

RADIO FIX AND HOLDING DATA RECORD

NAME: FARMINGTON VORTAC STATE: MN COUNTRY: US ICAO REGION CODE: K3
 LATITUDE/LONGITUDE: 443751.43N/0931055.39W TYPE:

AIRSPACE DOCKET: FIX TYPE OF ACTION: NO CHANGE

FIX MAKE-UP FACILITIES:

FAC	NAME	IDENT	TYPE	CLASS	MAG BRG	TRUE BRG	DME	DIST FROM FAC NM	FEET	MRA	MAA
1	FARMINGTON	FGT	VORTAC	VH							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	S	FGT	VORTAC	178.03	358.03	R	1		3000	14000	4	10
2	E	FGT	VORTAC	085.00	265.00	L	1		2800	14000	4	10
3	S		WP	178.03	358.03	R		4	3000	6000	5	6

CONTROLLING OBSTRUCTIONS:

PAT	AIRSPED	OBSTRUCTION	COORDINATES	ELEVATION	ACCURACY CODE
1	200	TOWER (27-000313)	442835.00N/0931107.00W	1474	2C
2	200	TOWER (27-001333)	443417.00N/0930441.00W	1360	5D
3	200	TOWER (27-000313)	442835.00N/0931107.00W	1474	2C

REASON FOR NONSTANDARD HOLDING:

PAT 2 ATC REQUEST

HOLDING RESTRICTIONS:

HOLDING LIMITED TO ESTABLISHED PATTERNS.

REMARKS:

PRECIPITOUS TERRAIN EVALUATION COMPLETED
 ASSIGNED FACILITY MAGVAR: 6E (1965)

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
EN ROUTE	V13					(US)
EN ROUTE	V161					(US)
EN ROUTE	V171					(US)
EN ROUTE	V26					(US)
EN ROUTE	V82					(US)
IAP	COPTER ILS OR LOC RWY 10R			FCM	MINNEAPOLIS	MN (US)
IAP	ILS OR LOC RWY 10R			FCM	MINNEAPOLIS	MN (US)
IAP	RNAV (GPS) RWY 10L			FCM	MINNEAPOLIS	MN (US)
IAP	RNAV (GPS) RWY 28L			FCM	MINNEAPOLIS	MN (US)
IAP	RNAV (GPS) RWY 28R			FCM	MINNEAPOLIS	MN (US)
IAP	ILS OR LOC RWY 30		2	LVN	MINNEAPOLIS	MN (US)
IAP	RNAV (GPS) RWY 30			LVN	MINNEAPOLIS	MN (US)
IAP	VOR RWY 12		2	LVN	MINNEAPOLIS	MN (US)
IAP	ILS OR LOC RWY 12R		1	MSP	MINNEAPOLIS	MN (US)
IAP	ILS RWY 12R (CAT II - III)		1	MSP	MINNEAPOLIS	MN (US)
IAP	ILS RWY 12R (SA CAT I)		1	MSP	MINNEAPOLIS	MN (US)
IAP	LOC RWY 17		1	MSP	MINNEAPOLIS	MN (US)
IAP	LOC RWY 22		1	MSP	MINNEAPOLIS	MN (US)
IAP	RNAV (GPS) RWY 22		3	MSP	MINNEAPOLIS	MN (US)
IAP	RNAV (GPS) Z RWY 12R		3	MSP	MINNEAPOLIS	MN (US)
IAP	RNAV (RNP) Y RWY 12R		3	MSP	MINNEAPOLIS	MN (US)
IAP	ILS OR LOC RWY 30			OWA	OWATONNA	MN (US)
IAP	ILS OR LOC RWY 9		2	RGK	RED WING	MN (US)
IAP	LOC RWY 34			SGS	SOUTH ST PAUL	MN (US)
IAP	RNAV (GPS) RWY 34			SGS	SOUTH ST PAUL	MN (US)
IAP	ILS OR LOC RWY 14			STP	ST PAUL	MN (US)
IAP	ILS OR LOC RWY 32			STP	ST PAUL	MN (US)
STAR	AGUDE			CFE	BUFFALO	MN (US)
STAR	AGUDE			FBL	FARIBAULT	MN (US)
STAR	AGUDE			Gyl	GLENCOE	MN (US)
STAR	AGUDE			MGG	MAPLE LAKE	MN (US)
STAR	AGUDE			ANE	MINNEAPOLIS	MN (US)
STAR	AGUDE			FCM	MINNEAPOLIS	MN (US)
STAR	AGUDE			LVN	MINNEAPOLIS	MN (US)
STAR	AGUDE			MIC	MINNEAPOLIS	MN (US)
STAR	KASPR			MSP	MINNEAPOLIS	MN (US)
STAR	AGUDE			SGS	SOUTH ST PAUL	MN (US)
STAR	AGUDE			21D	ST PAUL	MN (US)
STAR	AGUDE			STP	ST PAUL	MN (US)
STAR	AGUDE			RNH	NEW RICHMOND	WI (US)
STAR	AGUDE			OEO	OSCEOLA	WI (US)

