Antarctic Automatic Weather Stations: 1987
Field Report for AS 86-87

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Introduction:

The automatic weather stations (AWS) in Antarctica measure air temperature, wind speed and wind direction at a nominal height of three meters above the surface, and air pressure at the electronics enclosure. Some AWS units measure relative humidity and/or the air temperature difference between three meters and 0.5 meters above the surface. The AWS unit is controlled by a micro-computer which updates the data at a nominal 10 minute interval and transmits three to five data points for each sensor at a nominal 200 second interval to ARGOS equipped polar orbiting satellites.

The AWS units in Antarctica support the following studies:

a. Barrier wind flow along the Antarctic Peninsula and the Transantarctic Mountains.
b. Katabatic flow down the Adelie coast, Byrd Glacier, Beardmore Glacier and Reeves Glacier.
c. Mesoscale circulation on the Ross Ice Shelf.
d. Climatology of Byrd Station and Dome C.
e. Sensible and latent heat fluxes on the Ross Ice Shelf.
f. Oceanographic support.
g. Meteorological support for air operations using a local user terminal (LUT) at McMurdo.
h. Influence of Amundsen-Scott Station on the local climate.

Locations:

Table 1. gives the site name, AWS ID, location and start date for AWS units installed for 1987. Fig. 1 is a map showing the locations of AWS units in Antarctica given in Table 1.

Field Work, 1986-1987 Field Season:

The field work for the austral summer (AS) 1986-1987 involved visiting Marilyn site (8921) to replace the AWS unit, Patriot and Allison sites to exchange AWS units, Martha site to install an AWS unit, Manuela site replacing the entire station and the installation of an AWS unit on Buckle Island of the Balleny Islands.

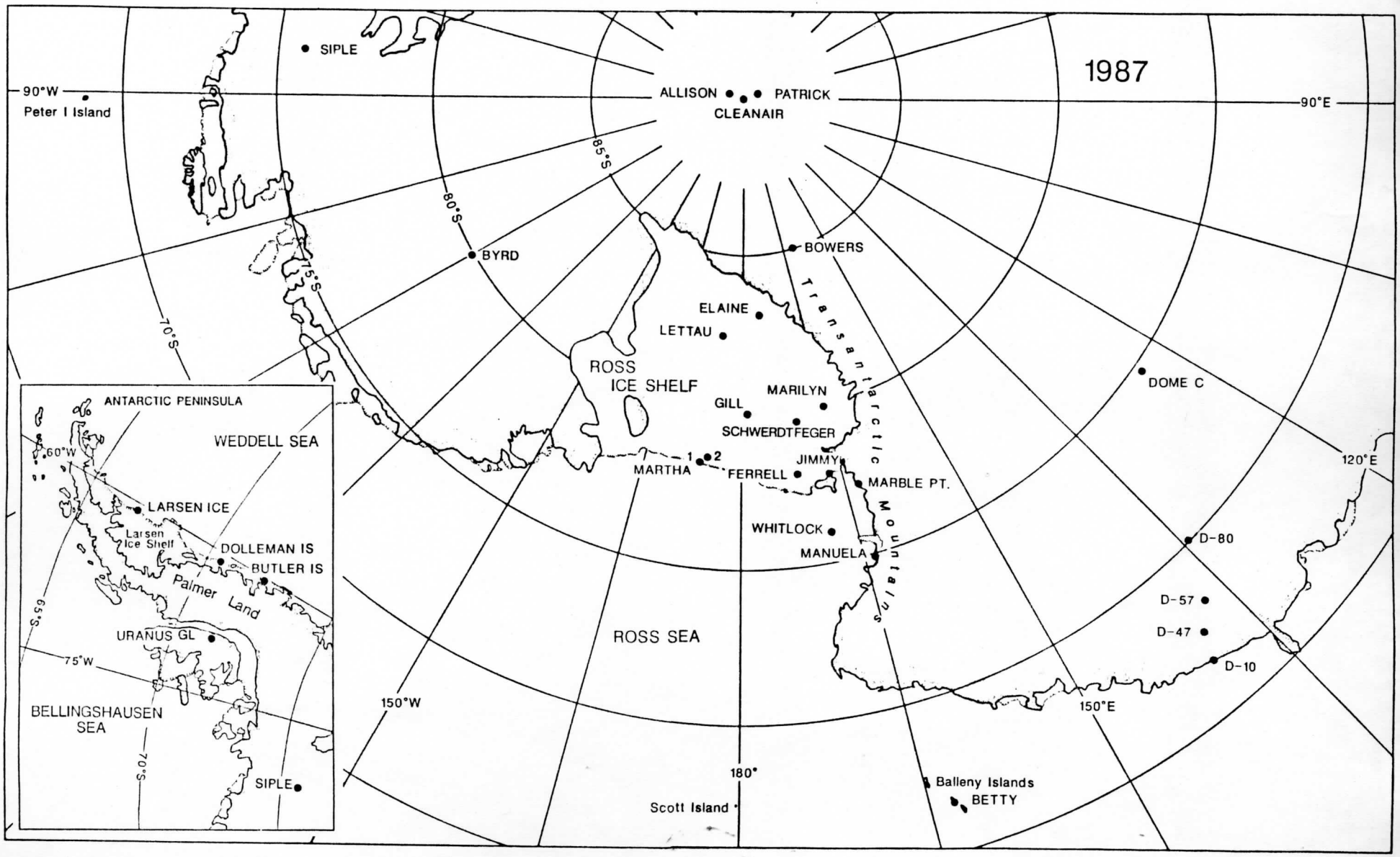

Fig. 1. Map of Antarctica showing the locations and Id number of AWS units for the year 1987.

