federal

Aviation Administration (FAA) coordination.

(3) Identify aircraft maintenance release procedures.

(4) Include record keeping requirements for supersonic flights, if applicable to the type aircraft at the contractor's location; this is commonly referred to as the "supersonic-flight log."

f. Documentation of Certificates, Licenses, and Permits. Contractor's Procedures shall identify the office/title of the individual(s) responsible for ensuring the currency of these documents. A method shall be established to inform the GFR when these documents are renewed or expire or are withdrawn or canceled. Contractors should not submit and GFRs shall not approve crewmembers with non-current certificates, licenses, or permits.

g. Mixed Crew Flights. Contractor procedures must address designation of pilot in command and crew positions for dual piloted and/or multi place aircraft and flight lead for formation flights. The contractor shall submit DLA Form 644 (enclosure 2, attachment 1), or GFR approved equivalent form, which lists by name and position all authorized contractor and Government personnel that shall participate in the flight.

h. Minimum Crew Requirements. Minimum crew requirement for the various types of flight activities shall be addressed by the contractor.

i. Aircrew Duty and Rest Limitations. The crew rest period is the non-work period immediately preceding the crew duty period. This period shall be a minimum of 12 hours with at least 8 uninterrupted hours allowed for sleep. The following crew duty period restrictions apply to all contractor crewmembers/non-crewmembers:

(1) The crew duty period begins when an individual reports for work (either flight or administrative duties) and ends when the engines are stopped at the end of a mission or series of missions.

(2) The basic crew duty period shall not exceed 12 consecutive hours. The GFR are authorized to grant extensions to the basic crew duty period of not more than two hours on a case-by-case basis.

(3) When flying support flights in dual-piloted aircraft with an operative autopilot installed and used, the maximum crew duty period may be 16 consecutive hours.

(4) Pilots in single-piloted helicopters are limited to a maximum of 6 flying hours in a 12-hour crew duty period.

(5) Use of augmented crews per procuring Service guidance is allowed.

(6) Contractor's Procedures shall address chronic fatigue issues.

j. Other Aircrew Restrictions. The contractor shall establish flight restrictions per Service and/or FAA guidance for contractor flight personnel recovering from the effects of alcohol consumption, medications, diving, etc.

k. Publications. This area shall include:

(1) Flight Crew Information File (FCIF). Each flight operations facility shall maintain an FCIF at a location readily available to crewmembers. Contractor's Procedures shall require crewmembers to read and certify knowledge of the contents of the FCIF initially and whenever there are changes. The FCIF should contain

information which affects the safety of aircraft operations and information of a transitory nature that concerns flight operations. When collocated with a Government flight operations activity, the contractor may use the Government FCIF, provided both organizations concur and standardized procedures for use are established. Approved revisions to the Contractor's Procedures shall be included in this file until republished.

(2) The requirement that only current, up-to-date publications be used. Contractor's Procedures shall identify the method and the office/title of the individual responsible for receiving, distributing, and maintaining the currency of technical manuals and checklists. Contractor personnel shall use Government technical manuals and checklists in all flight operations where applicable technical data has been published. The contractor shall obtain military technical manuals, changes, and supplements through Government channels. Where only commercial manuals are available, the contractor is responsible for obtaining them and ensuring that changes and supplements are promptly posted in the basic technical publications. For Federal Aviation Administration (FAA) certified aircraft, the contractor shall maintain all applicable Airworthiness Directives and Service Bulletins for review. Locally devised checklists may be used only when such deviation is authorized by the appropriate Procuring Service. Mixed crews (Government and contractor) performing crewmember or maintenance tasks shall use identical checklists.

2. Crewmember/Non-Crewmember Approval

a. Requesting Officials (or Contractor's Requesting Official (CRO)). Contractor's Procedures shall identify the office/title of individual(s) authorized to request crewmember approval and qualification training and the process for requesting approval. Only contractor designated requesting officials will submit requests to the GFR for crewmember approval or for qualification training. The contractor shall identify (in writing) these officials to the GFR, and will revise the list, as necessary, to ensure currency.

b. Government Approval for Qualification or Upgrade Training. The contractor's requesting official forwards two copies of DD Form 2627, Request for Government Approval for Aircrew Qualification and Training (enclosure 2, attachment 2), a résumé, and DD Form 1821 (enclosure 2, attachment 3), Contractor Crewmember Record, for approval of training to the GFR. Include a copy of contractor crewmember's proposed qualification training plan/program per paragraph 3. The GFR approves/disapproves the DD Form 2627, files the original and returns the duplicate to the contractor. The contractor shall ensure that crewmembers do not fly or initiate qualification training before receipt of Government approval. Following approval, training must be initiated and completed without delay. Formal training courses offered by the Services may be requested by the contractor and may require reimbursement according to the given contractual agreement.

c. Government Approval for Crewmember Status. The contractor and

the GFR shall ensure that only required quantity of crewmembers are authorized and that programs include sufficient flying time for currency in accordance with this instruction. The GFR shall not approve any crewmember until the Contractor's Procedures have been approved. On completion of qualification training, the contractor's requesting official forwards two copies of DD Form 2628, Request for Approval of Contractor Crewmember (enclosure 2, attachment 4), and DD Form 1821, Contractor Crewmember Record, to the GFR. The GFR indicates action taken and returns a signed copy to the contractor within 10 workdays. Contractor crewmembers shall not perform in their aircrew specialties until receipt of Government approval.

d. Contractor Approval for Non-crewmember Status. The contractor's requesting official must issue a list semiannually of each contractor and subcontractor non-crewmember required to fly in Government aircraft, to the GFR. The contractor's requesting official ensures that each non-crewmember is required and qualified for a specific mission.

e. Termination of Approvals

(1) Approvals of crewmembers are automatically canceled upon termination of employment, physical disqualification, or suspension/revocation of FAA rating. The contractor shall have procedures for identifying and addressing human factors issues such as substance abuse, personal and family problems, etc., which would preclude flight duties. The contractor shall notify the GFR of crewmember status changes by the most expeditious means and then immediately follow up in writing.

(2) After completion of an appropriate investigation, the GFR shall withdraw the approvals of crewmembers who have:

(a) Failed to meet the general requirements of basic airmanship or who fail to exercise sound judgment in the conduct of test or other flights.

(b) Exhibited evidence of personal instability or similar undesirable tendencies or have conducted themselves contrary to the Government's interests in promoting safety.

(c) The GFR shall promptly notify the contractor and ACO when an approval is withdrawn. A written statement by the GFR to the contractor must set forth, in detail, the reasons for the action taken.

3. Crewmember Qualification Requirements. This area shall describe:

a. General Qualifications. Minimum qualifications for approval of contractor crewmember, for test and other flight categories, are listed below. Factors such as total experience, currency of experience, experience in similar aircraft, type of flying experience, and other related factors shall be evaluated by the GFR before approving a contractor crewmember. All pilots shall have an FAA Commercial Pilot or Airline Transport Pilot rating and the appropriate category endorsements. Flight engineers shall have an FAA Flight Engineer Certificate and appropriate category endorsement. Contractors may use Service/MAJCOM forms/directives to record

individual crewmember records when performing ground and flight operations as approved by the GFR. For non-crewmember requirements see paragraphs 2.d. and 6.a. of this enclosure.

b. Experimental Test Flights and Associated Experimental Ground Operations

(1) Pilot. Not less than 1,500 hours first-pilot time, to include 100 hours as first-pilot during engineering and/or acceptance flights listed under the functional flight category. Graduation from a military test pilot school (TPS) is required.

(2) TPS Waiver. When the contractor pilot is not a graduate of a military TPS, the education and experience requirements listed below must be met as a basis of consideration for TPS waiver.

(a) Pilots must have at least 2,000 hours first-pilot time in comparable aircraft (e.g., helicopter, fighter/attack, cargo, or other). Additionally, 200 hours of first-pilot time during engineering flight test and 10 hours during experimental flight test are required.

(b) Education and experience requirements are as follows:

[1] An undergraduate or higher degree in an aerospace related engineering or aerospace related scientific discipline plus 1 year of applicable engineering test flight experience, or,

[2] An undergraduate or higher degree in any other engineering or scientific discipline plus 2 years of applicable engineering test flight experience, or,

[3] Any non-engineering undergraduate or higher degree plus 3 years of applicable engineering test flight experience, or,

[4] No degree, 4 years of applicable engineering test flight experience.

(3) Flight Engineer. Not less than 1000 flight engineer time to include 500 hours of engineering or experimental flight test in comparable aircraft.

(4) Other crewmembers. All other crewmembers must have 1000 hours in the position they are qualifying in, of which 300 hours must be in the same aircraft category.

c. Engineering Test, Check Flights, and all other flights

(1) Pilot. The pilot must be qualified in mission, type, design, and if appropriate, series of aircraft. The pilot must have not less than 1,000 hours first-pilot time. In addition,

(a) For fighter, attack, and trainer aircraft, the first pilot time must include 100 hours in the same aircraft type and design.

(b) The first-pilot time for other aircraft must include 300 hours in similar aircraft type.

(2) Copilot. The copilot must have not less than 500 hours first-pilot time and be qualified in mission, type, design, and if appropriate, series aircraft.

(3) Flight Engineer. Not less than 1,000 hours of flight engineer time of which 300 hours must be in the same aircraft category and shall be qualified in the mission, type, design and series of aircraft.

(4) Other crewmembers. All other crewmembers must have 1000 hours in the position they are qualifying in, of which 300 hours must

be in the same aircraft category.

(5) Maintenance Test Pilot (MTP) (Army)

(a) Army Standard Aircraft. Contractor pilots who perform Maintenance Test Flights (MTF) on Army Standard Aircraft, which have undergone maintenance, modification, new production or overhaul where followup/acceptance MTF is not performed by the Government shall be a graduate of the Army Maintenance Test Pilot Course or complete an equivalency evaluation performed by the United States Army Aviation Center (USAAVNC). For cost savings the preferred method for experienced pilots is for the contractor to submit requests for equivalency evaluation to the GFR who forwards the request through the procuring MACOM Aviation Office to the Commandant, USAAVNC, ATTN: ATZQ-ESO, Fort Rucker, AL 36362-5000. The equivalency evaluation is given by the Directorate of Evaluation & Standardization, USAAVNC, and consists of a maximum of two written examinations, an oral examination, and a flight evaluation. The oral and flight examinations will be given per the appropriate aircraft aircrew training manual. Requests for school quotas in the U.S. Army Maintenance Test Pilot Course should be sent through the same routing as stated above for equivalency training.

