Flight Procedure Tracking Form	Action: FLIGHT CHECK	Task Type: IAP	Date Open: 08/21/2012	Task #: 2011072926923409001	Request #: 20110729269234
Procedure: CONVERGING ILS RWY 30 R AMDT 2		Airport ID: KMSP	Airport: MINNEAPOLIS-ST PAUL INTL/WOLD-CHAMBERLAIN		Reimbursable #:
City: MINNEAPOLIS	ST: MN	GPS #:		Estimated Chart Date: 05/02/2013	FICO #:
Fac ID: INN	Fac. Type: ILS	Specialist: STEVE NELSON			

Procedure Review

MAG VAR P1

	Rec'd	Rel'd	Full Name	Comments
Lead:	09/05/2012	01/11/2013	JILL OLSON	
QA:	01/11/2013	01/11/2013	SCOTT BEARD	
Liaison:	01/11/2013		Spurlin	REPLACEMENT 1/11/13 - MAGVAR

Procedure Comments: ENROUTE **Remark Type:** INFORMATION

MINNEAPOLIS, MN MINNEAPOLIS-ST PAUL INTL/WOLD-CHAMBERLAIN (KMSP) CONVERGING ILS RWY 30R, AMDT 2 ENROUTE-YES FC: 3.19.13 PUB: 5.2.13

ATTACHED FORMS: ESV REPORTS; 8260-3; 8260-9; 8260-2(S): BONNA-INT, REV 10; GOPHER (GEP) VTAC, REV 14; GROVZ-INT, REV 4; JACKO-INT, REV 8; KANAC-INT, ORIG; SAMMZ-INT, REV 3; WHISK-INT, REV 12; WULAM-INT, REV 3.

CONTACT: JILL OLSON/STEVE BARNETT -AVJ-353 LEADS, 405.954.4014 / 405.954.9307.

CONVERGING ILS RWY 30R

MINNEAPOLIS-ST PAUL INTL/WOLD-CHAMBERLAIN (MSP)

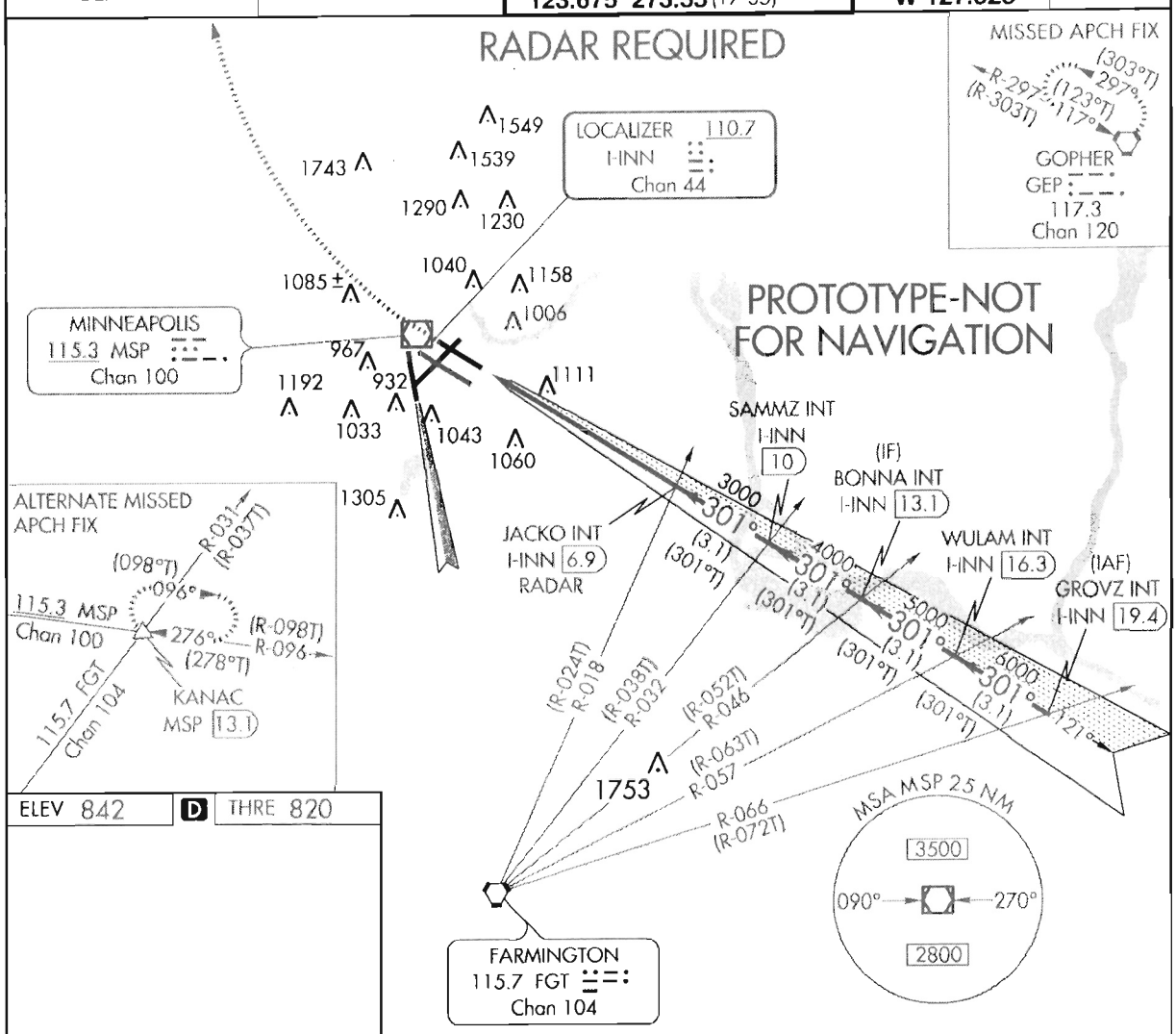
LOC/DME I-INN	APP CRS	Rwy ldg	8000
110.7	301°	THRE	820
Chan 44		Apt Elev	842

Simultaneous approach authorized with CONVERGING ILS Rwy 35. For inop MALSF, increase S-ILS 30R all Cats visibility to 1½ mile.

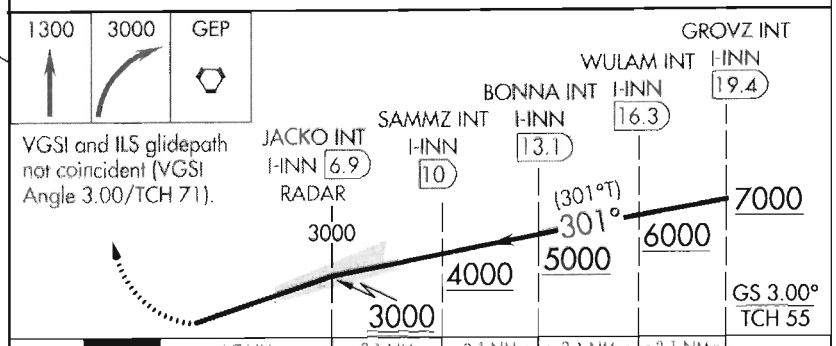
MALSF

MISSED APPROACH: Climb to 1500, then climbing right turn to 3000 direct GEP VORTAC and hold.

ATIS	MINNEAPOLIS APP CON	MINNEAPOLIS TOWER	GND CON	CLNC DEL
ARR 135.35 239.275	119.3 335.5	123.95 273.55 (12L-30R)	N 121.8 348.6	133.2
DEP 120.8		126.7 273.55 (12R-30L, 4-22)	S 121.9 348.6	
		123.675 273.55 (17-35)	W 127.925	



ELEV 842 | D | THRE 820



HIRL all Rwys
REIL Rwys 17 and 30R
TDZ/CL Rwys 12L, 12R, 30L, and 35

CATEGORY	A	B	C	D	E
S-ILS 30R	1270/60 450 (500-1¼)				

ESV Details

Originating Office :	Airspace Docket Number :	Request Type : Establish	
Facility Data			
Chart Name : FLIP	City : MINNEAPOLIS	Ident : INN	State : MN
Type/Class : LOC	Frequency : M110.7	Reference No.: 12109520	

Expanded Service Volume Data: (Requesting Officer)

ESV ID	Radial 1	Radial 2	Distance	Minimum Altitude	Maximum Altitude
FAA 031201-009	120	0	21	70	80

Requirement: GROVZ FIX KMSP RW30R

Signature: NELSON STEVEN	Routing Symbol: AJV-353	Date: 10/24/2012

Expanded Service Volume Data: (FMO)

ESV ID	Radial 1	Radial 2	Distance	Minimum Altitude	Maximum Altitude	Action Type
FAA 031201-009	120	0	21	70	80	APPROVE

Requirement/Remarks: GROVZ FIX KMSP RW30RAPPROVED. PEND. FLIGHT CHK/INSPECT @ THE REQ. DIST. AND MIN ALT.