Calendar of Events

Date	Event
29 Dec 86	Leave Madison, Wi for Christchurch
31 Dec 86	Arrive Christchurch, N.Z.
03 Jan 87	leave Christchurch for McMurdo, Antarctica arrive at McMurdo
04 Jan 87	Planning meeting. move shelters to annex, for laboratory space,
08 Jan 87	Recon flight to Marilyn site
10 Jan 87	Romove 8921B, installed 8915B at Marilyn site
12 Jan 87	Helo search for Ferrell site- not found
13 Jan 87	Meeting with Parish and ice breaker liason
15 Jan 87	Flight to South Pole
16 Jan 87	Visit to Patrick Site, remove 8905B. install 8901B
17 Jan 87	Visit to Allison Site, remove 8900B, install 8921 B
19 Jan 87	Flight to McMurdo
23 Jan 87	Helo to Ferrell site, beacon 235.8 mHz.
24 Jan 87	Meeting about ice breaker schedules
28 Jan 87	Helo to Ferrell. second beacon 235.05 mHz,
01 Feb 87	Installed 8927B at Jimmy Site for testing,
02 Feb 87	Weidner, Parish and Waight return to Chch,
08 Feb 87	Board Polar Sea,
11 Feb 87	Install 8900B at Martha II,
15 Feb 87	Install 8905B at Inexpressible Island (Manuela)
20 Feb 87	Installed 8928B at Buckle Island
27 Feb 87	Polar Sea arrives at Sydney, Australia,
02 Mar 87	Stearns leaves for Msp
03 Mar 87	Stearns arrives Madison, Wisconsin

Aerovane Record

Aerovane No.	Tach No.	Site	Date Installed	New Brushes
00-00-01		Byrd	03 Dec 84	
03-78-05		Patrick	28 Jan 86	
03-78-06				Jan 86
03-78-07		Siple	05 Feb 87	Jan 86
03-78-08		Lettau	Jan 86	
03-78-09	106798	Martha II	11 Feb 87	
03-78-10		Manuela	15 Feb 87	Jan 86
03-78-12				
03-78-14		Marble Pt	30 Jan 85	
03-78-16				
11-78-06-79	115384	McM		
12-78-09		Pole	Jan 86	
12-78-10-79	115638	Buckle Is	20 Feb 87	20 Jan 87
12-78-15	115289	McM		
12-78-16	110797	McM		20 Jan 87
12-78-16		Elain	Jan 86	
10-79-06	115396	Ferrell	23 Jan 87	
11-80-07		Dome C	12 Jan 84	
11-80-09				
11-80 11		Allison	28 Jan 86	
84-38				
84-447				Bearings shot
84-537		Marilyn	10 Jan 87	
84-538				Bearings shot
85-848				
85-849				
86-987	16458-86	Jimmy	01 Feb 87	

Visit to Marilyn Site, 10 Jan 87 by LC-130

Battery voltage 11.93 volts. Raised tower 10 feet. Installed AWS 8915 with delta T and relative humidity. Beacon was operating but was removed from the site. Radar reflector was installed and gave good signal return. Aerovane 84-537 was installed. New boom installed with two junction delta T. Batteries assumed okay based on the voltage reading of 11.93 v. Solar panel extension required due to additional tower height. Wire was cut and extension inserted using wire nuts. green to green and black to black. AWS box dug out and AWS 8921B was removed. About three feet ot tower was out of the snow. Antenna had open lead. Resistance thermometer for air temperature was open.

Patrick Site, 16 Jan 87 by Sprite from South Pole.

Picked up the flags to the site at the NE end of the clean air facility. Replaced short boom with long boom that has two juction delta T and resistance thermometer at lower level. Removed AWS 8905B and installed AWS 8901B less pressure gauge using rope to tie to the tower because boom cables were not long enough to bury the box. Tower was raised five feet, boom rotated 120 deg so that zero is at 240 deg. Battery voltage 12.71 volts and charging. Weather clear, temperature -20 F, wind 10 kts and dropping. Batteries were not dug up. Regulator was uncovered. Guys were left at the same place on the tower.

