CHAPTER 1

RESPONSIBILITIES OF COOPERATING AGENCIES

1.1 General. Every year, winter storms cause significant disruptions to travel and commerce, and threaten life and property. However, accurate forecasts can mitigate the disruption, allowing time for local officials and the general public to plan for the event. Large forecast errors often occur when observations in certain upstream "sensitive" regions over the Pacific, Gulf, and Western Atlantic are lacking or inaccurate. The main purpose of Winter Storm Reconnaissance (WSR) is to collect data in these "sensitive" regions where conventional observations are lacking and where satellites are unable to effectively resolve the vertical structure of the atmosphere (usually within cloudy regions). The data collected from the WSR program by the NOAA G-IV and US Air Force C-130s are transmitted to operational forecast centers, and used to improve numerical weather prediction model forecasts. The results from seven research and operational field programs indicate that in roughly 70% of the cases, the adaptive observations improve the forecasts for the targeted weather events. On average, a 10-20% error reduction is observed in the targeted forecasts. As a result, numerical forecast guidance issued 48 hours prior to the events become as accurate as 36 hour lead time forecasts without the use of adaptive observations.[1] Furthermore a recent preliminary analysis of the impacts from the 2012 WSR season by Dr. Ron Gelaro, NASA Global Modeling and Assimilation Office, initially indicated that, in some cases, these adaptive observations, provided substantial improvement to a global measure of 24-hour forecast errors.

The following summarizes the general responsibilities of the National Oceanic and Atmospheric Administration's National Weather Service, the U.S. Navy, and the U.S. Air Force:

1.1.1 National Oceanic and Atmospheric Administration's National Weather Service (NWS). The NWS is responsible for issuing winter storm forecasts, watches, warnings, and advisories to the public and various special user groups. Its responsibilities are documented in National Weather Service Policy Directive 10-5, Public Weather Services, and in NWS Instruction 10-513, WFO Winter Weather Products Specification. For further details on NWSI 10-513, consult the NWS Directives web site at: http://www.nws.noaa.gov/directives/010/010.htm, then click on 10-513, WFO Winter Weather Products Specification. The other files are regional supplements to this instruction.

1.1.2 U.S. Navy (USN). The USN, through the Naval Meteorology and Oceanography Command (NAVMETOCCOM), is responsible for issuing gale, storm, high seas warnings, and winter weather forecasts for fleet operations and Navy shore installations and Marine Corps operations and installations, as elaborated in the NAVMETOCCOM Instruction 3140.1 series.

1.1.3 U.S. Air Force (USAF). The USAF, through centralized weather units, is responsible for issuing military weather watches, warnings, and advisories to all Air Force and Army (including Reserve and National Guard) installations, facilities, and operations related to winter

[1] See http://www.aoc.noaa.gov/article_winterstorm.htm and http://www.emc.ncep.noaa.gov/gmb/targobs/target/publications.html.

storms for those hazardous phenomena specified in local agreements (such as Memorandum of Agreements or local regulations).

1.2 Responsibilities.

1.2.1 The Department of Commerce (DOC). The DOC, through the National Oceanic and Atmospheric Administration (NOAA), will:

1.2.1.1 Furnish aircraft from the NOAA Aircraft Operations Center (AOC) to support the following operational reconnaissance objectives:

- To provide additional real-time meteorological data, made available to operational forecasters and for assimilation into global numerical prediction models, to improve the forecasts of U.S. high-impact winter weather events over the continental U.S. (including Alaska) one to six days in advance through the application of adaptive observation techniques over data-sparse regions.

- To provide the data and analyses to better understand the structure and dynamics of these winter storm systems.

1.2.1.2 Coordinate with the Department of Defense (DOD), through the Air Force Reserve Command's 53rd Weather Reconnaissance Squadron (WRS), by 15 August, on the proposed upcoming winter storm reconnaissance plan and requirements, to include desired deployed locations and the number of flying hours.

1.2.1.3 Provide all East Coast/Atlantic and West Coast/Pacific winter-storm aircraft reconnaissance requirements to the Chief, Aerial Reconnaissance, All Hurricanes (CARCAH) through the Senior Duty Meteorologist (SDM) at NCEP Central Operations (NCO) Product Management Branch.

1.2.1.4 Provide basic surface, upper air, and radar observations from its network of stations making such observations.

1.2.1.5 Provide additional observations, when required, making available all reports to any requesting agency.

1.2.1.6 Provide basic analyses and forecasts through the National Centers for Environmental Prediction (NCEP), Camp Springs, Maryland.

1.2.1.7 Provide products under the multitier concept from Weather Forecast Offices (WFO) which will provide outlooks, watches, warnings, and advisories, when appropriate.

1.2.1.8 Operate satellite systems capable of providing coverage of the coastal areas of the contiguous United States during the winter storm season.

1.2.1.9 Coordinate with the National Aeronautics and Space Administration (NASA) to obtain pertinent meteorological data from NASA research and development experimental satellites.

1.2.1.10 Coordinate with the Department of Defense (DOD) to obtain pertinent meteorological data from the Defense Meteorological Satellite Program.

1.2.1.11 Provide satellite data for selected situations to authorized research facilities.

1.2.1.12 Provide oceanographic and meteorological surface data obtained from offshore buoy deployment, if possible, within existing facilities.

1.2.2 The Department of Defense (DOD). The DOD will:

1.2.2.1 Make available to NOAA agencies, through the Air Force Weather Agency (AFWA), basic surface, upper air, and radar observations from those DOD stations making such observations, pilot reports (PIREP), and aircraft reports (AIREP) that become available.

1.2.2.2 Furnish to NWS, aircraft reconnaissance observations supporting the objectives listed in paragraph 1.2.1.1 that are within its capabilities and in accordance with established reconnaissance priorities, and special observations detailed in Chapter 2 of this plan.

1.2.2.3 Designate CARCAH as the point of contact for coordination with both NCEP/HPC and the NCEP/NCO SDM for aircraft reconnaissance required in support of this plan.

1.2.2.4 Provide weather reconnaissance data monitor services through CARCAH to evaluate and disseminate reconnaissance reports.

1.2.2.5 Provide the necessary communications to relay reconnaissance reports from the aircraft to CARCAH.

1.2.2.6 Provide warnings to all DOD facilities and military units of weather that threatens to impact their operations or damage their installations.

1.2.2.7 Maintain situational awareness of weather reconnaissance forces providing support to NOAA. The situational awareness should be maintained through the appropriate combatant commander whose area of responsibility the mission is being conducted.

1.2.3 Department of Transportation (DOT)/Federal Aviation Administration (FAA). The FAA will:

1.2.3.1 Provide Air Traffic Control (ATC) services as appropriate to support this plan.

1.2.3.2 Disseminate PIREPs and AIREPs.

1.2.3.3 Provide hourly and special weather observations at selected terminal and flight service station locations.

1.2.4 Department of Homeland Security/U.S. Coast Guard (USCG). The USCG will:

1.2.4.1 Provide surface observations to NWS from its coastal facilities and vessels.

1.2.4.2 Collect special weather observations from surface ships of opportunity and provide them to the NWS.

1.2.4.3 Provide personnel, vessel, and communications support to the National Data Buoy Center for development, deployment, and operation of environmental data buoy systems.

1.3 Reconnaissance Organization Contact Information. A summary of reconnaissance organization contact information is listed in Appendix L.