NATIONAL TRANSPORTATION SAFETY BOARD

Office of Aviation Safety
Washington, D.C. 20594

March 17, 2016

Attachment 15 – AKR Localizer/DME Testing

OPERATIONAL FACTORS

CEN16MA036

Subject Area: AKR/LOC
Location: AKRON, OH

SAL LOG ENTRY REPORT
11/10/2015 - 11/12/2015

Report Date: 11/11/15 02:09Z
Page 1

Date	Time	CC	Remarks	Init
11/10/15	2048	89	STATUS SET TO OPEN (O)	
			EVENT TYPE SET TO AIRCRAFT ACCIDENT / INCIDENT	
			RWY 25 LOC REMOVED FROM SERVICE DUE TO AIRCRAFT ACCDNT	
			EFT1526/H25B	DRJ
11/10/15	2055	89	LIR - Modified in EM	DRJ
11/10/15	2055	89	LIR - Modified in EM	DRJ
11/10/15	2055	89	LIR - Modified in EM	DRJ
11/10/15	2059	89	LIR - Modified in EM	DRJ
11/10/15	2059	89	LIR - Modified in EM	DRJ
11/10/15	2100	89	AKR 11/002 AKR NAV ILS RWY 25 LOC/DME OUT OF SERVICE	
			1511102059-1511131800EST	DRJ
11/10/15	2100	89	LIR - Modified in EM	DRJ
11/10/15	2100	89	LIR - Modified in EM	DRJ
11/10/15	2100	89	LIR - Modified in EM	DRJ
11/10/15	2101	89	LIR - Modified in EM	DRJ
11/10/15	2101	89	LIR - Modified in EM	DRJ
11/10/15	2113	89	LIR - Modified in EM	DRJ
11/10/15	2113	89	LIR - Modified in EM	DRJ
11/10/15	2113	89	LIR - Modified in EM	DRJ
11/10/15	2117	89	LIR - Modified in EM	DRJ
11/10/15	2117	89	LIR - Modified in EM	DRJ
11/10/15	2117	89	LIR - Modified in EM	DRJ
11/10/15	2117	89	LIR - Modified in EM	DRJ
11/10/15	2145	89	LIR - Modified in EM	DRJ
11/10/15	2145	89	LIR - Modified in EM	DRJ
11/10/15	2153	89	LIR - Modified in EM	DRJ
11/10/15	2153	89	LIR - Modified in EM	DRJ
11/10/15	2203	89	LIR - Modified in EM	MJD
11/10/15	2218	89	SSCM/DH advised ATSS's are to document as found reading only.	DRJ
11/10/15	2218	89	LIR - Modified in EM	DRJ
11/10/15	2227	89	Log related to (LAD) LOG #1260346603	DRJ
11/11/15	0102	89	COORDINATION STAGE SET TO RETURNED TO SERVICE	
			ATSS/TPG certified and RTS AKR LOC 11/11 @ 0058z	SG
11/11/15	0102	89	LIR - Modified in EM	SG

