

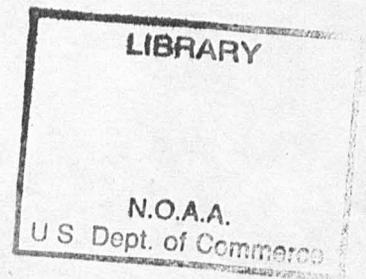
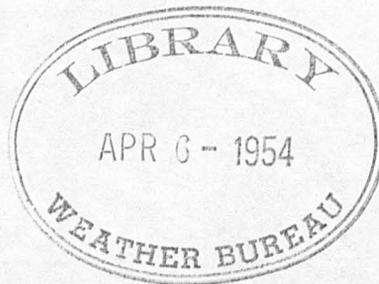
U.S. Weather Bureau.

Circular N. 6th ed., rev. Air Weather Service addendum 2

AIR WEATHER SERVICE
MILITARY AIR TRANSPORT SERVICE
UNITED STATES AIR FORCE
Washington 25, D. C.

AIR WEATHER SERVICE
ADDENDUM II
to
WBAN MANUAL OF SURFACE OBSERVATIONS

QC
983
: C57
no. N
6th ed.
rev.
1951
AWS
addendum 2



Effective 1 October 1952

85661

National Oceanic and Atmospheric Administration

ERRATA NOTICE

One or more conditions of the original document may affect the quality of the image, such as:

Discolored pages

Faded or light ink

Binding intrudes into the text

This has been a co-operative project between the NOAA Central Library and the Climate Database Modernization Program, National Climate Data Center (NCDC). To view the original document, please contact the NOAA Central Library in Silver Spring, MD at (301) 713-2607 x124 or www.reference@nodc.noaa.gov.

LASON
Imaging Contractor
12200 Kiln Court
Beltsville, MD 20704-1387
March 21, 2005

AIR WEATHER SERVICE
MILITARY AIR TRANSPORT SERVICE
UNITED STATES AIR FORCE
WASHINGTON 25, D. C.

1 October 1952

1. GENERAL. The WBAN Manual of Surface Observations (Sixth Revised Edition) as supplemented by AWS Addendum II is directive upon all units of the Air Weather Service. Addendum II supersedes Addendum I dated 15 March 1951 and Amendment 1 through 4 to Addendum I. This addendum will be effective upon receipt. The pages of Addendum I including Amendment 1 through 4 will be removed from the WBAN Manual of Surface Observations and the pages of Addendum II inserted.

2. SCOPE. The WBAN Manual of Surface Observations has been prepared to provide instructions covering Airways and Synoptic Observations. This AWS Addendum provides instructions common only to the Air Weather Service. Instructions contained in the WBAN Manual of Surface Observations and this AWS Addendum will take precedence over conflicting instructions contained in any publication. Interpretations or amplifications of instructions contained in the WBAN Manual and this AWS Addendum will not be made, except as noted below:

a. When specifically authorized by the WBAN Manual or this AWS Addendum.

b. When required to fulfill local needs in areas of hostilities.

c. When the supplemental information has been approved by this headquarters.

3. SUPPLEMENTS. Wing, group, and independent squadron Commanders will supply necessary instructions or amplifications as "Supplements" to this AWS Addendum. The exact format of these supplements are at the discretion of the organization preparing them. Supplemental instructions issued in accordance with paragraph 2c will be forwarded to this headquarters for approval prior to issue. Organizations issuing supplements will forward ten (10) copies of the supplement to this headquarters and will make distribution to adjacent AWS units to insure that such units are aware of the supplemental procedures.

4. SPECIAL PROJECTS. AWS units operating in conjunction with a special project are authorized to deviate from the instructions in the WBAN Manual of Surface Observations and this AWS Addendum when so directed by the agency in charge of the project. All observations transmitted over normal weather communications circuits will be made in accordance with these instructions.

5. PROCEDURES. The WBAN Manual of Surface Observations and USWB Circular "S" will be bound in a loose-leaf, hard-backed binder. The punched holes will be protected by use of gummed reinforcements. The AWS Addendum will be entered in accordance with instructions in the FOREWORD.

6. SUPPLY OF MANUALS. Additional copies of the WBAN Manual of Surface Observations, this AWS Addendum and USWB Circular "S" will be procured from the Wilkins AF Depot, Shelby Ohio in accordance with instructions contained in AWS Letter 5-3.

BY COMMAND OF MAJOR GENERAL SENTER;

OFFICIAL:

NICHOLAS H. CHAVASSE
Colonel, USAF
Chief of Staff

Robert B. Edwards
ROBERT B. EDWARDS
Lt. Colonel, USAF
Adjutant General

DISTRIBUTION:

Hq, AWS - - - - -	5
Hq, 2058th AWW - - - - -	113
Hq, 2143d AWW - - - - -	96
Hq, 1st Wea Gp - - - - -	73
Hq, 2nd Wea Gp - - - - -	77
Hq, 3d Wea Gp - - - - -	86
Hq, 4th Wea Gp - - - - -	35
Hq, 6th Wea Gp - - - - -	28
Hq, 7th Wea Gp - - - - -	31
Hq, 8th Wea Gp - - - - -	110
Hq, 9th Wea Gp - - - - -	47
Hq, 8th Wea Sq - - - - -	35
Hq, 55th SRS - - - - -	2
Hq, 53d SRS - - - - -	2
DCD - - - - -	15
AWS DO/STDS - - - - -	50
Stock, Wilkins AF Depot, Shelby, Ohio - - - - -	1195

FOREWORD

This Air Weather Service Addendum to the WBAN Manual of Surface Observations was prepared by Headquarters, Air Weather Service, to prescribe certain observing procedures common to the Air Weather Service that are not covered in the basic WBAN Manual of Surface Observations.

This addendum has been prepared in such a manner as to permit the addendum pages to be inserted in the basic manual adjacent to the material to which reference is made. Remove the pages of the previous addendum including the amendments thereto and insert the pages of this addendum; the pages are numbered in two places. The number in the lower margin is the addendum page number and the number in the upper margin is the page number that will be used after the page is placed in the WBAN Manual. The page will carry the same number as the basic manual page and the letter designator will increase in alphabetical order. Instructions for the entry of each page will be given in the lower margin of the page.

The basic WBAN Manual of Surface Observations will be marked to indicate that an addendum item pertains to the paragraph. Make the annotation in accordance with the following example:

(See par A1230)

1230. INTERCONNECTION OF LAYERS. *****

Those pages of the addendum which do not refer to a specific paragraph or page of the basic WBAN Manual will be bound following the last page of the WBAN Manual.

The attention of all personnel is directed to AFR 105-10, "Limited Weather Observations by Control - Tower Operators". This AFR provides the weather observer with a valuable aid in his duties of providing the most current and representative weather data for aircraft operations. The observer will always use these control - tower observations to the maximum extent, and should contradict the control - tower observation only when he has later or better information upon which he may base his observation.

1a

All10. DEFINITION OF SKY COVER. The ceilometer or ceiling light will always be used as a guide in estimating sky cover during periods of darkness. In addition, the observer will never attempt to make a night-time cloud or sky cover observation without first permitting his eyes to become adapted to the darkness. Darkness adaptation requires a minimum period of about 5 minutes after leaving a lighted room similar to that found in a weather station. During this time the observer should not look at lights or lighted areas. If this precaution is not observed, darkness adaptation will never be obtained. The actual cloud or sky cover observation should be made from a darkened area, if at all possible. Detachment commanders will attempt to secure permission to turn off, or have turned off, the lights adjacent to the observation site during the short period of time necessary to make the cloud or sky cover observation.

(Insert Facing Page 1 of WBAN Manual)

5a

A1431. MEASURED CEILING. A ceiling may be classified as measured when determined by use of a ceilometer or ceiling light, only when the ceiling height is less than ten (10) times the length of the baseline used. For example; if the baseline were 1000 feet in length, the maximum measured ceiling which may be reported would be 9,500 feet. When the ceiling is ten (10) times or more the length of the baseline, the indications from a ceilometer or ceiling light will be used as a guide in estimating the height.

(Insert Facing Page 5 of WBAN Manual)

7a

A1441.1 OBSERVATIONS ON REDUCED BASELINE. All observing stations will survey and mark baseline distances of 250 feet, 500 feet and 1000 feet for use with the ceiling light or ceilometer projector and clinometer. The shorter baselines will be used for heights as indicated:

- 250 Feet - Heights of 300 feet or less.
- 500 Feet - Heights of more than 300 feet up to and including 1500 feet.
- 1000 Feet - Heights over 1500 feet.

It is recommended that baseline distances of 1,500 feet and 2,000 feet be surveyed and marked for use with clouds above 10,000 feet. Tables giving cloud height versus elevation angle will be available for all baseline distances used. The tables will clearly state whether the tabular values of cloud height incorporate any difference in elevation between point of observation and the surface, as defined in paragraph 1412.

(Insert Facing Page 7 in WBAN Manual)

9a

Al442. BALLOONS. Delete the present paragraphs (2) and (3) of the basic manual and substitute the following in their place:

- (2) Watch the balloon continuously, determining with a stop watch, the length of time required for the balloon to enter into the base of the layer. The point of entry will be considered as the time at which the balloon first begins to fade due to the effects of the layer. If there is any doubt in the mind of the observer as to the accuracy of the balloon's indications, the height indicated will be used as a guide in estimating the height of the layer. The observer will always be alert for such things as the balloon entering the side of a cloud rather than the base, the balloon being obscured by a cloud drifting across the field of view below the balloon, or effects of precipitation on the ascent rate of the balloon.
- (3) Determine the height by means of the table appropriate to the balloon used. (See Table 4 for values of height versus time). Interpolate between the given values to determine heights at the nearest 5 second period.

12a

A1448. CEILOMETER OPERATION. Ceilometer Equipment, AN/GMQ-2, will be operated during periods when clouds are present or are forecast to be present. A theodolite check of the angle recording accuracy of the equipment will be made at least once each month by setting up a theodolite adjacent to the detector and sighting on the spot produced by the projector beam on the cloud base. This check should be made at as many different elevation angles as possible to insure that the equipment is operating properly. The comparison is made by comparing cloud heights as determined by the ceilometer and the theodolite. If the cloud heights indicate a random (plus and minus at adjacent values) error, the operational procedures used in the comparison should be carefully checked. If this check does not indicate a discrepancy, this fact should be reported to the squadron headquarters for action by a qualified technician. If the elevation angles or cloud heights indicate a constant error at all values, this fact will be reported to the squadron headquarters for immediate correction by a qualified technician. Enter in AF Form 208A for the ceilometer AN/GMQ-2 the results of this check and action taken to remedy any discrepancies noted.

A1448.1 Ceilometer Equipment, AN/GMQ-2, will be operated in accordance with instructions contained in SECTION 4, "OPERATION" of TO-16-30GMQ2-5. Care will be taken to insure that the threshold setting is not so high as to give angle markings in excess of 4 to 6 degrees for clouds less than 5000 feet above the surface.

