Order

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

7000.2B

1/12/04

SUBJ: FAA/NWS MEMORANDUM OF UNDERSTANDING FOR POLICY AGREEMENTS

1. PURPOSE. This order transmits the Federal Aviation Administration (FAA) and National Weather Service (NWS) policy agreements for meeting aviation weather services requirements.

2. DISTRIBUTION. This order is distributed to selected offices in Washington headquarters, regional offices, the Technical Center, and the Aeronautical Center.

3. CANCELLATION. Order 7000.2A, FAA/NOAA Memorandum of Agreement, dated March 25, 1977, is canceled.

4. BACKGROUND. The attached Memorandum of Understanding (MOU) establishes policy agreements between FAA and NWS for meeting aviation weather services requirements. This MOU should be treated as an "umbrella" MOU for all other agreements between the two agencies as it pertains to policy for meeting aviation weather requirements. Responsible officials of NWS and FAA are expected to develop orderly planned programs to be reflected in budget estimates. It is expected that the related plans of the two agencies will be consistent with these policies down to the field level.

STEVEN J. BROWN
Associate Administrator for Air Traffic Services

Distribution: A-W (TP/TT/RS/OS/OP/TB)-1; A-X (AT/F)-2; AMA-500 (2); ACT-320 (2); AUA-400/ATX-100/AFZ-100 (2).

Initiated By: ARS-100

Appendix 1

MEMORANDUM OF UNDERSTANDING

between the

FEDERAL AVIATION ADMINISTRATION (FAA)

and the

NATIONAL WEATHER SERVICE (NWS)

for

POLICY AGREEMENTS

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APPENDICES

1.0 PURPOSE. This MOU defines policy agreements between Federal Aviation Administration (FAA) and National Weather Service (NWS) for meeting aviation weather services requirements.

2.0 STATUTORY AUTHORITY. NWS has authority to enter into this MOU to provide weather services pursuant to the NWS Organic Act, 15 U.S.C. § 313. This MOU is also authorized by 49 U.S.C. § 44720, which authorizes NWS to provide meteorological services to promote safety and efficiency in air navigation, as well as for FAA and NWS to cooperate on such matters. In addition, 49 U.S.C.§ 106(l)(6) authorizes FAA to enter into and perform contracts, leases, cooperative agreements and other transactions with entities described therein, including Federal agencies, on such terms as the Administrator of FAA considers appropriate. Finally, 49 U.S.C. § 106(m) authorizes FAA, with or without reimbursement, to accept the services, equipment, personnel and facilities of any other Federal entity; and authorizes the head of such Federal agency to cooperate with the Administrator of the FAA in making such services available.

3.0 SCOPE. The attached appendices, hereby made a part of this agreement, provide policy to FAA and NWS for the development of national, regional and local agreements, including FAA/NWS components of multi-agency agreements. New programs shall be established under the policies set forth in this MOU. If mutually agreeable, existing programs may be modified in keeping with this MOU as opportunities for change arise.

4.0 AGENCY ROLES. The high-level allocation of roles between the agencies is as follows:

4.1 NWS provides basic meteorological services;

4.2 FAA establishes all users' requirements for aviation weather services;

4.3 NWS provides mutually agreed upon aviation weather services;

4.4 FAA ensures aviation weather services are provided;

4.5 FAA may support NWS with funding for mutually agreed upon aviation weather services, except for funds directly appropriated to NWS for those services;

4.6 FAA determines whether NWS, FAA, or the private sector should provide aviation specific weather services. Litigation, risk, reliability, and cost effectiveness, at a minimum, will be factors used in the decision process. Utilization of private vendors is permissible as long as FAA requirements are satisfied;

4.7 Regardless of the source of service provisions, FAA either alone, or through NWS, ensures aviation weather services meet requirements;

4.8 FAA funds costs of transition to NWS operations of FAA-funded aviation weather research and development (R&D).

5.0 COST ACCOUNTABILITY. A mutually agreed upon cost accounting method shall be used by FAA and NWS for aviation weather services. This cost accounting method is further discussed in Appendix B (Finance).

6.0 FACILITIES. When one agency has equipment in the other's facilities, the agency where the equipment is located is responsible for providing appropriate space, the proper environmental conditions for both equipment and maintenance personnel and providing ready access to said equipment.