Signature of Manager/Designee | Date | Signature of Technician | Date

Subject Area: AKR/DME
Location: AKRON, OH

SAL LOG ENTRY REPORT
11/10/2015 - 11/12/2015

Report Date: 11/11/15 02:11Z
Page 1

Date	Time	CC	Remarks	Init
11/10/15	0015	60	LIR - Modified in EM	NJA
11/10/15	0129	60	COORDINATION STAGE SET TO PENDING APPROVAL	NJA
11/10/15	1048	60	COORDINATION STAGE SET TO APPROVED	BMT
11/10/15	1414	60	PHONE LOG ENTRY FOR AF SPECIALIST ALEXANDER, WARDELL,: advised of approval	GEH
11/10/15	1605	60	COORDINATION STAGE SET TO RETURNED TO SERVICE AKR RWY 25 DME OTS for PM; no recall given. ATSS/WA RTS.	DJ
11/10/15	1604	60	STATUS SET TO CLOSED (C)	DJ
11/10/15	1155	00	Maintenance outage coordination approved with MOCC (GH)	WNA
11/10/15	1400	10	Arrived at Site	WNA
11/10/15	1600	50	PM Performed Semi-Annual PM, 1 on DME/AKR per 6730.2A Chg 2, paragraph 4-15B(1-10)	WNA
11/10/15	1600	50	PM Performed Quarterly PM, 1 on DME /AKR per 6730.2A Chg 2, paragraph 4-15A(1-3)	WNA
11/10/15	1602	51	DME CERTIFIED	WNA
11/10/15	1603	10	Departed from Site	WNA
11/10/15	1604	00	AKR DME Returned to service with MOCC (DJ)	WNA
11/10/15	2048	88	This is an Associated/Related entry of the Log ID : 1260360003	DRJ
11/10/15	2055	88	LIR - Modified in EM	DRJ
11/10/15	2059	88	LIR - Modified in EM	DRJ
11/10/15	2100	88	LIR - Modified in EM	DRJ
11/10/15	2100	88	LIR - Modified in EM	DRJ
11/10/15	2101	88	LIR - Modified in EM	DRJ
11/10/15	2113	88	LIR - Modified in EM	DRJ
11/10/15	2113	89	LIR - Modified in EM	DRJ
11/10/15	2117	89	LIR - Modified in EM	DRJ
11/10/15	2117	89	LIR - Modified in EM	DRJ
11/10/15	2145	89	LIR - Modified in EM	DRJ
11/10/15	2153	89	LIR - Modified in EM	DRJ
11/10/15	2218	89	LIR - Modified in EM	DRJ
11/11/15	0102	89	LIR - Modified in EM	SG
11/11/15	0103	89	LIR - Modified in EM	SG
11/11/15	0105	89	LIR - Modified in EM	SG
11/11/15	0120	89	LIR - Modified in EM	SG

Signature of Manager/Designee | Date | Signature of Technician | Date

Date	Time	CC	Remarks	Init
11/11/15	0122	89	LIR - Modified in EM	SG
11/11/15	0122	89	LIR - Modified in EM	SG
11/10/15	2320	10	Arrived at Site	MBD
11/10/15	2325	00	Arrived at site to initiate certifiaction and/or restoration of facility in a post-aircraft.	MBD
11/10/15	2325	00	current weather conditions are light drizzle and overcast, around 50 degrees.	MBD
11/10/15	2325	00	Found DME operating on commericial with no alarm or bypass light indication. System appears to be operating normally.	MBD
11/11/15	0058	51	DME CERTIFIED	MBD
11/11/15	0058	00	All as found values in tolerence on normal transmitter readings.	MBD
11/11/15	0103	00	AKR DME RTS MOCC (SG)	MBD
11/11/15	0110	10	Departed from Site	MBD

Signature of Manager/Designee | Date | Signature of Technician | Date

Date	Time	CC	Remarks	Init
11/11/15	0103	89	ATSS/MBD certified and RTS AKR DME 11/11 @ 0058z	SG
11/11/15	0103	89	LIR - Modified in EM	SG
11/11/15	0105	89	RETURN COORDINATION:	
			CAK TRACON Akron,OH 11/11/15 0104 KT	
			JYO NATIONAL NOTAM 11/11/15 0104 E	SG
11/11/15	0105	89	LIR - Modified in EM	SG
11/11/15	0120	89	LIR - Modified in EM	SG
11/11/15	0120	89	LIR - Modified in EM	SG
11/11/15	0122	89	LIR - Modified in EM	SG
11/11/15	0122	89	LIR - Modified in EM	SG
11/11/15	0122	89	LIR - Modified in EM	SG
11/11/15	0122	89	LIR - Modified in EM	SG
11/10/15	2320	10	Arrived at Site	TPG
11/10/15	2325	00	Arrived at site to initiate certifiaction and/or restoration of	
			facility in a post-aircraft.	TPG
11/10/15	2325	00	current weather conditions are light drizzle and overcast, around	
			50 degrees.	TPG
11/10/15	2325	00	Found Localizer operating on commericial with no alarm or bypass	
			light indication. System appears to be operating normally.	TPG
11/11/15	0058	51	LOC CERTIFIED	TPG
11/11/15	0058	00	All as found values in tolerence on normal transmitter readings	
			and ground check.	TPG
11/11/15	0103	00	AKR LOC RTS with MOCC "SG"	TPG
11/11/15	0110	10	Departed from Site	TPG

