Flight Procedure Tracking Form	Action: FLIGHT CHECK	Task Type: IAP	Date Open: 11/14/2007	Task #: 2007041920728701003	Request #: 20070419207287
Procedure: ILS OR LOC RWY 23R AMDT 12		Airport ID: KTYS	Airport: MCGHEE-TYSON		Reimbursable #:
City: KNOXVILLE	ST: TN	GPS #:		Estimated Chart Date: 05/31/2012	FICO #: 959442
Fac ID: BUI	Fac. Type: ILS	Specialist: CASIMIR TABAKA			

Procedure Review

P3

	Rec'd	Rel'd	Full Name	Comments
Lead:	10/07/2008	02/22/2012	MARLON ROBINSON	
QA:	02/22/2012	02/22/2012	STEVEN SZUKALA	
Liaison:	02/22/2012		Terrell	WAIVER

Procedure Comments: NON-ENROUTE **Remark Type:** INFORMATION pkg 1.f1

KNOXVILLE, TN MCGHEE-TYSON (KTYS) ILS OR LOC RWY 23R, AMDT 12 ENROUTE-NO FC: 4.17.12 PUB: 5.31.12

ATTACHED FORMS: 8260-3; 8260-10; 8260-9; 8260-2(S): BUZBY (BU) OM, REV 2; HIGAR-INT, REV 1; GROSS-INT, REV 10; RIZEN (DK) OM, REV 1; (INFO ONLY) VOLUNTEER (VXV) VTAC, REV 7.

CONTACT: DON SMITH, AJV-352 LEAD, 405.954.1036:

ILS or LOC RWY 23R
KNOXVILLE/MCGHEE-TYSON (TYS)

LOC I-BUI	APP CRS	Rwy ldg	9005
111.7	230°	THRE	977
		Apt Elev	981

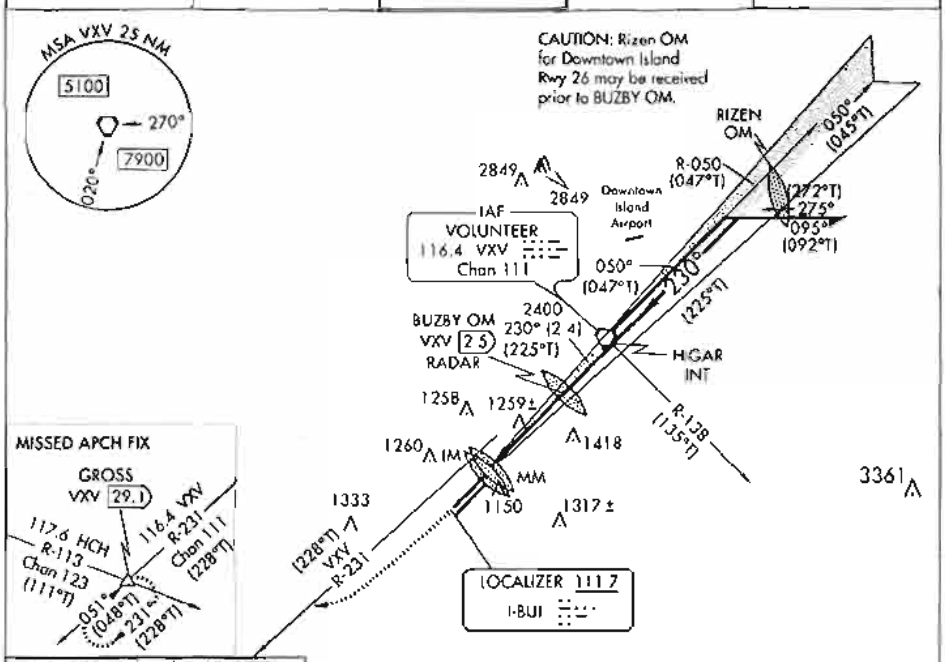
For inoperative ALSF, increase S-ILS 23R Cat E visibility to RVR 4000 and S-LOC 23R Cat E visibility to 2.

ASR

ALSF-2

MISSED APPROACH: Climb to 2000 then climbing right turn to 3000 on heading 240° and VXV VORTAC R-231 to GROSS INT/VXV 29.1 DME and hold.

ATIS	KNOXVILLE APP CON	KNOXVILLE TOWER	GND CON	CLNC DEL
128.35	123.9 360.8	121.2 257.8	121.9 348.6	121.65

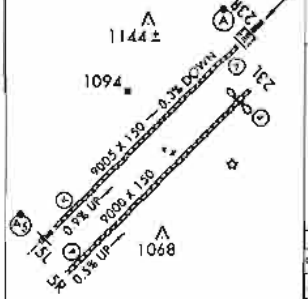


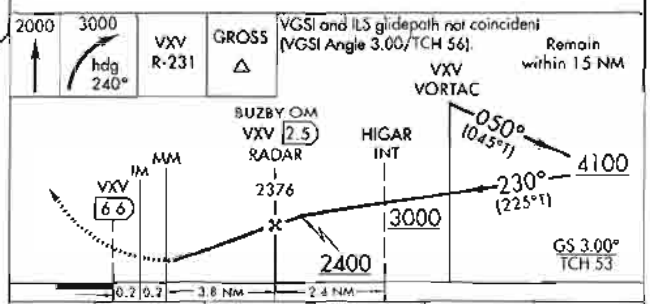
PROTOTYPE: NOT FOR NAVIGATION

ELEV 981 D THRE 977

HIRL Rwy 5L-23R and Rwy 5R-23L
REIL Rwys 5R and 23L
TDZ/CL Rwys 5R and 23R

230° 4.2 NM from FAF





CATEGORY	A	B	C	D	E
S-ILS 23R	1177/18 200 (200-½)				
S-LOC 23R	1520/24 543 (600-½)		1520/60 543 (600-1¼)		
CIRCLING	1520-1 539 (600-1)	1540-1 559 (600-1)	1700-1⅝ 719 (800-1⅝)	1700-2¼ 719 (800-1¾)	1900-3 919 (1000-3)

FAF to MAP 4.2 NM

Knots	60	90	120	150	180
Min:Sec	4:12	2:48	2:06	1:41	1:24

35°49'N-84°00'W

KNOXVILLE/MCGHEE-TYSON (TYS)
ILS or LOC RWY 23R

LOC I-BUI	APP CRS	Rwy ldg	9005
111.7	230°	THRE	977
		Apt Elev	981

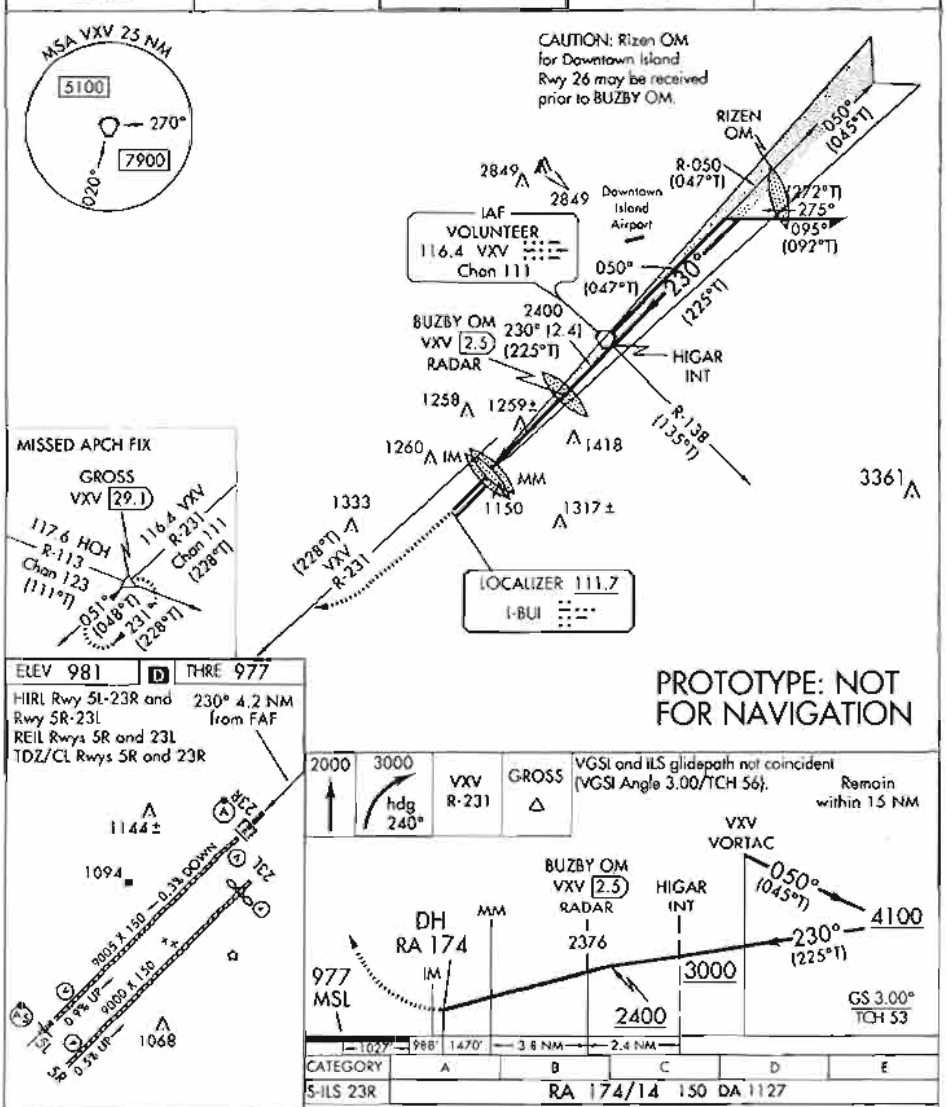
ILS RWY 23R (SA CAT I)
KNOXVILLE/MCGHEE-TYSON (TYS)

ASR — Requires specific OPSPEC, MSPEC or LOA approval and use of HUD to DH.

ALSF-2

MISSED APPROACH: Climb to 2000 then climbing right turn to 3000 on heading 240° and VXV VORTAC R-231 to GROSS INT/VXV 29.1 DME and hold.