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

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: 32

DATE OF REVISION: 10/29/2026

REASON FOR REVISION:

1. FIX USE: REMOVED DP ORSKY, ROCHESTER, AND SCHEP FROM KANE, KFCM, KMSP AND KSTP.
2. FIX USE: REMOVED DP COULT, MEADOW LAKE, WLSTN, MINNEAPOLIS AND ZMBRO FROM KMSP.
3. REQUIRED CHARTING: REMOVE DP.

INITIATED BY:

DATE:

ORGANIZATION:

NAME:

OFFICE OF PRIMARY RESPONSIBILITY:

AJV-A431

NAME: EMMANUEL GONZALES

APPROVED BY:

DATE: 09/24/2026

OFFICE: AJV-A422

NAME: RAKE MCGRAW

SIGNATURE:

RADIO FIX AND HOLDING DATA RECORD

NAME: FLYING CLOUD VOR/DME

STATE: MN

COUNTRY: US

ICAO REGION CODE: K3

LATITUDE/LONGITUDE: 444931.26N/0932633.68W

TYPE:

AIRSPACE DOCKET:

FIX TYPE OF ACTION: NO CHANGE

FIX MAKE-UP FACILITIES:

FAC	NAME	IDENT	TYPE	CLASS	MAG BRG	TRUE BRG	DME	DIST FROM FAC NM FEET	MRA	MAA
1	FLYING CLOUD	FCM	VOR/DME	L						17500

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	W	FCM	VOR/DME	265.00	085.00	R	1	2600 12000	4 9

CONTROLLING OBSTRUCTIONS:

PAT	AIRSPEED	OBSTRUCTION	COORDINATES	ELEVATION	ACCURACY CODE
1	200	AAO	444512.00N/0932354.00W	1260	4B
1	310	TOWER (27-001132)	444641.60N/0934449.00W	1449	4D

HOLDING RESTRICTIONS:

HOLDING LIMITED TO ESTABLISHED PATTERN(S)

PROCEDURES REQUIRING CLIMB-IN-HOLD:

PAT	PROCEDURE TITLE	AIRPORT IDENT	CITY	STATE
1	ILS OR LOC RWY 10R	FCM	MINNEAPOLIS	MN (US)
1	ILS RWY 12R (CAT II - III) (ALT MA)	MSP	MINNEAPOLIS	MN (US)
1	COPTER ILS OR LOC RWY 10R	FCM	MINNEAPOLIS	MN (US)
1	ILS OR LOC RWY 12R (ALT MA)	MSP	MINNEAPOLIS	MN (US)
1	VOR RWY 10R	FCM	MINNEAPOLIS	MN (US)
1	ILS RWY 12R (SA CAT I) (ALT MA)	MSP	MINNEAPOLIS	MN (US)

REMARKS:

PRECIPITOUS TERRAIN EVALUATION COMPLETED.
ASSIGNED FACILITY MAG VAR: E1/2010.