Signature of Manager/Designee | Date | Signature of Technician | Date

Technical Performance Record

Localizer Normal Ground Check

Facility	Location	Runway	From	To	Supervisor's Signature
AKR	AKRON, OH	25	10/7/14	11/10/15	[redacted]

Equipment Number	Equipment Type	Front Course / Back Course	Antenna Array	Reference Flight Inspection Dates	
	MARK 1F	Front Course	LPD	Course Alignment: 10/7/14	Course Width: 10/5/11

Date	UTC Time	Normal Ground Check														Remarks	Initials
		90Hz Side							150Hz Side								
		Low Clr Point @	N/A 35	N/A 30	N/A 20	N/A 10	Edge	Centerline	Edge	N/A 10	N/A 20	N/A 30	N/A 35	Low Clr Point @			
10/7/14	2116	259	N/A	N/A	N/A	N/A	.169	.003 150 Hz	.168	N/A	N/A	N/A	N/A	332	Reference		
		---	---	---	---	---	≤ .184	.005 90 Hz	≤ .188	---	---	---	---	---	Centerline and Width DDM Limits		
		≥ 234	≥ N/A	≥ N/A	≥ N/A	≥ N/A	≥ ~~.154~~ .154	.011 150 Hz	≥ .153	≥ N/A	≥ N/A	≥ N/A	≥ N/A	≥ 299	Centerline, Width, and Clearance DDM Limits		
10/7/14	2118	.259	N/A	N/A	N/A	N/A	.164	.003/150	.173	N/A	N/A	N/A	N/A	.332	post flight V		
11/20/14	1730	.259	N/A	N/A	N/A	N/A	.167	.003/150	.178	N/A	N/A	N/A	N/A	.332	Q & SA		
02/24/15	1700	.283	N/A	N/A	N/A	N/A	.160	.007/150	.180	N/A	N/A	N/A	N/A	.304	Q >12" snow		
5-26-15	1650	.259	N/A	N/A	N/A	N/A	.165	.003/150	.175	N/A	N/A	N/A	N/A	.359	Q, SA, A		
7-6-15	2045	[illegible]	N/A	N/A	N/A	N/A	.164	.004/150	.176	N/A	N/A	N/A	N/A	—	after system shut down		
9-27-15	1720	.250 AB ~~.259~~	N/A	N/A	N/A	N/A	.170	.003/150	.163	N/A	N/A	N/A	N/A	.312	Q		
11/10/15	2350	can't find	—	—	—	—	.167	.003/90	.165	—	—	—	—	.320	AS found Post A/C accident		

I certify that the above post-accident/incident date is a true record of the

AKR LOC parameter values
(facility/equipment type) (screens)

as found, ____ as left, or ____ as found and left
at the date and time indicated.

	ATSS	Observer
Signatures	[redacted]	[redacted]
Names	Timothy Goss	MICHAEL B DENNIS
Titles	Coordinator	ATSS

Technical Performance Record

Localizer - Normal Radiated Parameters

Facility	Location	Runway	From	To	Supervisor's Signature
AKR	Akron, OH	25	9-16-15	11/10/15	[redacted]

Equipment Number	Equipment Type	Antenna Type	Reference Flight Inspection Date (s)
	MK I F	LPD	1(10-5-11) 2(10-7-14) 3(_____) 4(_____)

Date	UTC Time	Course FI # 1 Carrier Power (Watts) **	Course FI # 1 Sideband Power (mW) **	Course FI # 1 CSB/SBO Phasing (DDM / Hz)	Course FI # 2 Modulation Equality (DDM / Hz) *	Course Modulation SDM (%)	Course Ident Modulation (%)	Course Monitor Course Monitor (DDM / Hz)	Course Monitor Width Monitor (DDM) 150 Hz	Clearance FI # N/A Carrier Power (Watts) **	Clearance Sideband Power (mW) **	Clearance CSB/SBO Phasing (DDM / Hz)	Clearance Modulation Equality (DDM / Hz)	Clearance Modulation SDM (%)	Clearance Ident Modulation (%)	Clearance Monitor Width Monitor 1 (DDM) 150 Hz	Clearance Monitor Width Monitor 2 (DDM) 150 Hz	Remarks	Initials
9-16-15	1400	15	290	.004/90	.004/150	40	8	.000	.155	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Standard / Reference	
		≤ 16.5	≤ 319	≤ .054/90	.006/150	≤ 44	≤ 10	---	---	≤ N/A	≤ N/A	≤ N/A	N/A	≤ N/A	≤ N/A	--	--	Upper Operating Tolerance	
		≥ 13.5	≥ 261	≤ .047/150	.002/150	≥ 36	≥ 6	---	---	≥ N/A	≥ N/A	≤ N/A	N/A	≥ N/A	≥ N/A	--	--	Lower Operating Tolerance	
9-16-15	1400	15	290	N/A	.004/150	40	8	.000	.155	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	M/	[redacted]
10-8-15	1900	15	290	N/A	.004/150	40	8	.001/90	.156	N/A	N/A	N/A	N/A	N/A	30.4	N/A	N/A	M	
11/10/15	2325	15.0	295	—	.003/150	40.6	8.0	.002/90	.155	—	—	—	—	—	—	—	—	As found Post A/C accident	