ATIS	KNOXVILLE APP CON	KNOXVILLE TOWER	GND CON	CLNC DEL
128.35	123.9 360.8	121.2 257.8	121.9 348.6	121.65



CATEGORY	A	B	C	D	E
S-ILS 23R	RA 174/14 150 DA 1127				

FAF to MAP 4.2 NM					
Knots	60	90	120	150	180
Min:Sec	4:12	2:48	2.06	1:41	1:24

SA CATEGORY I ILS- SPECIAL AIRCREW & AIRCRAFT CERTIFICATION REQUIRED

LOC I-BUI	APP CRS	Rwy ldg	9005
111.7	230°	THRE	977
		Apt Elev	981

ILS RWY 23R (CAT II)

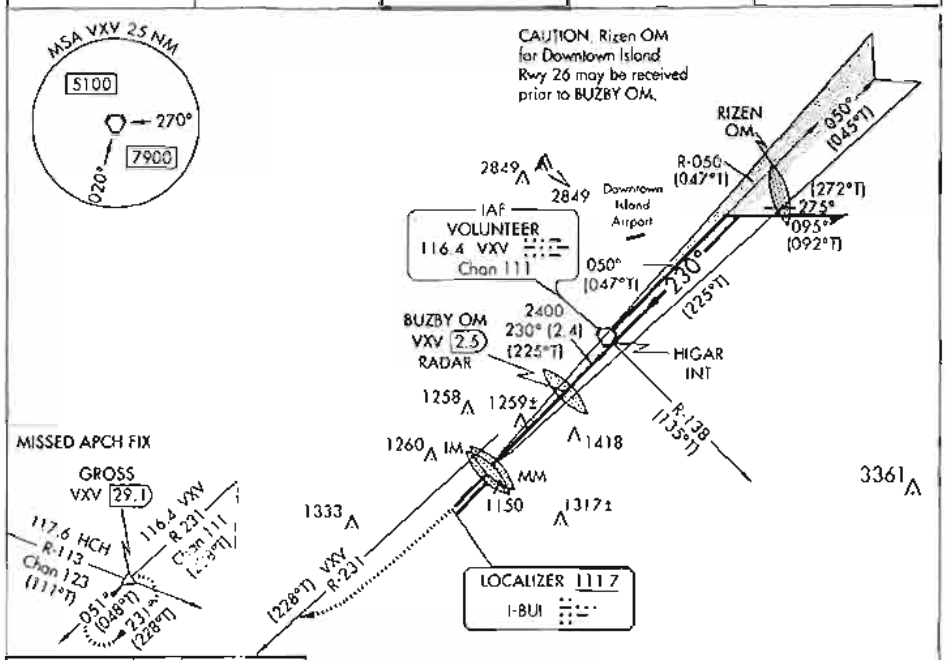
KNOXVILLE/MCGHEE-TYSON (TYS)

ASR

ALSF-2

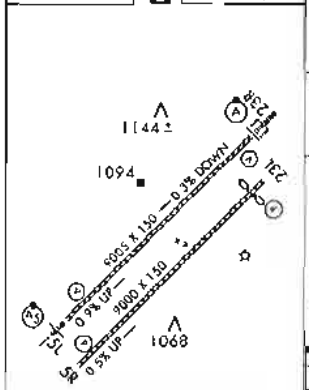
MISSED APPROACH: Climb to 2000 then climbing right turn to 3000 on heading 240° and VXV VORTAC R-231 to GROSS INT/VXV 29.1 DME and hold.

ATIS	KNOXVILLE APP CON	KNOXVILLE TOWER	GND CON	CLNC DEL
128.35	123.9 360.8	121.2 257.8	121.9 348.6	121.65



ELEV 981 D THRE 977

PROTOTYPE: NOT FOR NAVIGATION

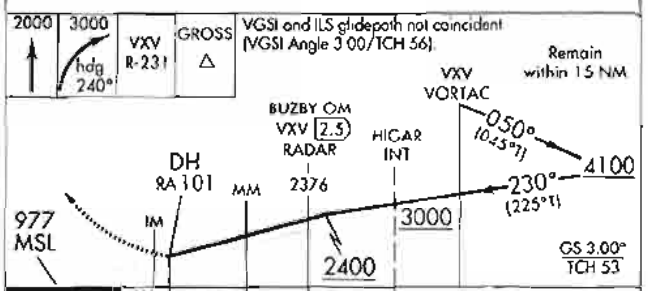


HIRL Rwy 5L-23R and Rwy 5R-23L
REIL Rwys 5R and 23L
TDZ/CL Rwys 5R and 23R

2000 | 3000 | hdg 240° | VXV R-231 | GROSS

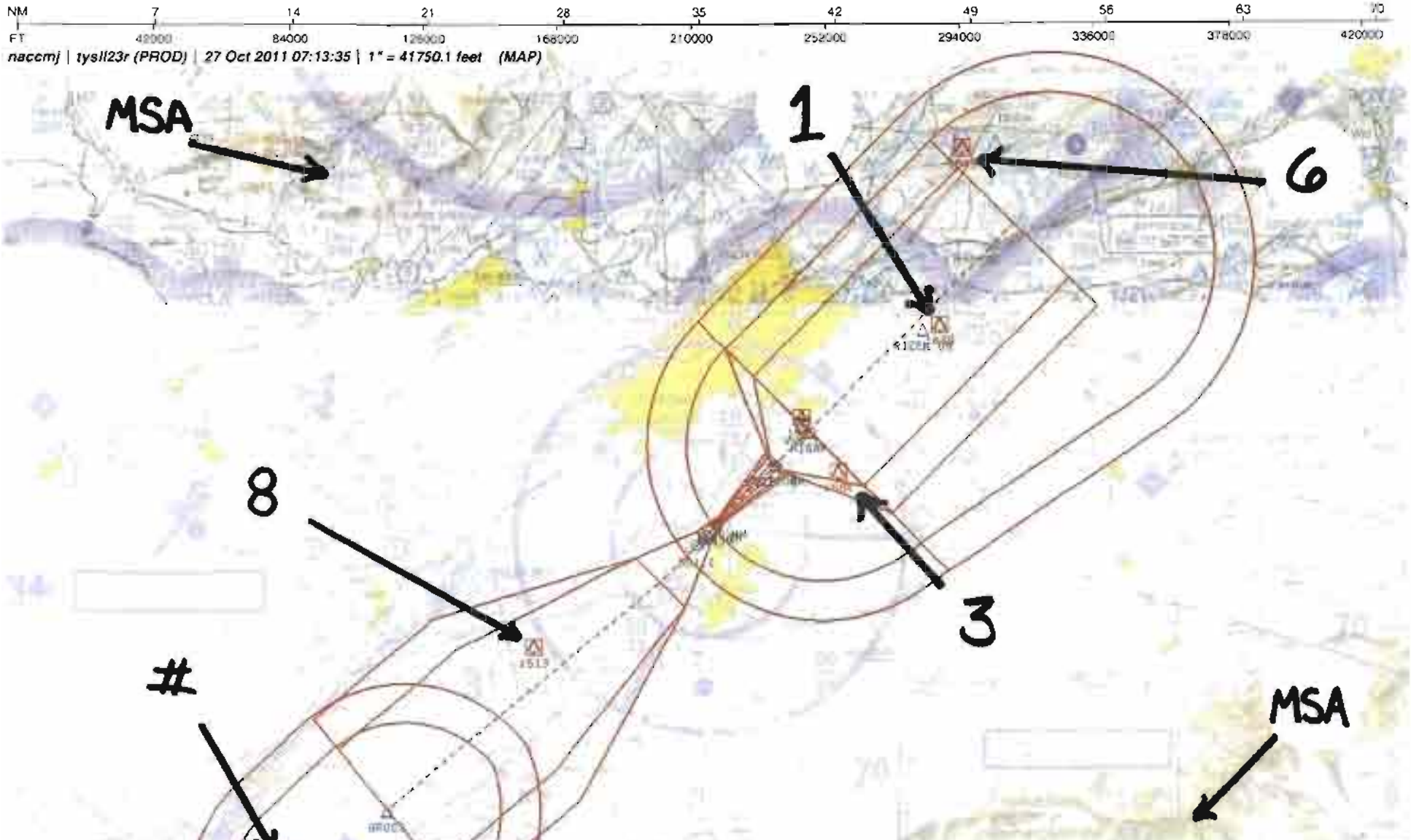
VGSI and ILS glidepath not coincident (VGSI Angle 3.00/TCH 56).

Remain within 15 NM



CATEGORY	A	B	C	D
S-ILS 23R	RA 101/12 100 DA 1077			

CATEGORY II ILS - SPECIAL AIRCREW & AIRCRAFT CERTIFICATION REQUIRED



Airport ID:	KTYS
Apt Name:	MC GHEE TYSON
City:	KNOXVILLE
State:	TN
Proc ID:	ILS or LOC RWY 23R
Amdt #	12
Scale:	1:600,000