(b) Nonstandard Army Aircraft. For nonstandard Army aircraft and contractor-furnished aircraft, maintenance test flights shall be accomplished by pilots designated in writing by the GFR, upon request from the contractor.

d. Contractor Flight Instructor and Flight Examiner Qualifications

(1) Flight Instructors may be designated by the contractor to provide instruction to contractor crewmembers. Only highly qualified, proficient, and experienced personnel may be selected and trained as instructor crewmembers. These candidates shall meet the evaluation requirements provided by the Services prior to GFR approval on DD Form 2628.

(2) Flight Examiners may be designated by the contractor to administer recurring flight evaluations when authorized by the GFR. Only highly qualified instructor personnel may be selected and trained as Flight Examiners. These candidates shall meet the evaluation requirements provided by the Services prior to GFR approval on DD form 2628.

(3) Instrument Flight Examiners (IE), Standardization Instructor Pilots (SP), and Instructor Pilots (IP) (Army). Contractor pilots who administer the Army Aircrew Training Program (ATP) shall meet all Service specific qualification requirements per Army Regulation (AR) 95-1 series.

e. Medical Qualification Requirements

(1) Crewmembers need a current annual military or FAA class II flight physical.

(2) Flight non-crewmembers need a current annual military or FAA class III flight physical.

4. General Procedures. The following minimum areas shall be addressed:

a. Airfield Operations

(1) The Contractor's Procedures shall address local airfield operations. If the contractor flight activity is physically located at an operational civil or military airfield, the contractor shall comply with local directives and execute any agreements with the airfield authority required to ensure full compliance with the contract and this instruction.

(2) Contractor's Procedures shall address qualification and certification requirements for radio operators or tower controllers in accordance with FAA/FCC regulations when these services are provided by the contractor.

b. Weather Requirements. FCF/ACF flights shall be accomplished during day visual meteorological conditions. Service guidance for ceiling/visibility minimums shall be used. In no instance shall the takeoff/landing minimums be less than the following:

(1) All initial FCF/ACFs and subsequent FCF/ACFs involving discrepancies for engine, flight controls, landing gear, or instruments affecting IFR capability:

(a) Bomber, cargo, tanker, patrol, and trainer aircraft: 1,500 feet and 3 miles.

(b) Fighter, attack, and reconnaissance aircraft: 3,000 feet and 3 miles.

(c) Helicopters: 700 feet and 1 mile.

(2) Subsequent FCF/ACF flights:

(a) Bomber, cargo, tanker, patrol, and trainer aircraft: 1,000 feet and 3 miles.

(b) Fighter, attack, and reconnaissance aircraft: 1,000 feet and 3 miles.

(c) Helicopters: 500 feet and 1 mile. Helicopter FCF/ACF flights may be conducted under Special VFR conditions, but in no case with weather less than above. FCF/ACF hover checks may be performed when weather is less than the above, provided visual reference to the ground and obstruction clearance is maintained.

(3) Training flights (including touch-and-go landings): 300 feet and 1 mile.

c. Required daylight operations

(1) All check flights shall commence no earlier than official sunrise and terminate no later than 30 minutes prior to official sunset.

(2) Experimental/Engineering flights shall be conducted between official sunrise and sunset unless night operations are specifically required by the test plan/mission.

d. Flight operating limits. Service guidance shall be used for all operating limits. In the absence of Service guidance, maneuvering parameters such as minimum altitudes and operating limits similar to Service requirements for like aircraft missions and events shall be included in the Contractor Procedures.

e. Filing of flight plans. Local procedures for filing of flight plans will be addressed. Flight plans will be filled out and filed in accordance with FAA/host nation regulations.

f. Arming and disarming (if applicable). The Contractor's Procedures will mirror Service, Tech Order, Tech Manual, and any

applicable local procedures for arming and disarming procedures.

g. Live fire, laser, and gunnery operations. If conducted, the Contractor's Procedures will mirror Service, Tech Order, Tech Manual, and any applicable local procedures.

h. Night Vision/low light operations. If conducted, the Contractor's Procedures will mirror Service, Tech Order, Tech Manual, and any applicable local procedures.

i. Life Support Equipment. Provide procedures to identify the process and the office/title of the responsible individual(s) and methods to issue, care, inspect, clean, and store equipment.

j. Experimental and Engineering Operations. This area shall address the contractor's specific procedures for experimental tests, engineering tests, and associated ground operations of Government aircraft as separate sections within the Procedures.

k. Emergency Operating Procedures. Provide detailed procedures addressing the appropriate minimum items below:

(1) Radio failure
(2) Landing gear malfunctions
(3) In-flight fire
(4) Barrier and arresting gear engagement
(5) Controlled bailout/ejection
(6) Jettisoning (fuel, armament, cargo)
(7) Minimum and emergency fuel procedures
(8) Emergency aircraft evacuation
(9) Emergency aircraft extraction (hanger/flightline fire)
(10) Hot brakes
(11) Hazardous material
(12) Any other aircraft specific emergency procedures (e.g., auto rotation)

l. Passenger Transportation Procedures. This area includes procedures for submitting contractor personnel or other passenger transportation requests, including orientation flights, on Government aircraft through the GFR to the appropriate Military Command for approval. Passengers are restricted from the following types of flights: experimental test flights; initial acceptance, functional check flights, maintenance test, or production check flights.

m. Aircrew and Flight Briefings. Mission/aircraft specific Service briefing guides shall be used for conducting these briefings. In the absence of such briefing guides, the contractor shall develop briefing guides similar to what the Service uses for like aircraft and missions.

n. Determining Weight and Balance. Contractor's Procedures shall indicate the office/title of the individual(s) responsible for determining aircraft weight and balance or for providing the information required to compute it.

5. Crewmember Training Requirements

a. Initial Qualification Training. For qualification in mission/type/design and series of aircraft, GFR approval depends on crewmember experience and proficiency equal to the type of flying contemplated or conducted. Initial qualification training shall be

per Service guidance in the specific mission, type, design, and if appropriate, series aircraft. Differences in series aircraft and any special equipment or systems should also be addressed during initial training. If provided, the contractor's in-house training program shall be equivalent to the Services'. When aircraft flight simulators exist for the type aircraft being flown, crewmembers shall complete emergency procedures simulator training. The duration of the training session shall be commensurate with Service requirements. When no simulator exists, emergency procedures training shall be accomplished in an actual or mockup cockpit by an instructor. A comprehensive written examination on the applicable mission, type, design, and if appropriate, series of aircraft must be completed. Knowledge of all the aircraft systems, including normal and emergency procedures, must be demonstrated to an instructor pilot. In the absence of a Service defined program or when limited by the contract, the contractor shall recommend an initial qualification program which is similar to programs the Services use for like aircraft to the GFR for approval.

b. Crewmember Currency Requirements

(1) General Requirements. Currency applies to minimum requirements to maintain qualification in a particular type/design aircraft. Contractor crewmembers shall maintain all applicable currencies required by the procuring Service for each flight operation/event (in which qualification is maintained), in the designated aircraft and crew position. If this guidance doesn't exist, the contractor shall develop and submit a recommended currency program (similar to Service requirements for like aircraft, missions and events) to the GFR for approval. The Contractor's Procedures shall:

(a) Describe the methods used to ensure that aircrews maintain required currencies and don't perform tasks for which they are not current and qualified.

(b) Identify the office/title of the individual responsible for overseeing subparagraph (1), above.

(c) Publish a table of the specific Service guidance used for currency and recurrency requirements.

(2) Proration. A crewmember performing on a contract for less than a semiannual training period shall accomplish a prorated share of the minimum requirements based on the percentage of the remaining training period. Accomplishment of these currency requirements should be distributed evenly throughout the calendar period to enhance aircrew proficiency.

(3) Contractor pilots designated as IE, SP, or IP, for the administration of the Army ATP shall meet the currency requirements per the AR 95 series.

c. Dual Aircraft Qualifications. When circumstances dictate, the GFR may authorize contractor crewmembers to be current and qualified in two aircraft. Contractor crewmembers maintaining dual qualifications shall accomplish a minimum of 50 percent of the currency requirements in each aircraft. Contractor crewmembers who are qualified in other than Government aircraft shall have their records so noted, but approval for such additional qualification shall not be the responsibility of the GFR. Generally, the operation of

civil aircraft does not contribute to currency and proficiency requirements for the operation of Government aircraft unless the civil and Government aircraft are similar in handling qualities and have basically the same engineering systems (fuel, electrical, hydraulic, etc.), as determined by the GFR.

d. Night and IMC. There is no requirement for contractor pilots and copilots to fulfill night or instrument requirements, except in those cases where night or instrument flying by contractor personnel is required by contract. Pilots maintaining night flying currency must also maintain instrument currency except in aircraft not certified for instrument flight. Training and currency requirements for night currency and other events shall be accomplished in the contractor's flying program under the provisions of the contract.

e. Special Flight Events. The contractor shall ensure that crewmembers are properly trained in flight operations which require special maneuvers or qualifications; e.g., formation, air refueling, BFM, ACBT, low level, night vision devices, weapons delivery etc. Currency requirements for these operationally oriented flight events shall be Per Service guidance.

f. Periods of Reduced Flight Time Availability. When contractor crewmembers cannot meet training requirements because of low density production or developmental aircraft, the contractor shall develop and submit a recommended alternative training plan for category/design aircraft through the GFR and ACO to the appropriate waiver authority. An example of such a training plan would be to substitute 50 percent of the Service requirements in a similar aircraft or compatible simulator. Such approvals must be obtained for each applicable semiannual period.

g. Recurrency/Requalification. When crewmembers fail to maintain basic aircraft qualification currency they shall not be permitted to fly as crewmembers on Government aircraft except for appropriate recurrency/requalification training. The contractor shall develop and submit a recommended recurrency program (similar to Service requirements for like aircraft, missions and events) to the GFR for approval.

6. Crewmember Ground Training Requirements. The contractor shall develop a ground training program which includes (as a minimum) the requirements of this section. The Contractor's Procedures must assure that aircrews do not fly if training requirements have not been meet.

a. Crewmember and non-crewmember requirements

(1) Altitude Chamber training. Altitude chamber training is required for flight above 18,000 MSL. Refresher training will be accomplished per Service directives. A current military flight physical or FAA medical certificate, as appropriate, must be presented prior to the altitude chamber training. This training may be waived by the GFR for non-crewmembers required to perform a one-time function.