People helping
Kevin Linn, driver
Eric Merriam

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17 Jan 87. Trip to Allison Site by Spryte:

Went to the left of old Pole and the flagged area and easily picked up the flagged poles to the site. Battery voltage at AWS 2.85 volts. Dug up battery boxes, removed AWS 8900B, battery boxes, regulator, boom and tower. Filled in the hole. Installed battery boxes with tower base board on the box and battery boxes level with the snow. Battery plugs were to the outside of the boxes away from the tower. Solar panel left at same height on the tower-not moved. AWS 8921B tied to tower behind the solar panel and resting on two bolts on bottom box mounts. Junction box with regulator at level of the bottom delta T. Old model boom with two junction delta T oriented so that boom zero is at 300 deg with 180 deg point pointing towards South Pole dome. Battery check 12.49 V when charging, solar panel out 13.5 v. Charging indicated. Aerovane installed in 1986 remained in place.

Angle from the site to the South Pole dome as determined from the sun is 60 deg W.

People helping us.
Jim Keller, Rte 3, Box 117, Rolla, Mo. 65401. Jim Benson, Driver

23 Jan 87, Ferrell site:

Removed aerovane 84-538, bearings shot. Installed aerovane 10-79-06. Installed beacon 235.8 mHz on board with antenna down and taped to the 2x6 vertical board. AWS unit removed for check at McMurdo.

28 Jan 87, Ferrell Site:
Tacan 47 nmi at 268 true. Installed beacon 235.05 mHz on 2x6 below other beacon with antenna up and end-on to first beacon. antenna taped to the board. Station beeped.

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1 Feb 87, Jimmy Site on Star Glacier:

Delta T and relative humidity, AWS 8927B, Aerovane 86-987 installed to test the bearings. Solar panel charging batteries previously installed at the south Pole at Allison Site. Battery voltage 12.45 and charging. Used 4x4 as anchors with chains. Tower height 5 feet.

4 Feb 87, Jimmy Site on Star Glacier:

Wind direction on boom 670/10020*360=24 deg,sun at 10:30=22 deg, RH87-1 installed in the boom.
20 gal of water poured on the 4x4 anchors.

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11 Feb 87, Martha II Site:

Searched for AWS 8923 along 172.5 deg W but not found due to poor visibilty caused by heavy clouds with some clear areas. Installed new unit about 10 nmi from the edge of the ice shelf at 78 deg 22' 34" S, 173 deg 25' 8" W based on satellite tracking system of J. Ardai. Installed AWS 8900B with RH87-2, Aerovane 03-78-09 and two junction delta T. Tower height-10 feet. Anchoring- rope and anchor boards, rope about 25 feet long. Top of battery boxes even with snow. tower resting on the battery boxes, no base board, tied legs of tower to handles on battery box with one leg between boxes. Boom direction not determined due to the sun being totally obscured by clouds. AWS beeped.

On return trip by the ice breaker the wind was strong off the ice shelf. Ship data recorded on the bridge is as follows:

Date	Long	Time	Time	Ws	Wd	TT	PP
2/13	171 14'	2126	2100	25	203	-11	981.5
2/13	172 02'	2225	2200	25	204	-13.5	982.1
2/13	172 32'	2255	2300	19	213	-13.	983.8
2/13	173 18'	2400	2400	21	214	-14.	985.5
2/14	174 06'	0112	0100	18	203	-14.5	986.5

AWS ID: 8900B

SITE NAME: Martha II
LOCATION : 10 nmi S of ice edge at 78.38 S, 173.42 W.
HEIGHT : 18 m, height of ice shelf determined from ship

DATE ACTIVATED: 11 February 1987
LAST VISITED : Same

SENSOR	IDENTIFICATION
AEROVANE	3-78-10
PRESSURE GAUGE	
HUMIDITY PROBE	RH87-2
DELTA-T PROBE	Two junction

VARIABLE	AWS	MEASURED	CORRECTION
PRESSURE			
WIND SPD			
WIND DIR	196	215	add 20 deg to data

SITE DESCRIPTION:

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Installed AWS 8900B with RH87-2, Aerovane 03-78-09 and two junction delta T. Tower-10 feet
Anchoring- rope and anchor boards, rope about 25 feet long. Top of battery boxes even with snow. tower resting on the battery boxes. no base board, tied legs of tower to handles on battery box with one leg between boxes. Boom direction not determined due to the sun being totally obscured by clouds. AWS beeped.

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2/14	174 06'	0112	0100	18	203	-14.5	986.5

15 February 1987, Manuela Site, Inexpressible Island

Tower was down away from the Reeves Glacier with all three legs broken off at the first cross brace from the bottom. The aerovane was frozen at the tachometer and the aerovane number was not noted at the time, solar panel on ground and the glass was crazed. Everything was removed and and returned to the ship including the batteries. Battery voltage was not measured at the site nor at McMurdo upon storing the batteries in cage 11.

Replacement AWS unit installed. AWS 8905B, Aerovane 03-78-10 with heavy duty prop, short boom with 2 junction delta T and RH87-3, solar panel, two battery boxes, new in 86, and regulator. Boom installed so that 180 deg end pointed towards the Reeves glacier. Battery boxes installed on the old tower base box, iron pins bolted to tower bottom and driven through the holes in the base box into the rocks at least 6 inches. Battery boxes pushed up against the two sides of the tower towards the glacier and both against leg toward the glacier. Plugs on the battery boxes are towards the inside and each other. One five foot tower section used. Base box not moved from the previous installation. Solar panel is parallel to the boom.

