Flight Procedure Tracking Form	Action: FLIGHT CHECK	Task Type: IAP	Date Open: 08/15/2012	Task #: 2011072926923405001	Request #: 20110729269234
Procedure: RNAV (RNP) Z RWY 12 L ORIG		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:	Fac. Type: RNP	Specialist: PABLO ORTIZ			

Procedure Review

	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 1/11/2019 - MAGVAR

MAG VAR P1

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

MINNEAPOLIS, MN MINNEAPOLIS-ST PAUL INTL/WOLD-CHAMBERLAIN (KMSP) RNAV (RNP) Z RWY 12L, ORIG (RNP) ENROUTE-YES FC: 3.19.13 PUB: 5.2.13

ATTACHED FORMS: 8260-3; 8260-10; 8260-9; 8260-2(S): ALGIN-INT, REV 11; CCJAY-INT, REV 2; CFBKP, ORIG; CHUUT, ORIG; FSCOT, ORIG; GLDON, ORIG; HAMML-INT, REV 2; INGLS, ORIG; KANAC-INT, ORIG; UBTYA-INT, REV 2; WASHY-INT, REV 6; WSTWD, ORIG.

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

APP CRS	Rwy ldg	7620
121°	THRE	839
	Apt Elev	842

CHUUT

RNAV (RNP) Z RWY 12L

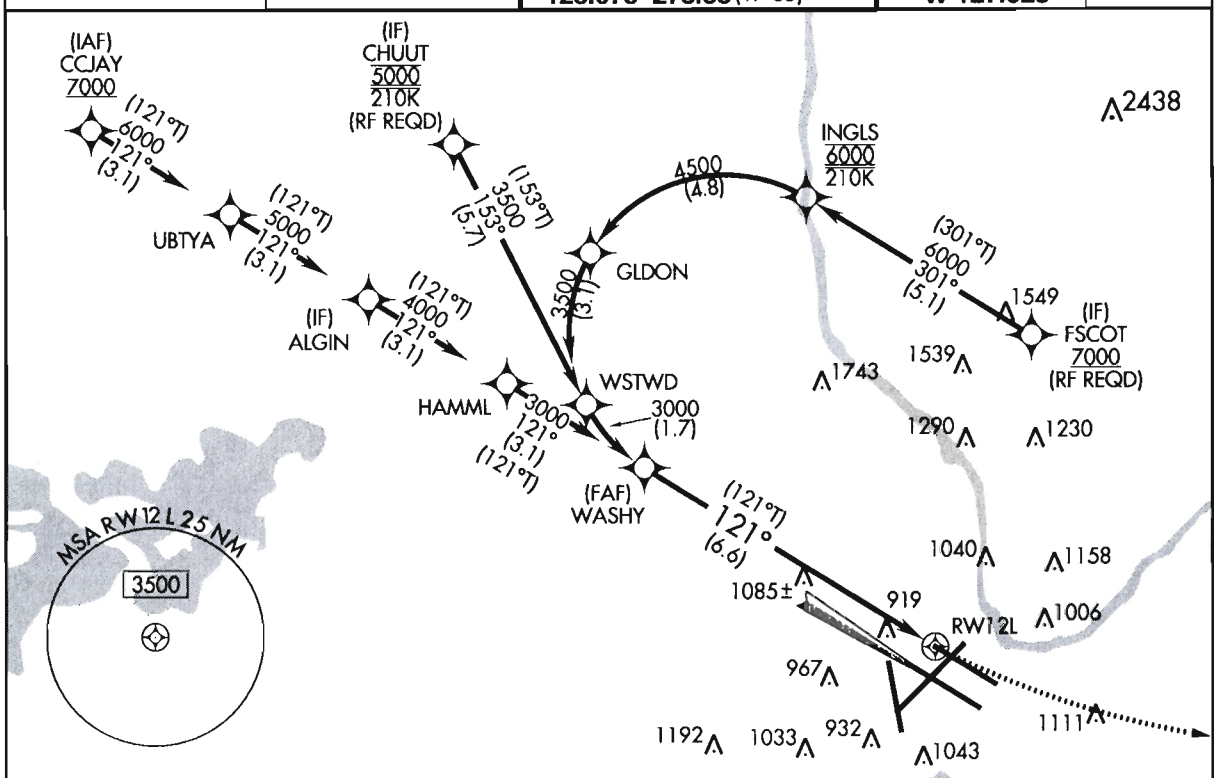
MINNEAPOLIS-ST PAUL INTL/WOLD-CHAMBERLAIN (MSP)

For uncompensated Baro-VNAV systems, procedure NA below -20°C (-4°F) or above 54°C (130°F). For inop ALSF, increase RNP 0.21 all Cats visibility to RVR 6000 and RNP 0.30 all Cats visibility to 1⅜ mile. Simultaneous approach authorized with Rwy 12R, except for arrivals at FSCOT and INGLS. Use of FD or AP providing RNAV track guidance required during simultaneous operations. GPS required.

ALSF-2

MISSED APPROACH: Climb to 1300 then climbing left turn to 3000 direct KANAC and hold.

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



ELEV 842	D	THRE 839

RADAR REQUIRED

PROTOTYPE-NOT FOR NAVIGATION

MISSED APCH FIX

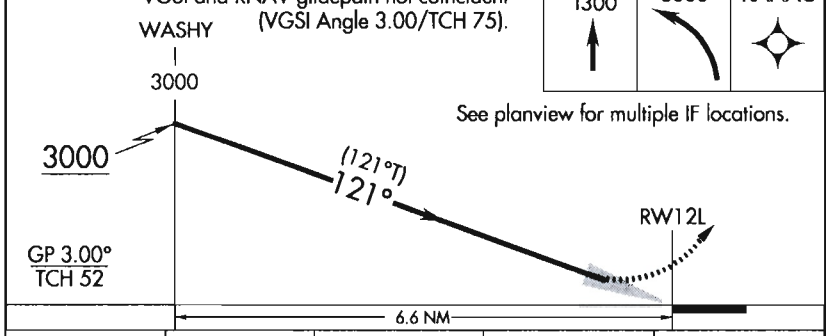
(096°T) 4 NM
096°
276°
(276°T)
KANAC

ALGIN: 4500.268N / 09328.793W
CCJAY: 4503.511N / 09336.374W
CFBKP: 4459.623N / 09318.997W
CHUUT: 4503.256N / 09326.459W
FSCOT: 4459.570N / 09310.603W
GLDON: 4501.162N / 09322.708W
HAMML: 4458.643N / 09325.008W
INGLS: 4502.230N / 09316.765W
KANAC: 4452.032N / 09255.886W
UBTYA: 4501.891N / 09332.582W
WASHY: 4457.016N / 09321.226W
WSTWD: 4458.230N / 09322.819W
RW12L: 4453.577N / 09313.260W

VGSI and RNAV glidepath not coincident (VGSI Angle 3.00/TCH 75).

1300	3000	KANAC

See planview for multiple IF locations.



CATEGORY	A	B	C	D
RNP 0.21 DA	1176/26	337 (4 0-¾)		
RNP 0.30 DA	1241/40	402 (500-1)		

AUTHORIZATION REQUIRED

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

US DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

RNAV (RNP) - STANDARD, INSTRUMENT APPROACH PROCEDURE, TITLE 14 CFR PART 97.33

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TERMINAL ROUTES

FROM	TO	COURSE AND DISTANCE	ALTITUDE
CCJAY (IAF)	UBTYA (TF) (FB) (RNP 1.00)	121.06 / 3.14	6000
UBTYA	ALGIN (TF) (FB) (RNP 1.00)	121.10 / 3.14	5000
ALGIN (IF)	HAMML (TF) (FB) (RNP 1.00)	121.15 / 3.14	4000
HAMML	WASHY (TF) (FB) (RNP 1.00)	121.19 / 3.14	3000
CHUUT (IF)	WSTWD (TF) (FB) (RNP 1.00)	152.79 / 5.65	3500
(SEE FORM 8260-10)			

MISSED APPROACH

MAP: DA

CLIMB TO 1300 THEN CLIMBING LEFT TURN TO 3000 DIRECT KANAC AND HOLD.

1. *PT* ____ SIDE OF COURSE ____ OUTBOUND ____ FT WITHIN ____ MILES OF ____ (IAF)
2. PROFILE STARTS AT WASHY
3. FAC: 121.24 FAF: ____ DIST FAF TO MAP: ____ THLD: ____
4. MIN. ALT: WASHY 3000
5. DIST TO THLD FROM OM: *6.62* MM: ____ IM: ____ 150 HAT: ____ 100 HAT: ____ GS ANT: ____
6. MIN GS INCPT: 3000 GS ALT AT: WASHY 3000 OM: ____ MM: ____ IM: ____
7. GS ANGLE: 3.00 TCH: #52.2 34:1 IS CLEAR
8. MSA FROM: RW12L 3500

ADDITIONAL FLIGHT DATA:
HOLD E, RT, 275.59 INBOUND.
CHART 919 TREE 445346N/0931429W
DISTANCE TO THLD FROM 337 HATH: 0.90 NM.
CHART MINIMUM 7000 AT CCJAY
CHART MANDATORY 5000 AT CHUUT
CHART MINIMUM 7000 AT FSCOT
CHART MANDATORY 6000 AT INGLS
ROUTE TYPE: A, H
ROUTE TYPE QUALIFIER1: F
ROUTE TYPE QUALIFIER2: S
#TCH 890.8 MSL (DO NOT CHART)
CHART LOC RWY 12R

MAG VAR: 0E EPOCH YEAR: 2015

MINIMUMS

TAKEOFF: SEE FAA FORM 8260-15A FOR THIS AIRPORT | ALTERNATE: N A | 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
AUTHORIZATION REQUIRED															
RNP 0.21 DA	1176	2600	337	1176	2600	337	1176	2600	337	1176	2600	337			
RNP 0.30 DA	1241	4000	402	1241	4000	402	1241	4000	402	1241	4000	402			

NOTES:
CHART NOTE: FOR UNCOMPENSATED BARO-VNAV SYSTEMS, PROCEDURE NA BELOW -20C (-4F) OR ABOVE 54C (130F).
CHART NOTE: FOR INOPERATIVE ALSF, INCREASE RNP 0.21 ALL CATS VISIBILITY TO RVR 6000 AND RNP 0.30 ALL CATS VISIBILITY TO 1 3/8 MILE.
(SEE FORM 8260-10)

QUALITY 4 CHECKED

CITY AND STATE	ELEVATION: 842 THRE: 839	FACILITY IDENTIFIER:	PROCEDURE NO./AMDT NO./EFFECTIVE DATE:	SUP:
MINNEAPOLIS, MN	AIRPORT NAME: MINNEAPOLIS-ST PAUL INTL/WOLD-CHAMBERLAIN	RNAV	RNAV (RNP) Z RWY 12L, ORIG	AMDT: NONE
				DATED

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, AMGR

FLIGHT CHECKED BY		
NAME:	FIFO	DATE:
DEVELOPED BY		
NAME: PABLO ORTIZ	FIFO AJV-353	DATE: 11/14/2012
APPROVED BY		
NAME: LARRY H STROUT MANAGER	FIFO AJV-353	DATE:

CHANGES:

1. ORIGINAL PROCEDURE.

REASONS:

1. FPT REQUEST.

01/08/2013: THIS IS AN UPDATED COPY OF THE FORM DEVELOPED ON 11/14/2012.
1. TERMINAL ROUTE CCJAY TO UBTYA ALTITUDE CHANGED 5000 TO 6000.
2. ADDITIONAL FLIGHT DATA CHART MINIMUM AT CCJAY CHANGED 5000 TO 7000.
3. ADDED CHART PLANVIEW NOTE: RADAR REQUIRED.

QUALITY CHECKED

US DEPARTMENT OF TRANSPORTATION - FEDERAL AVIATION ADMINISTRATION

RNAV (RNP) - STANDARD, INSTRUMENT APPROACH PROCEDURE, - TITLE 14 CFR PART 97.33

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TERMINAL ROUTES, (CONT.):

FROM	TO	COURSE AND DISTANCE	ALTITUDE
FSCOT (IF)	INGLS (TF) (FB) (RNP 1.00)	301.36 / 5.12	6000
INGLS	GLDON (RF) (FB) (RNP 1.00)	(3.05 NM RADIUS CCW *(CFBKP)/4.84*	4500
GLDON	WSTWD (RF) (FB) (RNP 1.00)	(3.05 NM RADIUS CCW *(CFBKP)/3.06*	3500
WSTWD	WASHY (RF) (FB) (RNP 1.00)	(3.05 NM RADIUS CCW *(CFBKP)/1.68*	3000
WASHY (FAF)	RW12L (MAP) (TF) (FO)	121.24 / 6.62	
RW12L (MAP)	*1300 MSL (CA)*	121.24	1300
1300 MSL	KANAC (DF) (FO)		*3000*

NOTES, (CONT.):
CHART NOTE: SIMULTANEOUS APPROACH AUTHORIZED WITH RWY 12R, EXCEPT FOR ARRIVALS AT FSCOT AND CHUUT.
USE OF FD OR AP PROVIDING RNAV TRACK GUIDANCE REQUIRED DURING SIMULTANEOUS OPERATIONS.
CHART NOTE: GPS REQUIRED.
CHART PLANVIEW NOTE AT CHUUT : MAX 210 KIAS.
CHART PLANVIEW NOTE AT INGLS : MAX 210 KIAS.
CHART PLANVIEW NOTE ADJACENT TO CHUUT IF: RF REQUIRED.
CHART PLANVIEW NOTE ADJACENT TO FSCOT IF: RF REQUIRED.
CHART PROFILE NOTE: VGSI AND RNAV GLIDEPATH NOT COINCIDENT.
CHART PROFILE NOTE: SEE PLANVIEW FOR MULTIPLE IF LOCATIONS.
CHART PLANVIEW NOTE: RADAR REQUIRED.

QUALITY 4 CHECKED

CITY AND STATE	ELEVATION: 842 THRE: 839	FACILITY IDENTIFIER:	PROCEDURE NO./ AMDT NO./EFFECTIVE DATE:	SUP:
MINNEAPOLIS, MN	AIRPORT NAME: MINNEAPOLIS-ST PAUL INTL/WOLD-CHAMBERLAIN	RNAV	RNAV (RNP) Z RWY 12L, ORIG	AMDT: NONE
				DATED:

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

RNAV (RNP) STANDARD INSTRUMENT APPROACH PROCEDURE

FLIGHT STANDARDS SERVICES - **FAR PART 97.33**

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ARINC PACKET - 424-18 - RNAV (RNP)

```
                 1         2         3         4         5         6         7         8         9         0         1         2         3
WP      123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012
        ------------------------------------------------------------------------------------------------------------------------------------
        SUSAEAENRT   ALGIN K30    C     N45001607W093284758                      E0007     NAR           ALGIN
        SUSAEAENRT   CCJAY K30    C     N45033066W093362244                      E0008     NAR           CCJAY
        SUSAEAENRT   CFBKP K30    W     N44593739W093185979                      E0006     NAR           CNF(CFBKP)
        SUSAEAENRT   CHUUT K30    W     N45031534W093262754                      E0007     NAR           CHUUT
        SUSAEAENRT   FSCOT K30    W     N44593420W093103617                      E0004     NAR           FSCOT
        SUSAEAENRT   GLDON K30    W     N45010973W093224247                      E0006     NAR           GLDON
        SUSAEAENRT   HAMML K30    C     N44583858W093250045                      E0006     NAR           HAMML
        SUSAEAENRT   INGLS K30    W     N45021378W093164588                      E0005     NAR           INGLS
        SUSAEAENRT   KANAC K30    C   L N44520191W092555314                      E0003     NAR           KANAC
        SUSAEAENRT   UBTYA K30    C     N45015343W093323491                      E0007     NAR           UBTYA
        SUSAEAENRT   WASHY K30    C     N44570096W093211353                      E0006     NAR           WASHY
        SUSAEAENRT   WSTWD K30    W     N44581377W093224912                      E0006     NAR           WSTWD

                 1         2         3         4         5         6         7         8         9         0         1         2         3
AIRPORT 123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012
        ------------------------------------------------------------------------------------------------------------------------------------
        SUSAP KMSPK3AMSP     0     110YHN44525510W093131840E000000842         1800018000C    MNAR    MINNEAPOLIS-ST PAUL INTL/WOLD-

                 1         2         3         4         5         6         7         8         9         0         1         2         3
SEGMENT 123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012
        ------------------------------------------------------------------------------------------------------------------------------------
        SUSAP KMSPK3FH12LZ ACCJAY 010CCJAYK3EA0E  A    IF                                  + 07000     18000                A FS
        SUSAP KMSPK3FH12LZ ACCJAY 020UBTYAK3EA0E    010TF                                  + 06000                          A FS
        SUSAP KMSPK3FH12LZ ACCJAY 030ALGINK3EA0E  B 010TF                                  + 05000                          A FS
        SUSAP KMSPK3FH12LZ ACCJAY 040HAMMLK3EA0E    010TF                                  + 04000                          A FS
        SUSAP KMSPK3FH12LZ ACCJAY 050WASHYK3EA0EE   010TF                                  + 03000                          A FS
        SUSAP KMSPK3FH12LZ ACHUUT 010CHUUTK3EA0E  B    IF                                    05000     18000210               A-FS
        SUSAP KMSPK3FH12LZ ACHUUT 020WSTWDK3EA0E    010TF                                  + 03500                          A FS
        SUSAP KMSPK3FH12LZ ACHUUT 030WASHYK3EA0EE  L010RF       0030501528    12120017    + 03000                CFBKP K3EAA FS
        SUSAP KMSPK3FH12LZ AFSCOT 010FSCOTK3EA0E  B    IF                                  + 07000     18000                A FS
        SUSAP KMSPK3FH12LZ AFSCOT 020INGLSK3EA0E    010TF                                    06000         210              A-FS
        SUSAP KMSPK3FH12LZ AFSCOT 030GLDONK3EA0E   L010RF       0030503014    21030048    + 04500                CFBKP K3EAA FS
        SUSAP KMSPK3FH12LZ AFSCOT 040WSTWDK3EA0E   L010RF       0030502103    15280031    + 03500                CFBKP K3EAA FS
        SUSAP KMSPK3FH12LZ AFSCOT 050WASHYK3EA0EE  L010RF       0030501528    12120017    + 03000                CFBKP K3EAA FS
        SUSAP KMSPK3FH12LZ H      020WASHYK3EA1E  F    IF                                  + 03000     18000      RW12L K3PGA FS
        SUSAP KMSPK3FH12LZ H      020WASHYK3EA2W                                               A031A212                      FS
        SUSAP KMSPK3FH12LZ H      030RW12LK3PG0GY M 031TF                                    00891            -300          A FS
        SUSAP KMSPK3FH12LZ H      040         0  M     CA                          1212    + 01300                          A FS
        SUSAP KMSPK3FH12LZ H      050KANACK3EA0EY      DF                                  + 03000                          A FS
        SUSAP KMSPK3FH12LZ H      060KANACK3EA0EE  R   HM                         27560040  + 03000                          A FS
```

QUALITY 4 Charts

CITY AND STATE	ELEVATION: 842 THRE: 839	FACILITY IDENTIFIER:	PROCEDURE NO. / AMDT NO. / EFFECTIVE DATE:	SUP:
MINNEAPOLIS, MN	AIRPORT NAME: **MINNEAPOLIS-ST PAUL INTL/WOLD-CHAMBERLIN**	**RNAV**	**RNAV (RNP) Z RWY 12L, ORIG**	AMDT: **NONE**
				DATED:

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

RNAV (RNP) STANDARD INSTRUMENT APPROACH PROCEDURE

FLIGHT STANDARDS SERVICES - **FAR PART 97.33**

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```
                 1         2         3         4         5         6         7         8         9         0         1         2         3
RUNWAY  123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012
        ------------------------------------------------------------------------------------------------------------------------------------
        SUSAP KMSPK3GRW12L   0082001213 N44533463W093131557-0200    +022840083900005215 0IIPJL3
```

```
                 1         2         3         4         5         6         7         8         9         0         1         2         3
MSA     123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012345678901234567890123456789012
        ------------------------------------------------------------------------------------------------------------------------------------
        SUSAP KMSPK3SRW12LK3PG                0   18018003525                                                                          M
```

QUALITY CHECKED

CITY AND STATE	ELEVATION: 842 THRE: 839	FACILITY IDENTIFIER:	PROCEDURE NO. / AMDT NO. / EFFECTIVE DATE:	SUP:
MINNEAPOLIS, MN	AIRPORT NAME: MINNEAPOLIS-ST PAUL INTL/WOLD-CHAMBERLIN	RNAV	RNAV (RNP) Z RWY 12L, ORIG	AMDT: NONE
				DATED:

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

RNAV (RNP) STANDARD INSTRUMENT APPROACH PROCEDURE

FLIGHT STANDARDS SERVICES - **FAR PART 97.33**

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ARINC SUMMARY - 424-18 - RNAV (RNP)

ROUTES	TRANSITION	FIX	SEQ	USE	PATH	TURN	FO/FB	RNP	MAG(TRUE)	DISTANCE	ALTITUDE	SPEED
	CCJAY	CCJAY	010	IAF	IF		FB				AA 07000	
	CCJAY	UBTYA	020		TF		FB	1.0			AA 06000	
	CCJAY	ALGIN	030		TF		FB	1.0			AA 05000	
	CCJAY	HAMML	040		TF		FB	1.0			AA 04000	
	CCJAY	WASHY	050		TF		FB	1.0			AA 03000	
	CHUUT	CHUUT	010		IF		FB				AT 05000	AB 210
	CHUUT	WSTWD	020		TF		FB	1.0			AA 03500	
	CHUUT	WASHY	030		RF	L	FB	1.0		001.7	AA 03000	
	FSCOT	FSCOT	010		IF		FB				AA 07000	
	FSCOT	INGLS	020		TF		FB	1.0			AT 06000	AB 210
	FSCOT	GLDON	030		RF	L	FB	1.0		004.8	AA 04500	
	FSCOT	WSTWD	040		RF	L	FB	1.0		003.1	AA 03500	
	FSCOT	WASHY	050		RF	L	FB	1.0		001.7	AA 03000	
		WASHY	020	FAF	IF		FB				AA 03000	
		RW12L	030	MAP	TF		FO	0.3			AT 00891	

MISSED APPROACH	FIX	SEQ	USE	PATH	TURN	FO/FB	RNP	MAG(TRUE)	DISTANCE	ALTITUDE	SPEED
		040		CA		FB		121.2(121.2T)		AA 01300	
	KANAC	050		DF		FO				AA 03000	
	KANAC	060		HM	R	FO		275.6(275.6T)	004.0	AA 03000	

POINT DATA	WAYPOINT	LAT IN SECS	LONG IN SECS	LAT IN MINS	LONG IN MINS
	ALGIN	N450016.07	W0932847.58	N4500.268	W09328.793
	CCJAY	N450330.66	W0933622.44	N4503.511	W09336.374
	CFBKP	N445937.39	W0931859.79	N4459.623	W09318.997
	CHUUT	N450315.34	W0932627.54	N4503.256	W09326.459
	FSCOT	N445934.20	W0931036.17	N4459.570	W09310.603
	GLDON	N450109.73	W0932242.47	N4501.162	W09322.708
	HAMML	N445838.58	W0932500.45	N4458.643	W09325.008
	INGLS	N450213.78	W0931645.88	N4502.230	W09316.765
	KANAC	N445201.91	W0925553.14	N4452.032	W09255.886
	UBTYA	N450153.43	W0933234.91	N4501.891	W09332.582
	WASHY	N445700.96	W0932113.53	N4457.016	W09321.226
	WSTWD	N445813.77	W0932249.12	N4458.230	W09322.819
	RW12L	N445334.63	W0931315.57	N4453.577	W09313.260

RUNWAY DATA	RWY	THRESHOLD ELEVATION	TCH
	RW12L	00839	52

QUALITY CHECKED

CITY AND STATE	ELEVATION: 842 THRE: 839	FACILITY IDENTIFIER:	PROCEDURE NO. / AMDT NO. / EFFECTIVE DATE:	SUP:
MINNEAPOLIS, MN	AIRPORT NAME: MINNEAPOLIS-ST PAUL INTL/WOLD-CHAMBERLIN	RNAV	RNAV (RNP) Z RWY 12L, ORIG	AMDT: NONE
				DATED:

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:

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.

QUALITY CHECKED

CITY AND STATE	ELEVATION: 842 THRE: 839	FACILITY IDENTIFIER:	PROCEDURE NO. / AMDT NO. / EFFECTIVE DATE:	SUP:
MINNEAPOLIS, MN	AIRPORT NAME: MINNEAPOLIS-ST PAUL INTL/WOLD-CHAMBERLIN	RNAV	RNAV (RNP) Z RWY 12L, ORIG	AMDT: NONE
				DATED:

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.
INITIAL	CCJAY	UBTYA	1. TOWER (27-001535)	450306.00N/0933413.00W	1436 (5E)	1000	AC125 AT3439	6000
(RNP 1.00)			2. TERRAIN	450157.00N/0933618.00W	1083 (1100)		AS1500	2600
INITIAL: STEPDOWN	UBTYA	ALGIN	3. AAO	445945.00N/0933118.00W	1273 (4E)	1000	AC98 AT2629	5000
(RNP 1.00)			4. TERRAIN	445948.00N/0933115.00W	1073 (1100)		AS1500	2600
INTERMEDIATE:	ALGIN	HAMML	5. TOWER (27-000565)	445956.00N/0932354.00W	1361 (4D)	500	AC50 AT2089	4000
(RNP 1.00)			6. TERRAIN	445745.00N/0932551.00W	1041 (1000)		AS1500	2500
INTERMEDIATE: STEPDOWN	HAMML	WASHY	5. TOWER (27-000565)	445956.00N/0932354.00W	1361 (4D)	500	AC50 VEB167 AT922	3000
(RNP 1.00)			7. TERRAIN	445742.00N/0932551.00W	1041 (1000)		AS1500	2500
INTERMEDIATE:	CHUUT	WSTWD	5. TOWER (27-000565)	445956.00N/0932354.00W	1361 (4D)	500	AC50 AT1589	3500
(RNP 1.00)			8. TERRAIN	450151.00N/0932754.00W	1034 (1000)		AS1500	2500
INTERMEDIATE:	FSCOT	INGLS	9. TOWER (27-000090)	445954.00N/0931118.00W	1549 (4D)	500	AC50 AT3901	6000
(RNP 1.00)			10. TERRAIN	450312.00N/0931333.00W	1086 (1100)		AS1500	2600
INTERMEDIATE: STEPDOWN	INGLS	GLDON	11. AAO	450303.00N/0931357.00W	1263 (4E)	500	AC98 AT2639	4500
(RNP 1.00)			12. TERRAIN	450109.00N/0931742.00W	991 (1000)		AS1500	2500

2. PROCEDURE TURN

3. MISSED APPROACH — MAP / ELEV

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: **RW12L**

SECTOR	OBSTRUCTION	BRG/DIST	ELEVATION (MSL)	M S A	SECTOR	OBSTRUCTION	BRG/DIST	ELEVATION (MSL)	M S A
360-360	TWR (27-000499)	019/ 10.8	2438 (1D)	3500					

QUALITY CHECKED

CITY AND STATE	ELEVATION: 842 AIRPORT NAME:	FACILITY	PROCEDURE AND AMENDMENT NO:	REGION
MINNEAPOLIS, MN	MINNEAPOLIS-ST PAUL INTL/WOLD-CHAMBERLAIN	RNAV	RNAV (RNP) Z RWY 12L, ORIG	AGL

PART B - SUPPLEMENTAL DATA

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

4. MONITOR STATUS	PRIMARY NAVAID:	
	MONITOR POINT:	
	HRS OPTN: CAT 1	
	HRS OPTN: 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: 838.6
	DISTANCE FROM RWY:	ELEV GP ANTENNA:
		THRESHOLD CROSSING HEIGHT: 52.2
9. FINAL APPROACH COURSE AIMING	X	RUNWAY THRESHOLD FT. FROM THRESHOLD
	X	ON CENTERLINE FT. FROM CENTERLINE

10. WAIVERS: NONE

PART D - PREPARED BY: PABLO ORTIZ	DATE: 10/23/2012
TITLE: AERONAUTICAL INFORMATION SPECIALIST	OFFICE: AJV-353

PART C - REMARKS:

MAX SPEED INGLS TO GLDON - 210 KIAS.

PRECIPITOUS TERRAIN EVALUATION COMPLETED.

SEE ATTACHED AIRSPACE LETTER.

AUTHORIZATION REQUIRED (AR). FAAO 8260.52 CRITERIA USED EXCEPT WHERE NOTED

MULTIPLE INTERMEDIATES DEVELOPED PER USER/ATC REQUEST

BARO-VNAV NA BELOW -20C (-4F) OR ABOVE 54C (130F). AJV POLICY EMAIL USED TO CORRECT ACT TO MEET MINIMUM LOW ANGLE REQUIREMENTS DATED 9/26/2012, HIGH TEMP DERIVED FROM AFS-400 CALCULATOR
ACT:-27C
DELTA ISA LOW: -20.00
ISA DEVIATION: -33.33

ALTITUDES ON STRAIGHT FINAL COURSE PLACED ON GS USING 54A FORMULA 2-16B AT ATC REQUEST

AVERAGE COLD TEMPERATURE BASED ON 5 YEAR HISTORY 2007-2011 OF -27

FINAL APPROACH, MISSED APPROACH AND MINIMUMS DERIVED FROM IPDS BUILD

VEB ROC (0.30 HIGHER VALUE) APPLIED/USED

VEB DATA: SEE ATTACHED SPREADSHEETS

KMSP ASOS ON SERVICE A: 24 HRS

BACKUP ALTIMETER SOURCE NOT ESTABLISHED DUE TO REDUNDANT WEATHER SOURCES AT THE AIRPORT

VGSI DATA RW35: 3.00/78.90

PER MANAGER, USE OF MEMORANDUM DATED 10/01/11 OF BANK ANGLES GREATER THAN 20 DEGREE APPROVED TO MAINTAIN ATC/INDUSTRY DESIGN REQUEST

*VKTW: OBTAINED FROM HISTORICAL WIND DATA (MITRE)

RF SEGMENT RADIUS/BANK ANGLE COMPUTATIONS:

SEGMENT	ALT	KIAS	HAA	*VKTW	TR	BA
INGLS-GLDON	6000	210	5158.1	48	3.05	20.99
GLDON-WSTWD	4500	210	3658.1	49	3.05	20.27
WSTWD-WASHY	3500	210	2658.1	50	3.05	19.85

ORDER 8260.52 PARA 3.6, RNP VISUAL OIS BUFFER PENETRATIONS: (IPDS BUILD) UNLIT.
919 TREE (KMSP0178) 445345.96N/0931429.04W (33.20)
919 TREE (KMSP0177) 445346.84N/0931427.84W (33.20)
862 POLE (27-020820) 445347.87N/0931434.57W (33.04)
916 TREE (KMSPO009) 445346.69N/0931428.00W (30.20)
862 POLE (27-020819) 445347.55N/0931437.47W (27.18)
913 TREE (KMSPO008) 445346.28N/0931430.83W (21.83)
865 POLE (27-020818) 445346.81N/0931440.16W (11.16)
871 POLE (27-020817) 445346.29N/0931442.93W (3.27)
869 POLE (27-020843) 445348.52N/0931443.93W (0.80)

#18 IS AN IPDS PROVIDED ACCURACY

QUALITY 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.
INTERMEDIATE: STEPDOWN	GLDON	WSTWD	5. TOWER (27-000565)	445956.00N/0932354.00W	1361 (4D)	500	AC50 AT1589	3500
(RNP 1.00)			13. TERRAIN	445939.00N/0932336.00W	1004 (1000)		AS1500	2500
INTERMEDIATE: STEPDOWN	WSTWD	WASHY	14. AAO	445733.00N/0932509.00W	1191 (4E)	500	AC98 VEB167 AT1044	3000
(RNP 1.00)			15. TERRAIN	445733.00N/0932509.00W	991 (1000)		AS1500	2500
FINAL: RNP 0.30	WASHY	RW12L	16. TREE (KMSPO013)	445400.33N/0931435.54W	940 (2C)	22.09:1	AC20	1241/402
FINAL: RNP 0.21	WASHY	RW12L	17. TREE (KMSP0181)	445409.09N/0931413.76W	927 (1B)	22.10:1	AC10	1176/337
MISSED APPROACH	*DA*	*RW12L*				*ASC*		
(RNP 0.30-1.00)		*40:1*						
MISSED APPROACH	*DA*	*RW12L*				*ASC*		
(RNP 0.21-1.00)		*40:1*						
3. MISSED APPROACH — MAP:	*DA / DA*	*KANAC*				*ASC*		*3000*
			18. AAO	*445409.00N/0925724.00W*	*1280*	*1000*		*2400*
ELEV:	*1080/1015*		*19. TERRAIN*	*445409.00N/0925724.00W*	*1080 (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	

QUALITY CHECKED

5. MINIMUM SAFE ALTITUDES — PRIMARY NAVAID:

SECTOR	OBSTRUCTION	BRG/DIST	ELEVATION (MSL)	M S A	SECTOR	OBSTRUCTION	BRG/DIST	ELEVATION (MSL)	M S A

CITY AND STATE		FACILITY	PROCEDURE AND AMENDMENT NO:	REGION
MINNEAPOLIS, MN	**ELEVATION: 842** AIRPORT NAME: **MINNEAPOLIS-ST PAUL INTL/WOLD-CHAMBERLAIN**	**RNAV**	**RNAV (RNP) Z RWY 12L, ORIG**	**AGL**

PART B - SUPPLEMENTAL DATA

1. COMMUNICATIONS WITH:	2. WEATHER SERVICE			3. ALTIMETER SETTING
SATISFACTORY ON:		N W S	OTHER:	SOURCE:
		F A A		DISTANCE:
		A / C		HOURS REMOTE OPERATION:
V H F / U H F / H F	LOCATION:			ADJUSTMENT:

4. MONITOR STATUS	PRIMARY NAVAID:	
	MONITOR POINT:	
	HRS OPTN: CAT 1	
	HRS OPTN: CAT 3	
5. APPROACH & RUNWAY LIGHTING		**ALS**
		(S) SALS
		MALS
		HIRL
		MIRL
		REIL
		TDZ
		C/LINE
		OTHER (SPECIFY)
6. RUNWAY MARKINGS	BASIC	
	ALL WEATHER	
	INSTRUMENT	
7. RUNWAY VISUAL RANGE	APPROACH	
	MIDFIELD	
	ROLL OUT	
8. GLIDE PATH	GP ANGLE:	ELEV RWY THRESHOLD:
	DISTANCE FROM RWY:	ELEV GP ANTENNA:
		THRESHOLD CROSSING HEIGHT:
9. FINAL APPROACH COURSE AIMING	RUNWAY THRESHOLD	FT. FROM THRESHOLD
	ON CENTERLINE	FT. FROM CENTERLINE

10. WAIVERS:

PART D - PREPARED BY:	DATE:
TITLE:	OFFICE:

PART C - REMARKS:

QUALITY CHECKED

RADIO FIX AND HOLDING DATA RECORD

NAME: ALGIN **STATE:** MN **COUNTRY:** US

LATITUDE/LONGITUDE: 450016.07N/0932847.58W **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-PJL	LOC/DME		301.33	301.33	14.05	14.32		5000	6000
2	GOPHER	GEP	VORTAC	H	202.20	208.20		9.61		5000	6000

EXPANDED SERVICE VOLUME (ESV):

FAC IDENT	FAC TYPE	RADIAL/BEARING	DISTANCE	MIN ALTITUDE	MAX ALTITUDE
I-PJL	LOC/DME	R-301	15	50	60

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

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

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
IAP	ILS OR LOC RWY 12L	1, 2		KMSP	MINNEAPOLIS	MN (US)
IAP	ILS RWY 12L (CAT II)	1, 2		KMSP	MINNEAPOLIS	MN (US)
IAP	ILS RWY 12L (CAT III)	1, 2		KMSP	MINNEAPOLIS	MN (US)
IAP	ILS RWY 12L (SA CAT I)	1, 2		KMSP	MINNEAPOLIS	MN (US)
IAP	RNAV (GPS) Y RWY 12L			KMSP	MINNEAPOLIS	MN (US)
IAP	RNAV (RNP) Z RWY 12L			KMSP	MINNEAPOLIS	MN (US)

REQUIRED CHARTING: MILITARY IAP, IAP

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: 11 **DATE OF REVISION:** 03/07/2013

REASON FOR REVISION:
1. RELOCATED FIX 0.43NM (2623.08') NORTHWEST.
2. ADDED FIX TYPES WP.
3. CHANGED FAC 1 MAG BRG FROM 300.33 TO 301.33, DME FROM 13.62 TO 14.05, DIST FROM FAC NM FROM 13.89 TO 14.32.
4. CHANGED FAC 2 MAG/TRUE BRG FROM 199.64/205.64 TO 202.20/208.20, DIST FROM FAC NM FROM 9.64 TO 9.61, MRA FROM 3000 TO 5000.
5. CHANGED ESV I-PJL RADIAL FROM 300 TO 301, DISTANCE FROM 14 TO 15.
6. ADDED FACILITY USED TO ESTABLISH FIX COORDINATE NOTE.
7. UPDATED FIX USE.

DEVELOPED BY: **DATE:** 09/24/2012 **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: CCJAY **STATE:** MN **COUNTRY:** US

LATITUDE/LONGITUDE: 450330.66N/0933622.44W **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-PJL	LOC/DME		301.33	301.33	20.33	20.60		5000	8000
2	GOPHER	GEP	VORTAC	H	236.24	242.24		11.20		5000	8000

EXPANDED SERVICE VOLUME (ESV):

FAC IDENT	FAC TYPE	RADIAL/BEARING	DISTANCE	MIN ALTITUDE	MAX ALTITUDE
I-PJL	LOC/DME	R-301	21	5000	8000

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

REMARKS:
MINNEAPOLIS (FAC 1) USED TO ESTABLISH FIX COORDINATES
I-PJL DME LAT/LONG: 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	ILS OR LOC RWY 12L	1, 2		KMSP	MINNEAPOLIS	MN (US)
IAP	ILS RWY 12L (CAT II)	1, 2		KMSP	MINNEAPOLIS	MN (US)
IAP	ILS RWY 12L (CAT III)	1, 2		KMSP	MINNEAPOLIS	MN (US)
IAP	ILS RWY 12L (SA CAT I)	1, 2		KMSP	MINNEAPOLIS	MN (US)
IAP	RNAV (GPS) Y RWY 12L			KMSP	MINNEAPOLIS	MN (US)
IAP	RNAV (RNP) Z RWY 12L			KMSP	MINNEAPOLIS	MN (US)

REQUIRED CHARTING: MILITARY IAP, IAP

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: 2 **DATE OF REVISION:** 03/07/2013

REASON FOR REVISION:
1. RELOCATED FIX 0.93NM (5626.96') NORTHWEST.
2. ADDED FIX TYPE WP.
3. CHANGED FAC 1 MAG BRG FROM 300.33 TO 301.33, DME FROM 19.40 TO 20.33, DIST FROM FAC NM FROM 19.67 TO 20.60, MRA FROM 7000 TO 5000.
4. CHANGED FAC 2 MAG/TRUE BRG FROM 232.01/238.01 TO 236.24/242.24, DIST FROM FAC NM FROM 10.75 TO 11.20, MRA FROM 3000 TO 5000.
5. CHANGED ESV I-PJL RADIAL FROM 300 TO 301, DISTANCE FROM 20 TO 21, MIN ALTITUDE FROM 7000 TO 5000.
6. ADDED FACILITY USED TO ESTABLISH FIX COORDINATE NOTE.
7. UPDATED FIX USE.

DEVELOPED BY: **DATE:** 09/24/2012 **OFFICE:** AJV-354 **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 4

RADIO FIX AND HOLDING DATA RECORD

NAME: CFBKP **STATE:** MN **COUNTRY:** US

LATITUDE/LONGITUDE: 445937.39N/0931859.79W **TYPE:** CNF

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

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
IAP	RNAV (RNP) Z RWY 12L			KMSP	MINNEAPOLIS	MN (US)

COMPULSORY REPORTING POINT: NO

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

DEVELOPED BY: **DATE:** 10/18/2012 **OFFICE:** AJV-353 **NAME:** PABLO ORTIZ

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: CHUUT **STATE:** MN **COUNTRY:** US

LATITUDE/LONGITUDE: 450315.34N/0932627.54W **TYPE:** WP

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

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
IAP	RNAV (RNP) Z RWY 12L			KMSP	MINNEAPOLIS	MN (US)

REQUIRED CHARTING: IAP

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: ORIG **DATE OF REVISION:** 05/02/2013

REASON FOR REVISION:
01/10/2013: THIS IS AN UPDATED COPY OF THE FORM DEVELOPED ON 10/15/2012.
1. UPDATED FIX USE.
2. REMOVED STAR FROM REQUIRED CHARTING.

DEVELOPED BY: **DATE:** 10/15/2012 **OFFICE:** AJV-353 **NAME:** STEPHEN PETERSON

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

SIGNATURE:

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

QUALITY CHECKED

RADIO FIX AND HOLDING DATA RECORD

NAME: FSCOT **STATE:** MN **COUNTRY:** US

LATITUDE/LONGITUDE: 445934.20N/0931036.17W **TYPE:** WP

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

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
IAP	RNAV (RNP) Z RWY 12L			KMSP	MINNEAPOLIS	MN (US)

REQUIRED CHARTING: IAP

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: ORIG **DATE OF REVISION:** 07/24/2014

REASON FOR REVISION:
01/10/2013: THIS IS AN UPDATED COPY OF THE FORM DEVELOPED ON 09/28/2012.
1. UPDATED FIX USE.
2. REMOVED STAR FROM REQUIRED CHARTING.

DEVELOPED BY: **DATE:** 09/28/2012 **OFFICE:** AJV-353 **NAME:** BEV L BORDY

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: GLDON **STATE:** MN **COUNTRY:** US

LATITUDE/LONGITUDE: 450109.73N/0932242.47W **TYPE:** WP

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

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
IAP	RNAV (RNP) Z RWY 12L			KMSP	MINNEAPOLIS	MN (US)

REQUIRED CHARTING: IAP

COMPULSORY REPORTING POINT: NO

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

DEVELOPED BY: **DATE:** 10/18/2012 **OFFICE:** AJV-353 **NAME:** PABLO ORTIZ

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: HAMML **STATE:** MN **COUNTRY:** US

LATITUDE/LONGITUDE: 445838.58N/0932500.45W **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-PJL	LOC/DME		301.33	301.33	10.91	11.18		4000	5300
2	GOPHER	GEP	VORTAC	H	184.42	190.42		10.27		4000	5300

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

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

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
IAP	ILS OR LOC RWY 12L	1, 2		KMSP	MINNEAPOLIS	MN (US)
IAP	ILS RWY 12L (CAT II)	1, 2		KMSP	MINNEAPOLIS	MN (US)
IAP	ILS RWY 12L (CAT III)	1, 2		KMSP	MINNEAPOLIS	MN (US)
IAP	ILS RWY 12L (SA CAT I)	1, 2		KMSP	MINNEAPOLIS	MN (US)
IAP	RNAV (GPS) Y RWY 12L			KMSP	MINNEAPOLIS	MN (US)
IAP	RNAV (RNP) Z RWY 12L			KMSP	MINNEAPOLIS	MN (US)

REQUIRED CHARTING: MILITARY IAP, IAP

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: 2 **DATE OF REVISION:** 03/07/2013

REASON FOR REVISION:
1. RELOCATED FIX 0.25NM (1522.88') NORTHWEST.
2. ADDED FIX TYPES WP.
3. CHANGED FAC 1 MAG BRG FROM 300.33 TO 301.33, DME FROM 10.66 TO 10.91, DIST FROM FAC NM FROM 10.93 TO 11.18, MAA FROM 5300 TO 5000.
4. CHANGED FAC 2 MAG/TRUE BRG FROM 183.13/189.13 TO 184.42/190.42, DIST FROM FAC NM FROM 10.36 TO 10.27, MRA FROM 3000 TO 4000, MAA FROM 5300 TO 5000.
5. REMOVED ESV. NOT NECESSARY FOR THIS FIX.
6. ADDED FACILITY USED TO ESTABLISH FIX COORDINATE NOTE.
7. UPDATED FIX USE.

DEVELOPED BY: **DATE:** 09/24/2012 **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: INGLS **STATE:** MN **COUNTRY:** US

LATITUDE/LONGITUDE: 450213.78N/0931645.88W **TYPE:** WP

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

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
IAP	RNAV (RNP) Z RWY 12L			KMSP	MINNEAPOLIS	MN (US)

REQUIRED CHARTING: IAP

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: ORIG **DATE OF REVISION:** 07/24/2014

REASON FOR REVISION:
01/10/2013: THIS IS AN UPDATED COPY OF THE FORM DEVELOPED ON 09/28/2012.
1. UPDATED FIX USE.
2. REMOVED STAR FROM REQUIRED CHARTING.

DEVELOPED BY: **DATE:** 09/28/2012 **OFFICE:** AJV-353 **NAME:** BEV L BORDY

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 A 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
EN ROUTE	V2-97	1, 2				(US)
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 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: UBTYA **STATE:** MN **COUNTRY:** US

LATITUDE/LONGITUDE: 450153.43N/0933234.91W **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-PJL	LOC/DME		301.33	301.33	17.19	17.46		5000	7000
2	GOPHER	GEP	VORTAC	H	220.56	226.56		9.95		5000	7000

EXPANDED SERVICE VOLUME (ESV):

FAC IDENT	FAC TYPE	RADIAL/BEARING	DISTANCE	MIN ALTITUDE	MAX ALTITUDE
I-PJL	LOC/DME	R-301	18	5000	7000

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

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

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
IAP	ILS OR LOC RWY 12L	1, 2		KMSP	MINNEAPOLIS	MN (US)
IAP	ILS RWY 12L (CAT II)	1, 2		KMSP	MINNEAPOLIS	MN (US)
IAP	ILS RWY 12L (CAT III)	1, 2		KMSP	MINNEAPOLIS	MN (US)
IAP	ILS RWY 12L (SA CAT I)	1, 2		KMSP	MINNEAPOLIS	MN (US)
IAP	RNAV (GPS) Y RWY 12L			KMSP	MINNEAPOLIS	MN (US)
IAP	RNAV (RNP) Z RWY 12L			KMSP	MINNEAPOLIS	MN (US)

REQUIRED CHARTING: MILITARY IAP, IAP

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: 2 **DATE OF REVISION:** 03/07/2013

REASON FOR REVISION:
1. RELOCATED FIX 0.66NM (3994.69') NORTHWEST.
2. CHANGED FAC 1 MAG BRG FROM 300.33 TO 301.33, DME FROM 16.53 TO 17.19, DIST FROM FAC NM FROM 16.80 TO 17.46, MRA FROM 6000 TO 5000.
3. CHANGED FAC 2 MAG/TRUE BRG FROM 216.85/222.85 TO 220.56/226.56, DIST FROM FAC NM FROM 9.80 TO 9.95, MRA FROM 3000 TO 5000.
4. CHANGED ESV I-PJL RADIAL FROM 300 TO 301, DISTANCE FROM 17 TO 18, MIN ALTITUDE FROM 6000 TO 5000.
5. ADDED FACILITY USED TO ESTABLISH FIX COORDINATE NOTE.
6. UPDATED FIX USE.

DEVELOPED BY: **DATE:** 09/24/2012 **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 4 CHECKED

RADIO FIX AND HOLDING DATA RECORD

NAME: WASHY **STATE:** MN **COUNTRY:** US

LATITUDE/LONGITUDE: 445700.96N/0932113.53W **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-PJL	LOC		301.33	301.33	7.77	8.04	48868	3000	5300
2	GOPHER	GEP	VORTAC	H	169.96	175.96		11.76		3000	5300

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

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

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
IAP	ILS OR LOC RWY 12L	1, 2		KMSP	MINNEAPOLIS	MN (US)
IAP	ILS RWY 12L (CAT II)	1, 2		KMSP	MINNEAPOLIS	MN (US)
IAP	ILS RWY 12L (CAT III)	1, 2		KMSP	MINNEAPOLIS	MN (US)
IAP	ILS RWY 12L (SA CAT I)	1, 2		KMSP	MINNEAPOLIS	MN (US)
IAP	RNAV (GPS) Y RWY 12L			KMSP	MINNEAPOLIS	MN (US)
IAP	RNAV (RNP) Z RWY 12L			KMSP	MINNEAPOLIS	MN (US)

REQUIRED CHARTING: MILITARY IAP, IAP

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: 6 **DATE OF REVISION:** 03/07/2013

REASON FOR REVISION:
1. RELOCATED FIX 0.12NM (710.18') NORTHWEST.
2. CHANGED FAC 1 MAG BRG FROM 300.33 TO 301.33, DME FROM 7.65 TO 7.77, DIST FROM FAC NM/FT FROM 7.93/48158 TO 8.04/48868.
3. CHANGED FAC 2 MAG/TRUE BRG FROM 169.50/175.50 TO 169.96/175.96, DIST FROM FAC NM FROM 11.82 TO 11.76.
4. ADDED FACILITY USED TO ESTABLISH COORDINATE NOTE.
5. UPDATED FIX USE.

DEVELOPED BY: **DATE:** 10/18/2012 **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: WSTWD **STATE:** MN **COUNTRY:** US

LATITUDE/LONGITUDE: 445813.77N/0932249.12W **TYPE:** WP

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

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
IAP	RNAV (RNP) Z RWY 12L			KMSP	MINNEAPOLIS	MN (US)

REQUIRED CHARTING: IAP

COMPULSORY REPORTING POINT: NO

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

DEVELOPED BY: **DATE:** 10/18/2012 **OFFICE:** AJV-353 **NAME:** PABLO ORTIZ

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

SIGNATURE:

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

QUALITY CHECKED

TERMINAL AIRSPACE DATA REQUIREMENTS

CITY: **MINNEAPOLIS** STATE: **MN**

AIRPORT NAME: **MINNEAPOLIS-ST PAUL INTL/WOLD-CHAMBERLAIN** ID: **KMSP**

PROCEDURE: **RNAV (RNP) Z RWY 12L** AMDT: **ORIG**

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 **3.17**
   (Enter THLD, FAF, ARP, FACILITY, as appropriate)
2. Width of **FINAL** segment at 1000' point **1.20**
   (Enter appropriate segment, final, intermediate, etc.)
3. True Course of **FINAL** segment containing 1000' point **121.24**
4. High Terrain in **FINAL** segment containing 1000' point **850**
5. Distance from **THLD** to 1500' point **4.74**
   (If 1500' point in PT maneuvering area or holding pattern note in remarks)
6. Width of **FINAL** segment at 1500' point **1.20**
7. True Course of **FINAL** segment containing 1500' point **121.24**
8. High Terrain in **FINAL** segment containing 1500' point **850**
9. Threshold Coordinates (if straight-in) ... **445334.63N** / **0931315.57W**
10. ARP Coordinates ..... **445255.10N** / **0931318.40W**
11. Runway Approach End and distance furthest from ARP ..... RWY **12L**
    Distance **1.19** NM
12. FAF Coordinates ..... **445700.96N** / **0932113.53W**

REMARKS: Approach/Drawing attached.

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 (RNP) Z RWY 12L, ORIG
RNAV (RNP) Z RWY 12R, ORIG
RNAV (RNP) Z RWY 30L, ORIG
RNAV (RNP) Z RWY 30R, ORIG
RNAV (RNP) 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).

KMSP RW 12L
Do not Remove

PFAF Calculations

Min Intermediate Segment Alt (a):	0.00
LTP MSL Elevation (b):	0.00
TCH:	0.00
Glidepath Angle (Θ):	0.00°
Distance from LTP to PFAF (D):	**0.00**
	0.00 NM
LTP/FTP Latitude:	000° 00' 00.00"
LTP/FTP Longitude:	000° 00' 00.00"
True RWY Bearing/True Course:	0.00
PFAF Latitude:	**000° 00' 00.00"**
PFAF Longitude:	**000° 00' 00.00"**

Latitude Longitude valid for straight segment only

VEB OCS Origin & Slope

Intermediate Segment Altitude:	3000
LTP Elevation:	838.6
Glidepath Angle:	3
TCH:	52.2
RNP Value:	0.30
Δ ISA:	-33.34

Straight In Segment

(Wingspan =<262) **LTP to Origin:**	**3,994.55'**
(Wingspan =<136) **LTP to Origin:**	**3,773.69'**
OCS Slope Ratio:	**22.09 : 1**
RF Turn Segment | Bank angle:	**0.00°**
(Wingspan =<262) **LTP to Origin:**	**NA**
(Wingspan =<136) **LTP to Origin:**	**NA**
OCS Slope Ratio:	**NA**

Version 2.0

VEB Temperature Limits

Glidepath Angle:	0.00°	
Max Glidepath Angle:	0.00°	
PFAF Elevation:	0	
LTP Elevation:	0	
ACT:	0.00°C	
Min Glidepath Angle	**#DIV/0!**	
NA Below	**#DIV/0!**	**#DIV/0!**
NA Above	**#DIV/0!**	**#DIV/0!**

Intermediate Segment VEB ROC

Glidepath Angle	3.00°
LTP MSL Elevation	838.60
TCH (ft)	52.20
OCS Slope	22.09
OCS Origin Distance (ft) *(measured along-track from LTP)*	3,994.55
Obstacle Distance (ft) *(measured along-track from LTP)*	59,296.46
VEB ROC *(at obstacle)*	**667**
Glidepath MSL altitude at Obstacle	4,082.65
OCS MSL altitude at Obstacle	3,415.36

KMSP Rwy 12L

Do not Remove

PFAF Calculations

Min Intermediate Segment Alt (a):	0.00
LTP MSL Elevation (b):	0.00
TCH:	0.00
Glidepath Angle (Θ):	0.00°
Distance from LTP to PFAF (D):	**0.00**
	0.00 NM
LTP/FTP Latitude:	000° 00' 00.00"
LTP/FTP Longitude:	000° 00' 00.00"
True RWY Bearing/True Course:	0.00
PFAF Latitude:	**000° 00' 00.00"**
PFAF Longitude:	**000° 00' 00.00"**

Latitude/Longitude valid for straight segment only

VEB OCS Origin & Slope

Intermediate Segment Altitude:	3000
LTP Elevation:	838.6
Glidepath Angle:	3
TCH:	52.2
RNP Value:	0.21
Δ ISA:	-33.34

Straight In Segment

(*Wingspan =<262*) **LTP to Origin:**	**3,254.41'**
(*Wingspan =<136*) **LTP to Origin:**	**3,033.38'**
OCS Slope Ratio:	**22.10 : 1**
RF Turn Segment | Bank angle:	**0.00°**
(*Wingspan =<262*) **LTP to Origin:**	**NA**
(*Wingspan =<136*) **LTP to Origin:**	**NA**
OCS Slope Ratio:	**NA**

Version 20

VEB Temperature Limits

Glidepath Angle:	0.00°	
Max Glidepath Angle:	0.00°	
PFAF Elevation:	0	
LTP Elevation:	0	
ACT:	0.00°C	
Min Glidepath Angle	**#DIV/0!**	
NA Below	**#DIV/0!**	**#DIV/0!**
NA Above	**#DIV/0!**	**#DIV/0!**

Intermediate Segment VEB ROC

Glidepath Angle	3.00°
LTP MSL Elevation	838.60
TCH (ft)	52.20
OCS Slope	22.10
OCS Origin Distance (ft) *(measured along-track from LTP)*	3,254.41
Obstacle Distance (ft) *(measured along-track from LTP)*	56,406.39
VEB ROC *(at obstacle)*	**612**
Glidepath MSL altitude at Obstacle	3,923.17
OCS MSL altitude at Obstacle	3,311.36