

NATIONAL WEATHER SERVICE INSTRUCTION 10-1306

December 26, 2006

Operations and Services

Surface Observing Program (Land), NWSPD 10-13

SUPPLEMENTARY AVIATION WEATHER REPORTING STATION PROGRAM

NOTICE: This publication is available at: <http://www.nws.noaa.gov/directives/>

OPR:W/OS7 (J. Heil)

Certified by: W/OS7 (M. Campbell)

Type of Issuance: Routine.

SUMMARY OF REVISIONS: This directive supersedes , NWSI 10-1306, “Supplementary Aviation Weather Reporting Station Program,” dated October 17, 2003. Changes: (1) add reference to the FAA Automated Weather Sensors Systems (AWSS), (2) modifies wording to make instructions more clear, (3) removes references for access to FAA communications systems, (4) deletes augmentation from Backup Supplementary Aviation Weather Reporting Station (BSAWRS), and (5) adds to the Cooperators responsibilities the cost of inspections.

Signed

December 12, 2006

Dennis H. McCarthy
Director, Office of Climate,
Water, and Weather Services

Date

Supplementary Aviation Weather Reporting Station Program

<u>Table of Contents:</u>	<u>Page</u>
1. General	3
2. Types of Stations	3
3. Responsibilities	3
4. Instructions	3
4.1 Recruitment	3
4.2 Commissioned Automated Observing Systems	3
4.3 Multiple Cooperators at the Same Location	3
4.4 Multiple Cooperator Operations	3
4.5 Observation Dissemination	3
4.6 Government Owned Facilities	4
4.7 Instrumentation	4
4.8 Certification of Observers	4
4.9 Inspections	4

Appendices:

A. Configuration of Stations	A-1
B. NWS and Cooperator Responsibilities	B-1
C. Procedures for Management of SAWRS	C-1
D. Procedures for Management of BSAWRS	D-1
E. Procedures for Management of SAWRS-II	E-1
F. Guidelines for FARs Part 135.213(b)	F-1
G. Use of Government Owned Facilities	G-1

Exhibit:

A. NWS Form B-12 Cooperative Agreement for Aviation Weather Observations	EX-1
--	------

1. General. This instruction and attached appendices describe the National Weather Service (NWS) methods and procedures for the Supplementary Aviation Weather Reporting Station (SAWRS) program.
2. Types of Stations. SAWRS are established by aviation interests but receive observation program guidance and management by the NWS. There are various station configurations depending on whether manual observers or an automated weather observing platform is the source of weather observations. Appendix A provides the station configurations. Appendices C, D, and E provide the procedures for management of the different station configurations.
3. Responsibilities. The NWS and cooperating SAWRS managers (referred to as cooperators) enter into an agreement for services documented on Weather Service (WS) Form B-12, Cooperative Agreement for Aviation Weather Observations. WS Form B-12 is provided as Exhibit A to this instruction. Appendix B provides the NWS and cooperator responsibilities for the SAWRS program.
4. Instructions.
 - 4.1 Recruitment. The NWS does not recruit cooperators.
 - 4.2 Commissioned Automated Observing Systems. If an automated observing system is commissioned at a location, it will be the **official source of aviation weather observations** for the location.
 - 4.3 Multiple Cooperators at the Same Location. When two or more cooperators are requesting the establishment of a station or the change of an existing program, the applicants will indicate in writing the agreement they have with each other. This agreement will be filed as an appendix to WS Form B-12.
 - 4.4 Multiple Cooperators Operations. A single set of instruments will be used in taking official observations from a location. Cooperators will make mutual arrangements for providing and sharing common observing equipment. If this is not practical, due to distance or other reasons, exceptions to the above instruction may be allowed after approval by the NWS Regional Headquarters. Station documentation will include the details on which instrument set is used for each specific observation program. Only one observation at a given time is the official observation for any airport.
 - 4.5 Observation Dissemination. The aviation weather observations will be available locally for all airport users. At a minimum, the observation will be on display so as to be available for viewing by all aviation interests on the airport. Regional recommendations for exceptions to this policy may be approved by the Director, Office of Climate, Water, and Weather Services.

4.6 Government Owned Facilities. Cooperators supplementing NWS or FAA observing programs may use Government facilities and equipment in accordance with established procedures and subject to the concurrence of the respective agency. Such usage will not compromise the security of Government property. Refer to Appendix G.

4.7 Instrumentation. The requirements and standards for meteorological instruments will comply and otherwise be consistent with policies for NWS aviation observing programs in NWS Instruction (NWSI) 10-1302, Appendix A.

