

SUBJECT	:	Snow Radiation Shield
PURPOSE	:	Eliminate a ceilometer general alarm when there is snow cover and bright sunlight.
EQUIPMENT AFFECTED	:	ASOS Laser Beam Ceilometer
PARTS REQUIRED	:	1 ea., snow radiation shield P/N 50-20663 1 ea., Label CT12K P/N 98-20678
MOD PROCUREMENT	:	The above parts will be provided through NLSC as an ASOS Field Modification Kit S100-2MT1MP2. Technicians are to order for each site (listed in Appendix B) in their assigned maintenance area(s).
SPECIAL TOOLS REQUIRED	:	Allen wrench, 3/16 inches
TIME REQUIRED	:	1 hour
EFFECT ON OTHER INSTRUCTIONS	:	None
AUTHORIZATION	:	This modification is authorized by ECP E94SM05F122
VERIFICATION STATEMENT	:	This modification has been successfully tested for operational integrity at Sterling, Virginia, and the sites listed in Appendix A

#### GENERAL

This modification adds a snow radiation shield to the Laser Beam Ceilometer (LBC). It is attached to the ceilometer by a flange that fits between the top of the pedestal and the LBC. The radiation shield fits over the ambient air temperature sensor on the bottom side of the equipment housing. The shield protects the ambient air temperature sensor from being heated from snow reflected sunlight. The shield must remain in place year-round.

#### PROCEDURE

##### BEFORE INSTALLING SNOW SHIELD

1. Call the AOMC at 1-800-242-8194. Inform the AOMC at which site you will be installing the snow radiation shield. Confirm that the AOMC will provide access to the site-specific data base.
2. For commissioned sites, obtain approval of the responsible MIC/OIC before starting installation. For non-commissioned sites, coordinate with the MIC/OIC before starting installation. You may install on any day of the month if permission is granted and the restrictions in step 3 are complied with.
3. **Commissioned Sites Only:** Do not start installation during bad weather, precipitation, instrument flight rule (IFR) conditions, or if any one of those conditions are expected within 3 hours. These meteorological conditions will be defined by the responsible MIC/OIC.

## INSTRUCTIONS

4. The snow radiation shield is held in place by a flange on the edge of the shield. It is installed underneath the ceilometer with one surface parallel to the edge of the ceilometer base and the flange against the pedestal top plate. The flange fits between the top of the pedestal and the bottom of the ceilometer. It is mounted at the opposite end from the fan cable and connector. It is mounted midway between the sides and over top of the ambient air sensor housing which protrudes out of the bottom of the ceilometer. Reference figure 1 for a pictorial view.
5. Find the end of ceilometer opposite the fan cable entry on the bottom of the ceilometer. Remove the two screws that secure the ceilometer to the pedestal on that end of the ceilometer.
6. On the end of the ceilometer where the fan cable enters the ceilometer base, loosen, but **do not remove**, the two screws that secure this end to the pedestal. Loosen so about 1/16 inch is between the head of the screw and the pedestal.
7. Ensure that the thumb screws securing the blower assembly, and the two latches securing the ceilometer cover to the base plate, are in place and tight.
8. Find the end of the ceilometer where the temperature sensor housing is located. This is the same end from which the two screws were removed. The ceilometer will be tilted away from this end.
9. In one hand, hold the snow radiation shield so the flange is toward the pedestal. With the other hand, lift **at the side of the ceilometer**. If your lifting hand is at the end of the ceilometer, it will be in the way when the shield is put in the ceilometer to aid in lifting and pushing. Carefully tilt the ceilometer away from you.
10. Insert the shield between the inside edge of the ceilometer and the pedestal top assembly so the flange fits over top of the pedestal. Lower the ceilometer to secure the snow radiation shield. Reference figure 1.
11. Check that the shield is positioned midway with respect to the sides of the ceilometer. Move as necessary by sliding.
12. Reinstall the two screws removed in step 5.
13. Tighten all four mounting screws (step 5 and step 6) that secure the ceilometer to the pedestal.
14. Apply the stick-on part number above the existing name plate on the side of the ceilometer.

### AFTER INSTALLING SNOW RADIATION SHIELD

15. Inform site office staff that the ASOS is again operational.  
Call the AOMC and tell them:
  - a. Your location,
  - b. Installation of the modification has been completed, and the ASOS is operational.

### **REPORTING MODIFICATION**

Target date for completion of this modification is 30 days after receipt of parts. Electronically report the completed modification on WS Form A-26, Maintenance Report, for each system using instructions in EHB-4, Part 2, Appendix F. Use reporting code ASKY. An example of the Form A-26 is provided.