A1448.2 The ceilometer record will be evaluated in accordance with SECTION 4, "OPERATION" of TO 16-30GMQ2-5, as supplemented below:

- (1) The base of the cloud layer will be the point of low maximum ceilometer reaction. This point is determined by selecting the point of first maximum reaction while the detector is on its upward scan and the last point of maximum reaction while the detector is on the downward scan. The elevation angle corresponding to these points is selected by use of dividers as indicated in TO 16-30GMQ2-5 and the one degree correction for time lag applied. This correction is expressed as follows:

<u>Detector on upward scan</u>	<u>Detector on downward scan</u>
Elevation angle minus 1 Degree	Elevation angle plus 1 Degree

A1448.3 Ceilometer chart rolls will be prepared in accordance with the following instructions.

- (1) At the beginning and end of each roll enter the station name, date of beginning and ending of the roll (day, month and year, LST).
- (2) At the beginning and end of each roll enter the length of the baseline used.
- (3) Enter the date and time (LST) of starting and stopping the recorder and the method of operation used.

103440 May 51
AUTO-ON

A1448.4 Ceilometer chart rolls will be disposed of in accordance with AWS Letter 181-2. The chart rolls will be placed in the cardboard shipping box and the data blocks on the end of the box completed, if the rolls are to be forwarded from the station. Enter the following data in these blocks;

- (1) Station name
- (2) Date of beginning of roll
- (3) Date of end of roll

A1451. Balloons will be used in accordance with paragraph 1451 of the basic manual, regardless of whether the observation is for scheduled transmission.

A1510. When the space allotted in column 3-4 (Column 3 on the revised forms) is not large enough to permit entry of ceiling and sky condition data, place additional entries on the next line. Leave the other columns in the lower line blank unless the remarks require the use of additional space in column 14 (Column 13 on the revised forms).

14a

A1511. SUMMATION. Observers will use extreme caution in classifying a layer as "thin" since this classification may have a very definite effect on the operational use of the observation. The previous criteria for classifying a layer as thin "i.e., use of sun or moon" can not be used for this purpose. The transparency of a layer must be determined by the observer being able to plainly see the sky or higher clouds through the layer.

The following interpretation will be made in assigning sky condition symbols to a layer whose amount is recorded as 0 or which does not increase the summation total.

a. A sky condition symbol will not be assigned to a layer whose amount is recorded as 0, when that layer is the only layer in the sky. Existence of such a layer will be shown in remarks.

b. When multiple layers are recorded as having 0 amounts, a sky condition symbol will be assigned to the lowest layer at which the summation total is recorded as 0.1.

c. A sky condition symbol will be assigned to an upper (above another layer) cloud layer whose amount is recorded as 0. The summation total at the upper level will determine the sky condition symbol to be assigned.

d. The 0828 LST observation shown on page 120 of this manual illustrates the assignment of sky condition symbols to upper layers whose amount is recorded as 0.

e. Example (2) on page 14 of this manual illustrates the assignment of sky condition symbols to a single layer whose amount is recorded as 0. This example also illustrates the assignment of sky condition symbols to multiple layers whose individual amounts are recorded as 0 and whose total is 0.1.

(Insert Facing Page 14 in WBAN Manual)

18a

A1544. Enter "TOTAL OPAQUE SKY COVER" in the heading of Column 38 of the old WBAN 10A-10B Forms. The revised WBAN 10A-10B forms have this entry in Column 36 to place all cloud data together. No entry is necessary in the column heading of the revised forms.

(Insert Facing Page 18 of the WBAN Manual)

21a

A2010. The provisions of paragraph A1110 pertaining to darkness adaptation are applicable to visibility observations.

A2011. Observations of visibility from the control tower will normally be made by tower operators. Detachment commanders will make necessary arrangements with the local AACS commander to insure that control tower visibility observations are made when requested by the local weather station. The detachment commander will also be responsible for providing necessary charts of visibility check points (see paragraph A2110.1) and training of tower operators in accordance with AWS Letter 50-1.

A2011.1 If the control tower visibility differs from the visibility in the current observation, a new visibility observation will be made immediately by the observer. The control tower visibility will be used as a guide, and if the range of vision of the observer is less than that of the tower operator (i.e., buildings, trees, etc. prevent the observer from seeing the horizon), the tower visibility should be used as the official visibility, unless the observer has good reason to believe that the control tower visibility is not representative.

A2011.2 The detachment commander of each AWS unit will contact the local AACS commander and the Base Operations Officer to advise them of the use made of control tower visibilities. It is recommended that a base policy on the use of control tower visibility as regards weather minimums be established at the time of this coordination.

A2110. CHART OF VISIBILITY MARKERS. Charts of visibility markers will be prepared in accordance with the following specifications. Stations presently having charts that do not differ materially in scale or format from these specifications need not prepare a new set of charts.

- (1) The chart for visibility markers within $1\frac{1}{2}$ miles of the point of observation will be drawn on the scale of 1 inch equals $\frac{1}{4}$ mile. Concentric circles will be drawn for each $\frac{1}{4}$ mile distance from the point of observation.
- (2) The chart for all visibility markers will be drawn on a minimum scale of 1 inch equals 2 miles. Concentric circles will be drawn for each 1 mile distance from the point of observation.

- (3) Day and night visibility markers may be shown on one chart, or separate charts may be prepared for day and night markers, the letter "N" will be entered below the night visibility markers.
- (4) Visibility markers will be selected in accordance with paragraphs 2120, 2130 and 2140 of the basic manual.
- (5) The distance to the marker, height of the marker above the ground and identification of the marker will be placed below a simple drawing of the marker on the chart, as shown below:

Water Tower
D-3 $\frac{1}{2}$ H-75

A2110.1 A set of visibility charts prepared in accordance with paragraph A2110 will be prepared for use in the control tower. This set of charts will be prepared with the tower as the point of observation.

A2110.2 Photographic panorama. Another type of visibility diagram can be constructed photographically to aid in the determination of visibility values. It is suggested that this diagram be used to supplement the chart of visibility markers described in paragraph A2110.

The first step in preparation of this panorama photograph is to set up a wide angle camera at the point from which visibility is observed. This should be done on a very clear day. A series of photographs are then taken, covering the entire 360° of horizon. The pictures should overlap slightly.

The finished prints are then mounted, in consecutive order, on a piece of cardboard or similar material. Overlap areas are cut away with a razor blade to produce a continuous strip picture of the entire horizon.

An accurate map of the local area should next be obtained and distances to prominent objects which appear on the photograph should be scaled off, using the visibility observation point as the origin. The strip photograph is then annotated by inserting the distances over the appropriate object, as well as the cardinal compass points, which are also obtained from the map.

The last step is to photograph the annotated strip picture in order to produce a reduced print of a useable size.

38a

2. Delete example 2 of the basic manual and substitute the following;

"R-reported in 1228 obs; S-began at 1235 and both continued through 1330. Enter remark in 1328 obs; "SB35".
NOTE: If the R- had stopped at 1235 the entry in remarks would have been "RE35 SB35".

3. Delete example 3 of the basic manual and substitute the following;

"No precipitation reported in the 1228 obs; SW began at 1240 and was reported by a special (See par. A9132.6(4); SW stopped at 1255, began again at 1305 and stopped at 1315. Enter remark in 1328 obs; "SE15".

(Insert Facing Page 38 of WBAN Manual)

46a

A4330. Enter a large X in space for snow depth on the line "Mid to". See Figure 6 on page 120.

(Insert Facing Page 46 of the WBAN Manual)

49a

A5100. At six monthly intervals all ML-24 and ML-224 thermometers on hand in the weather station will be given an ice bath zero check. Those thermometers that exhibit an average error greater than $.5^{\circ}\text{C}$ ($.9^{\circ}\text{F}$) will no longer be used.

The ice bath should consist of approximately one (1) pint of finely chopped ice made from distilled water and approximately one (1) pint of distilled water in a glass jar. Submerge the thermometers completely except for about $\frac{1}{2}$ inch to allow finger grip when reading. Agitate the ice and water bath while the thermometers are immersed. Submerge the thermometers for two (2) minutes in the ice and water bath prior to the first reading.

Remove the thermometer from the ice and water bath as far as the height of the top of the mercury column, quickly read it, and again submerge the thermometer to the original depth. Six readings of each thermometers should be taken and recorded at one (1) minute intervals.

If the average error in six (6) readings exceeds $.5^{\circ}\text{C}$ ($.9^{\circ}\text{F}$) the thermometer will be marked "Defective Thermometer" and returned to the base supply in accordance with TO 16-2BEE-1 dated 14 August 1951.

Records of the individual thermometer tests will be maintained in station files until the next quarterly inspection.

(Insert Facing Page 49 in WBAN Manual)

55a

A5213. CHARTS. Thermograph Chart, ML-234, will be used with Thermograph, ML-277(), in cold climates. Thermograph Chart, ML-235, will be used with Thermograph, ML-77(). These charts will be obtained through normal supply channels and completed charts will be disposed of in accordance with AWS Letter 181-2.

(Insert Facing Page 55 in WBAN Manual)

61a

A6010.1 Enter Table 9 with dew point with respect to ice in degrees and tenths and read the dew point with respect to water to the nearest whole degree. Enter Tables 10A and 10B with dry bulb temperature in whole degrees and relative humidity with respect to ice in whole percent. Interpolate between the given 10% columnar headings when necessary. Read the relative humidity with respect to water to the nearest whole percent. Do not use these tables when Psychrometric Calculator, ML-429/AM is used.

(Insert Facing Page 61 in WBAN Manual)

68a

A6430. TWENTY-FOUR HOUR MAXIMUM RELATIVE HUMIDITY. Enter

24HR.

MAX in the space at the top of Column 78.
RH

A6440. TWENTY-FOUR HOUR MINIMUM RELATIVE HUMIDITY. Enter

24HR

MIN in the space at the top of Column 79.
RH

(Insert Facing Page 68 in the WBAN Manual)

69a

A7010. Mobile AWS units may use aneroid barometers of the type ML-102() for hourly and six hourly observations when a mercurial barometer is not available. If an aneroid barometer is used, entries will be made in columns 7, 13 and 17 (Columns 6, 12 and 17 on the revised forms). Station pressure will not be taken from the micro-barograph when an aneroid barometer is used for pressure measurements. The station pressure computations at the six hourly times will be entered as appropriate. Aneroid barometers will be checked against a corrected mercurial barometer or an approved aneroid checking barometer at least once every ninety (90) days. If the aneroid barometer has not been checked within ninety (90) days, record all pressure data in parentheses and transmit the data preceded by an "E".

(Insert Facing Page 69 of the WBAN Manual)

71a

A7230. Paragraph 7220 of the basic manual is not applicable to units of the Air Weather Service. Station elevation and removal corrections are defined in paragraphs 1310 through 2300 and paragraphs 3500 through 3542 of AWSM 105-15.

A7230.1 Paragraph 7230 of the basic manual is not applicable to units of the Air Weather Service. Barometer corrections and their application are set forth in paragraphs 3100 through 3413 of AWSM 105-15.

A7231. Paragraph 7231 of the basic manual is not applicable to units of the Air Weather Service. Barometer corrections are determined and applied as set forth in paragraphs 3100 through 3413 of AWSM 105-15.

(Insert Facing Page 71 in the WBAN Manual)

72a

A7242. Units of the Air Weather Service will use a mercurial barometer of the type, ML-2(), for the 6-hourly comparison of the barograph, except that mobile units may use a precision aneroid for this purpose when a mercurial barometer is not available. The barograph correction will be posted adjacent to the barograph. An adjustable type correction indicator may be used for this purpose. This indicator can be made locally from cardboard (or plastic if available).

