APPENDIX A

FEDERAL COORDINATION AND PLANNING

BASIS FOR FEDERAL COORDINATION PROCESS

In 1963, Congress and the Executive Office of the President expressed concern about the adequacy of coordination of federal meteorological activities. In response, Congress directed in Section 304 of Public Law 87-843--the Appropriations Act for State, Justice, Commerce, and Related Agencies--that the Bureau of the Budget prepare an annual horizontal budget for all meteorological programs in the federal agencies.

The Bureau of the Budget (now the Office of Management and Budget) issued a report entitled "Survey of Federal Meteorological Activities" (1963). The report described each agency's program in some detail, particularly its operational services, and detailed the relationship between the programs of the various agencies. The report revealed close cooperation but little evidence of systematic coordination. Based on this study, the Bureau of the Budget issued a set of ground rules to be followed in the coordination process. It established a permanent general philosophy for assignment and assessment of agency roles in the field of meteorology and set certain goals to be achieved by the coordination process. The Bureau of the Budget tasked the Department of Commerce (DOC) to establish the coordinating mechanism in concert with the other federal agencies. It also reaffirmed the concept of having a central agency--the DOC-- responsible for providing common meteorological facilities and services and clarified the responsibilities of other agencies for providing meteorological services specific to their own needs.

The implementation of these directives by DOC led to the creation of the Office of the Federal Coordinator for Meteorological Services and Supporting Research (OFCM) which operates with policy guidance from the Federal Committee for Meteorological Services and Supporting Research. The principal work in the coordination of meteorological activities and in the preparation and maintenance of federal plans is accomplished by the OFCM staff with the advice and assistance of the Interdepartmental Committee for Meteorological Services and Supporting Research, and over 30 program councils, committees, and working groups.

MISSION AND STAFFING OF THE OFFICE OF THE FEDERAL COORDINATOR FOR METEOROLOGY (OFCM)

The mission of the OFCM is to ensure the effective use of federal meteorological resources by leading the systematic coordination of operational weather requirements and services, and supporting research, among the federal agencies. To discharge its mission, the OFCM has meshed its objectives with the objectives of the agencies that provide the services and perform the research. They include:

- Documenting agency programs and activities in a series of national plans and reports that enable agencies to revise/adjust their individual ongoing programs and provide a means for communicating new ideas and approaches to fulfill requirements.
- Providing structure and program to promote continuity in the development and coordination of interagency plans and procedures for meteorological services and supporting research activities.
- Preparing analyses, summaries, or evaluations of agency meteorological programs and plans that provide a factual basis for the Executive and Legislative branches to make appropriate decisions related to the allocation of funds.
- Reviewing federal weather programs and federal requirements for meteorological services and supporting research. This review may suggest additions or revisions to current or proposed programs or identify opportunities for improved efficiency, reliability, or cost avoidance through coordinated actions or integrated programs.

In 1979, a General Accounting Office (GAO) report, "The Federal Weather Program Must Have Stronger Central Direction," LCD-80-10, recommended stronger centralized planning and direction for federal weather activities. Pursuant to GAO's recommendation, DOC increased the permanent professional staff from one to seven and assigned an additional

professional staff member as the DOC representative. DOC also provides administrative support to the OFCM and approximately one-half of the OFCM's annual operating budget. The Department of Defense (DOD) currently provides two senior staff officers-- one Air Force and one Navy--and contributes approximately one-fourth of the annual budget. The Department of Transportation (DOT) Federal Aviation Administration (FAA) provides one professional staff member and also provides approximately one-fourth of the annual operating budget. These four agency representatives are designated Assistant Federal Coordinators for liaison to their respective agencies. In all, 14 meteorologists, oceanographers, physical scientists, and administrative and computer-support personnel are assigned to the OFCM staff.

COORDINATION OF MULTIAGENCY PROGRAMS

FEDERAL COMMITTEE

The Federal Committee for Meteorological Services and Supporting Research (FCMSSR), established in 1964, provides policy-level agency representation and guidance to the Federal Coordinator to address agency differences that arise during the coordination of meteorological activities and the preparation of federal plans. The Under Secretary of Commerce for Oceans and Atmosphere, who is also the Administrator of the National Oceanic and Atmospheric Administration (NOAA), serves as the FCMSSR Chair.