(2) Physiological training. All crewmembers and non-crewmembers shall receive the appropriate crewmember physiological training (exclusive of altitude chamber). Physiological training for

pilots and copilots shall include vertigo simulator and/or other disorientation training to the maximum extent possible. Refresher training will be accomplished per Service directives. This training may be waived by the GFR for non-crewmembers required to perform a one-time function.

(3) Aircraft Egress/Evacuation Training. This training shall cover a review of aircraft emergency equipment and escape procedures. Training shall be tailored to the type(s) of aircraft and crew position in which the individual maintains qualification. The contractor shall ensure that all crewmembers and non-crewmembers receive annual egress training. As appropriate, egress/evacuation training shall address a minimum of the following:

(a) Egress methods (ground and flight).

(b) Ejection seat normal and emergency procedures to include automatic modes.

(c) Seat kit modes of operation and deployment.

(d) Post ejection checklist items.

(e) Parachute operation to include malfunctions and landing techniques.

(f) Fire extinguisher training/refresher.

(g) Use of smoke masks.

(4) Life Support equipment training. The frequency and content of training shall be tailored to meet minimum requirements of the Procuring Service.

(5) Water Survival Training. Currency is required prior to operating any Government aircraft over open water beyond the gliding distance to land. The frequency and content of training shall be tailored to meet minimum requirements of the Procuring Service. Training shall be given by a qualified life support/survival equipment instructor or by attending a military water survival refresher course. Water survival training shall be tailored to the type(s) of aircraft and crew position(s) for which the individual maintains qualification. This training may be waived by the GFR for non-crewmembers required to perform a one-time function.

(6) Land Survival Training. The frequency and content of training shall be tailored to meet minimum requirements of the Procuring Service.

b. Additional Crewmember requirements. The frequency and content of training shall be tailored to meet minimum requirements of the procuring Service.

(1) Academic Training. Aircrew members shall complete academic refresher training to include self-instruction. As a minimum, this training shall address the following topics (as appropriate): FCF/ACF procedures; aircraft normal and emergency systems/operations; Tech Manual notes, warnings and cautions; flight test areas and procedures; local airfield and ATC procedures; review of the Contractor's Procedures and Service guidance used. This training may be conducted during monthly flying safety meetings.

(2) Emergency Procedures Training. This training may include the use of simulators belonging to either the contractor or the Government. A qualified simulator instructor or IP is required to supervise this training. If a compatible simulator does not exist, an

IP may provide this training in a crew station mockup or cockpit.

(3) Crew/Cockpit Resource Management Training(CRM)/Aircrew Coordination Training (ACT). The contractor shall ensure that all crewmembers receive the CRM/ACT required by Service directives.

(4) Initial Centrifuge Training (Air Force). All crewmembers who fly fighter "type" aircraft must receive G-centrifuge training in accordance with Service instructions.

7. Crewmember Evaluations

a. Evaluations. Approved contractor crewmembers must be evaluated on their ability to perform assigned duties and designated flight tasks, including operating all the aircraft systems related to their crew position. They must perform assigned aircrew functions safely and effectively. The flight and ground evaluations shall be accomplished in accordance with Service criteria for standardization/evaluation of aircrew members. If a pilot exceeds the currency period for the instrument check, he/she will not fly IFR unsupervised by an IP until the evaluation is satisfactorily completed. Evaluations may be conducted as an integral part of the regularly scheduled flights. The Contractor's Procedures shall:

(1) Describe the methods used to ensure that aircrew evaluations do not lapse.

(2) Identify office/title of individual(s) responsible for monitoring expiration of flight evaluations, performing flight evaluations, and maintaining examinations.

(3) Reference applicable specific Service guidance used for the evaluation program.

b. No-Notice Evaluations. Contractor crewmembers are subject to no-notice flight evaluations. No-notice evaluations may be administered by a Government instructor/evaluator.

c. Flight Evaluators. Flight evaluations shall be administered to the contractor crewmember either by an approved contractor flight evaluator/instruction or by a qualified Government evaluator/instructor, at the direction of the GFR.

d. Contractor pilots designated as IE, SP, or IP for the administration of the Army ATP shall be evaluated annually, by the Directorate of Evaluation and Standardization (DES), USAAVNC, Fort Rucker, AL, or a designated representative.

8. Forms and Records

a. The Contractor's Procedures shall identify the office/title of individual(s) responsible for monitoring and reviewing all crew/non-crewmembers records. Contractor's Procedures shall outline requirements for completion and submission of DLA Form 644, Request For Flight Approval, or GFR approved equivalent form. Multiple or extended time period flight approvals may only be issued for operations where: a non-resident GFR maintains the delegation, or under extraordinary circumstances where the GFR may not physically be available for an extended period of time. In this latter case, it shall only be for the minimum time period consistent with mission

requirements. In no case shall flight approvals be issued for more than one month. The flight approval request must be completed through block 9a for approval. Specifically, the following items must be completed in detail:

(1) Block 3 - A by-name listing of all crewmember and non-crewmember personnel, by position, authorized to participate in the flight.

(2) Block 8 - Type of flight, profile, governing directives, test plan, flight release, etc. Include flight area, route of flight, stops, and destination.

(3) Block 9a - Signature of contractor's requesting official who certifies that the flight is in accordance with the flight program authorized by the contract and shall be conducted in accordance with the approved flight operations procedures.

(4) Additionally, the information required in blocks 11-14a shall be forwarded to the GFR upon completion of the flight, including number of sorties/flights, hours flown and significant remarks, for example: if flight was postponed, curtailed, adversely affected., etc.

b. Contractor Crewmember Record. Use DD Form 1821 or Service/MAJCOM forms and directives, to record individual crewmember training, qualifications, flight time and approval to operate Government aircraft.

c. Training Folder. Maintain a training folder on each crew/non-crewmember in training status. This folder serves as a management tool to record training progress and assist in the orderly progression of training. The folder shall contain:

(1) A "Training Recap Table" listing all training required by the upgrade program. This table should fully identify prerequisite events and should allow the instructor to document the date an event was completed.

(2) A record of the grade and date of the current aircraft and aircrew examinations.

(3) Hours, types, and dates of ground schools completed.

(4) Each training and checkout flight numbered with a résumé as to the areas covered, including how the trainee performed during that training period.

d. Records (Crewmember). Maintain a record folder for each crewmember after the completion of training and qualification. Include in the record folder:

(1) A completed training folder as required in paragraph c., above, for at least 1 year.

(2) Copies of GFR crewmember approvals. Include documented records of any completed special training which is needed to perform all maneuvers required to conduct the test, functional/acceptance check flights, and mission profile; e.g., formation, refueling, instrument, night, low level, etc.

(3) Certification of current military flight physical or FAA medical certificate.

(4) Certification of physiological training, altitude chamber, and centrifuge training, when required.

(5) Certification of Life Support, egress and survival training.

(6) A copy of all applicable FAA certificates and records of other qualifications.

(7) Certification of recurring flight evaluations and prerequisite written and oral examinations. A copy of all flight evaluations shall be maintained per Service directives.

(8) Certification of CRM training.

e. Records (Non-crewmember). Maintain a records folder for each non-crewmember that shall include as a minimum:

(1) A completed copy of non-crewmember's authorization to fly.

(2) Military or FAA medical certification.

(3) Certification of training and qualification.

(4) Certification of physiological training and altitude chamber, when required.

(5) Certification of applicable Life Support, egress and survival training.

f. Flight Time Records. Maintain a record of each crewmember's flights to include:

(1) Date and time.

(2) Type mission.

(3) Aircraft type/design/series.

(4) Instrument time (actual, simulated).

(5) Night hours.

(6) First pilot, co-pilot, instructor pilot, etc., hours.

g. Access to Records. Crewmember/non-crewmember training folders, flight time records, and record folders shall be available to the GFR and other appropriate Government personnel at the request of the GFR.

Encl 2
ATT 1
DLAI 8210.1
AFJI 10-220
AR 95-20
NAVAIRINST 3710.1D

Sample DLA Form 644
Request for Flight Approval

REQUEST FOR FLIGHT APPROVAL			NUMBER *(FOR DLA USE ONLY)*
TO: *(DLA Activity Approving Flight)*		**FROM:** *(Name and Address of Contractor)*	
1. PRIME CONTRACT NUMBER UNDER WHICH AIRCRAFT ASSIGNED		2. BAILMENT NUMBER UNDER WHICH AIRCRAFT ASSIGNED (When Applicable)	
3. FLIGHT CREW		4. NON-CREW PERSONNEL	
POSITION	NAME OF PERSON	POSITION	NAME OF PERSON

5. AIRCRAFT MISSION, DESIGN, SERIES	6. DATE(S) OF FLIGHT(S)
7. AIRCRAFT SERIAL NUMBER(S)	
8. PURPOSE OF FLIGHT *(Statement concerning flight objectives)*	
9. I CERTIFY that this flight is in accordance with the flight program authorized by the contract and will be conducted in accordance with the approved flight operations procedures.	9a. SIGNATURE OF CONTRACTOR REPRESENTATIVE AND DATE
10. GOVERNMENT FLIGHT REPRESENTATIVE ACTION ☐ APPROVED ☐ DISAPPROVED	10a. SIGNATURE OF GOVERNMENT FLIGHT REPRESENTATIVE AND DATE
11. NUMBER OF FLIGHTS	12. HOURS FLOWN
13. REMARKS *(Enter brief statements as to flight results, trouble encountered during flight, and weather, or other conditions which prevented completion of flight.)*	
14. SIGNATURE OF CONTRACTOR REPRESENTATIVE	14a. DATE

DLA FORM 644, JUN 73 (EG) EDITION OF MAY 67 OBSOLETE

Encl 2
ATT 2
DLAI 8210.1
AFJI 10-220
AR 95-20
NAVAIRINST 3710.1D

Sample DD Form 2627
Request for Government Approval for Aircrew Qualifications and Training

REQUEST FOR GOVERNMENT APPROVAL FOR AIRCREW QUALIFICATIONS AND TRAINING

Form Approved
OMB NO. 0704-0347
Expires Mar 31, 2000

PLEASE DO NOT RETURN YOUR COMPLETED FORM TO THIS ADDRESS. RETURN COMPLETED FORM TO THE GOVERNMENT FLIGHT REPRESENTATIVE.