7.0 REVIEW AND AUTHORITY TO CHANGE THIS DOCUMENT. These policy agreements or portions thereof shall be reviewed and updated when deemed necessary by either agency. Amendments to the appendices consistent with the policy in this document may be made upon mutual agreement, in writing, between the FAA Associate Administrator for Air Traffic Services, ATS-1, and the NWS Assistant Administrator for Weather Services, W, as appropriate.

8.0 CANCELLATION. This MOU supersedes the Memorandum of Agreement, signed on January 24, 1977, that established policy agreements between FAA and NWS for providing aviation weather services and meteorological communications.

9.0 TERMINATION. This agreement may be terminated in whole or in part by mutual consent at any time, or unilaterally, provided the withdrawing party gives the other party 180 days notice in writing.

10.0 DISPUTE RESOLUTION. Should disagreements arise with respect to any agreement(s) developed pursuant to this MOU and entered into by NWS and FAA, that cannot be resolved at the operating level, the disagreement shall be stated in writing by each party and presented to the other party for consideration. If agreement on the matter is not reached within 30 days, the parties shall forward the written presentation of the disagreement to respective higher officials for appropriate resolution.

9/15/02
ACTING ASSOCIATE for
ADMINISTRATOR FOR AIR
TRAFFIC SERVICES
FEDERAL AVIATION ADMINISTRATION

9/15/02
for ASSISTANT ADMINISTRATOR
FOR WEATHER SERVICES
NATIONAL OCEANIC AND
ATMOSPHERIC ADMINISTRATION

APPENDIX A
ADMINISTRATION

1.0 PURPOSE. This Appendix defines the policy agreements between FAA and NWS for administering and coordinating aviation weather services.

2.0 COORDINATION.

2.1 As a mechanism for policy and overall program coordination between FAA and NWS, the FAAs Office of Aerospace Weather Policy and Standards (ARS-20) and NWSs Office of Climate, Water and Weather Services (OS) shall maintain lines of communication and procedures for coordinating each agency's policies and programs impacting aviation weather services. In matters relating to aviation weather at the day-to-day working level, the FAA's Office of Aerospace Weather Policy and Standards and NWS's Aviation Services' Branch (OS-23) are the focal points for the coordination of aviation weather requirements and programs.

2.2 An FAA/NWS Policy and Requirements Management Team (PRMT) makes decisions on interagency policy and requirements issues. The team consists of the National Weather Service Deputy Assistant Administrator for Weather Services and the FAA Director of Air Traffic System Requirements Service, Director Air Traffic Planning and Procedures Program, ATP-1, and ARS-20.

3.0 ESTABLISHMENT OF AVIATION WEATHER REQUIREMENTS.

3.1 Current NWS aviation weather services are documented in NWS Policy Directives, system specifications for joint systems like Automated Surface Observing System (ASOS) and Next Generation Radar (NEXRAD) and interface control documents. FAA establishes requirements for, and changes to, NWS-provided aviation weather services. To do this, FAA documents and conveys the users' needs to NWS. NWS provides to FAA a scientific analysis and cost feasibility of meeting those needs. FAA then establishes firm requirements. NWS, in coordination with FAA, may initiate additional aviation weather services at any time technology or available resources permit FAA to meet new, changed, or previously unmet requirements. The signature level for this process will be at the ARS-20 level in FAA and at the OS-1 level in NWS.

3.2 In addition to responding to the FAA requirements review, NWS shall periodically review its requirements for FAA-supplied equipment, facilities, and human resources needed to meet stated FAA requirements. NWS shall forward a statement to FAA, ARS-20, that lists new, changed, or unmet requirements that result from this review. FAA shall evaluate the statement and respond to NWS.

4.0 PROGRAM REVIEW FOR PLANNING PURPOSES. NWS and FAA shall consult with each other in all long-range planning that affects aviation weather services.

5.0 ESTABLISHMENT OF SPECIAL ARRANGEMENTS. From the viewpoint of efficient utilization of federal manpower and resources, and when mutually agreeable, the responsible agency may request the other agency to carry out a program or a portion thereof in aviation weather services, communications, basic meteorological services, or research and development. In such cases, the requested agency will establish and operate the programs, or portion thereof, within the limitations of available resources and under the standards established by the responsible agency.