The 13 federal agencies that engage in meteorological activities or have a need for meteorological services are represented on FCMSSR. The FCMSSR membership includes: DOC, DOD, DOT, the Departments of Agriculture (USDA), Energy (DOE), Interior (DOI), and State (DOS), and the Environmental Protection Agency (EPA), Federal Emergency Management Agency (FEMA), National Aeronautics and Space Administration (NASA), National Science Foundation (NSF), National Transportation Safety Board (NTSB), Nuclear Regulatory Commission (NRC), and the Office of Management and Budget (OMB).

FCMSSR last met on September 15, 1997. Highlights of the meeting included presentations on: (1) the National Research Council Board on Atmospheric Sciences and Climate (BASC) study entitled *Opportunities, Challenges, and Imperatives for the Atmospheric Sciences Entering the Twenty-First Century*; (2) space weather activities, including OFCM's publication of the *National Space Weather Program Implementation Plan* (January 1997); (3) aviation weather services, including the OFCM publication--*National Aviation Weather Program Strategic Plan* (April 1997); and (4) the Natural Disaster Reduction Initiative. In addition, FCMSSR approved the OFCM's plan to streamline the interagency coordination structure.

The next FCMSSR meeting is expected to be held in September 1998. At that meeting, FCMSSR will address individual priority areas that would benefit from better interagency coordination and cooperation. In addition, FCMSSR will examine the need for further reorganization of the OFCM coordinating structure.

Realignment of Coordinating Infrastructure

During FY 1997, the OFCM realigned the interagency council, committee, and working group coordinating structure. The effort reduced the total number of committees and groups from 46 to 34 (approximately 25 percent). In addition to these numerical reductions, the streamlining, for the first-time, aligned committees, working groups, and joint action groups under the respective subject area of program councils. The new structure was implemented in September 1997.

In an effort to identify opportunities, challenges, and priorities for the 21st Century, the Federal Coordinator, initiated in February 1998 an across-the-board review of meteorological programs, services, and activities within the federal agencies. Employing an inclusive approach, the review, which began in early February 1998 and concluded in June, consisted of: (a) identifying priority areas, issues, and problems within each agency; (b) soliciting agency ideas to improve the effectiveness of interagency coordination and cooperation; and (c) consolidating the inputs. The Federal Coordinator's outreach included personal visits with each agency's representative to both the Federal and Interdepartmental Committees for Meteorological Services and Supporting Research (FCMSSR and ICMSSR, respectively), former Federal Coordinators, as well as other key leaders from federal agencies, the private sector/universities, and other OFCM affiliations. The preliminary findings, conclusions, and recommendations were presented to the ICMSSR in July and accepted in August 1998. OFCM will seek FCMSSR endorsement at the September 1998 meeting.

The activities reported in the remainder of this section reflect the future coordinating infrastructure.

PROGRAM COUNCILS

There are two program councils (PC) to coordinate specific interagency cooperative programs: National Aviation Weather (NAWPC) and National Space Weather (NSWPC). Each PC is comprised of decision-level representatives from the agencies directly concerned with the specific program area. The Federal Coordinator serves as the PC chairperson.

National Aviation Weather Program Council

The National Aviation Weather Program Council (NAWPC) last met on September 9, 1997 and approved the *National Aviation Weather Program Strategic Plan*. NAWPC also was briefed on the NASA/FAA Aviation Safety Program, the findings in the preparation of the NWS Aviation Weather Operations Plan, the FAA Aviation Weather Research Plan, and the Aviation Weather Training effort at COMET.

The Joint Action Group for Aviation Weather (JAG/AW) published and distributed the *National Aviation Weather Program Strategic Plan* in August 1997. Since that time, the JAG/AW has been meeting regularly to draft a *National Aviation Weather Program Implementation Plan*, later called a National Aviation Weather Initiatives document. The Initiatives Document will define agency roles in a series of service packages, addressing areas such as in-flight icing, turbulence, microburst/windshear, etc. During this planning process, the JAG/AW is working in conjunction with other initiatives such as the NASA Aviation Safety Program (ASP) and the FAA Product Development Teams. The JAG/AW conducted a Weather Initiatives briefing to government and industry on June 2, 1998.