PRIVACY ACT STATEMENT

AUTHORITY: 10 USC 136, 10 USC 2302; DLAI 8210.1; EO 9397.

PRINCIPLE PURPOSE(S): Used to monitor and manage individual contract flight and ground personnel records.

ROUTINE USE(S): Records from this system may be disclosed to the Federal Aviation Administration (FAA) or any of the blanket routine uses published by the Department of Defense (DoD) or the DoD Component maintaining the records.

DISCLOSURE: Voluntary; however, failure to provide the information could result in disapproval to participate in the program.

1. FROM *(Name and Address of Contractor's Requesting Official)*	2. TO *(Name and Address of Government Flight Representative)*

3. CREWMEMBER NAME *(Last, First, Middle Initial)*	4. SSN	5. DATE OF BIRTH *(YYYYMMDD)*

6. AIRCRAFT	7. CREW POSITION	8. SECURITY CLEARANCE	9. FAA RATING

10. EDUCATIONAL BACKGROUND

a. HIGH SCHOOL (1) NAME	(2) LOCATION *(Include Zip Code)*	(3) DATE COMPLETED *(YYYYMM)*
b. COLLEGE(S) OR UNIVERSTY(IES) (1) NAME	(2) LOCATION *(Include Zip Code)*	(3) DEGREE(S) OBTAINED

c. FLIGHT SCHOOL (1) NAME	(2) DATE COMPLETED *(YYYYMMDD)*	d. TEST PILOT SCHOOL (1) NAME	(2) DATE COMPLETED *(YYYYMMDD)*

e. SPECIAL PROFESSIONAL SCHOOL(S) *(List name of school, location, primary subject of study, and date completed) (Use additional sheets if necessary)*

11. HAVE YOU EVER SERVED IN ANY BRANCH OF THE U.S. MILITARY SERVICE? *(X one)* ☐ YES *(Complete a. – f.)* ☐ NO

a. BRANCH OF SERVICE	b. SERVICE DATES (YYYYMMDD) (1) FROM (2) TO	c. LAST LOCATION

d. HIGHEST RANK	e. AERONAUTICAL RATING	f. ARE YOU NOW A MEMBER OF THE RESERVES OR NATIONAL GUARD? *(X one)*			
		☐	YES *(if Yes, specify:)*	(1) BRANCH OF SERVICE	(2) PRESENT RANK
		☐	NO		

12. PROVIDE A RESUME OF EXPERIENCE IN THE FLIGHT TEST FIELD. *(Include both engineering and aircrew experience by project, type of.. aircraft, and hours flown.)*

☐ RESUME ATTACHED. *(X if applicable)*

13. FLIGHT CREWMEMBER CERTIFICATION. I certify that I have read and understand all of the contractor's procedures and directives pertinent to the accomplishment of my assigned duty.

a. TYPED NAME *(Last, First, Middle Initial)*	b. SIGNATURE	c. DATE SIGNED

14. CONTRACTOR'S REQUESTING OFFICIAL *(CRO)*

I have verified the records of the crewmember above and request the he/she be approved for qualification training as a *(crew position)* _____ for *(Strike out all inapplicable)* experimental/ engineering/acceptance/production/functional/support flights in _____ type aircraft.

a. TYPED NAME *(Last, First, Middle Initial)*	b. SIGNATURE	c. DATE SIGNED

15. GOVERNMENT FLIGHT REPRESENTATIVE *(GFR)*

		a. TYPED NAME *(Last, First, Middle Initial)*	b. SIGNATURE	c. DATE SIGNED
☐	APPROVED			
☐	DISAPPROVED			

Encl 2
ATT 3
DLAI 8210.1
AFJI 10-220
AR 95-20
NAVAIRINST 3710.1D

Sample DLA Form 1821
Contractor Crewmember Record

CONTRACTOR CREWMEMBER RECORD

Form Approved
OMB No. 0704-88

PRIVACY ACT STATEMENT

AUTHORITY: 10 USC 8012.44 USC 3101, and EO 9397, November 1943 (SSN)

PURPOSE AND USE: Used to record individual contractor flight crew personnel records and approval to operated Government aircraft. Serves as a record of approval of private contractor personnel who will operate Government Aircraft.

DISCLOSURE: Voluntary; however, failure to complete will prevent approval of contractor flight crew members from operating Government aircraft.

NAME OF CREWMEMBER *(First, last, middle initial)*

CONTRACTOR REPRESENTATIVE *(Name and Address)*

IDENTIFY CREW POSITION

☐ TEST ☐ SUPPORT

☐ FUNCTIONAL ☐ OTHER *(Specify)*

MISSION, DESIGN AND SERIES AIRCRAFT OR OTHER REQUIREMENT FOR THIS QUALIFICATION

BASE OR LOCATION WHERE QUALIFICATION ACCOMPLISHED

☐ INITIAL QUALIFICATION ☐ REQUALIFICATION

SECTION I FLIGHT EXPERIENCE *(Time to nearest hour)*

FLYING TIME ABOVE TYPE

JET _____ HRS. TURBO PROP _____ HRS. RECIPROCATING _____ HRS. ROTARY _____ HRS.

TOTAL FLYING TIME

MISSION DESIGN AND SERIES AIRCRAFT	PERIOD OF TIME	IP	1ST PILOT				COPILOT	AIRCRAFT COMMANDER	OTHER CREW MEMBER *(Specify)*
			TOTAL	WX	HOOD	NIGHT			
	LAST 12 MOS								
	LAST 4 YRS								
	TOTAL								

	LAST 12 MOS								
	LAST 4 YRS								
	TOTAL								
	LAST 12 MOS								
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	LAST 12 MOS								
	LAST 4 YRS								
	TOTAL								
	LAST 12 MOS								
	LAST 4 YRS								
	TOTAL								

SECTION II FLIGHT CHECK *(Instructor fill in remarks where applicable)*			
1. PREFLIGHT INSPECTION AND FORMS		7. IN-FLIGHT EMERGENCY PROCEDURES	
2. EMERGENCY ESCAPE PROCEDURS		8. PRELANDING CHECK, TRAFFIC PATTERN AND LANDINGS	
3. PRESTART COCKPIT PROCEDURES & ENGINE START		9. POSTFLIGHT INSPECTION	
4. COMMUNICATIONS AND TAXI PROCEDURES		10. ACCOMPLISHMENT OF FORMS AND AIRCRAFT SECURITY	
5. PRETAKEOFF COCKPIT CHECK AND ENGINE RUNUP		11. INSTRUMENT PROFICIENCY CHECK	
6. TAKEOFF AND FLIGHT PROCEDURES		12. OTHER *(Specify)*	

SECTION III ADDITIONAL REQUIREMENTS *(fill in where applicable)*				
	CHECKED BY	GRADE	DATE AND PLACE	HOURS
13. PHYSICAL EXAMINATION				
14. PHYSIOLOGICAL/ALTITUDE INDOCTRINATION				
15. PRESSURE SUIT TRAINING				
16. PERFORMANCE DATA				
17. GROUND SCHOOL *(By Subject)*				
AIRCRAFT GENERAL				
AIRCRAFT PREFLIGHT				
ENGINE SYSTEM				
OXYGEN SYSTEM				
AIR CONDITIONING				
PRESURIZATION				
FUEL SYSTEM				
INSTRUMENT SYSTEM				
ELECTRICAL SYSTEM				
HYDRAULIC POWER SYSTEM				
UTILITY SYSTEM				
FLIGHT CONTROL SYSTEM				
AUTO PILOT SYSTEM				
ROTARY SYSTEM				
18. COMUNICATIONS AND NAVIGATION				
19. AIRCRAFT EMERGENCY PROCEDURES				
20. OTHER REQUIREMENTS AS STATED IN APPROVED CONTRACTOR OPERATING PROCEDURES				

21. **Have you ever had an accident *(as defined by FAR or military procedures)* or physiological reaction *(e.g. hypoxia, decompression sickness, hyperventilation, spatial disorientation)* as a pilot, or other crewmember?_____**
If yes, explain.

22. **Have you ever been charged with a flying violation? If so, state the circumstances.**

23. **Remarks.** ***(For additional space use blank sheet.)***

CERTIFICATION OF QUALIFICATION

This is to certify that _____
(Name and Crew Position)

Has satisfactorily completed the training or special qualification indicated hereon:

YEAR	TRAINING OR SPECIAL QUALIFICATIONS	DATE COMPLETED	CERTIFYING OFFICIAL
	GROUND PHASE		
	WRITTEN EXAMINATION		
	EMERGENCY PROCEDURES		
	EGRESS TRAINING		
	PHYSIOLOGICAL TRAINING		
	OTHER *(Specify)*[1]		
	FLIGHT PHASE		
	PROFICIENCY		
	INSTRUMENT		
	OTHER *(Specify)*[1]		
	GROUND PHASE		
	WRITTEN EXAMINATION		
	EMERGENCY PROCEDURES		
	EGRESS TRAINING		
	PHYSIOLOGICAL TRAINING		
	OTHER *(Specify)*[1]		
	FLIGHT PHASE		
	PROFICIENCY		
	INSTRUMENT		
	OTHER *(Specify)*[1]		

[1]***Formation, Refueling, Night or special maneuver requirements.***

SECTION IV - CERTIFICATIONS

I certify that I have read and understand all pertinent technical orders, handbooks, contractor's operating Procedures, and pilot's operating instructions pertaining to the above aircraft.

DATE	SIGNATURE OF

The above crewmember has/has not demonstrated proficiency in, and has/has not a satisfactory knowledge of _____ mission/design/series aircraft and has/has not completed the flight requirements for the type of flight check indicated above, and is/is not fully qualified in this type aircraft.

This checkout consisted of _____ hours dual, _____ hours solo, _____ landings from right *(or rear)* seat, and _____ landings from left *(or front)* seat.

DATE	BASE OR HOME STATION OF INSTRUCTOR	TYPED OR PRINTED NAME OF INSTRUCTOR
		SIGNATURE OF INSTRUCTOR

Sample DD Form 2628
Request for Approval of Contractor Crewmember

REQUEST FOR APPROVAL OF CONTRACTOR CREWMEMBER	*Form Approved* *OMB NO. 0704-0347* *Expires Mar 31, 2000*

The public reporting burden for this collection of information is estimated to average 5 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operation and Reports (0704-0347), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

PLEASE DO NOT RETURN YOUR COMPLETED FORM TO THIS ADDRESS. RETURN COMPLETED FORM TO THE GOVERNMENT FLIGHT REPRESENTATIVE.