4.8 Certification of Observers. All SAWRS observers will be certified weather observers in compliance with NWSI 10-1304.

4.9 Inspections. Inspections will follow the standards in NWSI 10-1303 including use of the appropriate WS Form B-32 inspection guide and the WS Form B-33 inspection report. Observing programs should be inspected twice a year by a representative of the supervising weather forecast office or the Regional Headquarters in compliance with NWSI 10-1303. Since SAWRS is a no cost program to the government, inspection costs will be incurred by the Cooperators. This includes transportation, meals, and lodging, if necessary.

Appendix A - Configuration of Stations

<u>Table of Contents:</u>	<u>Page</u>
1. SAWRS	A-1
2. BSAWRS	A-1
3. SAWRS-II	A-1

1. Supplementary Aviation Weather Reporting Station (SAWRS). A station where an observer is the source of weather observations and there is not a commissioned automated surface observing system (ASOS, automated weather observing system (AWOS), or automated weather sensors systems (AWSS). The SAWRS observer is the source of the official observation if no Federal or contract weather observers are on duty. Appendix C provides procedures for management of SAWRS.
2. Backup Supplementary Aviation Weather Reporting Station (BSAWRS). A staffed station where a commissioned AWOS/AWSS is the source of weather observations. The BSAWRS observer provides backup and/or augmentation to the AWOS if no Federal or contract weather observers are on duty. Appendix D provides procedures for management of BSAWRS.
3. Supplementary Aviation Weather Reporting Station-II (SAWRS-II). A staffed station where a commissioned ASOS is the source of weather observations. The SAWRS-II observer provides backup to the ASOS if no Federal or contract weather observers are on duty. Appendix E provides procedures for management of SAWRS-II.

Appendix B - NWS and Cooperator Responsibilities

Table of Contents:

	<u>Page</u>
1. The Office of Climate, Water, and Weather Services at National Weather Service Headquarters	B-1
2. Regional Headquarters	B-1
3. Weather Forecast Offices	B-1
4. Cooperators	B-2
1. <u>The Office of Climate, Water, and Weather Services (OCWWS) at National Weather Service Headquarters.</u> OCWWS will:	
a. Coordinate and establish national policy for the program.	
b. Develop documentation and coordinate interagency documentation requirements.	
c. Consult with the Federal Aviation Administration (FAA) headquarters and manage national level issues.	
2. <u>Regional Headquarters.</u> Regional Headquarters will:	
a. Approve or deny applications to establish supplementary aviation weather reporting stations. Upon receipt of application, the NWS Regional Headquarters should consult with appropriate FAA regional headquarters Flight Standards or Technical Standards branch to evaluate the station application.	
b. Upon request, evaluate the feasibility of using weather observations from one airport to permit Federal Aviation Regulations (FARs) Part 135 operations at another airport. Refer to appendix F for guidelines.	
c. Coordinate management of the program with the supervising Weather Forecast Offices.	
3. <u>Weather Forecast Offices (WFO).</u> WFOs supervise all SAWRSs in their county warning area. The meteorologist in charge of the supervising WFO will:	
a. Coordinate management of the program with the NWS Regional Headquarters.	
b. Establish a cooperative agreement, using WS Form B-12, between the NWS and the SAWRS cooperator.	

- c. Provide applicable observing handbooks, training handbook, instructions and forms required for taking and recording observations.
 - d. Provide guidance to the cooperator in the establishment and perform the initial, as well as the semi-annual inspections of a station.
 - e. Administer certification examinations to observers.
 - f. Provide quality control of observations and observational guidance as requested.
4. Cooperators. Cooperators will sign a WS Form B-12 with the NWS. The form will provide terms and responsibilities, the cooperator agrees to:
- a. Provide, install, operate, relocate if necessary, protect and maintain, all manual or backup observing equipment in accordance with NWS aviation observing program standards in NWSI 10-1302 and applicable observing handbooks (refer to Appendix C, D or E).
 - b. Provide space to properly site and operate equipment in accordance with NWSI 10-1302.
 - c. Provide observations to company aircraft and, when required, to a designated NWS or FAA facility.
 - d. Provide at least one person certified to observe and record the weather observation or element(s) in accordance with this instruction, and applicable observing handbooks.
 - e. Mail the original observational forms to a NWS facility as directed,
 - f. Inform the supervising WFO or NWS Regional Headquarters when a change in flight schedules results in a change in the schedule of observations.
 - g. Annotate and return the certificates of former employees to the issuing authority.
 - h. Permit NWS officials access to the station.
 - i. Provide additional services as listed on WS Form B-12.