Bearing on sun at 1930 = 3520/9860*360=129 deg
Sun direction at 1930 and 163.6 deg E is 263 deg so add 134 deg to direction of the vane. Hanson nunatak direction is 4360/9860*360=156 deg relative to boom. True direction is 156 + 134 = 290 deg as compared to 292 deg based on the map. Put in another anchor board with rocks to the NW of the tower using 25 feet of chain. Chains were installed above the boom on the tower legs with two chains on each leg.

AWS ID: 8905B

SITE NAME: Manuela
LOCATION : Inexpressible Island, 74.92S, 163.60 E
HEIGHT : 80 m above sea level
TOWER HEIGHT: Five Feet

DATE ACTIVATED: 06 February 1984
LAST VISITED : 15 February 1987

SENSOR	IDENTIFICATION
AEROVANE	3-78-10 with heavy duty prop
PRESSURE GAUGE	
HUMIDITY PROBE	RH87-3
DELTA-T PROBE	Two Junction delta T

VARIABLE	AWS	MEASURED	CORRECTION	METHOD
PRESSURE				
WIND SPD				
WIND DIR	129 deg	263 deg	add 134 deg to data	sun sight

SITE DESCRIPTION:

Tower was down away from the Reeves Glacier with all three legs broken off at the first cross brace from the bottom. The aerovane was frozen at the tachometer and the aerovane number was not noted at the time, solar panel on ground and the glass was crazed. Everything was removed and and returned to the ship including the batteries. Battery voltage was not measured at the site nor at McMurdo upon storing the batteries in cage 11.

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Ship data during deployment.
1700 22 268 986.9 -4. C 1800 15 277 987.2 -4. C

20 February 1987, Buckle Island of the Balleny Island Group (Betty Site)

Sailed by Sturge Island with the top of the island in the clouds and no suitable site apparent. South end of Buckle Island appeared to be below the cloud level. Flight to the island found the end of the island obscured by clouds with a gap just north of the south end that was suitable for landing. Snow about 4 inches deep above a layer of ice. The helicopter wheels did not sink enough so that the bottom of the helicopter was above the snow. Elevation by the helicopter altimeter was 1700 feet.

The site was in a col with significant rises to the north and south, slight rise to the east and less to the west. Anchors were laid out to the four directions with the 50 foot chain to the west, 35 foot chain to the south and 25 foot chain to the north and east. The chain went through the center of the 18" x 18" anchor board to the stone anchor box. All were buried about two feet in the snow at the anchor point after the 4" x 4" was tossed into the anchor box.

Battery boxes were dug about 12 inches into the snow parallel to each other so that two legs of the five foot tower would be N-S. The two foot aluminum pipe extensions were put on the tower legs and through the base board into the snow with the base board resting on the battery boxes. One leg of the tower was between the battery boxes. The legs of the tower rested on the base board as the holes were too small to let the legs through. The base board was nailed to the battery boxes. The boom was on the N-S legs and the solar panel was pointed to the north and near the top of the tower. The AWS box is on the east side of the tower and near the bottom over one battery box. Regulator is back of AWS box. Cables are inside tower base at bottom and laying on the base board.

North was estimated with a compass with correction for the magnetic deviated. The dip was considereable and the compass direction was uncertain. After erecting the tower the aerovane was directed towards the sun at 1900 180 deg time (McM time). The bearing on the sun was 7170/10080*360=256 deg. The sun bearing at 163 deg 14' was 272 deg so add 16 deg to the wind vane reading to get the correct direction.

The AWS unit beeped about 1920 McMurdo time. Flight to the Polar Sea was uneventful. Two helicopters were used for the deployment. The MSTs were Mike Ross and Chris Stengrim. The helo pilit was Zimmer and the crew was Lincoln Miller. All helped dig in the anchors and worked very hard. Latitude and longitude was determined by the Polar Sea. Aerovane 12-78-10-79 was installed with heavy duty prop. AWS 8928B was installed.

AWS ID: 8928B

SITE NAME: Buckle Is. (Betty)
LOCATION : South end of Buckle Island at 66.87 S,163.24 E
HEIGHT : 520 m above sea level
TOWER HEIGHT: Five feet

DATE ACTIVATED: 20 February 1987
LAST VISITED : Same

SENSOR	IDENTIFICATION
AEROVANE	12-78-10-79 with heavy duty prop
PRESSURE GAUGE	
HUMIDITY PROBE	None
DELTA-T PROBE	None

VARIABLE	AWS	MEASURED	CORRECTION	METHOD
PRESSURE				
WIND SPD				
WIND DIR	256 deg	272 deg	Add 16 deg to data	sun sight

SITE DESCRIPTION:

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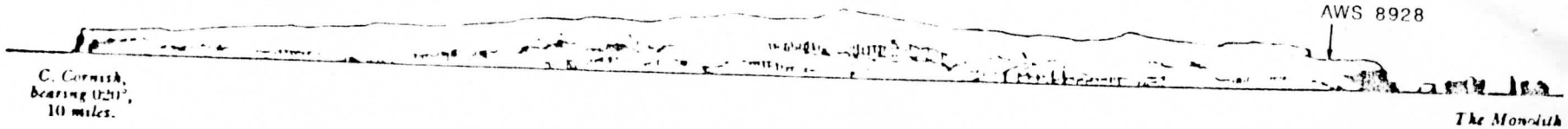
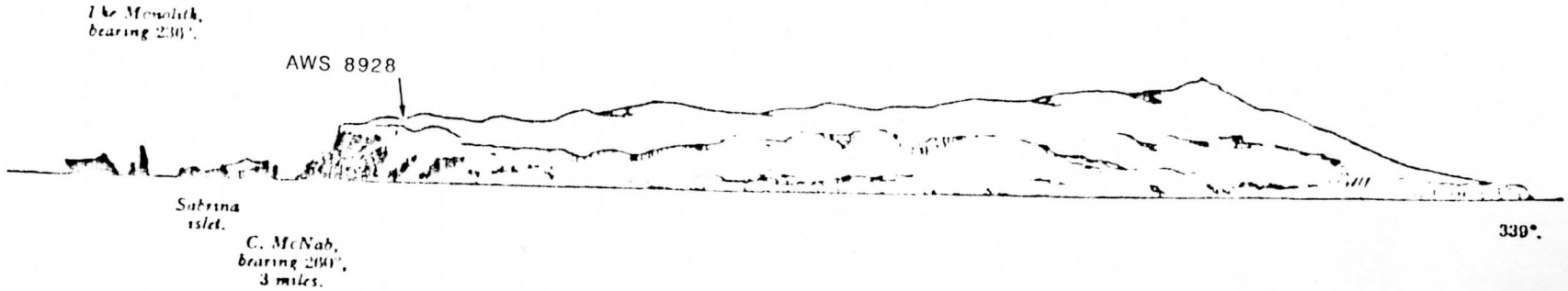


Buckle island from south-south-westward.
(Original dated 1938.)



Buckle island from eastward.
(Original dated 1938.)

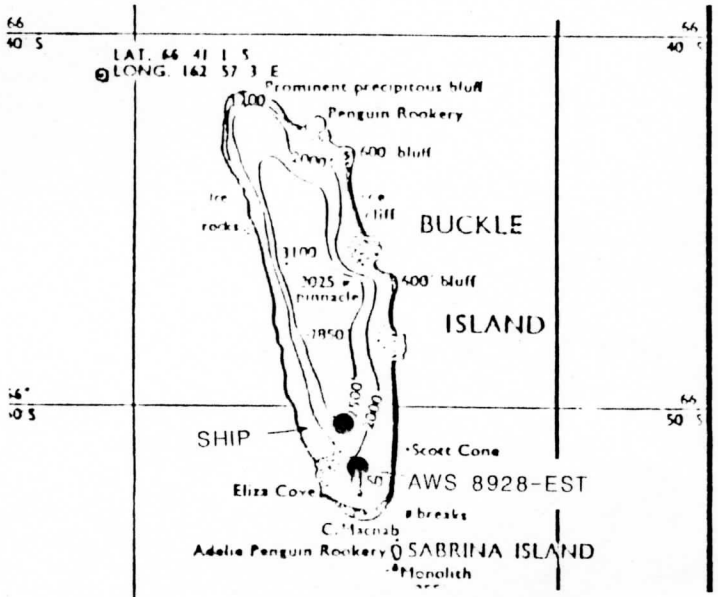


Figure 2. Map and sketches of Buckle Island showing location of AWS 8928B at Betty Site.

Inventory AS 86-87 at McMurdo

Solar panel extension	1	
Power cable extension, angle	3	
Power plug with pig tails	3	
Junction boxes, new	3	
old for 3 battery boxes	1	
Solar panels	1	
Battery boxes with batteries,	2	from Manuela Site
6 + 6 = 12	1	
Thermometer shields		
short	6	
pie tin	8	
nylon insulators	13	
Bell boxes	2	
plates, 2 hole	8	
Pipe 1/2"x7 3/4	3	
x 8 1/4	1	
x 5	2	
short nipples	15	
couplings	7	
Solar panel mounts	8	
Plugs, solar panel exten.	2	
power extension	3	
battery,female	2	
Rt angle power	5	
regulator-solar	4	
battery-regulator	2	
Boom clamps	9	
Tapered washers	9	
Boom, short	1	
Boom, long, delta T, RH	1	
long	1	
Aerovanes 12-78-16		
12-78-15		
Props	4	
Frequency meter	2	
Coax kit	1	
Thermal wire strippers	1	
Heat gun	1	
Barometer	1	
Batteries, unboxed, 12 V	6	
6 V	2	

Equipment packed for Didier Simone
Aerovane 11-78-06-79
antenna
5 foot tower sections 3
Aerovane bearings 2 sets of 2
Aerovane post
Aerovane brushes
Mounting bars- 1 set
Extra wire 3/14
Power extensions 3

Shipped to Madison from McMurdo by ship

Box of 6 volt batteries
Aerovane mounts 3
Teflon wire
Terminal strips
Aerovane, less tachometer
Beacon transmitters-3