1. FROM *(Name and Address of Contractor's Requesting Official)*	2. TO *(Name and Address of Government Flight Representative)*

3. CONTRACTOR'S REQUESTING OFFICIAL *(CRO)*.

I have verified the records of *(Crewmember's name)* _____ and request that he/she be approved As a *(crew position)* _____ for *(Strike out all inapplicable)* experimental/engineering/acceptance/production/functional/support flights in _____ type aircraft.

a. TYPED NAME *(Last, First, Middle Initial)*	b. SIGNATURE	c. DATE SIGNED

4. INSTRUCTOR PILOT/FLIGHT EXAMINER (IP/FE)

I certify that the crewmember above has satisfactorily flown a proficiency flight check on *(Date)* _____

a. TYPED NAME *(Last, First, Middle Initial)*	b. SIGNATURE	c. DATE SIGNED

5. GOVERNMENT FLIGHT REPRESENTATIVE (GFR)

		a. TYPED NAME *(Last, First, Middle Initial)*	b. SIGNATURE	c. DATE SIGNED
	APPROVED			
	DISAPPROVED			

DD FORM 2628, JUL 1997 (EG) PREVIOUS EDITION IS OBSOLETE

Ground Operations

1. Management. This section applies to contractor personnel who

perform ground operations on aircraft (including UAVs) and those personnel who operate and maintain ground support equipment used in support of aircraft. Contractors perform many ground operations related to aircraft not specifically mentioned in this instruction, however, all hazardous ground operations performed in, on, and around aircraft must be addressed in the Contractor's Procedures.

2. Ground Personnel Qualification Requirements. Personnel authorized to perform aircraft ground operations require the following:

a. Contractor medical (physical) requirements. All personnel performing ground operations shall receive a physical examination from a licensed physician on a specific periodic basis (not to exceed 5 years) determined by job requirements sufficient in depth to ensure the person is capable of performing the specific operations for which they are certified.

b. Completion of the training, currency and evaluations defined in this instruction.

3. General Procedures

a. The contractor shall develop and use written Ground Operations Procedures (GOPs)(the aircraft ground operations portion of the Contractor's Procedures) to ensure that only trained, qualified, and or certified personnel perform all aircraft ground operations. Include procedures for housekeeping, flightline vehicle operation, and selecting, training, testing and certification, of personnel in all normal and emergency operations.

b. As a minimum, develop GOPs to address the following specific ground operations (if performed).

(1) The contractor shall develop a Foreign Object Damage Prevention Program and procedures, which are planned, integrated, and developed in conjunction with Safety, Test, Quality, Maintenance, and Manufacturing offices. The program shall identify program goals and individuals/offices responsible for achieving them. It should address operations such as sweeping of runways, taxiways, and run-up areas; and the process for prevention of FOD during engine test cell activities, flight line maintenance, launch, and recovery. It should stipulate the method of hardware and Tool Control and accountability, and include a requirement to report and investigate FOD incidents. Include a process to identify types of FOD and problem areas, develop and utilize trend data and provide corrective action to prevent recurrence. The contractor shall review the FOD Prevention Program at least semiannually to assure adequacy and compliance. Specific FOD/Tool Control procedures shall address:

(a) Control of hardware, expendable tools and supplies used in, on, and around the aircraft.

(b) Control debris created during maintenance/manufacturing operations (AKA clean as you go).

(c) Control of personal items.

(d) Positive control of all tools taken onboard or used

around the aircraft.

(e) Methods for establishing tool ownership.

(f) Lost tool procedures.

(g) Training.

(2) Powered and non powered aerospace ground support equipment (AGE) operations (e.g., powered: external APUs, hydraulic test stands, etc.; non powered: nitrogen/oxygen servicing carts, lifting devices, aircraft workstands, tow bars, etc.). Procedures shall include AGE maintenance/inspection methods and standards (Service/commercial technical data should be referenced).

(3) Aircraft weapons, munitions, cartridge activated devices, laser, explosives, and hazardous materials (HAZMAT).

(4) Aircraft refuel/defuel operations, fuel storage, dispensing equipment (truck/pit), fuel system purging, fuel system maintenance (including confined space procedures), aircraft hangaring procedures/rules for full, partially full, or empty fuel tanks, and lower explosive level (LEL) procedures.

(5) Aircraft towing procedures including: identification of towing supervisor, pre-briefing, tow crew complement, towing speeds, obstacles, towing in congested areas, signaling, tow vehicle operation, tow bar installation and removal.

(6) Aircraft marshaling including aircraft taxi clearance distances.

(7) Aircraft jacking to include identification of jacking supervisor, required personnel, and any other aircraft specific requirements.

(8) Egress system maintenance of ejection, extraction and explosively operated canopy removal systems.

(9) Aircraft engine and aircraft APU operation.

(10) Aircraft taxiing by ground personnel (if permitted).

(11) Aircraft servicing (other than fuel) including: hydraulic, engine, gearbox, propellers, landing gear struts, accumulators, oxygen (liquid and gaseous), and aircraft tires.

(12) Storage of oil and lubricants.

(13) Storage of oxygen, nitrogen and other compressed gases.

(14) Hydraulic fluid contamination surveillance program for both aircraft and AGE. This shall include hydraulic test equipment used for operational checks of removed components.

(15) Mooring and tie down procedures.

(16) Oil analysis program (if applicable).

(17) Calibration procedures addressing:

(a) Tools.

(b) Gauges.

(c) Instruments.

(d) Test equipment.

(18) Weight and balance.

(19) Tire and wheel maintenance.

(20) Aircraft cleaning, corrosion prevention/control, paint removal, and painting.

(21) Welding.

(22) Battery handling, recharging, and storage.

(23) Non-destructive inspection (NDI).

(24) Prevention of Unauthorized Access or Operation of Government Aircraft. The Contractor's Procedures shall include a method for early detection and prevention of unauthorized engine run, taxi or flight operations, promote security awareness in flight-line supervisors and employees, and identify responsibilities for preventing unauthorized aircraft movement and preventing access to aircraft by unauthorized personnel.

(25) Severe weather plan. The Contractor's Procedures shall:

(a) Define conditions which constitute severe weather.

(b) Address provisions for obtaining forecasts and disseminating weather information to affected personnel and flight crews.

(c) Detail specific responsibilities for hangaring or evacuation of aircraft as appropriate.

(d) Include an off duty hours notification process in the event that a recall of personnel is required to hanger, tie down or evacuate aircraft.

(e) When prudent, negotiate formal agreements with appropriate military or civil installations. Annual review and verification of these agreements shall be accomplished.

4. Ground Personnel Training Requirements.

a. The contractor shall provide each employee, including subcontractors, comprehensive initial indoctrination training and recurring continuation training sufficient to enable him/her to perform authorized ground operations in a safe and effective manner. Initial and continuation training shall include written and practical exams as applicable.

b. Personnel authorized to operate aircraft systems (pneumatics, hydraulics, electrical, etc.) shall receive training and be certified in each system they shall operate.

c. Ejection or extraction systems. Personnel authorized access to cockpits equipped with ejection or extraction systems and/or explosive operating canopy removal systems shall complete a general familiarization course annually on cockpit safety and the hazards of these installed systems.

d. Engine Operations. Pilot checklists usually differ from ground maintenance engine run checklists and procedures. Therefore, if a pilot is to accomplish a ground maintenance engine run, the contractor shall ensure that the correct checklist and procedures are used. Helicopter ground engine operations shall only be performed by helicopter pilots current and qualified in the type helicopter. The restriction does not apply to helicopter APU operation. Ground personnel who operate aircraft engines, APUs, or taxi aircraft shall be evaluated semiannually and shall annually:

(1) Receive practical instructions in:

(a) Engine/APU start, normal and emergency operations to include all operations limits.

(b) Aircraft radio operations to include requesting assistance in emergencies.

(c) Normal and emergency aircraft brake and steering systems.

(d) Any other applicable emergency procedures for the given aircraft.

(2) Receive ground egress/evacuation training as appropriate.

(3) Pass a written examination, to include applicable bold face/critical action procedures.

5. Ground Personnel Certification, Recertification and Currency Requirements

a. Certification. Documentation in the employee's training record of successful completion of required initial or recurring continuation training and testing for a specific GOP is the process by which the employee is considered certified.

b. Recertification. If an employee's certification expires, (failure to maintain the recurring training requirements) completion of a recertification course with a qualified instructor shall be completed. If an employee remains uncertified for a six (6) month period, the employee must complete initial certification training.

c. Engine run currency. To be current, operators must perform an engine run at least every 45 days for the engine/type aircraft for which they are certified. Operators may maintain qualifications in several engines, aircraft types or platforms (i.e., test cell vs. cockpit). If the operator has the basic 45 day currency but has not operated from the same platform, engine, or aircraft within the last 45 days, then prior to conducting the engine run the operator shall:

(1) Review the engine controls unique to the platform or aircraft, as applicable.

(2) Review the normal operating limits and emergency shut down procedures.

(3) Document this review in the currency record.

6. Ground Personnel Evaluations

a. Ground personnel certified to operate aircraft engines, APUs or taxi aircraft shall semi-annually be evaluated by an examiner. These personnel will demonstrate proficiency, including knowledge of Tech Manual warnings, cautions and notes, and emergency procedures to the examiner.

b. Personnel authorized to qualify/certify engine run operators shall be current and qualified in the operation and be approved by the GFR. These engine-run qualifiers/certifiers shall receive their annual exam from a Government or contractor engine run qualifier/certifier approved by the GFR. The GFR may restrict qualifier/certifier status and or require use of military qualifiers/certifiers.

7. Records

a. The contractor shall maintain a training/certification record for each employee authorized to perform GOPs. These records shall document the following:

(1) Initial, recurring continuation, and recertification

training.

(2) Recurring written examination results.

(3) Certification status for each GOP the employee is certified to perform.

(4) Certification of medical examination type and currency as required.

(5) Certification of engine-run 45 day currency and reviews for the appropriate personnel.

(6) Taxi qualifications, if applicable.

(7) Certification of evaluations required in section 6., above.

(8) Other certifications as appropriate.

b. The contractor shall make these records available to the GFR and other appropriate Government personnel at the request of the GFR.