Committee for Aviation Services

The last meeting of the Committee for Aviation Services (CAS) was held in February 1998. Prior to this date, although no formal CAS meetings was called, members continued to coordinate their activities through other venues.

At the February meeting, CAS approved the PIREPS chapter which will be printed in the new *Manual on Codes - United States Supplement* (FMH-12). The group also began the task of revalidating the United States requirements for aviation weather products and services. One of the objectives is to reduce the number of exceptions filed with the WMO for METAR, SPECI and TAF codes. The group also evaluated the readiness of agencies to switch the reporting code for ice pellets in METAR, SPECI, and TAF from 'PE' to 'PL'. The WMO has set November 5, 1998 as the effective date for this change. In addition, CAS members received a report from an expert group on forecasting and TAF coding of low level wind shear. They discussed the surge of requests for TAFs at airports for which a forecast had not been previously prepared. The provision of forecasts hinges on resource implications--there may be too few personnel-hours to serve all requests.

The Working Group for Volcanic Ash reported on their activities related to the document *A National Framework for Volcanic Ash Hazards to Aviation*. CAS took an action to provide information on their respective aviation weather R&D iniatives in a standardized format so program directors and principal investigators can evaluate and coordinate their efforts across agencies for leveraging resources. The group also reviewed recent and upcoming meetings of national and international groups.

Working Group for Volcanic Ash

The Working Group for Volcanic Ash (WG/VA) briefed CAS on progress related to preparation of the document *A National Framework for Volcanic Ash Hazards to Aviation*. The document is being circulated for agency approval.

National Space Weather Program Council

At the last meeting of the National Space Weather Program Council (NSWPC) January 1997, the council approved the *National Space Weather Program Implementation Plan* and authorized publication of the plan. The council also recommended the consolidation of the Committee for Space Environmental Forecasting (CSEF) and the Working Group for the National Space Weather Program (WG/NSWP) which was subsequently approved by the Interdepartmental Committee. The consolidated Committee for Space Weather reports to the Program Council. The next meeting of NSWPC will be in the fall of 1998, at which time an updated *Implementation Plan* and support for a proposed Community Coordinated Modeling Center will be considered.

Committee for Space Weather

The Committee for Space Weather (CSW) met on June 10, 1998 at NOAA's Space Environment Center in Boulder, Colorado. At the meeting, the Chairman, Dr. Richard Behnke, NSF, emphasized the need to keep the National Space Weather Program moving forward. He also highlighted the proposed Community Coordinated Modeling Center. Additional presentations and discussion covered the Advanced Composition Explorer (ACE) follow-on; results of the SEC User Conference held April 20-23, 1998; data archiving; and agency activities. The Committee agreed to move forward with an update of the *National Space Weather Program Implementation Plan* and to prepare advocacy letters supporting the Community Coordinated Modeling Center, Geostorm, and the Polar Cap Observatory. The next meeting is expected to be held at OFCM in August or September 1998.

PLANNING, COMMITTEE ACTIVITIES, AND PUBLICATIONS

INTERDEPARTMENTAL COMMITTEE

The Interdepartmental Committee for Meteorological Services and Supporting Research (ICMSSR) met four times during this FY 1998. Topics which received special attention were: (1) the World Intellectual Property Organization (WIPO) negotiations on database protection; (2) the impacts of El Niño; (3) the Global Positioning System/ Meteorological (GPS/MET) satellite program; (3) the Year 2000 computer problem; (4) radio frequency allocation; (5) OFCM's post-storm data acquisition activities; (6) interagency aspects of the Natural Disaster Reduction Initiative; (7) the Texas tornadoes of May 27, 1997; (8) streamlining of the OFCM interagency coordination structure; and (9) the Department of Defense (DOD) Office of the Space Architect's interest in the OFCM providing a forum for environmental sensing.

At the last ICMSSR meeting, Mr. Samuel Williamson, Federal Coordinator, presented OFCM's look to the future. Mr. Williamson identified several priority areas that would benefit from better interagency coordination and cooperation. A schematic of the new federal committee and working group structure for meteorological coordination is found inside the backcover of this plan.