Shipped to Madison via Polar Sea

Aerovane from Manuela Site
AWS box
Solar Panel
Tool chest
Aerovane Prop

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Plans for the Field Season AS 87-88

1. Replace RTG powered AWS units at Dome C, Byrd, Ferrell and Marble Point with battery powered units. This will require four AWS units less pressure gauge and transmitter. Twenty four batteries will be required. (Stearns)

2. Install two AWS units on the Reeves Glacier. Two complete units required and 12 batteries. (bromwich and Parish)

3. Install AWS unit on Scott Island. One complete unit required with 6 batteries. (Stearns)

4. Remove AWS units at D-80, D-57, and D-47 for renovation and deployment along the Adelie Coast during AS 88-89. (Wendler)

5. Two AWS units could be removed from South Pole leaving the unit at the Clean Air Facility. (Hogan)

6. Consideration could be given to the Siple Coast study. Work may start there in one or two years for other reasons. (Bromwich and Parish)

7. With the closing of Siple Station next season should the Byrd Station record be continued? (Stearns)

27 AWS units are currently installed in Antarctic and expensive parts are available for one two three more units.

Figure 1 shows the locations of the AWS units.

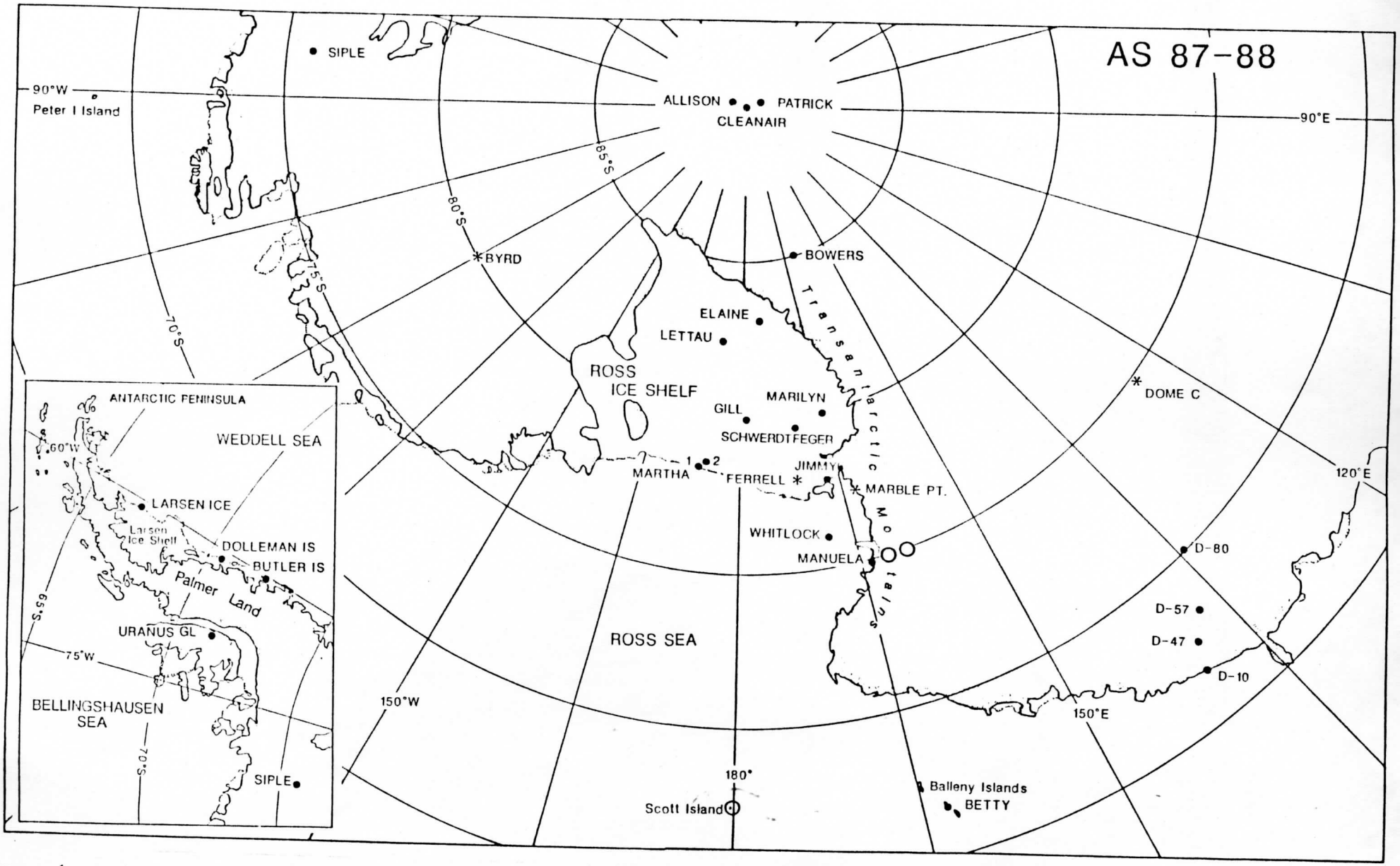

Figure 1. Locations of the AWS units for 1987 and those planned for 1988 including RTG replacement.