Government Flight Representative Procedures

1. GFR Designation. The approving authority designates a GFR for contractor operation locations where the Government has assumed some of the risk of loss for aircraft. The approving authority should also designate an alternate GFR. The contractor shall be provided and shall maintain an informational copy of applicable GFR letters of appointment. Enclosure 4, attachment 1, shows a sample format for a GFR Delegation of Authority letter.

2. GFR General Responsibilities

a. Contractor's Procedures. The GFR is responsible for surveillance of all contractor aircraft flight and ground operations involving Government aircraft and other aircraft for which the Government assumes at least some of the risk of loss or damage. All flights and Contractor's Procedures for ground operations of installed engines and/or propeller(s), engaging of rotors, taxi, and towing of Government aircraft conducted by the contractor are subject to final approval by the GFR. The contractor shall not conduct any operation without approved procedures. Contractor's Procedures shall be reviewed by the GFR at least every 12 months and within 90 days of a change of the primary GFR. The contractor shall be notified in writing when the review is complete. Deficiencies shall be reported to the contractor and ACO. The GFR shall maintain a record of approval of the Contractor's Procedures. When the contractor is not acting in accordance with Contractor's Procedures, the contract, test plans, this instruction, other applicable directives, or if safety is jeopardized, the GFR may withdraw approval of the flights,

crewmembers, and/or Contractor's Procedures. If the contractor fails to take prompt corrective action on noncompliance, the GFR may recommend revocation of the G&FRC/FRC to the ACO.

b. Contract Administration. Contract administration is performed to assure mission effectiveness, flight safety, and contractor compliance with FAR and DFARS clauses and other specific clauses which are cited in the contract. General procedures regarding contract administration for GFRs are contained in this instruction. In order to effectively perform their delegated duties and determine the scope of their responsibility, the GFR must achieve a thorough working knowledge of this instruction and the regulations, manuals, technical orders, and documents referenced in the contract. They must also become thoroughly familiar with the requirements of the contract including annexes and appendices. The GFR, in the role as functional expert, must evaluate contracts and changes to contracts and participate in preaward surveys to ensure that contracts contain appropriate vehicles for adequately performing contractor surveillance and contain referenced standards which protect Government resources while in the custody of the contractor. In the performance of this and other GFR responsibilities, the GFR shall maintain a record of noteworthy observations, discrepancies, recommendations, and contractor corrective actions.

c. Aircraft Risk Clauses/Deficiencies. Some contracts still reference old versions of the Ground and Flight Risk Clause/Flight Risk Clause (G&FRC/FRC) which do not call out this instruction or have the instruction intentionally deleted. These situations will require special attention from the GFR. GFRs should work with ACOs and PCOs to ensure that contracts contain the current version of the Risk clauses and this instruction. If these efforts are unsuccessful, the GFR shall inform the Procuring Services waiver approval authority of the contract and issues involved. In addition to the Risk Clauses, the GFR must be alert during the contract review to detect deficient procedures/omissions which could affect the safety, both ground and flight, of the aircraft. (Examples include: fire protection, special flight test programs, waivers, foreign object damage (FOD) programs, towing procedures, unique aerodrome requirements, tool control programs, engine run procedures, etc.).

d. TDY Support. The GFR shall ensure that TDY military aircrews are briefed on facility aerodrome procedures and applicable Contractor's Procedures and local flight rules. The GFR should also ensure that TDY crews have access to contractor flight planning and briefing facilities. See g., below, for more information on TDY crew flight approval.

e. Experimental Flight Operations. The GFR may need to discuss the flight program and flight profiles with contractor flight operations personnel or a procurement office flight program test officer to clarify the need for flight for certain experimental programs. Such experimental test profiles require a Government approved test plan. Other sources of information, education, and advice on these and other flight test profiles include the flight safety personnel at the U.S. Army Materiel Command (AMCSF-A), Naval Air Systems Command (AIR 8.0H), and Air Force Materiel Command

(AFMC/DOO).

f. Teaming. In DLA the GFR along with the Aviation Maintenance Manager and the Safety Specialist make up the Aviation Program Team (APT). The GFR heads the APT. Its purpose is to ensure all aspects of aircraft safety (flight, ground, & industrial) are adequately addressed. In performing their duties, the APT should maintain a close liaison with the other CAS and contractor organization functional offices, particularly the QA and safety activities. If surveillance of a contract reveals problem areas outside the scope of flight operations, ground operations or industrial safety, the GFR should advise the responsible CAS personnel or ACO, as appropriate. Conversely, GFRs should not hesitate to seek advice on matters of safety (ground/explosive) or QA from functional specialists. As team leader, the GFR should coordinate survey findings and observations regarding procedures, and conditions with the QAR, maintenance personnel, and the rest of the APT. Such findings can then be presented to the contractor and ACO through the GFR.

g. Flight Approval. All contractor flights for which the Government is assuming any risk of loss or damage will be approved by the GFR. Normally, flight approvals are requested through the use of DLA Form 644. GFRs may authorize use of a flight approval request form other than the 644. When joint contractor/Government crews fly aircraft under the G&FRC/FRC, the GFR will approve contractor personnel and the flight, while verifying Government personnel are properly qualified, current, authorized, and required to participate. Valid aircrew travel orders stating in essence, "The purpose of the travel is to perform the specific flight operations activity listed on the DLA Form 644 (e.g., FCF, ACF, Test Flight, etc.).", is considered sufficient validation for the purposes of this paragraph. A letter from the home unit commander, though not required in and by itself, is also considered sufficient validation. At DLA-administered contractor facilities authorization for Government crewmembers to fly with the contractor crewmembers rests with the GFR/CFO. Government acceptance flights flown by TDY military crewmembers shall be performed according to the guidelines and procedures of the CASC component responsible for contract administration.

h. Other Responsibilities. The GFR shall:

(1) Review special interest items (i.e., Quality Deficiency Reports, Corrective Action Requests (CARs), Air Traffic Control (ATC) facilities, maintenance facilities) to identify conditions or trends which have potential impact on flight operations or safety.

(2) Participate with Government QA personnel in the review of safety-of-flight related customer complaints (Maintenance Deficiency Report (MDR), etc.). This review will be of sufficient depth to ensure that both contractor and Government surveillance corrective actions (revisions of procedures, work cards, etc.) resulting from the analysis of these reports are adequate to prevent recurrence of the deficiency.

(3) Perform surveillance of the contractor's mishap investigation effort when an aircraft/aircraft ground mishap occurs, with the assistance of the safety specialist or a CAS flight safety officer, as required.

(4) Review the Contractor's FOD Prevention Program. Approval authority for the contractor's FOD Prevention Program is assigned to the GFR, however, the GFR should obtain recommendations from the entire APT, Quality Assurance Representatives (QARs), and maintenance personnel to adequately assess the entire FOD program prior to approving it.

(5) Maintain records of contractor flight/ground operations. This file will include, as a minimum:

(a) Current Contractor's Procedures with record of approvals.

(b) Approval of contractor flights and mission profiles (retain 1 year).

(c) Current listings of contractor crewmembers.

(d) Flight operations/safety evaluation reports, follow up results, and contractor-related correspondence (retain 3 years).

(6) For no-notice evaluations, the GFR should notify the Chief Pilot prior to brief time.

(7) The contractor and the GFR shall ensure that the appropriate number of crewmembers are authorized and that programs include sufficient flying time for currency in accordance with this instruction. The GFR shall not approve any crewmember until the Contractor's Procedures have been approved.

3. CAS Safety Responsibilities

a. Delegating Administration Responsibility/Authority. Assignment of a contract to a CAS component listed in the Federal Directory of Contract Administration Services (CAS) Components, found at www.dcmc.hq.dla.mil/CASBOOK/casbook.htm, for administration automatically carries with it the authority to perform all of the normal functions listed in FAR 42.302(a) to the extent that those functions apply to the contract, including surveillance of flight and ground operations and safety requirements. The procuring activity may elect to withhold the assignment of specific CAS functions, or via FAR 42.202, assign additional functions. In these cases, the procuring activity notifies the CAO of the functions withheld or added.

b. Supporting Contract Administration (SCA). When a CAS component requires support from another CAS component in administering a portion of the contract, the CAS component commander having cognizance over the contract must request SCA services (FAR 42.204), through the ACO, from a suitable CAS organization. This is done when, for example, contract work is performed at geographically separated locations. The applicable services to be performed will be stated in the request. Copies of necessary contractual documents are provided from the requesting CAS component. When the SCA delegation includes flight and ground operations, the GFRs from the two CAS components should keep each other informed of important activity concerning the contractor. An example SCA delegation format is found in enclosure 4.

c. Preaward Survey (PAS). The PAS is an evaluation of a prospective contractor's ability to perform under the specified terms of a contract proposal. It differs in scope from a regular survey in that the determination is whether the contractor "can" comply with the

safety requirements of the contract, not "is" the contractor in compliance. The Preaward monitor will provide the GFR with the contract, date, time, and location of the survey as well as the reporting requirements. Written reports should include a clear statement that the contractor is/is not capable of performing work in compliance with contract flight operations and safety requirements. Also include a specific recommendation for award or no award. When an existing contractor is bidding on a new contract and their capabilities are already known, the Preaward monitor may request a desk audit in lieu of a survey. GFRs should still recommend award/no award.

4. Contractor Flight and Ground Operations Surveys/Assessments

a. Surveys of Flight and Ground Operations. The GFR shall conduct surveys of each designated contractor's flight and ground operations. The survey is conducted to:

(1) Verify contractor conformance with contractual flight and ground operations and flight safety requirements.

(2) Verify the qualification of contractor crewmembers and ground/flight personnel. When circumstances (e.g., aircraft type, flying schedule, etc.) permit, an in-flight evaluation of contractor crewmembers should be accomplished. Flight examiners who are current, qualified, and designated in writing by their flying unit to perform flight evaluations may perform flight evaluations. As an alternative, the GFR may perform an in-flight supervisory flight evaluation of the performance of contractor flight crew members. Flight evaluation findings shall be debriefed to the GFR prior to the formal out briefing. A formal flight evaluation report will be entered into the tested individual's flight records.

b. Survey Guidance. The following guidelines will help ensure a thorough survey:

(1) General. The flight and ground operations/flight safety survey is an onsite evaluation of the effectiveness of the contractor flight and ground operations programs and Contractor's Procedures for protecting Government resources while under the cognizance of the CASC at contractor facilities. Observations determine the adequacy of written Contractor's Procedures, compliance with those procedures, and their effectiveness in protecting Government resources. The intent of the survey is to indicate what management attention is necessary to prevent occurrence/recurrences of injury to personnel or damage to Government assets.