Committee for Environmental Services, Operations, and Research Needs

The Committee for Environmental Services, Operations, and Research Needs is a new committee and replaces the former Committee for Weather Operations. The working groups aligned under this committee are the Working Groups for Environmental Services and Requirements, Hurricane and Winter Storm Operations and Research, Satellite Telemetry, and Natural Disaster Reduction/Post-Storm Data Acquisition.

In addition to the subject areas assigned to the working groups, the new committee will address the following: natural hazards (severe weather, flooding, volcanic eruptions, hurricanes, etc.), man-made hazards/atmospheric transport and diffusion, hydrometeorology/water resources management, marine/ocean environmental services, urban meteorology/air quality, outreach and education, agricultural and fire weather, waterways/ surface transportation, and commercialization.

Working Group for Environmental Service and Requirements

The Working Group for Environmental Service and Requirements will address the subject areas previously assigned to the Working Groups for Atmospheric Transport and Diffusion, Hydro-meteorology, Marine Environmental Services, and Severe Local Storms Operations.

Working Group for Hurricane and Winter Storm Operations and Research

With the streamlining of the Federal coordinating structure, the responsibilities of the Improved Weather Reconnaissance Program Council, the Working Group for Hurricane and Winter Storm Operations, and the Ad Hoc Group for Tropical Cyclone Research were consolidated into the Working Group for Hurricane and Winter Storm Operations and Research (WG/HWSOR).

In the weather reconnaissance arena, a major milestone was met when the 53rd Weather Reconnaissance Squadron (53 WRS) declared the first two Global Positioning System (GPS)-based Airborne Vertical Atmospheric Profiling Systems (AVAPS) operational. The AVAPS was developed by the National Center for Atmospheric Research (NCAR) to

replace the current Omega-based dropwindsonde system, which became obsolete with the demise of the Omega radionavigation system on September 30, 1997. Originally, NOAA contracted with NCAR to develop the AVAPS for the NOAA Aircraft Operation Center's new Gulfstream IV-SP (G-IV) aircraft and as a replacement system for the NOAA WP-3Ds. With the acquisition of the AVAPS for the fleet of WC-130Hs, which will be completed prior to the 1998 hurricane season, the Nation's weather reconnaissance aircraft will have a standard dropwindsonde system for both operational and research missions.

From mid-January through February 1998, the NOAA G-IV aircraft and two AVAPS-equipped WC-130H aircraft from the 53 WRS provided special El Niño observations over the Pacific. Ongoing research efforts at the National Centers for Environmental Prediction's Environmental Modeling Center (NCEP/EMC) and the Naval Research Laboratory in Monterey, California, (NRL-Monterey) indicate that the largest source of errors in numerical weather prediction forecasts are due to initial condition errors created by the lack of observations, particularly in areas of "dynamic sensitivity." For the United States, these sensitive areas are commonly over the data-sparse Northeast Pacific Ocean where many of the weather events associated with El Niño would originate. A joint NOAA/Navy/Air Force special observation project, called the Northeast Pacific Experiment (NORPEX 98), supplied critical wind, temperature, and moisture data to operational centers to improve model initial conditions, and to local forecast offices to improve warnings and forecasts. Both NCEP/EMC and NRL-Monterey employed objective targeting guidance (adaptive observing strategies) in a real-time operational context as an effective strategy to target dropwindsonde observations to provide improved initial conditions. The 53 WRS, operating out of Alaska and Hawaii, provided over 30 targeted missions during the 6-week period. NOAA's G-IV flight crews, operating out of Honolulu, provided eight storm surveys, during the period of maximum weather impact on the West Coast in late January and the first days of February. The 53 WRS WC-130H and NOAA G-IV data sets provided data coverage unprecedented in the past for the real-time prediction and study of winter circulations by El Niño. NORPEX 98 exemplified how an interagency effort can be successfully coordinated and should serve as a paradigm for cooperative supporting research efforts in the future.

The Working Group for Hurricane and Winter Storms Operations met in conjunction with the IHC to update the NHOP. The 1997 edition of the NHOP was published in May. The 52nd Interdepartmental Hurricane Conference is scheduled for January 26-30, 1998 in Clearwater Beach, Florida.