Signature: Hughes Dennis	Routing Symbol:	Date: 10/25/2012

Expanded Service Volume Data: (Super FMO)

ESV ID	Radial 1	Radial 2	Distance	Minimum Altitude	Maximum Altitude	Action Type
FAA 031201-009	120	0	21	70	80	APPROVE

Requirement/Remarks: GROVZ FIX KMSP RW30RAPPROVED. PEND. FLIGHT CHK/INSPECT @ THE REQ. DIST. AND MIN ALT.

Signature: Hughes Dennis	Routing Symbol:	Date: 10/25/2012

Expanded Service Volume Data: (FIFO)

ESV ID	Radial 1	Radial 2	Distance	Minimum Altitude	Maximum Altitude	Action Type
FAA 031201-009	120	0				

Requirement/Remarks:

Signature:	Routing Symbol:	Date:

ESV Details

Originating Office :	Airspace Docket Number :	Request Type : Establish	
Facility Data			
Chart Name : FLIP	City : MINNEAPOLIS	Ident : INN	State : MN
Type/Class : GS	Frequency : M330.2	Reference No.: 12109521	

Expanded Service Volume Data: (Requesting Officer)

ESV ID	Radial 1	Radial 2	Distance	Minimum Altitude	Maximum Altitude
FAA 031202-009	120	0	21	70	80

Requirement: GROVZ FIX KMSP RW30R

Signature: NELSON STEVEN	Routing Symbol: AJV-353	Date: 10/24/2012

Expanded Service Volume Data: (FMO)

ESV ID	Radial 1	Radial 2	Distance	Minimum Altitude	Maximum Altitude	Action Type
FAA 031202-009	120	0	21	70	80	APPROVE

Requirement/Remarks: GROVZ FIX KMSP RW30RAPPROVED. PEND. FLIGHT CHK/INSPECT @ THE REQ. DIST. AND MIN ALT.

Signature: Hughes Dennis	Routing Symbol:	Date: 10/25/2012

Expanded Service Volume Data: (Super FMO)

ESV ID	Radial 1	Radial 2	Distance	Minimum Altitude	Maximum Altitude	Action Type
FAA 031202-009	120	0	21	70	80	APPROVE

Requirement/Remarks: GROVZ FIX KMSP RW30RAPPROVED. PEND. FLIGHT CHK/INSPECT @ THE REQ. DIST. AND MIN ALT.

Signature: Hughes Dennis	Routing Symbol:	Date: 10/25/2012

Expanded Service Volume Data: (FIFO)

ESV ID	Radial 1	Radial 2	Distance	Minimum Altitude	Maximum Altitude	Action Type
FAA 031202-009	120	0				

Requirement/Remarks:

Signature:	Routing Symbol:	Date:

ESV Details

Originating Office :	Airspace Docket Number :	Request Type : Establish	
Facility Data			
Chart Name : FLIP	City : MINNEAPOLIS	Ident : INN	State : MN
Type/Class : GS	Frequency : M330.2	Reference No.: 12109523	

Expanded Service Volume Data: (Requesting Officer)

ESV ID	Radial 1	Radial 2	Distance	Minimum Altitude	Maximum Altitude
FAA 031202-011	120	0	14	50	60

Requirement: BONNA FIX KMSP RW30R

Signature: NELSON STEVEN	Routing Symbol: AJV-353	Date: 10/24/2012

Expanded Service Volume Data: (FMO)

ESV ID	Radial 1	Radial 2	Distance	Minimum Altitude	Maximum Altitude	Action Type
FAA 031202-011	120	0	14	50	60	APPROVE

Requirement/Remarks: BONNA FIX KMSP RW30RAPPROVED. PEND. FLIGHT CHK/INSPECT @ THE REQ. DIST. AND MIN ALT.

Signature: Hughes Dennis	Routing Symbol:	Date: 10/25/2012

Expanded Service Volume Data: (Super FMO)

ESV ID	Radial 1	Radial 2	Distance	Minimum Altitude	Maximum Altitude	Action Type
FAA 031202-011	120	0	14	50	60	APPROVE

Requirement/Remarks: BONNA FIX KMSP RW30RAPPROVED. PEND. FLIGHT CHK/INSPECT @ THE REQ. DIST. AND MIN ALT.

Signature: Hughes Dennis	Routing Symbol:	Date: 10/25/2012

Expanded Service Volume Data: (FIFO)

ESV ID	Radial 1	Radial 2	Distance	Minimum Altitude	Maximum Altitude	Action Type
FAA 031202-011	120	0				

Requirement/Remarks:

Signature:	Routing Symbol:	Date:

ESV Details

Originating Office :	Airspace Docket Number :	Request Type : Establish	
Facility Data			
Chart Name : FLIP	City : MINNEAPOLIS	Ident : INN	State : MN
Type/Class : GS	Frequency : M330.2	Reference No.: 12109522	

Expanded Service Volume Data: (Requesting Officer)

ESV ID	Radial 1	Radial 2	Distance	Minimum Altitude	Maximum Altitude
FAA 031202-010	120	0	17	60	70

Requirement: WULAM FIX KMSP RW30R

Signature: NELSON STEVEN	Routing Symbol: AJV-353	Date: 10/24/2012

Expanded Service Volume Data: (FMO)

ESV ID	Radial 1	Radial 2	Distance	Minimum Altitude	Maximum Altitude	Action Type
FAA 031202-010	120	0	17	60	70	APPROVE

Requirement/Remarks: WULAM FIX KMSP RW30RAPPROVED. PEND. FLIGHT CHK/INSPECT @ THE REQ. DIST. AND MIN ALT.

Signature: Hughes Dennis	Routing Symbol:	Date: 10/25/2012

Expanded Service Volume Data: (Super FMO)

ESV ID	Radial 1	Radial 2	Distance	Minimum Altitude	Maximum Altitude	Action Type
FAA 031202-010	120	0	17	60	70	APPROVE

Requirement/Remarks: WULAM FIX KMSP RW30RAPPROVED. PEND. FLIGHT CHK/INSPECT @ THE REQ. DIST. AND MIN ALT.

Signature: Hughes Dennis	Routing Symbol:	Date: 10/25/2012

Expanded Service Volume Data: (FIFO)

ESV ID	Radial 1	Radial 2	Distance	Minimum Altitude	Maximum Altitude	Action Type
FAA 031202-010	120	0				

Requirement/Remarks:

Signature:	Routing Symbol:	Date:

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
GROVZ INT/19.40 DME (IAF)	WULAM INT/16.26 DME	301.35 / 3.14 (I-INN)	6000
WULAM INT/16.26 DME	BONNA INT/13.12 DME	301.35 / 3.14 (I-INN)	5000
BONNA INT/13.12 DME (IF)	SAMMZ INT/9.98 DME	301.35 / 3.14 (I-INN)	4000
SAMMZ INT/9.98 DME	JACKO INT/6.85 DME/RADAR	301.35 / 3.14 (I-INN)	3000

MISSED APPROACH

ILS: DA

CLIMB TO 1500, THEN CLIMBING RIGHT TURN TO 3000 DIRECT GEP VORTAC AND HOLD, OR AS DIRECTED BY ATC.

ALTERNATE MA: CLIMB TO 1500, THEN CLIMBING RIGHT TURN TO 3000 ON HEADING 130 AND MSP VOR/DME R-096 TO KANAC INT/MSP 13.13 DME AND HOLD.

ADDITIONAL FLIGHT DATA:
HOLD NW, LT, 117.00 INBOUND.
CHART IN PLANVIEW: ALTERNATE MA HOLDING, HOLD E KANAC INT/MSP 13.13 DME, RT, 275.59 INBOUND.
CHART IN PLANVIEW: KANAC INT/MSP 13.13 DME.
CHART LOC RWY 35.

