

# RADIO FIX AND HOLDING DATA RECORD

NAME: CMMOE

STATE: MN

COUNTRY: US

ICAO REGION CODE: K3

LATITUDE/LONGITUDE: 445739.87N/0930607.55W

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**

STAR BLUEM (RNAV)  
STAR KKILR (RNAV)  
STAR MUSCL (RNAV)  
STAR NITZR (RNAV)

KMSP MINNEAPOLIS  
KMSP MINNEAPOLIS  
KMSP MINNEAPOLIS  
KMSP MINNEAPOLIS

MN (US)  
MN (US)  
MN (US)  
MN (US)

REQUIRED CHARTING: STAR, IAP

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: 1

DATE OF REVISION: 03/19/2026

**REASON FOR REVISION:**

1. FIX MOVED 1204 FT SOUTHEAST AND UPDATED COORDINATES FROM 445745.48N/0930622.30W TO 445739.87N/0930607.55W.
2. REMOVED FIX USE: KMSP RNAV (RNP) Y RWY 12L.

INITIATED BY:

DATE:

ORGANIZATION:

NAME:

OFFICE OF PRIMARY RESPONSIBILITY:

AJV-A432

NAME: BARBARA GORMAN

APPROVED BY:

DATE: 02/12/2026

OFFICE: AJV-A430

NAME: CASIMIR TABAKA

SIGNATURE:

QUALITY  
14  
CHECKED

# RADIO FIX AND HOLDING DATA RECORD

NAME: COZZZ

STATE: MN

COUNTRY: US

ICAO REGION CODE: K3

LATITUDE/LONGITUDE: 450315.64N/0931910.42W

TYPE: WP

AIRSPACE DOCKET:

FIX TYPE OF ACTION: CANCEL

HOLDING:

HOLDING TYPE OF ACTION:

## FIX USE:

### USE TYPE

STAR  
STAR  
STAR  
STAR

### USE TITLE

BLUEM (RNAV)  
KKILR (RNAV)  
MUSCL (RNAV)  
NITZR (RNAV)

### FAC

### PAT

### AIRPORT IDENT

KMSP  
KMSP  
KMSP  
KMSP

### CITY

MINNEAPOLIS  
MINNEAPOLIS  
MINNEAPOLIS  
MINNEAPOLIS

### STATE

MN (US)  
MN (US)  
MN (US)  
MN (US)

REQUIRED CHARTING: STAR

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: ORIG

DATE OF REVISION: 03/05/2015

INITIATED BY:

DATE:

ORGANIZATION:

NAME:

DEVELOPED BY:

DATE:

OFFICE:

NAME:

APPROVED BY:

DATE: 02/12/2026

OFFICE: AJV-A430

NAME: CASIMIR TABAKA

SIGNATURE:

DISTRIBUTION:

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

QUALITY  
14  
CHECKED

# RADIO FIX AND HOLDING DATA RECORD

NAME: DOLEE

STATE: MN

COUNTRY: US

ICAO REGION CODE: K3

LATITUDE/LONGITUDE: 445402.69N/0933236.02W

TYPE: WP

AIRSPACE DOCKET:

FIX TYPE OF ACTION: CANCEL

HOLDING:

HOLDING TYPE OF ACTION:

**FIX USE:**

**USE TYPE**

STAR  
STAR  
STAR  
STAR

**USE TITLE**

BLUEM (RNAV)  
KKILR (RNAV)  
MUCSL (RNAV)  
NITZR (RNAV)

**FAC**

**PAT**

**AIRPORT IDENT**

KMSP  
KMSP  
KMSP  
KMSP

**CITY**

MINNEAPOLIS  
MINNEAPOLIS  
MINNEAPOLIS  
MINNEAPOLIS

**STATE**

MN (US)  
MN (US)  
MN (US)  
MN (US)

REQUIRED CHARTING: STAR

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: ORIG

DATE OF REVISION: 03/05/2015

INITIATED BY:

DATE:

ORGANIZATION:

NAME:

DEVELOPED BY:

DATE:

OFFICE:

NAME:

APPROVED BY:

DATE: 02/12/2026

OFFICE: AJV-A430

NAME: CASIMIR TABAKA

SIGNATURE:

DISTRIBUTION:

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

QUALITY  
14  
CHECKED

# RADIO FIX AND HOLDING DATA RECORD

NAME: FSCOT

STATE: MN

COUNTRY: US

ICAO REGION CODE: K3

LATITUDE/LONGITUDE: 445855.65N/0930906.94W

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
IAP	RNAV (RNP) Y RWY 12L			KMSP	MINNEAPOLIS	MN (US)
STAR	BLUEM (RNAV)			KMSP	MINNEAPOLIS	MN (US)
STAR	KKILR (RNAV)			KMSP	MINNEAPOLIS	MN (US)
STAR	MUSCL (RNAV)			KMSP	MINNEAPOLIS	MN (US)
STAR	NITZR (RNAV)			KMSP	MINNEAPOLIS	MN (US)

REQUIRED CHARTING: STAR, IAP

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: 1

DATE OF REVISION: 03/19/2026

## REASON FOR REVISION:

1. FIX MOVED 3.2 NM SOUTHEAST AND UPDATED COORDINATES FROM 450035.38N/0931257.68W TO 445855.65N/0930906.94W. ATC RETAINED FIX NAME FOR OPERATIONAL ADVANTAGE.
2. ADDED FIX USE: KMSP STARS MUSCL (RNAV), NITZR (RNAV), BLUEM (RNAV), AND KKILR (RNAV).
3. ADDED REQUIRED CHARTING: STAR.
4. REMOVED REMARK: PRECISE FIX COORDINATES: 450035.378N/0931257.679W.