Make appropriate entries in the SYSLOG using the Maintenance Action keys, Field Modification keys, and comment fields. Follow these steps:

- a. Log on as TECH.
- b. Key the MAINT screen.
- c. Key the ACTION page.

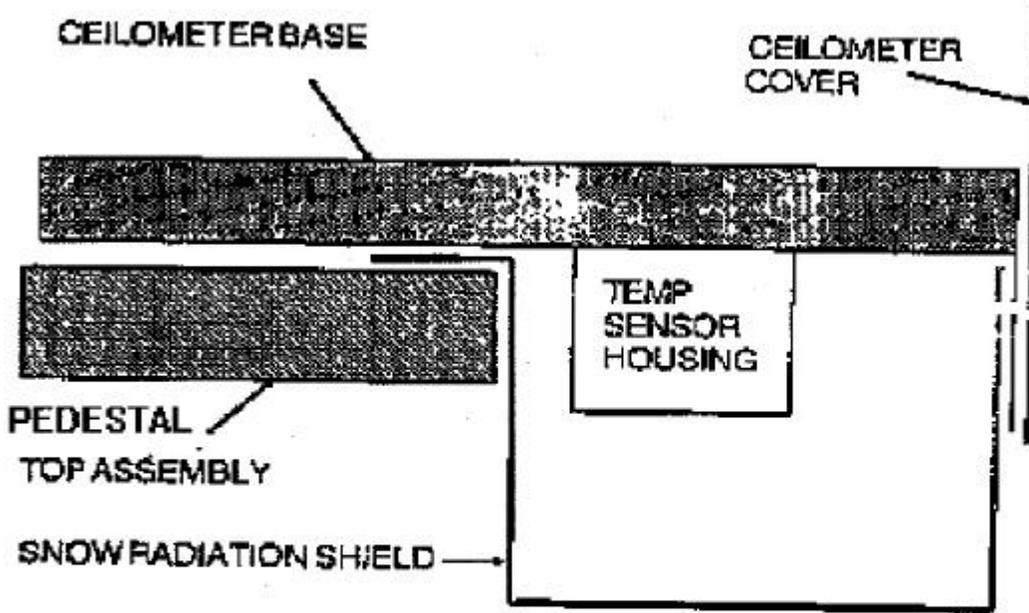
- d. Key START - Stop here and perform the modification.  
After Mod Note 24 activities are completed, log onto the system.
- e. Key the MAINT screen.
- f. Key the ACTION page.
- g. Key FMK - Enter the Field Mod Kit (FMK) number as follows: MOD 24.  
On the second line of the screen verify that only MOD 24 is displayed.  
Complete by entering Y in the Y/N if only MOD 24 is displayed.
- h. Check the SYSLOG and verify the FMK message.

Acting Chief, Engineering Division

Attachments  
Appendix A  
Appendix B

W/OSO321:BGMcCormick:rhz:1/26/95,"amod24.h11" disk HB11-F, spellchecked:redone 7/12/95:redone  
8/4/95:8/9/95:8/10/95:8/11/95

Figure 1



**CROSS SECTION OF SNOW RADIATION SHIELD  
INSTALLED ON A CEILOMETER**

## Sites for the snow shield demonstration

**EASTERN**

PORTLAND, ME - PWM  
 SYRACUSE, NY - SYR  
 CHARLESTON, WV - CRW  
 ALBANY, NY - ALB  
 BERLIN, NH - BML  
 WHITEFIELD, NH - HIE  
 WORCESTER, MA - ORH  
 ERIE, PA - ERI  
 NORTH ADAMS, MA - 2B6  
 WISCASSET, ME - 9B9  
 JAFFREY, NH - AFN  
 CLEVELAND, OH - CLE

**WESTERN**

STAMPEDE PASS, WA - SMP  
 SEXTON SUMMIT, OR - SXT  
 BLUE CANYON, CA - BLU  
 KALLISPELL, MT - FCA  
 HAVRE, MT - HVR  
 GLASGOW, MT - GGW  
 GREAT FALLS, MT - GTF  
 HELENA, MT - HLN  
 ELY, NV - ELY  
 MISSOULA, MT - MSO  
 SPOKANE, WA - GEG  
 PENDLETON, OR - PDT  
 YAKIMA, WA - YKM

**CENTRAL**

ABERDEEN, SD - ABR  
 ALAMOSA, CO - ALS  
 GRAND ISLAND, NE - GRI  
 LINCOLN, NE - LNK  
 GOODLAND, KS - GLD  
 CONCORDIA, KS - CNK  
 TOPEKA, KS - TOP  
 WICHITA, KS - ICT  
 KANSAS CITY, MO - MCI  
 HASTINGS, NE - HSI  
 TEKAMAH, NE - TQE  
 IOWA CITY, IA - IOW  
 PADUCAH, KY - PAH  
 ALPENA, MI - APN  
 ST CLOUD, MN - STC  
 DUBUQUE, IA - DBQ  
 SIDNEY, NE - SNY  
 ROCKFORD, IL - RFD  
 PEORIA, IL - PIA  
 SPRINGFIELD, IL - SPI  
 FORT WAYNE, IN - FWA  
 MADISON, WI - MSN  
 ROCHESTER, MN - RST  
 SOUTH BEND, IN - SBN  
 WATERLOO, IA - ALO

APPENDIX B

07S	BLU	ENA	ILG	N00	SEG
1S4	BMG	ENN	IMT	N22	SFF
22G	BML	ENW	INL	N63	SGF
2B4	BNO	EPH	INW	N97	SGY
2B6	BOI	ERI	IOW	NED	SIT
2V3	BPI	EST	IPT	NYC	SLK
3KM	BRD	EVV	ISN	OFK	SLN
3S2	BRW	EVW	ISW	OJC	SMP
3SM	BTL	EWB	IXD	OLF	SNY
3SZ	BTM	FAI	JEF	OLM	SOV
3U6	BTT	FAR	JKL	OMA	SPI
47C	BYG	FCA	JNU	OME	SPW
5B5	BZN	FFT	JST	OMK	STC
5C0	C19	FIT	KAL	ONO	STJ
6V2	CAG	FLD	KNXX	ORE	STL
7G2	CAK	FLG	KNYG	ORH	STP
7MY	CAO	FNT	KTN	ORT	SUX
9B9	CDB	FOE	LAA	OSH	SWD
A21	CEZ	FSD	LAN	OSU	SXT
A8L	CFV	FVE	LAS	OTZ	SYR
ABE	CGI	FWA	LBF	OVE	TAL
ABQ	CKB	GAG	LEX	PADK	TAN
ABR	CLE	GCK	LGU	PAQ	TCS
ADG	CMI	GCN	LHX	PASY	TDZ
ADQ	CNK	GED	LNK	PDT	THV
AFN	CNU	GEG	LOU	PDX	TOP
AIA	CON	GEY	LOZ	PGA	TOR
AKN	COS	GGW	LVM	PHD	TPH
AKO	COU	GJT	LWC	PHL	TQE
ALB	CPR	GKN	LWS	PIA	TRI
ALO	CPS	GLD	LWV	PIR	TYS
ALS	CQX	GLR	MBS	PKD	U11
ALW	CRW	GRB	MCG	PLN	U73
AMA	CVG	GRI	MCI	PNE	UCA
AMW	CYS	GRR	MCK	PPF	UNO
ANC	DAG	GSH	MDH	PSC	VEL
ANN	DAY	GTF	MFD	PSP	VPZ
AOH	DBQ	GVW	MFI	PTK	VSF
APN	DCA	HAO	MFR	PTW	VTN
ARB	DDC	HEI	MGJ	PUB	WLD
ARR	DEC	HFD	MGW	PUW	WMC
ASX	DEN	HIE	MGY	PVD	YIP
ATY	DET	HLC	MHK	PWK	YKM
AXN	DFI	HLN	MHS	PWM	YNG
AZO	DGW	HOM	MIC	PYM	
B20	DHT	HON	MIW	RAC	
BDE	DKK	HRO	MKE	RAP	
BEH	DLN	HSI	MKG	RBG	
BFD	DMO	HTL	MLI	RFD	
BFF	DRA	HUF	MLP	RHI	
BGD	DRO	HUT	MLS	RIL	
BGM	DSM	HVN	MLT	RIW	
BIG	DSV	HVR	MNN	RNO	
BIH	DTW	HWV	MPV	ROW	
BIL	DVN	HYR	MRI	RSL	
BIS	EAA	114	MSN	RST	
BIX1	ELM	115	MSO	S22	
BIX2	ELN	IAD	MTJ	SBM	
BIX3	ELY	ICT	MTO	SBN	
BJJ	ELZ	IGM	MVL	SCC	
BLF	EMP	IJD	MWH	SDF	