FAA Form 6750-24 (03/08)

Electronic Version (Adobe)

I certify that the above post-accident/incident date is a true record of the

AKR LO C **parameter values** _____

(facility/equipment type) **(sc...ons)**

_____ **as found,** _____ **as left, or** _____ **as found and left at the date and time indicated.**

ATSS		**Cl...erver**
[redacted]	**Signatures**	[redacted]
Timothy Goss	**Names**	MICHAEL BOERNER
Coordinator	**Titles**	ATSS

TECHNICAL PERFORMANCE RECORD — FA-9783 CARDION DISTANCE MEASURING EQUIPMENT (DME)

FACILITY	LOCATION (CITY, STATE, AIRPORT, OTHER)	DATE (FROM - TO)
AKR - DME	AKRON FULTON INTERNATIONAL AIRPORT	8/25/15 11/10/15

DME TYPE	SERIAL NUMBER	CHANNEL NUMBER	SUPERVISOR'S (SIGNATURE)
CARDION 9783		46X	[redacted]

DATE	TIME	TRANSPONDER: Transmitter Frequency * (MHz)	Peak Power Output * (W)	Pulse Spacing (µs)	Pulse Width (µs)	Pulse Rise (µs)	Pulse Fall (µs)	Squitter Count (PPS)	Ident Tone Frequency (Hz)	Reply Delay (µs)	REMARKS	INITIALS
Nominal		1007.000	100	12	3.5	2.5	2.5	1350	1350	50		
Upper		1007.020140	N/A	11.75	3.0	1.5	1.5	1500	1360	50.10		
Lower		1006.979860	≥50	12.25	4.0	3.0	3.0	1200	1340	49.90		
8/25/15	1315		110							50	Q	[redacted]
11/10/15	1445	1006.998576	105							50	Annuals Quarterly	
11/10/15	0010	1006.709547	113	11.90	3.60	2.48	2.40	1360	—	50.0	POST AC ACCIDENT FOUND	

I certify that the above post-accident/incident date is a true record of the AKR DME (facility/equipment type) parameter values (screens) as found, ____ as left, or ____ as found and left at the date and time indicated.

	ATSS	Observer
Signatures	[redacted]	[redacted]
Names	MICHAEL BOWLES	Timothy Goss
Titles	ATSS	coordinator

*Annual checks

FIG 9-3-2
Facility Restoral Checklist

Figure 9-3-2 is required for each facility removed from service as identified by the Duty TOAAR.

NOTE-The following line will be completed later as required in step 3c.

Log Data Uploaded: Date: 11/10/15 Time: 0143Z Initials: TPG

1. Complete the following initial items:

a. List the facility that has been identified to be returned to service. The restoration can be accomplished via certification and/or operational status check.

Facility: ~~AKR~~ LOC **Ident**: ~~LOC~~ AKR

b. Identify the ATSS who last certified the facility, and the observer:

(1) Record below the name of the specialist who last certified the facility or equipment. Control point visits or phone calls may be required to learn who last certified. Normally, the person named below should not be responsible for certifying and restoring the facility today, but may be the observer. If you arrive alone and find you were the last certifying technician, do not proceed, but request that the OCC notify the Duty TOAAR. Based on circumstances and approval from the Duty TOAAR, you may be authorized to proceed.