INITIATED BY:

DATE:

ORGANIZATION:

NAME:

OFFICE OF PRIMARY RESPONSIBILITY:

AJV-A432

NAME: BARBARA GORMAN

APPROVED BY:

DATE: 02/12/2026

OFFICE: AJV-A430

NAME: CASIMIR TABAKA

SIGNATURE:

QUALITY  
14  
CHECKED

# RADIO FIX AND HOLDING DATA RECORD

NAME: JERMN

STATE: WI

COUNTRY: US

ICAO REGION CODE: K5

LATITUDE/LONGITUDE: 450017.45N/0912735.23W

TYPE: WP

AIRSPACE DOCKET:

FIX TYPE OF ACTION: NO CHANGE

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 MIN	ALTITUDES MAX	TEMPLATES MIN	MAX
1	E		WP	096.76	276.76	R	10	8000	41000	15	29

## CONTROLLING OBSTRUCTIONS:

PAT	AIRSPEED	OBSTRUCTION	COORDINATES	ELEVATION	ACCURACY CODE
1	230	TOWER (55-000357)	450607.00N/0910933.00W	1814	4D

## HOLDING RESTRICTIONS:

HOLDING LIMITED TO ESTABLISHED PATTERN.

## REMARKS:

PRECIPITOUS TERRAIN EVALUATION COMPLETED.  
PAT 1: MIN TEMPLATE 15 USED TO ACCOMMODATE 10NM LEGS.

## FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
STAR	MUSCL (RNAV)		1	KMSP	MINNEAPOLIS	MN (US)

REQUIRED CHARTING: STAR, EN ROUTE HIGH, CONTROLLER HIGH

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: 2

DATE OF REVISION: 03/19/2026

## REASON FOR REVISION:

1. UPDATED HOLDING PATTERN CONTROLLING OBSTRUCTION ELEVATION FROM 1816 TO 1814 MSL.
2. ADDED HOLDING RESTRICTION: HOLDING LIMITED TO ESTABLISHED PATTERN.
3. REMOVED REMARK: FIX NAME RETAINED, PER JO 7400.2K.
4. ADDED REQUIRED CHARTING: CONTROLLER HIGH.

INITIATED BY:

DATE:

ORGANIZATION:

NAME:

OFFICE OF PRIMARY RESPONSIBILITY:

AJV-A432

NAME: BARBARA GORMAN

APPROVED BY:

DATE: 02/12/2026

OFFICE: AJV-A430

NAME: CASIMIR TABAKA

SIGNATURE:

QUALITY  
14  
CHECKED

# RADIO FIX AND HOLDING DATA RECORD

NAME: LOOON

STATE: WI

COUNTRY: US

ICAO REGION CODE: K5

LATITUDE/LONGITUDE: 445855.32N/0924240.72W

TYPE: WP

AIRSPACE DOCKET:

FIX TYPE OF ACTION: MODIFY

HOLDING:

HOLDING TYPE OF ACTION: NO CHANGE

FIX USE:

USE TYPE  
STAR

USE TITLE  
MUSCL (RNAV)

FAC

PAT

AIRPORT IDENT  
KMSP

CITY  
MINNEAPOLIS

STATE  
MN (US)

REQUIRED CHARTING: STAR

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: 2

DATE OF REVISION: 03/19/2026

REASON FOR REVISION:

1. REMOVED FIX TYPE: DME.
2. REMOVED FIX MAKE-UP FACILITY: MINNEAPOLIS (MSP) VOR/DME.
3. REMOVED FIX USE: KMSP EAU CLAIRE STAR.

INITIATED BY:

DATE:

ORGANIZATION:

NAME:

OFFICE OF PRIMARY RESPONSIBILITY:

AJV-A432

NAME: BARBARA GORMAN

APPROVED BY:

DATE: 02/12/2026

OFFICE: AJV-A430

NAME: CASIMIR TABAKA

SIGNATURE:

QUALITY  
14  
CHECKED

# RADIO FIX AND HOLDING DATA RECORD

NAME: SHEAY

STATE: WI

COUNTRY: US

ICAO REGION CODE: K5

LATITUDE/LONGITUDE: 445323.43N/0900441.41W

TYPE: WP

AIRSPACE DOCKET:

FIX TYPE OF ACTION: NO CHANGE

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	E		WP	094.80	274.80	R	10	10000 45000	15 30

## CONTROLLING OBSTRUCTIONS:

PAT	AIRSPEED	OBSTRUCTION	COORDINATES	ELEVATION	ACCURACY CODE
1	230	TOWER (55-000039)	445514.20N/0894128.75W	2549	4D

## HOLDING RESTRICTIONS:

HOLDING LIMITED TO ESTABLISHED PATTERN.