6.0 COORDINATION OF PUBLIC INFORMATION.

6.1 Whenever FAA or NWS gives public notice of any activity, in which both agencies participate, the cooperation of the other agency will be appropriately acknowledged in the announcement. Press releases, descriptive literature, educational posters, etc., issued by either agency affecting or referring to the activities of the other agency shall be coordinated by the respective public information offices before release.

6.2 Correspondence incorrectly directed or sent to either agency, which concerns the responsibility of the other agency, will be forwarded promptly to the appropriate agency.

APPENDIX B
FINANCE

1.0 PURPOSE. This Appendix defines policy agreements between FAA and NWS for financing aviation weather services and provides for coordination of budget and authorization requests.

2.0 COORDINATION. Both agencies should coordinate their aviation weather budget and authorization requests and other testimony prior to transmission to their respective departments, Office of Management and Budget, or Congress. The objective is to prevent duplication, assure consistency and support the other agencies request.

3.0 AGENCY FINANCIAL RESPONSIBILITIES.

3.1 NWS is responsible for funding costs of operational forecasts and analysis for aviation weather except for Center Weather Service Units (CWSUs).

3.2 FAA is responsible for funding costs of CWSUs and all other aviation weather products except for joint programs.

3.3 Each agency is responsible for funding its proportionate share of joint programs, based upon “Agency Roles” described in paragraph 4.0 of the core document, and as documented in separate written agreements.

4.0 FAA/NWS AGREEMENTS.

4.1 All agreements between agencies shall:

4.1.1 Follow policies of this MOU;

4.1.2 Be documented as MOU, MOA, or IAA;

4.1.3 Identify basic and specialized roles;

4.1.4 Be subject to availability of appropriated funds;

4.1.5 Contain termination provisions and provisions for resolving disputes.

4.1.5.1 If the two agencies share responsibilities for a function and one of the agencies determines it cannot continue to support the function, the agency terminating the arrangement will:

4.1.5.1.1 Notify the other agency not less than 180 days before the proposed termination;

4.1.5.1.2 Describe the operation and its cost.

4.1.5.2 The requiring agency will determine whether the functions being performed will continue to be required after the proposed termination date.

4.1.5.3 If the requirement continues, both agencies will work together to:

4.1.5.3.1 Establish cost and duration of option to continue;

4.1.5.3.2 Determine level and duration of any reimbursement that will be given to the remaining agency to continue to provide the functions at a facility where there is a cooperative agreement, and that facility is decommissioned or closed for other reasons.

4.1.6 If a decision is made to reimburse the remaining agency, a new agreement covering that decision will be concluded prior to the termination of the existing arrangement. If one agency has previously designated another agency, by mutual agreement, to perform a portion of its function, the first agency remains responsible for that function in the event the agreement is terminated and a requirement for the function still exists.

5.0 COST ACCOUNTABILITY. A mutually agreed upon method for full accounting of budget activity shall be used to address cost traceability and accountability. Documentation, including an itemized list of various cost components, must support the billed amounts. Details of the method for full accounting of budget activity should be formalized in a separate interagency agreement.

6.0 FUNDING.

6.1 Whenever mutual arrangements can be made for the existing facilities and staff of one agency to cost effectively assist the other agency in carrying out its responsibilities, such assistance will, if possible, be rendered. However, neither agency will establish facilities exclusively for the purpose of performing the responsibilities of the other agency.

6.2 In the event that one agency incurs incremental costs in order to assist the other agency in performing its responsibilities, the benefiting agency may provide funding. Such costs may include administrative overhead charges in accordance with the established practices of the performing agency or as negotiated between the two agencies.

6.3 In lieu of reimbursement, FAA and NWS may agree, in writing, for the responsible agency to augment the other agency’s staff or facilities with the responsible agency’s own staff or equipment.

APPENDIX C
OPERATIONS

1.0 PURPOSE. This Appendix defines the policy agreements between FAA and NWS for weather observations, pilot weather briefings, and other meteorological services designed to meet FAA's weather requirements.

2.0 WEATHER PRODUCTS AND SERVICES.

2.1 International Responsibilities. The International Civil Aviation Organization (ICAO) sets standards and recommended practices (requirements) for meteorological services for international air navigation. The World Meteorological Organization (WMO) promulgates technical regulations to implement these standards and practices for meteorological services used for international air navigation. FAA represents the United States in ICAO to establish standards and recommended practices for the United States. NWS represents the United States in the WMO to establish technical regulations. FAA is responsible for filing differences between United States national practices and ICAO standards and recommended practices. NWS is responsible for defining exceptions to WMO Technical Regulations.