Satellite Telemetry Interagency Working Group

The Satellite Telemetry Interagency Working Group (STIWG), chartered by the OFCM and the Office of Water Data Coordination, continued discussions on the joint funding of GOES-DCS enhancements and, in particular, the contract for higher baud rate transmitters, demodulators, and test sets which are being developed under a contract managed by NESDIS.

STIWG is considering further developments in the high baud rate contract and the need for funding for a DOMSAT in 1999 and beyond. STIWG member agencies use direct read-out receivers to acquire the data they remotely sense and transmit to a GOES Data Collection System (DCS). Those data are streamed to the Earth station at Wallops Island, Virginia. That station feeds the data to the DOMSAT for broadcast. This system may be retained since recent changes to the NOAAPORT system may require some modifications to the agencies' direct read-out receivers and antennae. This issue is still under consideration.

Working Group for Natural Disaster Reduction/Post-Storm Data Acquisition

The Civil Air Patrol (CAP), which provides aerial post-storm survey flights in accordance with a memorandum of understanding, has proved to be an extremely valuable resource. Since February 1998, CAP has responded on five occasions to requests aerial surveys in the wake of destructive tornado outbreaks. In each case, the support provided was timely, professional, and extremely cost effective.

In response to these recent events, the Working Group for Post-Storm Data Acquisition determined that the national plan should include more comprehensive quick response procedures before going to final publication. Once completed, the *National Plan for Post-Storm Data Acquisition* will be available on the OFCM's website. Plans are also

underway to make post-storm data and reports on the website.

Committee for Operational Processing Centers

The Committee for Operational Processing Centers (COPC) will remain largely unchanged. The committee will retain oversight of the Working Group for Cooperative Support and Backup and assume the subject area of high performance computing and communications (HPCC). Within the HPCC domain are the topics of coupled ocean-atmospheric models, data assimilation, and data handling/archiving.

The principals of the OFCM-sponsored Committee for Operational Processing Centers (COPC) and the Shared Processing Program Operations Steering Committee (SPOSC) met twice during FY 1998. The November 1997 meetings were hosted by the National Centers for Environmental Prediction (NCEP) at the Space Environment Center in Boulder, Colorado. In May 1998, the Air Force Weather Agency (AFWA) hosted the next set of meetings at Offutt Air Force Base, Nebraska. Since the principals for both meetings are the same, the practice has become to hold the meetings consecutively, coupled with a joint executive session. In November, the principals discussed the need for a COPC Strategic Vision, and the principals participated in a 1-day off site, which was hosted by the OFCM in February 1998, to formulate the "draft vision." In May, plans were made to finalize the strategic vision, and a set of draft objectives to implement the vision were developed. The COPC then designated the Working Group for Cooperative Support and Backup to serve as the COPC's executive agent to monitor progress on the objectives, and to flesh out and have primary responsibility for objectives that span the centers. In December 1997, the initial operational capability date for the new Asynchronous Transfer Mode (ATM) communications capability was met, and because the transition to ATM went relatively smoothly, domestic satellite operations were terminated on January 30, 1998. ATM represents a significant and cost-effective upgrade in the capability of the OPCs to share model and satellite data on a daily, cooperative-support basis and to backup one another in emergency situations.

The work of the Joint Action Group for Observations (JAG/OBS) will continue to focus on common, quality observational databases among the Operational Processing Centers. JAG/OBS is evaluating an NCEP-proposed method for determining optimum times for data counts; exploring standardized counting categories, times, and methods; validating positions and elevations of United States stations for the Regional Basic Synoptic Network (RBSN); and working to resolve differences between Master Station Libraries maintained by the individual centers, including the World Meteorological Organization.

Committee for Environmental Information Systems and Communications

The Committee for Environmental Services, Operations, and Research Needs is a new committee and replaces the former Committee for Weather Information Systems. The working groups aligned under this committee are the Working Groups for Communications Interfaces and Data Exchange and Meteorological Codes.

In addition to the subject areas assigned to the working groups, the new committee will examine and monitor the subject areas formerly assigned to the Working Group for Meteorological Information Management as well as: next generation automated weather information systems, next generation Internet, information dissemination technology, radio spectrum policy, data management/ requirements, free access and open exchange of data, and the Y2K computer problem.