FM 9

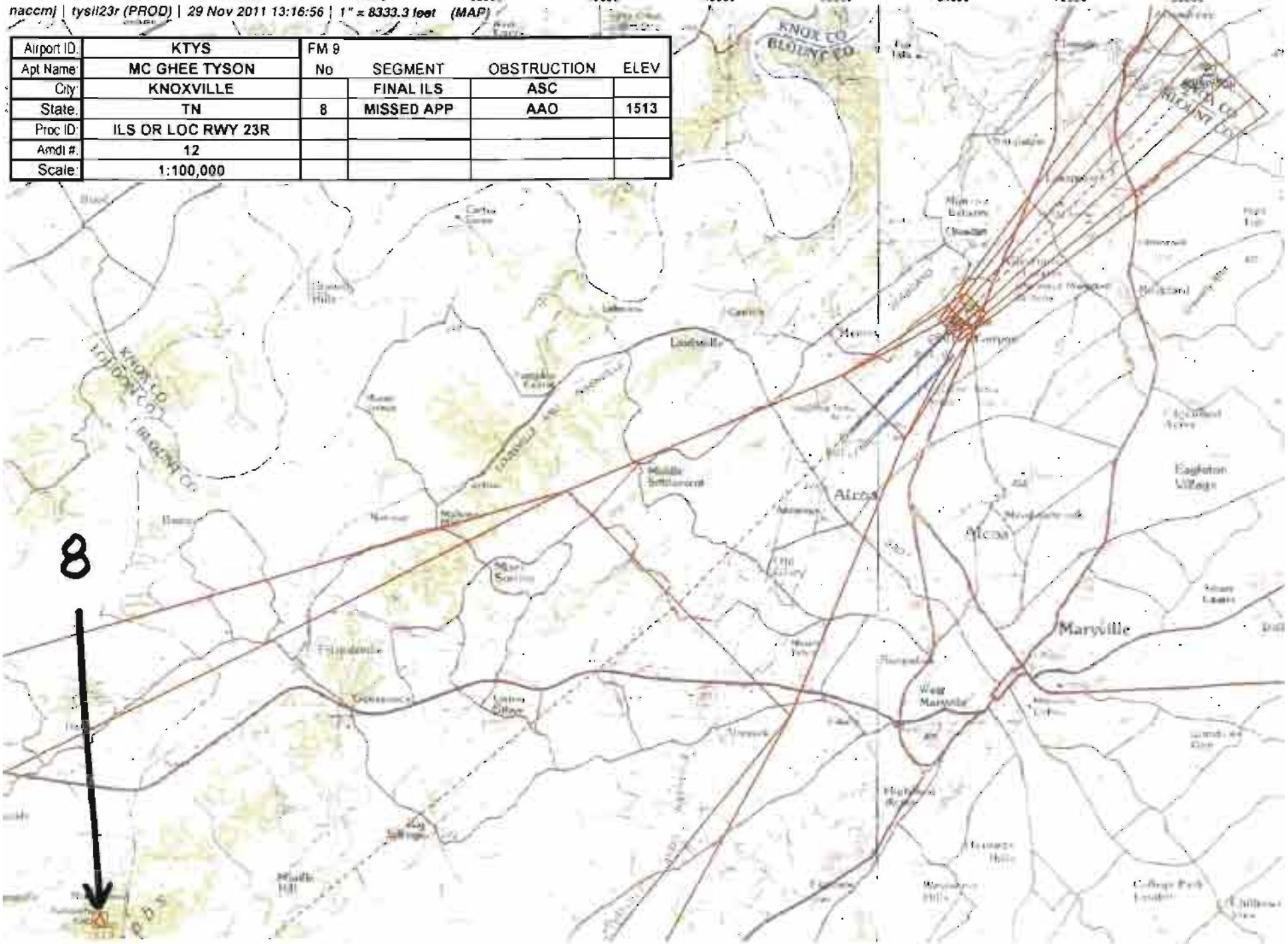
No	SEGMENT	OBSTRUCTION	ELEV
1	PT INTERMED	AAO	1639
3	INTERMED SDF	AAO	1588
	FINAL ILS	ASC	
5	FINAL LOC	TREE	1441
6	15 NM PT	TOWER	3049
8	PRI MA LVL SFC	AAO	1513
#	MA HOLD	TOWER	1769
MSA	090-200	AAO	6843
MSA	200-090	TOWER	4049

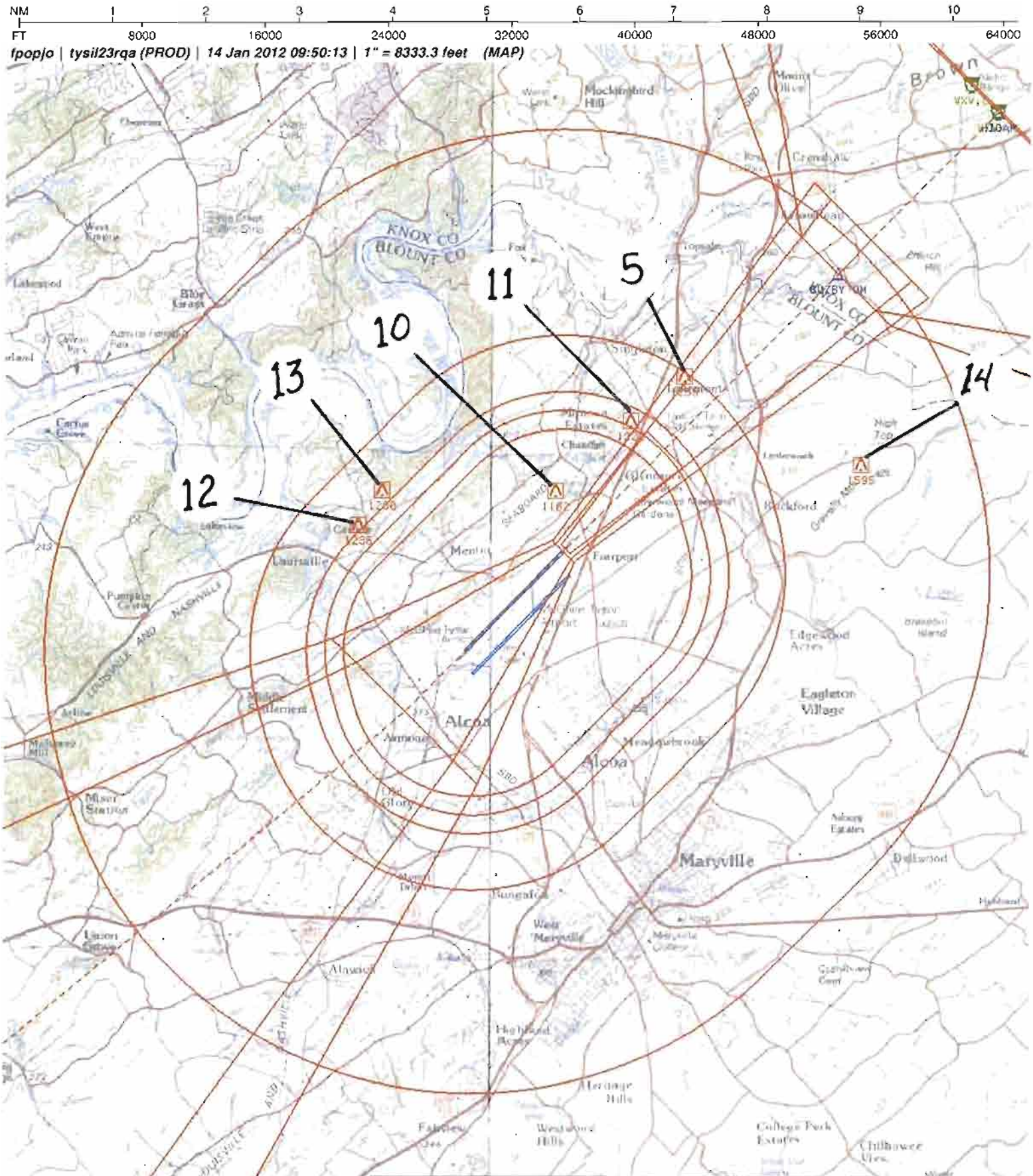
NM 1 2 3 4 5 6 7 8 9 10 11 12 13 14

FT 8000 16000 24000 32000 40000 48000 56000 64000 72000 80000

naccmj | tysll23r (PROD) | 29 Nov 2011 13:16:56 | 1" = 8333.3 feet (MAP)

		FM 9			
Airport ID:	KTYS				
Apt Name:	MC GHEE TYSON	No	SEGMENT	OBSTRUCTION	ELEV
City:	KNOXVILLE		FINAL ILS	ASC	
State:	TN	8	MISSED APP	AAO	1513
Proc ID:	ILS OR LOC RWY 23R				
Amdt #:	12				
Scale:	1:100,000				





Airport ID	KTYS	FM 9			
Apt Name	MC GHEE TYSON	No	SEGMENT	OBSTRUCTION	ELEV
City	KNOXVILLE	5	FINAL LOC	TREE	1259
State	TN	10	CIRC CAT A	TREE	1162
Proc ID	ILS OR LOC RWY 23R	11	CIRC CAT B	TREE	1222
Amdt #	12	12	CIRC CAT C	TOWER	1235
Scale	1:100,000	13	CIRC CAT D	TOWER	1260
		14	CIRC CAT E	SPOT	1595

US DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

ILS - STANDARD
INSTRUMENT APPROACH PROCEDURE
TITLE 14 CFR PART 97.29

Bearings, headings, courses, and radials are magnetic. Elevations and altitudes are in feet, MSL, except HAT, HAA, TCH, and RA. Altitudes are minimum altitudes unless otherwise indicated. Ceilings are in feet above airport elevation. Distances are in nautical miles unless otherwise indicated, except visibilities which are in statute miles or in feet RVR.

TERMINAL ROUTES

FROM	TO	COURSE AND DISTANCE	ALTITUDE
HIGAR INT	BUZBY OM	229.82 / 2.43 (I-BUI)	2400

MISSED APPROACH

ILS: DA
LOC: 4.17 MILES AFTER BUZBY OM/VXV 2.47 DME/RADAR OR AT VXV 6.61 DME FIX

CLIMB TO 2000 THEN CLIMBING RIGHT TURN TO 3000 ON HEADING 240 AND VXV VORTAC R-231 TO GROSS INT/VXV 29.13 DME AND HOLD.

ADDITIONAL FLIGHT DATA:
HOLD SW, RT, 050.88 INBOUND
CHART FAS OBST: 1259 TREE 355106N/0835727W
CHART DOWNTOWN ISLAND AIRPORT
CHART RIZEN OM.
CHART: ASR
DO NOT CHART VXV R-050 AS PT OUTBOUND IN PLANVIEW

1. PT R SIDE OF COURSE 049.82 OUTBOUND 5000 FT WITHIN 15 MILES OF VXV VORTAC (IAF)
2.
3. FAC: 229.82 FAF: BUZBY OM/VXV 2.47 DME/RADAR DIST FAF TO MAP: 4.17 THLD: 4.17
4. MIN. ALT: HIGAR 3000, BUZBY OM 2400
5. DIST TO THLD FROM OM: 4.17 MM: 0.40 IM: 935 150 HAT: 1855 100 HAT: 988 GS ANT: 1027
6. MIN GS INCPT: 2400 GS ALT AT: - OM: 2376 MM: 1159 IM: 1081
7. GS ANGLE: 3.00 TCH: 52.8
8. MSA FROM: VXV VORTAC 090-200 7900, 200-090 5100

MAG VAR: 5W EPOCH YEAR: 2015

MINIMUMS

TAKEOFF: SEE FAA FORM 8260-15A FOR THIS AIRPORT | ALTERNATE: N A | ILS: STANDARD # | LOC: STANDARD @

CATEGORY =====>	A			B			C			D			E		
	DH/MDA	VIS	HAT/HAA	DH/MDA	VIS	HAT/HAA	DH/MDA	VIS	HAT/HAA	DH/MDA	VIS	HAT/HAA	DH/MDA	VIS	HAT/HAA
S-ILS 23R	1177	1800	200	1177	1800	200	1177	1800	200	1177	1800	200	1177	1800	200
S-LOC 23R	1520	2400	543	1520	2400	543	1520	6000	543	1520	6000	543	1520	6000	543
CIRCLING	1520	1	539	1540	1	559	1700	1 5/8	719	1700	2 1/4	719	1900	3	919