1. PT ____ SIDE OF COURSE ____ OUTBOUND ____ FT WITHIN ____ MILES OF ____ (IAF)
2. PROFILE STARTS AT GROVZ
3. FAC: 301.35 FAF: ____ DIST FAF TO MAP: ____ THLD: ____
4. MIN. ALT: GROVZ 7000, WULAM 6000, BONNA 5000, SAMMZ 4000, JACKO 3000
5. DIST TO THLD FROM OM: 6.67 MM: - IM: - 150 HAT: - 100 HAT: - GS ANT: 1025
6. MIN GS INCPT: 3000 GS ALT AT: JACKO 3000 OM: - MM: - IM: -
7. GS ANGLE: 3.00 TCH: 54.9
8. MSA FROM: MSP VOR/DME 090-270 2800, 270-090 3500

MAG VAR: 0E EPOCH YEAR: 2015

MINIMUMS

TAKEOFF: SEE FAA FORM 8260-15A FOR THIS AIRPORT ALTERNATE: N A X

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 30R	1270	6000	450	1270	6000	450	1270	6000	450	1270	6000	450	1270	6000	450

NOTES:
CHART NOTE: SIMULTANEOUS APPROACH AUTHORIZED WITH CONVERGING ILS RWY 35.
CHART NOTE: FOR INOPERATIVE MALSF, INCREASE S-ILS 30R ALL CATS VISIBILITY TO 1 1/2 MILE.
CHART PLANVIEW: RADAR REQUIRED.
CHART PROFILE NOTE: VGSI AND ILS GLIDEPATH NOT COINCIDENT.

QUALITY CHECKED 4

CITY AND STATE	ELEVATION: 842 THRE: 820	FACILITY IDENTIFIER:	PROCEDURE NO./AMDT NO./EFFECTIVE DATE:	SUP:
MINNEAPOLIS, MN	AIRPORT NAME: MINNEAPOLIS-ST PAUL INTL/WOLD-CHAMBERLAIN	I-INN	CONVERGING ILS RWY 30R, AMDT 2	AMDT: 1A
				DATED 03/08/2012

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

COORDINATED WITH:

ATA	AAT	ALPA	APA	AOPA	NBAA	OTHER (specify)
X		X	X	X	X	X ZMP, MSP APP CON, MSP ATCT, AMGR

FLIGHT CHECKED BY		
NAME:	FIFO	DATE:

DEVELOPED BY		
NAME: STEVE NELSON	FIFO AJV-353	DATE: 10/24/2012

APPROVED BY		
NAME: LARRY H STROUT MANAGER	FIFO AJV-353	DATE:

CHANGES:

1. CHANGED FAC FROM 300.34 TO 301.35.
2. CHANGED SIMULTANEOUS APPROACH AUTHORIZED WITH RWY 30L AND CONVERGING ILS RWY 35 TO SIMULTANEOUS APPROACH AUTHORIZED WITH CONVERGING ILS RWY 35.
3. CHANGED PRIMARY MISSED APPROACH TO CLIMB TO 1500, THEN CLIMBING RIGHT TURN TO 3000 DIRECT GEP VORTAC AND HOLD, OR AS DIRECTED BY ATC.
4. CHANGED ALTERNATE MISSED APPROACH TO CLIMB TO 1500, THEN CLIMBING RIGHT TURN TO 3000 ON HEADING 130 AND MSP VOR/DME R-096 TO KANAC INT/MSP 13.13 DME AND HOLD.
5. CHANGED DME JACKO FROM 6.72 TO 6.85, SAMMZ FROM 9.72 TO 9.98, BONNA FROM 12.68 TO 13.12, WULAM FROM 15.59 TO 16.26, GROVZ FROM 18.46 TO 19.40.
6. CHANGED DISTANCE SAMMZ TO JACKO FROM 3.00 TO 3.14, BONNA TO SAMMZ FROM 2.96 TO 3.14, WULAM TO BONNA FROM 2.91 TO 3.14, GROVZ TO WULAM FROM 2.87 TO 3.14.
7. CHANGED TCH FROM 55.0 TO 54.9.
8. CHANGED MSA FROM GEP VORTAC TO MSP VOR/DME.
9. CHANGED S-ILS DA FROM 1273 TO 1270.
10. CHANGED S-ILS VISIBILITY FROM 1 1/2 TO 6000.
11. ADDED FOR INOPERATIVE MALSF NOTE.
12. CHANGED ALTITUDE GROVZ TO WULAM FROM 6000 TO 5000 AND PROFILE STARTS AT GROVZ TO BONNA.

REASONS:

1. FAC MAG VAR CHANGE FROM 1E TO 0E.
2. 7110.98A HAS NO PROVISION FOR CONVERGING PROCEDURES TO RUN SIMULTANEOUSLY WITH PARALLEL RUNWAYS.
3-4, 12. FPT REQUEST.
5-6. APPLIED 8260.54A, PFAF FORMULA 2-16B.
7. UTILIZED UNROUNDED VALUE.
8. STANDARDIZATION OF ALL PROCEDURES AT KMSP.
9. APPLICATION OF THRE INSTEAD OF TDZE.
10-11. INSTALLATION OF MALFS SERVING RWY 30R.

01/08/13: THIS IS AN UPDATED COPY OF THE FORM DEVELOPED ON 10/24/12.
1. DELETED THE AFFECTS OF THE CHANGES, REQUESTED BY THE FPT, IN CHANGES #12, AT THE REQUEST OF THE FPT.

QUALITY 4 CHECKED

STANDARD INSTRUMENT APPROACH PROCEDURE DATA RECORD

PART - A OBSTRUCTION DATA

1. APP SEGMENT	FROM	TO	OBSTRUCTION	COORDINATES	ELEV. MSL	ROC	ALT. ADJUSTMENTS	MIN. ALT.
INITIAL	GROVZ INT/19.40	WULAM INT/16.26	1. TOWER (27-001242)	444615.88N/0924943.73W	1230 (5D)	1000	AT3770	6000
	DME	DME	2. TERRAIN	444654.00N/0925018.00W	1008 (1000)		AS1500	2500
INITIAL: STEPDOWN	WULAM INT/16.26	BONNA INT/13.12	3. AAO	444721.00N/0925054.00W	1241 (4E)	1000	AT2759	5000
	DME	DME	4. TERRAIN	444721.00N/0925054.00W	1041 (1000)		AS1500	2500
INTERMEDIATE	BONNA INT/13.12	SAMMZ INT/9.98	5. AAO	444912.00N/0925227.00W	1227 (4E)	500	AT2148 AC125	4000
	DME	DME	6. TERRAIN	444915.00N/0925448.00W	962 (1000)		AS1500	2500
INTERMEDIATE:	SAMMZ INT/9.98	JACKO INT/6.85	7. AAO	444906.00N/0930209.00W	1178 (4E)	500	AT1197 AC125	3000
STEPDOWN	DME	DME/RADAR	8. TERRAIN	444906.00N/0930209.00W	978 (1000)		AS1500	2500
FINAL: ILS	JACKO INT/6.85	RW30R				ASC		1270/450
	DME/RADAR							
2. PROCEDURE TURN	NA							
3. MISSED APPROACH MAP:	DA	GEP VORTAC				ASC		3000
			9. BLDG (27-000387)	445834.00N/0931621.00W	1743 (3C)	1000		2800
ELEV:	992		10. TERRAIN	450312.00N/0931339.00W	1073 (1100)		AS1500	2600

4. CIRCLING AREA	DISTANCE	HT. ABV. ARPT. REQUIRED	HT. ABV. ARPT. ACTUAL
CATEGORY A	1.3 NM	350	
CATEGORY B	1.5 NM	450	
CATEGORY C	1.7 NM	450	
CATEGORY D	2.3 NM	550	
CATEGORY E	4.5 NM	550	

5. MINIMUM SAFE ALTITUDES — PRIMARY NAVAID: MSP VOR/DME

SECTOR	OBSTRUCTION	BRG/DIST	ELEVATION (MSL)	M S A	SECTOR	OBSTRUCTION	BRG/DIST	ELEVATION (MSL)	M S A
090-270	TWR (27-001201)	149/ 14.3	1753 (5D)	2800					4
270-090	TWR (27-000499)	020/ 10.8	2438 (1D)	3500					