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
EN ROUTE	V412					(US)
IAP	VOR-A			CFE	BUFFALO	MN (US)
IAP	COPTER ILS OR LOC RWY 10R		1	FCM	MINNEAPOLIS	MN (US)
IAP	ILS OR LOC RWY 10R		1	FCM	MINNEAPOLIS	MN (US)
IAP	VOR RWY 10R		1	FCM	MINNEAPOLIS	MN (US)
IAP	VOR/DME RWY 36		1	FCM	MINNEAPOLIS	MN (US)
IAP	VOR RWY 12			LVN	MINNEAPOLIS	MN (US)
IAP	ILS OR LOC RWY 12R		1	MSP	MINNEAPOLIS	MN (US)
IAP	ILS OR LOC RWY 12R (ALT MA)		1	MSP	MINNEAPOLIS	MN (US)
IAP	ILS RWY 12R (CAT II - III) (ALT MA)		1	MSP	MINNEAPOLIS	MN (US)
IAP	ILS RWY 12R (SA CAT I) (ALT MA)		1	MSP	MINNEAPOLIS	MN (US)
IAP	LOC RWY 17			MSP	MINNEAPOLIS	MN (US)
IAP	ILS OR LOC RWY 14			STP	ST PAUL	MN (US)
STAR	AGUDE			CFE	BUFFALO	MN (US)
STAR	AGUDE			FBL	FARIBAULT	MN (US)
STAR	AGUDE			Gyl	GLENCOE	MN (US)
STAR	AGUDE			MGG	MAPLE LAKE	MN (US)
STAR	AGUDE			ANE	MINNEAPOLIS	MN (US)
STAR	AGUDE			FCM	MINNEAPOLIS	MN (US)
STAR	AGUDE			LVN	MINNEAPOLIS	MN (US)
STAR	AGUDE			MIC	MINNEAPOLIS	MN (US)
STAR	KASPR			MSP	MINNEAPOLIS	MN (US)
STAR	AGUDE			SGS	SOUTH ST PAUL	MN (US)
STAR	AGUDE			21D	ST PAUL	MN (US)
STAR	AGUDE			STP	ST PAUL	MN (US)
STAR	AGUDE			RNH	NEW RICHMOND	WI (US)
STAR	AGUDE			OEO	OSCEOLA	WI (US)

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

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: 25

DATE OF REVISION: 10/29/2026

REASON FOR REVISION:

1. FIX USE: REMOVED DP COULT, KBREW AND ROCHESTER FROM KANE, KFCM, KMSP AND KSTP.
2. FIX USE: REMOVED DP SCHEP, SMERF (RNAV) AND ZMBRO FROM KMSP.
3. REQUIRED CHARTING: REMOVED DP.

INITIATED BY:**DATE:****ORGANIZATION:****NAME:****OFFICE OF PRIMARY RESPONSIBILITY:**

AJV-A431

NAME: EMMANUEL GONZALES**APPROVED BY:****DATE:** 09/24/2026**OFFICE:** AJV-A422**NAME:** RAKE MCGRAW**SIGNATURE:**

RADIO FIX AND HOLDING DATA RECORD

NAME: HALFWAY VOR/DME

STATE: MN

COUNTRY: US

ICAO REGION CODE: K3

LATITUDE/LONGITUDE: 441216.00N/0932213.80W

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	HALFWAY	FOW	VOR/DME	T							12000

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	NW	FOW	VOR/DME	314.00	134.00	R	1	2600 6000	4 13
2	S	FOW	VOR/DME	196.89	016.89	R	1	2900 6000	4 5

CONTROLLING OBSTRUCTIONS:

PAT	AIRSPEED	OBSTRUCTION	COORDINATES	ELEVATION	ACCURACY CODE
1	200	TOWER (27-001169)	441243.90N/0932004.20W	1580	4D
1	310	TOWER (27-001169)	441243.90N/0932004.20W	1580	4D
2	200	TOWER (27-001422)	440246.00N/0932304.00W	1827	5D

HOLDING RESTRICTIONS:

HOLDING LIMITED TO ESTABLISHED PATTERNS.

REMARKS:

PRECIPITOUS TERRAIN EVALUATION COMPLETED.

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
IAP	VOR-A		2	FBL	FARIBAULT	MN (US)
IAP	COPTER ILS Z OR LOC Z RWY 33			MKT	MANKATO	MN (US)
IAP	ILS Y OR LOC Y RWY 33			MKT	MANKATO	MN (US)
IAP	ILS OR LOC RWY 30			LVN	MINNEAPOLIS	MN (US)
IAP	ILS OR LOC RWY 30		1	OWA	OWATONNA	MN (US)
IAP	VOR RWY 12		1	OWA	OWATONNA	MN (US)
STAR	KASPR			MSP	MINNEAPOLIS	MN (US)

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

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: 16

DATE OF REVISION: 10/29/2026

REASON FOR REVISION:

1. FIX USE: FIX USE: REMOVED DP ORSKY, ROCHESTER, SCHEP AND ZMBRO FROM KANE, KFCM, KMSP AND KSTP.
2. REQUIRED CHARTING: REMOVED DP.