The last meeting of the Committee for Weather Information Systems (CWIS) was held on November 10, 1997. During this meeting, CWIS heard agency updates on weather information systems, to include the National Weather Service's Advanced Weather Interactive Processing System (AWIPS), the FAA's Weather and Radar Processor (WARP) and Integrated Terminal Weather System (ITWS), the Air Force's Automated Weather Distribution System (AWDS), the Navy's Navy Integrated Tactical Environmental System (NITES), and the Army's Integrated Meteorological System (IMETS). Common themes were the need for smaller scale resolution and the move towards user-friendly systems. During this meeting, the committee discussed the issue of rapidly growing volume of gridded and imagery data and the need for some sort of data management initiative. CWIS agreed that this is something they should look into and that a small ad hoc group should be formed to pursue the issue further.

Working Group for Communications Interfaces and Data Exchange

The Working Group for Communications Interfaces and Data Exchange (WG/CIDE) is continuing work on revising the *Interdepartmental Meteorological Data Exchange System (IMDES) Report* (FCM-R12-1991), issuing a change to FCM-S3-1991 (Green Book) to correct version of X.25 in use, and updating the "Green Book" to document ATM and frame relay standards. WG/CIDE is also developing a proposal for an FTP-server, file-naming standard to support preparations for a WMO Working Group on Data Management meeting. A draft IMDES Report was distributed to Working Group members on April 11, 1998. WG/CIDE plans to publish the updated IMDES Report by August 15, 1998.

Working Group for Meteorological Codes

The Working Group for Meteorological Codes (WG/MC) met on February 18, 1998 to: (a) discuss the METAR/SPECI code change for reporting ice pellets; (b) finalize code modifications to TEMP DROP and RECCO resulting from the Interdepartmental Hurricane Conference; (c) approve TESAC code modifications; and (d) examine additional coding topics on satellite ephemerous data, satellite instrument and data-processing techniques, the future of CREX, and encoding of the 41414-group in Upper Air observations.

The group also received a briefing on the NWS proposal on Valid Time Event Code (VTEC) coding. VTEC will aid the delivery of NWS text products to a wide variety of users. With the approval of the PIREP code by CAS, WG/MC will begin preparation of a draft of FMH-12.

Committee for Integrated Observing Systems

The Committee for Integrated Observing Systems is a new committee and replaces the former Committee for Observing Systems. The working groups aligned under this committee are the Working Groups for Atmospheric Observing Systems and Marine Coastal Ocean Observing Systems.

In addition to the subject areas assigned to the working groups, the committee will address: global climate observing systems, new opportunities result from research developed technology/capabilities (profilers, ACARS/MDCARS, WVSS, GPS ground-based systems, and other adaptive observing strategies); cooperative observer networks; observation mesonets; systems evaluation of NEXRAD and ASOS; optimizing and integrating observing capabilities; observing systems simulation experiments; system maintenance capabilities; and architectural frameworks for surface weather systems, coastal /marine/ocean, and space.

Working Group for Atmospheric Observing Systems

The Working Group for Atmospheric Observing Systems will focus their efforts on the subject areas previously assigned to the Working Groups for Surface Observations, Upper Air Observations, Profiler Systems, Operational Environmental Satellites, Monitoring the Stratosphere, Lightning Detection Systems, and Doppler Radar Observations.

The Working Group for Surface Observations (WG/SO) last met on February 19, 1998 to: (a) discuss the implementation of the change in the METAR/SPECI code for reporting ice pellets (PE-to-PL), (b) receive updates of prior actions items, and (c) review/discuss the use of a contractor to perform a survey on surface weather observing networks. Due to the software change impacts on ASOS that are tied to the PE-to-PL implementation for METAR/ SPECI, WG/SO deferred to the ASOS Program Management Committee for establishing an interagency implementation date. The WMO imple-mentation date is November 5, 1998.

The meeting was the first occasion for participation by a member from the Federal Highway Administration (FHWA). FHWA requested participation in WG/SO to support the Department of Transportation's Intelligent Transportation System activities. FHWA is deploying road-side sensor systems that are very similar to ASOS and AWOS.