TEN YEAR PLAN FOR ANTARCTIC AUTOMATIC WEATHER STATIONS

1987

At the present time there are 26 automatic weather stations (AWS) operating with 28 deployed in Antarctica. In 1986 17 of the 24 SWS units deployed operated for the entire deployment period. The 1986 average was .84 of the deployed time. The AWS units measure wind speed and direction, air temperature and atmospheric pressure at a nominal height of three meters. The data is received by them Argos system on polar orbiting satellites which is providing a exceedingly reliable data link.

Several AWS units have been equipped to measure relative humidity and a vertical temperature difference. These additional measurements will be added to AWS units that are brought in for redeployment. Measurements other than relative humidity and vertical temperature difference can be made so the sensors should not be limited to the six mentioned above but should be tailored to the needs of the experiment, if possible. The trade off is that more variables means that there is less historical data for each variable in the transmission to the satellite.

Table 1. gives the locations of AWS units for 1987. AWS 8910 is not operating at Siple Stations and the reason is believed to be that the power plug is shorted to the shell grounding out the station through the antenna ground.

Redeployment of the AWS units in the McMurdo area in the same season can be done relatively easily, but redeployment from one area of the Antarctic Continent to another may entail a one year delay. The AWS units can be deployed using ice breaker helicopters, C-130 aircraft, UH-1 helicopters and twin otter aircraft. Deployment of AWS units should take advantage of other operations in the area so as to minimize the deployment costs.

The following are future research objectives suggested at the Annual Antarctic Automatic Weather Stations meetings and contained in proposals from other investigators. Additional suggestions are welcome and should be made for adequete planning for the future.

Table 1. AWS locations for 1987:

Location or name	AWS ID	Lat. (deg)	Long. (deg)	Elev. (m)	Start Date
Purpose: Katabatic wind flow; G. Wendler, Univ. of Alaska.					
D-10	8901	66.70 S	139.80 E	240	15 Jan 84
D-47	8914	67.38 S	138.72 E	1560	13 Nov 85
D-57	8916	68.18 S	137.52 E	2103	17 Nov 85
D-80	8919	70.02 S	134.72 E	2500	11 Dec 85
Dome C	8904	74.50 S	123.00 E	3280	13 Jan 83
Purpose: Climatic record; C. Stearns, Univ of Wisconsin.					
Byrd Stat.	8903	80.00 S	120.00 W	1530	05 Feb 80
Siple	8910	75.90 S	84.30 E	1054	
Purpose: NSFA Support network.					
Marble Point	8906	77.43 S	163.75 E	120	05 Feb 80
Ferrell	8907	78.02 S	170.80 E	44	10 Dec 80
Whitlock	8913	76.20 S	168.70 E	275	23 Jan 82
Buckle Is.	8928	66.87 S	163.24 E	520?	20 Feb 87
Purpose: Ross Ice Shelf network; C Stearns, Univ of Wisconsin.					
Marilyn	8915	79.98 S	165.03 E	75	16 Jan 84
Schwerdt.	8924	79.57 S	169.45 E	50?	24 Jan 85
Gill	8925	80.00 S	179.00 W	50?	24 Jan 85
Bowers	8909	85.20 S	163.40 E	2014?	11 Jan 86
Elaine	8911	83.15 S	174.46 E	100?	28 Jan 86
Lettau	8908	82.59 S	174.27 W	30?	29 Jan 86
Martha I	8923	78.31 S	172.50 W	40	01 Feb 88
Martha II	8900	78.38 S	173.42 W	18	11 Feb 87
Purpose: Katabatic Flows; Bromwich and Parish, Oh & Wy					
Manuela	8905	74.92 S	163.60 E	80	06 Feb 84
Purpose: Barrier Wind, Antarctic Peninsula; C. Stearns, U of W.					
Larsen Ice	8926	66.97 S	60.55 W	17	01 Jan 86
Dolleman Is.	8917	70.70 S	60.97 W	395	18 Feb 86
Butler Is.	8902	72.20 S	60.34 W	90?	01 Mar 86
Fossil Blf	8920	71.33 S	68.28 W	765	06 Mar 86
Purpose: South Pole station influence, A. Hogan, SUNY.					
Pole	8918	90.00 S		2835	29 Jan 86
Patrick	8921	89.88 S	45.00 E	2835	28 Jan 86
Allison	8901	89.88 S	45.00 W	2835	28 Jan 86
Purpose: Testing					
Jimmy	8927	77.80 S	166.72 E	200	01 Feb 87

NSFA METEOROLOGICAL SUPPORT:

PURPOSE: To provide real time data from AWS units in support of air operations at Willy Field and the Ice Runway near McMurdo. The meteorological office at McMurdo has the equipment to pick up the AWS units transmission relayed from the satellite. All operating AWS units are received however experience has shown that the following units are most valuable and should remain in place for NSFA support.

P.I.: NSFA Meteorologist in Charge at McMurdo.