CITY AND STATE	ELEVATION: 842 / AIRPORT NAME:	FACILITY	PROCEDURE AND AMENDMENT NO:	REGION
MINNEAPOLIS, MN	MINNEAPOLIS-ST PAUL INTL/WOLD-CHAMBERLAIN	I-INN	CONVERGING ILS RWY 30R, AMDT 2	AGL

QUALITY CHECKED

PART B - SUPPLEMENTAL DATA

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

4. MONITOR STATUS	PRIMARY NAVAID: I-INN	
	MONITOR POINT: MSP ATCT	
	HRS OPTN: CAT 1	24
	CAT 3	
5. APPROACH & RUNWAY LIGHTING	X	ALSF-1 12R ALSF-2 12L, 30L, 35
		(S) SALS
	X	MALSR 22, 04 MALSF 30R
	X	HIRL 12L, 30R, 17, 22, 30L, 04, 12R, 35
		MIRL
	X	REIL 30R, 17
	X	TDZ 12L, 30L, 12R, 35
	X	C/L 12L, 30R, 17, 30L, 12R, 35
	X	OTHER (SPECIFY) PAPI-4R 17 PAPI-4L 12L, 30R, 22, 30L, 04, 12R, 35
6. RUNWAY MARKINGS	BASIC	
	ALL WEATHER	PIR-G 12L, 30R, 22, 30L, 04, 12R, 35
	INSTRUMENT	NPI-G 17
7. RUNWAY VISUAL RANGE	APPROACH	12L, 30R, 17, 22, 30L, 04, 12R, 35
	MIDFIELD	12L, 30R, 17, 30L, 12R, 35
	ROLL OUT	12L, 30R, 17, 22, 30L, 04, 12R, 35
8. GLIDE PATH	GP ANGLE: 3.00	ELEV RWY THRESHOLD: 819.8
	DISTANCE FROM RWY: 1025	ELEV GP ANTENNA: 821
		THRESHOLD CROSSING HEIGHT: 54.9
9. FINAL APPROACH COURSE AIMING	X	RUNWAY THRESHOLD — FT. FROM THRESHOLD
	X	ON CENTERLINE — FT. FROM CENTERLINE

10. WAIVERS: NONE

PART D - PREPARED BY: STEVE NELSON	DATE: 10/24/2012
TITLE: AERONAUTICAL INFORMATION SPECIALIST	OFFICE: AJV-353

PART C - REMARKS:

THRESHOLD DISPLACED 200.

PRECIPITOUS TERRAIN EVALUATION COMPLETED.

NO ADDITIONAL AIRSPACE REQUIRED.

BACKUP ALTIMETER SOURCE NOT UTILIZED. KMSP HAS REDUNDANT WEATHER SOURCING.

JACKO TO GROVZ FIX PLACEMENT DEVELOPED UTILIZING 8260.54A, FORMULA 2-16B AT 1000' INTERVALS.

450' HATH IN ORDER TO DECONFLICT MISSED APPROACH AREA WITH CONVERGING ILS RWY 35 MISSED APPROACH AREA.

VGSI DATA: 3.00/71.30.

MISSED APPROACH OBSTACLES CONT.
ALTERNATE:
ASC 3000
11. TOWER (27-000090) 445954.00N/0931118.00W 1549 1000 2600
12. TERRAIN 445457.00N/0925645.00W 1139 (1100) AS1500 2600

QUALITY 4 CHECKED

RADIO FIX AND HOLDING DATA RECORD

NAME: BONNA **STATE:** MN **COUNTRY:** US

LATITUDE/LONGITUDE: 444608.17N/0925609.02W **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	MINNEAPOLIS	I-INN	LOC/DME		121.35	121.35	13.12	14.47		5000	6000
2	FARMINGTON	FGT	VORTAC	H	045.75	051.75		13.40		5000	17500

EXPANDED SERVICE VOLUME (ESV):

FAC IDENT	FAC TYPE	RADIAL/BEARING	DISTANCE	MIN ALTITUDE	MAX ALTITUDE
I-INN	LOC/DME	R-121	14	5000	6000

REMARKS:
MINNEAPOLIS (FAC 1) USED TO ESTABLISH FIX COORDINATES
I-INN DME: 445303.68N/0931148.87W.
LOCATION IAW 8260.54A FORMULA 2-16B.
ESTABLISHED ESV IS FOR GS.

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
IAP	CONVERGING ILS RWY 30R	1, 2		KMSP	MINNEAPOLIS	MN (US)
IAP	ILS OR LOC RWY 30R	1, 2		KMSP	MINNEAPOLIS	MN (US)
IAP	RNAV (GPS) Y RWY 30R			KMSP	MINNEAPOLIS	MN (US)
IAP	RNAV (RNP) Z RWY 30R			KMSP	MINNEAPOLIS	MN (US)

REQUIRED CHARTING: MILITARY IAP, IAP

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: 10 **DATE OF REVISION:** 03/07/2013

REASON FOR REVISION:
1. RELOCATED FIX 0.45NM (2711.28') SOUTHEAST.
2. ADDED FIX TYPES WP.
3. CHANGED FAC 1 MAG/TRUE BRG FROM 120.34/121.34 TO 121.35/121.35, DME FROM 12.68 TO 13.12, DIST FROM FAC NM FROM 14.02 TO 14.47.
4. CHANGED FAC 2 MAG/TRUE BRG FROM 043.94/049.94 TO 045.75/051.75, DIST FROM FAC NM FROM 13.25 TO 13.40.
5. CHANGED ESV I-INN RADIAL FROM 120 TO 121, DISTANCE FROM 13 TO 14.
6. ADDED FACILITY USED TO ESTABLISH FIX COORDINATE NOTE.
7. UPDATED FIX USE.

DEVELOPED BY: **DATE:** 09/17/2012 **OFFICE:** AJV-353 **NAME:** STEVE NELSON

APPROVED BY: **DATE:** **OFFICE:** AJV-353 **NAME:** LARRY STROUT

SIGNATURE:

DISTRIBUTION: **NFDC**
FPO: CEN
ARTCC: ZMP
ATC FACILITY: MSP APP CON
OTHER:

QUALITY CHECKED

RADIO FIX AND HOLDING DATA RECORD

NAME: GOPHER VORTAC **STATE:** MN **COUNTRY:** US

LATITUDE/LONGITUDE: 450844.47N/0932223.45W **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	DIST FROM FAC FEET	MRA	MAA
1	GOPHER	GEP	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	LEG LENGTH DME	HOLDING ALTITUDES MIN	HOLDING ALTITUDES MAX	TEMPLATES MIN	TEMPLATES MAX
1	NW	GEP	VORTAC	297.00	117.00	L	1		3000	14000	4	10
2	N	GEP	VORTAC	346.00	166.00	L	1		2600	14000	4	10
3	W	GEP	VORTAC	264.00	084.00	R	1		2700	14000	4	10
4	NW		WP	297.00	117.00	L		4	3000	14000	5	11
5	N		WP	346.00	166.00	L		4	2700	14000	5	11
6	W		WP	265.00	085.00	R		4	2700	14000	5	11

CONTROLLING OBSTRUCTIONS:

PAT	AIRSPEED	OBSTRUCTION	COORDINATES	ELEVATION	ACCURACY CODE
1	200	TOWER (27-000032)	451043.00N/0932100.00W	1530	4D
1	265	TOWER (27-000032)	451043.00N/0932100.00W	1530	4D
2	200	TOWER (27-000032)	451043.00N/0932100.00W	1530	4D
3	200	TOWER (27-000032)	451043.00N/0932100.00W	1530	4D
4	200	TOWER (27-000032)	451043.00N/0932100.00W	1530	4D
4	265	TOWER (27-000032)	451043.00N/0932100.00W	1530	4D
5	200	TOWER (27-000032)	451043.00N/0932100.00W	1530	4D
5	265	TOWER (27-000990)	452012.00N/0932329.00W	2049	5D
6	200	TOWER (27-000032)	451043.00N/0932100.00W	1530	4D

REASON FOR NONSTANDARD HOLDING:
PAT 1 ATC REQUEST
PAT 2 ATC REQUEST
PAT 4 ATC REQUEST
PAT 5 ATC REQUEST

HOLDING RESTRICTIONS:
HOLDING LIMITED TO ESTABLISHED PATTERNS.