The group plans to revisit the topic of a common interagency observing handbook. In addition, the group is examining the need to broaden the working group's focus from an aviation-oriented perspective to one that balances the needs of all surface observation users.

The Working Group for Doppler Radar Meteorological Observations (WG/DRMO) is continuing the revision and updating of *FMH-11, Part A: System Concepts, Responsibilities, and Procedures*. Several drafts have been circulated

among the member agencies for comments and revisions. In the future, the group plans to revise each of the four parts of the FMH-11 handbook. The majority of the coordination is being conducted via correspondence and electronic mail; no meetings have been held.

The Working Group for Profiler Systems (WG/PS) last met in the spring of 1997 in conjunction with a Profiler Systems Signal Processing Workshop. The use of profilers has proven valuable in many operational applications such as severe weather forecasting, pollution monitoring and space launch support; however, a limiting factor is in the signal processing. Current signal processing techniques affect real-time applications where there is little time to validate data accuracy. Many of the signal processing problems are well understood and can be solved by implementing state-of-the-art techniques. The WG/PS is drafting a review paper that covers the state-of-the-technology and outlines future profiler enhancements. The draft review paper is planned to be complete in the first quarter FY 1998.

During FY 1998, the working group will be working on an action plan to achieve quality and reliability improvements in profiler products.

Working Group for Coastal Marine and Ocean Observing Systems

The Working Group for Coastal Marine and Ocean Observing Systems is a new working group and will address the following subject areas: data buoys, deep water projects, Voluntary Observing Ship Program, Southern Hemisphere Project Buoy Program, Tropical Atmospheric Ocean (TAO) Moored Array, Topical Ocean Global Atmospheric (TOGA) Program, Tropical Project Ocean Observing System, Natural Water Level Observation Network, and Physical Oceanographic Real-Time System.

Committee for Cooperative Research

The Committee for Cooperative Research is a new committee. The committee will oversee the major areas of: observing and monitoring global change, global change research, and the United States Weather Research Program (USWRP). As part of observing and monitoring global change, the committee will address space-based measurements (Landsat, EOS, NPOESS, the Tropical Rainfall Measuring Mission, and Sea-Viewing Wide Field-of-View Sensors (SeaWiFS), NASA scatterometer, and NPOESS); surface-based measurements (Atmospheric Radiation measurements, ENSO Observing System, Atlantic Observing System, Global Cooperative Air Sampling Network, Ameri-Flux, Ground and balloon-based Ozone Measurement Network, Surface UV Monitoring Network, and Atmospheric Chemistry Measurements); and air quality research. Under the USWRP, the committee will deal with subjects such as the optimal mix of observations, quantitative precipitation forecasting, landfall of tropical storms, and overall USWRP socio-economic impacts.

Committee for Climate Monitoring and Services

The Committee for Climate Monitoring and Services is a new committee and assumes the activities of the Working Group for Climate Services. In addition, the committee will discuss: climate modeling, assessment, analysis, and prediction; climate services; research; long-term environment change; long-term data sets; and relevant climate issues, such as global warming, seasonal variations, ozone depletion, and aerosols/atmospheric chemistry.

The Working Group for Climate Services (WG/CS) last met on February 3, 1998. Dr. Carol Weaver provided feedback from the NAOS council. A long discussion revolved around the stagnant, but important, activities of the Working Group for Meteorological Information Management. The WG/CS agreed that the activities of MIM fall very closely with the goals of WG/CS. The next meeting will concentrate on ways to incorporate MIM activities into the CS charter. The next meeting is planned for October 1998.

RELATED FEDERAL METEOROLOGICAL COORDINATION

Federal Meteorological Handbooks

At the direction of the ICMSSR, the OFCM maintains a continuing program to revitalize the Federal Meteorological Handbooks (FMH). Responsibility for review and revisions, if necessary, of each handbook is assigned to the appropriate committee and/or working group within the existing interdepartmental coordinating infrastructure. The FMH series includes observing and reporting practices for surface, upper air, radar, and meteorological rocket observations. The titles of nine existing handbooks are: *Surface Weather Observations and Reports*, *Surface Synoptic Codes*, *Rawinsonde and Pibal Observations*, *Weather Radar Observations*, *Meteorological Rocket Observations*, and *Doppler Radar Meteorological Observations*.