NOTES:
CATEGORY II ILS SPECIAL AIRCREW AND AIRCRAFT CERTIFICATION REQUIRED S-ILS 23R: CAT A, B, C, D, RA 101, RVR 1200, HATh 100, DA 1077 MSL.
CHART NOTE: FOR INOPERATIVE ALSF, INCREASE S-ILS 23R CAT E VISIBILITY TO RVR 4000 AND S-LOC 23R CAT E VISIBILITY TO 1 5/8.
(SEE FORM 8260-10)

CAT C 800-2, CAT D 800-2 1/4, CAT E 1000-3
@ CAT D 800-2 1/4, CAT E 1000-3

QUALITY 1 CHECKED

CITY AND STATE	ELEVATION: 981 THRE: 977	FACILITY IDENTIFIER:	PROCEDURE NO./AMDT NO./EFFECTIVE DATE:	SUP:
KNOXVILLE, TN	AIRPORT NAME: MC GHEE TYSON	I-BUI	ILS OR LOC RWY 23R, AMDT 12 ILS RWY 23R (SA CAT I) ILS RWY 23R (CAT II)	AMDT: 11 DATED 05/12/2005

ALL AFFECTED PROCEDURES REVIEWED?	COORDINATES OF FACILITIES	REQUIRED EFFECTIVE DATE
[ ] YES [X] NO		**ROUTINE**

COORDINATED WITH:

ATA	AAT	ALPA	APA	AOPA	NBAA	OTHER (specify)
[X]	[ ]	[X]	[X]	[X]	[X]	[X] **ZTL, TYS ATCT, AMGR.**

FLIGHT CHECKED BY		
NAME:	FIFO	DATE:

DEVELOPED BY		
NAME: **TERENCE D. SHARP (CHRIS JOHENGEN)**	FIFO **AJV-351**	DATE: **10/28/2011**

APPROVED BY		
NAME: **DARRYEL ADAMS** **MANAGER**	FIFO **AJV-352**	DATE:

CHANGES:

1. **ADDED CAT E MINIMUMS.**
2. **UPDATED CAT A AND B CIRCLING CONTROLLING OBSTACLES.**
3. **UPDATED MISSED APPROACH LEVEL SURFACE CONTROLLING OBSTACLE.**
4. **INCREASED PROCEDURE TURN DISTANCE TO 15 NM.**
5. **INCREASED PT ALTITUDE TO 4100 FEET.**
6. **CHANGED HAT TO HATH.**
7. **UPDATED MAG VAR FROM 3W TO 5W.**
8. **ADDED SA CAT I MINIMUMS/NOTES**

REASONS:

1. **ATC REQUEST.**
2. **NEW CONTROLLING OBSTACLE.**
3. **CRITERIA. NO ACTION REQUIRED, NEW OBSTACLE DOES NOT EFFECT PROCEDURE.**
4. **CRITERIA FOR CAT E AIRCRAFT.**
5. **IDENTIFIED NEW CONTROLLING OBSTACLE.**
6. **TERPS 8260.3 VOLUME 1 CHAPTER 3.**

7, 8. **CRITERIA.**

03/27/2012: THIS IS AN UPDATED COPY OF A FORM DEVELOPED ON 10/28/2011.
ADDED TO ADDITIONAL FLIGHT DATA: DO NOT CHART VXV R-050 AS PT OUTBOUND IN PLANVIEW.

04/24/2012: THIS IS AN UPDATED COPY OF A FORM DEVELOPED ON 10/28/2011.
RAISED PT OUTBOUND ALTITUDE FROM 4100 TO 5000.

QUALITY CHECKED

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NOTES, (CONT.):
CHART PROFILE NOTE: VGSI AND ILS GLIDEPATH NOT COINCIDENT.
CHART PLANVIEW NOTE: CAUTION: RIZEN OM FOR DOWNTOWN ISLAND RWY 26 MAY BE RECEIVED PRIOR TO BUZBY OM.
SA CATEGORY I ILS SPECIAL AIRCREW AND AIRCRAFT CERTIFICATION REQUIRED S-ILS 23R: CAT A, B, C, D, RA 174, RVR 1400, HATh 150, DA 1127 MSL.
SA CAT I CHART NOTE: REQUIRES SPECIFIC OPSPEC, MSPEC OR LOA APPROVAL AND USE OF HUD TO DH.

QUALITY CHECKED

CITY AND STATE	ELEVATION: 981 THRE: 977	FACILITY IDENTIFIER:	PROCEDURE NO./ AMDT NO./EFFECTIVE DATE:	SUP:
KNOXVILLE, TN	AIRPORT NAME: MC GHEE TYSON	I-BUI	ILS OR LOC RWY 23R, AMDT 12 ILS RWY 23R (SA CAT I) ILS RWY 23R (CAT II)	AMDT: 11 DATED: 05/12/2005

ALL AFFECTED PROCEDURES REVIEWED?	COORDINATES OF FACILITIES	REQUIRED EFFECTIVE DATE
☐ YES ☐ NO		

COORDINATED WITH:

ATA	AAT	ALPA	APA	AOPA	NBAA	OTHER (specify)
☐	☐	☐	☐	☐	☐	☐ _____

FLIGHT CHECKED BY		
NAME:	FIFO	DATE:
DEVELOPED BY		
NAME:	FIFO	DATE:
APPROVED BY		
NAME:	FIFO	DATE:

CHANGES:

REASONS:

U.S. DEPARTMENT OF TRANSPORTATION - FEDERAL AVIATION ADMINISTRATION

ILS STANDARD INSTRUMENT APPROACH PROCEDURE

FLIGHT STANDARDS SERVICES - **FAR PART 97.29**

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ARINC PACKET - 424-18 - ILS

```
                 1         2         3         4         5         6         7         8         9         0         1         2         3
NAVAID  123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012
        ------------------------------------------------------------------------------------------------------------------------------------
        SUSAD        VXV   K7011640VTHA N35541742W083534102    N35541742W083534102W0030012902     NARVOLUNTEER

                 1         2         3         4         5         6         7         8         9         0         1         2         3
WP      123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012
        ------------------------------------------------------------------------------------------------------------------------------------
        SUSAEAENRT   BUZBY K70    R     N35521623W083552586                    W0054     NAR           BUZBY OM
        SUSAEAENRT   GROSS K70    C   L N35344044W084201042                    W0050     NAR           GROSS
        SUSAEAENRT   HIGAR K70    R     N35535971W083531918                    W0054     NAR           HIGAR

                 1         2         3         4         5         6         7         8         9         0         1         2         3
AIRPORT 123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012
        ------------------------------------------------------------------------------------------------------------------------------------
        SUSAP KTYSK7ATYS     0     090YHN35483950W083593850W003000981         1800018000C    MNAR    MC GHEE TYSON

                 1         2         3         4         5         6         7         8         9         0         1         2         3
SEGMENT 123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012
        ------------------------------------------------------------------------------------------------------------------------------------
        SUSAP KTYSK7FI23R  AVXV   010VXV  K7D 0VE AL   PI IBUIK7      0469008309480150PI  + 05000     18000                 0 NS
        SUSAP KTYSK7FI23R  I      010HIGARK7EA0E  I    IF IBUIK7      04980082        PI  J 030000240018000                 0 NS
        SUSAP KTYSK7FI23R  I      020BUZBYK7EA0E  F    CF IBUIK7      0498005823000024PI  H 0240002376        -300VXV   K7D 0 NS
        SUSAP KTYSK7FI23R  I      030RW23RK7PG0GY M    CF IBUIK7      0498001723000042PI    01029             -300          0 NS
        SUSAP KTYSK7FI23R  I      040         0  M     CA                     2298        + 02000                           0 NS
        SUSAP KTYSK7FI23R  I      050         0        VI                     2400                                          0 NS
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        SUSAP KTYSK7FI23R  I      070GROSSK7EA0EE  R   HM                     0509T010    + 03000                           0 NS

                 1         2         3         4         5         6         7         8         9         0         1         2         3
RUNWAY  123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012
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                 1         2         3         4         5         6         7         8         9         0         1         2         3
ILS     123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012
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                 1         2         3         4         5         6         7         8         9         0         1         2         3
MSA     123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012
        ------------------------------------------------------------------------------------------------------------------------------------
        SUSAP KTYSK7SVXV  K7D                 0   0202700512527002007925                                                          M
```

CHECKED - QUALITY

CITY AND STATE	ELEVATION: 981 THRE: 977	FACILITY IDENTIFIER:	PROCEDURE NO. / AMDT NO. / EFFECTIVE DATE:	SUP:
KNOXVILLE, TN	AIRPORT NAME: MC GHEE TYSON	I-BUI	ILS OR LOC RWY 23R, AMDT 12 ILS RWY 23R (SA CAT I) ILS RWY 23R (CAT II)	AMDT: 11 DATED: 05/12/2005

ALL AFFECTED PROCEDURES REVIEWED?	COORDINATES OF FACILITIES	REQUIRED EFFECTIVE DATE
☐ YES ☐ NO		

COORDINATED WITH:

ATA ☐ AAT ☐ ALPA ☐ APA ☐ AOPA ☐ NBAA ☐ OTHER (specify) ☐ _____

FLIGHT CHECKED BY		
NAME:	FIFO	DATE:
DEVELOPED BY		
NAME:	NFPG	DATE:
APPROVED BY		
NAME:	NFPG	DATE:

CHANGES:

REASONS:

U.S. DEPARTMENT OF TRANSPORTATION - FEDERAL AVIATION ADMINISTRATION

ILS STANDARD INSTRUMENT APPROACH PROCEDURE

FLIGHT STANDARDS SERVICES - **FAR PART 97.29**

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ARINC SUMMARY - 424-18 - ILS

ROUTES	TRANSITION	FIX	SEQ	USE	PATH	TURN	FO/FB	RNP	MAG(TRUE)	DISTANCE	ALTITUDE	SPEED
	VXV	VXV	010	IAF	PI	L	FB		094.8()	015.0	AA 05000	
		HIGAR	010	FACF	IF		FB				AA 03000 GI 02400	
		BUZBY	020	FAF	CF		FB		230.0()	002.4	GI 02400 GS 02376	
		RW23R	030	MAP	CF		FO		230.0()	004.2	AT 01029	

