

APPENDIX C

*Principal Duties of HRD Scientific Personnel*

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**1. Safety**

Flight operations are routinely conducted in turbulent conditions. Shock-mounted electronic and experimental racks surround most seat positions. Therefore, *for safety onboard the aircraft all personnel should wear a flight suit and closed toed shoes*. For comfort, personnel should bring a jacket or sweater, as the cabin gets cold during flight.

Smoking is prohibited within 50 ft of the aircraft while they are on the ground. No smoking is permitted on the aircraft at any time.

Section 4-401, of the NOAA Safety Rules Manual state that: "Don't let your attention wander, either through constant conversation, use of cell phone or sightseeing while operating vehicles. Drivers must use caution and common sense under all conditions. Operators and passengers are not permitted to smoke or eat in the government vehicles. Cell phone use is permitted while car is parked."

**2. Conditions of Flight**

Mission participants should be aware of the designated "conditions-of-flight." There are five designated basic conditions of readiness encountered during flight. The pilot will set a specific condition and announce it to all personnel over the aircraft's PA (public address) and ICS (interphone communications systems). All personnel are expected to act in accordance with the instructions for the specific condition announced by the pilot. These conditions and appropriate actions are shown below.

CONDITION 1: TURBULENCE/PENETRATION. All personnel will stow loose equipment and fasten safety belts.

CONDITION 2: HIGH ALTITUDE TRANSIT/FERRY. There are no cabin stations manning requirements.

CONDITION 3: NORMAL MISSION OPERATIONS. All scientific and flight crew stations are to be manned with equipment checked and operating as dictated by mission requirements. Personnel are free to leave their ditching stations.

CONDITION 4: AIRCRAFT INSPECTION. After take-off, crewmembers will perform wings, engines, electronic bays, lower compartments, and aircraft systems check. All other personnel will remain seated with safety belts fastened and headsets on.

CONDITION 5: TAKE-OFF/LANDING. All personnel will stow or secure loose equipment, don headsets, and fasten safety belts/shoulder harnesses.

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#### **3. General Information for All Scientific Mission Participants**

Mission participants are advised to carry the proper personal identification; i.e., travel orders, "shot" records (when appropriate), and passports. Passports will be checked by AOC personnel prior to deployment to countries requiring it. All participants must provide their own meals for in-flight consumption.

#### **4. HRD SCIENCE CREW Responsibilities**

##### FIELD PROGRAM DIRECTOR

- 1) Responsible to [HRD DIRECTOR] for the preparation and implementation of the HFPP
- 2) Only official communication link to AOC. Communicates flight requirements, patterns, and changes in mission to AOC crew (including [AOC DESIGNEE])
- 3) Only formal communication link between AOML and CARCAH during operations. Coordinates scheduling of each day's operations with AOC only after all (POD) reconnaissance requirements are completed between CARCAH and AOC
- 4) Works with PIs to select missions to be flown
- 5) Provides for pre-mission briefing of flight crews, HRD SCIENCE CREW, and others (as required)
- 6) Assigns duties and ensures safety of the HRD SCIENCE CREW
- 7) Coordinates press statements with NOAA/Public Affairs
- 8) Organizes necessary deployment debriefs and reports activities to [HRD DIRECTOR]

##### FIELD PROGRAM DEPUTY DIRECTOR

- 1) Assumes the duties of [FIELD PROGRAM DIRECTOR] in their absence
- 2) Assists [FIELD PROGRAM DIRECTOR] on any and all activities related to the HFP

##### PI(s)

- 1) Has overall responsibility for the experiment
- 2) Coordinates the project and sub-project requirements
- 3) Determines the primary modes of operation for appropriate instrumentation
- 4) Assists [FIELD PROGRAM DIRECTOR] in the selection and planning of missions for the experiment
- 5) Provides a written summary of the experiment accomplishments to [FIELD PROGRAM DIRECTOR] at the debrief

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#### LEAD PROJECT SCIENTIST [LPS]

- 1) Complete training and be familiar with any checklists
- 2) Has overall scientific responsibility for his/her aircraft mission
- 3) Communicates with the AOC Flight Director and makes in-flight decisions concerning alterations of: (a) flight patterns; (b) instrumentation operation; and (c) assignment of duties of HRD SCIENCE CREW
- 4) Acts as project supervisor on the aircraft and is the focal point for all interactions of project personnel with operational or visiting personnel
- 5) Conducts pre-flight and post-flight briefings for the flight crew. Completes formal checklists of safety, instrument operations, and data download (noting malfunctions, problems, etc.)
- 6) Provides a written report of each mission to [FIELD PROGRAM DIRECTOR], detailing issues encountered, interesting phenomena observed, (reasons for) changes in flight patterns and instrument status, and any other relevant details from each mission
- 7) Present mission summaries at experiment debrief

#### RADAR SCIENTIST

- 1) Complete training and be familiar with any checklists/guides
- 2) Prepares radar workstation for mission, including starting any software and radar displays
- 3) During the ferry to the storm, the radar scientist should check the performance of the radar (e.g., showing reflectivity, velocity in fore, aft scans in Tail radar)
- 4) Determines optimum meteorological target displays. Continuously monitors displays for performance of the radars and optimum mode of operations. Thoroughly documents modes and characteristics of the operations.
- 5) Communicates with ground radar scientists on the radar operations, resolves issues related to analysis software, and maintains logs
- 6) Downloads data onto media at the end of instrument operation
- 7) Provides a summary of the radar operation to the on-board LPS at the post-flight debriefing

#### DROPSONDE SCIENTIST

- 1) Complete training and be familiar with any checklists/guides
- 2) Prepares workstation, sets up software and directories to process and transmit dropsonde data
- 3) Processes dropsonde observations for accuracy
- 4) Generates and transmits TEMP drop messages
- 5) Downloads data onto media at the end of instrument operation
- 6) Provides a written pre-flight and post-flight status report and dropsonde summary to the on-board LPS at the post-flight debriefing

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##### CLOUD PHYSICS SCIENTIST

- 1) Has overall responsibility for the cloud physics project on the aircraft
- 2) Briefs the on-board LPS on equipment status before takeoff
- 3) Determines the operational mode of the cloud physics sensors (i.e., where, when, and at what rate to sample)
- 4) Operates and monitors the cloud physics sensors and data systems
- 5) Downloads data on media at the end of instrument operation
- 6) Provides a written pre-flight and post-flight status report and flight summary of each mission day's operations to the on-board LPS at the post-flight debriefing

##### BOUNDARY LAYER SCIENTIST

- 1) Ensures that the required number of AXCPs, AXBTs, and AXCTDs are on the aircraft for each mission
- 2) Operates the AXCP, AXBT, and AXCTD equipment (as required) on the aircraft
- 3) Briefs the on-board LPS on equipment status before takeoff
- 4) Determines where and when to release the AXCPs, AXBTs, and AXCTDs (as appropriate) subject to clearance by flight crew
- 5) Performs pre-flight, in-flight, and post-flight checks and calibrations
- 6) Provides a written pre-flight and post-flight status report and a flight summary of each mission day's operations to the on-board LPS at the post-flight debriefing