DEPLOYMENT:

Site Name	Lat	Long	Season	AWS ID
Ferrell	78.0 S	170.8 E	AS 80-81	8907
Marble Point	77.4 S	163.7 E	AS 79-80	8906
Whitlock	76.2 S	168.7 E	AS 81-82	8913
Marilyn	80.0 S	165.0 E	AS 83-84	8921B
Martha II	78.3 S	172.5 W	AS 83-84	8923B

END OF DEPLOYMENT: Indefinite

ADELIE COAST AIRFLOW:

PURPOSE: To determine the airflow off of the continent to the ocean along the Adelie Land including the snow transport.

P.I.: Gerd Wendler, University of Alaske, Fairbanks, Alaska

DEPLOYMENT:

Site Name	Lat	Long	Season	AWS ID
Horn Bluff	68.5 S	150.0 E	AS 87-88	
D-10	66.7 S	139.8 E	AS 82-83	8901
Dibble Glacier	66.2 S	135.0 E	AS 87-88	

DEPLOYMENT METHOD: To be decided as well as the exact locations.

END OF DEPLOYMENT:

COMMENTS:

KATABATIC FLOW-REEVES GLACIER

PURPOSE: To measure the wind speed, wind direction as well as other meteorological parameters at the top, along and at the bottom of the Reeves Glacier to understand the behavor of the katabatic flow including the extension out over the ocean.

P.I.s: Dave Bromwich,Ohio State
Tom Parish, University of Wyoming

DEPLOYMENT: Four AWS units required.

Site Name	Lat	Long	Season	AWS ID

DEPLOYMENT METHOD: Ice breaker helicopter? The helicopter is limited to going only 35 nautical miles from the ice breaker so the goal will be to put one AWS unit as far up the glacier as possible.

END OF DEPLOYMENT:

COMMENTS:

SIPLE COAST AIRFLOW

PURPOSE:

P.I.; Tom Parish, University of Wyoming

DEPLOYMENT: Four AWS units required.

Site Name	Lat	Long	Season	AWS ID
Upstream B	83.5 S	138.0 E		

DEPLOYMENT METHOD:

END OF DEPLOYMENT:

COMMENTS:

ISLAND STATIONS

PURPOSE: to provide synoptic data from three islands in the Antarctic Ocean in a very data sparse region--no manned stations and very little ship traffic.

P.I.: Harry Van Loon, NCAR, Boulder, Colorada.
C.R. Stearns, University of Wisronsin, Madison, Wisconsin

DEPLOYMENT;

Site Name	Lat	Long	Season	AWS ID
Peter I Island	90.0 W	69.0 W	AS 88-89	
Bellany Island (Buckle)	165.0 E	67.5 S	AS 88-89	8928B
Scott Island	180.0 E	68.0 S	AS 88-89	

DEPLOYMENT METHOD: Ship of opportunity.

END OF DEPLOYMENT:

COMMENTS: Funding would be from a source other than NSF-DPP.

POLAR REGIONS ICE SHELF MONITORING (Prism)

PURPOSE: To determine the melting/freezing rate of the underside of the Ross Ice Shelf at two specific sites. The AWS units would be used to relay data and to provide weather information at the site. The data transmitted would be the distance from the ocean bottom to the bottom of the ice shelf.

P.I.: Stan Jacobs.Lamont-Doherty Geological Observatory, Palisades. N.Y.

DEPLOYMENT: Two AWS units required.

Site Name	Lat	Long	Season	AWS ID

DEPLOYMENT METHOD:

END OF DEPLOYMENT:

COMMENTS:

SEASONAL SEA ICE ZONE PROJECT IN THE WEDDELL SEA

PURPOSE: To investigate the effects of oceanographic and atmospheric conditions during the drift of sea ice and tabular icebergs from the Weddell Sea into the westerlies.

P.I.: Torgny Vinje and Monica Kristensen, Norsk Polar'institutt, Norway.

DEPLOYMENT: Five AWS units would be required for each deployment.

Site Name	Lat	Long	Season	AWS ID
Weddell Sea	S of 75	W of 30	AS 87-88	
Weddell Sea	"	"	AS 90-91	

DEPLOYMENT METHOD: By helicopters from Norwegian expedition ship Dedember 87 and December 90.

END OF DEPLOYMENT:

COMMENTS: The array of AWS units will presumeably drift north into the Westerlies in one year. Battery capacity should be for two years.

WEDDELL SEA OCEAN-ATMOSPHERIC CIRCULATION AND ICE DYNAMICS

PURPOSE:

P.I.: D.W.S. Limbert, British Antarctic Survey, Cambridge, England.

DEPLOYMENT:

Site Name	Lat	Long	Season	AWS ID

DEPLOYMENT METHOD:

END OF DEPLOYMENT:

COMMENTS:

MONITORING OF METEOROLOGICALLY BARREN COASTAL REGIONS

P.I. C.R. Stearns

PURPOSE: To locate AWS units along the coast of Antarctica in data sparse regions. The coast of Antarctica from 75 deg W to 160 deg W is particularly devoid of meteorological stations.

DEPLOYMENT: Ice breaker when the opportunity arises. Sites will depend on the ability to penetrate the sea ice to a solid location.