MISSED APPROACH	FIX	SEQ	USE	PATH	TURN	FO/FB	RNP	MAG(TRUE)	DISTANCE	ALTITUDE	SPEED
		040		CA		FB		229.8()		AA 02000	
		050		VI		FB		240.0()			
	GROSS	060		CF		FO		230.9()	016.0	AA 03000	
	GROSS	070		HM	R	FO		050.9()	T01.0	AA 03000	

POINT DATA	WAYPOINT	LAT IN SECS	LONG IN SECS	LAT IN MINS	LONG IN MINS
	VXV	N355417.42	W0835341.02	N3554.290	W08353.684
	BUZBY	N355216.23	W0835525.86	N3552.271	W08355.431
	GROSS	N353440.44	W0842010.42	N3534.674	W08420.174
	HIGAR	N355359.71	W0835319.18	N3553.995	W08353.320
	RW23R	N354918.75	W0835902.62	N3549.313	W08359.044
	IBUI (LOC)	N354808.30	W0840028.56	N3548.138	W08400.476

RUNWAY DATA	RWY	THRESHOLD ELEVATION	TCH
	RW23R	00977	53

CITY AND STATE	ELEVATION: 981 THRE: 977	FACILITY IDENTIFIER:	PROCEDURE NO. / AMDT NO. / EFFECTIVE DATE:	SUP:
KNOXVILLE, TN	AIRPORT NAME: MC GHEE TYSON	I-BUI	ILS OR LOC RWY 23R, AMDT 12 ILS RWY 23R (SA CAT I) ILS RWY 23R (CAT II)	AMDT: 11 DATED: 05/12/2005

ALL AFFECTED PROCEDURES REVIEWED?	COORDINATES OF FACILITIES	REQUIRED EFFECTIVE DATE
☐ YES ☐ NO		

COORDINATED WITH:

ATA ☐ AAT ☐ ALPA ☐ APA ☐ AOPA ☐ NBAA ☐ OTHER ☐ (specify) _____

FLIGHT CHECKED BY		
NAME:	FIFO	DATE:
DEVELOPED BY		
NAME:	NFPG	DATE:
APPROVED BY		
NAME:	NFPG	DATE:

CHANGES:

REASONS:

U.S. DEPARTMENT OF TRANSPORTATION - FEDERAL AVIATION ADMINISTRATION

LOC STANDARD INSTRUMENT APPROACH PROCEDURE

FLIGHT STANDARDS SERVICES - **FAR PART 97.25**

Bearings, headings, courses, and radials are magnetic. Elevations and altitudes are in feet, MSL, except HAT, HAA, TCH, and RA. Altitudes are minimum altitudes unless otherwise indicated. Ceilings are in feet above airport elevation. Distances are in nautical miles unless otherwise indicated, except visibilities which are in statute miles or in feet RVR.

```
ARINC PACKET - 424-18 - LOC

                  1         2         3         4         5         6         7         8         9         0         1         2         3
NAVAID  123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012
        ------------------------------------------------------------------------------------------------------------------------------------
        SUSAD        VXV   K7011640VTHA N35541742W083534102    N35541742W083534102W0030012902     NARVOLUNTEER

                  1         2         3         4         5         6         7         8         9         0         1         2         3
WP      123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012
        ------------------------------------------------------------------------------------------------------------------------------------
        SUSAEAENRT   BUZBY K70    R     N35521623W083552586                    W0054     NAR          BUZBY OM
        SUSAEAENRT   GROSS K70    C   L N35344044W084201042                    W0050     NAR          GROSS
        SUSAEAENRT   HIGAR K70    R     N35535971W083531918                    W0054     NAR          HIGAR

                  1         2         3         4         5         6         7         8         9         0         1         2         3
AIRPORT 123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012
        ------------------------------------------------------------------------------------------------------------------------------------
        SUSAP KTYSK7ATYS     0     090YHN35483950W083593850W003000981         1800018000C    MNAR    MC GHEE TYSON

                  1         2         3         4         5         6         7         8         9         0         1         2         3
SEGMENT 123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012
        ------------------------------------------------------------------------------------------------------------------------------------
        SUSAP KTYSK7FL23R  AVXV   010VXV  K7D 0VE AL   PI IBUIK7      0469008309480150PI  + 05000     18000                 0 NS
        SUSAP KTYSK7FL23R  L      010HIGARK7EA0E  I    IF IBUIK7      04980082        PI  + 03000     18000                 0 NS
        SUSAP KTYSK7FL23R  L      020BUZBYK7EA0E  F    CF IBUIK7      0498005823000024PI  + 02400                 VXV   K7D 0 NS
        SUSAP KTYSK7FL23R  L      030RW23RK7PG0GY M    CF IBUIK7      0498001723000042PI    01029             -310          0 NS
        SUSAP KTYSK7FL23R  L      040         0  M     CA                     2298        + 02000                          0 NS
        SUSAP KTYSK7FL23R  L      050         0        VI                     2400                                         0 NS
        SUSAP KTYSK7FL23R  L      060GROSSK7EA0EY      CF VXV K7      2309029123090160D   + 03000                          0 NS
        SUSAP KTYSK7FL23R  L      070GROSSK7EA0EE  R   HM                     0509T010    + 03000                          0 NS

                  1         2         3         4         5         6         7         8         9         0         1         2         3
RUNWAY  123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012
        ------------------------------------------------------------------------------------------------------------------------------------
        SUSAP KTYSK7GRW23R   0090052278 N35491875W083590262-0600    +0267100977000053150IIBUI2

                  1         2         3         4         5         6         7         8         9         0         1         2         3
ILS     123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012
        ------------------------------------------------------------------------------------------------------------------------------------
        SUSAP KTYSK7IIBUI2   011170RW23RN35480830W0840028562298N35491433W0835914851039 10270399300W00505300975

                  1         2         3         4         5         6         7         8         9         0         1         2         3
MSA     123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012
        ------------------------------------------------------------------------------------------------------------------------------------
        SUSAP KTYSK7SVXV  K7D                 0   0202700512527002007925                                                          M
```

QUALITY CHECKED

CITY AND STATE	ELEVATION: 981 THRE: 977	FACILITY IDENTIFIER:	PROCEDURE NO. / AMDT NO. / EFFECTIVE DATE:	SUP:
KNOXVILLE, TN	AIRPORT NAME: MC GHEE TYSON	I-BUI	ILS OR LOC RWY 23R, AMDT 12 ILS RWY 23R (SA CAT I) ILS RWY 23R (CAT II)	AMDT: 11 DATED: 05/12/2005

ALL AFFECTED PROCEDURES REVIEWED?	COORDINATES OF FACILITIES	REQUIRED EFFECTIVE DATE
☐ YES ☐ NO		

COORDINATED WITH:

ATA ☐ AAT ☐ ALPA ☐ APA ☐ AOPA ☐ NBAA ☐ OTHER (specify) ☐ _____

FLIGHT CHECKED BY		
NAME:	FIFO	DATE:
DEVELOPED BY		
NAME:	NFPG	DATE:
APPROVED BY		
NAME:	NFPG	DATE:

CHANGES:

REASONS:

U.S. DEPARTMENT OF TRANSPORTATION - FEDERAL AVIATION ADMINISTRATION

LOC STANDARD INSTRUMENT APPROACH PROCEDURE

FLIGHT STANDARDS SERVICES - **FAR PART 97.25**

Bearings, headings, courses, and radials are magnetic. Elevations and altitudes are in feet, MSL, except HAT, HAA, TCH, and RA. Altitudes are minimum altitudes unless otherwise indicated. Ceilings are in feet above airport elevation. Distances are in nautical miles unless otherwise indicated, except visibilities which are in statute miles or in feet RVR.

ARINC SUMMARY - 424-18 - LOC

ROUTES	TRANSITION	FIX	SEQ	USE	PATH	TURN	FO/FB	RNP	MAG(TRUE)	DISTANCE	ALTITUDE	SPEED
	VXV	VXV	010	IAF	PI	L	FB		094.8()	015.0	AA 05000	
		HIGAR	010	FACF	IF		FB				AA 03000	
		BUZBY	020	FAF	CF		FB		230.0()	002.4	AA 02400	
		RW23R	030	MAP	CF		FO		230.0()	004.2	AT 01029	

MISSED APPROACH	FIX	SEQ	USE	PATH	TURN	FO/FB	RNP	MAG(TRUE)	DISTANCE	ALTITUDE	SPEED
		040		CA		FB		229.8()		AA 02000	
		050		VI		FB		240.0()			
	GROSS	060		CF		FO		230.9()	016.0	AA 03000	
	GROSS	070		HM	R	FO		050.9()	T01.0	AA 03000	

POINT DATA	WAYPOINT	LAT IN SECS	LONG IN SECS	LAT IN MINS	LONG IN MINS
	VXV	N355417.42	W0835341.02	N3554.290	W08353.684
	BUZBY	N355216.23	W0835525.86	N3552.271	W08355.431
	GROSS	N353440.44	W0842010.42	N3534.674	W08420.174
	HIGAR	N355359.71	W0835319.18	N3553.995	W08353.320
	RW23R	N354918.75	W0835902.62	N3549.313	W08359.044
	IBUI (LOC)	N354808.30	W0840028.56	N3548.138	W08400.476

RUNWAY DATA	RWY	THRESHOLD ELEVATION	TCH
	RW23R	00977	53

CITY AND STATE	ELEVATION: 981 THRE: 977	FACILITY IDENTIFIER:	PROCEDURE NO. / AMDT NO. / EFFECTIVE DATE:	SUP:
KNOXVILLE, TN	AIRPORT NAME: MC GHEE TYSON	I-BUI	ILS OR LOC RWY 23R, AMDT 12 ILS RWY 23R (SA CAT I) ILS RWY 23R (CAT II)	AMDT: 11 DATED: 05/12/2005

ALL AFFECTED PROCEDURES REVIEWED?	COORDINATES OF FACILITIES	REQUIRED EFFECTIVE DATE
☐ YES ☐ NO		

COORDINATED WITH:

ATA ☐ AAT ☐ ALPA ☐ APA ☐ AOPA ☐ NBAA ☐ OTHER (specify) ☐ _____

FLIGHT CHECKED BY		
NAME:	FIFO	DATE:
DEVELOPED BY		
NAME:	NFPG	DATE:
APPROVED BY		
NAME:	NFPG	DATE:

CHANGES:

REASONS:

STANDARD INSTRUMENT APPROACH PROCEDURE DATA RECORD

PART - A OBSTRUCTION DATA

1. APP SEGMENT	FROM	TO	OBSTRUCTION	COORDINATES	ELEV. MSL	ROC	ALT. ADJUSTMENTS	MIN. ALT.
INTERMEDIATE: PT	15 NM	HIGAR INT	1. 200' AAO	355903.00N/0834458.00W	1639 (2C)	500	XP861	3000
			2. TERRAIN	355903.00N/0834458.00W	1439 (1400)		AS1500	2900
INTERMEDIATE:	HIGAR INT	BU OM	3. 200' AAO	355130.00N/0835124.00W	1588 (4E)	500	DG312	2400
STEPDOWN			4. TERRAIN	355130.00N/0835124.00W	1388 (1400)		AS1000	2400
FINAL: ILS	GS INTCP	RW23R				ASC		1177/200
FINAL: LOC	BUZBY OM/VXV	4.17 MILES AFTER	5. TREE	355106.00N/0835727.00W	1259 (2C)	250		1520
	2.47 DME/RADAR	BUZBY OM/VXV						
		2.47 DME/RADAR						
		OR AT VXV 6.61						
		DME FIX						
FINAL: ILS CAT II	GS INTCP	RW23R				ASC		1077/100
FINAL: ILS SA CAT I	GS INTCP	RW23R				ASC		1127/150
2. PROCEDURE TURN	VXV VORTAC	15 NM	6. TOWER (47-000192)	360806.00N/0834329.00W	3049 (1D)	1000	XP951	5000
			7. TERRAIN	360630.10N/0834542.00W	2100 (2100)		AS1500	3600
3. MISSED APPROACH — MAP:	DA / 4.17 MILES	GROSS INT/VXV				ASC		3000
	AFTER BUZBY	29.13 DME	8. 200' AAO	354236.00N/0841044.40W	1513 (2C)	1000		2600
ELEV:	1011/1270		9. TERRAIN	354236.00N/0841044.40W	1313 (1300)		AS1500	2800
4. CIRCLING AREA	DISTANCE	HT. ABV. ARPT.						
CATEGORY A	1.3 NM	REQUIRED 350 / ACTUAL 539	10. TREE (KTYST021)	354952.70N/0835908.53W	1162 (2C)	300	SI	1520
CATEGORY B	1.5 NM	REQUIRED 450 / ACTUAL 559	11. TREE (KTYST025)	355037.15N/0835809.72W	1222 (2C)	300		1540
CATEGORY C	1.7 NM	REQUIRED 450 / ACTUAL 559	12. TOWER (47-002288)	354930.56N/0840143.62W	1235 (1A)	300		1540
CATEGORY D	2.3 NM	REQUIRED 550 / ACTUAL 719	13. TOWER (47-000978)	354953.00N/0840125.00W	1260 (5E)	300	AC125	1700
CATEGORY E	4.5 NM	REQUIRED 550 / ACTUAL 919	14. 200 AAO	355008.90N/0835507.20W	1595 (2C)	300		1900

5. MINIMUM SAFE ALTITUDES — PRIMARY NAVAID: VXV VORTAC

SECTOR	OBSTRUCTION	BRG/DIST	ELEVATION (MSL)	M S A	SECTOR	OBSTRUCTION	BRG/DIST	ELEVATION (MSL)	M S A
090-200	AAO	140/ 28.4	6843 (6A)	7900					
200-090	TWR (47-001483)	303/ 24.8	4049 (2E)	5100					

QUALITY CHECKED

CITY AND STATE	ELEVATION: 981 / AIRPORT NAME:	FACILITY	PROCEDURE AND AMENDMENT NO:	REGION
KNOXVILLE, TN	MC GHEE TYSON	I-BUI	ILS OR LOC RWY 23R, AMDT 12 ILS RWY 23R (SA CAT I) ILS RWY 23R (CAT II)	ASO

PART B - SUPPLEMENTAL DATA

1. COMMUNICATIONS WITH:	2. WEATHER SERVICE			3. ALTIMETER SETTING
TYS APP CON TYS TOWER	X	N W S	OTHER: ASOS	SOURCE: KTYS
	X	F A A		DISTANCE:
SATISFACTORY ON:		A / C		HOURS REMOTE OPERATION:
X V H F X U H F H F	LOCATION: KTYS/KTYS/KTYS			ADJUSTMENT: 0

4. MONITOR STATUS	PRIMARY NAVAID: I-BUI		
	MONITOR POINT: TYS TWR		
	HRS OPTN:	CAT 1	24
		CAT 3	

5. APPROACH & RUNWAY LIGHTING	X	ALSF-2 23R
		(S) SALS
	X	MALSR 05L
	X	HIRL 05R, 05L, 23R, 23L
		MIRL
	X	REIL 05R, 23L
	X	TDZ 05R, 23R
	X	C/L 05R, 05L, 23R, 23L
	X	OTHER (SPECIFY) PAPI-4L 05R, 23L VASI-4L 05L, 23R

6. RUNWAY MARKINGS	BASIC	
	ALL WEATHER	PIR-G 05R, 05L, 23R, 23L
	INSTRUMENT	
7. RUNWAY VISUAL RANGE	APPROACH	05L, 23R, 23L
	MIDFIELD	05L, 23R
	ROLL OUT	05L, 23R

8. GLIDE PATH	GP ANGLE: 3.00	ELEV RWY THRESHOLD: 976.4
	DISTANCE FROM RWY: 1027	ELEV GP ANTENNA: 978.5
		THRESHOLD CROSSING HEIGHT: 52.8

9. FINAL APPROACH COURSE AIMING	X	RUNWAY THRESHOLD	FT. FROM THRESHOLD
	X	ON CENTERLINE	FT. FROM CENTERLINE

10. WAIVERS: 1

ORDER 8260.19C WAIVER REQUIRED FOR VXV VORTAC DME TO BE USED AS A SUBSTITUTE FOR THE OM (LOC FAF)

PART D - PREPARED BY: TERENCE D. SHARP (CHRIS JOHENGEN)	DATE: 10/28/2011
TITLE: AERONAUTICAL INFORMATION SPECIALIST	OFFICE: AJV-351

PART C - REMARKS:

BLOCK 2: ASOS ON SERVICE-A. HRS OPTN: 24. BLOCK 3: ALTIMETER SETTING: KTYS. BLOCK 5: NA.
VGSI ANGLE AND TCH DATA: RWY 23R: 3.00/56.
VDP NA - FINAL FACILITY DOES NOT HAVE DME. RDH 52.8 USED IAW 8240.47B COMMISSIONING.

WAIVER: FAAO 8260.19C WAIVER REQUIRED FOR VXV VORTAC DME TO BE USED AS A SUBSTITUTE FOR THE OM (LOC FAF)

SEE ATTACHED AIRSPACE LETTER.

TOWER 43-2288 (2C) BASED ON SURVEY IN AIRPORT FILE.

TOWER 43-0978 (4D) BASED ON 86-ASO-2189-OE.

TREES ARE 100' AS PER EST FPO.

ALTERNATE MISSED APPROACH NOT DEVELOPED. NO SUITABLE OMNI FACILITY OTHER THAN VXV VORTAC AVAILABLE. ATC AND EST FPO ADVISE AND CONCUR.

THE ILS (BUZBY OM) FAF AND THE RNAV (GPS) PFAF (AWOKI) ARE NOT COINCIDENTAL, ATC REQUEST. EST FPO ADVISED/CONCURES.

NO BACKUP ALTIMETER SOURCE DUE TO REDUNDANCY AT FACILITY.

XP: OBST 1: MR = LOCALIZER MINIMUM RECEPTION RESTRICTION. LOCALIZER UNUSABLE BELOW 3000' BEYOND 15 MILES.

XP: OBST 6: PER FLIGHT CHECK RESULTS MINIMUM ALTITUDE OF 4000 NOT USEABLE DUE TO UNLOCKS AT 24NM/ONLY 5000 IS SATISFACTORY.

04/24/2012: THIS IS AN UPDATED COPY OF A FORM DEVELOPED ON 10/28/2011. RAISED PT OBSTACLE ALTITUDE FROM 4100 TO 5000. ADDED 1500' AIRSPACE TO PT TERRAIN ALTITUDE FROM 2100 TO 3600.

QUALITY CHECKED

RADIO FIX AND HOLDING DATA RECORD

NAME: BUZBY OM **STATE:** TN **COUNTRY:** US

LATITUDE/LONGITUDE: 355216.23N/0835525.86W **TYPE:** RADAR, DME

AIRSPACE DOCKET: **FIX TYPE OF ACTION:** MODIFY

FIX MAKE-UP FACILITIES:

FAC	NAME	IDENT	TYPE	CLASS	MAG BRG	TRUE BRG	DME	DIST FROM FAC NM	DIST FROM FAC FEET	MRA	MAA
1	BUZBY	BU	OM		049.82	044.82		5.82	35352	2400	5400
2	VOLUNTEER	VXV	VORTAC	H			2.47	2.47		2400	5400

HOLDING: **HOLDING TYPE OF ACTION:** NO CHANGE

REMARKS:
COORDINATES REFLECT LOCATION ON LOC/AZ CENTERLINE ABEAM THE BUZBY OM.
ACTUAL FACILITY LOCATION IS 355218.47N/0835528.62W.
MAG BRG AND TRUE BRG UPDATED.

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
IAP	ILS OR LOC RWY 23R			KTYS	KNOXVILLE	TN (US)

REQUIRED CHARTING: MILITARY IAP, IAP

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: 2 **DATE OF REVISION:** 05/31/2012

REASON FOR REVISION:
UPDATED FIX COORDINATES AND FACILITY DATA.
KTYS MAG VAR CHANGED FROM 3W TO 5W.