Since this is a no cost program to the government, the Cooperator will also provide transportation, meals and lodging, if necessary, for inspections.

Appendix C - Procedures for Management of SAWRS

<u>Table of Contents:</u>	<u>Page</u>
1. General	C-1
2. Aviation Observations	C-1
3. Documentation	C-2

1. General. Each NWS Regional Headquarters or supervising Weather Forecast Office (WFO) provides observation technical guidance, observer certification, station inspections, and quality control to help ensure the SAWRS cooperator properly conducts the aviation weather observation program.

2. Aviation Observations. Observations are taken and recorded in accordance with standards and instructions provided in NWSI 10-1306 and NWS Observing Handbook Number No. 8 (WSOH #8).

a. The WS Form B-12 provides a schedule of observations provided by SAWRS. The Federal Aviation Regulations (FAR) determine the schedule of observations as follows:

- (1) FAR Parts 121 and 135 - Non-Scheduled Operations. One observation should be taken, recorded, and reported to the aircraft, if practical, 30 minutes prior to approach or departure, but in no case later than the commencement of each approach or departure. Under changing conditions, additional SPECI reports will be taken, recorded, and reported to the aircraft with the frequency specified by instructions in WSOH #8 until the approach or departure is completed. Observations may be discontinued upon the completion of each operation.
- (2) FAR Parts 121 and 135 - Scheduled Operations. When scheduled flight operations are conducted, observations are to be taken in accordance with instructions in WSOH #8 and reported beginning at least 1 hour prior to scheduled arrival and continuing until the actual departure of the aircraft. If the departure is scheduled more than 1 hour after the arrival, observations may be discontinued after the arrival until immediately prior to the scheduled departure.

- b. At stations where SAWRS observers supplement observations taken by the FAA (during the hours the FAA operations are closed), and the observing equipment is shared by Government. The cooperator may install and maintain a communication system.
 - c. At stations where the NWS provides terminal aviation forecasts (TAF), observations will be communicated to the FAA facility for long-line transmission. A phone call, if used, will be at the expense of the SAWRS cooperator.
 - d. Dew point temperatures will be reported by SAWRS observers if a TAF is prepared for the location.
3. Documentation. The NWS provides each SAWRS with two copies of WSOH #8 and one copy of the NWS Training Guide for Surface Observations. These documents are available from the National Logistical Supply Center and the stock numbers are found in NWS Engineering Handbook No 1.

Appendix D - Procedures for Management of BSAWRS

<u>Table of Contents:</u>	<u>Page</u>
1. General	D-1
2. Aviation Observations	D-1
3. Backup of AWOS/AWSS	D-2
4. Documentation	D-2

1. General. Each NWS Regional Headquarters or supervising Weather Forecast Office provides observation technical guidance, observer certification, station inspections and quality control to help ensure the BSAWRS properly conducts the aviation weather observation program.

2. Aviation Observations. The observers provide backup to AWOS/AWSS. Such backup should be provided in accordance with standards and instructions provided in this instruction and the applicable AWOS/AWSS Observer Handbook. Backup of the AWOS/AWSS observations will be in the format as described in WSOH # 8 and instructions set by the system manufacture.

- a. Details of the understanding between the NWS Regional Headquarters and the BSAWRS will be described on WS Form B-12. A BSAWRS cooperator must agree to the following terms:
 - (1) The observers have received operator training for overriding and restoring the automated system at no cost to the NWS,
 - (2) The hours of backup agree with the time of observations listed on the WS Form B-12.
- b. Only Non Federal AWOS/AWSS equipped with an observer terminal (OT) are capable of being augmented by the observers. The observer will not have access to an OT at a Federal AWOS/ASOS, since a configuration change of having two OT's has caused problems with data. If problems develop, it is the responsibility of the BSAWRS to ensure the AWOS/AWSS communications are turned off and put into a "test" status prior to initiating the BSAWRS observations, as detailed in the AWOS/AWSS Operators Handbook. Any expenses incurred will be with the cooperator.
- c. Quality control responsibility for AWOS/AWSS equipment belongs to the FAA, the AWOS/AWSS owner, and/or manufacturer.