INITIATED BY:

DATE:

ORGANIZATION:

NAME:

OFFICE OF PRIMARY RESPONSIBILITY:

AJV-A431

NAME: EMMANUEL GONZALES

APPROVED BY:

DATE: 09/24/2026

OFFICE: AJV-A422

NAME: RAKE MCGRAW

SIGNATURE:

RADIO FIX AND HOLDING DATA RECORD

NAME: JEDET

STATE: MN

COUNTRY: US

ICAO REGION CODE: K3

LATITUDE/LONGITUDE: 442740.64N/0924340.59W

TYPE: WP

AIRSPACE DOCKET:

FIX TYPE OF ACTION: MODIFY

HOLDING:

HOLDING TYPE OF ACTION: NO CHANGE

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
DP	ZMBRO (RNAV)			ANE	MINNEAPOLIS	MN (US)
DP	ZMBRO (RNAV)			FCM	MINNEAPOLIS	MN (US)
DP	HTDSH (RNAV)			MSP	MINNEAPOLIS	MN (US)
DP	ZMBRO (RNAV)			MSP	MINNEAPOLIS	MN (US)
DP	ZMBRO (RNAV)			STP	ST PAUL	MN (US)

REQUIRED CHARTING: DP

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: 4

DATE OF REVISION: 10/29/2026

REASON FOR REVISION:

TYPE: REMOVED INT AND DME.

FIX MAKE-UP FACILITIES: REMOVED FAC 1, 2, 3 AND ALL ASSOCIATED DATA.

EXPANDED SERVICE VOLUME (ESV): REMOVED FOW VOR/DME AND ODI VORTAC.

REMARKS: REMOVED MINNEAPOLIS (FAC 1) USED TO ESTABLISH FIX COORDINATES.

FIX USE: CHANGED DP FROM ZMBRO TO ZMBRO (RNAV) AND REMOVED FAC 1, 2 FOR KANE, KFCM, KMSP AND KSTP. ADDED DP HTDSH (RNAV) AT KMSP.

REQUIRED CHARTING: REMOVED CONTROLLER, EN ROUTE LOW AND ENROUTE HIGH

INITIATED BY:

DATE:

ORGANIZATION:

NAME:

OFFICE OF PRIMARY RESPONSIBILITY:

AJV-A431

NAME: DEXTER SWEETING

APPROVED BY:

DATE: 09/24/2026

OFFICE: AJV-A422

NAME: RAKE MCGRAW

SIGNATURE:

RADIO FIX AND HOLDING DATA RECORD

NAME: ROCHESTER VOR/DME

STATE: MN

COUNTRY: US

ICAO REGION CODE: K3

LATITUDE/LONGITUDE: 434658.45N/0923549.06W

TYPE:

AIRSPACE DOCKET:

FIX TYPE OF ACTION: NO CHANGE

FIX MAKE-UP FACILITIES:

FAC	NAME	IDENT	TYPE	CLASS	MAG BRG	TRUE BRG	DME	DIST FROM FAC NM FEET	MRA	MAA
1	ROCHESTER	RST	VOR/DME	L						17500

HOLDING:

HOLDING TYPE OF ACTION: MODIFY

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	SW	RST	VOR/DME	205.14	025.14	R	1	3000 6000	4 5
2	NE		WP	062.00	242.00	R	4	2900 6000	5 6

CONTROLLING OBSTRUCTIONS:

PAT	AIRSPEED	OBSTRUCTION	COORDINATES	ELEVATION	ACCURACY CODE
1	200	WINDMILL (27-026327)	434254.73N/0924248.59W	1893	5D
2	200	WINDMILL (27-026327)	434254.73N/0924248.59W	1893	5D

HOLDING RESTRICTIONS:

HOLDING LIMITED TO ESTABLISHED PATTERNS.

REMARKS:

PRECIPITOUS TERRAIN EVALUATION COMPLETED.

ASSIGNED FACILITY MAGVAR: 5E (1965).

PAT 3 CONTROLLING OBSTACLE LIES IN SECONDARY AREA 4205 FT FROM EDGE OF PRIMARY (PRIMARY EQUIVALENT HEIGHT 1826.01)