DEVELOPED BY: **DATE:** 11/21/2011 **OFFICE:** AJV-351 **NAME:** TERENCE SHARP (CHRISTOPHER JOHENGEN)

APPROVED BY: **DATE:** **OFFICE:** AJV-352 **NAME:** DARRYEL ADAMS

SIGNATURE:

DISTRIBUTION:
NFDC
FPO: ATL
ARTCC: ZTL
ATC FACILITY: TYS
OTHER: NGB/ANG/C4AT

QUALITY CHECKED

RADIO FIX AND HOLDING DATA RECORD

NAME: HIGAR **STATE:** TN **COUNTRY:** US

LATITUDE/LONGITUDE: 355359.71N/0835319.18W **TYPE:** INT

AIRSPACE DOCKET: **FIX TYPE OF ACTION:** MODIFY

FIX MAKE-UP FACILITIES:

FAC	NAME	IDENT	TYPE	CLASS	MAG BRG	TRUE BRG	DME	DIST FROM FAC NM	DIST FROM FAC FEET	MRA	MAA
1	KNOXVILLE	I-BUI	LOC		049.82	044.82		8.25		3000	5400
2	VOLUNTEER	VXV	VORTAC	H	137.90	134.90		0.42		3000	5400

HOLDING: **HOLDING TYPE OF ACTION:** NO CHANGE

REMARKS:
FIX USED AS INTERMEDIATE STEPDOWN TO ENSURE AIRCRAFT REMAIN AT OR ABOVE 3000 UNTIL WITHIN LOCALIZER COVERAGE DUE TO FLIGHT CHECK RESTRICTION (NOT USABLE BELOW 3000 FT BEYOND 15NM). COORDINATES CALCULATED BY PLACING FIX ON RWY CENTERLINE ABEAM VXV VORTAC.
MAG BRG AND TRUE BRG UPDATED.

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
IAP	ILS OR LOC RWY 23R	1, 2		KTYS	KNOXVILLE	TN (US)
IAP	ILS RWY 23R (CAT II)	1, 2		KTYS	KNOXVILLE	TN (US)

REQUIRED CHARTING: MILITARY IAP, IAP

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: 1 **DATE OF REVISION:** 05/31/2012

REASON FOR REVISION:
BUI MAG VAR CHANGED FROM 3W TO 5W.

DEVELOPED BY: **DATE:** 11/21/2011 **OFFICE:** AJV-351 **NAME:** TERENCE SHARP (CHRISTOPHER JOHENGEN)

APPROVED BY: **DATE:** **OFFICE:** AJV-352 **NAME:** DARRYEL ADAMS

SIGNATURE:

DISTRIBUTION:
NFDC
FPO: ATL
ARTCC: ZTL
ATC FACILITY: TYS
OTHER: NGB/ANG/C4AT

QUALITY CHECKED

RADIO FIX AND HOLDING DATA RECORD

INFO ONLY

NAME: GROSS **STATE:** TN **COUNTRY:** US

LATITUDE/LONGITUDE: 353440.44N/0842010.42W **TYPE:** WP, INT, DME

AIRSPACE DOCKET: **FIX TYPE OF ACTION:** MODIFY

FIX MAKE-UP FACILITIES:

FAC	NAME	IDENT	TYPE	CLASS	MAG BRG	TRUE BRG	DME	DIST FROM FAC NM	DIST FROM FAC FEET	MRA	MAA
1	VOLUNTEER	VXV	VORTAC	H	230.88	227.88	29.13	29.13		3000	17500
2	HINCH MOUNTAIN	HCH	VORTAC	L	113.00	111.00		33.67		3000	17500

HOLDING: **HOLDING TYPE OF ACTION:** MODIFY

PATTERNS:

PAT	DIR	IDENT	TYPE	RAD/CRS/BRG	CRS INBOUND	TURN (L OR R)	LEG LENGTH TIME	LEG LENGTH DME	HOLDING ALTITUDES MIN	HOLDING ALTITUDES MAX	TEMPLATES MIN	TEMPLATES MAX
1	SW	VXV	VORTAC	230.88	050.88	R	1		3000	6000	6	9
2	SW		WP	230.88	050.88	R		4	3000	6000	5	6

CONTROLLING OBSTRUCTIONS:

PAT	AIRSPEED	OBSTRUCTION	COORDINATES	ELEVATION	ACCURACY CODE
1	200	AAO	353135.50N/0842637.60W	1769	6A
1	230	AAO	353135.50N/0842637.60W	1769	6A
2	200	AAO	353135.50N/0842637.60W	1769	6A
2	230	AAO	353135.50N/0842637.60W	1769	6A

HOLDING RESTRICTIONS:
HOLDING LIMITED TO ESTABLISHED PATTERNS.

REMARKS:
PRECIPITOUS TERRAIN EVALUATION COMPLETED.

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
EN ROUTE	V115	1, 2				(US)
IAP	NDB RWY 2			KMMI	ATHENS	TN (US)
IAP	NDB RWY 20			KMMI	ATHENS	TN (US)
IAP	RNAV (GPS) RWY 20			KMMI	ATHENS	TN (US)
IAP	HI-VOR/DME OR TACAN RWY 23R		1	KTYS	KNOXVILLE	TN (US)
IAP	ILS OR LOC RWY 23R			KTYS	KNOXVILLE	TN (US)
IAP	ILS OR LOC RWY 5L			KTYS	KNOXVILLE	TN (US)
IAP	NDB RWY 5L			KTYS	KNOXVILLE	TN (US)
IAP	RNAV (GPS) RWY 23L		2	KTYS	KNOXVILLE	TN (US)
IAP	RNAV (GPS) RWY 23R		2	KTYS	KNOXVILLE	TN (US)
IAP	RNAV (GPS) RWY 5L			KTYS	KNOXVILLE	TN (US)
IAP	RNAV (GPS) RWY 5R			KTYS	KNOXVILLE	TN (US)
IAP	VOR RWY 23L		1	KTYS	KNOXVILLE	TN (US)
IAP	VOR RWY 23R		1	KTYS	KNOXVILLE	TN (US)

REQUIRED CHARTING: MILITARY IAP, IAP, CONTROLLER, EN ROUTE LOW

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: 10 **DATE OF REVISION:** 06/03/2010

REASON FOR REVISION:
1. ADDED PRECIPITOUS TERRAIN REMARK.
2. MOVED HOLDING LIMITATION REMARK TO RESTRICTIONS.
3. ADDED DISTANCE FROM FACILITY FOR FAC 1 AND 2.
4. LOWERED HOLDING PAT 1 AND 2 MAX ALTITUDE FROM 14000 TO 6000.
5. CHANGED HOLDING PAT 1 AND 2 MAX TEMPLATE FROM 12/11 TO 9/6.
6. UPDATED HOLDING PAT 1 AND 2 ACCURACY CODE.
7. UPDATED HOLDING PAT 1 AND 2 OBSTACLE INFO.
8. UPDATED FIX USE.
9. REMOVED NGB/ANG/C4AT FROM DISTRIBUTION LIST.
10. REMOVED FAC 3 (KTYS R23R).
11. REMOVED DME LEG LENGTH FROM PAT 1, CHANGED FROM 5 TO 4 FOR PAT 2.

DEVELOPED BY: **DATE:** 12/14/2009 **OFFICE:** AVN-110 **NAME:** PETER GETZ (LEE NICHOLS)

APPROVED BY: **DATE:** 03/15/2010 **OFFICE:** AVN-110 **NAME:** GEORGE DAVIS

SIGNATURE:

QUALITY CHECKED

DISTRIBUTION:
NFDC
FPO: EST
ARTCC: ZTL
ATC FACILITY: TYS APP CON
OTHER:

QUALITY CHECKED

RADIO FIX AND HOLDING DATA RECORD

INFO ONLY

NAME: RIZEN OM **STATE:** TN **COUNTRY:** US

LATITUDE/LONGITUDE: 355912.21N/0834601.03W **TYPE:** RADAR

AIRSPACE DOCKET: **FIX TYPE OF ACTION:** MODIFY

FIX MAKE-UP FACILITIES:

FAC	NAME	IDENT	TYPE	CLASS	MAG BRG	TRUE BRG	DME	DIST FROM FAC NM	DIST FROM FAC FEET	MRA	MAA
1	RIZEN	DK	OM							2500	5300
2	KNOXVILLE	I-DKX	LOC		080.18	075.18		5.71		2500	5300

HOLDING: **HOLDING TYPE OF ACTION:** NO CHANGE

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
IAP	LOC RWY 26	1, 2		KDKX	KNOXVILLE	TN (US)
IAP	ILS OR LOC RWY 23R			KTYS	KNOXVILLE	TN (US)

REQUIRED CHARTING: IAP

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: 1 **DATE OF REVISION:** 09/23/2010

REASON FOR REVISION:
1. UPDATED FIX USE.
2. FIX MOVED 633.35 FT SOUTH.
3. UPDATED FIX LAT/LONGS.
4. ADDED DISTANCE FROM FAC 2.
5. UPDATED MRA AND MAA.
6. ADDED RADAR TO FIX TYPE.

THIS IS AN UPDATED COPY OF A FORM DEVELOPED ON 2/23/10. CORRECTED A TYPO IN THE LATITUDE FOR THE FIX. MINUTES SHOULD BE 59, VICE 55.

DEVELOPED BY: **DATE:** 04/21/2010 **OFFICE:** AVN-110 **NAME:** PETER GETZ (GRACE NOWAK)

APPROVED BY: **DATE:** 09/09/2010 **OFFICE:** AVN-110 **NAME:** GEORGE DAVIS

SIGNATURE:

DISTRIBUTION:
NFDC
FPO: EST
ARTCC: ZTL
ATC FACILITY: TYS APP CON
OTHER:

QUALITY CHECKED 6

TERMINAL AIRSPACE DATA REQUIREMENTS

CITY: **KNOXVILLE** STATE: **TN**

AIRPORT NAME: **MC GHEE TYSON** ID: **KTYS**

PROCEDURE: **ILS OR LOC RWY 23R** AMDT: **12**

DOCKET#: **NOT REQUIRED**
(96-AXX-X/Required/Not Required)

ALL DIST TO 1/100 NM; ELEV TO NEAREST FT; COORD TO 1/100 SEC; DEG TO 1/100 DG.

1. Distance from **THLD** to 1000' point **4.84**
   (Enter THLD, FAF, ARP, FACILITY, as appropriate)
2. Width of **FINAL** segment at 1000' point **1.26**
   (Enter appropriate segment, final, intermediate, etc.)
3. True Course of **FINAL** segment containing 1000' point **224.82**
4. High Terrain in **FINAL** segment containing 1000' point **1588**
5. Distance from **THLD** to 1500' point **5.57**
   (If 1500' point in PT maneuvering area or holding pattern note in remarks)
6. Width of **FINAL** segment at 1500' point **1.42**
7. True Course of **FINAL** segment containing 1500' point **224.82**
8. High Terrain in **FINAL** segment containing 1500' point **1588**
9. Threshold Coordinates (if straight-in) ... **354918.75n** / **0835902.62w**
10. ARP Coordinates ..... **354839.50n** / **0835938.50w**
11. Runway Approach End and distance furthest from ARP ..... RWY **05R**
    Distance **0.81** NM
12. FAF Coordinates ..... **355216.23N** / **0835525.86W**

REMARKS: Approach/Drawing attached.