2.2 Weather Observations. For purposes of this MOU, aviation surface weather observations are defined as observations created for civil aviation purposes in the United States and its possessions that are disseminated on FAA and NWS communication networks.

2.2.1 FAA and NWS will coordinate, as necessary, on all matters related to taking and reporting weather observations relevant to aviation needs. When other agencies are involved, FAA and NWS will coordinate through the Office of the Federal Coordinator for Meteorological Services and Supporting Research (OFCM).

2.2.2 NWS, in consultation with FAA, will develop plans for joint-use observations in support of aviation. Plans and existing programs will be reviewed in accordance with paragraph 3.0 of this Appendix. Each agency will inform the other, as far in advance as possible, of all proposed changes relating to things such as the establishment, decommissioning, hours of operation, or relocation of field and/or observing facilities.

2.2.3 In the interest of efficiency and economy of overall government operations, and as mutually agreed, FAA and NWS share the responsibility for the management of the aviation surface weather observing program. The communication circuits of the two agencies will be used to the best advantage of the government.

2.2.4 Automated Surface Weather Observations. Automated surface observing systems, (i.e., AWOS and ASOS), provide automated surface aviation observations. FAA is responsible for establishing standards for the augmentation and backup of automated systems. FAA is responsible for the management of the federal and non-federal automated weather observing system program. FAA has responsibility for providing augmentation and backup of ASOS at all service level A, B, and C sites within the Continental United States

(CONUS). NWS is responsible for providing backup and augmentation of selected sites outside CONUS.

2.2.5 Other Aviation Surface Weather Observations. FAA is responsible for the management of manual observations taken in its facilities. NWS is responsible for the management of the Supplemental Aviation Weather Reporting Stations (SAWRS) program. NWS may establish other observing stations to meet NWS requirements.

2.2.6 Radar Observations. Both agencies, in conjunction with DOD operated radars that provide information on weather elements. Each agency will operate, maintain, and logistically support their radars and interface/processing equipment. Equipment and data lines for accessing either agency's radars are the responsibility of the user or as determined by appropriate agreements.

2.2.7 Upper Air Observations. NWS is responsible for basic upper air observation systems. FAA will collaborate with NWS in taking advantage of aviation platforms for taking observations.

2.2.8 Installation, Maintenance and Logistics for Equipment. Each agency is responsible for the installation, maintenance, and logistical needs of their manual observation programs.

2.3 Weather Forecasts. Representatives of both agencies will review weather forecast products to assure compatibility with FAA requirements.

2.4 Pilot Weather Briefings (PWB).

2.4.1 FAA, as the representative of aviation users, is responsible for determining the information required by pilots.

2.4.1.1 FAA has the responsibility for providing PWBs.

2.4.1.2 NWS has responsibility for Flight Documentation.

2.4.1.3 FAAs Automated Flight Service Station (AFSS) staff is responsible for routine telephone and in-person requests for PWB service. NWS offices may support users requesting detailed aviation, meteorological information.

2.5 Meteorological Support to Air Traffic Operations.

2.5.1 NWS meteorologists in FAA's Center Weather Service Units (CWSUs) provide weather support to FAA's en route and local air traffic operations. A separate FAA/NWS Memorandum of Agreement will govern their use and remuneration.

2.5.2 NWS's meteorological support to FAA's air traffic facilities will be in conformance to FAA Order 7210.38 *Center Weather Service Unit (CWSU)* and *National Weather Service Procedural Directive 01-10-803.*

3.0 PRODUCT AND SERVICE ASSURANCE.

3.1 FAA and NWS have quality control responsibilities for aviation weather observations. This includes real time quality control as well as station inspections.

3.2 NWS, with FAA's assistance, will monitor and evaluate the quality and effectiveness of NWS aviation weather services provided through the NAS. If necessary, NWS will provide scientific verification of products.

3.3 NWS, in consultation with FAA, will establish standards for the provision of operational weather information used for PWBs and will provide quality control over these services. NWS will examine and certify all FAA personnel assigned to PWB duties.