## REMARKS:

PRECIPITOUS TERRAIN EVALUATION COMPLETED.  
PAT 1: MIN TEMPLATE 15 USED TO ACCOMMODATE 10NM LEGS.

## FIX USE:

USE TYPE	USE TITLE	FAC	PAT	AIRPORT IDENT	CITY	STATE
STAR	MUSCL (RNAV)		1	KMSP	MINNEAPOLIS	MN (US)

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

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: 2

DATE OF REVISION: 03/19/2026

## REASON FOR REVISION:

1. UPDATED HOLDING PATTERN CONTROLLING OBSTRUCTION COORDINATES FROM 445514.00N/0894129.00W TO 445514.20N/0894128.75W.
2. UPDATED REQUIRED CHARTING: FROM CONTROLLER TO CONTROLLER LOW AND CONTROLLER HIGH.

INITIATED BY:

DATE:

ORGANIZATION:

NAME:

OFFICE OF PRIMARY RESPONSIBILITY:

AJV-A432

NAME: BARBARA GORMAN

APPROVED BY:

DATE: 02/12/2026

OFFICE: AJV-A430

NAME: CASIMIR TABAKA

SIGNATURE:

QUALITY  
14  
CHECKED

# RADIO FIX AND HOLDING DATA RECORD

NAME: TIETN

STATE: MN

COUNTRY: US

ICAO REGION CODE: K3

LATITUDE/LONGITUDE: 444929.62N/0932146.79W

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
IAP	RNAV (RNP) Y RWY 12R			KMSP	MINNEAPOLIS	MN (US)
STAR	BLUEM (RNAV)			KMSP	MINNEAPOLIS	MN (US)
STAR	KKILR (RNAV)			KMSP	MINNEAPOLIS	MN (US)
STAR	MUSCL (RNAV)			KMSP	MINNEAPOLIS	MN (US)
STAR	NITZR (RNAV)			KMSP	MINNEAPOLIS	MN (US)

REQUIRED CHARTING: STAR, IAP

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: 1

DATE OF REVISION: 03/19/2026

## REASON FOR REVISION:

1. FIX MOVED 3.55 NM SOUTHEAST AND UPDATED COORDINATES FROM 445119.07N/0932603.53W TO 444929.62N/0932146.79W. ATC RETAINED FIX NAME FOR OPERATIONAL ADVANTAGE.
2. ADDED FIX USE: KMSP STARS MUSCL (RNAV), NITZR (RNAV), BLUEM (RNAV), AND KKILR (RNAV).
3. ADDED REQUIRED CHARTING: STAR.
4. REMOVED REMARK: PRECISE FIX COORDINATES: 445119.070N/0932603.530W.

INITIATED BY:

DATE:

ORGANIZATION:

NAME:

OFFICE OF PRIMARY RESPONSIBILITY:

AJV-A432

NAME: BARBARA GORMAN

APPROVED BY:

DATE: 02/12/2026

OFFICE: AJV-A430

NAME: CASIMIR TABAKA

SIGNATURE:

QUALITY  
14  
CHECKED



# RADIO FIX AND HOLDING DATA RECORD

NAME: WOLVS

STATE: WI

COUNTRY: US

ICAO REGION CODE: K5

LATITUDE/LONGITUDE: 450014.73N/0923422.91W

TYPE: WP

AIRSPACE DOCKET:

FIX TYPE OF ACTION: MODIFY

HOLDING:

HOLDING TYPE OF ACTION: NO CHANGE

FIX USE:

USE TYPE  
STAR

USE TITLE  
MUSCL (RNAV)

FAC

PAT

AIRPORT IDENT  
KMSP

CITY  
MINNEAPOLIS

STATE  
MN (US)

REQUIRED CHARTING: STAR, EN ROUTE LOW, CONTROLLER LOW

COMPULSORY REPORTING POINT: NO

RECORD REVISION NUMBER: 5

DATE OF REVISION: 03/19/2026

REASON FOR REVISION:

1. REMOVED FIX TYPE: DME.
2. REMOVED FIX MAKE-UP FACILITY: MINNEAPOLIS (MSP) VOR/DME.
3. REMOVED FIX USE: KMSP EAU CLAIRE STAR.
4. UPDATED REQUIRED CHARTING: CONTROLLER TO CONTROLLER LOW.

INITIATED BY:

DATE:

ORGANIZATION:

NAME:

OFFICE OF PRIMARY RESPONSIBILITY:

AJV-A432

NAME: BARBARA GORMAN

APPROVED BY:

DATE: 02/12/2026

OFFICE: AJV-A430

NAME: CASIMIR TABAKA

SIGNATURE:

QUALITY  
14  
CHECKED