INFO ONLY

RADIO FIX AND HOLDING DATA RECORD

INFO ONLY

NAME: VOLUNTEER VORTAC **STATE:** TN **COUNTRY:** US

LATITUDE/LONGITUDE: 355417.42N/0835341.02W **TYPE:**

AIRSPACE DOCKET: **FIX TYPE OF ACTION:** MODIFY

FIX MAKE-UP FACILITIES:

FAC	NAME	IDENT	TYPE	CLASS	MAG BRG	TRUE BRG	DME	DIST FROM FAC NM	FEET	MRA	MAA
1	VOLUNTEER	VXV	VORTAC	H							45000

HOLDING: **HOLDING TYPE OF ACTION:** NO CHANGE

PATTERNS:

PAT	DIR	IDENT	TYPE	RAD/CRS/BRG	CRS INBOUND	TURN (L OR R)	LEG LENGTH TIME	DME	HOLDING ALTITUDES MIN	MAX	TEMPLATES MIN	MAX
1	NE	VXV	VORTAC	053.00	233.00	L	1-1 1/2	-	4000	36000	4	25
2	NE		WP	053.00	233.00	L		5	4000	14000	5	11

CONTROLLING OBSTRUCTIONS:

PAT	AIRSPEED	OBSTRUCTION	COORDINATES	ELEVATION	ACCURACY CODE
1	200	AAO	355441.65N/0834603.68W	1739	2C
1	310	TOWER (47-002285)	360012.82N/0835634.04W	2849	2C
2	200	AAO	355441.65N/0834603.68W	1739	2C
2	310	TOWER (47-002285)	360012.82N/0835634.04W	2849	2C

REASON FOR NONSTANDARD HOLDING:
PAT 1 AIR TRAFFIC REQUEST
PAT 2 AIR TRAFFIC REQUEST

HOLDING RESTRICTIONS:
HOLDING LIMITED TO ESTABLISHED PATTERNS.

PROCEDURES REQUIRING CLIMB-IN-HOLD:

PAT	PROCEDURE TITLE	AIRPORT IDENT	CITY	STATE
2	RNAV (GPS) RWY 5L	KTYS	KNOXVILLE	TN (US)
2	RNAV (GPS) RWY 5R	KTYS	KNOXVILLE	TN (US)

REMARKS:
PRECIPITOUS TERRAIN EVALUATION COMPLETED.

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
DP	CADIT (RNAV)			KATL	ATLANTA	GA (US)
DP	COKEM (RNAV)			KATL	ATLANTA	GA (US)
DP	NUGGT (RNAV)			KATL	ATLANTA	GA (US)
DP	SUMMT (RNAV)			KATL	ATLANTA	GA (US)
DP	FEDRA (RNAV)			KSDF	LOUISVILLE	KY (US)
DP	ASHEVILLE			KAVL	ASHEVILLE	NC (US)
DP	BOBCAT			KCLT	CHARLOTTE	NC (US)
DP	ZAVER (RNAV)			KCLT	CHARLOTTE	NC (US)
DP	BOBCAT			KJQF	CONCORD	NC (US)
DP	BOBCAT			KAKH	GASTONIA	NC (US)
DP	HICKORY			KHKY	HICKORY	NC (US)
DP	BOBCAT			KEQY	MONROE	NC (US)
DP	BOBCAT			KUZA	ROCK HILL	SC (US)
DP	CHATTANOOGA			KCHA	CHATTANOOGA	TN (US)
DP	TAKE-OFF MINIMUMS			KJAU	JACKSBORO	TN (US)
DP	KNOXVILLE			KTYS	KNOXVILLE	TN (US)
DP	TITAN (OBSTACLE)			KBNA	NASHVILLE	TN (US)
DP	TAKE-OFF MINIMUMS			KGKT	SEVIERVILLE	TN (US)
EN ROUTE	J22					(US)
EN ROUTE	J43					(US)
EN ROUTE	J46					(US)
EN ROUTE	J91					(US)
EN ROUTE	J99					(US)
EN ROUTE	V115					(US)
EN ROUTE	V136					(US)
EN ROUTE	V16					(US)
EN ROUTE	V185					(US)
EN ROUTE	V267					(US)
EN ROUTE	V384					(US)
EN ROUTE	V466					(US)
EN ROUTE	V519					(US)
EN ROUTE	V97					(US)
IAP	LOC RWY 26			KDKX	KNOXVILLE	TN (US)
IAP	VOR/DME-B			KDKX	KNOXVILLE	TN (US)
IAP	ILS OR LOC RWY 23R			KTYS	KNOXVILLE	TN (US)
IAP	ILS OR LOC RWY 5L		1	KTYS	KNOXVILLE	TN (US)
IAP	ILS RWY 23R (CAT II)			KTYS	KNOXVILLE	TN (US)
IAP	RNAV (GPS) RWY 5L		2	KTYS	KNOXVILLE	TN (US)

QUALITY CHECKED 6

INFO ONLY

IAP	RNAV (GPS) RWY 5R	2	KTYS	KNOXVILLE	TN (US)
IAP	VOR RWY 23L		KTYS	KNOXVILLE	TN (US)
IAP	VOR RWY 23R		KTYS	KNOXVILLE	TN (US)
IAP	RNAV (GPS) RWY 23		KMNV	MADISONVILLE	TN (US)
IAP	NDB RWY 5		KMOR	MORRISTOWN	TN (US)
IAP	SDF RWY 5		KMOR	MORRISTOWN	TN (US)
IAP	RNAV (GPS) RWY 10		KGKT	SEVIERVILLE	TN (US)
IAP	VOR/DME RWY 10		KGKT	SEVIERVILLE	TN (US)
STAR	WHINZ		KATL	ATLANTA	GA (US)
STAR	AWSON		KPDK	ATLANTA	GA (US)
STAR	HARDU		KCVG	COVINGTON	KY (US)
STAR	JAKIE (RNAV)		KCVG	COVINGTON	KY (US)
STAR	DARBY		KLOU	LOUISVILLE	KY (US)
STAR	DARBY		KSDF	LOUISVILLE	KY (US)
STAR	JOHNS (RNAV)		KCLT	CHARLOTTE	NC (US)
STAR	SHINE		KCLT	CHARLOTTE	NC (US)
STAR	UNMAN (RNAV)		KGYH	GREENVILLE	SC (US)
STAR	UNMAN (RNAV)		KGSP	GREER	SC (US)
STAR	VOLLS		KBNA	NASHVILLE	TN (US)

REQUIRED CHARTING: DP, STAR, MILITARY IAP, IAP, CONTROLLER, EN ROUTE LOW, EN ROUTE HIGH

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: 7 **DATE OF REVISION:** 09/23/2010

REASON FOR REVISION:
1. ADDED PRECIPITOUS TERRAIN EVALUATION REMARK.
2. MOVED HOLDING LIMITED TO ESTABLISHED PATTERNS TO HOLDING RESTRICTIONS.
3. ADDED REASON FOR NONSTANDARD HOLDING FOR PAT 2.

DEVELOPED BY: **DATE:** **OFFICE:** AVN-101 **NAME:** (DAN POWELL)

APPROVED BY: **DATE:** 09/09/2010 **OFFICE:** **NAME:** GEORGE DAVIS

SIGNATURE:

DISTRIBUTION: **NFDC**
FPO: EST
ARTCC: ZTL
ATC FACILITY: TYS APP CON
OTHER: NGB/ANG/C4AT

QUALITY CHECKED 6

INFO - NO CHANGE

US Department of Transportation
Federal Aviation Administration

FLIGHT PROCEDURES STANDARDS WAIVER

FLIGHT STANDARDS USE ONLY

CONTROL NO:

1. Flight Procedure Identification: **ILS OR LOC RWY 23R, McGhee-Tyson, Knoxville, TN**

2. Waiver Required and Applicable Standard: **FAAO 8260.3b para 282a. and Volume 3 para 2.9.1 Distance Measuring Equipment (DME). "When used as a substitute for the outer marker, the fix displacement error shall not exceed ± 1/2 NM and the angular divergence of the signal sources shall not exceed 6 degrees (DOD 23 degrees)"**

Waiver is required to allow continued use of DME for this procedure as an alternate method of determining the non-precision FAF.

3. Reason for Waiver *(Justification for nonstandard treatment)*:
This procedure is used at McGhee-Tyson, Knoxville, TN, which is a joint use airport. DME has been used as an alternate means to identify the non-precision FAF since at least 1990, which is the last revision in the files. Not having the DME usable for civil pilots would cause confusion by having the ILS with a DME FAF published, but not usable by civil pilots. This would require publishing 2 identical ILS procedures (one for civil and one for military) in the same book, with the only difference being the elimination of the DME fix at the non-precision FAF. It would place an additional burden on air traffic personnel by requiring them to advise pilots that they were passing the non-precision FAF anytime the outer marker was not available.

4. Equivalent Level of Safety Provided:
The DME source is only 2.47 NM from the fix, so fix error is well within tolerance. The angular difference between the signal sources is only 9.69 degrees, which is only 3.69 degrees more than required for civil use, and well under the 23 degrees difference authorized in military procedures. The same DME facility (VXV VORTAC) is the procedure turn (procedure entry) facility.

5. How Relocation or Additional Facilities Will Affect Waiver Requirement:
Thirteen (13) airways converge on VXV VORTAC. It is impractical to relocate the VORTAC due to the delays and expense in realigning airways, rebuilding fixes, and conducting additional flight inspections. Adding DME to the localizer would create a more complicated procedure, requiring pilots to tune in two separate DME sources, causing the potential for the incorrect DME source being selected.

6. Coordination With User Organizations *(Specify)*:

AVN-110 _____ **AVN-101** _____

7. SUBMITTED BY

DATE:	Office Identification:	Title:	Signature:
APR 6 2005	AVN-100	Manager, National Flight Procedures Office	Chas Frederic Anderson

FAA FORM 8260 - 1 / July 2003 (computer generated)