3.4 If, at certain locations, it is impractical for NWS to perform observational quality control functions, FAA staff, when available, will assist NWS in fulfilling the responsibility. NWS is responsible for certification of all personnel who take aviation weather observations.

APPENDIX D
COMMUNICATIONS

1.0 PURPOSE. This Appendix defines the policy agreements between FAA and NWS for meteorological communications networks, systems, facilities, and services that FAA and NWS operate and share. A list of weather collection/distribution systems addressed by this Appendix is included as Attachment 1.

2.0 RESPONSIBILITIES.

2.1 FAA, in compliance with the ICAO Standards and Recommended Practices, shall establish requirements for dissemination of aviation weather information.

2.2 In the interest of efficiency and economy in government operations, FAA and NWS share responsibility for the collection and dissemination of weather information.

2.3 NWS, in compliance with the WMO Technical Regulations and FAA requirements, shall specify the content, code, and format of the weather data to be collected and/or distributed.

2.4 FAA will determine the distribution requirements of the circuits established to provide weather information to FAA facilities, and for circuits serving external users (other than NWS) from FAA facilities.

2.5 NWS will determine the distribution requirements of the circuits established to provide weather information to NWS facilities and for circuits serving external users (other than FAA) from NWS facilities.

3.0 COMMUNICATIONS CIRCUITS.

3.1 International Circuits.

3.1.1 FAA has the responsibility to supply, install, operate, support, and maintain circuits and broadcasts that mainly serve ICAO requirements including distribution, except in Micronesia.

3.1.2 NWS has the responsibility to supply, install, operate, support, and maintain circuits and broadcasts that mainly serve WMO requirements such as International Satellite Communications Systems (ISCS) and the Global Telecommunication System (GTS). A separate FAA/NWS Memorandum of Agreement will govern ISCS funding and operation.

3.1.2.1 NWS has the responsibility to supply, install, operate, support and maintain circuits that mainly serve ICAO requirements in Micronesia, including distribution by AFTN.

3.1.2.2 NWS will allow FAA access to these telecommunications circuits, at no cost to FAA, to carry FAA AFTN, RMM weather collection and data distribution and other

required aeronautical data from Micronesia to the FAA Honolulu CERAP and other locations in Micronesia as required.

3.2 National Circuits.

3.2.1 FAA has the responsibility to supply, install, operate, support and maintain the national circuits in support of aviation requirements, as part of the meteorological data communications system.

3.2.2 NWS has the responsibility to install, operate, supply, support, and maintain circuits to meet basic meteorological services.

3.2.3 NWS, in consultation with FAA, has the responsibility to provide access to aviation weather information to FAA, private users, and commercial vendors.

3.3 Local Meteorological Circuits. The agency that has the primary need for a local interagency communication circuit has the responsibility to supply, install, operate, support and maintain receiving/transmitting equipment in both FAA and NWS facilities. FAA is responsible for voice or data circuits necessary to the NAS for local collection or dissemination of observations, and to get observations into the national circuit. NWS is responsible for local circuits for dissemination of weather information (other than for aviation) to the public.

3.4 Coordination.

3.4.1 If one agency develops plans that have an impact on the other agency, these plans shall be mutually coordinated. Each agency should attempt this coordination as far in advance as practical prior to actions requiring adjustments in existing systems to permit timely budgeting, programming, and project assignment.

3.4.2 Interfaces between FAA and NWS systems and equipment shall be compatible. Any plans for new circuits/networks shall be coordinated between agencies down to all affected levels to ensure compatibility, a smooth changeover, and continuous operations.

4.0 OPERATING PROCEDURES. Whenever one agency operates communications facilities for the other, such operations shall be in conformance with the standards and procedures prescribed by the agency whose primary mission is being discharged.

5.0 FUNDING. Each agency shall budget for basic communication systems established to fulfill its mission. Changes and additions to the basic systems will be funded by the agency whose mission is being accomplished. Funding for networks/circuits established to fulfill missions of both agencies shall be negotiated in advance.

6.0 USER FEES. Users of NWSs Family of Services (FOS) pay a one-time connection fee and an annual maintenance fee to the NWS for each connection. Because FAA and NWS support each other’s mission, NWS has waived user fees for FAA. If user fees are imposed

on communications systems by either agency in the future, such fees will be waived for the other agency.