To date, revisions have been completed for the *Surface Weather Observations and Reports* (FMH-1), *Surface Synoptic Codes* (FMH-2), *Rawinsonde and Pibal Observations* (FMH-3), *Meteorological Rocket Observations* (FMH-10), and *Doppler Radar Meteorological Observations* (FMH-11) handbooks. Federal agencies are continuing to develop the *Manual on Codes--U.S. Supplement* (FMH-12). This new handbook will include, along with other codes to be determined, the Pilot Report (PIREP) code form that had been included in earlier versions of FMH-1.

New versions of all handbooks are available to private-sector users through the Customer Services at the National Climatic Data Center, Asheville, North Carolina. Federal agencies may request copies from the OFCM.

Meteorological Publications of OFCM

The preparation of federal plans is a major responsibility of the Federal Coordinator and requires extensive planning and coordination. Generally, federal plans are prepared for each of the specialized meteorological services and for meteorological programs common to two or more agencies. The federal coordinating committees and working groups compile information from the involved agencies and propose a unified plan for consideration.

Current publications of the Federal Coordinator for Meteorology are listed in Table A.1. Italicized titles are also available via our web site *WWW.OFCM.GOV*. With the exception of FMH's, copies of OFCM publications are available upon request.

Interdepartmental Hurricane Conference

On January 26-30, 1998, OFCM hosted the 52nd Interdepartmental Hurricane Conference (IHC) in Clearwater Beach, Florida. The agenda included: (a) presentations on current research in tropical cyclone observing, forecasting, and warning activities; (b) a review of the 1997 tropical cyclone season in the Atlantic Ocean, Gulf of Mexico, Caribbean Sea, and the Pacific Ocean; (c) a review of activities related to the Air Force Reserve's weather reconnaissance mission; and (d) revisions to the National Hurricane Operations Plan. The guest speaker was Dr. William Gray, Chairman, Meteorology Department, Colorado State University. Dr. Gray discussed his perspectives of and the advances made in tropical cyclone research.

The 53rd IHC is scheduled for February 8-12, 1999 in Biloxi, Mississippi. The Air Force Reserve's 53rd Weather Reconnaissance Squadron will also serve as hosts for some of the activities and events.

Surface Transportation - Road/Weather Information System

During FY 1998, OFCM increased coordination and assistance in support of the DOT's Federal Highway Administration (FHWA) and the FORETELL Consortium. In addition to participating in these and other on-going activities related to the Intelligent Transportation System (ITS), staff members provided technical assistance in meteorology and advice on WMO code formats and standards related to the development of the National Transportation Communications for ITS Protocol (NTCIP). The primary objective of the NTCIP is to provide a communications standard that ensures the interoperability and interchangeability of traffic control and ITS devices (including meteorological sensors). In addition, staff members provided technical advise and shared information on similar remote sensing efforts being conducted in other federal agencies.

Committee for the Environment and Natural Resources/Subcommittee for Natural Disaster Reduction

OFCM staff and agency members participated in other meteorology-related, interagency programs which were not run by OFCM. These programs were under the auspices of the Committee for the Environment and Natural Resources and the Subcommittee for Natural Disaster Reduction. OFCM staff also participated in NOAA's North American Atmospheric Observing System (NAOS) activities. The goal of NAOS is to meet evolving NOAA requirements for North American atmospheric observations needed to support the assessment and prediction for weather and climate.

World Weather Program

Some federal agencies participate in international activities relating to meteorological services and data exchange. These activities are carried out under the World Weather Program of the World Meteorological Organization, which is a specialized agency of the United Nations. The World Weather Program is described in Appendix D.

Frequency (Radio Spectrum Management

In June 1998, at the request of ICMSSR, OFCM prepared and distributed a White Paper on Frequency (Radio Spectrum) Management. Appendix E is a copy of the white paper.

Table A.1 Current OFCM Publications

Publication Title	Date	Number
Federal Plan for Meteorological Services and Supporting Research, Fiscal Year 1998	*June 1996*	*FCM-P1-1996*
National Plan for Space Environment Services and Supporting Research: 1993-1997	August 1993	FCM-P10-1993
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