AKR LOC	Aaron Brandt
Facility	**ATSS who last certified facility**

(2) An observer will normally be required; however, under certain conditions the observer requirement may be waived by the TOAAR. Has the observer requirement been waived by the TOAAR? Yes____ No X

(3) If the answer to (2) is **No**, identify who is to be the observer below:

Mike Dennis	ATSS [redacted]
Observer Name	**Observer Title/Phone**

c. Upon arriving at the facility, log the following information: (check off)

(1) Arrival date and time at facility X

(2) Reason for facility visit X

(3) Current weather conditions (not at time of accident/incident) at facility. This is your "unofficial" observation of the general weather conditions upon your arrival at the facility. See the following example text. X

Examples of typical initial log entries: (not necessary to use word-for-word)

2310 Arrived site to initiate certification and/or restoration of facility in a post-aircraft accident/incident.

2315 Presently the weather conditions are overcast and snowing with 2 feet of snow on the ground.

2316 Found GS was operating on commercial power with no alarms or transfers indicated. Air traffic reported no pilot reports of malfunction of this facility during the last (x) hours (where x = approximate number of hours).

FIG 9-3-2
Facility Restoral Checklist (continued)

2. Initiate action to certify and restore facility.

a. If the facility is shutdown, record the status of the equipment in the facility log. Reset the equipment, and MAKE NO ADJUSTMENTS. If the facility fails to restore to normal after resetting, notify the accident TOAAR immediately for further instructions. If the facility resets successfully, continue with the next step.

b. Immediately record as-found technical data (see paragraph 3 below), MAKING NO ADJUSTMENTS. IF OUT-OF-TOLERANCE CONDITIONS ARE FOUND, notify the accident TOAAR immediately for further instructions.

c. If a flight inspection has been requested, MAKE NO ADJUSTMENTS prior to commencing the flight inspection, and then make only those adjustments coordinated with flight inspection personnel.

d. Once as-found technical data has been recorded (see paragraph 3 below), and any flight inspection activities have been completed, corrective maintenance in support of facility restoration may begin. Record as-left technical data (see paragraph 3 below).

e. Certify the facility as required and initiate restoration coordination. Record all activities in the facility maintenance log.

3. Documentation of the condition of the facility.

a. Technical performance parameters must be recorded accurately on the appropriate FAA form, Technical Performance Record (TPR). For RMM facilities, all screens required to support a certification judgment must be captured and a hard copy retained. If the equipment involved is operational, a set of "as found" readings or screens must be recorded prior to any corrective maintenance, followed by recording a set of "as left" readings or screens.

b. Authentication of Technical Readings: An authentication statement must be entered immediately below each set (as found, as left) of parameter values, on each TPR form, and on each screen printed, identifying whether the values are "as found" or "as left." The authentication statement is not necessary on copies of electronic log pages. If no adjustment or other maintenance was accomplished, a single statement will suffice. The authentication statement to be used on each set of readings on each TPR and each page of RMM screens is as follows:

I certify that the above post-accident/incident data is a true record of the [*facility or equipment type*] parameter values (screens) [*as found, as left, or as found and left*] at the date and time indicated.

ATSS:	Observer:
Signature [redacted]	Signature [redacted]
Name Timothy Goss	Name MICHAEL B DENNIS
Title Coordinator	Title ATSS

NOTE-In the above authentication statement, compose, select, or modify the text in brackets as appropriate.

EXAMPLE-I certify that the above is a true record of the **XYZ Localizer** parameter **values as-found** at the date and time indicated.

c. Terminate each TPR page that contains accident/incident data in accordance with FAA Order 6000.15.

d. Enter the date and time of uploading automated logs, if any, on the blanks provided on page 1 of this checklist.

Completion:

e. Confirm restoration coordination is complete.

f. This completes the facility restoral process.

FIG 9-3-2
Facility Restoral Checklist

Figure 9-3-2 is required for each facility removed from service as identified by the Duty TOAAR.

NOTE-The following line will be completed later as required in step 3c.

Log Data Uploaded: Date: 11/11/13 Time: 02037Z Initials: MA

1. Complete the following initial items:

a. List the facility that has been identified to be returned to service. The restoration can be accomplished via certification and/or operational status check.