COMMUNICATIONS APPENDIX
ATTACHMENT 1
Weather Collection/Distribution Systems

System/ Service	Name	Description	National Responsibility
ADAS	Automated Weather Observing System (AWOS) Data Acquisition System	FAA system that collects weather data from ASOS and AWOS, processes the data, and disseminates it to area control facilities and externally into the FAA and NWS weather networks.	FAA
AFTN	Aeronautical Fixed Telecommunication Network	Worldwide system of aeronautical fixed circuits provided for the exchange of messages and/or digital data between aeronautical fixed stations having the same compatible communications characteristics.	FAA
AOMC	ASOS Operations Monitoring Center	NWS-operated center for monitoring ASOS.	NWS
ASOS	Automated Surface Observing System	FAA and NWS operated aviation surface weather collection, processing, and dissemination system	Both
AWIPS	Advanced Weather Interactive Processing System	NWS system that provides data processing, analysis, storage, and display capabilities to support forecast operations.	NWS
AWP	Aviation Weather Processor	FAA system that stores and distributes weather products to flight service stations.	FAA
DATIS	Digital Automated Terminal Information System	FAA system that is the data source for terminal information, provided to aircraft via a data link.	FAA
DAWN	Digital Aviation Weather Network	Primary weather information data link across Alaska and FAA's uplink to WMSCR	FAA
FBWTG	FAA Bulk Weather Telecommunications Gateway	FAA system that provides NWS data, weather, and airborne, messages to other FAA systems, such as ITWS and WARP.	FAA
FOS	Family Of Services	NOAA-operated services consisting of the Public Product Service, the Domestic Data Service, the International Data Service. High Resolution Data Service, Server Access Service, and the Radar Products Service.	NWS
ISCS	International Satellite Communication System	NWS operated system for the worldwide broadcast of aviation related (WAFS) and basic (RMTN) weather information via satellite	NWS
ITWS	Integrated Terminal Weather System	FAA system that will provide a set of integrated weather information products, which are readily useable.	FAA
MDCRS	Meteorological Data Collection and Reporting Service	The service for collecting, translating, and disseminating real-time upper altitude weather observations from airlines and forwarding them to the NWS.	FAA
NOAAPort	NOAA Port Broadcast System	NOAA Port provides one-way broadcast communications of NOAA environmental data and information in near real time to NOAA and external users.	NWS
NWWS	NOAA Weather Wire Service	NOAA-operated service that provides users with NWS weather warnings, watches, forecasts, and other weather information.	NWS

System/Service	Name	Description	National Responsibility
OASIS	Operational And Supportability Implementation System	FAA system to be deployed at FAA facilities that contain functionality of the AWP and the FSDP as well as some workstations.	FAA
RMM	Remote Maintenance Monitoring	FAA system for monitoring navigation FAA and communication systems from remote location.	FAA
WAFS	World Area Forecast System	FAA and NOAA operated system for the world wide broadcast of aviation related weather information via satellite.	Both
WMSCR	Weather Message Switching Center Replacement	FAA-operated aviation weather communications system, consisting primarily of services “A” weather and NOTAMS.	FAA
WARP	Weather And Radar Processor	FAA system that provides weather processing, tools and an integrated workstation to consolidate weather data from multiple sources.	FAA
WSR-88D	Weather Service Radar	Doppler type radar that provides reflectivity, radial velocity, and spectrum width data to infer areas of precipitation, turbulence, hail, mesocyclones, and wind shear.	FAA/NWS
WSP	Weather System Processor	FAA system that detects and reports hazardous weather from ASR-9.	FAA

APPENDIX E
AVIATION WEATHER RESEARCH AND DEVELOPMENT

1.0 PURPOSE. This Appendix defines policy agreements between FAA and NWS for planning and conducting work in Aviation Weather Research and Development (R&D).

2.0 REQUIREMENTS.

2.1 FAA is responsible for determining aviation weather users' needs and developing processes for transforming valid weather needs into requirements. FAA processes include, but are not restricted to, those contained in the Users' Needs Analysis (UNA) and the Aviation Weather Technology Transfer (AWTT) process.

2.1.1 The UNA process is designed to determine and validate aviation weather users' needs. NWS expertise should be used as members of a users' needs analysis team and in the development of requirements resulting from the validated needs.

2.1.2 The AWTT process identifies decision points and decision criteria for identification and accelerated transition of selected research and development products into operational use. This process also contains mechanisms to identify risks as well as to prepare a concept of use, scientific/technical reviews, budget requests, and regulatory approval. Both agencies shall participate in the AWTT process.

3.0 COORDINATION. FAA and NWS shall collaborate in the development of requirements for aviation weather R&D.

4.0 SUPPLY, INSTALLATION, MAINTENANCE, SUPPORT, AND OPERATION OF R&D FACILITIES.

4.1 Research and development facilities operated for test, experimentation, or evaluation may be maintained separately by each agency. Where one agency has the capability of performing work for the other, interagency agreements shall be used rather than creating duplicate facilities.

4.2 Where it is agreed that one agency will perform its own work at the other agency's facility, the host agency will cooperate in helping to meet the requirements to supply, install, operate, support and maintain; in such cases, the performing agency will provide the necessary funds.

APPENDIX F
TRAINING

1.0 PURPOSE. This Appendix defines the policy agreements between FAA and NWS for the use of each other's resources in meeting each agencies training requirements.

2.0 POLICY.

2.1 NWS instructional personnel will be used to conduct, develop and review, joint training and education programs whenever a knowledge of meteorological interpretation is involved.

2.2 FAA instructional personnel will be used in joint training and education programs whenever a knowledge of air traffic requirements, procedures, aircraft operations or the maintenance of NAS equipment is involved.

3.0 OPERATIONAL CONSIDERATIONS.

3.1 Operational and logistical considerations pertaining to existing, agency-specific training will be established by the responsible agency.

3.2 Operational and logistical considerations pertaining to jointly developed and/or modified specific-use training will be mutually determined.

3.3 Participation by other than NWS and FAA personnel will be considered on an individual basis.

3.4 Jointly developed training materials produced for external users (e.g. pilots, dispatchers) will be governed by separate agreement between FAA and NWS.

4.0 FUNDING.

4.1 Travel and Per Diem costs.

4.1.1 If one agency requires the services or participation of the other agency's employees for a course, which is not a mutual requirement, the requiring agency shall be responsible for providing funds for the travel and per diem for all participants. Reimbursement will be based on the rules and regulations of the employing agency.

4.1.2 If training meets a joint requirement, each agency shall be responsible for providing funds for the travel and per diem of its respective personnel under its own guidelines and approval.

4.2 Instruction and Facility Costs.

4.2.1 If one agency requires the services or participation of the other agency for a course, which is not a mutual requirement, the requiring agency will provide the funds to the non-requiring agency to cover costs of the course including instruction, supplies, overhead and support service.

4.2.2 If the training satisfies a joint requirement, the cost of the course will be equally shared by both agencies, unless otherwise agreed in writing.

4.2.3 All reimbursement shall be accomplished in accordance with the standard accounting and billing practices of the two agencies.

5.0 TRAINING COORDINATOR. FAA and NWS shall each designate, in writing, a training coordinator. The FAA Training Coordinator will reside in the Air Traffic Resource Management Program Training Division, ATX-100. The NWS Training Coordinator will reside in the FAA Academy, Air Traffic Division, AMA-500, NWS Unit. The FAA Training Coordinator shall consult with Airways Facilities Training Division, AFZ-100 if necessary. Training Coordinators will determine, within the policies of this MOU, the agency/agencies responsible for developing and conducting training programs to meet requirements.

APPENDIX G
DEFINITIONS

Augmentation - The process of adding information to a weather observation that is beyond the capabilities of the automated weather observing system and/or is deemed operationally significant.

Automated Forecasting - A prediction, based upon algorithms, without human value added, of one or more meteorological elements which describe the state of the atmosphere in the future.

Automated Surface Observing System (ASOS) - A modular system designed to automatically collect, process, transmit, and archive weather sensor measurement data.

Aviation Weather Services (AWS) - Includes those activities, derived generally from the output of, and in addition to, the basic meteorological services, that produce those products required to serve the needs of aviation weather information users. These activities are consistent with the definition of specialized meteorological services contained in the original OMB Circular A-62, now rescinded but still used by OMB as guidance.

Aviation Weather Technology Transfer (AWTT) - A process established to manage and accelerate the transfer of aviation weather research and development into operational use.

Backup - A method of providing an observation, part of an observation, documentation, or communication of an observation when the primary method is unavailable or non-representative.

Basic Meteorological Services - Includes all activities required to produce a description in time and space of the atmosphere necessary to derive the products needed for the protection of lives and property of the general public.

Center Weather Service Unit (CWSU) - A unit within an FAA Air Route Traffic Control Center (ARTCC) and staffed by NWS meteorologists that provides meteorological support to the air traffic controllers.

Differences - The United States national standards/practices that differ from those standards and practices adopted by the International Civil Aviation Organization (ICAO). Contracting States, of which the United States is one, are obligated to notify ICAO of any differences between national regulations/practices and ICAO standards.

En route air traffic operations - Service provided aircraft on IFR flight plans, generally by centers, when these aircraft are operating between departure and destination terminal areas.

Exceptions - The United States definition of differences to regulations/practices that differ from those standards and practices adopted by the International Civil Aviation Organization (ICAO) and promulgated by the WMO in Technical Regulations.

Flight Documentation - Documents specified in Annex 3, Chapter 9, to the ICAO standards and practices for use by flight crews in pre-flight planning and in-flight operations.

Interagency Agreement (IAA) - A written agreement made between federal agencies as defined in Section 551(a) of Title 5 of the United States Code. Such agreements are appropriate where one federal agency either directly, or through a prime contractor, provides services, supplies or facilities to another federal agency, or where one federal agency obtains services, or supplies, or facilities from another federal agency, or that agency's contractor.

International Civil Aviation Organization (ICAO) - A specialized agency of the United Nations that sets world standards for Contracting States in the areas of air safety, navigation, environment, and security.

Joint-Use Observations - An automated or manual observation of one or more meteorological elements used by at least two agencies.

Local Agreements - Agreements by and between FAA and NWS facilities/offices below the regional office level that define policy agreements between those local entities only.

Memorandum of Agreement (MOA) - A written document executed by two or more parties, which creates a legally binding commitment and may require the obligation of funds.

Memorandum of Understanding (MOU) - A written document executed by two or more parties, which establishes policies or procedures of mutual concern. It does not require either party to obligate funds and does not create a mutually binding commitment.

National Agreements - Agreements by and between FAA and NWS Headquarters that define policy agreements between the two agencies. Regional and local offices must adhere to national agreements.

National Airspace System (NAS) - The common network of United States airspace; air navigation facilities, equipment and services, airports or landing areas; aeronautical charts, information, and services; rules, regulations and procedures, technical information, manpower, and material. Also included are system components shared jointly with the military.

National Weather Service Policy Directives - Directive system used by NWS to record delegations of authority, set policy, define programs, processes and standards, establish quality control, and augment training activities.

Next Generation Radar (NEXRAD) - Weather Surveillance Radar - 1988 Doppler (WSR-88D) used to better detect precipitation, wind velocity, and hazardous storms. NEXRAD is a tri-agency (FAA, NWS and DoD), jointly funded program and the data from all three agencies is provided to air traffic control.

Observation - The evaluation of one or more meteorological elements.

Office of Federal Coordinator for Meteorological Services and Supporting Research (OFCM) - An interdepartmental office reporting to the Administration of the National Oceanic and Atmospheric Administration (NOAA) established 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.

Pilot Weather Briefing (PWB) - A service provided by the Automated Flight Service Station to assist pilots in flight planning. Briefing items may include weather information, Notices to Airmen (NOTAMS), military activities, flow control information, and other items as requested by pilots.

Regional Agreements - Agreements by and between FAA and NWS Regional Offices that define policy agreements between the two agencies at regional levels. Local offices must adhere to regional agreements.

Reimbursement - A payment for costs incurred under one appropriation on behalf of another appropriation and subsequently recovered through inter-appropriation billings. Work performed by one agency for another agency is usually financed on a reimbursable basis. A written agreement between the agencies involved is required before work may be performed on a reimbursable basis.

Service Standards - Level of augmentation and backup provided at automated weather sites. Service level “D” is the minimum level of service and is a completely automated level. Service levels “C” through “A” include human-observed augmentation and backup.

Users’ Needs Analysis (UNA) - A process in which the FAA determines and validates users’ needs as a first step in the requirements setting process.

World Meteorological Organization (WMO) - A specialized agency of the United Nations created to coordinate global scientific activity in order to promote prompt and accurate weather information and other services for public, private and commercial use, including the airline and shipping industries.