REMARKS:
PRECIPITOUS TERRAIN EVALUATION COMPLETED.
HOLDING PATTERN 1 AND 4 EVALUATED FOR MILITARY AIRCRAFT AT KMSP.
HOLDING PATTERN 5 EVALUATED FOR MILITARY AIRCRAFT AT KMIC.

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
DP	DES MOINES			KDSM	DES MOINES	IA (US)
DP	COULT			KANE	MINNEAPOLIS	MN (US)
DP	KBREW			KANE	MINNEAPOLIS	MN (US)
DP	ORSKY			KANE	MINNEAPOLIS	MN (US)
DP	WLSTN			KANE	MINNEAPOLIS	MN (US)
DP	COULT			KFCM	MINNEAPOLIS	MN (US)
DP	KBREW			KFCM	MINNEAPOLIS	MN (US)
DP	ORSKY			KFCM	MINNEAPOLIS	MN (US)
DP	WLSTN			KFCM	MINNEAPOLIS	MN (US)
DP	COULT			KMSP	MINNEAPOLIS	MN (US)
DP	KBREW			KMSP	MINNEAPOLIS	MN (US)
DP	ORSKY			KMSP	MINNEAPOLIS	MN (US)
DP	WLSTN			KMSP	MINNEAPOLIS	MN (US)
DP	COULT			KSTP	ST PAUL	MN (US)
DP	KBREW			KSTP	ST PAUL	MN (US)
DP	ORSKY			KSTP	ST PAUL	MN (US)
DP	WLSTN			KSTP	ST PAUL	MN (US)
DP	BLUFS			KOMA	OMAHA	NE (US)
EN ROUTE	J106					(US)
EN ROUTE	J114					(US)
EN ROUTE	J21					(US)
EN ROUTE	J25					(US)
EN ROUTE	J36					(US)
EN ROUTE	J68-70					(US)
EN ROUTE	J70					(US)
EN ROUTE	Q501					(US)
EN ROUTE	Q501-502					(US)
EN ROUTE	Q502					(US)
EN ROUTE	V148					(US)
EN ROUTE	V2					(US)

QUALITY CHECKED 6

EN ROUTE	V2-97				(US)
EN ROUTE	V218				(US)
EN ROUTE	V413-510				(US)
EN ROUTE	V505				(US)
EN ROUTE	V78				(US)
EN ROUTE	V82-161				(US)
IAP	VOR -B		KCFE	BUFFALO	MN (US)
IAP	NDB RWY 34		KCBG	CAMBRIDGE	MN (US)
IAP	RNAV (GPS) RWY 34		KCBG	CAMBRIDGE	MN (US)
IAP	RNAV (GPS) RWY 28		KMGG	MAPLE LAKE	MN (US)
IAP	VOR-A		KMGG	MAPLE LAKE	MN (US)
IAP	ILS OR LOC/DME RWY 27	3	KANE	MINNEAPOLIS	MN (US)
IAP	RNAV (GPS) RWY 18		KANE	MINNEAPOLIS	MN (US)
IAP	RNAV (GPS) RWY 27	6	KANE	MINNEAPOLIS	MN (US)
IAP	VOR RWY 9	3	KANE	MINNEAPOLIS	MN (US)
IAP	VOR/DME RWY 27	3	KANE	MINNEAPOLIS	MN (US)
IAP	COPTER ILS OR LOC RWY 10R		KFCM	MINNEAPOLIS	MN (US)
IAP	ILS OR LOC RWY 10R		KFCM	MINNEAPOLIS	MN (US)
IAP	RNAV (GPS) RWY 10L		KFCM	MINNEAPOLIS	MN (US)
IAP	RNAV (GPS) RWY 10R		KFCM	MINNEAPOLIS	MN (US)
IAP	VOR RWY 10R		KFCM	MINNEAPOLIS	MN (US)
IAP	RNAV (GPS) RWY 14L	5	KMIC	MINNEAPOLIS	MN (US)
IAP	VOR OR GPS-A	2	KMIC	MINNEAPOLIS	MN (US)
IAP	CONVERGING ILS RWY 30L	1	KMSP	MINNEAPOLIS	MN (US)
IAP	CONVERGING ILS RWY 30R	1	KMSP	MINNEAPOLIS	MN (US)
IAP	ILS OR LOC RWY 30R	1	KMSP	MINNEAPOLIS	MN (US)
IAP	LOC RWY 17		KMSP	MINNEAPOLIS	MN (US)
IAP	LOC RWY 22		KMSP	MINNEAPOLIS	MN (US)
IAP	LOC RWY 4	1	KMSP	MINNEAPOLIS	MN (US)
IAP	RNAV (GPS) RWY 4	4	KMSP	MINNEAPOLIS	MN (US)
IAP	RNAV (GPS) Y RWY 30R	4	KMSP	MINNEAPOLIS	MN (US)
IAP	RNAV (GPS) Y RWY 35	4	KMSP	MINNEAPOLIS	MN (US)
IAP	RNAV (RNP) Z RWY 30R	4	KMSP	MINNEAPOLIS	MN (US)
IAP	RNAV (RNP) Z RWY 35	4	KMSP	MINNEAPOLIS	MN (US)
IAP	NDB RWY 15		KPNM	PRINCETON	MN (US)
IAP	ILS OR LOC RWY 9		KRGK	RED WING	MN (US)
IAP	GPS RWY 34		KROS	RUSH CITY	MN (US)
IAP	LOC RWY 34		KSGS	SOUTH ST PAUL	MN (US)
IAP	NDB OR GPS-B		KSGS	SOUTH ST PAUL	MN (US)
IAP	ILS OR LOC RWY 31		KSTC	ST CLOUD	MN (US)
IAP	VOR RWY 31		KSTC	ST CLOUD	MN (US)
IAP	VOR/DME RWY 13		KSTC	ST CLOUD	MN (US)
IAP	NDB RWY 4		K21D	ST PAUL	MN (US)
IAP	COPTER ILS OR LOC RWY 32		KSTP	ST PAUL	MN (US)
IAP	ILS OR LOC RWY 14		KSTP	ST PAUL	MN (US)
IAP	ILS OR LOC RWY 32		KSTP	ST PAUL	MN (US)
IAP	NDB RWY 31		KSTP	ST PAUL	MN (US)
IAP	RNAV (GPS) RWY 14		KSTP	ST PAUL	MN (US)
STAR	AGUDE		KCFE	BUFFALO	MN (US)
STAR	AGUDE		KFBL	FARIBAULT	MN (US)
STAR	AGUDE		KGYL	GLENCOE	MN (US)
STAR	AGUDE		KMGG	MAPLE LAKE	MN (US)
STAR	AGUDE		KANE	MINNEAPOLIS	MN (US)
STAR	ENCEE		KANE	MINNEAPOLIS	MN (US)
STAR	GOPHER		KANE	MINNEAPOLIS	MN (US)
STAR	TWOLF		KANE	MINNEAPOLIS	MN (US)
STAR	AGUDE		KFCM	MINNEAPOLIS	MN (US)
STAR	ENCEE		KFCM	MINNEAPOLIS	MN (US)
STAR	GOPHER		KFCM	MINNEAPOLIS	MN (US)
STAR	TWOLF		KFCM	MINNEAPOLIS	MN (US)
STAR	AGUDE		KLVN	MINNEAPOLIS	MN (US)
STAR	ENCEE		KLVN	MINNEAPOLIS	MN (US)
STAR	GOPHER		KLVN	MINNEAPOLIS	MN (US)
STAR	TWOLF		KLVN	MINNEAPOLIS	MN (US)
STAR	AGUDE		KMIC	MINNEAPOLIS	MN (US)
STAR	ENCEE		KMIC	MINNEAPOLIS	MN (US)
STAR	GOPHER		KMIC	MINNEAPOLIS	MN (US)
STAR	TWOLF		KMIC	MINNEAPOLIS	MN (US)
STAR	EAU CLAIRE		KMSP	MINNEAPOLIS	MN (US)
STAR	GOPHER		KMSP	MINNEAPOLIS	MN (US)
STAR	SAUGR (FMS)		KMSP	MINNEAPOLIS	MN (US)
STAR	TWOLF		KMSP	MINNEAPOLIS	MN (US)
STAR	WILDD		KMSP	MINNEAPOLIS	MN (US)
STAR	AGUDE		KRGK	RED WING	MN (US)
STAR	AGUDE		KSGS	SOUTH ST PAUL	MN (US)
STAR	AGUDE		K21D	ST PAUL	MN (US)
STAR	AGUDE		KSTP	ST PAUL	MN (US)
STAR	ENCEE (RNAV)		KSTP	ST PAUL	MN (US)
STAR	GOPHER		KSTP	ST PAUL	MN (US)
STAR	AGUDE		KRNH	NEW RICHMOND	WI (US)
STAR	TWOLF		KRNH	NEW RICHMOND	WI (US)
STAR	AGUDE		KOEO	OSCEOLA	WI (US)
STAR	TWOLF		KOEO	OSCEOLA	WI (US)

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

QUALITY CHECKED

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: 14 **DATE OF REVISION:** 03/07/2013

REASON FOR REVISION:
ADDED HOLDING PATTERN REMARK FOR KMIC.
REMOVED HOLDING PATTERN 5 REMARK FOR KMSP.
CHANGED HOLDING PATTERN 1 MIN ALTITUDE FROM 4000 TO 3000.
CHANGED HOLDING PATTERN 4 MIN ALTITUDE FROM 4000 TO 3000.

DEVELOPED BY:	**DATE:** 09/18/2012	**OFFICE:** AJV-353	**NAME:** JILL OLSON (KISSY MAXFIELD)
APPROVED BY:	**DATE:**	**OFFICE:** AJV-353	**NAME:** LARRY STROUT
	SIGNATURE:		

DISTRIBUTION:
NFDC
FPO: CEN
ARTCC: ZMP
ATC FACILITY: MSP APP CON, MSP ATCT
OTHER:

QUALITY CHECKED

RADIO FIX AND HOLDING DATA RECORD

NAME: GROVZ **STATE:** MN **COUNTRY:** US

LATITUDE/LONGITUDE: 444250.91N/0924838.71W **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	MINNEAPOLIS	I-INN	LOC/DME		121.35	121.35	19.40	20.75		5000	8000
2	FARMINGTON	FGT	VORTAC	H	066.44	072.44		16.66		5000	17500

EXPANDED SERVICE VOLUME (ESV):

FAC IDENT	FAC TYPE	RADIAL/BEARING	DISTANCE	MIN ALTITUDE	MAX ALTITUDE
I-INN	LOC/DME	R-121	21	5000	8000

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

REMARKS:
MINNEAPOLIS (FAC 1) USED TO ESTABLISH FIX COORDINATES
I-INN DME: 445303.68N/0931148.87W.
LOCATION IAW 8260.54A FORMULA 2-16B.
ESTABLISHED ESV IS FOR LOC/GS.

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
IAP	CONVERGING ILS RWY 30R	1, 2		KMSP	MINNEAPOLIS	MN (US)
IAP	ILS OR LOC RWY 30R	1, 2		KMSP	MINNEAPOLIS	MN (US)
IAP	RNAV (GPS) Y RWY 30R			KMSP	MINNEAPOLIS	MN (US)
IAP	RNAV (RNP) Z RWY 30R			KMSP	MINNEAPOLIS	MN (US)

REQUIRED CHARTING: MILITARY IAP, IAP

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: 4 **DATE OF REVISION:** 03/07/2013

REASON FOR REVISION:
1. RELOCATED FIX 0.95NM (5753.02') SOUTHEAST.
2. ADDED FIX TYPES WP.
3. CHANGED FAC 1 MAG/TRUE BRG FROM 120.34/121.34 TO 121.35/121.35, DME FROM 18.46 TO 19.40, DIST FROM FAC NM FROM 19.80 TO 20.75, MRA FROM 7000 TO 5000.
4. CHANGED FAC 2 MAG/TRUE BRG FROM 063.88/069.88 TO 066.44/072.44, DIST FROM FAC NM FROM 16.06 TO 16.66, MRA FROM 7000 TO 5000.
5. CHANGED ESV I-INN RADIAL FROM 120 TO 121, DISTANCE FROM 19 TO 21, MIN ALTITUDE FROM 7000 TO 5000.
6. ADDED FACILITY USED TO ESTABLISH FIX COORDINATE NOTE.
7. UPDATED FIX USE.

DEVELOPED BY: **DATE:** 09/17/2012 **OFFICE:** AJV-353 **NAME:** STEVE NELSON

APPROVED BY: **DATE:** **OFFICE:** AJV-353 **NAME:** LARRY STROUT

SIGNATURE:

DISTRIBUTION:
NFDC
FPO: CEN
ARTCC: ZMP
ATC FACILITY: MSP APP CON
OTHER:

RADIO FIX AND HOLDING DATA RECORD

NAME: JACKO **STATE:** MN **COUNTRY:** US

LATITUDE/LONGITUDE: 444924.96N/0930340.22W **TYPE:** WP, RADAR, 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	MINNEAPOLIS	I-INN	LOC/DME		121.35	121.35	6.85	8.19	49759	3000	5300
2	FARMINGTON	FGT	VORTAC	H	018.06	024.06		12.66		3000	17500

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

REMARKS:
MINNEAPOLIS (FAC 1) USED TO ESTABLISH FIX COORDINATES
LOCATION IAW 8260.54A FORMULA 2-16B.
I-INN DME LAT/LONG: 445303.68N/0931148.87W.

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
IAP	CONVERGING ILS RWY 30R	1, 2		KMSP	MINNEAPOLIS	MN (US)
IAP	ILS OR LOC RWY 30R	1, 2		KMSP	MINNEAPOLIS	MN (US)
IAP	RNAV (GPS) Y RWY 30R			KMSP	MINNEAPOLIS	MN (US)
IAP	RNAV (RNP) Z RWY 30R			KMSP	MINNEAPOLIS	MN (US)

REQUIRED CHARTING: MILITARY IAP, IAP

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: 8 **DATE OF REVISION:** 03/07/2013

REASON FOR REVISION:
1. RELOCATED FIX 0.12NM (758.29') SOUTHEAST.
2. CHANGED FAC 1 MAG/TRUE BRG FROM 120.34/121.34 TO 121.35/121.35, DME FROM 6.72 TO 6.85, DIST FROM FAC NM/FEET FROM 8.06/48999 TO 8.19/49759.
3. CHANGED FAC 2 MAG/TRUE BRG FROM 017.50/023.50 TO 018.06/024.06, DIST FROM FAC NM FROM 12.68 TO 12.66.
4. ADDED FACILITY USED TO ESTABLISH FIX COORDINATE NOTE.
5. UPDATED FIX USE.

DEVELOPED BY: **DATE:** 09/12/2012 **OFFICE:** AJV-353 **NAME:** STEVE NELSON

APPROVED BY: **DATE:** **OFFICE:** AJV-353 **NAME:** LARRY STROUT

SIGNATURE:

DISTRIBUTION:
NFDC
FPO: CEN
ARTCC: ZMP
ATC FACILITY: MSP APP CON, MSP ATCT
OTHER:

QUALITY CHECKED

RADIO FIX AND HOLDING DATA RECORD

NAME: KANAC **STATE:** MN **COUNTRY:** US

LATITUDE/LONGITUDE: 445201.91N/0925553.14W **TYPE:** WP, INT, DME

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

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	GOPHER	GEP	VORTAC	H	125.47	131.47	25.16	25.16		3000	17500
2	FARMINGTON	FGT	VORTAC	H	031.00	037.00	17.77	17.77		3000	17500
3	MINNEAPOLIS	MSP	VOR/DME	L	095.59	097.59	13.13	13.13		3000	17500

HOLDING: **HOLDING TYPE OF ACTION:** ESTABLISH

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	SE	GEP	VORTAC	125.47	305.47	R	1		3000	14000	5	11
2	E	MSP	VOR/DME	095.59	275.59	R	1		3000	14000	5	11
3	E		WP	095.59	275.59	R		4	3000	14000	5	11

CONTROLLING OBSTRUCTIONS:

PAT	AIRSPEED	OBSTRUCTION	COORDINATES	ELEVATION	ACCURACY CODE
1	200	AAO	445457.00N/0925645.00W	1339	4E
1	265	AAO	444615.00N/0923542.00W	1395	4E
2	200	AAO	445457.00N/0925645.00W	1339	4E
2	265	TOWER (55-000156)	445630.32N/0923935.00W	1466	2C
3	200	AAO	445457.00N/0925645.00W	1339	4E
3	265	TOWER (55-000156)	445630.32N/0923935.00W	1466	2C

HOLDING RESTRICTIONS:
HOLDING LIMITED TO ESTABLISHED PATTERN.