(2) Procuring activities' flight safety, Stan Eval, or aircraft maintenance representatives are always invited and encouraged to visit contractor sites in conjunction with GFR surveys.

(3) Frequency of Surveys. The frequency of the surveys must be based upon the degree of risk and magnitude of potential Government loss associated with the types of aircraft flight and ground operations. In addition, the individual contractor's safety history, current level of performance, and complexity of operations must also be considered. The designated GFR is the most knowledgeable judge of these factors and therefore is charged with the responsibility of

determining the frequency of the surveys.

(a) Resident GFRs will perform a minimum of one survey every 12 months in addition to their daily surveillance of the contractor.

(b) Nonresident GFRs will determine the survey frequencies after initial fact finding visits to the contractor's facility. The minimum frequency will be one survey every 6 months.

(4) Preparation for Flight and Ground Operations Survey. GFRs should review the following items before beginning the survey:

(a) Contractor's Procedures for currency and validity.

(b) Historical data, including past surveys (e.g., preaward, postaward), Inspector General (IG) reports, and mishap reports. Make a list of items which should be followed up. Note the nature of any problems, the proposed corrective action and responsible office and the anticipated "get well" date. Attempt to locate trends and root causes which may be contributing to the symptoms. Don't overlook findings from other locations which may have application.

(c) Instructions, manuals and regulations. Review waivers to procedures and requirements and review the need for their continued use. The GFR shall review required "Service Guidance" included in the Contractor's Procedures for currency and appropriateness.

(d) The contract, including enclosures and appendices. Verify the inclusion of the appropriate FAR and DFARS clauses and status of any Contract Data Package Recommendation/Deficiency Report, DD Form 1716, related to flight operations. Determine if flight and ground operations or flight safety requirements peculiar to the facility are addressed by contract.

(5) Notification. Notify the contractor in writing at least 30 days prior and request that the contractor provide a safety manager to accompany the Government team during the survey. GFRs may wish to include a copy of the survey checklist they will be using, to the contractor. Send a copy of notification letter to the CAO commander. (NOTE: When mishap reports, deficiency reports, etc., demonstrate the need for additional evaluations of the contractor's operations, unannounced surveys may be performed.)

(6) Team Composition. Prior to the survey, the GFR will form a qualified team including applicable Flight Operations, Quality, Safety and other appropriate technical personnel to effectively evaluate contractor performance. Letters of invitations to participate will be sent to the procuring Service safety and operations offices as appropriate.

(7) Conducting the Survey. To ensure the Government team is integrated and areas of responsibility are established a Government-only meeting should be conducted prior to the in brief and out brief with the contractor.

(a) Conduct a formal in brief. A formal in brief with the contractor and Government team provides the setting for the conduct of the survey.

(b) Visit, review, interview, and observe, as necessary. Compare the observations with contract requirements and written Contractor's Procedures. Make notes of outstanding/ exemplary processes and discrepancies for use in the formal report. Cite a specific directive for each discrepancy.

(c) Minor observations or deficiencies may be discussed directly during the progress of the survey or retained as notes for final out briefing. If sufficient confidence is established with supervisory personnel, these items need not appear in the final report. Caution should be exercised to avoid any constructive change allegation. If doubt exists, items should be included in the written report for review by the ACO and formally forwarded to the contractor. Upon discovering a deficiency which is an obvious serious hazard (e.g., smoking while performing fueling operations), immediately notify appropriate contractor supervisory personnel so they can direct immediate hazard correction.

(8) Exit Briefing. Conduct an out-briefing with those who attended the in-briefing.

(9) Reports. Prepare and distribute a written report as follows:

(a) Prepare the survey report using the format at enclosure 4, or any appropriate substitute format. Describe the program elements and sub-elements which were observed during the survey. Observations requiring written corrective action and those related to critical safety of flight items should include documentation of facts, reference(s) to the written requirement (i.e., the contract, the Contractor's Procedures, and applicable Tech Orders), and sufficient discussion to convey why the discrepancy must be corrected. Coordinate the final report with the survey team participants.

(b) Attach a facility and flight and ground operations/flight safety program data sheet to the report. This data sheet is a concise summary of the contractor facility and its level of activity. Enclosure 4 contains a sample format. It should include the following items of information:

[1] Contractor name and address.

[2] Primary Government and contractor personnel and phone numbers.

[3] Number of Government and contractor crewmembers assigned.

[4] Current contract number(s) that contain the Ground and Flight Risk/Flight Risk Clause.

[5] Contract flight and ground operations clause/ requirement reference(s) and safety clause/requirement reference(s).

[6] Kind(s) of aircraft.

[7] Procuring Service, PCO, ACO.

[8] Quantity of aircraft scheduled by year.

[9] Current issues.

(c) To ensure proper interpretation of contractual requirements, written reports involving contractor operations must be addressed to the ACO for endorsement and prompt forwarding to the contractor. The GFR should not send the report directly to the contractor. Information copies should be forwarded to the buying Service Aviation Safety Office by the GFR.

(d) The survey report distribution schedule for contractor operations is as follows:

[1] The GFR provides a report to the CAO Commander and ACO within 10 working days after completion of the survey.

[2] The ACO makes comments and endorses the report to the contractor within 5 working days.

[3] The contractor replies to survey observations within 30 days, unless a specific case warrants other action.

(e) Follow up. Establish a follow up system to monitor the contractor's corrective actions. Provide status report as necessary to the ACO and the CASC commander. When conditions warrant, a follow up survey will be performed, as determined by the GFR.

Encl 4
ATT 1
DLAI 8210.1
AFJI 10-220
AR 95-20
NAVAIRINST 3710.1D

Sample GFR Delegation of Authority Letter

[LETTERHEAD]

IN
REPLY
REFER
TO: MEMORANDUM FOR WHOM IT MAY CONCERN

[Date]

SUBJECT: Government Flight Representative Delegation of Authority

Pursuant to DLAI 8210.1/AFJI 10-220/AR 95-20/NAVAIRINST 3710.1D, Contractor's Flight and Ground Operations, [name/rank] is hereby designated [Alternate, if appropriate] Government Flight Representative (GFR) for [name/location of contractor]. This authority is granted to [name/rank] as an individual, and is not to be redelegated. It is effective only so long as [name/rank] remains in his/her present assignment, unless sooner terminated.

[Name/rank] is delegated full authority to approve contractor crewmembers, flights, and the Contractor's Procedures for aircraft flight and ground operations under his/her jurisdiction for which the Government, by contract, assumes some, or all, of the risk of loss under DFARS 252.228-7001, the Ground and Flight Risk Clause [or DFARS 252.228-7002, the Flight Risk Clause, as appropriate].

Direct any questions concerning this letter to this office, DSN 123-4567, (888) 123-4567.

[Approving Authority]

Encl 4
ATT 2
DLAI 8210.1
AFJI 10-220
AR 95-20
NAVAIRINST 3710.1D

Sample Supporting Contract
Administration (SCA) Request Format

[LETTERHEAD]

IN REPLY REFER TO: [YOUR OFFICE SYMBOL] [Date]

MEMORANDUM FOR [CAO OR ON-SITE UNIT COMMANDER]

SUBJECT: Supporting Contract Administration (SCA) Request

Request that your command provide supporting contract administration of contractor flight/ground operations under [designate contract number/or program]. Please appoint one or two rated members of your command as Primary/Alternate Government Flight Representative(s) (GFR(s)), to monitor contractor flight and/or ground operations. We ask that acceptance of this SCA request be in writing and include your GFR's(s') names. The officers selected should attend the DCMC administered GFR Training Course prior to assuming GFR contract administration duties.

The newly appointed GFR(s) will ensure contractor compliance for all contractual flight and ground operations, and safety requirements. The GFR(s) will also ensure the contractor complies with the requirements of DLAI 8210.1/AFJI 10-220/AR 95-20/NAVAIRINST 3710.1D, "Contractor's Flight and Ground Operations."

[CAO Commander's Signature Block]

Encl 4
ATT 3
DLAI 8210.1
AFJI 10-220
AR 95-20
NAVAIRINST 3710.1D

Sample Survey Report

I. EXECUTIVE SUMMARY

A. INTRODUCTION/TEAM MEMBERS

The Flight Operations assessment of [contractor] was accomplished [date]. This assessment fulfills the requirements of DLAI 8210.1/ NAVAIRINST 3710.1/AR 95-20/AFJI 10-220 for conducting an Annual Flight Operations Survey of contractor operations where the Government, by contract, assumes some or all of the risk of loss. The following team members conducted the assessment:

[List team members, duty titles, and office symbols]
[To the maximum extent possible teams should include customers (from program office) and contractor representatives.]

B. PURPOSE

The purpose of the Flight Operations survey/assessment is to thoroughly analyze those contractor ground and flight operations conducted with Government aircraft. The assessment process provides an open forum with the contractor, the program office(s) and the GFR jointly analyzing those operations to determine what steps can be taken to improve overall operations. In conjunction with the assessment, the team examined the Contractor's Procedures, contractual requirements, and ground & aircrew qualifications. The analysis contained in this report provides a tool to manage and lower risk. The goal is to improve the safety and security for all personnel involved and to better protect and conserve Government resources.

This report includes the Executive Summary narrating the teams' observations, and a Facility Data Sheet.

The information herein is to be considered "For Official Use Only" and is not to be distributed outside [the contractor's], owning program offices, or CAS channels.

C. DISCUSSION [Include an overall assessment of the contractor's current flight operations program (procedures and operations) in relation to the requirements of the contract, which will be substantiated and specifically documented in subsequent sections of the report. Address sub-elements of each program in sufficient detail

to confirm adequate review by the GFR and provide an adequate overview of the contractor's performance. Include appropriate comments. Site references from the contract for all observation requiring corrective actions.]

1. Safety Program.

2. Ground Operations.
   a. Ground procedures.
   b. Foreign Object Damage Control Program.
   c. Training and Certification.
   d. Engine Run Procedures.
   e. Corrective Action Requests (CARs).

3. Facility and Property Protection.

   a. ARFF.
   b. Facilities and Property.