(Insert Facing Page 72 of WBAN Manual)

73a

A7245. CHARTS. Units of the Air Weather Service will use Microbarograph Chart, ML-236 with Microbarograph ML-3(). Table 10C is not applicable to the Air Weather Service. These charts will be obtained through normal supply channels and will be disposed of in accordance with AWS Letter 181-2.

(Insert Facing Page 73 of the WBAN Manual)

AWS ADDENDUM II
Eff 1 Oct 52

78a

A7320. Paragraphs 7320 through 7324 of the basic manual are not applicable to the Air Weather Service. Station pressure will be reduced to sea level pressure in accordance with SECTION 5000 of AWSM 105-15.

(Insert Facing Page 78 in the WBAN Manual)

80a

A7410. DESCRIPTION OF DIAGRAMS. Forms 1154C through 1154H and the table "Correction for Lapse Rate and Humidity" (see paragraph 7430(6)) will be obtained by letter request, through channels, to Chief, Air Weather Service, ATTI; AWS DM/Supply Division.

(Insert Facing Page 80 in WBAN Manual)

AWS ADDENDUM II
Eff 1 Oct 52

83a

A7520. Paragraphs 7520 and 7521 of the basic manual are not applicable to the Air Weather Service. Altimeter settings will be determined as set forth in SECTION 4000 of AWSM 105-15.

(Insert Facing Page 83 of the WBAN Manual)

87a

A7740. The sentence of paragraph 7740 of the basic manual which reads, "Omit entry if a mercurial barometer is instruments" is not applicable to units using a precision aneroid in accordance with paragraph A7010.

(Insert Facing Page 87 of the WBAN Manual)

AWS ADDENDUM II
Eff 1 Oct 52

88a

A7787.1 Air Weather Service units recording station pressure from an aneroid barometer will enter missing (M) in lines 60, 61 and 62 of WBAN 10B in accordance with paragraph 11010 of the basic manual.

A7787.2 When entries are made at Air Weather Service units utilizing a mercurial barometer, a barograph correction of 0.00 will be entered as "0" per example in column 65 of Figure 6, Page 120.

(Insert Facing Page 88 of the WBAN Manual)

94a

A8312. Wind Recorder, ML-144, is considered a gust recording instrument. All references to gust recording equipment are applicable to Wind Recorder, ML-144.

(Insert Facing Page 94 of the WEAN Manual)

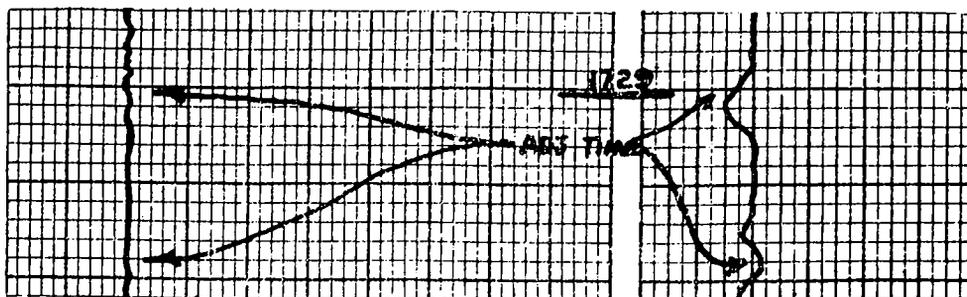
94b

A8430. GUSTINESS. (Column 11)
The peak speed of gusts will be entered in knots in
Column 11 of WBAN 10A.

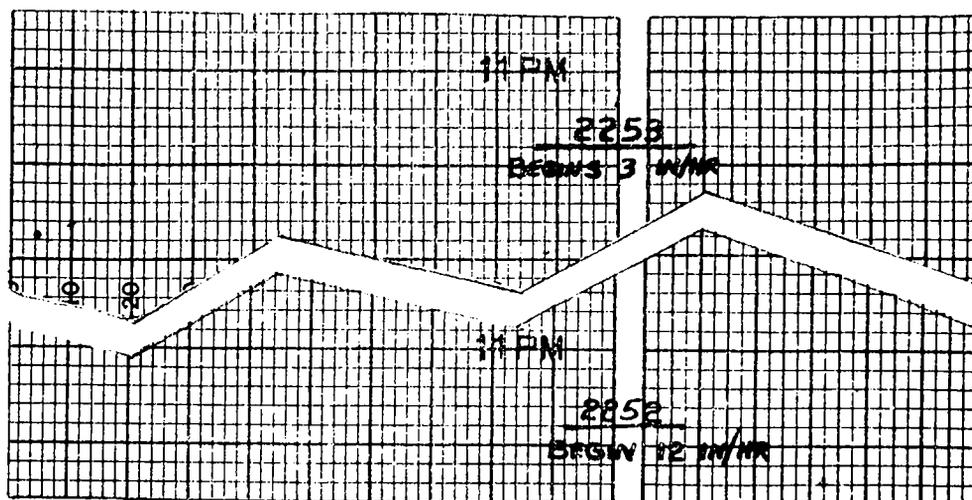
(Insert Facing Page 95 of the WBAN Manual)

96b

- (3) When the recorder becomes more than 10 minutes in error, the chart feed rate will be increased or stopped, as necessary, to bring the recorder into correct time adjustment. Indicate this by means of an arrow and time of adjustment.



- (4) When the chart feed rate is changed, indicate this by means of black pencil mark similar to that used for a time check and the note "BEGIN 12 IN/HR" or "BEGIN 3 IN/HR". When a new chart feed is used, it will be continued for 24 hours, or some multiple of 24 hours (i.e. 24, 48, etc.), or until a new chart roll is installed, which ever occurs first.



A8530. ENTRIES AFTER CHART REMOVAL FROM RECORDER. Make entries for name of station, detachment number, date of removal from recorder and chart feed rate used in the manner prescribed in paragraph A8510.

96c

A8540. DISPOSITION OF CHART ROLLS. Completed Chart Rolls, ML-172 will be disposed of in accordance with AWS Letter 181-2. Chart Roll, ML-172, may be cut into 24 hour sections (midnight to midnight, LST) for summary of the day purpose. If this is done, the sections will be reassembled and rolled into a roll prior to forwarding. Use scotch tape to join the sections together to form a continuous chart. Chart Roll, ML-172, will be replaced in its cardboard shipping box (if available), and the data entered in the spaces on the end of the box, prior to forwarding.

A8550. CHANGING CHARTS. Chart Roll, ML-172, will be changed at 0001 LST on the first day of each month and at intermediate times as required.

A8560. CHART FEED. A chart feed rate of 3 inches per hour will be used for normal operation. Increased chart feed rates may be used when it is desired to obtain detailed records of wind during tropical cyclones (See par. 8312), thunderstorms or frontal passages.

(Insert Facing Page 96b of the WBAN Manual)

98a

A9132.1 CEILING. Add the following criteria for special observations due to changes in ceiling to those listed in paragraph 9132.1 of the basic manual.

- (5) The ceiling decreases to less than any instrument minimum established for the airport. These minimums are with reference to instrument minimums ILS, GCA or alternate minimums.
- (6) The ceiling increases to or above any instrument minimum established for the airport. These minimums are with reference to instrument minimums exclusive of ILS, GCA or alternate minimums.
- (7) The ceiling changes from unlimited to any value.
- (8) The ceiling decreases to less than 2000 feet, or increases to 2000 feet or more.
- (9) The ceiling decreases to become less than the GCA minimum for the airport.
- (10) The ceiling increases to become equal to or more than the GCA minimum for the airport.

(Insert Facing Page 98 of the WBAN Manual)

99a

A9132.3 VISIBILITY. Add the following criteria for special observations due to a change in visibility to those listed in paragraph 9132.3 of the basic manual.

- (1) During the period between local sunset and local sunrise (darkness) the visibility decreases to less than 2 miles or increases to 2 miles or more.
- (2) The visibility decreases to become less than any instrument minimum for the airport, or increases to become equal to or more than any instrument minimum for the airport.
- (3) The visibility decreases to become less than the GCA minimums for the airport, or increases to become equal to or more than the GCA minimums for the airport.

(Insert Facing Page 99 of the WBAN Manual)

100a

A9132.6 PRECIPITATION. Add the following criteria for special observations due to precipitation to those listed in paragraph 9132.6 of the basic manual.

- (4) Any form of precipitation (liquid, freezing or frozen), except very light, begins, and the preceding record or special observation did not indicate that precipitation was occurring at the station.

A9132.9 TERMINAL FORECAST GROUPS. Wing, group and independent squadron commanders will prescribe the criteria for special observations required by changes in the TFAWS groups. When it is not desired that changes in TFAWS groups be considered as criteria for special observations, no supplemental instructions need be issued.

A9141. Weather stations will make local extra observations whenever:

- (1) The ceiling becomes 2000 feet or less.
- (2) The visibility becomes 3 miles or less.
- (3) Any form of precipitation is occurring.
- (4) Any obstruction to vision other than haze or smoke is present.
- (5) Any other criteria specified by wing, group or independent squadron commanders are met.

(Insert Facing Page 100 of WBAN Manual)

101a

Delete so much of the second line on page 101 of the basic manual as reads "or when there are no impending aircraft operations".

A9143. The remark "ACFT ACCIDENT" will never be transmitted or disseminated in any manner.

A9150. CHECK OBSERVATIONS. Weather stations supplying observations to a communications agency for broadcast to aircraft will make check observations to insure that the elements broadcast have been observed within 20 minutes of the time of broadcast. Detachment commanders are responsible for coordination with the local AACS commander to determine the time of broadcast, filing times and code form required for these observations.

(Insert Facing Page 101 of the WBAN Manual)

102a

A9161. HOURLY REPORTS. Air Weather Service units will arrange additive data in the following order:

- (1) Remarks pertaining to these portions of the observations from station identification through altimeter setting.
- (2) 3 and 6 - hourly additive data.
- (3) Radar storm detection reports.
- (4) RAICG, RAFRZ and 700 mb data.
- (5) Pilot reports (When specified by wing group or squadron commander).
- (6) Terminal forecast groups.
- (7) Notices to airmen in Q code or plain language.
- (8) Significant cloud group (if specified by paragraph 11103.2).

A9162. OTHER REPORTS. The format for SPL, PDW and COR messages will be as follows:

A9162.1 Special Reports (SPL). The text will contain station identification special number, and the report. (Time of the special is shown in the heading; it is not repeated in the message text).

Example:

LRV	(2CR 5LF)
SPL AWUS 9890-4 161410Z	(2CR LF)
LRV S5 W2X1S ← 5	(2CR 5LF)

A9162.2 Delayed Report (PDW). The text will contain station identification and the report. (Time of the observation is shown in the heading).

EXAMPLE: (Station previously transmitted DLAD in sequence; observation is now available for transmission).

RND	(2CR 5LF)
PDW AWUS 9890-4 041530Z	(2CR LF)
RND O15 194/15/10→18/009/322	(2CR 5LF)

A9163. CORRECTED REPORTS. See appropriate AACS manual or CAA manual for the composition of COR messages are shown in paragraphs A9163.1, A9163.2 and 9163.3.

A9163.1 The text will contain the station identification and the correction. Correction may consist of a complete observation (in case of garbling) or of a single element properly identified. Extraneous words or phrases such as "SHUD READ" will not be used; corrections will not be repeated in the message. (Time of the report being corrected is shown in the heading).