Facility: DME **Ident**: AKR

b. Identify the ATSS who last certified the facility, and the observer:

(1) Record below the name of the specialist who last certified the facility or equipment. Control point visits or phone calls may be required to learn who last certified. Normally, the person named below should not be responsible for certifying and restoring the facility today, but may be the observer. If you arrive alone and find you were the last certifying technician, do not proceed, but request that the OCC notify the Duty TOAAR. Based on circumstances and approval from the Duty TOAAR, you may be authorized to proceed.

AKR DME — **Facility**

WARDELL ALEXANDER — **ATSS who last certified facility**

(2) An observer will normally be required; however, under certain conditions the observer requirement may be waived by the TOAAR. Has the observer requirement been waived by the TOAAR? Yes____ No X

(3) If the answer to (2) is **No**, identify who is to be the observer below:

TIM GOSS — **Observer Name**

ATSS / 330-323-1675 — **Observer Title/Phone**

c. Upon arriving at the facility, log the following information: (check off)

(1) Arrival date and time at facility — X

(2) Reason for facility visit — X

(3) Current weather conditions (not at time of accident/incident) at facility. This is your "unofficial" observation of the general weather conditions upon your arrival at the facility. See the following example text. — X

Examples of typical initial log entries: (not necessary to use word-for-word)

2310 Arrived site to initiate certification and/or restoration of facility in a post-aircraft accident/incident.

2315 Presently the weather conditions are overcast and snowing with 2 feet of snow on the ground.

2316 Found GS was operating on commercial power with no alarms or transfers indicated. Air traffic reported no pilot reports of malfunction of this facility during the last (x) hours (where x = approximate number of hours).

FIG 9-3-2
Facility Restoral Checklist (continued)

2. Initiate action to certify and restore facility.

a. If the facility is shutdown, record the status of the equipment in the facility log. Reset the equipment, and MAKE NO ADJUSTMENTS. If the facility fails to restore to normal after resetting, notify the accident TOAAR immediately for further instructions. If the facility resets successfully, continue with the next step.

b. Immediately record as-found technical data (see paragraph 3 below), MAKING NO ADJUSTMENTS. IF OUT-OF-TOLERANCE CONDITIONS ARE FOUND, notify the accident TOAAR immediately for further instructions.

c. If a flight inspection has been requested, MAKE NO ADJUSTMENTS prior to commencing the flight inspection, and then make only those adjustments coordinated with flight inspection personnel.

d. Once as-found technical data has been recorded (see paragraph 3 below), and any flight inspection activities have been completed, corrective maintenance in support of facility restoration may begin. Record as-left technical data (see paragraph 3 below).

e. Certify the facility as required and initiate restoration coordination. Record all activities in the facility maintenance log.

3. Documentation of the condition of the facility.

a. Technical performance parameters must be recorded accurately on the appropriate FAA form, Technical Performance Record (TPR). For RMM facilities, all screens required to support a certification judgment must be captured and a hard copy retained. If the equipment involved is operational, a set of "as found" readings or screens must be recorded prior to any corrective maintenance, followed by recording a set of "as left" readings or screens.

b. Authentication of Technical Readings: An authentication statement must be entered immediately below each set (as found, as left) of parameter values, on each TPR form, and on each screen printed, identifying whether the values are "as found" or "as left." The authentication statement is not necessary on copies of electronic log pages. If no adjustment or other maintenance was accomplished, a single statement will suffice. The authentication statement to be used on each set of readings on each TPR and each page of RMM screens is as follows:

I certify that the above post-accident/incident data is a true record of the [*facility or equipment type*] parameter values (screens) [*as found, as left, or as found and left*] at the date and time indicated.

ATSS: Observer:
Signature [redacted] Signature [redacted]
Name MICHAEL BOENING Name Timothy Goss
Title ATSS Title Coordinator

NOTE-In the above authentication statement, compose, select, or modify the text in brackets as appropriate.

EXAMPLE-I certify that the above is a true record of the **XYZ Localizer** parameter **values as-found** at the date and time indicated.

c. Terminate each TPR page that contains accident/incident data in accordance with FAA Order 6000.15.

d. Enter the date and time of uploading automated logs, if any, on the blanks provided on page 1 of this checklist.

Completion:

e. Confirm restoration coordination is complete.

f. This completes the facility restoral process.