- d. Backup situations range from failure of a single sensor to total systems outage resulting in loss of all data processing and communications to the system being in "test" status following a maintenance action. To backup AWOS/AWSS, the BSAWRS cooperator must document site specific backup procedures in coordination with the supervising WFO or the NWS Regional Headquarters.
3. Backup of AWOS/AWSS. The observer will provide backup for critical element failures during AWOS/AWSS outages in accordance with the observing handbooks. An element is considered failed if it is missing, garbled or unquestionably erroneous. Critical elements are listed below:
- a. Wind direction, speed, and character,
 - b. Visibility,
 - c. Present Weather (Augmented in remarks),
 - d. Sky Condition,
 - e. Temperature/Dew Point, and
 - f. Altimeter Setting.
4. Documentation. Provide each BSAWRS with two copies of WSOH #8 and one copy of the NWS Training Guide for Surface Observations. These documents are available from the National Logistical Supply Center and the stock numbers are found in the NWS Engineering Handbook No 1.

Appendix E - Procedures for Management of SAWRS-II

<u>Table of Contents:</u>	<u>Page</u>
1. General	E-1
2. Aviation Observations	E-1
3. Documentation	E-2

1. General. Each NWS Regional Headquarters or supervising Weather Forecast Office provides observation technical guidance, observer certification, station inspections and quality control to help ensure the SAWRS-II properly conducts the aviation weather observation program.

2. Aviation Observations. The SAWRS-II observer provides backup to ASOS. Such backup should be provided in accordance with standards and instructions in this instruction, FAA Order 7900.5, and in WSOH #8. There may be occasions where the SAWRS-II observer may use information from Weather Service Observing Handbook No. 7 (WSOH #7)- ASOS Augmentation and Backup, Part III.

- a. The SAWRS-II cooperators will not have access to an ASOS Operator Interface Device (OID), and will not edit ASOS observations. There will be backup observations and no augmentation of ASOS at a SAWRS-II site.
- b. The ASOS will remain in operational mode whenever possible. It will not be turned off when observational elements are missing. To back up ASOS, the cooperators must develop site specific procedures in coordination with the supervising WFO and NWS Regional Headquarters.
 - (1) The SAWRS-II will notify the supervising NWS WFO office when ASOS appears to be disabled or malfunctioning.
 - (2) If an element appears to be erroneous, the ASOS Operations and Monitoring Center (AOMC) will be notified by the supervising NWS WFO office. The AOMC will turn off report processing for the specific sensor in question when requested by the NWS staff.
- c. SAWRS-II observations will not be taken while ASOS is functional and reporting the elements. SAWRS-II sites will coordinate with the supervising WFO prior to backup of the ASOS.
- d. Two types of SAWRS-II observations may be reported, both of which are dependent on the operational status of ASOS. The observations will follow the standards in WSOH #8.

- (1) Missing Element Observation. Missing element observations will be recorded on the WS Form MF1M-10C as a corrected observation by the SAWRS-II observer. Missing element observations will be recorded only when one or more of the following critical elements is missing from the ASOS:
 - (a) Wind (direction, speed, and character),
 - (b) Visibility,
 - (c) Present Weather,
 - (d) Sky Condition,
 - (e) Temperature/Dew Point (Dew Point is required only if a terminal aviation forecast is provided for the location),
 - (f) Altimeter Setting.
- (2) SAWRS-II operators will report complete observations following the standards in WSOH #8 if ASOS is wholly disabled.

e. Communications

- (1) At sites where the NWS provides TAFs, complete observation, including remarks, may be phoned to the appropriate NWS office (OCONUS Only) or Flight Service Station (FSS) for long line transmission. The phone call will be at the expense of the SAWRS-II cooperater unless other arrangements such as a hot line or 800 number are already in place. The appropriate NWS/FAA office will transmit a corrected observation in accordance with applicable observing handbooks.
- (2) SAWRS-II operators will not send corrected observations containing missing elements or complete observations directly into any network or data distribution system except for local airport use.

- f. The cooperater will have a method of determining current data being reported by the ASOS. Methods may range from a telephone call to the ASOS voice line to a cooperater funded and maintained video display unit.

3. Documentation. The NWS provides each SAWRS-II with two copies of WSOH #8, one copy of the NWS Training Guide for Surface Observations, and one copy of the WSOH #7, Part III. These documents are available from the National Logistical Supply Center and the stock numbers are found in the NWS Engineering Handbook No 1.