(Insert Facing Page 102 of the WBAN Manual)

102b

EXAMPLE (To correct altimeter setting)

LRV (2CR 5LF)
COR AWUS 9890-4 192230Z (2CR LF)
LRV ALSTG 992 (2CR 5LF)

A9163.2 Headings for correction to PDWs will not contain contraction PDW.

EXAMPLE (To correct temperature and dew point values in report originally transmitted as PDW)

TIK (2CR 5LF)
COR AWUS 9890-4 161630Z (2CR LF)
TIK TMP/DWPNT 42/31 (2CR 5LF)

A9163.3 The contraction SPL will be included in the headings of messages correcting special observations. (Time shown in the heading is the time of the special observation for which the correction is transmitted).

EXAMPLE (To correct sea level pressure value)

FFO (2CR 5LF)
COR SPL AWUS 9891-3 191800Z (2CR LF)
FFO SL PRESS 002 (2CR 5LF)

A9163.4 The following contractions will be used to identify elements of an observation for which a correction is transmitted.

a. Ceiling	CIG
b. Sky Condition	SKY
c. Present Weather	WX
d. Sea Level Pressure	SL PRES
e. Temperature	TMP
f. Dew Point	DWPNT
g. Temperature and Dew Point	TMP/DWPNT
h. Surface Wind	WND
i. Altimeter Setting	ALSTG
j. 3 hourly pressure change	PRES CHG
k. 3 hourly pressure tendency	PRES TNDCY
l. Precipitation	PCPN
m. Cloud Group (additional data)	CLDS
n. Terminal Forecast, Coded	TFAWS
o. 850 mb Height	850 HGT
p. Snow Depth	SNW
q. Remarks	RMRK

102c

A9163.4 Continued:

r.	Radiosonde Data	RADAT
s.	RAREP Data	RAREP
t.	Maximum Temperature	MAX TMP
u.	Minimum Temperature	MIN TMP

A9163.5 The time of transmission will be entered on the "hard" copy of all SPL, PDW or COR messages immediately upon the completion of the transmission.

(Insert Facing Page 102b of the WBAN Manual)

103a

A9173. TIME. The inclusion of time in a corrected report will be in accordance with paragraph A9163.1.

A9174. DELAYED MESSAGE. Composition of PDW messages will be in accordance with paragraph A9162.2.

A9180. DISSEMINATION. Wing, group and independent squadron commanders will specify the applicable manual of operations or instructions governing transmission of observations.

(Insert Facing Page 103 of the WBAN Manual)

104a

A9181. LOCAL DISTRIBUTION. All observations will be distributed to the control tower, GCA, or other approach control units immediately upon their completion. Transmission to these agencies will be given priority over all other duties. Detachment commanders will coordinate with the local AACS commander to insure that the most direct system of communications available is used to pass these observations to the control tower, GCA unit or other approach control units. Every effort will be made to avoid, "second-hand transmissions" of observations, such as the tower passing the observations to GCA. A system of "read-back" will be instituted to insure that the observation has been correctly recorded by the unit concerned. In addition to the above action a log, locally reproduced, will be maintained to indicate the following information:

- (1) Time of the observation (From Col 2 of WBAN 10).
- (2) Time the observation was transmitted to the tower, GCA or other local agencies, and the initials of the individual receiving the observation.
- (3) Reasons for delays or non-delivery of observation.
- (4) Initials of observer making entries.

If telautograph is used for local dissemination, the log need not be maintained. The time of transmission and the initials of the observer will always be the last items in any telautograph transmission. Messages transmitted by telautograph will be maintained for a period of sixty (60) days then destroyed.

A9400. RUNWAY AND GCA OBSERVATIONS

A9410. Runway and GCA site observations, when made, will be recorded in accordance with AWS Letter 55-20, 7 July 1952, as amended. Since the values of elements of these observations are representative of a limited area, they will not be used as the appropriate values for elements of the aviation and synoptic observations, (Those observations most representative of the general weather condition in the area which are transmitted over weather communication channels); however, values of elements observed at the runway or GCA site can be used as aids in determining the values of elements for the aviation observation. Runway and GCA observations will be disseminated locally as may be required.

A9411. Runway temperatures will not be included in the remarks sections of the transmitted observation unless specifically directed by the wing, group, or independent squadron commander.

(Insert Facing Page 104 of the WBAN Manual)

109a

10200. DISSEMINATION

A10210. Those Air Weather Service units that have SEND-RECEIVE teletype facilities will transmit pilot reports either as a separate report during free circuit time or append them to the remarks section of a transmitted observation. Those stations that do not have SEND-RECEIVE teletype facilities will transmit their pilot reports by means of Plan 62 to the nearest Flight Service Center. Here the reports will be collected, edited and as many as possible selected for transmission on the scheduled Pilot Report (PR) collective. Appropriate AACS manuals designate those stations responsible for the preparation of these pilot report collectives.

A10211. PIREPS to be transmitted on the teletype during free circuit time will be prepared as follows;

EXAMPLE;

HEM	(2CR 5LF)
PRUS 9891 151245	(2CR LF)
HEM 1220Z PIREP 10 W LGT ICG 80 F-51	(2CR 5LF)

NOTE: The DATE-TIME-GROUP will be the date and time the message was prepared for transmission.

(Insert Facing Page 109 of the WBAN Manual)

111a

Al1001. WBAN 10A and B will be prepared in duplicate by AWS surface observation sections. WBAN 10D will not be prepared. Disposition of completed forms will be made in accordance with AWS Letter 181-2. WBAN 10A and 10B will be obtained through supply channels.

Al1003. A 3H pencil will be used providing the impression is sufficiently dark for good microfilm reproduction. When the impression is not dark enough for good microfilm reproduction, a well sharpened, 2H pencil will be used. Test the impression by holding the completed form at arms length in normal light. If all entries are easily read and completely legible, the impression is satisfactory. Numbers, symbols and letters will be of such a size as to fill $2/3$ to $3/4$ of the vertical space between lines.

(Insert Facing Page 111 in the WBAN Manual)

113a

All103.1 Additive data groups will be used by all AWS units which transmit observations in the Airways Code and do not transmit a 3 or 6 hourly observation in the 1949 Synoptic Code. Those portions of TABLE 18 in conflict with this procedure will be ignored. The symbolic form for additive data groups are given in paragraph 11103.11 of the basic manual. The following are encoding instructions for individual elements:

(1) Group "appRR"

- a - Characteristic of barograph trace during the past three hours. "a" is coded in accordance with the instructions given in paragraph 7620 of the basic manual. If the station is not equipped with a barograph or the characteristic can not be determined a slant "/" will be reported.
- pp - Amount of barometric tendency (net change) during the three-hour period ending at the actual time of observation, reported in "units" and "tenths" of millibars. "pp" is coded from TABLE AI.

TABLE AI

SYMBOL pp - Amount of Barometric Change

Code Figure	Inches of Mercury	Millibars
00	0.000	0.0
02	0.005	0.2
03	0.010	0.3
05	0.015	0.5
07	0.020	0.7
08	0.025	0.8
10	0.030	1.0
12	0.035	1.2
14	0.040	1.4
15	0.045	1.5
17	0.050	1.7

Code Figure	Inches of Mercury	Millibars
19	0.055	1.9
20	0.060	2.0
22	0.065	2.2
24	0.070	2.4
25	0.075	2.5
27	0.080	2.7
29	0.085	2.9
30	0.090	3.0
32	0.095	3.2
34	0.100	3.4
36	0.105	3.6

(Insert Facing Page 112 of the WBAN Manual)

113b

TABLE AI CONTD.

SYMBOL pp - Amount of Barometric Change

Code Figure	Inches of Mercury	Millibars	Code Figure	Inches of Mercury	Millibars
37	0.110	3.7	69	0.205	6.9
39	0.115	3.9	71	0.210	7.1
41	0.120	4.1	73	0.215	7.3
42	0.125	4.2	75	0.220	7.5
44	0.130	4.4	76	0.225	7.5
46	0.135	4.6	78	0.230	7.8
47	0.140	4.7	80	0.235	8.0
49	0.145	4.9	81	0.240	8.1
51	0.150	5.1	83	0.245	8.3
52	0.155	5.2	85	0.250	8.5
54	0.160	5.4	86	0.255	8.6
56	0.165	5.6	88	0.260	8.8
58	0.170	5.8	90	0.265	9.0
59	0.175	5.9	91	0.270	9.1
61	0.180	6.1	93	0.275	9.3
63	0.185	6.3	95	0.280	9.5
64	0.190	6.4	97	0.285	9.7
66	0.195	6.6	98	0.290	9.8
68	0.200	6.8	99	See Coding Instructions	
			//	Missing	

When the value for "pp" equals or exceeds 9.9 mbs. the "99ppp" group is inserted in message immediately following the "appRR" or the "app" group, as appropriate. When the group "99ppp" is used "pp" is always encoded as "99" and the change encoded in tenths of millibars for "ppp".

RR - Amount of precipitation for the six-hour period preceding the actual time of observation, in "hundredths" of an inch. "RR" is coded in accordance with the instructions given in paragraph 4310 of the basic manual, and Table AII.

TABLE AII

SYMBOL RR - Amount of Precipitation
 (In 6-hour period preceding observation)

Code Figure	Amount	Code Figure	Amount	Code Figure	Amount
00	TRACE*	07	.07 inch	97	.97 inch
01	.01 inch	08	.08 inch	98	.98 inch
02	.02 inch	09	.09 inch		
03	.03 inch	10	.10 inch	99	.99 inch
04	.04 inch	11	.11 inch	00	1.00 inch
05	.05 inch	etc.	etc.	01	1.01 inch
06	.06 inch	96	.96 inch	02	1.02 inch

* "Trace" of precipitation is an amount generally considered too small to measure; actually it is less than 0.005 inch.

When precipitation has not occurred during the preceding 6-hour period, "RR" is omitted from the group and only three code figures will be reported for this group (i.e.: app).

When a TRACE of precipitation has occurred, code figure "00" will be reported.

When the amount of precipitation is 1.00 inch or more, the number of whole inches is reported as a plain language word inserted in the message following the "appRR" group. If both the "99ppp" group and "a plain language precipitation word" are reported, the order in message will be "appRR 99ppp Language".

EXAMPLES:

- When a = 6, pp = 02, and RR = zero, the group is coded "602".
- When a = 6, pp = 02, and RR = TRACE, the group is coded "60200".
- When a = 6, pp = 9.9, and RR = zero, the groups are coded "699 99099".
- When a = 6, pp = 10.2, and RR = 1.00, the groups are coded "69900 99102 ONE".
- When a = 6, pp = 3.4 and RR = 1.03 the groups are coded "63403 ONE".
- When a = missing, pp = missing, and RR = zero, the group is coded "///".
- When a = missing, pp = missing, and RR = .03, the group is coded "///03".

(Insert Facing Page 113b of the WBAN Manual)

113d

(2) Group C_LC_MC_HD_C

- C_L = Clouds of genera (types) Sc, St, Cu, and Cb. "C_L" is encoded in accordance with Circular "S", pages 12-24.
- C_M = Clouds of genera (types) ac, As, and Ns. "C_M" is encoded in accordance with Circular "S", pages 25-33.
- C_H = Clouds of genera (types) Ci, Cs, Cc. "C_H" is encoded in accordance with Circular "S", pages 34-43.
- D_C = True direction from which clouds are moving, reported to 8 points of the compass. "D_C" is encoded from Table AIII.

TABLE AIII

SYMBOL D_C - Direction From Which Clouds are Moving

Code Figures	True Direction	Figures	True Direction
0	No clouds or calm	5	Southwest
1	Northeast	6	West
2	East	7	Northwest
3	Southeast	8	North
4	South	9	Unknown

When NO clouds are present, the C_LC_MC_HD_C group is omitted from the message.

When the sky or upper clouds are completely hidden by obscuring phenomena on the surface or in a layer aloft, the group "C_LC_MC_HD_C" will be coded as "////". When upper clouds or the sky are visible through surface based obscuration or an obscuring layer aloft, the group "C_LC_MC_HD_C" will be encoded in the normal manner. Obscuring phenomena on the surface or aloft will not be shown in the cloud group.

(3) Group "9SpSp_pSp"

- 9 - Indicator figure for the Special Phenomena Group (9SpSp_pSp).

113e

SpSp - Special Phenomena, general description.

At the present time "depth of snow on ground" is the only element reported as additive data by the "9SpSpssp" group. Hence, code figure 85 (Depth of Snow on Ground, in whole inches) from Code Table No. 20 of the Synoptic Code, 1949 Edition, will be encoded for "SpSp" so that the first three digits of the group will always be "985").

ssp - Special Phenomena, detailed description.

The code figure reported for "ssp" is the actual depth of snow on ground in whole inches. One inch of snow on ground is the smallest amount reported in the Special Phenomena Group (i.e., 98501); hence the group will never be coded "98500". (See notes regarding snow on the ground on page 113f).

The "depth of snow on ground" is reported as follows. The GCT reporting times shown below pertain to WMO Region IV. Overseas units will be governed by appropriate WMO Regional Specifications as directed by the wing, group or independent squadron commander.

- (1) At 1230 GCT: When there is more than a TRACE of snow on the ground, the depth will be reported by the Special Phenomena group regardless of whether or not precipitation has occurred during the preceding 6 hours.
- (2) At 1830, 0030, and 0630 GCT: When precipitation has occurred during the preceding 6 hours and there is more than a TRACE of snow on ground, the depth will be reported in the Special Phenomena Group. For example: 2 inches of snow cover would be coded as 98502, 13 inches as 98513, etc.

(4) Group "T_n/xT_n/x"

T_nT_n - Minimum temperature of the air in whole degrees Fahrenheit. The GCT reporting times shown below pertain to WMO Region IV. Overseas units will be governed by appropriate WMO Regional Specifications as directed by the wing, group or independent squadron commander.

(Insert Facing Page 113d of the WBAN Manual)

113f

At 1230 GCT the minimum temperature, which occurred during the 12-hour period preceding the time of observation, will be reported.

At 1830 GCT the minimum temperature, which occurred during the 24-hour period preceding the time of observation, will be reported.

$T_x T_x$ - Maximum temperature of the air in whole degrees Fahrenheit. The GCT reporting times shown below pertain to WMO Region IV. Overseas units will be governed by appropriate WMO Regional Specifications as directed by the wing, group or independent squadron commander.

At 0030 GCT the maximum temperature, which occurred during the 12-hour period preceding the time of observation, will be reported.

At 0630 GCT the maximum temperature, which occurred during the 24-hour period preceding the time of observations, will be reported.

When the maximum or minimum temperature is missing slants (//) will be reported.

Stations not equipped to regularly determine maximum and minimum temperatures will omit the $T_n/x T_n/x$ group from the message.

NOTE: See paragraphs 1804.221 and 1804.222 of the Synoptic Code, 1949 Edition, regarding procedures for reporting temperatures of 0°F or lower, and 100°F or higher.

(5) Group 2h85h85h85a3

2 - Indicator figure for the 850 mb pressure group (2h85h85h85a3).

h85h85h85 - Height in "tens" of geopotential feet above mean sea level of the 850 mb pressure surface (i.e., in thousands, hundreds, and tens of "gp feet").

a3 - Characteristic of barograph trace during the three-hour period ending 3 hours prior to the actual time of observation. "a3" is the "a" from the observation three-hours previous.

113g

INTERPRETATIONS OF "DEPTH OF SNOW ON GROUND"

The following interpretations of coding "depth of snow on ground" are offered for general guidance to all observers in coding this element. Traces of snow are not included in the additive data groups; however, they are included in "group 7" of the 6-hourly synoptic reports, (7RRR_s).

"A trace of snow on the ground" means that there is some snow on the ground in exposed places, but the depth is too small to measure for practical purposes (this depth is set at "0.4 inch or less").

The accurate and uniform determination of a "trace of snow on ground" is a difficult procedure. In general, the observer should be guided by the average conditions throughout the area surrounding the station. If a "trace of snow on the ground" is observed in fairly exposed places and this appears to be the general condition of the surrounding country, a "trace" will be reported even though there is no snow remaining in exposed places immediately adjacent to the station. In general, a trace will not be reported when it is quite evident that the remaining snow is due to localized conditions such as snow whose presence has been prolonged by artificial conditions arising from its sheltered position, such as under trees, north side of buildings and ridges, or in drifts (natural or man made) whose surfaces have melted and frozen, resulting in a hard ice-crusted mound that may linger for weeks.

The term "depth of snow on ground" as written above includes new snow, old snow, ice, and any ice-like formation which may be present on the ground.

Coding instructions required that depth of snow be reported to the nearest whole inch, and when the depth is exactly halfway between two whole inch measurements the 5 tenths is dropped or added in accordance with standard rule for the disposal of decimals. For example; up to 0.4 inch, inclusive, is coded a "TRACE"; 0.5 to 1.4 inches, inclusive, is coded 1 inch; 1.5 to 2.4 inches, inclusive, is coded as 2 inches, etc.

It is generally preferred that the term "snow cover" be used instead of "snow" in referring to the total depth of accumulated snow and ice present on the ground. It is also desirable to avoid terms like "10 inches of snow", "snow 4 inches", etc., when referring to the accumulated depth of both the new and old snow. The terms "snow cover 10 inches", or "4 inches of snow cover" or "7 inch snow cover" are more explicit, and may serve to avoid giving the impression that the depth of snow which fell during the past 6 hours was 10, 4 or 7 inches, respectively.

(Insert Facing Page 113f of the WBAN Manual)

115a

All103.2 The rules for selecting the significant cloud layer or layers and coding the group $8N_sCh_s h_s$ are given in paragraphs 1131 through 1314.3 of AWS Manual 105-24. The following stations will include this group:

Long Beach, California
Hamilton AFB, California
March AFB, California
Travis AFB, California
McClellan AFB, California

All203. STATE OF GROUND. Air Force stations will make observations of state of ground in accordance with the basic manual.

(Insert Facing Page 115 of the WBAN Manual)

119a

All211. VERIFICATION. The right or left hand margin of the WBAN 10A and 10B form will be divided into two columns. No column headings need be entered. The first column will be used for the entry of the initials of the senior forecaster on duty at the time the weather observation was made. The forecaster will initial this column after he has inspected the observation and found all elements correct to the best of his knowledge. This inspection will consist of verification of data on the WBAN 10A and 10B form and the transmitted observation. When a forecaster is not on duty, the senior weather observer on duty shall perform this verification. The second column will be used for the initials of the observer transmitting the observation and will be a certification that the observation has been transmitted correctly over communications circuits and over local distribution channels. (When the station does not actually make the transmission, the observer will verify the observation from the teletype).

(Insert Facing Page 119 in the WBAN Manual)

AIR WEATHER SERVICE
MILITARY AIR TRANSPORT SERVICE
UNITED STATES AIR FORCE
Washington 25, D. C.

AIR WEATHER SERVICE ADDENDUM II
to
WBAN MANUAL OF SURFACE OBSERVATIONS

AWS AMENDMENT)
NO. 1)

15 February 1954

1. Air Weather Service Addendum II to WBAN Manual of Surface Observations, October 1952, will be amended in accordance with the inclosed instruction effective 0000Z, 15 February 1954.

2. The amendment will be properly entered in the addendum and recorded in the "Record of Changes".

3. This amendment has been distributed in accordance with the distribution formula listed below. The stock of this manual will be located at MATS Publications, Headquarters, MATS, Andrews Air Force Base, Washington 25, D. C. Additional copies will be procured in accordance with the provisions of AWSL 5-8.

BY ORDER OF THE COMMANDER:

OFFICIAL:

NICHOLAS H. CHAVASSE
Colonel, USAF
Chief of Staff

Louis W. Berger
LOUIS W. BERGER
Lt. Colonel, USAF
Adjutant

DISTRIBUTION:

Hq, 1st Wea Gp - - - - -	73	Hq, 2143d AWW - - - - -	128
Hq, 2d Wea Gp - - - - -	25	Hq, 2058th AWW - - - - -	175
Hq, 3d Wea Gp - - - - -	50	US Weather Bureau - - - - -	10
Hq, 4th Wea Gp - - - - -	50	US Navy - - - - -	10
Hq, 6th Wea Gp - - - - -	26	Department of Wea	
Hq, 7th Wea Gp - - - - -	38	Chamute AFB, Ill- - - - -	485
Hq, 8th Wea Gp - - - - -	71	National Guard Bureau - - -	18
Hq, 9th Wea Gp - - - - -	60	Data Control Division - - -	15
Hq, 8th Wea Sq - - - - -	20	AWS DO/STDS - - - - -	50
Hq, 6th Wea Sq - - - - -	24	Stock MATS Publication	
		Division, Hq, MATS - - - -	631

AWS ADDENDUM II
to
WBAN MANUAL OF SURFACE OBSERVATIONS
(1 October 1952)

AWS AMENDMENT)
NO. 1)

15 February 1954

1. Instructions. This amendment consists of pen and ink changes, insert paragraphs, revised pages and new insert pages. The pen and ink changes will be made in the usual manner. The insert paragraphs will be cut from the attached pages and inserted in the appropriate place in the manual with scotch tape or similiar material. Pages 38a, 102a and 119a with effective date 1 October 1952 will be removed and replaced with the revised pages 38a, 102a and 119a. The new page 16a will be inserted in the manual facing the page to which it applies.

2. Pen and Ink Changes. The following pen and ink corrections will be made;

a. Table 1a. Insert the following words in the explanation section opposite "-X Partial Obscurations" and immediately following the words in parenthesis.

b. Page 24. Note 2 at bottom of page. This statement should be changed to read as follows;

"A joint-use airport is either one at which the control tower is operated by military personnel and weather observations are taken by Weather Bureau personnel or one at which CAA operates the tower and military personnel take the observation".

c. Page 49a. In last line of the last paragraph delete word "quarterly".

d. Page 55a, delete paragraph A5213. (Don't remove page, see 3c).

e. Page 98a, A9132.1 subparagraph (5) insert the words "exclusive of" between the words "minimum" and "ILS" in the third line.

f. Page 109a, A10210 delete that part of the first sentence which reads "or append them to the remarks section of a transmitted observation". In the last sentence change "AACS" to "AWS".

g. Page 109a, A10211 change "9891" in the EXAMPLE to "91".

h. Page 115a, delete paragraph A11103.2.

3. Insert Paragraphs.

a. On page 1 of the instructions of AWS Addendum II delete the section entitled "Scope" and insert the following paragraph.

* * * * *

*2. SCOPE. The WBAN Manual of Surface Observations has been prepared to provide instructions covering Airways and Synoptic Observations. This AWS Addendum provides instructions common only to the Air Weather Service. Instructions contained in the WBAN Manual of Surface Observations and this AWS Addendum will prevail over conflicting instructions contained in any publication. AWS Addendum II and amendment thereto take precedence over the procedures set forth in the basic manual. WBAN Changes will not modify portions of this Addendum the provisions of which will remain in effect until rescinded by subsequent amendments. Interpretations or amplifications of instructions contained in the WBAN Manual and this AWS Addendum will not be made, except as noted below;

a. When specifically authorized by the WBAN Manual or this AWS Addendum.

b. When required to fulfill local needs in areas of hostilities.

c. When the supplemental information has been approved by this headquarters.

* * * * *

b. Insert the following paragraph immediately below paragraph All10 on page 1a.

* * * * *

Table 1a. Sky-Cover Symbols. (Page 2)

-X Partial Obscuration. The type and amount of the obscuration will be included in the remarks section of the observation (Column 13) - See A1520 for details.

* * * * *

c. Insert the following on the blank page facing page 54;

* * * * *

AWS ADDENDUM II (Upper left corner)
15 February 1954
54a

* * * * *
Opposite paragraph 5210 on page 54:
* * * * *

A5210. THERMOGRAPH. This instrument is no longer a standard item of authorized equipment at AWS weather stations and action has been taken to delete them from ECL 20-25-1. In view of these considerations the paragraphs pertaining to thermographs no longer apply to AWS installations.

* * * * *
d. Insert the following ahead of A9132.1 on page 98a.
* * * * *

*A9131. Add the following criteria to paragraph 9131.

(4) RAREPs (See paragraph 2051.1 of AWS Manual 105-28, RAREPS).

* * * * *
e. Delete the present paragraph A9132.6 on page 100a and insert the following.
* * * * *

*A9132.6 PRECIPITATION. Add the following criteria for special observations due to precipitation to those listed in paragraph 9132.6 of the basic manual.

(4) Any form of precipitation, regardless of type, (liquid, freezing or frozen) except very light, begins, and the preceding record or special observation did not indicate that precipitation was occurring at the station.

NOTE: As an example, R- begins at 1340 and changes to S- at 1405. A special would be taken at the beginning of the precipitation (1340) but a special would not be taken at 1405 to indicate a change in type R- to S- since precipitation was indicated as occurring by a preceding special (1340). The times of beginning or ending of precipitation will be entered in remarks in accordance with 3920(4)g.

AWS AMENDMENT)
NO. 1)

15 February 1964

* * * * *

f. Insert the following paragraph A9140 between paragraphs A9132.9 and A9141 on page 100a.

* * * * *

A9140. LOCAL EXTRA OBSERVATIONS. Only those local extra observations which represent a recordable change in ceiling sky condition, visibility or weather will be disseminated locally".

* * * * *

16a

*A1520.

(11) Type and amount of
the obscuration

Enter the type and amount of the
obscuration with two characters,
a letter and a number, e.g., .6
of fog would be entered as F6,
.3 of smoke as K3 etc.

(Insert facing page 16 of WBAN Manual)

38a

- *2. Delete example 2 of the basic manual and substitute the following;

"R- reported in 1228 obs; S- began at 1235 and both continued through 1330. Enter remark in 1328 obs; "SB35".
NOTE: If the R- had stopped at 1235 the entry in remarks would have been "RE35 SB35". If S- had stopped prior to 1330, say 1315, the entry in remarks would have been "RE35 SB35E15".

3. Delete example 3 of the basic manual and substitute the following;

"No precipitation reported in 1228 obs; SW began at 1240 and was reported by a special (See par. A9132.6(4)); SW stopped at 1255, began again at 1305 and stopped at 1315. Enter remark in 1328 obs; "SE15".

102a

*A9161. HOURLY REPORTS. Air Weather Service units will arrange additive data in the following order:

- (1) Remarks pertaining to these portions of the observations from station identification through altimeter setting.
- (2) 3 and 6 - hourly additive data.
- (3) Radar storm detection reports.
- (4) RAICG, RAFRZ and 700 mb data.
- (5) Terminal forecast groups.

*A9162. OTHER REPORTS. The format for SPL, PDW and COR messages will be prepared in accordance with the procedures set forth in AACS Manual 105-2. Examples of commonly used procedures are provided in the following paragraphs.

*A9162.1 Special Reports (SPL). The text will contain station identification special number, and the report. (Time of the special is shown in the heading; it is not repeated in the message text).
Example:

LRY	(2CR 5LF)
SPL AWUS 90-4 161410Z	(2CR LF)
LRY S5 WSX1S ←5	(2CR 5LF)

*A9162.2 Delayed Report (PDW). The text will contain station identification and the report. (Time of the observation is shown in the heading).

EXAMPLE: (Station previously transmitted DLAD in sequence; observation is now available for transmission).

RND	(2CR 5LF)
PDW AWUS 90-4 041530Z	(2CR LF)
RND 015 194/15/10 18/009/322	(2CR 5LF)

*A9163. CORRECTED REPORTS. See appropriate AACS manual or CAA manual for detailed instructions on the composition of COR messages shown in paragraphs A9163.1, A9163.2 and A9163.3.

*A9163.1 The text will contain the station identification and the correction. Correction may consist of a complete observation (in case of garbling) or of a single element properly identified. Extraneous words or phrases such as "SHUD READ" will not be used; corrections will not be repeated in the message. (Time of the report being corrected is shown in the heading).

(Insert Facing Page 102 of the WBAN Manual)

102b

EXAMPLE (To correct altimeter setting)

LRY (2CR 5LF)

COR AWUS 90-4 192230Z (2CR LF)
LRY ALSTG 992 (2CR 5LF)

*A9163.2 Headings for correction to PDWs will not contain contraction PDW.

EXAMPLE: (To correct temperature and dew point values in report originally transmitted as PDW)

TIK (2CR 5LF)

COR AWUS 90-4 161630Z (2CR LF)
TIK TMP/DWPNT 42/31 (2CR 5LF)

*A9163.3 The contraction SPL will be included in the headings of messages correcting special observations. (Time shown in the heading is the time of the special observation for which the correction is transmitted).

EXAMPLE: (To correct sea level pressure value)

FFO (2CR 5LF)

COR SPL AWUS 91-3 191800Z (2CR LF)
FFO SL PRESS 002 (2CR 5LF)

A9163.4 The following contractions will be used to identify elements of an observation for which a correction is transmitted.

a. Ceiling	CIG
b. Sky Condition	SKY
c. Present Weather	WX
d. Sea Level Pressure	SL PRES
e. Temperature	TMP
f. Dew Point	DWPNT
g. Temperature and Dew Point	TMP/DWPNT
h. Surface Wind	WIND
i. Altimeter Setting	ALSTG
j. 3 hourly pressure change	PRES CHG
k. 3 hourly pressure tendency	PRES TNDCY
l. Precipitation	PCPN
m. Cloud Group (additional data)	CLDS
n. Terminal Forecast, Coded	TFAWS
o. 850 mb Height	850 HGT
p. Snow Depth	SNW
q. Remarks	RMRK

119a

*All211. TRANSMISSION VERIFICATION. Either the right or left hand margin of the WBAN 10A and 10B will be used for the initials of the observer transmitting the observation and will be a certification that the observation has been transmitted correctly over communications circuits and over local distribution channels. (When the station does not actually make the transmission the observer will verify the observation from the teletype).

(Insert Facing Page 119 of the WBAN Manual)

HEADQUARTERS
 AIR WEATHER SERVICE
 MILITARY AIR TRANSPORT SERVICE
 UNITED STATES AIR FORCE
 Washington 25, D.C.

AIR WEATHER SERVICE ADDENDUM II
 to
 WBAN MANUAL OF WINDS ALOFT OBSERVATIONS

AWS AMENDMENT)
 NO. 3)

1 September 1956

1. Air Weather Service Addendum II to WBAN Manual of Winds Aloft Observations, July 1950, will be amended in accordance with the inclosed instructions which will be effective 1 September 1956.

2. This amendment consists of insert pages 14A, 16A, 19A and 27A. Insert pages 14A, 16A and 19A replaces addendum pages 14A, 16A and 19A dated 1 August 1956. Insert page 27A replaces addendum page 27A, dated 1 January 1955. The changes will be promptly entered in the manual and recorded in the "Record of Changes".

3. This amendment has been distributed as indicated below and will be stocked at MATS/Command Adjutant, Publishing Division, Andrews Air Force Base, Washington 25, D. C. Additional copies of this change may be requisitioned from Headquarters Air Weather Service, ATTN: AWSAD, in accordance with AWS Regulation 5-3, as amended.

BY ORDER OF THE COMMANDER:

OFFICIAL:

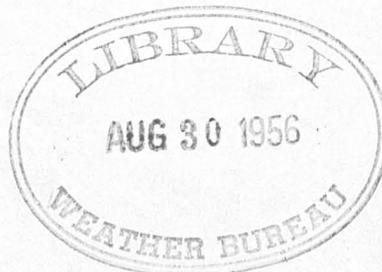
NICHOLAS H. CHAVASSE
 Colonel, USAF
 Chief of Staff

Richard E. Bell
 RICHARD E. BELL
 Major, USAF
 Adjutant

4 Atchmts
 Insert pages 14A, 16A, 19A
 and 27A

DISTRIBUTION:

Hq 1st Wea Gp - - 48	Hq 7th Wea Gp - - 46	US Navy - - - - - 10
Hq 2d Wea Gp - - 50	Hq 8th Wea Gp - - 79	ANG Special Distr - - - 66
Hq 3d Wea Gp - - 60	Hq 9th Wea Gp - - 35	Dept of Wea, Chanute - - 260
Hq 4th Wea Gp - - 41	Hq 1st Wea Wg - - 78	ASTIA - - - - - 10
Hq 5th Wea Gp - - 29	Hq 2d Wea Wg - - 154	Hq AWS - - - - - 10
Hq 6th Wea Gp - - 15	Hq 6th Wea Sq - - 40	Data Control Div - - - 15
		Stock - - - - - 254



Mol.1
 O-1950
 AWS ADD.

14A

A1432. When Balloon Inflation Nozzle ML-462/UM is used horizontal distances will be obtained from AWS Technical Reports 105-116 or 105-117 as applicable. These horizontal distances (meters) will then be plotted directly on Plotting Board ML-122 with Rule ML-126(). Wind speed in meters per second must then be obtained with wind speed scale AWS WPC 9-23 (available from Hq AWS only). Wind direction is read in the normal manner with the ML-177.

(Insert facing page 14 of WEAN Manual)

14B

1433. Paragraph 1433 of the basic manual is not applicable to units of the Air Weather Service.

*1441. Winds Aloft Graph, AWS WPC 9-28, will be used to graph data for abstraction of data for coding and summarization on AWS Form 20. The completed graphs may be destroyed when the associated Pibal or Rawin record is forwarded to a checking unit or to Data Control.

(Insert facing page 15 of WBAN Manual)

16A

*1441.1. ALTITUDE SCALES. The altitude scales of Winds Aloft Graph, AWS WPC 9-28, refer to height above sea level in terms of kilometers and thousands of feet. The scale in kilometers correspond to the basic horizontal lines of the chart and is labelled vertically along the left margin. The altitude scale in thousands of feet is labelled vertically along the right margin and is projected to the middle and left edge of the graph as dashed lines in 1,000 foot increments from sea level to 10,000 feet, in 2,000 foot increments from 10,000 to 20,000 feet and 5,000 foot increments from 20,000 to 140,000 feet with an additional dashed line for 23,000 feet.

*1441.2. WIND-DIRECTION SCALE. The wind-direction scale of Winds Aloft Graph, AWS WPC 9-28, is labelled at the top of the graph in 30° increments and so arranged that the vertical lines on the graph correspond to increments of 5° . This scale is printed linearly one and one-fourth times.

*1441.3. WIND SPEED TIME SCALE. The wind speed and time scale of Winds Aloft Graph, AWS WPC 9-28, is labelled along the lower edge of the graph and is so arranged that the vertical lines on the graph corresponds to increments of 0.5 minutes and of 0.5 m.p.s.

*1442. PLOTTING DATA. Winds pertaining to the surface and each minute of the observation are plotted against altitude on Winds Aloft Graph, AWS WPC 9-28. Pibal stations using fixed balloon ascent rates need not plot a time altitude curve. A minute-altitude scale should be improvised by cutting a vertical strip, about 1 inch wide, from a Winds Aloft Graph, AWS WPC 9-28, and drawing short, horizontal lines on it at points corresponding to the height of the balloon above mean sea level for successive minutes. (NOTE: Height of the balloon above mean sea level is determined by algebraically adding station elevation to the height of the balloon above the surface for each successive minute.) Each horizontal line drawn on the scale should be numbered according to the time to which it pertains. A scale so constructed and mounted on cardboard may then be used to plot wind-direction and wind speed for each successive minute.

*1442.1. Paragraph 1442.1 of the basic manual is not applicable to units of the Air Weather Service.

*1442.21. Find the points corresponding to the surface wind direction and speed as entered on WBAN-20. Place a small dot at the corresponding points on the form at the level of station elevation (see pars 1240 and 1442.6 for plotting "calm").

(Insert facing page 16 of WBAN Manual)

16B

*A1442.3. DATA ALOFT. Align the zero altitude index of the minute-altitude scale, improvised in accordance with paragraph A1442, with the zero altitude of the Winds Aloft Graph, AWS WPC 9-28. Find the points corresponding to the wind direction and speed for the first minute and plot these points at the altitude of the one minute mark on the minute-altitude scale. Continue this procedure until all data have been plotted.

*A1442.31. Data at altitudes exceeding 17 km will be plotted similarly to those at altitudes of 17 km and less, beginning again at appropriate altitude at the bottom of the graph.

*A1442.32. The time scale at the bottom of the chart is not labelled for minute equivalents beyond 60 minutes therefore, when additional minute equivalents are required the time scale will be renumbered beginning at any point in the time scale considered appropriate.

*A1442.33. Paragraph 1442.33 of the basic manual is not applicable to units of the Air Weather Service.

(Insert facing page 17 of WBAN Manual)

19A

*A1442.7. CURVES OF WIND DIRECTION AND SPEED. Draw smoothly curved, solid lines through successive points corresponding to wind direction and wind speed, respectively, plotted between the surface and 17 km. Points plotted on the 15 to 32 km and 30 to 37 km scales will be connected by broken lines of dashes, dots or solid lines of varying colors whichever is most desirable to identify the different plots.

*A1443. ABSTRACTION OF DATA FROM WINDS ALOFT GRAPH, AWS-WPC 9-28. Wind direction for coding and summarization purposes and wind speed in meters per second for summarization purposes are read directly from scales printed on graph. Wind speed in knots for coding purposes is determined by means of Wind Scales, AWS WPC 9-28A and AWS WPC 9-28B which cover the range of wind speeds from 0-58 knots and 58-116 knots respectively. These scales are also labelled to cover the range of wind speeds from 100-232 knots for use when the m.p.s. scale of the winds aloft graph has been relabelled to double the printed values. Wind Scales, AWS WPC 9-28A and AWS WPC 9-28B are used by aligning the upper edge of the scales with the desired altitude markings in feet and centering the scales horizontally by aligning the 15 meters per second or 45 meter per second reference lines of the scales as appropriate with the corresponding printed lines of the graph. When the wind scales are properly aligned, read the wind speed in knots at the intersection of the meter per second wind-speed curve with the upper edge of the wind scales. Wind data will be coded and transmitted in the units specified in the WBAN Manual for Upper Wind Code. Wind direction and wind speed data will be summarized in that section of the WBAN 20B entitled "Standard-Level Data for transcription to Punched Cards" in the units specified in pars. A1401.5 and A4028. NOTE: Wind data entries for the 150 and 300 meter levels are with respect to ground rather than to sea level.

(Insert facing page 19 of WBAN Manual)

27A

*A2125.1. The time-altitude curve will be plotted on Winds Aloft Graph, AWS WPC 9-28. Plotting on the Winds Aloft Graph, AWS WPC 9-28, will be accomplished similar to methods used on the WBAN 20A except that plotting will always be from the bottom to the top. When the altitude or elapsed time exceeds 17 km or 60 minutes respectively, lay off and label a supplementary time scale beginning at any point in the time scale considered appropriate. The last point on the first scale will be replotted on the supplementary scale, and all succeeding points will then be plotted on the supplementary scale.

*A2125.3. Convert altitudes above sea level to altitudes above surface by graphical subtraction as follows:

- (1) Round off the station elevation to the nearest increment of 25 meters i.e., station elevation 12 meters will be considered as 0, station elevation 313 meters will be considered as 325 meters.
- (2) The distance between each horizontal line of Auxiliary Time Altitude Scale, AWS WPC 9-28C, is equivalent to 25 meters, therefore, the rounded off value of station elevation may be indicated on this scale by measuring down from the top reference line of the scale to the rounded off station elevation value and etching in this point completely across the scale with india ink.
- (3) Place the top reference line of the auxiliary time altitude scale on the horizontal line for minute No. 1. Read the altitude opposite the line etched on the scale in accordance with (2) above. Repeat for each minute of the ascent. NOTE: The Auxiliary Time Altitude Scale, AWS WPC 9-28C, may also be used as a vernier for obtaining more precise altitude readings in meters from the graph.

*A2125.31. Paragraph 2125.31 of the basic manual is not applicable to units of the Air Weather Service.

(Insert facing page 27 of WBAN Manual)

AWS INTERIM)
CHANGE III-1)

HEADQUARTERS
AIR WEATHER SERVICE
MILITARY AIR TRANSPORT SERVICE
UNITED STATES AIR FORCE
Washington 25, D. C.
1 November 1956

AIR WEATHER SERVICE INTERIM CHANGE III-1
to
WBAN MANUAL OF SURFACE OBSERVATIONS

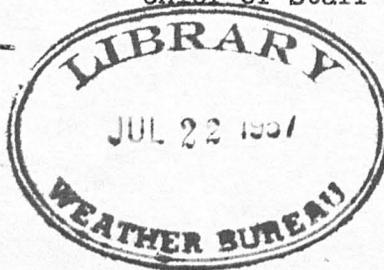
1. This Interim Change will be processed in accordance with the procedures outlined in paragraph 4 of AWS Addendum 1 to the WBAN Manual of Surface Observations, dated 10 December 1954.
2. This change consists of insert page 114b which will be inserted in the basic manual in accordance with the instructions at the bottom of the insert page.
3. After the action indicated in paragraph 2, above, has been completed this cover sheet will be filed in the front of the manual until this material is incorporated into WBAN Change 3.
4. Supply of Interim Change. The stock of this change pending publication of WBAN Change 3 is maintained at Headquarters Military Air Transport Service, Publication Division. Requisitions will be submitted to Commander, Air Weather Service, Andrews Air Force Base, ATTN: AWSAD, Washington 25, D. C., in accordance with the provisions of AWS Regulation 5-3, as amended.

BY ORDER OF THE COMMANDER:

OFFICIAL:

RICHARD M. GILL
Colonel, USAF
Chief of Staff

Charles B. Clontz
CHARLES B. CLONTZ
Captain, USAF
Asst. Adjutant



1 Incl
Insert page 114b

DISTRIBUTION:

Hq 1st Wea Wg	78	Hq 7th Wea Gp	46	ANG Spec Distr	66
Hq 2d Wea Wg	154	Hq 8th Wea Gp	79	Dept of Wea,	
Hq 3d Wea Wg	77	Hq 9th Wea Gp	35	Chanute	1000
Hq 2d Wea Gp	50	Hq 6th Wea Sq	40	ASTIA	10
Hq 3d Wea Gp	65	USWB	10	Hq AWS	10
Hq 4th Wea Gp	41	US Navy	10	DCD	15
Hq 6th Wea Gp	15	Misc Distr	60	Stock	150

Mol.1
0587c
N-1951

1 November 1956

AWS INTERIM
CHANGE III-1

114b

10320. Local Dissemination. The following information will be disseminated to local interests in accordance with Para 10320.1:

1. all record and special observations,
2. (AF,N) all local extra observations indicating that a change in one or more of the elements specified in Para 9141.1 has occurred since the preceding observation,
3. remarks considered operationally significant, either as a part of (1) and (2) above, or separately when available.

10320.1. Disseminate the information specified in Para 10320 as follows:

1. immediately to any control tower, GCA unit or other air/ground communications position,
2. by a single broadcast type communications system, when available, to as many other interests desiring them as possible,
3. by other available communications methods to local interests desiring the information as time and workload permits.

10320.2. Other observations may be disseminated locally as needed. Regarding pireps not incorporated in, or appended to scheduled aviation observations, see Para 12210.

10320.3. Disseminate runway observations locally in accordance with Section 9400.

(Insert facing page 114A of Change No. 2 to WBAN Manual of Surface Observations)

AWS INTERIM)
CHANGE IV-1)

HEADQUARTERS
AIR WEATHER SERVICE
MILITARY AIR TRANSPORT SERVICE
UNITED STATES AIR FORCE
Washington 25, D. C.
1 December 1956

AIR WEATHER SERVICE INTERIM CHANGE IV-1
to
WBAN MANUAL OF SURFACE OBSERVATIONS

1. This Interim Change will be processed in accordance with the procedures outlined in paragraph 4 of AWS Addendum 1 to the WBAN Manual of Surface Observations, dated 10 December 1954.

2. This change consists of pen and ink corrections and insert pages 24a, 70a, 70b, 70c, 70d, 76b, 112Bb, 115a and 118b which will be inserted in the basic manual in accordance with the instructions at the bottom of each insert page.

3. After the action indicated in paragraph 2, above, has been completed, this cover sheet will be filed in the front of the manual until this material is incorporated into WBAN Change 4.

4. This change is effective 1 December 1956.

5. Supply of Interim Change. The stock of this change pending publication of WBAN Change 4 is maintained at Headquarters Military Air Transport Service, Publication Division. Requisitions will be submitted to Commander, Air Weather Service, Andrews Air Force Base, ATTN: AWSAD, Washington 25, D.C., in accordance with the provisions of AWS Regulation 5-3, as amended.

BY ORDER OF THE COMMANDER:

OFFICIAL:

RICHARD M. GILL
Colonel, USAF
Chief of Staff

Richard E. Bell
RICHARD E. BELL
Major, USAF
Adjutant



2 Incls

- 1. Pen & Ink Corrections
- 2. Insert pages 24a, 70a, 70b, 70c, 70d, 76b, 112Bb, 115a & 118b

M 01.1
4587c
N-1951
AWS add.
c.)

DISTRIBUTION:

Hq 1st Wea Wg 78	Hq 7th Wea Gp 46	Dept of Weather
Hq 2d Wea Wg 154	Hq 8th Wea Gp 79	Chanute 1000
Hq 3d Wea Wg 77	Hq 9th Wea Gp 35	ASTIA 10
Hq 2d Wea Gp 50	Hq 6th Wea Sq 40	Hq AWS 10
Hq 3d Wea Gp 65	<u>USWB 10</u>	DCD 15
Hq 4th Wea Gp 41	US Navy 10	Misc Distr 60
Hq 6th Wea Gp 15	ANG Special Distr 60	Stock 250

1 December 1956

PEN AND INK CORRECTIONS

1. Page 16, paragraph 1611.1(2), second column, fourth line from top of page. Insert minus sign in front of the (X).
2. Page 65, paragraph 7020, NOTE 1. Delete "nor Air Force stations except mobile units."
3. Page 71, paragraph 7130. Insert in the margin the following notation:
"See paragraph 7130(AF), page 70a."
4. Page 113, paragraph 10171, last line. Delete the word "hourly".
5. Page 113, immediately above paragraph 10200 "Order of Elements". Insert the following:
10180 (AF) IASOR Data
10190 (AF) K Data (Radiation Intensity Level)
6. Page 122. In columns entitled, Subject and References, under Remarks.
Add:
17(AF) IASOR, 10181 and 18(AF) K Data, 10191
7. Page 115, paragraph 10332. Delete letter ^{AF}"N" in parenthesis.

1 December 1956

AWS INTERIM
CHANGE IV-1
24a

2420

(4)(AF) When runway visibilities are included as a remark in Column 13, the information will be entered immediately following any remarks pertaining to prevailing visibility. If no other visibility remarks are included in Column 13, runway visibility will follow any remarks pertaining to the elements in the body of the observation and preceding additive 3 and 6 hour data. Additionally, the runway along which the visibility was determined will always be designated in the report, e.g., VSBY $\frac{1}{2}$ RNWY 23, VSBY 1 VRBL $\frac{1}{2}$ RNWY 18.

(Insert facing page 24 of the WBAN Manual of Surface Observations)

1 December 1956

AWS INTERIM
CHANGE IV-1
70a

7130 (AF) Pending publication of detailed aneroid calibration procedures in the WBAN Manual on Barometry, the following interim calibration procedures will be used to calibrate precision aneroids prior to using them to routinely measure station pressure in lieu of the microbarograph or mercurial barometer. Aneroids will be read as described in paragraph 7130 of the basic manual.

7130.1 Comparative Readings. Comparative data from concurrent readings of the precision aneroid and a mercurial barometer will be obtained as described in following paragraphs and entered on AWS Form 85 Test as required by paragraph 7130.7. This form will be retained by the station pending availability of the WBAN Manual on Barometry with its more detailed aneroid calibration procedures.

7130.2 After the aneroid barometer has been installed in a permanent location comparative readings will be taken as follows:

(1) Take concurrent readings of the barometers (aneroid and mercurial) once each day at various times, but preferably in the afternoon. Compute the station pressures, determine the difference between the two barometers by subtracting the uncorrected reading of the aneroid from the station pressure value.

(2) After the differences for seven days have been determined, compute the algebraic mean of the differences. This mean will be added algebraically, as a correction, to subsequent uncorrected readings of the aneroid to obtain the correct station pressure. This correction will be applied until revised, to subsequent comparative barometer readings.

(3) Determine each day the difference obtained by subtracting the corrected aneroid readings obtained as in (2) from the station pressure based on readings

of the mercurial barometer. After fourteen consecutive days in which none of the differences exceed ± 0.3 mb, the corrected aneroid reading may be used as the station pressure for observational purposes.

(4) Continue to take concurrent daily readings at least 14 days longer and to compute the difference between station pressure and the corrected readings of the aneroid.

(5) After comparative readings have been taken daily for at least eight weeks, and after 14 consecutive days in which none of the differences in (4) have exceeded ± 0.3 mb, comparisons will be made once every seven days. Concurrent readings taken within periods of several consecutive months should include readings taken during the occurrence of relatively high and low pressure.

(Insert facing page 70 of the ~~WBAN Manual on Barometry~~)

1 December 1956

7130.3 Whenever the difference between station pressure and a corrected reading of the aneroid exceed 0.3 mb, the difference will be verified immediately preferably by another observer. If the verified difference:

(1) Does not exceed 0.3 mb, disregard the first value and proceed as specified in 7130.2, item (3)-(5).

(2) Exceeds 0.3 mb but not 0.6 mb, compute the algebraic mean of the two differences and post the mean value as a revised correction applicable until the next day (see paragraph 7130.5).

(3) Exceeds 0.6 mb, discontinue use of the aneroid until it can be checked by field maintenance technicians.

7130.4 After adjustment of the precision aneroid to a correction of zero (by a field maintenance technician), take a comparative reading one hour later and another two hours later. Compute the differences. If neither difference exceeds 0.3 mb, determine the algebraic mean of the two differences and post this mean value as the correction applicable until the next day (see paragraph 7130.5). If either difference exceeds 0.3 mb, proceed in accordance with paragraph 7030.3, items (2) and (3).

(1) Take comparative readings daily, determine their difference, and compute the cumulative sum of the differences. Use the posted correction determined as specified above as the first difference in the sum. Compute the algebraic mean value. Post each mean value as the correction applicable until the following day.

(2) Compute the posted correction in (1) above until it has been redetermined for seven consecutive days. If the difference between the station pressure and the corrected aneroid exceeds 0.3 mb, repeat the procedure in paragraph 7130.3 and paragraph (3) and (4) below. The mean value obtained on the seventh day will be posted as the correction applicable until either the difference between comparative readings exceeds 0.3 mb or the aneroid is adjusted to zero.

(3) Whenever the requirements of paragraph 7130.2 have not been satisfied since the aneroid was installed, and a posted correction has been redetermined as in (2) above, resume corrections as in paragraph 7130.2 (3). Whenever redetermination occur so frequently that the requirements of paragraph 7130.2 cannot be satisfied within three months, discontinue use of the instrument and turn it into supply as an unserviceable item. Necessary supply action to obtain another aneroid will be accomplished simultaneously with this turn in action.

(4) Whenever redetermination of the posted correction is required after comparisons have been initiated in accordance with paragraph 7130.2 (5), resume daily comparison for at least 14 days.

7130.6 Whenever the aneroid is used for observational purposes and there are indications that its readings are inaccurate, a series of five comparative readings will be taken approximately one hour apart. If the difference in the station pressure between the aneroid and mercurial barometer vary over a range of more than 0.3 mb, discontinue use of the instrument and request assistance of the field maintenance technician.

7130.7 AWS Form 85 Test will be prepared and maintained by all stations employing precision aneroids for routine determination of pressure. The basic information indicated on the form will be entered in the appropriate spaces.

(1) Enter local standard time to four figures (24 hour clock).

(2) Read attached thermometer (mercurial barometer) to nearest 0.5 degree F or C.

(3) Enter in Column 4 the uncorrected mercurial barometer reading to millibars and tenths.

(4) In Column 5, enter station pressure to thousands of an inch as determined from mercurial barometer. If station pressure is computed in millibars, no entry is required.

(5) In Column 6, enter station pressure in millibars and tenths.

(6) Enter uncorrected reading from precision aneroid.

(7) Enter correction in Column 8 determined in accordance with the instructions contained in paragraph 7130.1 through 7130.6.

(8) In Column 9, enter the station pressure obtained from precision aneroid. (Sum of Column 7 and 8)

(9) In Column 10, enter the differences obtained by subtracting the value in Column 9 from the value in Column 6.

(10) In Column 11, enter the remarks pertinent to the use of the precision aneroid especially those regarding suspected irregularities in performance.

(Insert facing page 70b of the ~~WBAN Manual on Barometry~~)

7420.1 AACS has advised AWS that they are issuing instructions to remove standard station altimeters presently installed in control towers. These altimeters will be replaced by new altimeter setting indicators within the next 12 months. In the interim, to insure that control towers have a valid altimeter setting at all times, weather stations will be contacted by local AACS detachment commanders and requested to check their microbarographs at the half-hourly period between observations. If the half-hourly pressure change amounts to 0.01 inch or more, a new altimeter setting will be provided to the control tower. It should be noted that this procedure is to be inaugurated on a temporary basis and the local AACS detachment commanders will notify the AWS detachment commander when this equipment is installed in order to eliminate the extra weather-observing workload involved.

(Insert facing page 77 of the WBAN Manual of Surface Observations)

10181 (AF) When there is ice or snow on the air base runways and in the opinion of the Base Operations Officer, its presence constitutes a hazard to landing operations, at his request the abbreviation "IASOR" (ice and snow on runway) will be appended to each scheduled observation until such a time as the condition is eliminated. (e.g., 3 hourly in U.S.)

This basic information is supplemented in detail in a separate NOTAM message prepared by the Base Operations Officers as soon as possible.

The remark "IASOR" for all purposes is considered an operationally significant remark and will be transmitted initially either as a remark to the 3-hourly observation, as a remark to a special observation transmitted in the first available 20-minute scan period, or as a single element entry transmitted in the first available 20-minute scan period.

10191 (AF) The radiation level intensity reading will be encoded using the symbolic group RIII. The letter "R" will be used as the radiation level indicator and "III" will represent hundreds, tens and units of roentgens obtained from radiation intensity instruments (e.g., R012 or twelve roentgens). For radiation levels above 999 roentgens, III will represent hundreds, tens and units of radiation followed by a plain language remark to indicate thousands of roentgens (e.g., PLUS 1000).

The radiation level intensity group will be appended to the 1530Z surface weather observations.

10332.1 (AF) Route all observations to the nearest Military Flight Service Center Weather Station or other facility having transmit facilities on the circuit for transmission in the appropriate sequence. Request the Flight Service Center Weather Station to notify Station KTIK of interruption of service in accordance with procedures established in paragraph 112, AACSM 105-2, Part 2. When service is resumed, the station whose service was interrupted will transmit notification to that effect in accordance with procedures established in paragraph 112, AACSM 105-2.

11103.1 (AF) It is AWS intent that any remark which is operationally significant to aircraft operations SHOULD BE reported. Significant remarks MUST NOT be limited only to the remarks described as mandatory elsewhere in this manual. It must be recognized that the provisions of this surface observing manual, though directive in nature, cannot possibly cover every conceivable situation that might arise. Therefore, when in the opinion of the observer, a situation occurs which should be reported but which would be an infraction of any of the provisions of this observing manual, good judgement and common sense alone should prevail and the best possible picture of actual conditions reported. Observers should be encouraged to exercise their prerogatives in this regard. Forecasters and chief observers should provide guidance in what is or is not considered as operationally significant information.

{Insert facing page 119 of the WBAN Manual of Surface Observations}