REMARKS:
FARMINGTON (FAC 2) AND GOPHER (FAC 1) USED TO ESTABLISH FIX COORDINATES
PRECIPITOUS TERRAIN EVALUATION COMPLETED.
HOLDING PATTERNS EVALUATED FOR MILITARY AIRCRAFT AT KMSP.

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE (US)
EN ROUTE	V2-97	1, 2				
IAP	CONVERGING ILS RWY 30L (ALT MA)	2, 3	2	KMSP	MINNEAPOLIS	MN (US)
IAP	CONVERGING ILS RWY 30R (ALT MA)	2, 3	2	KMSP	MINNEAPOLIS	MN (US)
IAP	ILS OR LOC RWY 12L	2, 3	2	KMSP	MINNEAPOLIS	MN (US)
IAP	ILS OR LOC RWY 12L (ALT MA)	1, 2	1	KMSP	MINNEAPOLIS	MN (US)
IAP	ILS OR LOC RWY 30R (ALT MA)	2, 3	2	KMSP	MINNEAPOLIS	MN (US)
IAP	ILS RWY 12L (CAT II)	2, 3	2	KMSP	MINNEAPOLIS	MN (US)
IAP	ILS RWY 12L (CAT II) (ALT MA)	1, 2	1	KMSP	MINNEAPOLIS	MN (US)
IAP	ILS RWY 12L (CAT III)	2, 3	2	KMSP	MINNEAPOLIS	MN (US)
IAP	ILS RWY 12L (CAT III) (ALT MA)	1, 2	1	KMSP	MINNEAPOLIS	MN (US)
IAP	ILS RWY 12L (SA CAT I)	2, 3	2	KMSP	MINNEAPOLIS	MN (US)
IAP	ILS RWY 12L (SA CAT I) (ALT MA)	1, 2	1	KMSP	MINNEAPOLIS	MN (US)
IAP	RNAV (GPS) Y RWY 12L		3	KMSP	MINNEAPOLIS	MN (US)
IAP	RNAV (RNP) Z RWY 12L		3	KMSP	MINNEAPOLIS	MN (US)

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

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: ORIG **DATE OF REVISION:** 03/07/2013

DEVELOPED BY: **DATE:** 10/16/2012 **OFFICE:** AJV-353 **NAME:** STEVE NELSON

APPROVED BY: **DATE:** **OFFICE:** AJV-353 **NAME:** LARRY STROUT

SIGNATURE:

DISTRIBUTION: **NFDC**
FPO: CEN
ARTCC: ZMP
ATC FACILITY: MSP APP CON
OTHER:

QUALITY CHECKED

RADIO FIX AND HOLDING DATA RECORD

NAME: SAMMZ **STATE:** MN **COUNTRY:** US

LATITUDE/LONGITUDE: 444746.62N/0925954.51W **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	MINNEAPOLIS	I-INN	LOC/DME		121.35	121.35	9.98	11.33		4000	5300
2	FARMINGTON	FGT	VORTAC	H	032.30	038.30		12.65		4000	17500

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

REMARKS:
MINNEAPOLIS (FAC 1) USED TO ESTABLISH FIX COORDINATES
I-INN DME: 445303.68N/0931148.87W.
LOCATION IAW 8260.54A FORMULA 2-16B.

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
IAP	CONVERGING ILS RWY 30R	1, 2		KMSP	MINNEAPOLIS	MN (US)
IAP	ILS OR LOC RWY 30R	1, 2		KMSP	MINNEAPOLIS	MN (US)
IAP	RNAV (GPS) Y RWY 30R			KMSP	MINNEAPOLIS	MN (US)
IAP	RNAV (RNP) Z RWY 30R			KMSP	MINNEAPOLIS	MN (US)

REQUIRED CHARTING: MILITARY IAP, IAP

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: 3 **DATE OF REVISION:** 03/07/2013

REASON FOR REVISION:
1. RELOCATED FIX 0.26NM (1592.59') SOUTHEAST.
2. ADDED FIX TYPE WP.
3. CHANGED FAC 1 MAG/TRUE BRG FROM 120.34/121.34 TO 121.35/121.35, DME FROM 9.72 TO 9.98, DIST FROM FAC NM FROM 11.07 TO 11.33.
4. CHANGED FAC 2 MAG/TRUE BRG FROM 031.12/037.12 TO 032.30/038.30, DIST FROM FAC NM FROM 12.63 TO 12.65.
5. ADDED FACILITY USED TO ESTABLISH FIX COORDINATE NOTE.
6. UPDATED FIX USE.

DEVELOPED BY: **DATE:** 09/17/2012 **OFFICE:** AJV-353 **NAME:** STEVE NELSON

APPROVED BY: **DATE:** **OFFICE:** AJV-353 **NAME:** LARRY STROUT

SIGNATURE:

DISTRIBUTION:
NFDC
FPO: CEN
ARTCC: ZMP
ATC FACILITY: MSP APP CON
OTHER:

QUALITY CHECKED 6

RADIO FIX AND HOLDING DATA RECORD

NAME: WHISK **STATE:** MN **COUNTRY:** US

LATITUDE/LONGITUDE: 450823.57N/0925743.72W **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	GOPHER	GEP	VORTAC	H	085.00	091.00	17.46	17.46		3000	17500
2	FLYING CLOUD	FCM	VOR/DME	L	046.15	047.15		27.84		3400	17500
3	FARMINGTON	FGT	VORTAC	H	011.00	017.00	31.95	31.95		4000	17500
4	MINNEAPOLIS	MSP	VOR/DME	L	036.55	038.55	18.70	18.70		3400	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	E	GEP	VORTAC	085.00	265.00	R	1		3000	14000	5	11
2	N		WP	014.00	194.00	R		4	3000	14000	5	11
3	N	FGT	VORTAC	011.00	191.00	R	1		4000	14000	6	11
4	NE	MSP	VOR/DME	036.55	216.55	R	1		4000	14000	5	11

CONTROLLING OBSTRUCTIONS:

PAT	AIRSPEED	OBSTRUCTION	COORDINATES	ELEVATION	ACCURACY CODE
1	200	AAO	450730.00N/0925754.00W	1250	4E
2	200	AAO	450730.00N/0925754.00W	1250	4E
3	200	TOWER (27-000481)	450828.00N/0930602.00W	1426	5D
4	200	AAO	451506.00N/0924948.00W	1280	4E

HOLDING RESTRICTIONS:
HOLDING LIMITED TO ESTABLISHED PATTERN.

REMARKS:
GOPHER (FAC 1) AND FARMINGTON (FAC 3) USED TO ESTABLISH FIX COORDINATES
PRECIPITOUS TERRAIN EVALUATION COMPLETED.

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
EN ROUTE	V13	1, 2, 3				(US)
EN ROUTE	V78	1, 2, 3				(US)
IAP	RNAV (GPS) RWY 22			KMSP	MINNEAPOLIS	MN (US)
IAP	RNAV (GPS) RWY 32		2	K21D	ST PAUL	MN (US)
IAP	ILS OR LOC RWY 14	1, 2	1	KSTP	ST PAUL	MN (US)
IAP	ILS OR LOC RWY 14 (ALT MA)	4	1	KSTP	ST PAUL	MN (US)
IAP	ILS OR LOC RWY 32	4	4	KSTP	ST PAUL	MN (US)
IAP	ILS OR LOC RWY 32 (ALT MA)	3	3	KSTP	ST PAUL	MN (US)
IAP	RNAV (GPS) RWY 14		2	KSTP	ST PAUL	MN (US)
IAP	RNAV (GPS) RWY 32		2	KSTP	ST PAUL	MN (US)
STAR	AGUDE	1, 2, 3, 4		KFBL	FARIBAULT	MN (US)
STAR	AGUDE	1, 2, 3, 4		KGYL	GLENCOE	MN (US)
STAR	AGUDE	1, 2, 3, 4		KMGG	MAPLE LAKE	MN (US)
STAR	AGUDE	1, 2, 3, 4		KANE	MINNEAPOLIS	MN (US)
STAR	AGUDE	1, 2, 3, 4		KFCM	MINNEAPOLIS	MN (US)
STAR	AGUDE	1, 2, 3, 4		KLVN	MINNEAPOLIS	MN (US)
STAR	AGUDE	1, 2, 3, 4		KMIC	MINNEAPOLIS	MN (US)
STAR	AGUDE	1, 2, 3, 4		KRGK	RED WING	MN (US)
STAR	AGUDE	1, 2, 3, 4		KSGS	SOUTH ST PAUL	MN (US)
STAR	AGUDE	1, 2, 3, 4		K21D	ST PAUL	MN (US)
STAR	AGUDE	1, 2, 3, 4		KSTP	ST PAUL	MN (US)
STAR	AGUDE	1, 2, 3, 4		KRNH	NEW RICHMOND	WI (US)
STAR	AGUDE	1, 2, 3, 4		KOEO	OSCEOLA	WI (US)