4. Flight Operations.

   a. Flight Operation Procedures.
   b. Flight Environment.
   c. Flight Crews.
   d. Flight Hours and Sorties.
   e. Flight Plans and Approval.
   f. Deployed Operations.

5. Miscellaneous.

   a. Contract Provisions/Waivers.
   b. Host Nation.

D. OBSERVATIONS [Included here are special deficiencies previously noted which warrant management involvement and follow-up action. The GFR may provide recommended courses of action and shall indicate the specific regulation or contractual requirement not complied with, if applicable. If documentation of corrective action is necessary, include specific instructions on a cover letter s to whom and when corrective action reports are required.]

II. OTHER DOCUMENTATION (e.g., Worksheets, Facility Data Sheets, etc., Attached)

[GFR's signature block]

Encl 4
ATT 4
DLAI 8210.1
AFJI 10-220
AR 95-20

Sample Data Sheet

[Contractor's name and address]

PRIMARY GOV PERSONNEL	OFFICE	COMM	DSN	FAX
CMDR				
CFO				
GFR				
A/GFR				
AMM				
SS				
ASO				

PRIMARY CTR PERSONNEL	POSITION	COMM	BEEPER	FAX

CONTRACTOR CREWMEMBERS: **[ACFT]** PLT: NAV: FE: CC: BM: Other:
[ACFT] PLT: NAV: FE: CC: BM: Other:

GOVERNMENT CREWMEMBERS: **[ACFT]** PLT: NAV: FE: CC: BM: Other:
[ACFT] PLT: NAV: FE: CC: BM: Other:

CLAUSE & REQUIREMENT REFERENCE MATRIX

CONTRACT NUMBER:	**xxxx**	**xxxx**	**xxxx**	**xxxx**	**xxxx**
Ground and Flight Risk, DFAR 252.228-7001					
Flight Risk, DFAR 252.228-7002					
Accident Reporting, DFAR 252.228-7005					
Contractor Flight Ops, DLAI 8210.1					
Tool/FOD Control					
Aircraft Rescue and Fire Fighting					

PROGRAM SUPPORT TEAM OFFICE COMM DSN FAX

PCO
ACO
PM
PI
SAFETY

CONTRACT NUMBER: AIRCRAFT TYPE:
DESCRIPTION: NUMBER PER YEAR:

PROGRAM SUPPORT TEAM OFFICE COMM DSN FAX

PCO
ACO
PM
PI
SAFETY

CONTRACT NUMBER: AIRCRAFT TYPE:
DESCRIPTION: NUMBER PER YEAR:

PROGRAM SUPPORT TEAM OFFICE COMM DSN FAX

PCO
ACO
PM
PI
SAFETY

CONTRACT NUMBER: AIRCRAFT TYPE:
DESCRIPTION: NUMBER PER YEAR:

OTHER PERSONNEL	POSITION	COMM	DSN	FAX

OTHER IMPORTANT INFORMATION: (email addresses, program status, etc.)

Federal Aviation Regulations that might apply to UNOLS Aircraft

Part 21 - CERTIFICATION PROCEDURES FOR PRODUCTS AND PARTS

Part 23 - AIRWORTHINESS STANDARDS: NORMAL, UTILITY, ACROBATIC, AND COMMUTER CATEGORY AIRPLANES

Part 33 - AIRWORTHINESS STANDARDS: AIRCRAFT ENGINES

Part 25 - AIRWORTHINESS STANDARDS: TRANSPORT CATEGORY AIRPLANES

Part 61 - CERTIFICATION: PILOTS, FLIGHT INSTRUCTORS, AND GROUND INSTRUCTORS

Part 91 - GENERAL OPERATING AND FLIGHT RULES

Part 119 - CERTIFICATION: AIR CARRIERS AND COMMERCIAL OPERATORS

Part 125 - CERTIFICATION AND OPERATIONS: AIRPLANES HAVING A SEATING CAPACITY OF 20 OR MORE PASSENGERS OR A MAXIMUM PAYLOAD CAPACITY OF 6,000 POUNDS OR MORE

Part 135 - OPERATING REQUIREMENTS: COMMUTER AND ON-DEMAND OPERATIONS AND RULES GOVERNING PERSONS ON BOARD SUCH AIRCRAFT

UNIVERSITY- NATIONAL OCEANOGRAPHIC LABORATORY SYSTEM GUIDELINES FOR REQUESTING/BECOMING A UNOLS NATIONAL OCEANOGRAPHIC AIRCRAFT FACILITY

DRAFT – September 30, 2004

1. INTRODUCTION

This instruction provides guidelines for requesting the designation of an institution's aircraft or fleet of aircraft as a University-National Oceanographic Laboratory System (UNOLS) National Oceanographic Aircraft Facility (NOAF). Included in these guidelines is a description of the objectives of UNOLS Operator Institutions, the relationship of UNOLS facilities to research and academia, the relationship of UNOLS Operating Institutions as UNOLS members, and the responsibilities of UNOLS Operating Institutions.

2. OBJECTIVES OF UNOLS OPERATOR INSTITUTIONS

The objective of a UNOLS Operator Institution is to provide an oceanographic facility, in this case aircraft, to scientists, faculty, and students from both within and outside of their institution, provided that funding is available from the sponsor of the class/research or from the user.

3. RELATIONSHIP TO RESEARCH AND ACADEMIA

UNOLS aircraft are those United States research aircraft generally operated in support of national oceanographic research and education programs by academic institutions and are significantly funded by the federal government.

4. RELATIONSHIP OF UNOLS OPERATING INSTITUTION AS UNOLS MEMBER

UNOLS institutions that operate UNOLS NOAFs are, in addition, designated as Operator Institutions.

UNOLS NOAFs are designated by the UNOLS Council. The list of designated UNOLS NOAFs shall be reviewed regularly for additions or deletions by the UNOLS Council. If a facility ceases to meet the UNOLS standards, the UNOLS Council shall recommend termination of such designation.

5. RESPONSIBILITIES OF A UNOLS OPERATING INSTITUTION

The responsibilities of the UNOLS Operating Institution include, but are not limited to:

a. Assuring that aircraft are regularly available to all federally funded users.
b. Maintaining their aircraft to accommodate the needs of the academic oceanographic programs.

c. Operating and maintaining their UNOLS NOAFs in accordance with FAA Part 135 (or 91 or 119??) and the airworthiness standards of FAA Part 25 (?) and NTSB regulations (are these sufficient or even applicable to all aircraft?).
d. Subjecting to regular, recognized aircraft inspection procedures, such as the required FAA annual and more frequent inspections as required by statute.
e. Participating fully in the UNOLS scheduling process. While scheduling is the responsibility of the operating institution, the operating institution shall receive, acknowledge, and structure requests for aircraft-time use in consultation with the UNOLS Office.
f. Submitting flight reports and flight assessments according to UNOLS uniform practices.
g. Adhere to cost accounting and performance standards according to UNOLS uniform procedures.
h. Requesting funds for operation of their NOAFs. UNOLS membership does not guarantee federal funding.

6. REQUIREMENTS FOR BECOMING A UNOLS NOAF

An institution requesting designation of their aircraft facilties as a UNOLS NOAF must be a qualified UNOLS member institution. If they are not a member, they must submit an application for membership in accordance with the guidelines established in the UNOLS Charter. These applications can be submitted in tandem with their requests to designate a vessel as a UNOLS vessel. Application forms can be obtained from the UNOLS Office.

The requirements for designating a vessel as a UNOLS vessel include:

a. The institution must operate the aircraft facility for oceanographic research and education purposes.
b. There must be evidence of three or more years of continuous operation of shared use research/education facilities.
c. The operating institution must be able to provide a projection of the aircraft facilties' use for the next year, including user charges.
d. The aircraft must successfully complete an appropriate safety inspection such as the FAA annual inspection at the, institution's expense (see above).
e. The vessel must be capable of operation under the FAA Part 135 (or 91 or 119 ???).
f. The aircraft must be regularly available to all federally funded users.
g. The aircraft must be maintained to accommodate the needs of the academic oceanographic programs.
h. The operating institution must be willing to participate fully in the UNOLS scheduling process. The operator shall receive, acknowledge, and structure requests for ship-time use in consultation with the UNOLS Office.
i. The operating institution must be willing to submit flight reports and flight assessments according to UNOLS uniform practices.
j. The operating institution must adhere to cost accounting and performance standards according to UNOLS uniform procedures.
k. The operator institution must be capable of obtaining the necessary funds to support operation of their aircraft. UNOLS membership does not guarantee federal funding.
l. The operator institution must submit a written application to the UNOLS Office addressing all of the requirements listed above and include a statement addressing how the addition of this aircraft facility to the UNOLS Academic Research Facilities will improve the mix of

facilities available for oceanographic programs or address an identified need for specific capabilities.

DESIGNATION OF A UNOLS NOAF

Requests for designation of a aircraft facility as a UNOLS NOAF shall be considered by the UNOLS Council upon receipt for evaluation of a written application by the operating institution. The application should address all requirements outlined in the previous section and shall be evaluated both upon that information and the match of the aircraft to current and projected requirements for additional facilities. Designation of UNOLS NOAFs is normally done by the UNOLS Council after a review of an application. If the application is denied, the applicant shall be promptly notified as to the specific reasons for the denial. The applicant shall then have two options:

OPTION 1: The applicant may reapply to the Council after addressing the specified deficiencies.

OPTION 2: The applicant may submit their modified re-application, along with a copy of the Council's notification of denial, for reconsideration by the UNOLS general membership. Designation would then be determined by a vote at the next annual meeting in accordance with the procedures described in Section 5a of the UNOLS charter.

Aircraft Flight Parameters

Position and time

- GPS - WAAS and/or differential
- Inertial navigation system (some aircraft)

Attitude, pressure altitude, rate of climb, heading, true air speed,

- ground speed and track

Distance above surface (radar or laser altimeter)

Flight Level Atmospheric Parameters

Temperature
Pressure
Humidity
Wind speed and direction (horizontal, vertical)
Wind Atmospheric turbulence
Liquid water

Remote Sensing

Solar radiation
Sea surface temperature
Visible imaging, digital video, frame grabbing

Deployable Sensors

Dropwindsonde
AXBT, AXCTD, AXCP, AXKT, sonobuoys
Surface drifters and floats

Instrumentation Integration Facility

Downward looking port
Data and power bus, including time and/or position stamp