Appendix F - Guidelines for FARs Part 135.213(b)

<u>Table of Contents:</u>	<u>Page</u>
1. Requests	F-1
2. Evaluations	F-1
3. Recommendations	F-1

1. Requests. Part 135, paragraph 213(b) stipulates, in some cases, air taxi and commercial operator pilots may conduct instrument flight rules operations at an airport using weather observations taken at another airport. Such procedures will only be authorized when, after investigation by the NWS and the FAA Flight Standards District Office, it is found the standards of safety for operations allow the deviation.

2. Evaluations. The NWS recommendation concerning the representativeness of observations should be made by the NWS Regional Headquarters using the following guidelines:

- a. If the weather observing sites are less than 10 miles apart, an evaluation of the terrain and/or obstructions between the sites for representativeness should be undertaken.
- b. If weather observing sites are more than 10 miles apart, a thorough assessment of terrain, obstructions, climatology, etc., will be carried out to determine if critical aviation weather elements taken at one point can be representative of what is occurring at the other.

3. Recommendations. Each request should be coordinated among the NWS regional staff. Recommendations should be made to the requesting FAA Flight Standards District Office, for action, not to the operator involved and should be confined to stating if the weather observations from one location can be expected to be generally representative of the weather occurring at the other location. Recommending any other particular course of action to the FAA should be avoided.

Appendix G - Use of Government Owned Facilities

<u>Table of Contents:</u>	<u>Page</u>
1. Authorization	G-1
2. Annotation	G-1

1. Authorization. When authorized to use Government Owned facilities, the SAWRS cooperators will be held reasonably accountable and responsible for the security of the property on the facility. The WS Form B-12 will be annotated in the cooperators responsibility section when the cooperator is authorized to use a Government facility.

2. Annotation. The annotation will be as follows:

“Ensure the security of the Government owned facility and equipment. The cooperator will be responsible and accountable for the damage or loss of property while the facility is occupied by the cooperator. Access to the Government facility will be strictly controlled and limited to cooperator staff approved by the Government for the purpose of taking and disseminating aviation weather observations. The cooperator staff is restricted to using the equipment necessary and approved for the SAWRS program. The cooperator will maintain strict control of, and accountability for, office keys and/or lock codes. Any Government supplied keys will not be duplicated. The use of Government telephones is restricted to official Government business. Any unauthorized use of Government telephones will be billed directly to the cooperator. Except as otherwise provided by law, the Government will not be responsible for the loss of, or damage to, the cooperator’s equipment, or death or injury to the cooperator or the cooperator’s employees. Failure to comply with these provisions will result in the immediate loss of authorization to use the Government facility and Government action to recover for any damages or losses.”

Exhibit A - WS Form B-12 Cooperative Agreement for Aviation Weather Observations

WS Form B-12 (4-02) (Pres. by NWSI 10-1306)		U.S. Department Of Commerce National Oceanic and Atmospheric Administration National Weather Service	
COOPERATIVE AGREEMENT FOR AVIATION WEATHER OBSERVATIONS			
Station		State	Effective Date
Name of Cooperator		Time of Observations	
I. Responsibilities of the Government: 1. Provide applicable observing handbooks, training handbook, instructions and forms required for taking and recording observations. 2. Provide technical guidance to the cooperator in the establishment and perform the initial inspection of a station. 3. Administer certification examinations to observers. 4. Conduct two station inspection visits annually. 5. Provide quality control of observations and technical guidance as requested.			
II. Responsibilities of the Cooperator: 1. Provide, install, operate, relocate if necessary, protect and maintain, all manual or backup observing equipment in accordance with NWS standards as described in NWSI 10-1302 and WSOH #8. 2. Provide space to properly site and operate equipment in accordance with NWSI 10-1302. 3. Provide observations to own company aircraft, and when required, to a designated NWS or FAA facility, 4. Provide at least 1 qualified person certified to observe and record the weather observation or element(s) in accordance with NWSI 10-1306, and WSOH #8 handbook, 5. Mail the original observational forms to a NWS facility as directed, 6. Make all observations taken and recorded, available to all other local aviation interests, 7. Inform the NWS when a change in flight schedules results in a change in the schedule of observations, 8. Annotate and return the certificates of former employees to the issuing authority, 9. Permit NWS officials access to the station 10. Provide additional services as listed on WS Form B-12.			
III. This agreement may be terminated by either party upon written notice to the other.			
COOPERATOR		NOAA, NATIONAL WEATHER SERVICE	
BY		BY	
TITLE		TITLE	
CITY - STATE - ZIP CODE	DATE	OFFICE	DATE

WS Form B-12 Cooperative Agreement for Aviation Weather Observations