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

QUALITY CHECKED

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: 12 **DATE OF REVISION:** 03/07/2013

REASON FOR REVISION:
1. CHANGED FAC 1 MRA FROM 3400 TO 3000.
2. CHANGED FAC 3 MRA FROM 5500 TO 4000.
3. DELETED PAT 2.
4. DELETED 265KT EVALUATION AND CORRESPONDING REMARK FROM PAT 1 AND 4.
5. ADDED FACILITIES USED TO ESTABLISH FIX COORDINATE NOTE.
6. UPDATED FIX USE.

DEVELOPED BY: **DATE:** 09/17/2012 **OFFICE:** AJV-353 **NAME:** STEVE NELSON

APPROVED BY: **DATE:** **OFFICE:** AJV-353 **NAME:** LARRY STROUT

SIGNATURE:

DISTRIBUTION:
NFDC
FPO: CEN
ARTCC: ZMP
ATC FACILITY: MSP APP CON
OTHER:

RADIO FIX AND HOLDING DATA RECORD

NAME: WULAM **STATE:** MN **COUNTRY:** US

LATITUDE/LONGITUDE: 444429.60N/0925223.75W **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	MINNEAPOLIS	I-INN	LOC/DME		121.35	121.35	16.26	17.61		5000	7000
2	FARMINGTON	FGT	VORTAC	H	057.23	063.23		14.79		5000	17500

EXPANDED SERVICE VOLUME (ESV):

FAC IDENT	FAC TYPE	RADIAL/BEARING	DISTANCE	MIN ALTITUDE	MAX ALTITUDE
I-INN	LOC/DME	R-121	17	5000	7000

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

REMARKS:
MINNEAPOLIS (FAC 1) USED TO ESTABLISH FIX COORDINATES
I-INN DME: 445303.68N/0931148.87W.
LOCATION IAW 8260.54A FORMULA 2-16B.
ESTABLISHED ESV IS FOR GS.

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
IAP	CONVERGING ILS RWY 30R	1, 2		KMSP	MINNEAPOLIS	MN (US)
IAP	ILS OR LOC RWY 30R	1, 2		KMSP	MINNEAPOLIS	MN (US)
IAP	RNAV (GPS) Y RWY 30R			KMSP	MINNEAPOLIS	MN (US)
IAP	RNAV (RNP) Z RWY 30R			KMSP	MINNEAPOLIS	MN (US)

REQUIRED CHARTING: MILITARY IAP, IAP

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: 3 **DATE OF REVISION:** 03/07/2013

REASON FOR REVISION:
1. RELOCATED FIX 0.68NM (4102.71') SOUTHEAST.
2. CHANGED FAC 1 MAG/TRUE BRG FROM 120.34/121.34 TO 121.35/121.35, DME FROM 15.59 TO 16.26, DIST FROM FAC NM FROM 16.93 TO 17.61, MRA FROM 6000 TO 5000.
3. CHANGED FAC 2 MAG/TRUE BRG FROM 054.95/060.95 TO 057.23/063.23, DIST FROM FAC NM FROM 14.45 TO 14.79, MRA FROM 6000 TO 5000.
4. CHANGED ESV I-INN RADIAL FROM 120 TO 121, DISTANCE FROM 16 TO 17, MIN ALTITUDE FROM 6000 TO 5000.
5. ADDED FACILITY USED TO ESTABLISH FIX COORDINATE NOTE.
6. UPDATED FIX USE.

DEVELOPED BY: **DATE:** 09/17/2012 **OFFICE:** AJV-353 **NAME:** STEVE NELSON

APPROVED BY: **DATE:** **OFFICE:** AJV-353 **NAME:** LARRY STROUT

SIGNATURE:

DISTRIBUTION:
NFDC
FPO: CEN
ARTCC: ZMP
ATC FACILITY: MSP APP CON
OTHER:

Federal Aviation Administration

Memorandum

Date:

To: Dick Powell Manager, National Flight Data Center, AJV-21

From: Larry H. Strout, Manager, Central Products Team, AJV-353

Subject: **ACTION:** Magnetic Variation Change for Minneapolis-St Paul Intl/Wold-Chamberlain (KMSP)

The Magnetic Variation (MV) data for the airport(s) and/or facility(s) listed under the 'Airport/Facility" column will be revised effective concurrent with the publication of the procedure(s) listed below.

CONVERGING ILS RWY 30L, AMDT 1
CONVERGING ILS RWY 30R, AMDT 2
CONVERGING ILS RWY 35, AMDT 3
ILS OR LOC RWY 12L, ILS RWY 12L (CAT II), ILS RWY 12L (CAT III), AMDT 9
ILS OR LOC RWY 12R, ILS RWY 12R (CAT II), ILS RWY 12R (CAT III), AMDT 10
ILS OR LOC RWY 30L, ILS RWY 30L (CAT II), AMDT 45
ILS OR LOC RWY 30R, AMDT 14
ILS OR LOC RWY 35, ILS RWY 35 (CAT II), ILS RWY 35 (CAT III), AMDT 3
LOC RWY 4, AMDT 2
LOC RWY 17, AMDT 2
LOC RWY 22, AMDT 2
RNAV (GPS) Y RWY 12L, AMDT 3
RNAV (GPS) Y RWY 12R, AMDT 2
RNAV (GPS) Y RWY 30L, AMDT 3
RNAV (GPS) Y RWY 30R, AMDT 2
RNAV (GPS) Y RWY 35, AMDT 2
RNAV (GPS) Z RWY 12L, ORIG
RNAV (GPS) Z RWY 12R, ORIG
RNAV (GPS) Z RWY 30L, ORIG
RNAV (GPS) Z RWY 30R, ORIG
RNAV (GPS) Z RWY 35, AMDT 1

STARS:
ARCHS (RNAV) ONE
BAINY (RNAV) ONE
CLFAX (RNAV) ONE
DOWNZ (RNAV) ONE

FEINT (RNAV) ONE
HHOGS (RNAV) ONE

STARS:
HORML (RNAV) ONE
KKILR (RNAV) ONE
MORSS (RNAV) ONE
MUSCL (RNAV) ONE
NITZR (RNAV) ONE
TORGY (RNAV) ONE

GRAPHIC DP:
HESTIN TWO
LEINY FOUR
SLAYER TWO
SMERF FIVE

Estimated Chart Date: 03/07/2013

Please publish these changes in the National Flight Data Digest.

MINNESOTA

Location	Name	Airport /Facility	Identifier	Assigned Magnetic Variation Is	Epoch Year
Minneapolis	Minneapolis-St Paul Intl/Wold-Chamberlain	Airport	KMSP / MSP	Old 2° East New 0° East	2015
Minneapolis		ILS (CAT III)	BMA	Old 1° East New 0° East	2015
Minneapolis		ILS (CAT III)	HKZ	Old 2° East New 0° East	2015
Minneapolis		ILS	INN	Old 1° East New 0° East	2015
Minneapolis		ILS (CAT II)	MSP	Old 0° East New 0° East	2015
Minneapolis		ILS (CAT III)	PJL	Old 1° East New 0° East	2015
Minneapolis		LOC	APL	Old 1° East New 0° East	2015
Minneapolis		LOC	SIJ	Old 1° East New 0° East	2015
Minneapolis		LOC	TJZ	Old 1° East New 0° East	2015
Minneapolis	Minneapolis APP CON	ASR-9	MSP	Old 3° East New 0° East	2015

If you have any questions please notify Larry H. Strout, larry.h.strout@faa.gov (405-954-5070).