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
SPECIAL IAP	COPTER RNAV (GPS) 138			99MN	ROCHESTER	MN (US)
SPECIAL IAP	COPTER RNAV (GPS) 326			99MN	ROCHESTER	MN (US)
EN ROUTE	V161					(US)
EN ROUTE	V170					(US)
EN ROUTE	V24					(US)
EN ROUTE	V398					(US)
EN ROUTE	V503					(US)
EN ROUTE	V67					(US)
EN ROUTE	V82					(US)
IAP	ILS OR LOC RWY 35		1	AUM	AUSTIN	MN (US)
IAP	RNAV (GPS) RWY 17			AUM	AUSTIN	MN (US)
IAP	RNAV (GPS) RWY 35			AUM	AUSTIN	MN (US)
IAP	VOR RWY 17			AUM	AUSTIN	MN (US)
IAP	RNAV (GPS) RWY 16			TOB	DODGE CENTER	MN (US)
IAP	RNAV (GPS) RWY 34			TOB	DODGE CENTER	MN (US)
IAP	ILS OR LOC RWY 30			OWA	OWATONNA	MN (US)
IAP	RNAV (GPS) RWY 30			OWA	OWATONNA	MN (US)
IAP	COPTER ILS Y OR LOC Y RWY 31		1	RST	ROCHESTER	MN (US)
IAP	ILS OR LOC RWY 13		1	RST	ROCHESTER	MN (US)
IAP	ILS Z OR LOC Z RWY 31		1	RST	ROCHESTER	MN (US)
IAP	ILS Z RWY 31 (SA CAT I/CAT II)		1	RST	ROCHESTER	MN (US)
IAP	RADAR-1		1	RST	ROCHESTER	MN (US)
IAP	RNAV (GPS) RWY 21		2	RST	ROCHESTER	MN (US)
IAP	RNAV (GPS) RWY 13		2	RST	ROCHESTER	MN (US)
IAP	ILS Y OR LOC Y RWY 30			ONA	WINONA	MN (US)
STAR	JANESVILLE			ORD	CHICAGO	IL (US)
STAR	KASPR			MSP	MINNEAPOLIS	MN (US)

REQUIRED CHARTING: STAR, IAP, EN ROUTE LOW, EN ROUTE HIGH, SPECIAL IAP, CONTROLLER LOW, CONTROLLER HIGH

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: 29

DATE OF REVISION: 05/14/2026

REASON FOR REVISION:

1. FIX USE: REMOVED VOR A AT KTOB.

3/20/26: THIS IS A CORRECTED COPY OF THE FORM APPROVED ON 03/04/26.

1. REMOVED PATTERN 3 AND ASSOCIATED CONTROLLING OBSTRUCTION.

INITIATED BY:

DATE:

ORGANIZATION:

NAME:

OFFICE OF PRIMARY RESPONSIBILITY:

AJV-A422

NAME: RAYMOND JOHNSON

APPROVED BY:

DATE: 04/09/2026

OFFICE: AJV-A422

NAME: RAKE MCGRAW

SIGNATURE:

RADIO FIX AND HOLDING DATA RECORD

NAME: ZMBRO

STATE: MN

COUNTRY: US

ICAO REGION CODE: K3

LATITUDE/LONGITUDE: 442029.98N/0922654.60W

TYPE: WP

AIRSPACE DOCKET:

FIX TYPE OF ACTION: MODIFY

HOLDING:

HOLDING TYPE OF ACTION: NO CHANGE

FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
DP	ZMBRO (RNAV)			ANE	MINNEAPOLIS	MN (US)
DP	ZMBRO (RNAV)			FCM	MINNEAPOLIS	MN (US)
DP	HTDSH (RNAV)			MSP	MINNEAPOLIS	MN (US)
DP	ZMBRO (RNAV)			MSP	MINNEAPOLIS	MN (US)
DP	ZMBRO (RNAV)			STP	ST PAUL	MN (US)

REQUIRED CHARTING: DP, EN ROUTE LOW, CONTROLLER LOW

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: 2

DATE OF REVISION: 10/29/2026

REASON FOR REVISION:

1. FIX USE: DP ZMBRO CHANGED TO DP ZMBRO (RNAV) AT MSP, ANE, FCM, AND STP.
2. REMOVED FAC 1 AND 2 FROM MAKE-UP FACILITIES.
3. REMOVED ESV INFORMATION.
4. REMOVED INT, DME FROM TYPE AND ADDED WP.
5. CHANGED "CONTROLLER" TO "CONTROLLER LOW" IN REQUIRE CHARTING.
6. FIX USE: ADDED DP HTDSH (RNAV) AT MSP.

INITIATED BY:

DATE:

ORGANIZATION:

NAME:

OFFICE OF PRIMARY RESPONSIBILITY:

AJV-A431

NAME: ZACHARY KRUEGER

APPROVED BY:

DATE: 09/24/2026

OFFICE: AJV-A422

NAME: RAKE MCGRAW

SIGNATURE: