ORDER

MSP ATCT
7110.26G

MINNEAPOLIS ATCT
STANDARD OPERATING PROCEDURES

July 28, 2024

VATUSA MINNEAPOLIS ARTCC

VIRTUAL AIR TRAFFIC SIMULATION NETWORK

FOR SIMULATION USE ONLY

VIRTUAL AIR TRAFFIC SIMULATION NETWORK

UNITED STATES DIVISION

Minneapolis ATCT

MSP 7110.26G

Effective date:
July 28, 2024

SUBJ: Minneapolis ATCT Standard Operating Procedures

This order prescribes standard operating procedures for use by Air Traffic Control Specialists at Minneapolis ATCT on the VATSIM network. Controllers are required to be familiar with the provisions of this order that pertain to their operational responsibilities and to exercise their best judgment if they encounter situations not covered by it.

It is emphasized that information contained herein is designed and specifically for use in a virtual controlling environment. It is not applicable, nor should be referenced for live operations in the National Airspace System (NAS). The procedures contained within this order document how the positions are to be operated and, in conjunction with FAA Orders 7110.10, 7110.65, and 7210.3, will be the basis for performance evaluations, training, and certification.

Dhruv Kalra
Air Traffic Manager
VATSIM Minneapolis ARTCC

Order Record of Changes

Description	Effective Date	Issued By
Original Publication	Jun 11, 2010	LG
Amendment of TIPH to LUAW	Sep 30, 2010	LG
Delegated airspace changes. Addition of M98 P-ACP and AIT. Amendment of M98 Voice Channels. Addition of MSP Voice ATIS Templates.	Jan 1, 2012	DK
Major rewrite and reorganization of document.	Jul 15, 2015	DK
Airspace stratification update. Rewrite to better incorporate OPD arrivals into SOP. Added 30/35 CRO sections.	Apr 27, 2020	DE
Go-around procedure update. Updated scratchpads to MSP for visual/instrument approaches. Added STP coordination when MSP is landing Runway 22. Added 4-13. Formatting cleanup.	Jul 1, 2023	DE
Removal of references to legacy controlling clients. Rewrite of Chapter 7. Removal of Appendices H/I. Chapter 9 rewrite. Update of far-gate Feeder airspace. Added scratchpad rules for untowered airports. Airspace diagram refresh. Heading diagram update.	Nov 8, 2023	DE
Addition of 1-13. Minor typo corrections.	Jan 19, 2024	DE
Removal of M98 sections for placement into new SOP and MSP-M98 coordination for placement into new LOA. Major rewrite.	Jul 28, 2024	DE

Paragraph *Page*

CHAPTER 1– INTRODUCTION

Section 1 – General

1-1-1 PURPOSE OF THIS ORDER. This order establishes standard operating procedures for the VATSIM Minneapolis ATCT, and supplements FAA JO 7110.65, Air Traffic Control.

1-1-2 AUDIENCE. All VATSIM Minneapolis ARTCC personnel.

1-1-3 WHERE CAN I FIND THIS ORDER? You can find this order on the Documents page of the vZMP website.

1-1-4 WHAT THIS ORDER CANCELS. The following notices are cancelled, and their content has been added to this SOP:

a. MSP/M98 Order 7110.26F CHG 2, eff. Jan 19, 2024.

1-1-5 SOFTWARE UTILIZATION. vZMP has standardized the Consolidated Radar Client (CRC) as its operating software of choice for all control positions. Any references to software in this and other Facility Orders are written with CRC in mind. Controllers utilizing alternative VATSIM radar clients must consult with the vZMP Facility Engineering department regarding the applicability of software settings to their client of choice.

1-1-6 GLOBAL RATINGS. All positions of operation outlined within this order must be staffed in compliance with VATSIM Global Controller Administration Policy (GCAP).

a. Minneapolis-St. Paul International (KMSP) is designated by GCAP as a **TIER I** facility, and all controllers staffing MSP ATCT and M98 TRACON positions must either possess or be in training for the appropriate rating and/or facility endorsements.

1-1-7 EMERGENCIES. Controllers must reference VATSIM CoC and CoR policies regarding emergencies at all times and have the right to request the termination of an emergency should it interfere with operations. Non-compliant pilots should be referred to a VATSIM supervisor IAW with the CoC.

CHAPTER 2 – AIR TRAFFIC CONTROL

Section 1 – General

2-1-1 AIRSPACE JURISDICTION.

MSP delegated airspace is depicted in Appendix A of this order and applicable Letters of Agreement. MSP airspace includes:

a. The airspace from the surface up to and including 3,000 ft. within 6 NM of the MSP Runway 30L DME.

b. The airspace within 1.5 NM either side of the localizer(s) for which approach(es) are active, from the 6-mile ring to final approach fix(es).

c. When landing Runways 30L/R and Runway 35, the airspace within 6 NM of the MSP Runway 30L DME between the eastern boundary of the satellite "corridor" over MSP west to the departure dispersal area, from the surface up to and including 4,000 ft.

2-1-2 CLASS BRAVO AIRSPACE.

Minneapolis Class Bravo airspace is depicted in Appendix B.

2-1-3 MSP TOWER POSITIONS AND FREQUENCIES.

Position Designation/Abbreviation	*Frequency*	*Callsign*
Clearance Delivery (CD)	133.200	MSP_DEL
Ground Metering (GH)	133.575	MSP_H_GND
Ground Control South (GCS)	**121.900**	**MSP_S_GND**
Ground Control North (GCN)	121.800	MSP_N_GND
Ground Control West (GCW)	127.925	MSP_W_GND
Local Control North (LCN)	123.950	MSP_N_TWR
Local Control South (LCS)	**126.700**	**MSP_S_TWR**
Local Control West (LCW)	123.675	MSP_W_TWR
Arrival ATIS	135.350	MSP_A_ATIS
Departure ATIS	120.800	MSP_D_ATIS

***NOTE** – Bold indicates the primary combined frequency to be connected first.*

2-1-4 OBSTRUCTIONS.

Obstructions are depicted in Appendix C.

2-1-5 MINIMUM VECTORING ALTITUDES (MVA).

MVAs are depicted in Appendix C.

2-1-6 DISTANCE BETWEEN PARALLEL RUNWAYS.

The distance between the centerlines of Runways 12L/30R and 12R/30L is 3,380 ft.

Section 2 – Runway Use, Noise Abatement, and Midnight Operations

2-2-1 GENERAL.

a. The guidelines for the issuance of air traffic control instructions relating to noise abatement for all turbojet aircraft and all other Group IV and V aircraft must be according to the procedures stated in this chapter.

b. Controllers are required to be thoroughly knowledgeable with the provisions of this chapter and to exercise their best judgment if they encounter situations not covered by it.

c. Whenever the normal landing pattern is over Highland or the South Minneapolis area, a noise sensitive message must be added to the ATIS.

d. Runway 35 should not be used for departures to the north, and Runway 17 should not be used for arrivals from the north by any type of aircraft except when weather conditions require its use.

2-2-2 RUNWAY SELECTION.

a. Runway selection must be determined in accordance with JO 8400.9, National Safety and Operational Criteria for Runway Use Program.

b. Parallel runway selection must be based on, but not limited to, wind, weather, and traffic conditions.

2-2-3 RUNWAY USE SYSTEM (RUS).

a. Departures are considered noisier than arrivals and must be considered first when selecting a runway configuration. Departure runway/runways should be considered in descending preference from the chart below based on, but not limited to, wind, weather, and airport demand.

b. Once a departure runway configuration has been selected, a corresponding arrival runway configuration must be selected in descending preference from the chart below based on, but not limited to wind, weather, and airport demand.

Departure Preference:	Arrival Preference:
Runways 12L/12R	Runways 30L/30R
Runway 17	Runway 35
Either Runway 22 or 04	Either Runway 22 or 04
Runways 30L/30R	Runways 12L/R

2-2-4 MENDOTA HEIGHTS/EAGAN PROCEDURES (RUNWAY 12R AND 12L DEPARTURES).

a. Whenever possible, under non simultaneous departure conditions:

1. Aircraft departing Runway 12R will be assigned a heading to maintain an approximate ground track of 105° magnetic.

2. Aircraft departing Runway 12L will be assigned a heading to maintain a ground track along the extended centerline, approximately 119° magnetic.

b. When diverging separation is used, it must be based upon the following criteria:

1. Runway 12R: a heading to maintain a track on or north of the Runway 30L localizer.

2. Runway 12L: between a 090° track and 15° north of the Runway 12R assigned heading.

c. LC must instruct all turbojet aircraft departing Runway 12L that will make a left turn, to maintain runway heading. LC must issue the assigned heading after the departure is beyond the departure end of Runway 12L and prior to transfer of communications.

d. Proceed on the assigned heading until at least 3 miles from the departure end of the runway, then assign on-course headings as soon as practical after the 3-mile point.

2-2-5 RUNWAY 30L AND 30R ARRIVALS AND DEPARTURES.

a. LC must instruct all turbojet aircraft departing Runway 30L that will make a left turn, to maintain runway heading. LC must issue the assigned heading after the departure is beyond the departure end of Runway 30L and prior to the transfer of communications.

b. Runway 30L/R Straight Out Procedure. To the extent possible, when not operationally required, avoid assigning runway heading off Runways 30L and 30R to noise sensitive aircraft. Controllers may assign any other heading within the tower primary departure dispersal areas.

NOTE - *This procedure requires use of controller provided visual separation. If conditions do not allow the use of controller provided visual separation, another form of approved separation must be used.*

2-2-6 RUNWAY 4 AND 22 DEPARTURES.

a. Aircraft departing Runway 22 and making a right turn must:

1. Be instructed to remain on runway heading until leaving 1,500 ft. MSL.

2. Not be issued a heading greater than 350° until past the Runway 12L localizer course.

b. Aircraft departing Runway 4 must be issued headings that avoid overflying the Veterans' Administration Hospital as much as possible.

2-2-7 RUNWAY 17 DEPARTURES.

a. Westbound Turns:

1. All turbojet aircraft and all other Group IV and V aircraft departing Runway 17 that will be assigned a heading west of runway heading must initially be instructed to fly runway heading.

2. LC must issue the appropriate westbound heading after the aircraft is observed reaching the 3.03 DME CTRD marking.

b. When traffic situations permit, assign aircraft departing Runway 17 a heading of 230°.

***NOTE** – The intent of the 230° heading is to allow aircraft to follow the river. It is intended for use during low demand periods and not intended to unduly delay aircraft by taking them off course. There are no noise restrictions preventing departure control from assigning a different heading when traffic conditions permit.*

2-2-8 INTERSECTION DEPARTURES – TURBOJET ONLY.

Controllers must ensure that intersection departures for turbojet aircraft are not initiated, unless the aircraft can comply with published climb restrictions, when the departure path is over a noise sensitive area (e.g., departing Runways 4, 30L, and 30R.)

2-2-9 QUIET HOURS PROCEDURES.

During quiet hours (2230 until 0600 local) maximize the use of the Mendota Heights/Eagan corridor as much as feasible by departing Runways 12L and 12R, and landing Runways 30L and 30R.

a. The RUS preferences for midnight operations are as follows:

1. Land 30s – Depart 12s (opposite direction).

2. Land 35 – Depart 12s or Land 30s – Depart 17.

3. Straight 12s.

4. Straight 30s.

b. Runway 17 south and westbound departures must be assigned runway heading to 3.03 DME (MSP VOR) then assigned heading 230°.

1. This procedure should typically be used between 0015 and 0530 local (daily).

2. Departure control may turn aircraft on course on initial contact.

c. If Runway 4/22 usage is required, give equal priority to either end.

d. Quiet hours procedures should be applied to all aircraft when feasible, and must be applied to all aircraft with noise characteristics similar to or greater than a C-130 or turbojet aircraft

e. Departures with noise characteristics may be issued a heading to remain over the river basin until leaving 3,000 ft. or higher before proceeding on course.

2-2-10 LAND 12S, LAND 35 PROHIBITED.

Due to increased concerns about go-around procedures, the land Runway 12s and 35 – Departure Runway 12s configuration is prohibited.

Section 3 – Airport Surface Detection (ASDE-X) Procedures

2-3-1 POSITION DETERMINATION.

ASDE-X system derived information may be used to:

a. Formulate clearances and control instructions to aircraft on the movement area.

EXAMPLE *– An aircraft is observed on the ASDE-X display exiting the runway; the next aircraft can be cleared for takeoff.*

b. Position aircraft using the movement areas.

c. Determine the exact location of aircraft, or spatial relationship to other aircraft on the movement area.

NOTE *– A standard icon size is used to represent all aircraft sizes. Controllers are cautioned to be aware that the icon position may not be a true representation of the actual aircraft position.*

2-3-2 SCRATCH PAD ENTRIES.

a. GC and LC may display pertinent information (e.g. gate information) in the aircraft's ASDEX scratch pad.

b. LC and/or GC must not use the ASDE-X scratch pad data to effect any coordination.

2-3-3 SYSTEM OPERATIONS.

a. When a runway becomes unavailable for aircraft arrivals or departures for 30 minutes or more, the runway must be entered as "Closed" in the Safety Logic System.

Section 4 – Standard Terminal Automation Replacement System

2-4-1 USE OF TOWER RADAR DISPLAYS.

a. MSP Tower personnel are authorized to use STARS for all terminal radar functions.

b. Controllers must ensure the correct configuration-specific airspace map is displayed

c. Controllers must ensure an adequate area outside of MSP delegated airspace is displayed.

2-4-2 STARS POSITION SYMBOLS.

Position	*Symbol*
LCN	T
LCS	V
LCW	Y
GCN/S/W	2Y
CD	6

Section 5 – Airport Movement Area Procedures

2-5-1 RUNWAY CROSSING PROCEDURES AND COORDINATION.

a. General Runway Crossing Procedures.

1. Aircraft runway crossing: GC and/or LC must not initiate a runway crossing until the aircraft to cross is within 1,000 ft. of the appropriate runway.

2. To the extent possible, runway crossings must be accomplished by LC on the appropriate LC frequency.

b. Runway Crossing Coordination and Phraseology.

1. LC and GC must not use conditional phrases, such as “Beat SWA252”, “Behind DAL551”, “Behind the departing King Air.”

2. In accordance with JO 7110.65 Chapter 2, Runway crossing coordination between GCS, GCN, GCW, LCN, LCS and LCW may utilize an abbreviated message format by omitting both the caller and receiver operating position and omitting operating initials.

3. Coordination must include the runway, the point at which the crossing will be conducted and what type of aircraft.

EXAMPLE – *GC - “Cross Runway 30L at Charlie with the Airbus.”*
LC - “Cross Runway 30L at Charlie.”

4. GC must advise LC when the runway crossing has been completed.

c. Multiple Runway Crossing. MSP ATCT is authorized to provide multiple runway crossings at the following areas:

1. Cross Runway 12R/30L at Taxiway C and cross Runway 4/22 at Taxiway W. The distance between centerlines is 894 feet.

2. Cross Runway 17/35 at Taxiway L3 and cross Runway 4/22 at Taxiway L. The distance between centerlines is 903 feet.

3. Cross Runway 12R/30L at Taxiway M and cross Runway 4/22 at Taxiway A. The distance between centerlines is 970 feet.

4. Cross Runway 12R/30L at Taxiway D and cross Runway 4/22 at Taxiway W. The distance between centerlines is 1,221 feet.

2-5-2 SPECIAL TAXI CONSIDERATIONS.

a. Avoid amending a runway hold short point when the aircraft is between Taxiway D and Taxiway M as much as practicable. If the hold short point is amended in this area, use phraseology that will better convey the change to the pilot.

EXAMPLE - *“DAL2132 amend your hold short point. Taxi via Alpha, hold short of Runway 12R at Mike.”*

b. Except when required by JO 7110.65 Chapter 3, do not use the word “cross” when amending a taxi route.

CHAPTER 3 – CLEARANCE DELIVERY

Section 1 – Position Information

3-1-1 CLEARANCE DELIVERY (CD) DUTIES AND RESPONSIBILITIES.

CD Must:

a. Mark IFR flight progress strips with proper frequency and appropriate restrictions.

b. Formulate and transmit MSP Class B Airspace departure clearances.

c. Formulate and transmit departure clearances via the appropriate frequency to local IFR aircraft.

d. Issues IFR clearances to outbound IFR aircraft either verbally or electronically via PDC or CPDLC.

e. Writes flight progress strips on VFR aircraft departing the Class B Airspace. Information on these strips should include information as outlined in vZMP Order N7110.101 – Flight Progress Strips.

f. Writes specific gate number or location on all flight progress strips, as applicable

g. After issuing IFR or Class B Airspace clearance, passes the flight progress strip to the appropriate GC position.

h. Broadcast departure ATIS code changes.

Section 2 – Standard Operating Procedures

3-2-1 STRIP MARKING.

FD and CD must mark flight progress strips in accordance with procedures in vZMP Order N7110.101 – Flight Progress Strips.

3-2-2 PDC/CPDLC CLEARANCES.

a. vTDLS is the primary method of issuing aircraft clearances at MSP.

b. TDLS Procedures.

1. Review proposed clearances received via vTDLS for accuracy and route integrity.

2. Ensure all fields have the correct information before transmitting.

c. Newly certified S1s working MSP clearance must not use the vTDLS system.

3-2-3 IFR ALTITUDE AND DEPARTURE FREQUENCY ASSIGNMENTS.

Assign the following altitudes and departure frequencies to IFR aircraft:

a. Jet aircraft:

1. Requesting 9,000 feet or higher final altitude – 7,000 feet and Departure Control

2. Requesting 8,000 feet or lower final altitude – 4,000 feet and Satellite Control

b. Turboprop aircraft:

1. Requesting 11,000 feet or higher final altitude – 5,000 feet and Departure Control

2. Requesting 10,000 feet or lower final altitude – 4,000 feet and Satellite Control

c. Any piston propeller aircraft, regardless of final requested altitude – 4,000 feet and Satellite Control

3-2-4 IFR ROUTING ASSIGNMENTS.

Departure Name	*Preferred Runway(s)*	*Direction*	*Initial Fix*	*Transition(s)*
COULT	17, 12L/30R	SE	TAXEE	DLL
KBREW *(Kay-Brew)*	12L/30R	NW	HRBEK	FAR
ORSKY *(Or-skee)*	17, 12R/30L	S	RUMLE	ONTIJ
RST *(Rochester)*	17, 12R/30L	SE	FOBUG/DOKTR	ALO
SCHEP *(Shepp)*	17, 12R/30L	SW	MCONL	RXANN
WLSTN *(Wellstone)*	12L/30R	NE	SNINE	GRB
ZMBRO *(Zumbro)*	17, 12R/30L	SE	JEDET	ODI
SMERF *(Smurf)*	12L/30R	W	ZOGAP	None
LEINY *(Line-ee)*	12L/30R	W	BOTNE	None

a. Ensure IFR aircraft are routed via a SID.

b. Those aircraft who do not file a SID issue the Minneapolis Nine Departure (MSP9), or the most current version. The Minneapolis Nine Departure or most current version does not need to be amended into the route string.

c. Aircraft unable SIDs:

1. Aircraft unable to accept an assigned SID must be issued MSP 9 Departure, or the most current version, to first filed fix (Ensure the first filed fix is located within ZMP airspace.

2. Aircraft unable to accept an assigned SID and unable to accept the MSP 9 Departure, or the most current version, must be issued radar vectors to first filed fix (Ensure the first filed fix is located within ZMP airspace). Ensure appropriate coordination with affected M98 sectors to maintain obstacle and airspace clearance.

3-2-5 VFR DEPARTURES.

a. Requesting Flight Following:

1. Manually enter the flight into STARS/vNAS.

2. Issue a clearance in accordance with JO 7110.65, Chapter 7, including:

(a) An altitude restriction at or below 3,500 feet.

(b) A departure frequency as per the Satellite Airspace Split Map (Appendix I).

b. Not requesting flight following:

1. Issue a VFR clearance per JO 7110.65, Chapter 7, including:

(a) An altitude restriction at or below 2,700 feet.

(b) A departure frequency corresponding to the correct tower frequency for route of flight and runway configuration.

EXAMPLE *– 123.95 for northbound departures.*

(c) A transponder code between 0341-0346, excluding any other currently issued codes from that list.

CHAPTER 4 – GROUND METERING

Section 1 – Position Information

4-1-1 GROUND METERING (GH) POSITION DUTIES AND RESPONSIBILITIES.

GH must:

a. Maintain an awareness of the airport operations/traffic flow.

b. Broadcast departure ATIS code changes.

Section 2 – Standard Operating Procedures

4-2-1 FLIGHT PROGRESS STRIP REVIEW.

a. Upon accepting position responsibility, review flight progress strips posted for correct strip marking and clearance issuance

4-2-2 METERING OF OUTBOUND AIRCRAFT.

When an aircraft contacts the metering frequency requesting push or taxi:

a. Ensure the aircraft has the appropriate ATIS code and write it on the flight progress strip

b. Instruct the aircraft to monitor the appropriate ground control frequency.

EXAMPLE – *"DAL1234 monitor ground one two one point niner"*

c. Should not issue pushback clearance or issue taxi instructions.

d. After instructing an aircraft to monitor GC, move the corresponding flight progress strip into the appropriate GC bay.

e. Unless special circumstances warrant, such as ESP/EDCTs, SWAP, deicing, etc., release aircraft to GC on a first come, first served basis.

CHAPTER 5 – GROUND CONTROL

Section 1 – General

5-1-1 GCN POSITION DUTIES AND RESPONSIBILITIES.

GCN must:

a. Issue taxi instructions to all aircraft operating in the movement area on the airport as they taxi to and from the active runways, to and from gates and hangars, etc. on the following surfaces:

1. Taxiways north and east of Taxiway Q, including Taxiway Q.

2. Runways as coordinated or assigned by LCN and east of Taxiway Q, including the intersection with Taxiway Q.

3. Runway 12L Deice Pad and/or Runway 30R Deice Pad.

4. All gates at Concourses A, B, C, D.

5. Gates E12, E10, E8, E6, E4, E2.

b. Coordinate crossing of active runways with LC.

c. Ensure departing aircraft have the appropriate ATIS code and are apprised of the latest field conditions, weather, and RVR values when required.

d. Pass the flight progress strip to LC before the departing aircraft reaches the takeoff runway, making sure that the proper sequence of strips/aircraft is maintained in case of multiple departures.

e. Broadcast departure ATIS code changes.

5-1-2 GCS POSITION DUTIES AND RESPONSIBILTIES.

GCS must:

a. Issue taxi instructions to all aircraft operating in the movement area on the airport as they taxi to and from the active runways, to and from gates and hangars, etc. on the following surfaces:

1. Taxiways between Taxiway Q and Runway 12R/30L, excluding Taxiway Q and excluding Runway 12L/30R.

2. Runways as coordinated or assigned by LC between Taxiway Q and Runway 12L/30R, excluding the intersections with Taxiway Q and including the intersections with Runway 12L/30R.

3. Runway 12R Deice Pad and/or Runway 30L Deice Pad.

4. All gates at Concourses F and G.

5. Gates E14, E16, E15, E13, E11, E9, E7, E5, E3, E1.

b. Coordinate crossing of active runways with LC.

c. Ensure departing aircraft have the appropriate ATIS code and are apprised of the latest field conditions, weather, and RVR values when required.

d. Pass the flight progress strip to LC before the departing aircraft reaches the takeoff runway, making sure that the proper sequence of strips/aircraft is maintained in case of multiple departures.

e. Broadcast departure ATIS code changes.

5-1-3 GCW POSITION DUTIES AND RESPONSIBILITIES.

GCW must:

a. Issue taxi instructions to all aircraft operating in the movement area on the airport as they taxi to and from the active runways, to and from gates and hangars, etc. on the following surfaces:

1. Taxiways and movement areas south of Runway 12R/30L including Taxiways W, C, D, L, K, S, N, M, T, Z, Y, and 17 de-ice pad.

2. All Terminal 2 (Humphrey) Gates unless otherwise coordinated.

b. Coordinate crossing of active runways with LC.

c. Ensure departing aircraft have the appropriate ATIS code and are apprised of the latest field conditions, weather, and RVR values when required.

d. Pass the flight progress strip to LC before the departing aircraft reaches the takeoff runway, marking sure that the proper sequence of strips/aircraft is maintained in case of multiple departures.

e. Broadcast departure ATIS code changes.

5-1-4 COMBINING/DECOMBINING POSITIONS.

a. GCW is normally combined with GCS.

b. GCN may combine to GCS.

Section 2 – STANDARD OPERATING PROCEDURES

5-2-1 TAXI OPERATIONS

GC must:

a. Operate independently on assigned taxiways, runways, and ramp areas.

b. Coordinate standard direction of taxi on Taxiways C, D, H, M, and Runway 4/22.

c. Accomplish frequency changes between aircraft transferring from one GC jurisdiction to another prior to the aircraft entering the other GC's area of jurisdiction. This should be done to allow the receiving GC time to sequence or issue appropriate taxi instructions.

d. Coordinate runway crossings with the appropriate LC.

e. Ensure that departing aircraft have the correct departure ATIS code and record it.

f. Execute appropriate strip marking procedures as described in vZMP Order N7110.101 – Flight Progress Strips.

g. Regulate, to the extent practical, the sequence of departure traffic so that routing and/or tracks differ between successive departures.

h. Must ensure an unrestricted pathway for an arriving aircraft to taxi clear of an active runway.

5-2-2 GROUND CONTROL DEPARTURE TAXI PROCEDURES.

GC must taxi aircraft to the appropriate departure runway based upon the initial departure fix/SID, direction of flight, and noise abatement procedures, as listed below.

When operationally beneficial, the CIC may authorize temporary changes to this procedure.

***NOTE** – The intent of this procedure is to prevent crossover fixes from causing excessive coordination between LC positions.*

a. 30s and 30s/35 Configurations:

1. Runway 30R – LEINY, DWN, SMERF, KBREW, DLH, BRD, WLSTN, COULT or any other traffic that will enter "D", "K" or "G" airspace.
2. Runway 30L – ZMBRO, RST, ORSKY, SCHEP or any other traffic that will enter "R" or "E" airspace.
3. When departing Runways 30L or 30R, straight out operations, i.e. LEINY, DWN, SMERF, departing 30L are not considered "crossover operations" and may be taxied to either runway at ground control's discretion. When operationally beneficial, ground control may seek authorization from the CIC for KBREW departures to be taxied to Runway 30L. Proper runway balance must be maintained.

b. 12/17 Configuration

1. Runway 12R – WEIGHT OR OPERATIONAL REQUIREMENT ONLY.

2. Runway 12L – LEINY, DWN, SMERF, KBREW, DLH, BRD, WLSTN or any traffic that will enter “D”, “K” or “G” airspace.

3. Runway 17 - COULT, ZMBRO, RST, ORSKY, SCHEP or any traffic that will enter “R”, “L” or “E” airspace.

c. 12s Configuration.

1. Runway 12R – ZMBRO, RST, ORSKY, SCHEP or any traffic that will enter “R” or “E” airspace.

2. Runway 12L – LEINY, DWN, SMERF, KBREW, DLH, BRD, WLSTN, COULT or any traffic that will enter “D”, “K” or “G” airspace.

d. 30s/17 Configuration:

1. Runway 30L – WEIGHT OR OPERATIONAL REQUIREMENT ONLY.

2. Runway 30R – LEINY, DWN, SMERF, KBREW, DLH, BRNRD, WLSTN, COULT

3. Runway 17 – ZMBRO, RST, ORSKY, SCHEP

e. 30/17 Configuration (Quiet Hours 2230-0600 local time). All aircraft depart Runway 17 unless an operational requirement exists.

5-2-3 CROSSOVER OPERATIONS.

Operations that require departing aircraft to enter the airspace assigned to another LC, are considered “crossover operations.” All crossover operations require CIC approval prior to taxi, and must be approved only when there is an operational requirement.

5-2-4 RESTRICTED OR DELAYED AIRCRAFT TAXI OPERATIONS.

When aircraft are delayed due to abnormal in-trail restrictions, TMC initiatives, pilot request, or otherwise, GC may stage aircraft in such a manner so as to minimize the impact of movement of other aircraft.

5-2-5 FLIGHT PROGRESS STRIPS.

a. GC must mark flight progress strips in accordance with vZMP Order N7110.101 – Flight Progress strips.

CHAPTER 6 – LOCAL CONTROL

Section 1 – General

6-1-1 LCN POSITION DUTIES AND RESPONSIBILITIES.

a. LCN is responsible for arrivals and departures on Runway 30R/12L.

b. Issues air traffic control instructions, clearances, and traffic information, ensuring the separation of arriving and departing aircraft and all those operating within MSP delegated airspace.

c. Is cognizant of MSP Class B Airspace procedures and assumes responsibility for the separation standards for traffic under the controller's jurisdiction. Utilizes the CTRD to his/her advantage. Issues radar advisories and provides other services as workload permits

d. Transmits weather, field conditions, NOTAMs, PIREPs, RVR values, and other required data to arriving and departing aircraft as necessary.

e. Is cognizant of and applies noise abatement procedures with regard to runway use and departure headings.

f. Uses proper control techniques to avoid delays.

g. Forwards flight progress strips to M98 in time for the radar controller to have the strip before the frequency change is made, and prior to 1 mile from the departure end of the runway.

h. Broadcast Arrival and Departure ATIS code changes.

i. Advise departures to contact M98 departure when separation is established.

j. Advise arrivals to contact appropriate GC frequency after landing roll.

6-1-2 LCS POSITION DUTIES AND RESPONSIBILITIES.

a. LCS is responsible for arrivals and departures on Runway 30L/12R and Runway 4/22.

b. Issues air traffic control instructions, clearances, and traffic information, ensuring the separation of arriving and departing aircraft and all those operating within MSP delegated airspace.

c. Is cognizant of MSP Class B Airspace procedures and assumes responsibility for the separation standards for traffic under the controller's jurisdiction. Utilizes the CTRD to his/her advantage. Issues radar advisories and provides other services as workload permits.

d. Transmits weather, field conditions, NOTAMs, PIREPs, RVR values, and other required data to arriving and departing aircraft as necessary.

e. Is cognizant of and applies noise abatement procedures with regard to runway use and departure headings.

f. Uses proper control techniques to avoid delays.

g. Forwards flight progress strips to M98 in time for the radar controller to have the strip before the frequency change is made, and prior to 1 mile from the departure end of the runway.

h. Broadcast Arrival and Departure ATIS code changes.

i. Advise departures to contact M98 departure when separation is established.

j. Advise arrivals to contact appropriate GC frequency after landing roll.

6-1-3 LCW POSITION DUTIES AND RESPONSIBILITIES.

a. LCW is responsible for arrivals and departures on Runway 17/35.

b. Issues air traffic control instructions, clearances, and traffic information, ensuring the separation of arriving and departing aircraft and all those operating within MSP delegated airspace.

c. Is cognizant of MSP Class B Airspace procedures and assumes responsibility for the separation standards for traffic under the controller's jurisdiction. Utilizes the CTRD to his/her advantage. Issues radar advisories and provides other services as workload permits.

d. Transmits weather, field conditions, NOTAMs, PIREPs, RVR values, and other required data to arriving and departing aircraft as necessary.

e. Is cognizant of and applies noise abatement procedures with regard to runway use and departure headings.

f. Uses proper control techniques to avoid delays.

g. Forwards flight progress strips to M98 in time for the radar controller to have the strip before the frequency change is made, and prior to 1 mile from the departure end of the runway.

h. Broadcast Arrival and Departure ATIS code changes.

i. Advise departures to contact M98 departure when separation is established.

j. Advise arrivals to contact appropriate GC frequency after landing roll.

6-1-4 COMBINING/DECOMBINING POSITIONS.

a. LCW combines to and decombines from LCS.

b. LCN combines to and decombines from LCS.

Section 2 – Standard Operating Procedures – Arrivals

6-2-1 SCRATCH PAD ENTRIES.

Scratch pad entries are located in Appendix E.

6-2-2 GO-AROUNDS.

In the event of a go-around, LC must:

a. Issue headings as necessary to ensure separation from other aircraft within MSP delegated airspace.

b. Determine if the aircraft will be vectored to the departure dispersal area or into satellite airspace and coordinate with the appropriate M98 position.

1. If the aircraft will enter the dispersal area, climb to 6,000 ft. and issue an "inside" heading if possible.

2. If the aircraft will enter satellite airspace, coordinate an altitude and heading with the satellite controller.

NOTE - *Under normal circumstances, the go-around aircraft should be vectored to the dispersal area. Satellite airspace may be used if the dispersal area is not available due to traffic. If necessary, an aircraft may be vectored in the ACDA if it will not enter satellite or departure airspace, or back to the ACDA with a point out to satellite if special circumstances warrant. If the aircraft will be vectored within or back to the ACDA, a heading and altitude must be coordinated with the appropriate ACDA controller.*

c. Make a handoff to the receiving controller.

EXAMPLE - *The go-around aircraft is issued a heading of 260°, an altitude of 6,000 ft., and handed off to Departure.*
(CC) "R, CC, Handoff."
(R) "R."
(CC) "One mile west MSP, DAL123, go-around, heading 260 climbing to 6,000."
(R) "DAL123, Radar Contact. MA."
(CC) "JB."

EXAMPLE - *The go-around aircraft is issued a 040° heading, an altitude of 4,000 ft., and handed off to Satellite.*
(CC) "G, CC, Handoff."
(G) "G."
(CC) "One mile north MSP, DAL123, go-around, heading 040 climbing to 4,000."
(G) "DAL123, Radar Contact. MA."
(CC) "JB

d. Assign the go-around aircraft the receiving controller's frequency.

Section 3 – Standard Operating Procedures – Departures

6-3-1 DEPARTURE HEADINGS.

REFERENCE – *MSP/M98 LOA.*

a. Runways 30L and 30R Turbojet Dispersal Procedures.

Unless otherwise required by other traffic or weather, assign initial departure headings to approximate the tracks listed below for aircraft on the following departure SIDs:

1. KBREW Departure – Assign headings that will approximate a 320° track.

2. WLSTN Departure – Assign headings that will approximate a 340° track.

3. COULT Departure – Assign headings that will approximate a 360° track.

4. MINNEAPOLIS Nine (MSP9) or subsequent versions of this SID with initial fixes as follows:

(a) Fargo (FAR) – Assign headings that will approximate a 320° track.

(b) Brainerd (BRNRD), Duluth (DLH), Hayward (HYR), Eau Claire (EAU) or Green Bay (GRB) – Assign headings that will approximate a 340° track.

(c) Dells (DLL) – Assign headings that will approximate a 360° track.

b. Automatic Releases.

MSP has automatic releases for departures from advertised departure runways to airspace within the MSP dispersal area unless otherwise specified.

6-3-2 TRANSFER OF CONTROL.

Prior to LC instructing an aircraft to contact departure, LC must:

a. Confirm the correct STARS auto-acquisition of departing aircraft. If aircraft does not correctly acquire, LC must perform a radar handoff to the appropriate M98 departure controller within 2 NM of the runway end. The handoff must include position, aircraft identification, type, and SID or, if landing within M98 airspace, destination airport, and any other pertinent information.

NOTE – *Approval to enter the departure controller's airspace is based on release status of the aircraft (e.g. "automatic releases"). Any handoff performed under this section is to ensure correct data block acquisition only.*

b. Transfer of communications constitutes transfer of control on departure aircraft subject to limits set forth in MSP/M98 LOA.

6-3-3 SPLIT LOCAL CONTROL PROCEDURES.

a. LCN must:

1. When on Runway 30s or 30s/35 configuration, assign headings off of Runway 30R from 300° track clockwise through 360° track.

2. When on Runway 12s or 12s/17 configuration, assign headings off of Runway 12L between a 090° track and 15° north of the Runway 12R heading.

REFERENCE *– 2-2-4 MENDOTA HEIGHTS/EAGAN PROCEDURES for noise abatement procedures.*

b. LCS must:

1. When on Runway 30s or 30s/35 configuration, issue headings off of Runway 30L from 260° track clockwise through 285° track.

2. When on Runway 12s configuration, issue a heading to maintain a track on or north of the 30L localizer.

3. When on Runway 12s/17 configuration, issue heading as coordinated with LCW and LCN.

4. When on Runway 30s/17 configuration, issue headings as coordinated with LCW and LCN.

5. When on any other configuration, issue headings as coordinated with LCW and/or LCN.

c. LCW must:

1. When on Runway 30s/17 configuration, issue headings from 285° track counterclockwise through 170° track.

2. When on Runway 12s/17 configuration, issue headings from 215° track counterclockwise through 120° track (or 15° divergence from LCN).

3. When on any other configuration, issue headings as coordinated with LCW and/or LCN.

REFERENCE *– 2-2-7 RUNWAY 17 DEPARTURES for noise abatement procedures.*

6-3-4 VERBAL COORDINATION BETWEEN LOCAL CONTROLS.

a. In accordance with JO 7110.65, Chapter 2, abbreviated standard coordination procedures are authorized between LCN, LCS, and LCW whereas each position may omit both the caller and receiver operating position and omit operating initials.

b. LC must state the runway number when coordinating departures off of Runways 04, 17, and 22.

6-3-5 LOCAL CONTROL CROSSOVER PROCEDURES.

When the LC positions are split and operations require a departing aircraft to enter the airspace assigned to another LC, these operations are considered crossover operations.

The exception to this is DWN, SMERF, and LEINY departures off of Runway 30L which are not considered crossovers under any situation. Also, when operationally beneficial, the OS/CIC may authorize KBREW departures off of Runway 30L to maintain proper runway balance. These fixes remain northbound fixes, however LCS must coordinate these departures with LCN prior to clearing the aircraft onto the runway. LCS must assign a heading on, or west of, the coordinated, straight-out heading (normally 300˚).

When instituting a crossover operation, the following procedures must apply:

a. Crossover Coordination Procedures:

1. Coordination between LC positions must be made when the aircraft is number one or two for departure.

2. Coordination must state departure fix and type of aircraft.

EXAMPLE – *(LCN) "ORSKY CRJ."*
(LCS) "260 approved."

b. Local Control Delegation of Airspace. When a LC delegates the use of their airspace to another LC position the following procedures must apply:

1. The LC position delegating the use of their airspace must ensure all traffic pertaining to the operation is exchanged.

EXAMPLE – *(LCN) "ORSKY CRJ"*
(LCS) "280 approved, I'll be 260 with the B737 rolling."

2. The controller accepting restrictions must be responsible to ensure that approved separation is maintained between the aircraft.

3. Diverging course or lateral/vertical separation must be ensured prior to turning aircraft off of runway heading.

4. Departure Divergence and Communication Transfer. LC must retain communication with departure aircraft until divergence or other applicable separation is established. When the conditions are IFR, LC must issue a diverging departure heading with the takeoff clearance.

5. LC must state the runway number when coordinating departures off Runways 04, 17 and 22.

6-3-6 RUNWAY 17 LINE UP AND WAIT AND/OR TAKEOFF CLEARANCE.

Runway 17 departures taxiing on Taxiway W must not be issued a LUAW clearance or a takeoff clearance until they have passed Taxiway W10.

Section 4 – Standard Operating Procedures – Class B

6-4-1 VFR DEPARTURES.

a. Requesting flight following. Assign heading, as necessary, to remain as close to on course while staying within the dispersal area.

b. Not requesting flight following:

1. If VFR aircraft will depart on a heading inside the dispersal area, terminate radar service upon exiting MSP Class B airspace and allow for frequency change with enough time to allow frequency change to FCM, STP, or MIC if appropriate.

2. If VFR aircraft will depart on a heading outside of the dispersal area, point out with appropriate satellite controller, terminate radar service upon exiting MSP Class B airspace, and allow frequency change with enough time to allow frequency change to FCM, STP, or MIC if appropriate.

6-4-2 HELICOPTERS.

a. Landing or Departing MSP. LC must coordinate with GC for the use of an area for takeoff or landing if not using an active runway.

CHAPTER 7 – SPECIAL OPERATIONS

Section 1 – Land and Hold Short Operations (LAHSO)

7-1-1 DESCRIPTION.

a. LAHSO are authorized at the Minneapolis-St. Paul International Airport on Runway 30L to hold short of Taxiways A9 and W9, and on Runway 22 to hold short of Taxiway K, subject to the provisions of JO 7110.118.

b. Aircraft landing Runway 30L, in LAHSO Groups 1 through 9, may be issued a landing clearance to hold short of Taxiways A9 and W9 for traffic crossing downfield. The Available Landing Distance (ALD) from the threshold on Runway 30L to the LAHSO lights, located northwest of Taxiways A8 and W8 is 8,150 feet.

c. Aircraft landing Runway 22, in LAHSO Groups 1 through 9, may be issued a landing clearance to hold short of Taxiway K with Runway 17 arrivals and departures. The ALD from the displaced threshold on Runway 22 to the LAHSO lights, located near the southwest edge of Taxiway S is 8,550 feet.

7-1-2 LAHSO REQUIREMENTS.

a. Ceiling and visibility:

1. Runway 30L: Ceiling 1000 ft. or greater and visibility 3 miles or greater.

2. Runway 22: Ceiling 1400 ft. or greater and visibility 4 miles or greater.

b. LAHSO runway must be dry and not contaminated.

c. The tailwind on the hold short runway must be calm (less than 3 knots).

d. No reported wind shear.

e. When LAHSO operations are expected to be utilized, an announcement must be made on the ATIS.

f. A LAHSO clearance must not be issued to any aircraft that is not listed in JO 7360.1.

g. Traffic information must be exchanged and a read back must be obtained from a landing aircraft with a LAHSO clearance.

h. LAHSO must be terminated for any situation or weather condition, which in the judgment of the CIC would adversely affect LAHSO.

7-1-3 RUNWAY 22 LAHSO AND RUNWAY 17 ARRIVALS AND DEPARTURES PROCEDURES

a. When converging/LAHSO operations on Runways 17 and 22 are expected to be utilized, make an announcement on the ATIS.

b. Aircraft landing Runway 22 issued LAHSO instructions to hold short of Taxiway K must be advised of traffic landing or departing Runway 17.

c. Aircraft landing or departing Runway 17 must be advised of traffic landing Runway 22 to hold short of Taxiway K.

d. LC must issue Rejected Landing Procedures (RLP)/control instructions based on known and observed aircraft at the time of rejected landing on Runway 22.

e. The approved RLP for LAHSO aircraft landing Runway 22 when used in conjunction with the Departure Decision Area (DDA) is a climbing right turn to a 260° heading until any potential conflicts have been resolved with the Runway 17 departure, and then proceed with normal M98 coordination for go-around aircraft.

f. Departure Decision Area (DDA):

1. The DDA is defined as an area from one-quarter (1/4) mile final on Runway 22 to a point where the LAHSO arrival on Runway 22 has landed, as indicated by the nose wheel touching down on the runway. Aircraft departing Runway 17 may not be cleared for takeoff while the LAHSO arrival on Runway 22 is in the DDA.

2. LC must ensure that aircraft cleared for takeoff on Runway 17 begin takeoff roll prior to the LAHSO arrival on Runway 22 reaching a one-quarter (1/4) mile final.

3. The Highway 62 (Crosstown) / Highway 55 (Hiawatha Avenue) interchange is a viable visual landmark to determine a ¼ mile final for Runway 22

7-1-4 ADDITIONAL PROCEDURES FOR RUNWAY 17/22 OPERATIONS.

a. When combining LC positions, Runways 17 and 22 must be worked at the same LC position.

b. Traffic departing Runway 12R must be rolling by the time Runway 22 traffic is 1.5 miles from the runway end.

c. Taxi procedures:

1. Normal Runway 22 crossing points:

   (a) Aircraft from the Terminal 1 (Lindbergh): Taxiways P, Q, C6/M6, B and A.

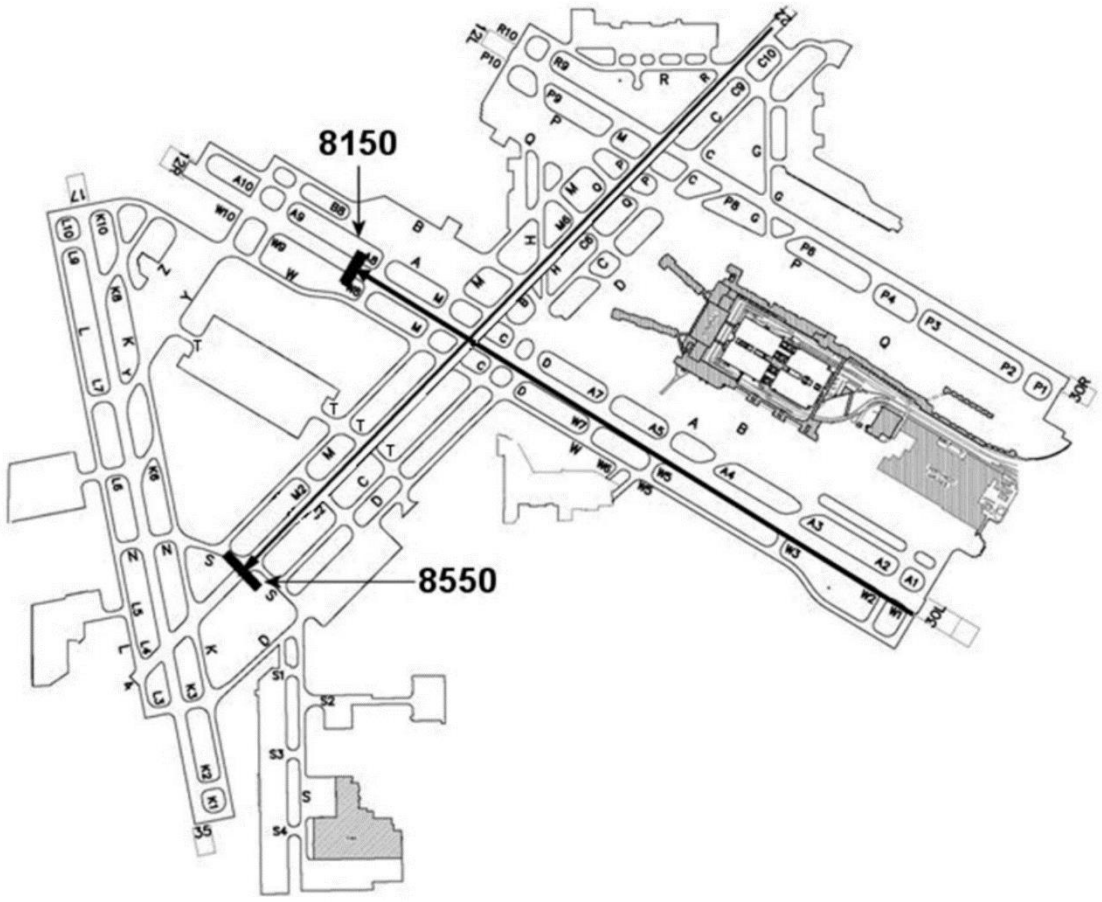
   (b) Aircraft from Terminal 2 (Humphrey): Taxiway S.

2. GCS must maintain heightened awareness to keep runway turnoffs clear of traffic.

7-1-5 LAHSO DISTANCE REMAINING DIAGRAM.

The land and hold short distance remaining diagram for Runway 30L to hold short of Taxiways A9 and W9 and Runway 22 to hold short of Taxiway K is shown below.

Figure 7-1. LAHSO Distance Remaining.



Section 2 – Line Up and Wait Procedures

7-2-1 LINE UP AND WAIT (LUAW) PROCEDURES.

a. Requirements. The following requirements must be fulfilled in order to perform LUAW operations at Minneapolis-St. Paul International Airport.

1. The Airport Surface Detection Equipment X (ASDE-X) must be operating at full core alert runway configuration

b. Procedures.

1. LUAW may be issued to any aircraft in accordance with 7110.65, Chapter 3 and JO 7210.3.

2. LUAW may be issued on any runway if the departure point is visible from the Tower, or if the position of the aircraft can be identified by the ASDE-X.

3. When issuing LUAW to an aircraft for traffic landing or departing on an intersecting runway, issue traffic to the LUAW aircraft as well as the aircraft cleared to land or take off on the intersecting runway.

4. LUAW between sunset and sunrise is prohibited at any intersection.

5. LUAW is prohibited at an intersection that is not visible from the Tower, unless the position of the aircraft can be verified by the ASDE-X.

6. Withhold landing clearance for aircraft inbound to a runway where an aircraft has been issued a LUAW clearance, until the LUAW aircraft begins takeoff roll if:

(a) Conditions are less than a reported ceiling of 800 feet AGL or visibility less than 2 miles.

7-2-2 RESPONSIBILITIES.

a. LC must:

1. Correlate the aircraft position utilizing the ASDE-X before issuing a LUAW clearance if the departure point is not visible from the Tower.

2. State the full call sign, runway, and intersection, if applicable, when issuing a LUAW clearance.

3. Ensure a pilot read back for accuracy when issuing LUAW.

4. Inform aircraft that are issued a LUAW clearance of the closest traffic on final approach to the same runway or landing/departing intersecting runways

EXAMPLE - *"EDV5634, Runway 12L line up and wait, B737 three mile final."*
EXAMPLE - *"SKW3025, Runway 22 at Charlie 6, line up and wait, traffic will depart Runway 12R."*

5. When simultaneously holding aircraft on intersecting runways, issue a traffic advisory to each aircraft.

EXAMPLE – *"DAL1844, Runway 12R, line up and wait, traffic holding on Runway 22."*

6. Inform the closest aircraft on final approach of aircraft holding in position on the same or intersecting runway.

EXAMPLE – *"SKW3027, Runway 12L, cleared to land, traffic holding in position."*

7-2-3 LUAW AND INTERSECTION DEPARTURES WAIVERS.

Personnel are authorized to taxi aircraft to line up and wait on Runway 12R at Taxiways M, A8/W8 and A9/W9; and Runway 4 at Taxiways S, T, and M2/C2, between sunset and sunrise. The following special provisions apply:

a. MSP must not issue a LUAW clearance when the subject intersection is not visible from the Tower

b. The runway must be used as a departure-only runway

c. MSP must not authorize multiple aircraft to LUAW on the same runway simultaneously.

d. Do not authorize aircraft to LUAW simultaneously on intersecting runways during the periods of sunset to sunrise.

Section 3 – Converging Runway Operations

7-3-1 RUNWAYS 30L/30R AND RUNWAY 35 CONVERGING RUNWAY OPERATIONS (CRO).

Simultaneous operations to converging runways are authorized for Runways 30L/R and Runway 35. Exceptions to these procedures are authorized for emergency and unusual situations only.

7-3-2 IMPLEMENTATION.

The CIC must ensure that the ATIS message includes the configuration option in use prior to implementing simultaneous operations to converging runways.

a. ILS V 35, ILS/LOC/RNAV 30L, ILS/LOC/RNAV 30R.

b. Visual approaches to Runways 35, 30L and 30R.

c. ILS V 35 and Visual approaches to Runway 30L and/or 30R.

d. Visual approaches to Runway 35 and ILS/LOC/RNAV approaches to Runways 30L/R.

e. RNAV (RNP) Y/RNAV (GPS) Z Runway 35 and ILS/LOC/RNAV Z Runways 30L/R.

f. RNAV (RNP) Y/RNAV (GPS) Z Runway 35 and Visual Approaches Runways 30L/R

g. RNAV (RNP) Y approaches to Runways 30L and 30R are NOT AUTHORIZED in conjunction with RNAV (RNP) Y approaches to Runway 35.

7-3-3 USE OF THE ARRIVAL DEPARTURE WINDOW.

Arrival Departure Window: a depiction presented on an air traffic control display, used by the controller to prevent possible conflicts between arrivals to, and departures from, a runway. The ADW identifies the point on the final approach course by which a departing aircraft must have begun takeoff.

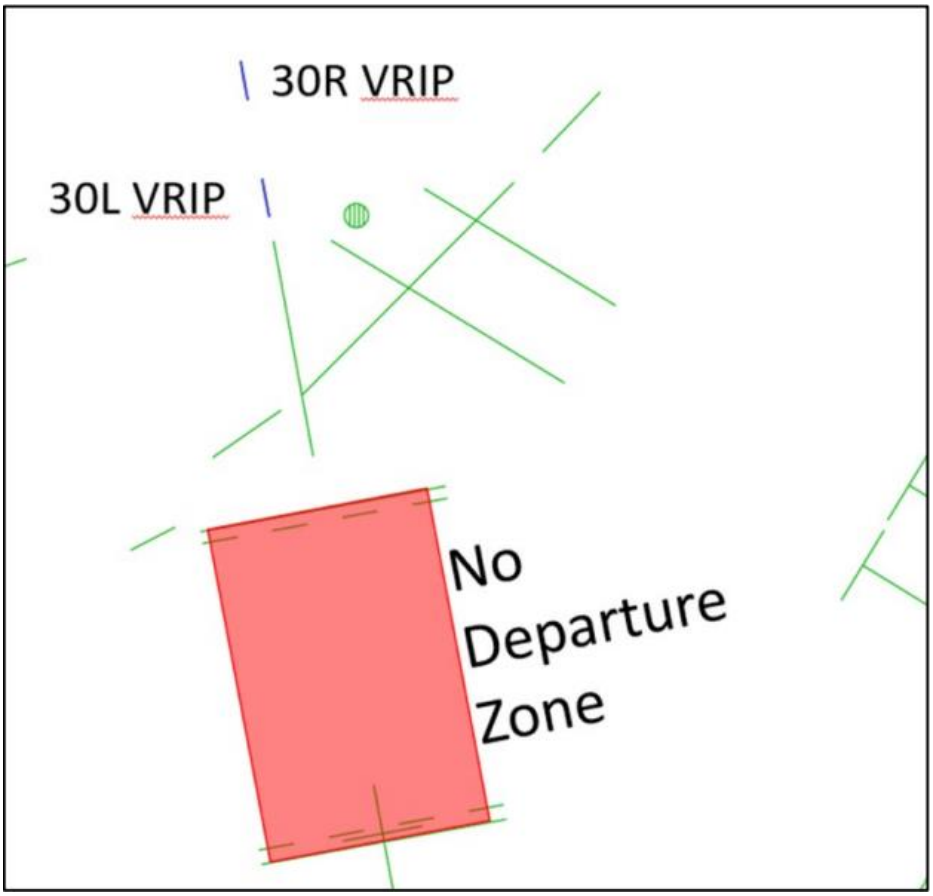
Runway Pair	Front Gate (NM)	Rear Gate (NM)
35/30L	2.26	.39
35/30R	2.35	.32

a. Definitions.

1. Converging Runway Display Aid (CRDA). A STARS tool which projects an aircraft's position on final onto another final using a "ghost" target.

2. No Departure Zone (NDZ). The area not within the ADW. If an arrival to RWY 35 is in this area while an aircraft departs RWY 30L/R, the risk of collision should a RWY 35 arrival go-around increases exponentially. SEE FIGURE 7-2.

FIGURE 7-2. No Departure Zone and Virtual Runway Intersection Points (VRIPs)



b. Procedures.

1. GCS/GCW:

(a) Coordinate with LCS/LCW to determine where to stage Runway 30L crossers when LAHSO is not available.

2. LCN:

(a) Issue takeoff clearances that will ensure a Runway 30R aircraft starts departure roll when converging aircraft is outside of the NDZ.

***NOTE** – The CRO procedure is designed for aircraft to depart Runway 30R prior to the Runway 35 arrival entering the NDZ. Wake turbulence applicable aircraft should wait to begin takeoff roll until the Runway 35 arrival is landing assured.*

(b) Runway 30R headings:

(1) LCN owns headings 315° clockwise through 360° inclusive.

(2) Assign an initial heading of 320° to all aircraft.

(3) Once the Runway 35 arrival is landing assured, further turns on course should be issued.

(4) LEINY, DWN, and SMERF departures should remain on a 320° heading.

(5) Do not issue turns that will track south of runway heading prior to the departing aircraft passing the Virtual Runway Intersection Point (30R VRIP). SEE FIGURE 7-2.

(c) In the event that an aircraft will not be or is not compliant with the ADW take one of the following steps:

(1) If takeoff clearance has not been issued, continue to hold in position or vacate the runway.

***NOTE** – This option may require RWY 30R arrival to go-around.*

(2) If takeoff clearance has been issued, cancel takeoff clearance and then hold in position or vacate the runway.

***NOTE** – This option may require RWY 30R arrival to go-around.*

(3) If an aircraft is not able to comply with steps above inform LCW of the noncompliance and the need to take corrective action.

(d) Inform tower cab of all go-arounds and intentions.

3. LCS:

(a) Issue takeoff clearances that will ensure a Runway 30L aircraft starts departure roll when converging aircraft is outside of the NDZ.

***NOTE** – The CRO procedure is designed for aircraft to depart Runway 30L when the Runway 35 arrival exits the NDZ. Wake turbulence applicable aircraft should wait to begin takeoff roll until the Runway 35 arrival is landing assured.*

(b) Runway 30L headings:

(1) LCS owns headings 260° through 300° inclusive

(2) Do not issue turns that will track south of runway heading prior to the departing aircraft passing the Virtual Runway Intersection Point (30L VRIP). SEE FIGURE 7-2.

(3) LEINY, DWN, and SMERF aircraft must be coordinated with LCN and may be assigned a 300° heading.

(c) In the event that an aircraft will not be or is not compliant with the ADW take one of the following steps:

(1) If takeoff clearance has not been issued, continue to hold in position or vacate the runway.

***NOTE** – This option may require RWY 30L arrival to go-around.*

(2) If takeoff clearance has been issued, cancel takeoff clearance and then hold in position or vacate the runway.

***NOTE** – This option may require RWY 30L arrival to go-around.*

(3) If an aircraft is not able to comply with steps above inform LCW of the noncompliance and the need to take corrective action.

(d) Inform tower cab of all go-arounds and intentions.

4. LCW:

(a) LCW owns the heading of 040o and an altitude of 4,000 feet (“40 and 4”) within tower airspace. Other headings/altitudes must be coordinated with LCS/LCN.

(b) Solicit parking information for aircraft landing Runway 35.

(c) Issue a wake turbulence traffic advisory when a heavy aircraft is landing or departing Runway 30L or Runway 30R.

EXAMPLE – *“Runway 35 cleared to land, caution wake turbulence, heavy A350 departing/landing/holding in position Runway 30L.”*

(d) When LAHSO is available, instruct all aircraft exiting Runway 35 needing to cross Runway 30L, to hold short of Runway 30L at W10 and monitor LCS.

(e) When LAHSO is not available, instruct all aircraft exiting Runway 35 needing to cross Runway 30L, to hold short of Runway 30L as coordinated with GCS/LCS and monitor LCS.

(f) When informed by LCN/LCS of ADW noncompliance the correlating Runway 35 arrival should be sent around and issued heading(s) and altitude(s) as coordinated with LCN/LCS.

(g) Inform the entire tower cab when an aircraft is executing a missed approach and intentions. Follow the procedures as outlined in paragraph 7-3-4.

EXAMPLES – *Going around, Runway 35. 40 and 4.*
Going around, Runway 35. I want to go 350 at 6.

7-3-4 MANAGEMENT OF BALKED LANDINGS DURING SIMULTANEOUS OPERATIONS ON CONVERGING RUNWAYS 35, 30L, AND 30R.

Runway 35 aircraft executing a go-around/balked landing inside of the missed approach point, based on known and observed traffic, must be issued an initial altitude at or above 2,500’ and issued a turn as follows:

a. Take IMMEDIATE action to resolve traffic conflicts if there are departures on or departing Runway 30L/30R (traffic alerts, traffic advisories, and/or control instructions).

NOTE – *When appropriate, issue a climbing right turn and assign a heading to take the aircraft over the center of the airport. When the aircraft is over the center of the airport, assign a northeasterly heading of approximately 040º, and coordinate with the appropriate TRACON operational positions.*

b. If traffic permits, issue control instructions to direct the go-around/balked landing aircraft into the dispersal airspace and coordinate with the appropriate TRACON operational position(s)

NOTE – *It is imperative the West Local Controller be prepared to comply with this paragraph by having a keen awareness of not only the Runway 35 arrivals, but the entirety of the operations, including where the departing aircraft off Runways 30L/30R are in relation to the Runway 35 arrival should that aircraft execute a go-around/balked landing.*

Section 4 – Opposite Direction Operations

7-4-1 DEFINITION.

a. Opposite Direction Operations (ODO): IFR/VFR Operations conducted to the same or parallel runway where an aircraft is operating in a reciprocal direction of another aircraft arriving, departing, or conducting an approach.

b. Cutoff Point: The Cutoff Point is 10 NM from the threshold of the Runway of intended landing.

***NOTE** – Aircraft on a downwind or a vector away from the airport are not considered within the Cutoff Point until established on a base leg that falls within the Cutoff Point.*

7-4-2 RESPONSIBILITIES.

a. MSP and M98 share the responsibilities to coordinate ODO and issue traffic advisories as prescribed in this agreement.

b. MSP is responsible to apply the cutoff point(s) between arriving and departing aircraft.

c. M98 is responsible to apply the cutoff point(s) between successive ODO arrivals.

7-4-3 PROCEDURES FOR AIRCRAFT RECEIVING IFR SERVICES.

a. General. These procedures apply when there are two aircraft receiving IFR services.

1. ODO procedures in this paragraph are applicable when two aircraft will execute approaches to opposite ends of the same runway, or an aircraft will depart prior to an arrival on an opposite direction approach to the same or parallel runway.

2. Traffic advisories must be issued to both the arriving and departing aircraft.

***EXAMPLES** – "OPPOSITE DIRECTION TRAFFIC (distance) MILE FINAL, (type aircraft)."*
"OPPOSITE DIRECTION TRAFFIC DEPARTING RUNWAY (number), (type aircraft)."
"OPPOSITE DIRECTION TRAFFIC (position), (type aircraft)."

3. Do not allow opposite direction same runway operations with opposing traffic inside the cutoff point unless an emergency situation exists.

4. Use of visual separation is not authorized for aircraft receiving IFR services that are conducting ODO to the same runway.

5. Ensure that ODO conducted from parallel runways provide for a turn away from the opposing traffic when inside of the cutoff point to the other runway. Visual separation may be applied after the turn away from conflicting traffic is issued.

b. Coordination.

1. MSP and M98 are responsible for initiating coordination required to accomplish an opposite direction arrival or departure.

2. MSP must verbally request opposite direction departures with M98.

3. M98 must verbally request opposite direction arrivals with MSP.

c. Cutoff Procedures: For aircraft receiving IFR services and conducting opposite direction same runway operations:

1. A departing aircraft must be airborne and issued a turn to avoid conflict prior to an aircraft reaching the Cutoff Point.

2. An aircraft performing a go-around, low approach, or missed approach must be issued a turn to avoid conflict prior to an aircraft reaching the Cutoff Point.

3. An arriving aircraft must cross the runway threshold prior to an aircraft reaching the Cutoff Point.

4. If the above conditions are not met, action must be taken to ensure control instructions are issued to protect the integrity of the Cutoff Points.

7-4-4 PROCEDURES FOR AIRCRAFT RECEIVING VFR SERVICES.

a. Ensure VFR/IFR aircraft are issued a turn to avoid conflict with opposing IFR/VFR traffic.

b. If coordination with another position is required, MSP must state the phrase “Opposite Direction”.

c. MSP must issue traffic to both aircraft and indicate the direction that the departure will turn (arrival/departure) or the location of the opposing aircraft on final (arrival/arrival).

d. If the above conditions are not met, action must be taken to ensure control instructions are issued to protect the integrity of the Cutoff Points.

7-4-5 ADDITIONAL PROCEDURES FOR MIDNIGHT OPERATIONS.

The following requirements apply to opposite-direction midnight operations when landing Runways 30L/30R and departing Runways 12L/12R.

a. Arrival ATIS should advertise Runway 30s; Departure ATIS should advertise Runway 12s.

b. MSP must APREQ all Runway 12 departures with

Section 5 – SWAP and TMU

7-5-1 SWAP Responsibilities

Severe Weather Avoidance Procedures (SWAP) are initiated between Minneapolis Tower and Minneapolis Center on an as-needed basis. Coded Departure Routes (CDR) are used for aircraft able to accept SWAP routings, otherwise full route clearances must be used. For further information, refer to the ZMP Traffic Management Coordinator/Traffic Management Specialists.

a. When Minneapolis Center (ZMP) has issued a SWAP, the Local Control position (LC) will become the primary person responsible for identifying aircraft that require a SWAP.

b. Flight Data/Clearance Delivery (FD/CD) must identify subsequent flight strips by indicating the appropriate SWAP route in the remarks section of the flight strip.

c. During a SWAP event there may be a TMU position open. This position is responsible for coordinating within ZMP, modifying flight plans, and issuing rerouted clearances to pilots as coordinated with the position responsible for Clearance Delivery.

d. When the aircraft begins taxiing, Ground Control (GC) will advise LC of the aircraft to be rerouted. LC will then advise the SWAP person to change the route of the affected aircraft.

e. Ground Control will instruct the aircraft to contact the appropriate frequency to receive the reroute. Reroutes must be handled by positions in the following order of preference:

(1) Clearance Delivery

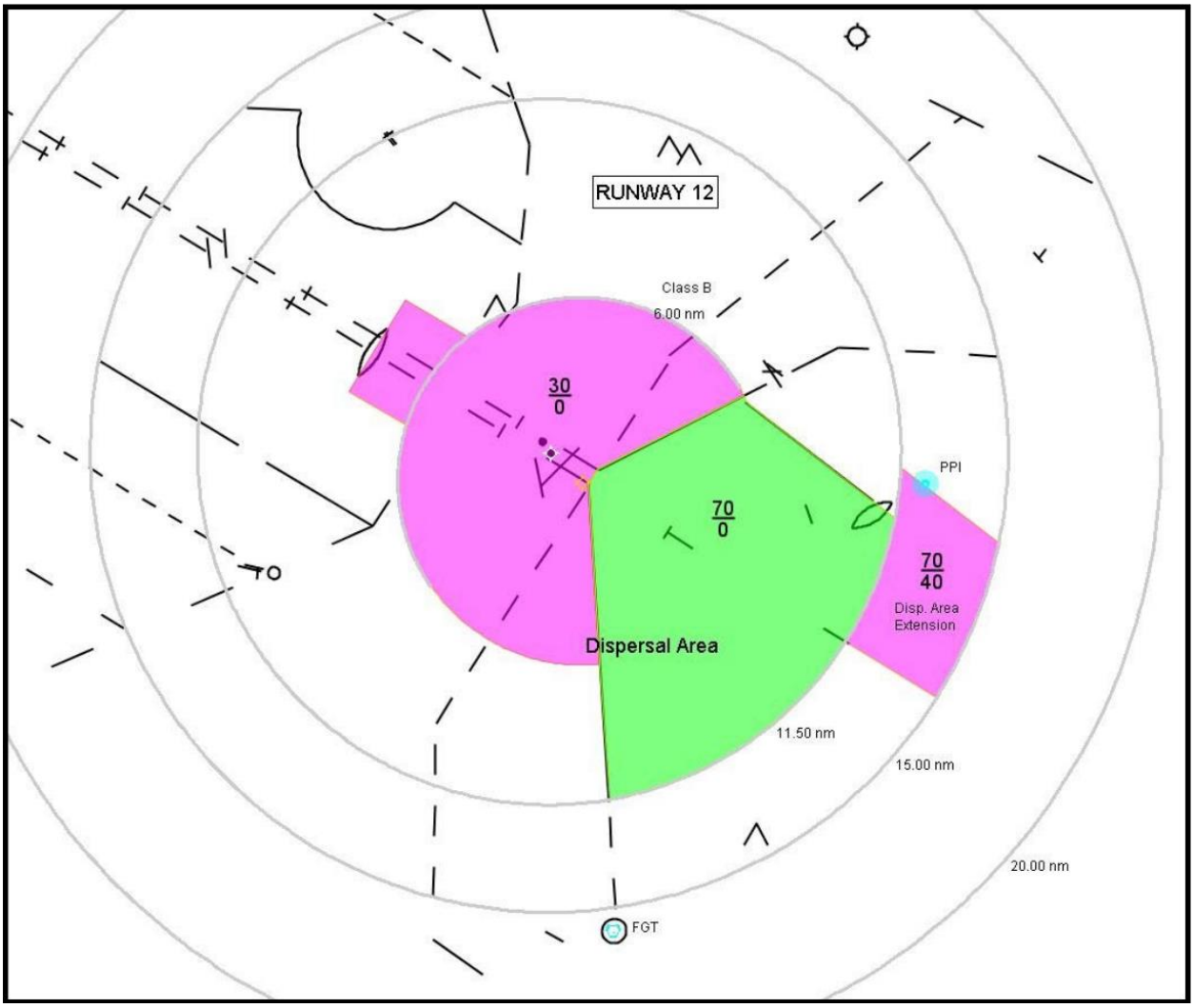
(2) Ground Control

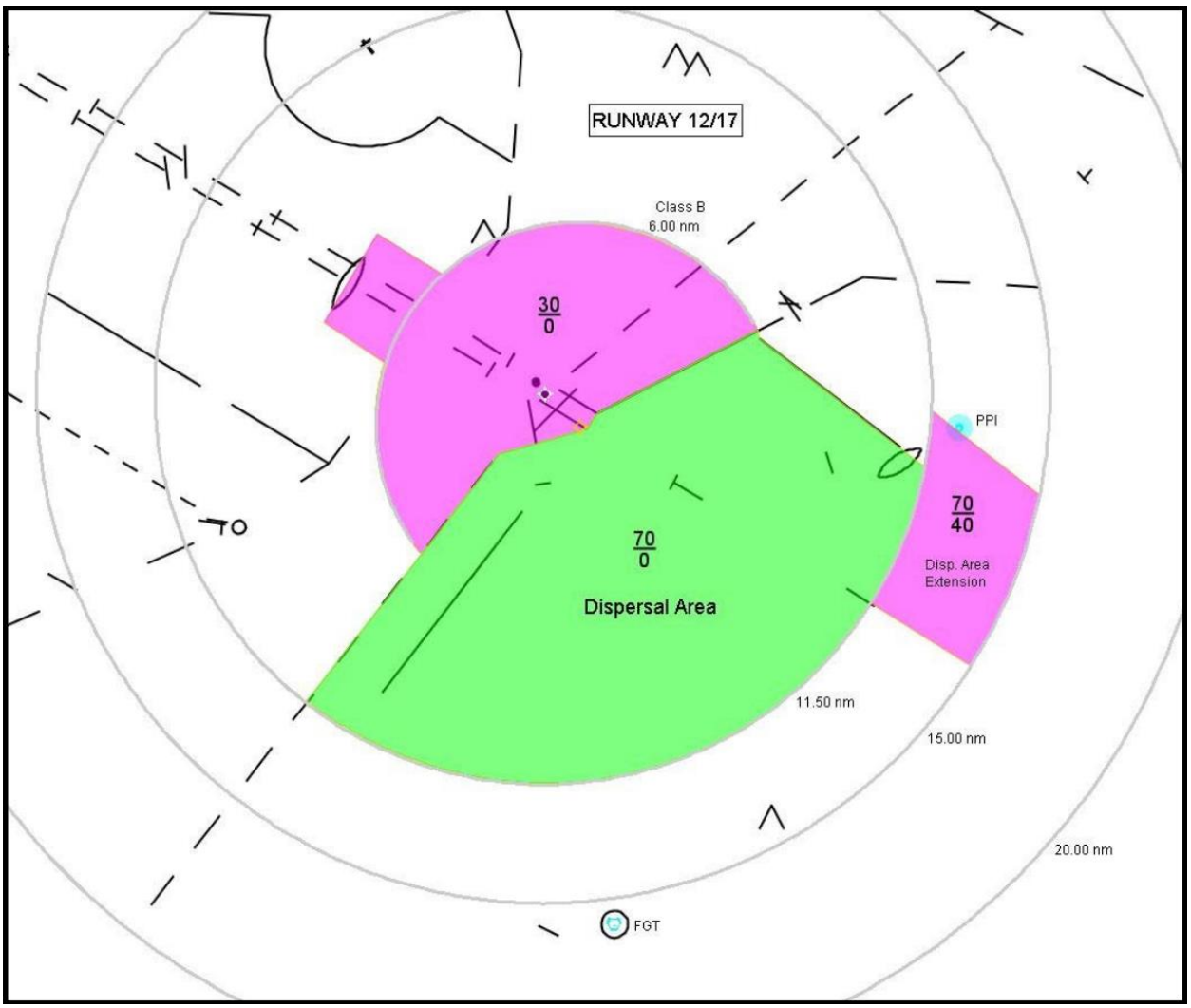
(3) Local Control

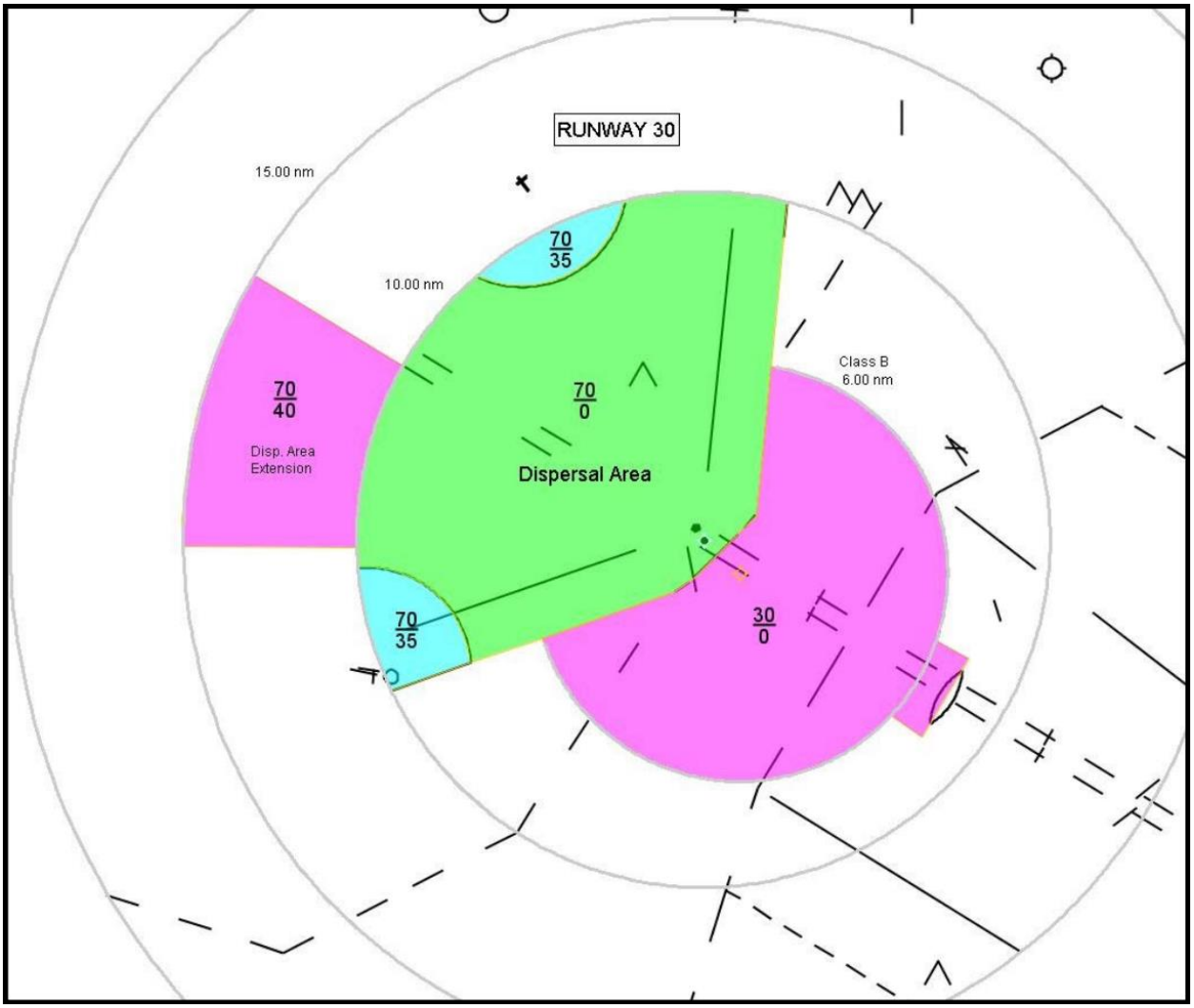
7-5-2 Traffic Management Unit.

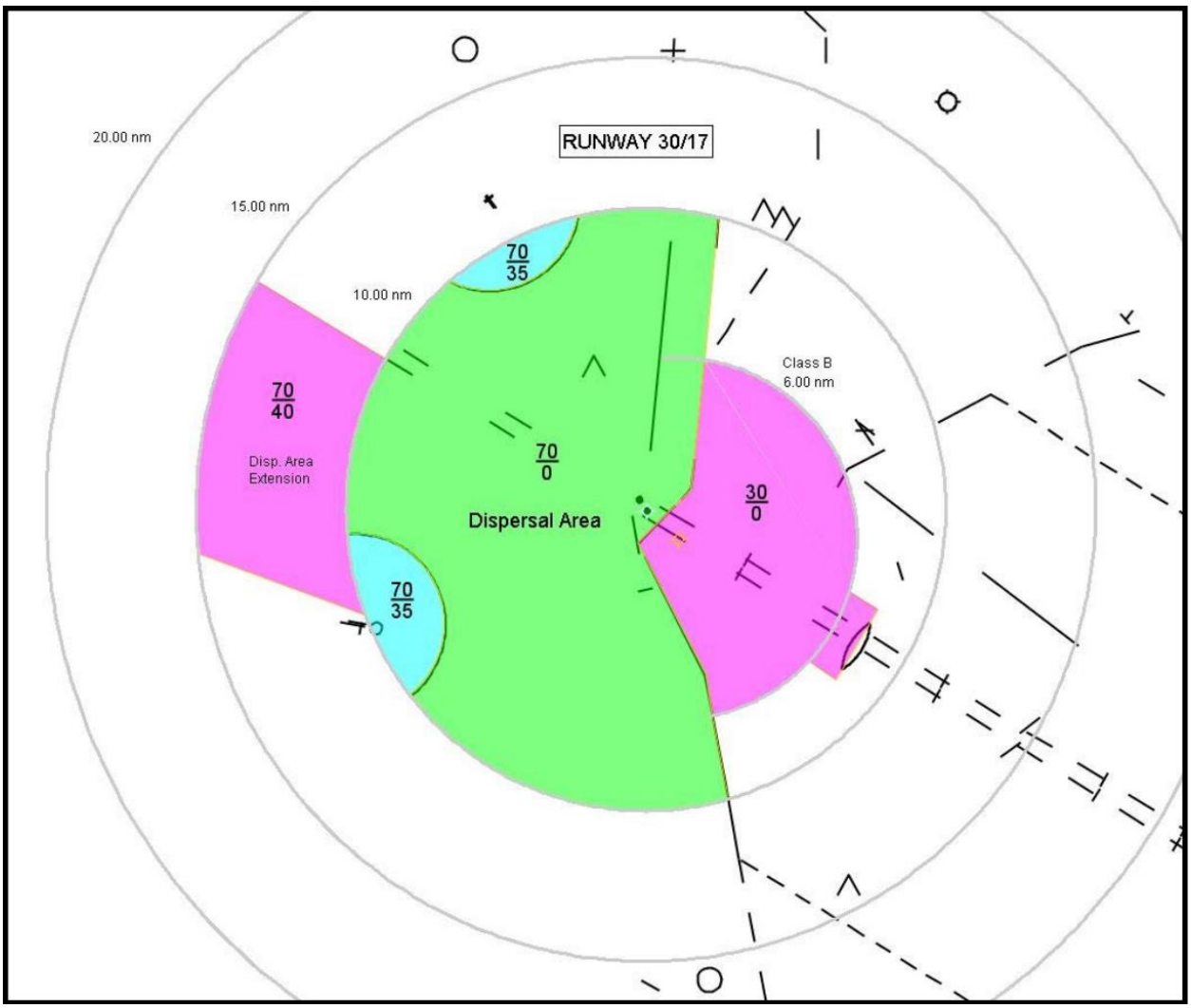
ZMP TMU will be utilized during periods of heavy traffic, severe weather, or any other situations requiring the presence of a Traffic Management Specialist/Coordinator. Traffic Management duties must be limited to those personnel who have completed the VATUSA National Traffic Flow Management Course and are appropriately briefed and certified to act in a Traffic Management role.

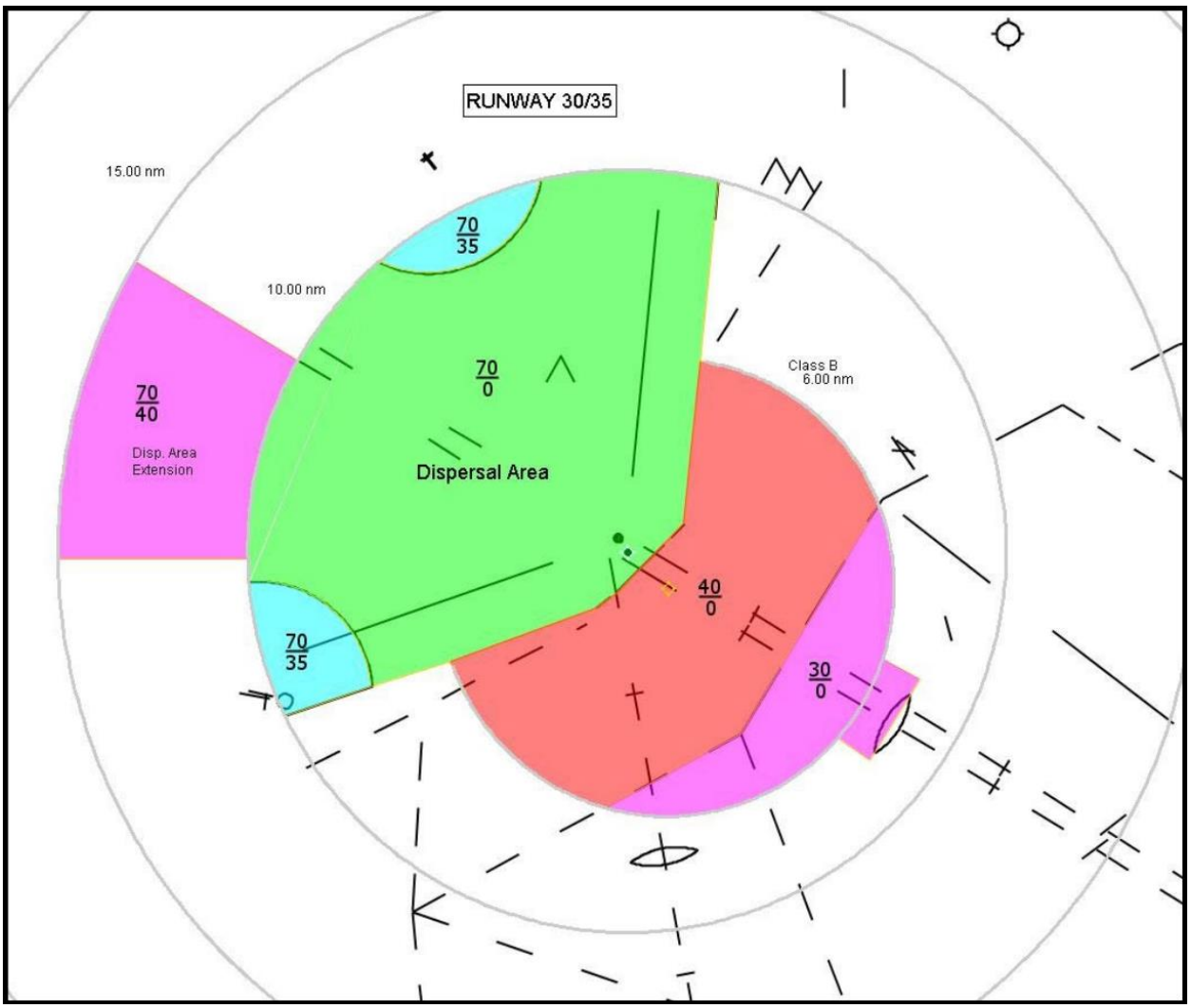
Appendix A MSP Tower Airspace

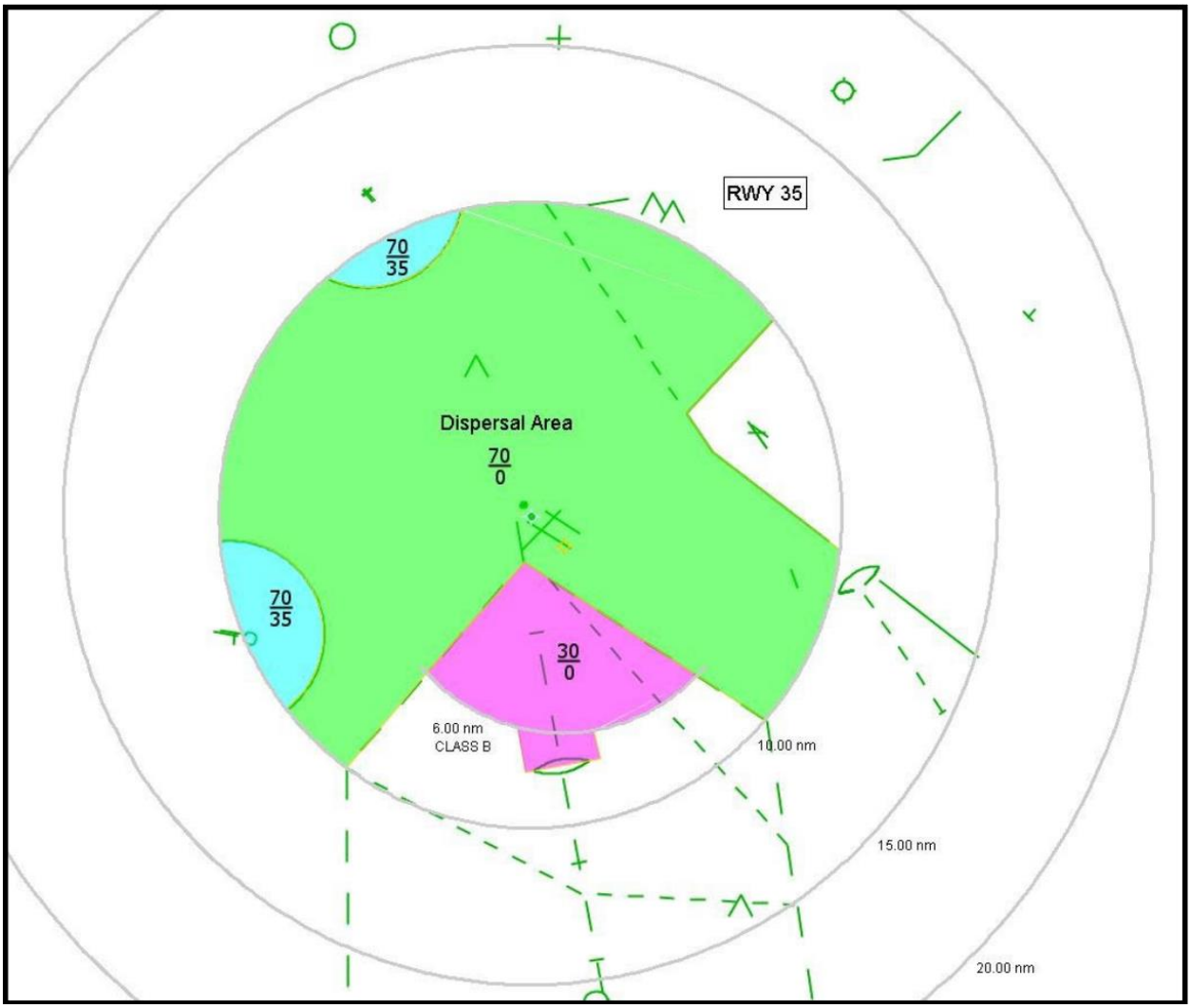


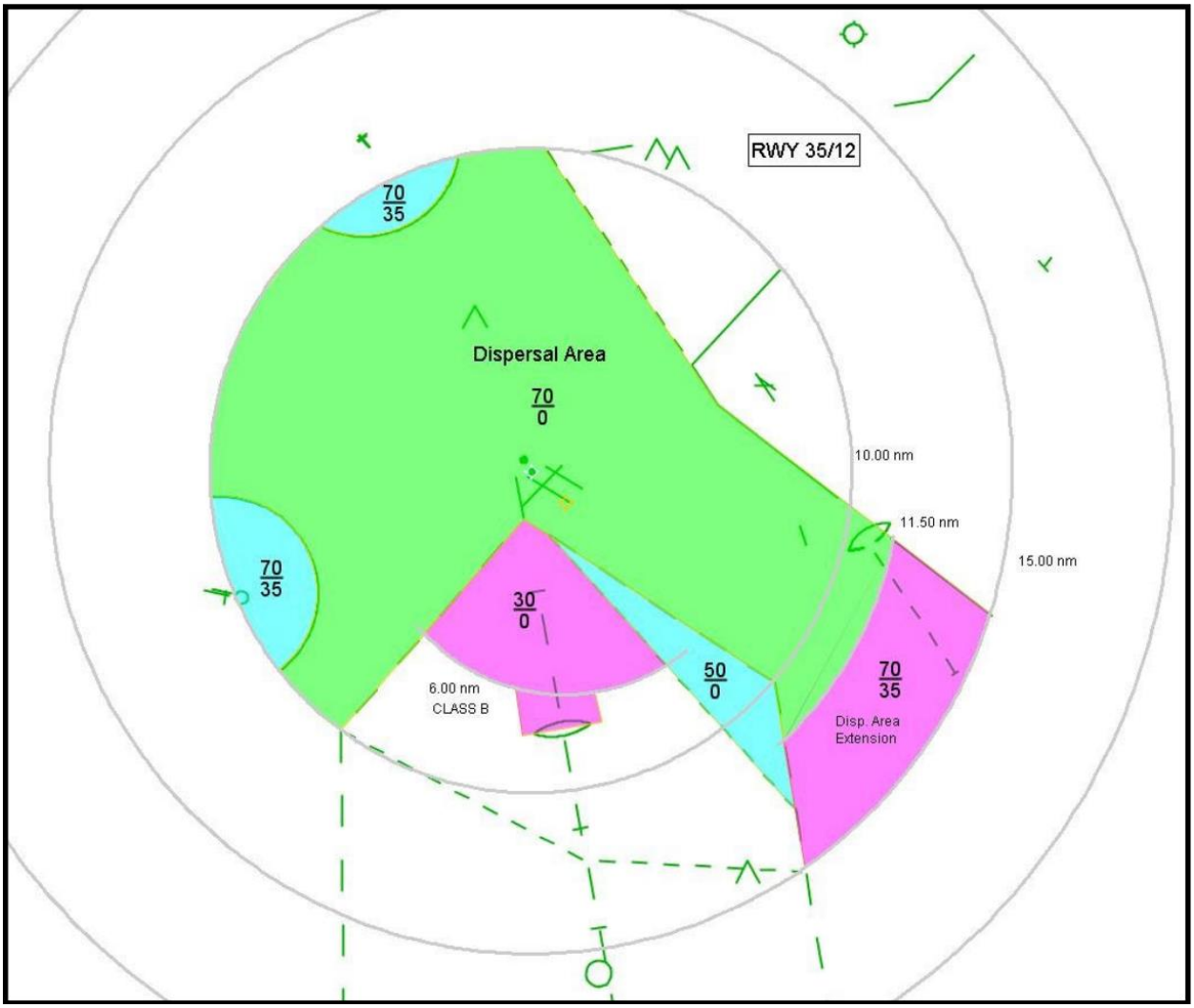

RUNWAY 12/17
Class B
6.00 nm
30
0
70
0
Dispersal Area
70
40
Disp. Area
Extension
PPI
11.50 nm
15.00 nm
20.00 nm
FGT

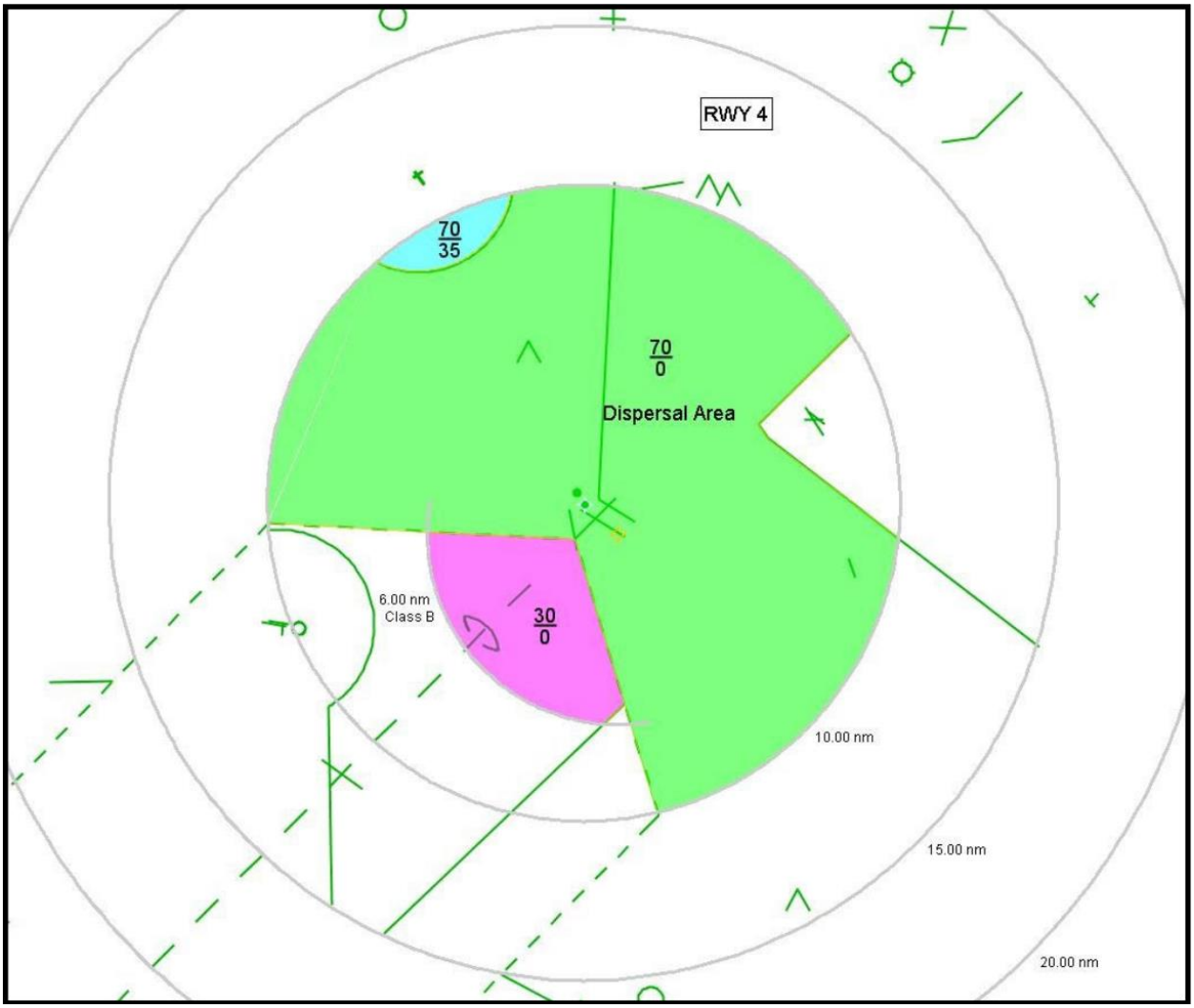

RUNWAY 30
15.00 nm
10.00 nm
70
35
70
40
Disp. Area
Extension
70
0
Dispersal Area
Class B
6.00 nm
70
35
30
0

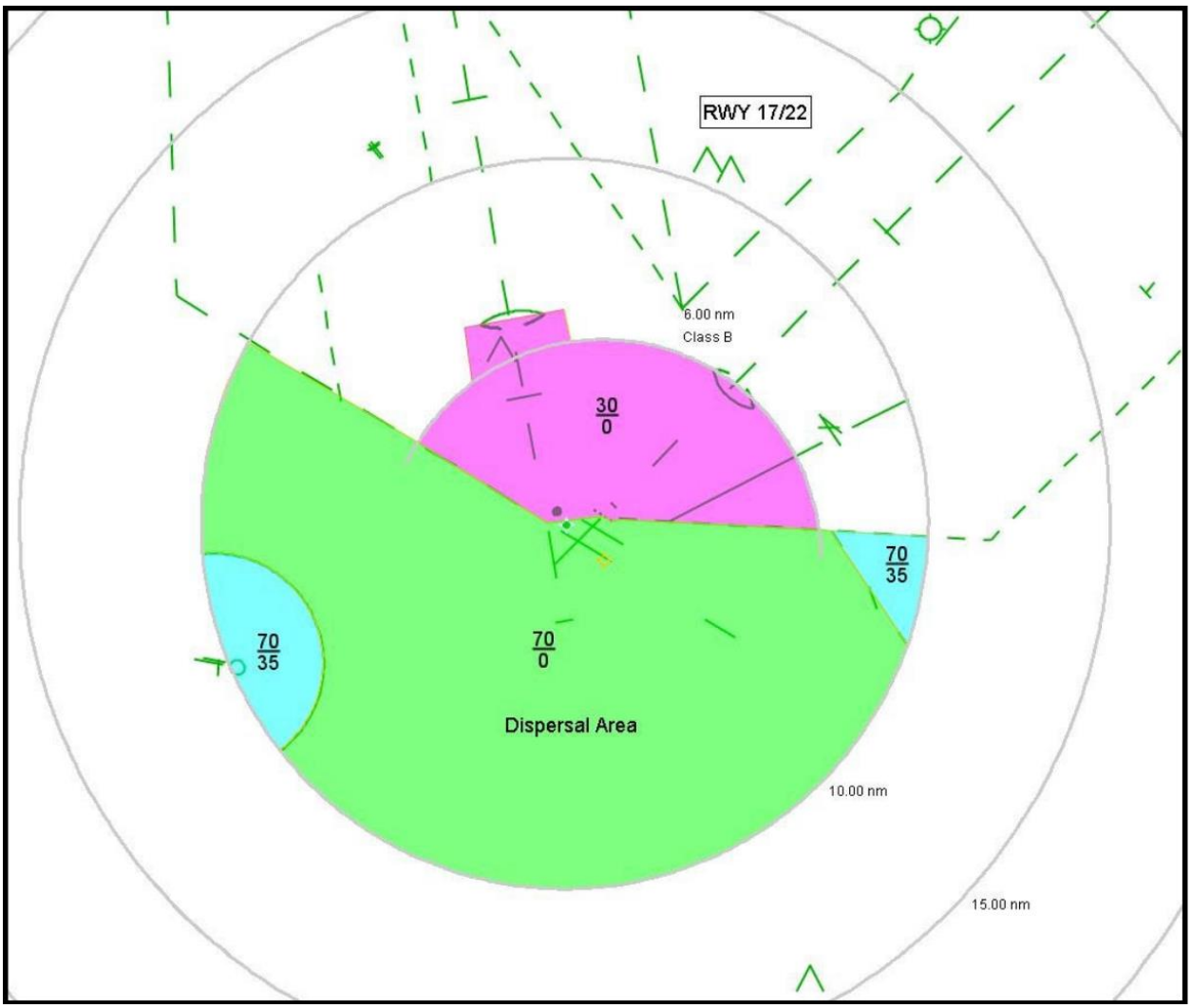

20.00 nm
15.00 nm
10.00 nm
RUNWAY 30/17
70
35
70
40
Disp. Area
Extension
70
0
Dispersal Area
70
35
Class B
6.00 nm
30
0

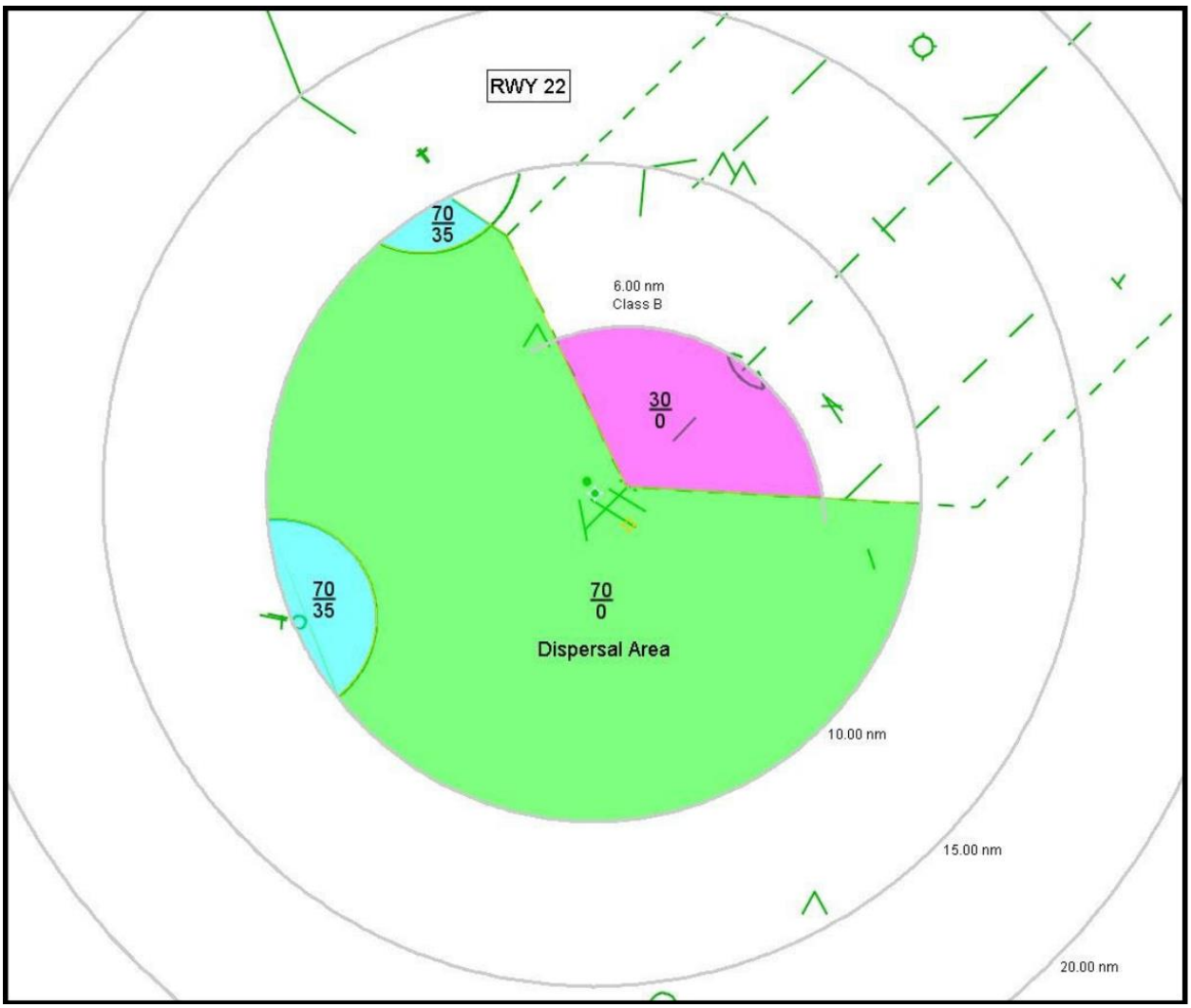

RUNWAY 30/35
15.00 nm
10.00 nm
70
35
70
0
70
40
Disp. Area
Extension
Dispersal Area
Class B
6.00 nm
40
0
30
0
70
35

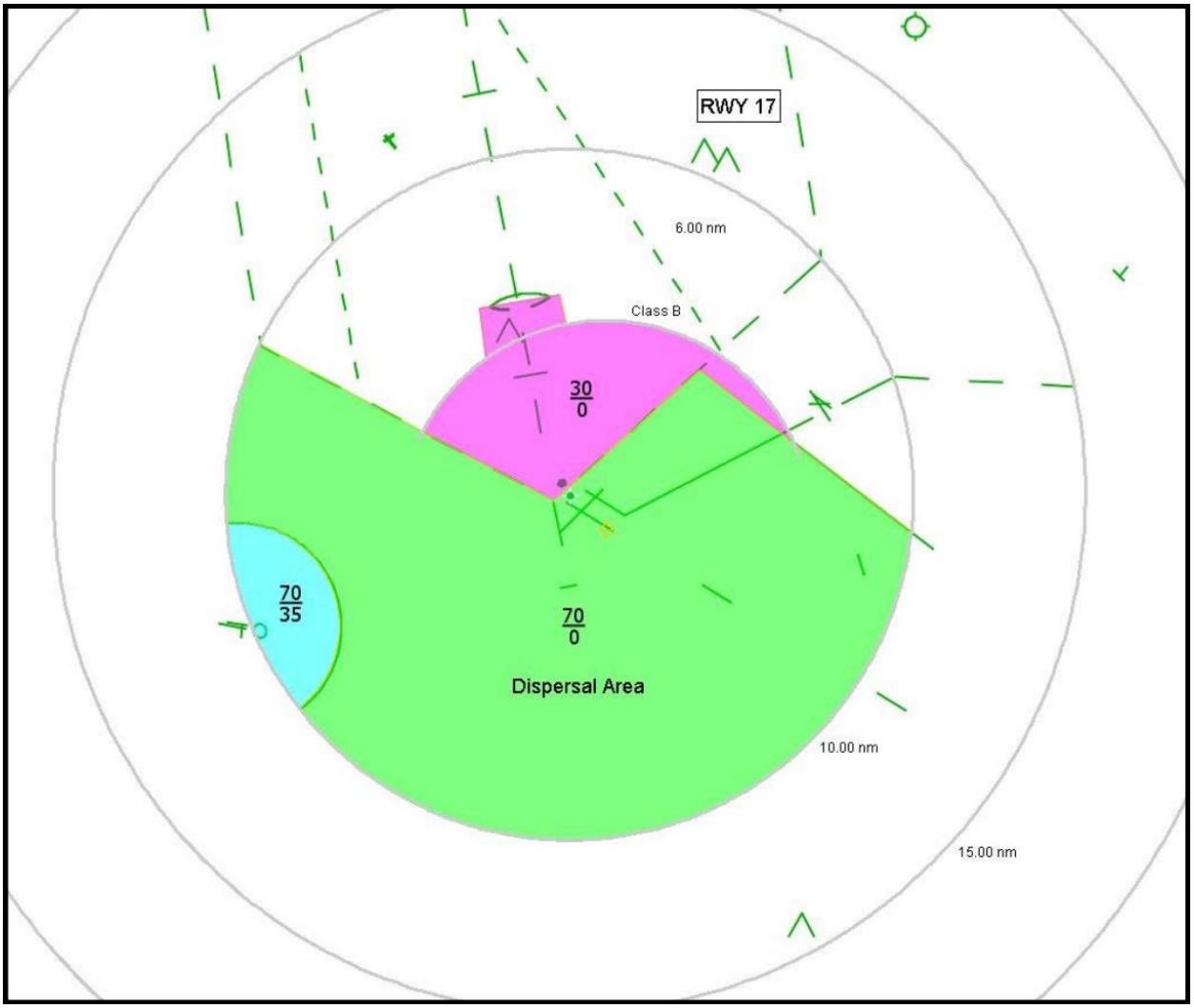

RWY 35
70
35
Dispersal Area
70
0
70
35
30
0
6.00 nm
CLASS B
10.00 nm
15.00 nm
20.00 nm


RWY 35/12
70
35
Dispersal Area
70
0
10.00 nm
11.50 nm
15.00 nm
70
35
30
0
6.00 nm
CLASS B
50
0
70
35
Disp. Area
Extension

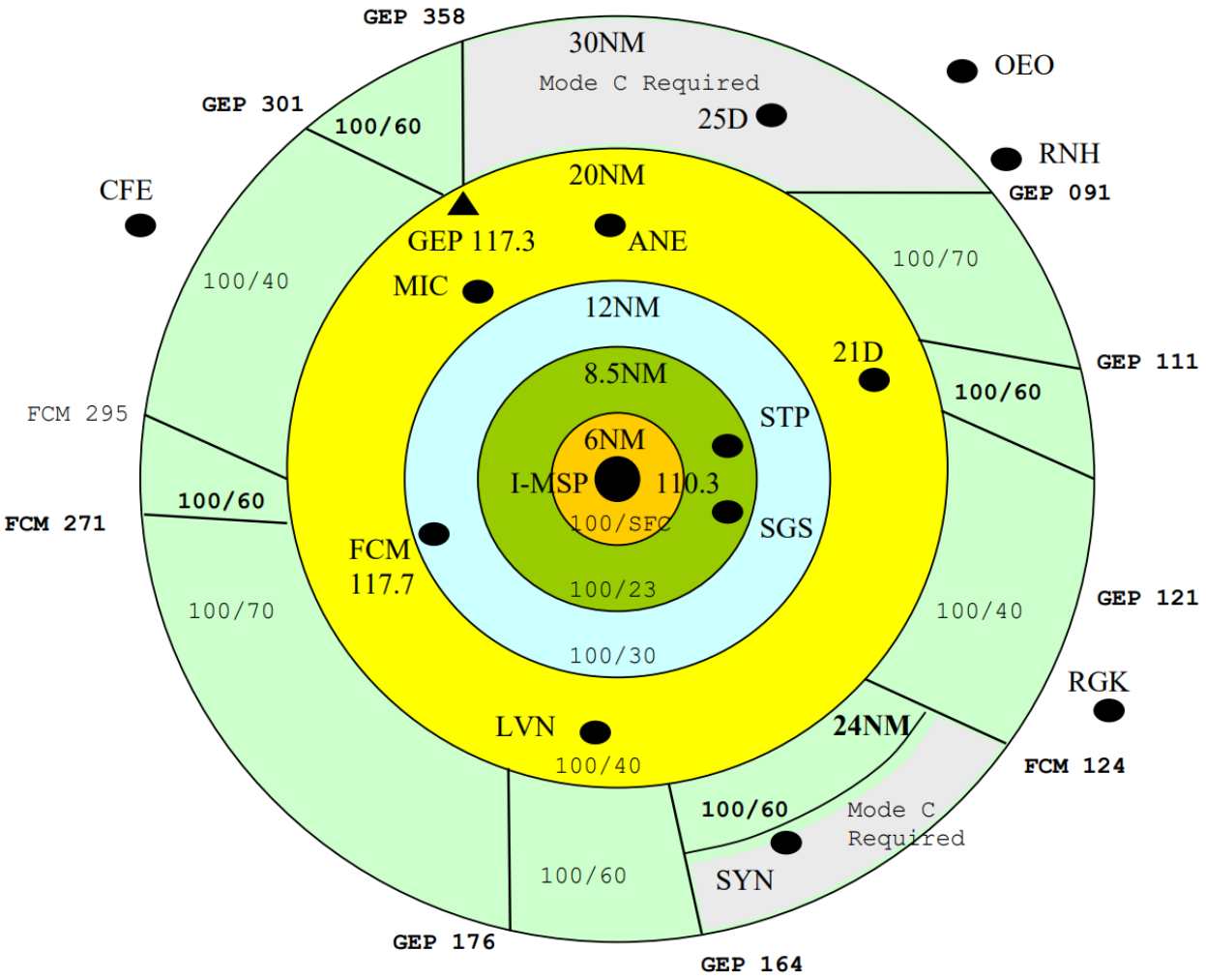

RWY 4
70
35
70
0
Dispersal Area
6.00 nm
Class B
30
0
10.00 nm
15.00 nm
20.00 nm


RWY 17/22
6.00 nm
Class B
30
0
70
35
70
0
70
35
Dispersal Area
10.00 nm
15.00 nm

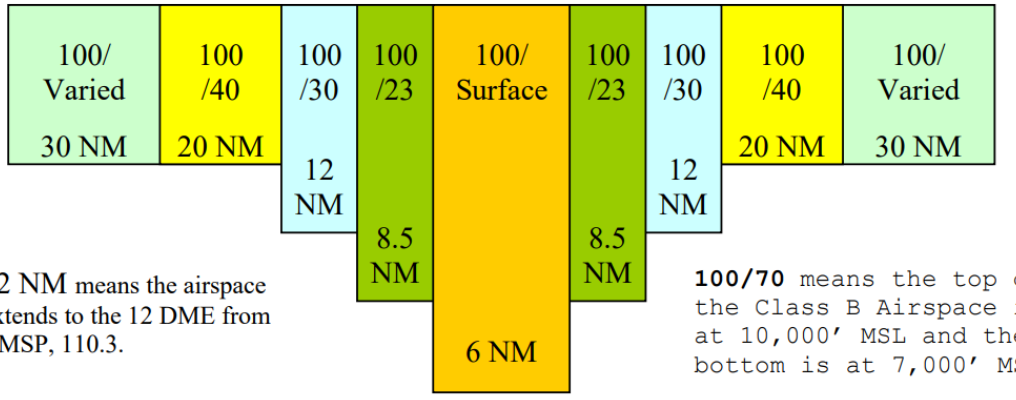

RWY 22
70
35
6.00 nm
Class B
30
0
70
35
70
0
Dispersal Area
10.00 nm
15.00 nm
20.00 nm


RWY 17
6.00 nm
Class B
30
0
70
35
70
0
Dispersal Area
10.00 nm
15.00 nm

Appendix B Bravo Airspace Map



Transponder with Mode C is required for operation within 30 DME of I-MSP.

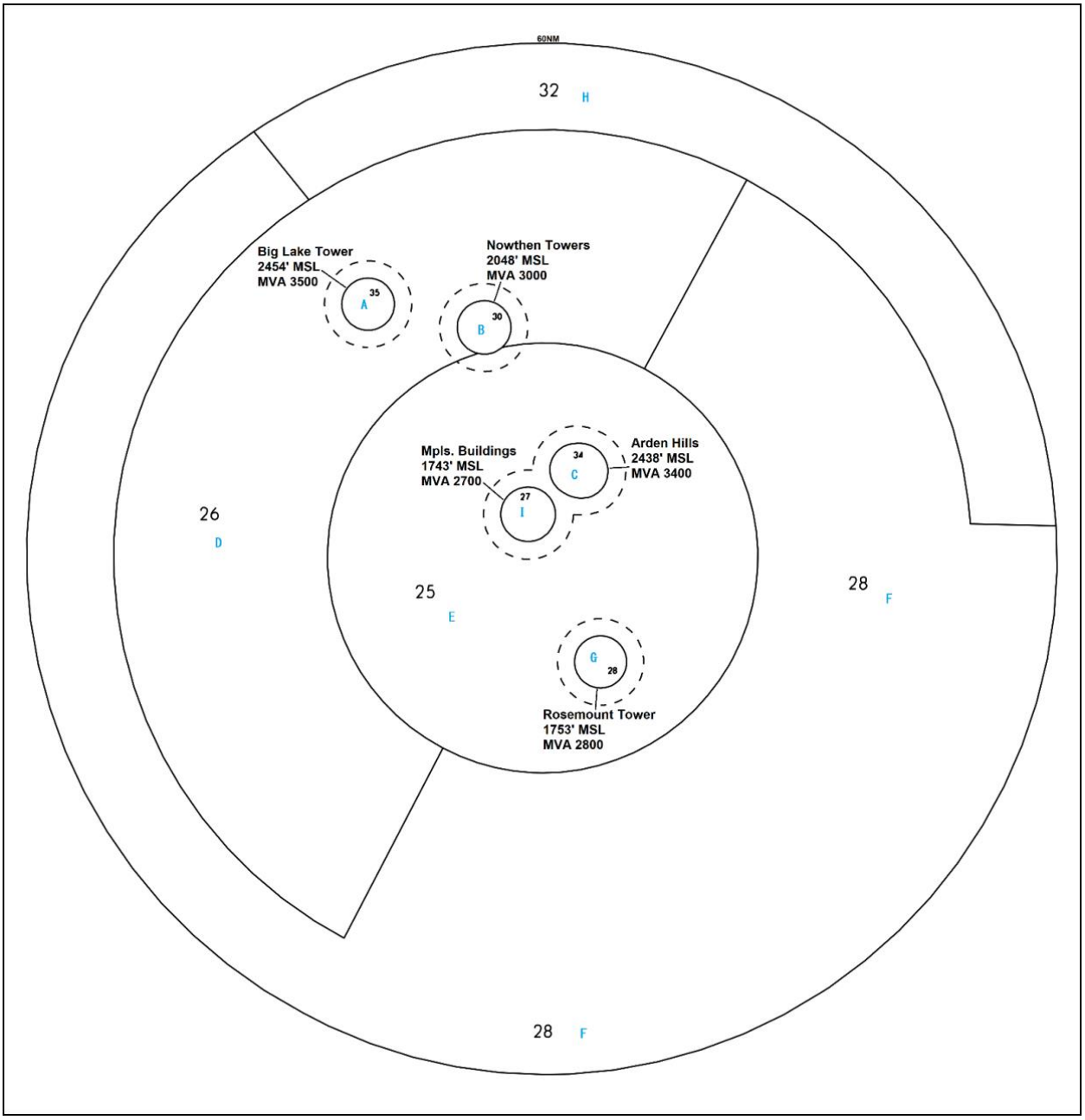


12 NM means the airspace extends to the 12 DME from I-MSP, 110.3.

100/70 means the top of the Class B Airspace is at 10,000' MSL and the bottom is at 7,000' MSL.

The Minneapolis – St. Paul Class B Airspace is centered on the Minneapolis DME Antenna (I-MSP) Ch 40, 110.3.

Appendix C MVA Chart and Obstruction Data



Appendix D Position Relief Briefing Checklists

MSP TOWER CAB CHECKLIST

SELF-BRIEF ITEMS (#1-3a via IDS)

- **A. STATUS INFORMATION AREAS**
- **B. ESTABLISH COMMS**
- **C. RUNWAY INFORMATION**
  - **a. Configuration**
  - **b. Verbally State Runway Status: unavailable, closed, occupied**
- **D. FLOW CONTROL**
- **E. AIRPORT ACTIVITIES**
- **F. TRAFFIC**
  - **a. Aircraft Cleared For Takeoff/To Land**
  - **b. Diverging Headings in Use**
  - **c. Primary Target Only**
  - **d. Point Outs**
  - **e. VFR Advisories (Class B) Aircraft**
  - **f. Special Activity Aircraft Landing or Departing, Off Duty Runways, Practice Approaches**
  - **g. Aircraft Standing By or Holding**
  - **h. Coordination Agreements With Other Positions**
  - **i. Special Problems, Requests or Instructions**

RUNWAY CHANGE CHECKLIST

1. **As instructed by the TRACON CIC, coordinate with Tower and all TRACON positions the last arrival and departure on the current runway and the first arrival on new runway. Coordinate with Departure and Satellite positions to establish resolution of conflicting traffic situations in new ACDA airspace during transition.**
2. **Advise Arrival Controllers when the new ACDA is available.**
3. **Coordinate with Tower and all TRACON positions to begin departing on new runway.**
4. **When changing from a parallel runway configuration to a parallel and 17/35 runway configuration, coordinate with Departure and Satellite positions to obtain/release airspace.**
5. **When changing to 30/17, remind Feeder and Arrival, if staffed, of 8,000 ft. airspace base.**

Appendix E Scratch Pad Entries

MSP Arrivals

For aircraft executing a visual approach, instrument approach, and for VFR arrival aircraft, use the following scratch pad entries:

RUNWAY	RNAV(GPS)	RNAV(RNP)	ILS/LOC	VISUAL
12L	ZL1	YL1	12L	VL1
12R	ZR1	YR1	12R	VR1
30L	ZL3	YL3	30L	VL3
30R	ZR3	YR3	30R	VR3
17			L17	V17
35	Z35	Y35	I35	V35
4	G04		L04	V04
22	G22		L22	V22

Visual Separation

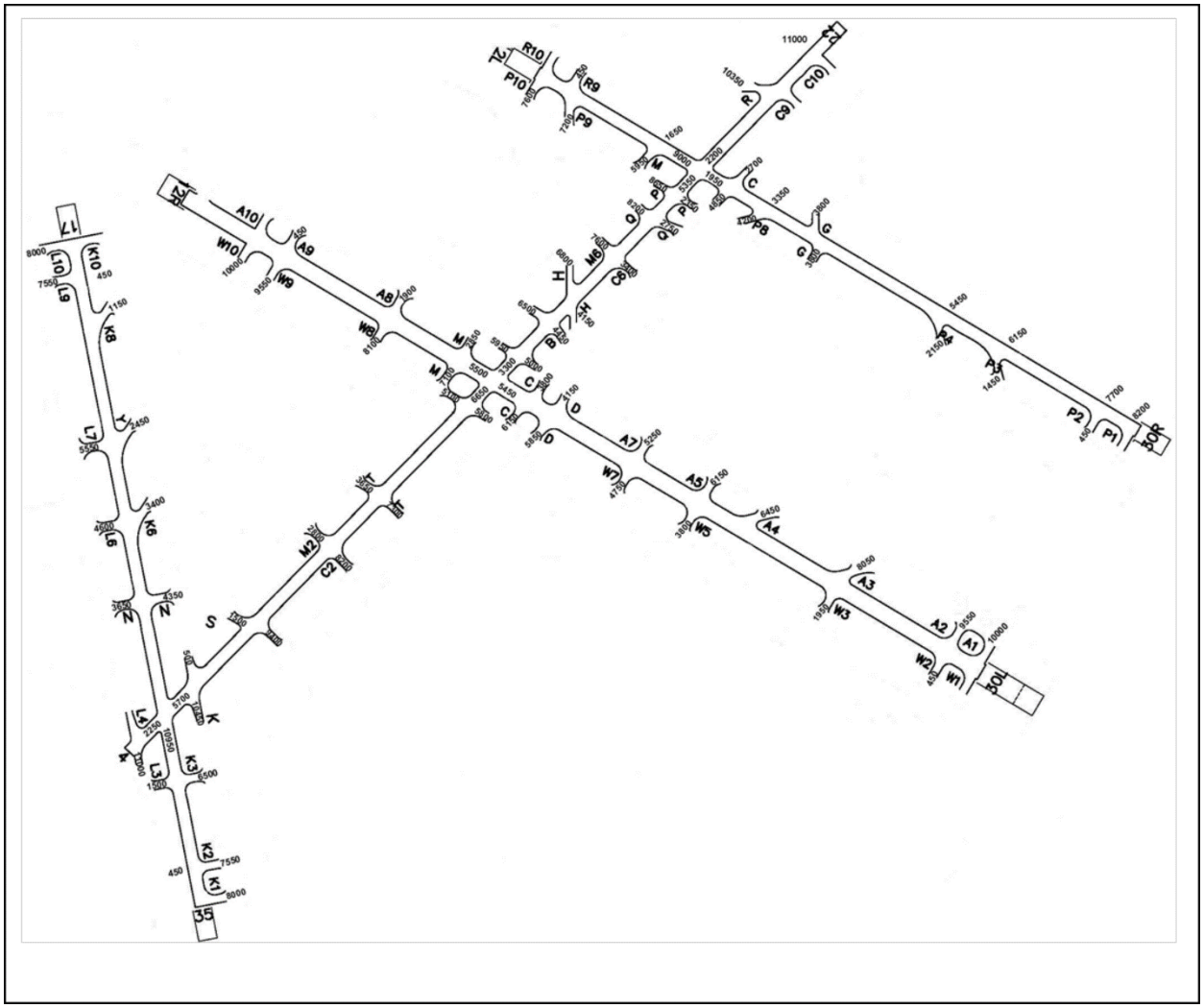
When an aircraft has been cleared for a visual approach, and the pilot has assumed responsibility for separation from the preceding aircraft, the letters “VV” must be entered as follows:

MSP Arrivals	
Runways 12L and 30R	**VVN**
Runways 12R and 30L	**VVS**
Runway 4	**VV4**
Runway 22	**VV2**
Runway 35	**VV5**
Runway 17	**VV7**

Other Approved Entries

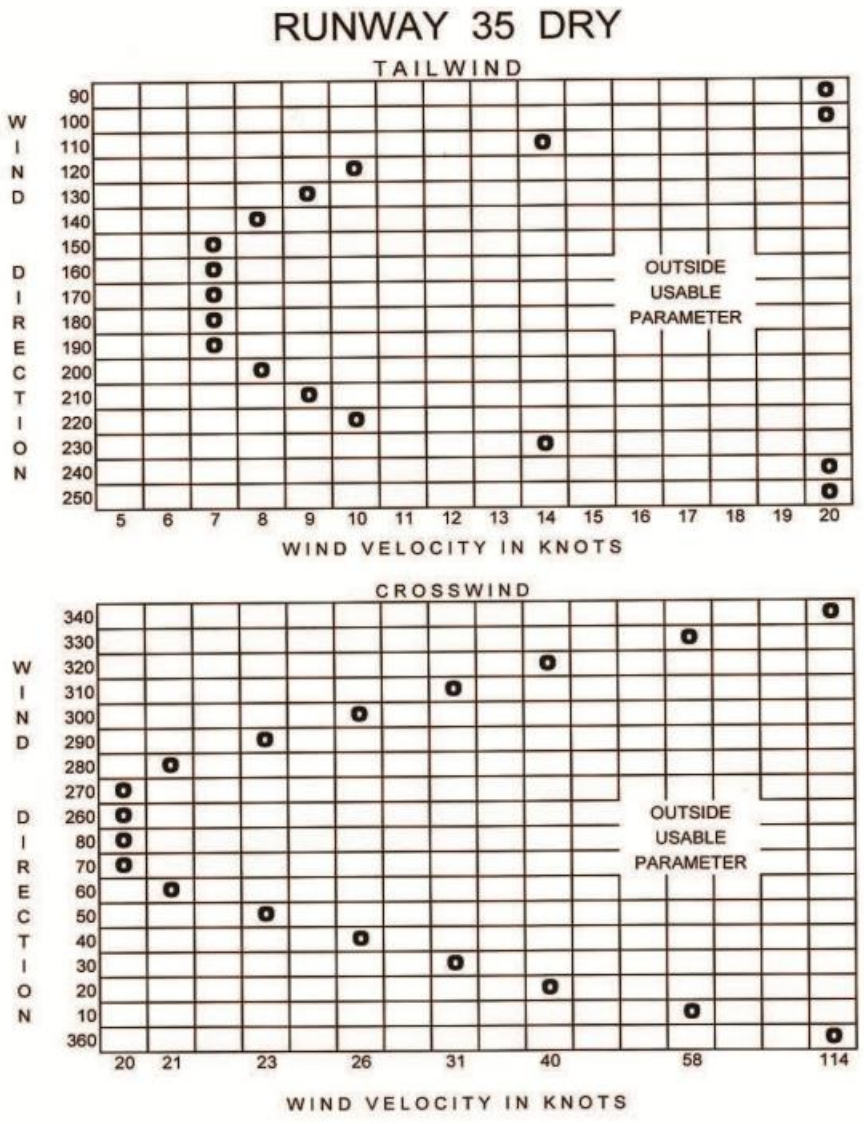
Air Work	**A/W**
Holding	**HLD**
Photo Flight	**PIX**
Holding at GEP	**GEP**
Holding at FGT	**FGT**
Tour	**2ER**

Appendix F Runway Intersection Distance Remaining Chart

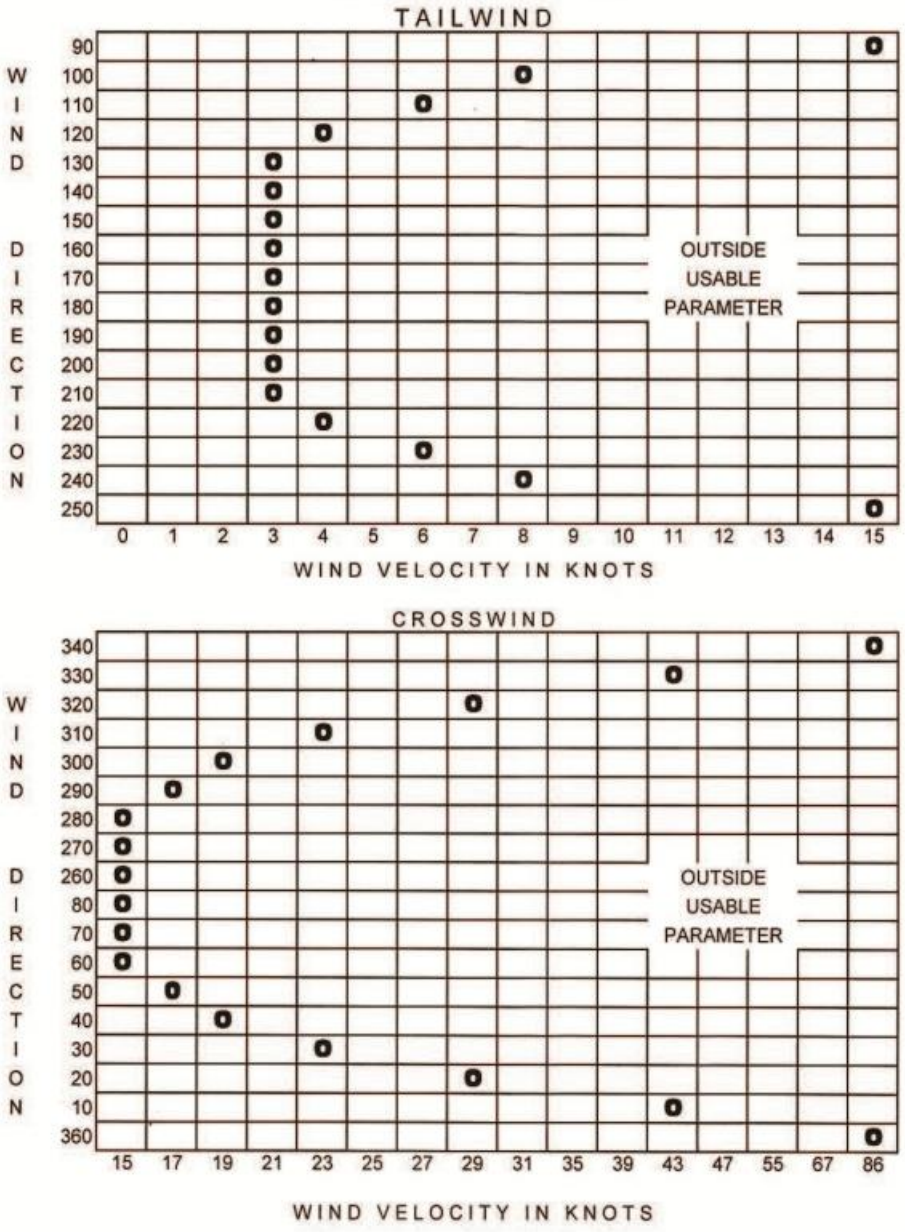


Appendix G Runway Use Wind Charts

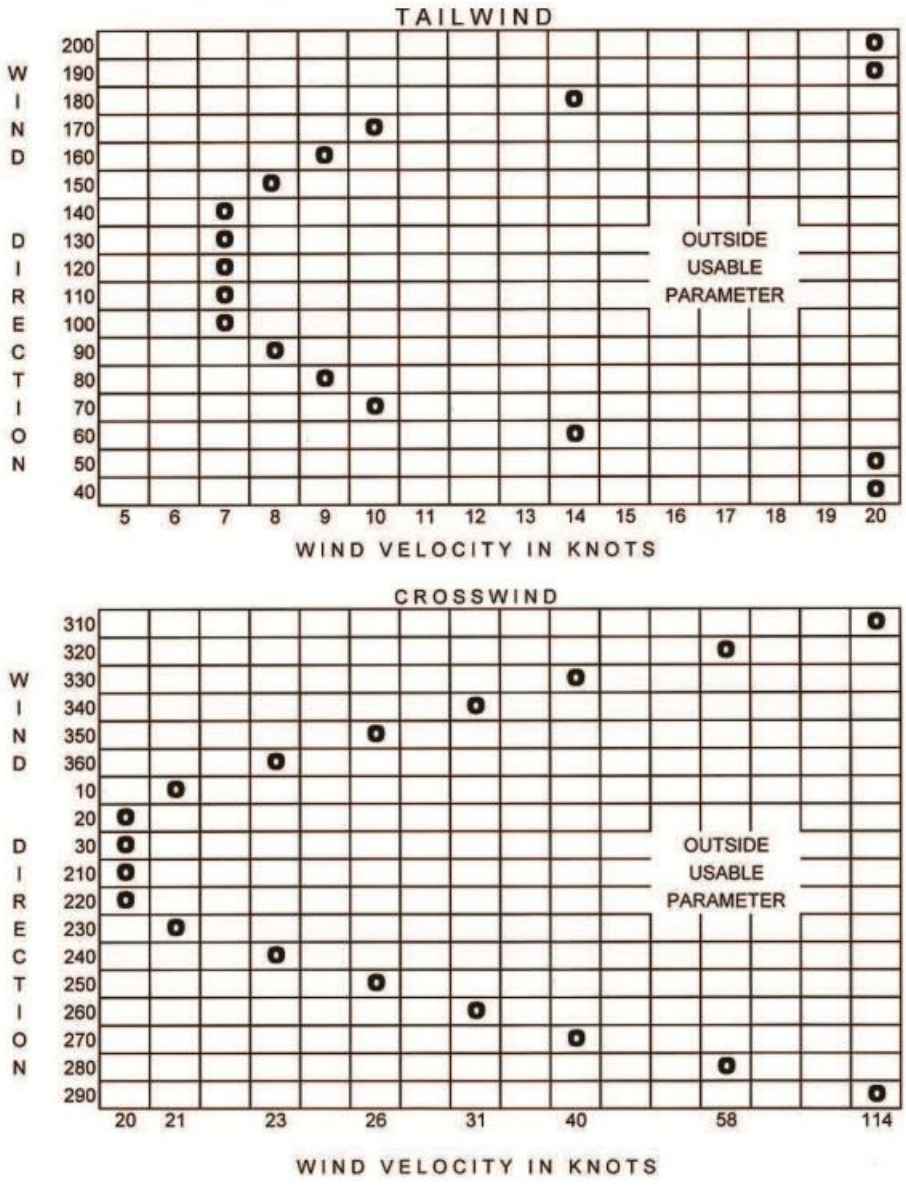
Note: These wind charts created in accordance with FAA Order 8400.9, National Safety and Operational Criteria for Runway Use Programs.



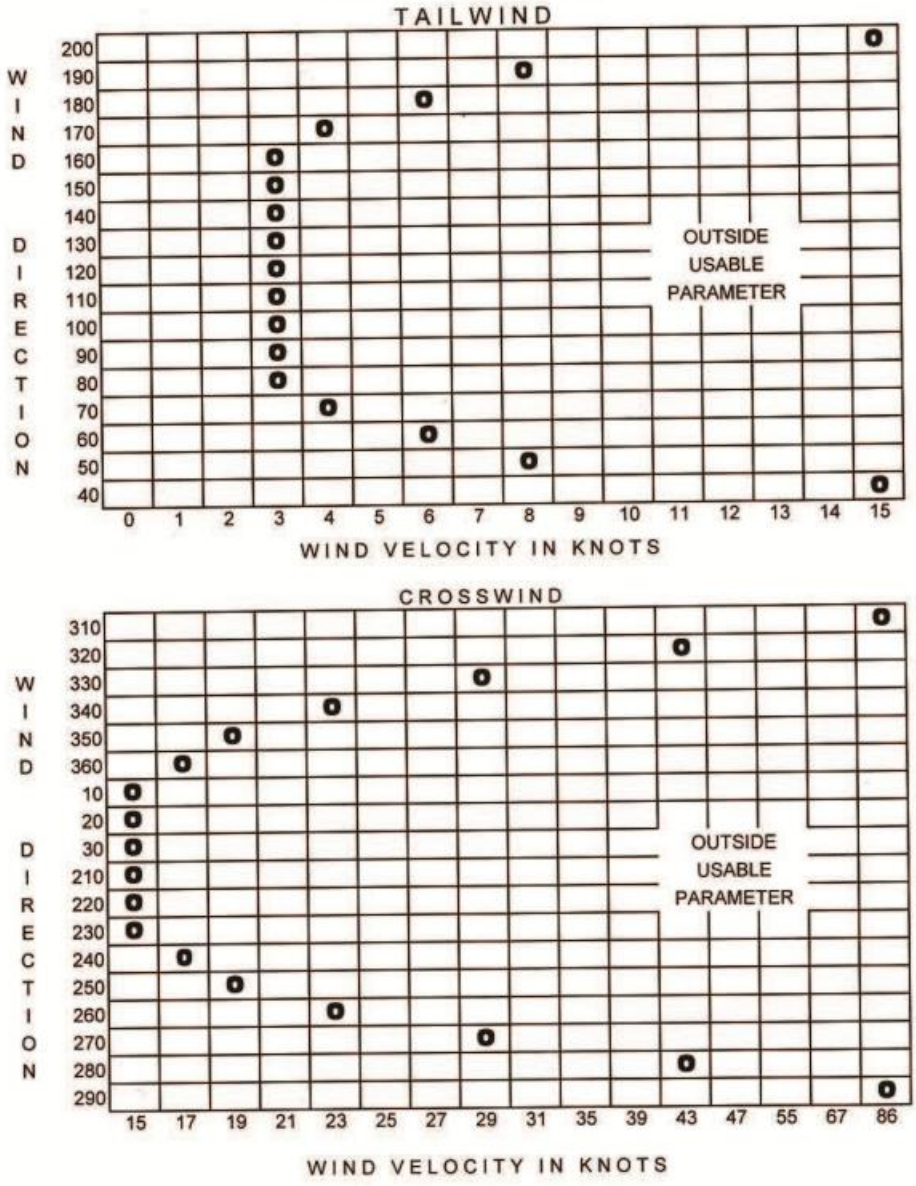
RUNWAY 35 WET



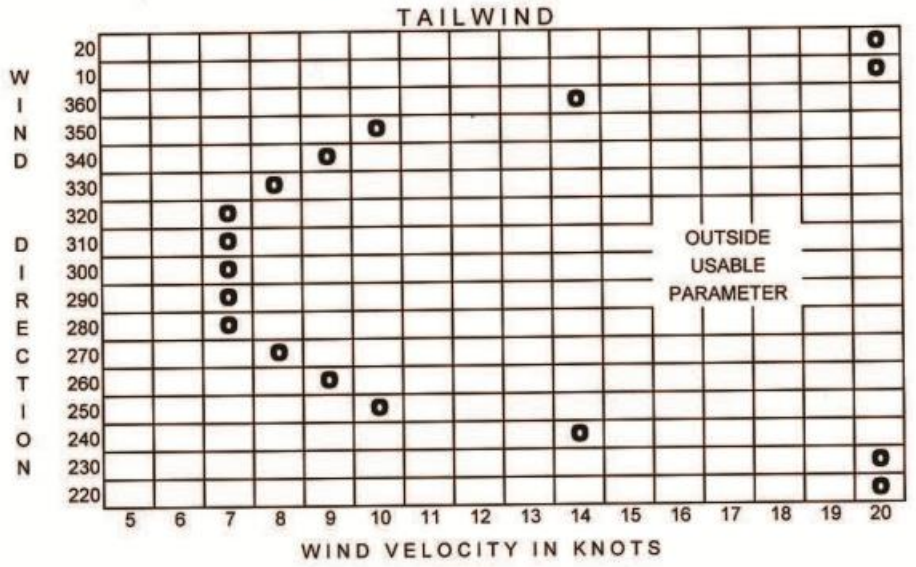
RUNWAY 30 DRY

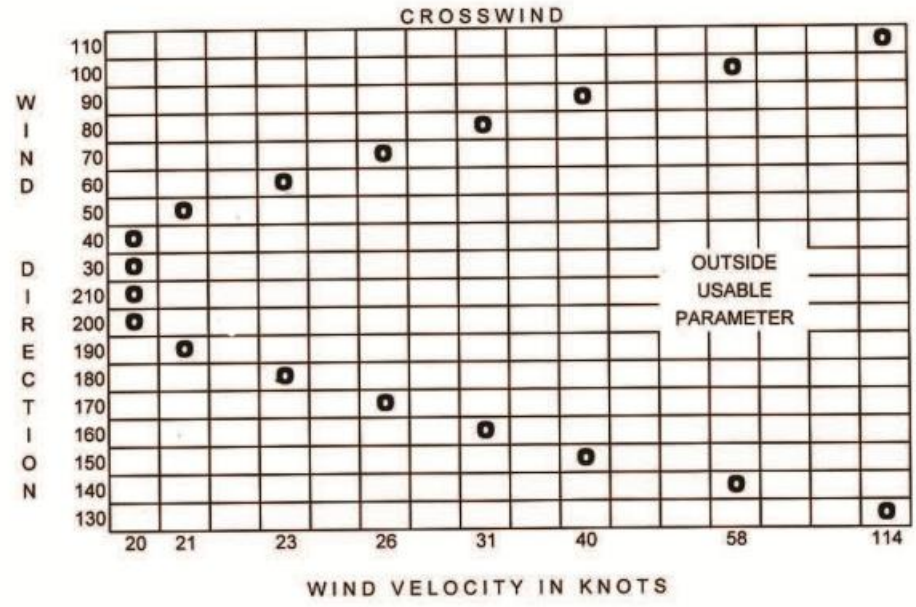


RUNWAY 30 WET

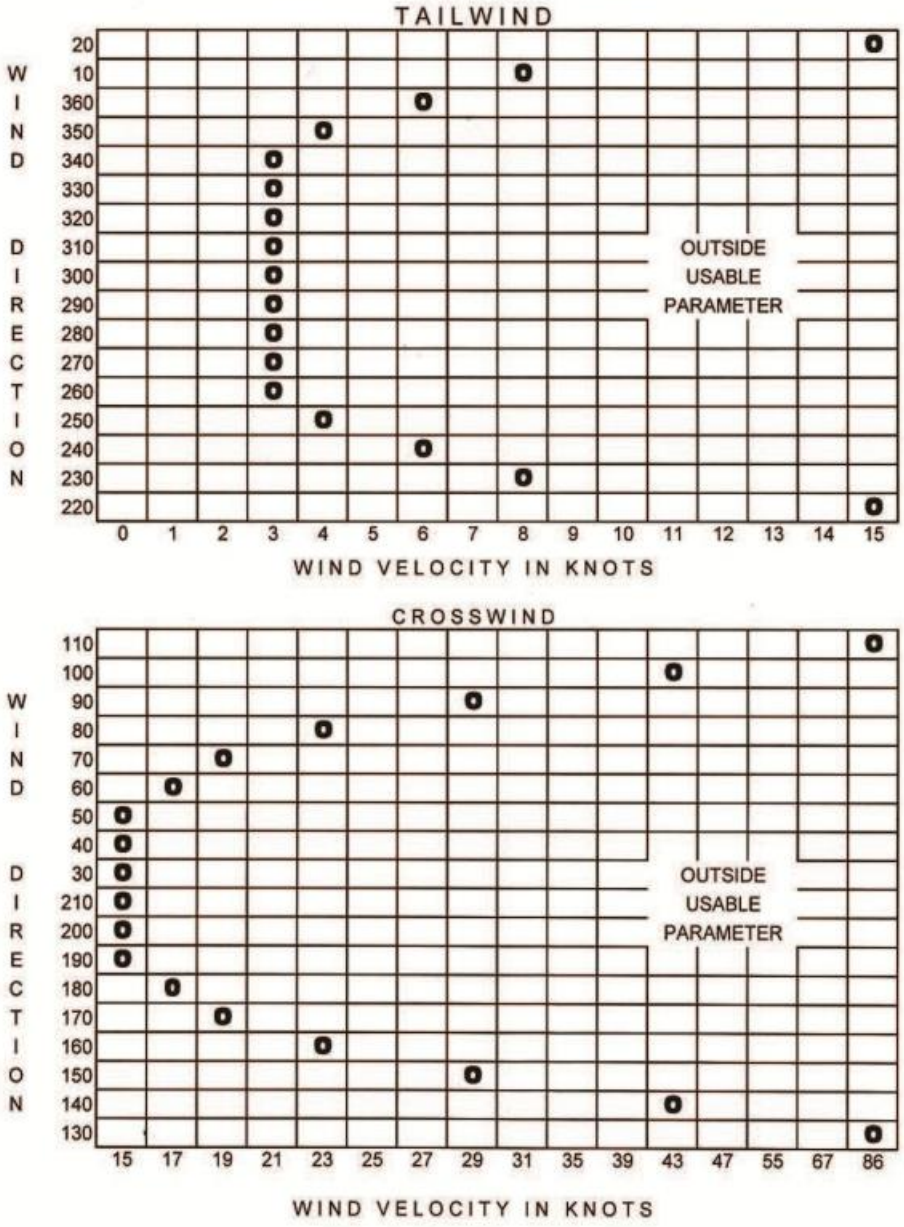


RUNWAY 12 DRY

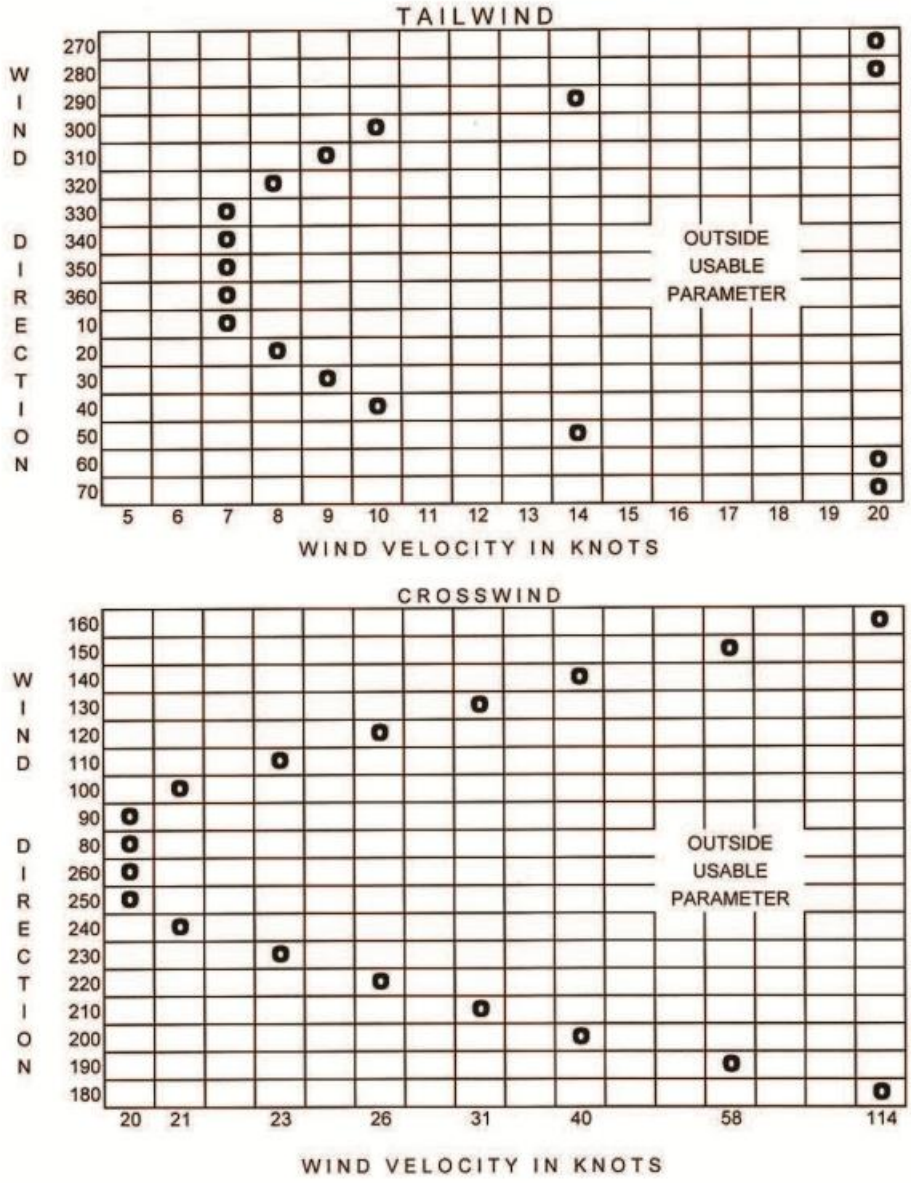




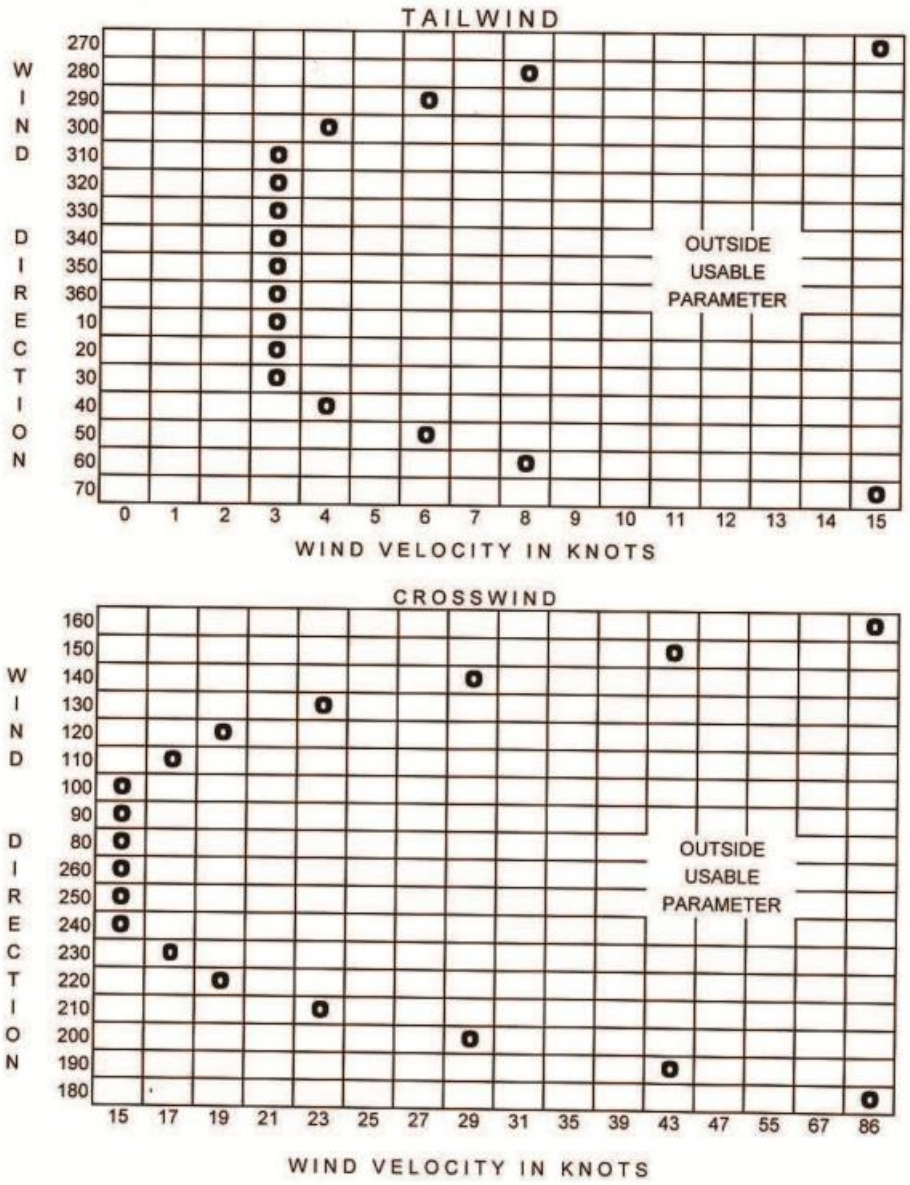
RUNWAY 12 WET



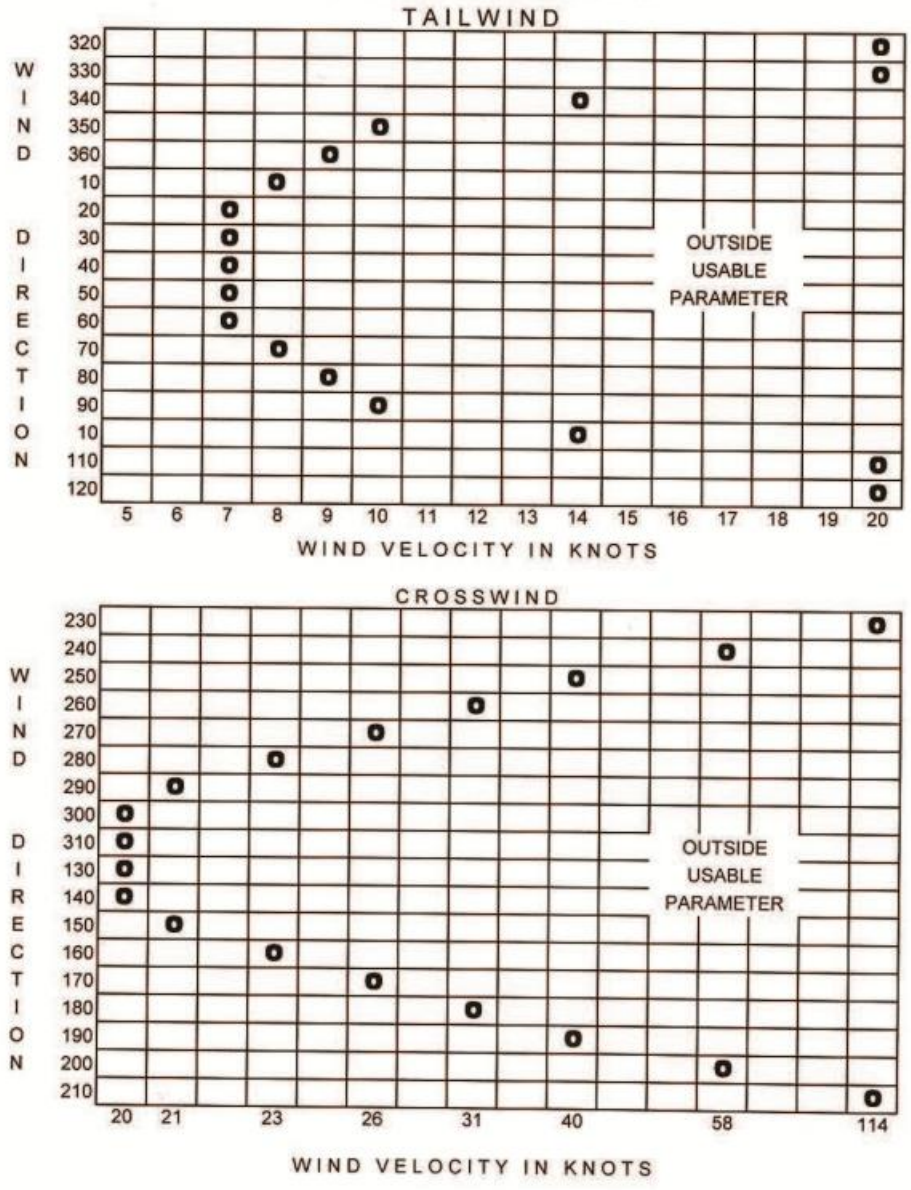
RUNWAY 17 DRY



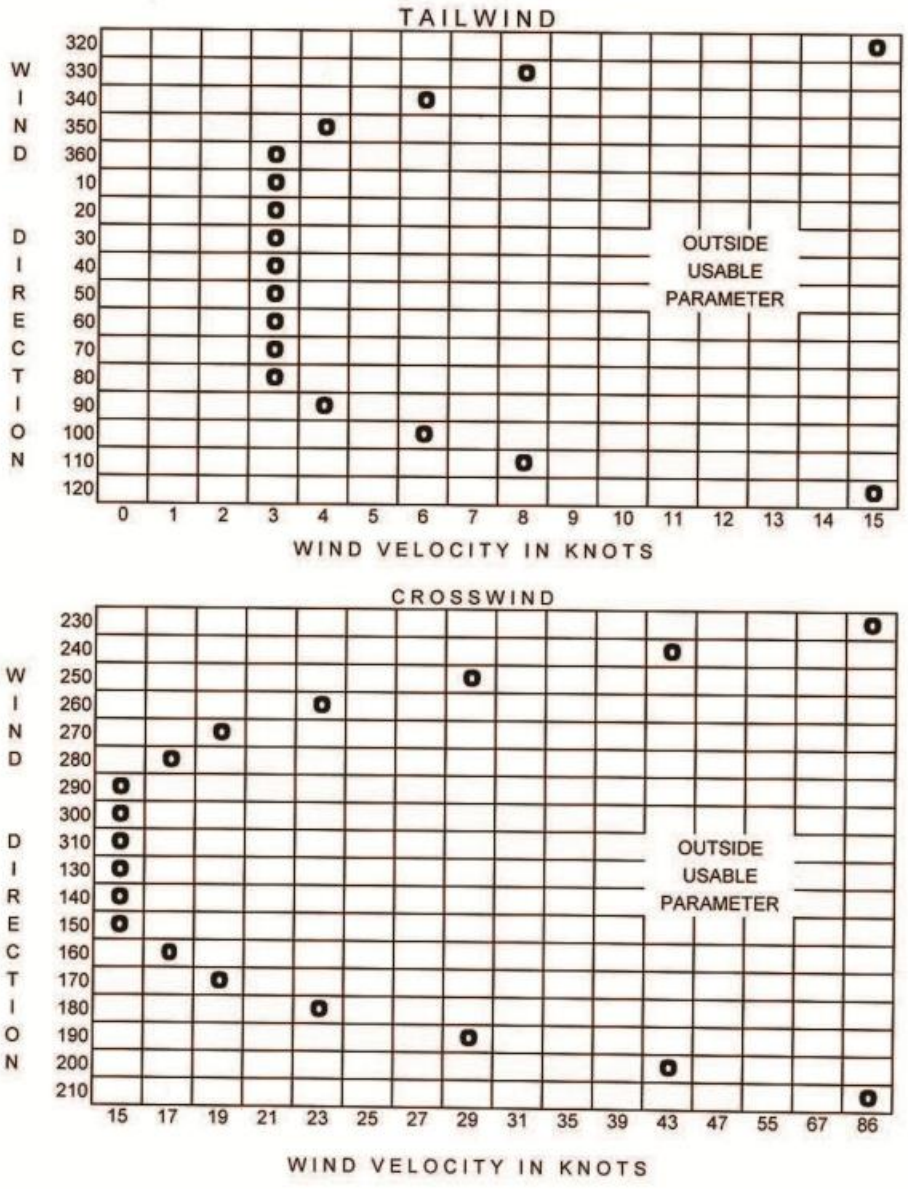
RUNWAY 17 WET



RUNWAY 22 DRY

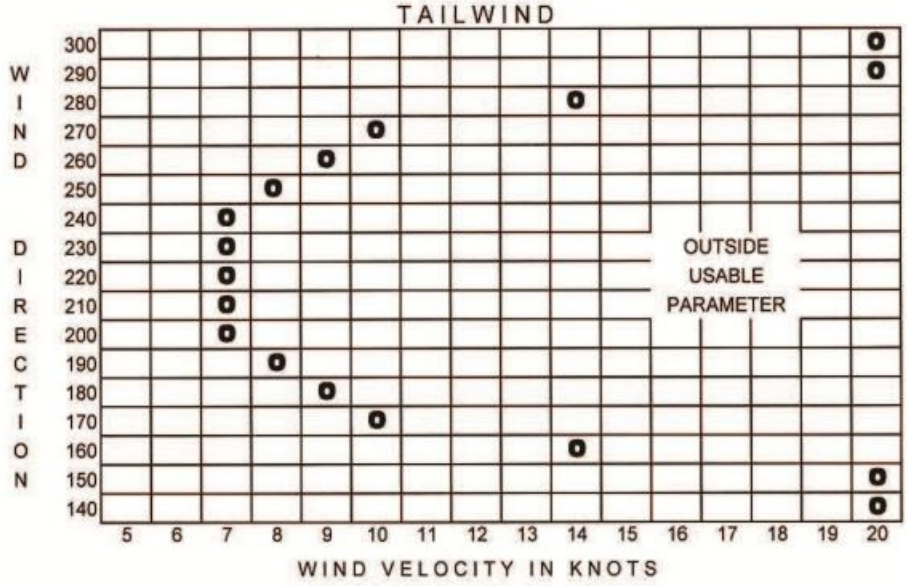


RUNWAY 22 WET

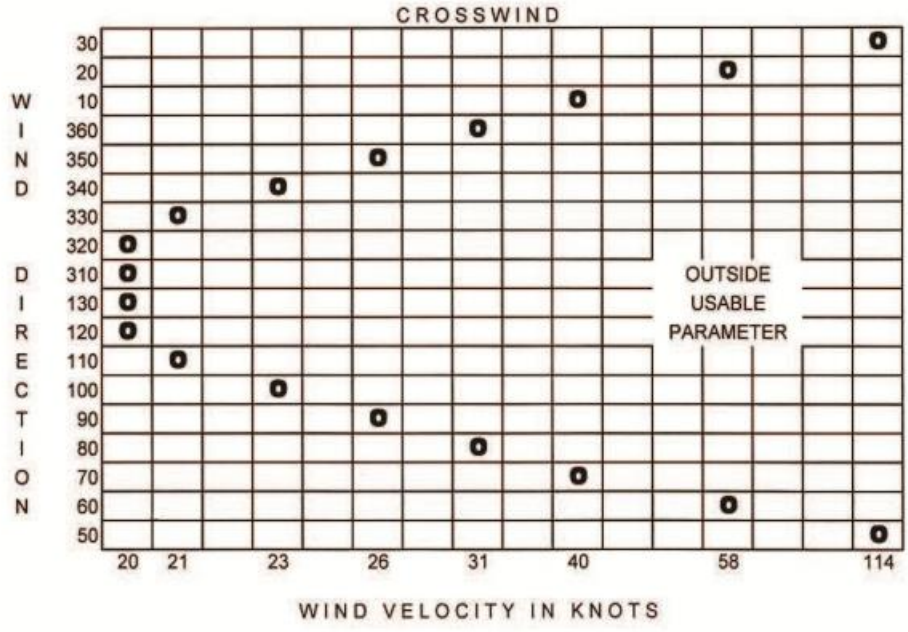


RUNWAY 4 DRY

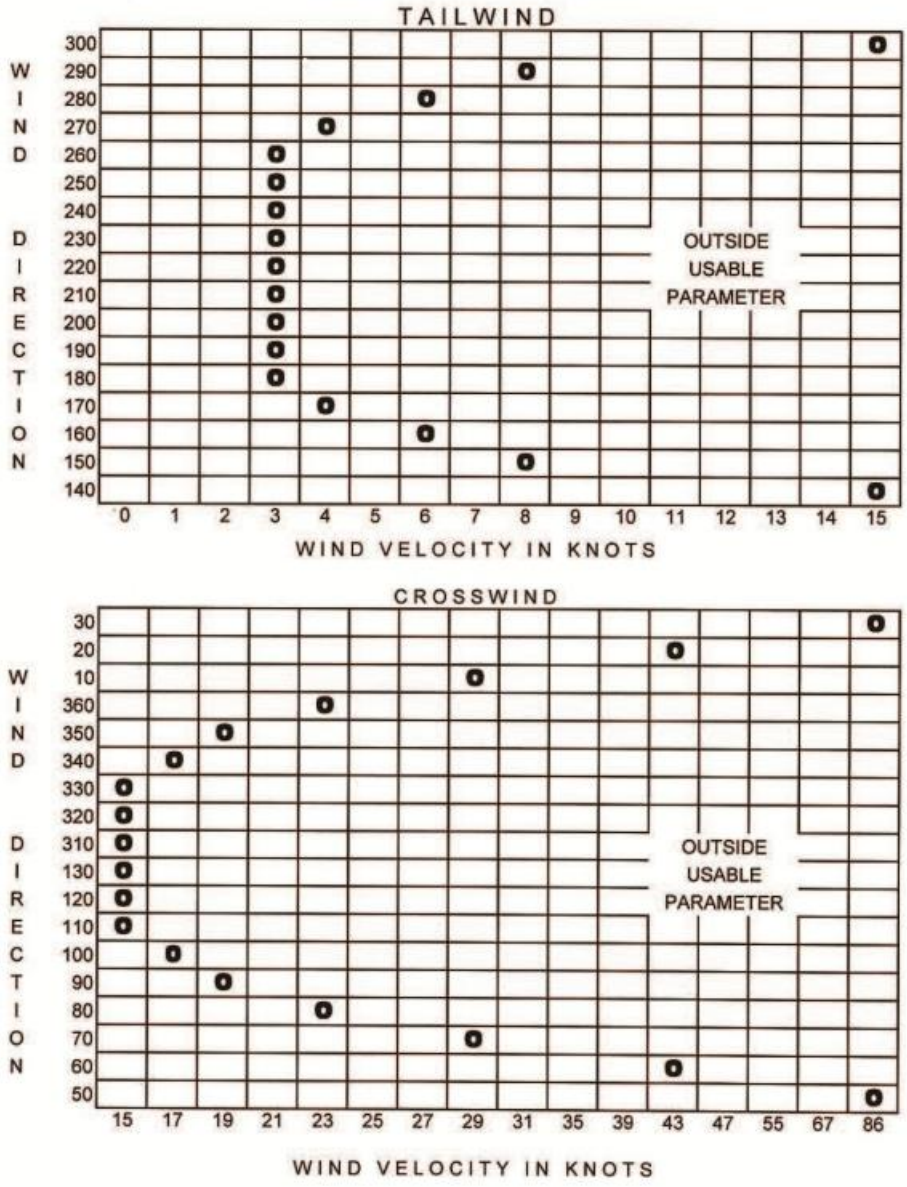
TAILWIND



CROSSWIND

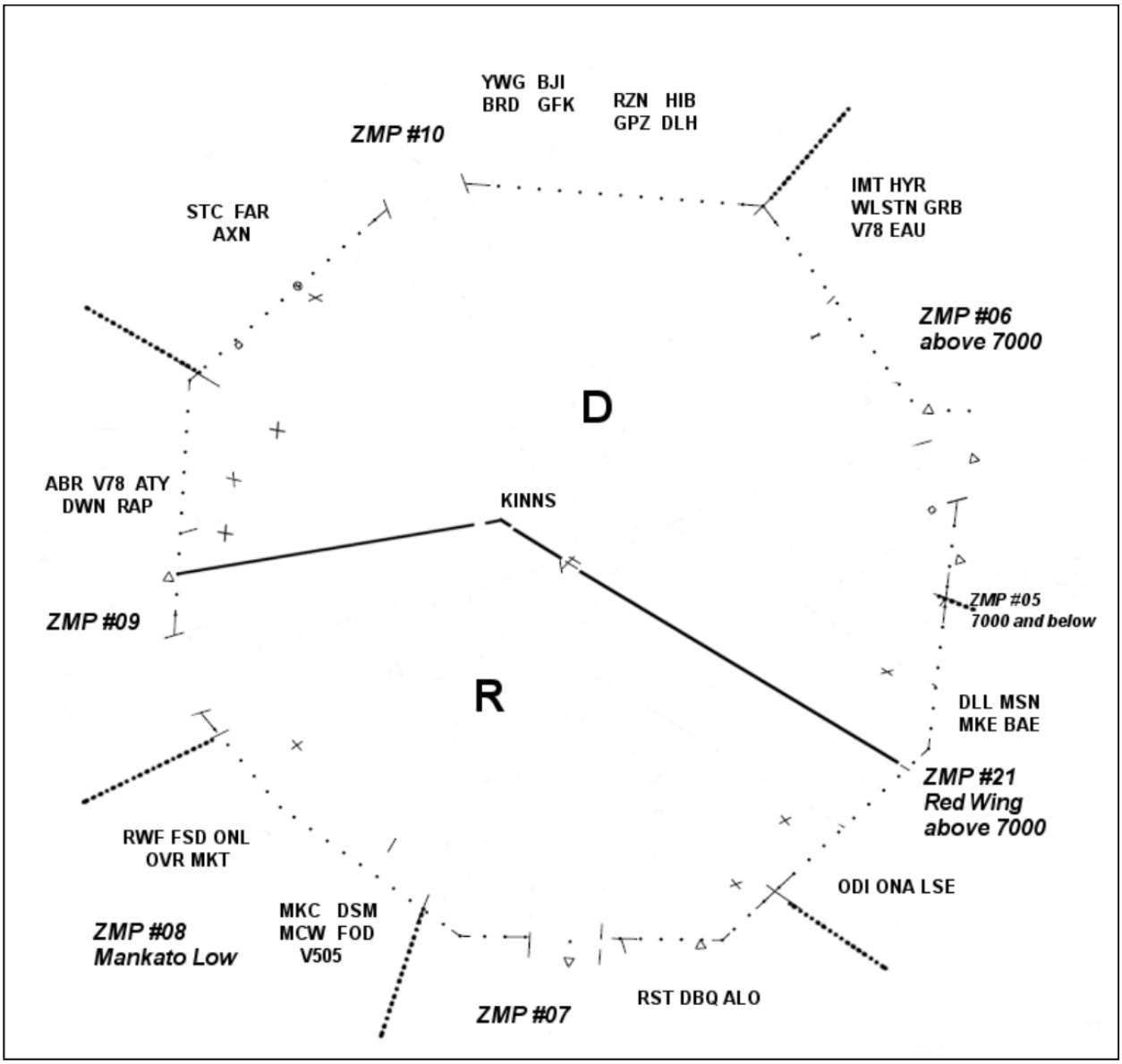


RUNWAY 4 WET

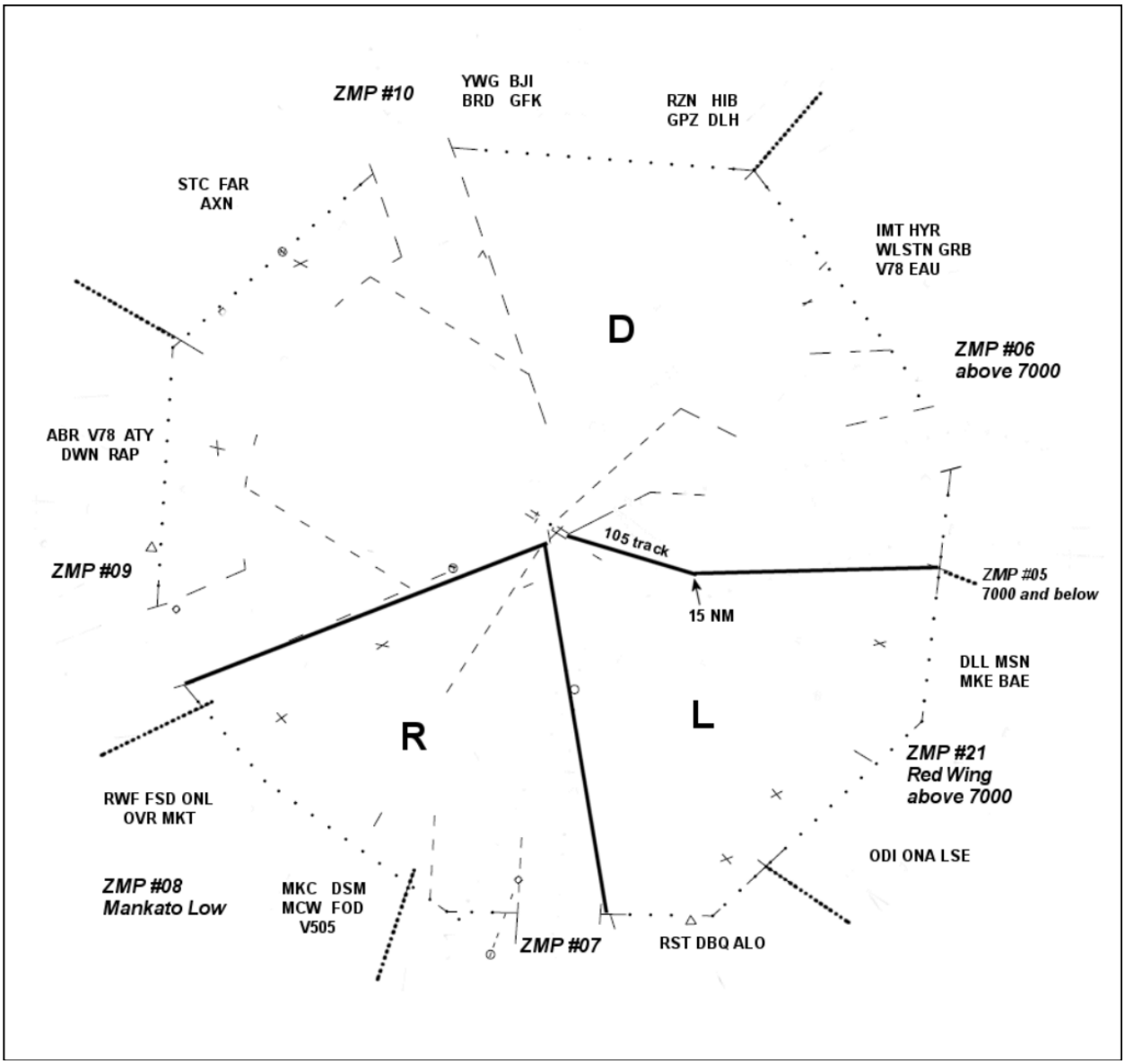

TAILWIND
WIND DIRECTION
300
290
280
270
260
250
240
230
220
210
200
190
180
170
160
150
140
OUTSIDE USABLE PARAMETER
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15
WIND VELOCITY IN KNOTS
CROSSWIND
WIND DIRECTION
30
20
10
360
350
340
330
320
310
130
120
110
100
90
80
70
60
50
OUTSIDE USABLE PARAMETER
15 17 19 21 23 25 27 29 31 35 39 43 47 55 67 86
WIND VELOCITY IN KNOTS

Appendix H Departure Configurations

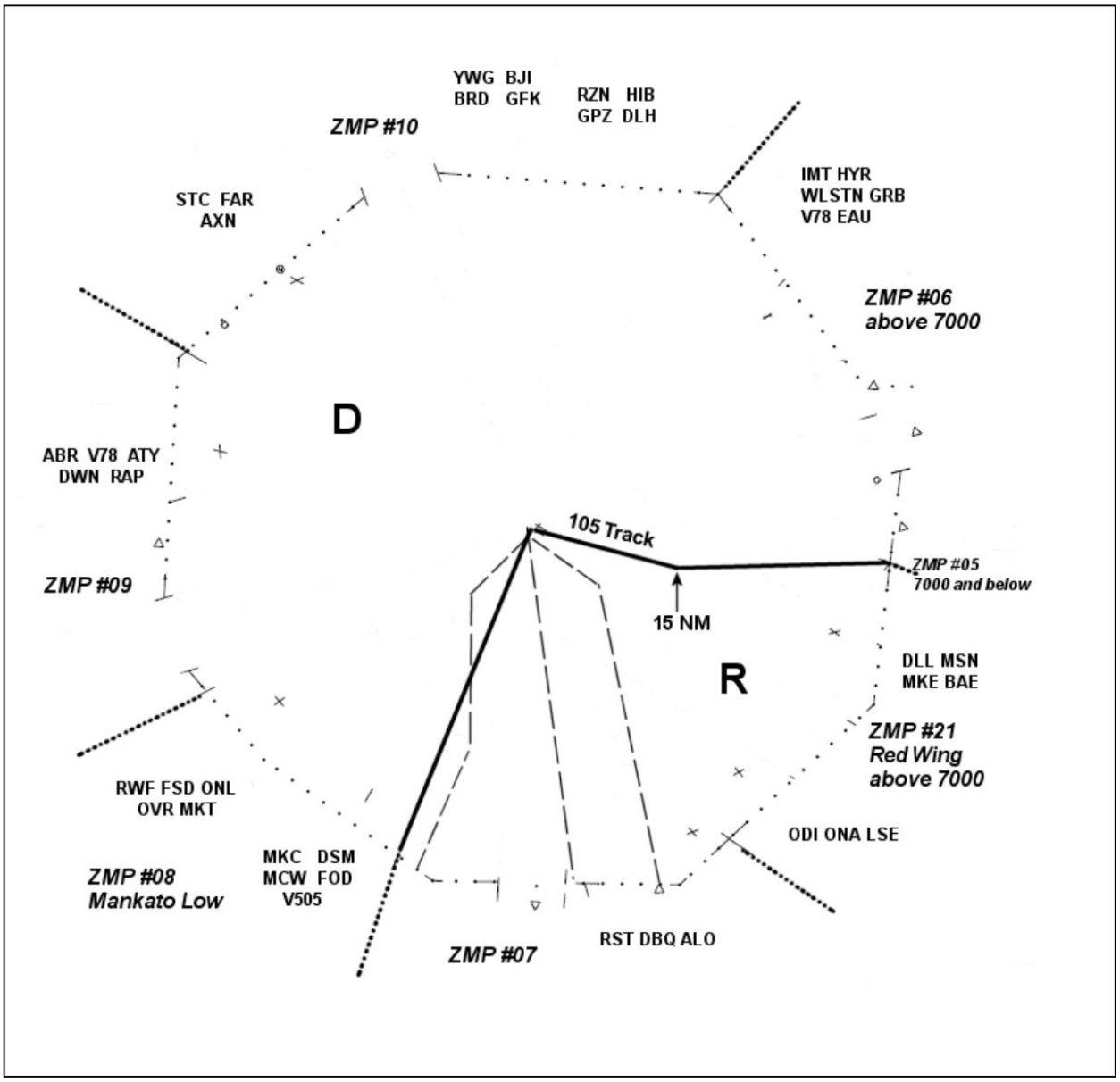
Land and Depart 12s
Land and Depart 30s
Land 30s and 35 – Depart 30s
Land 30s – Depart 30s and 17



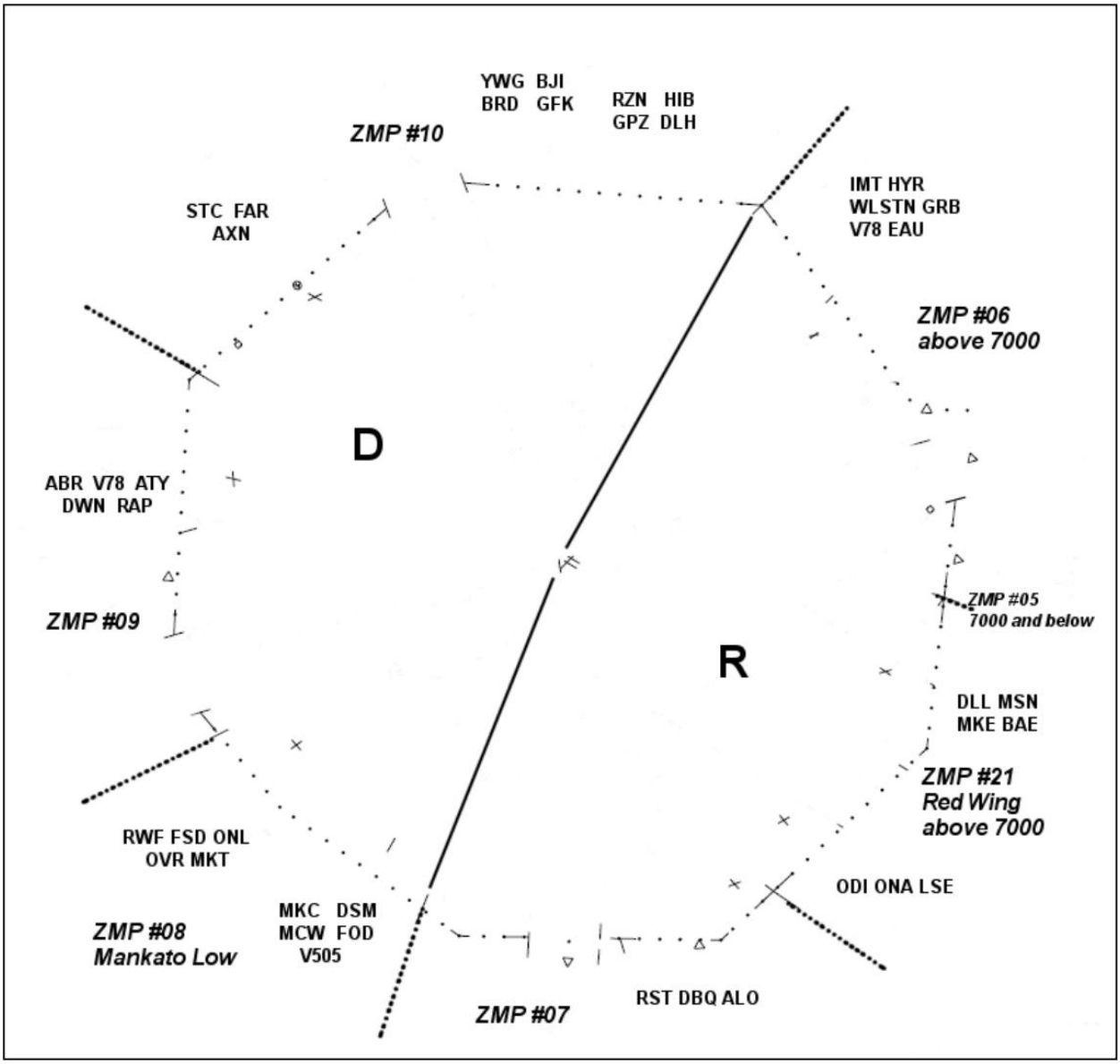
Land 12s – Depart 12s and 17
Three Departure Split



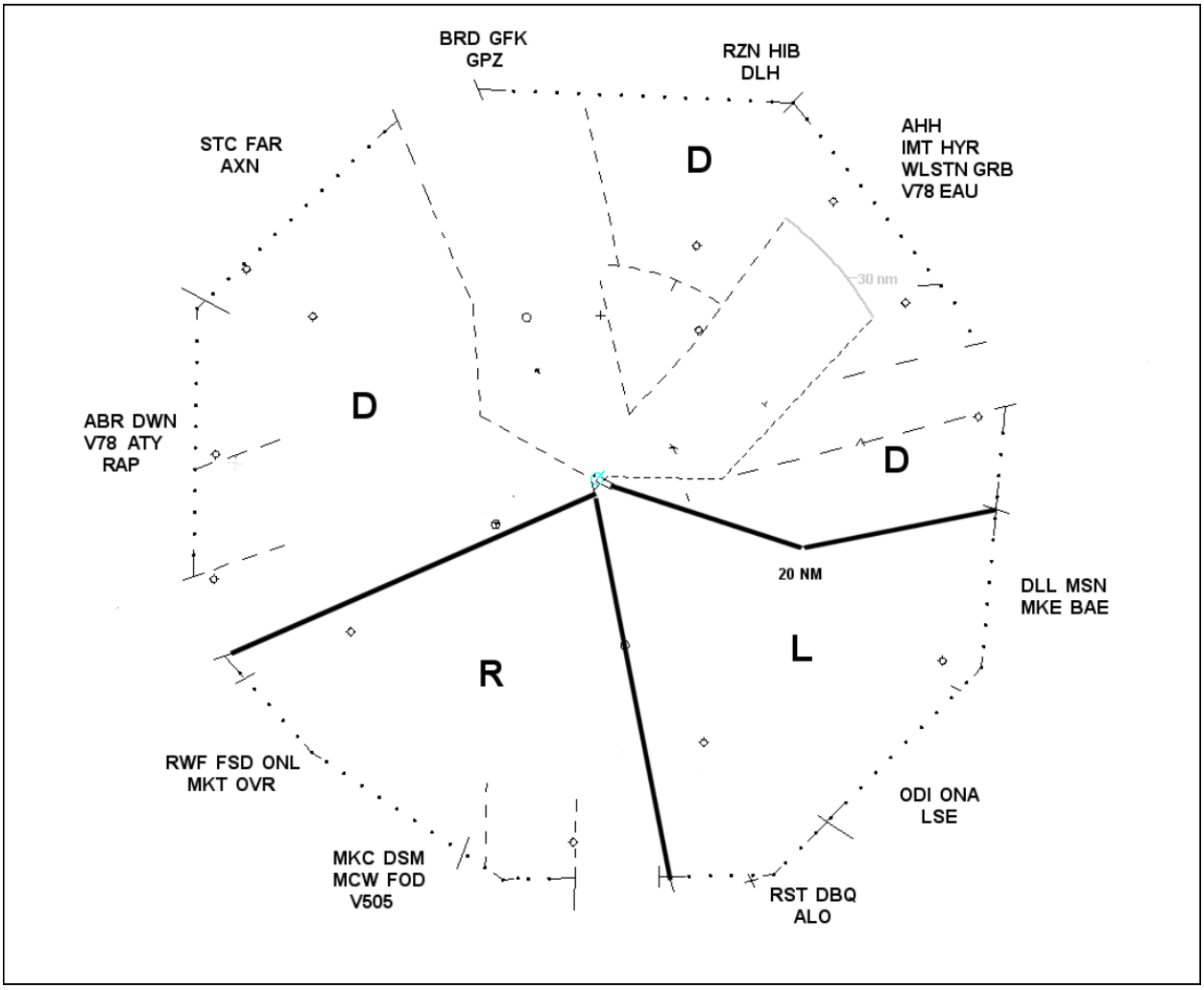
Land 35 – Depart 12
(Configuration #3)



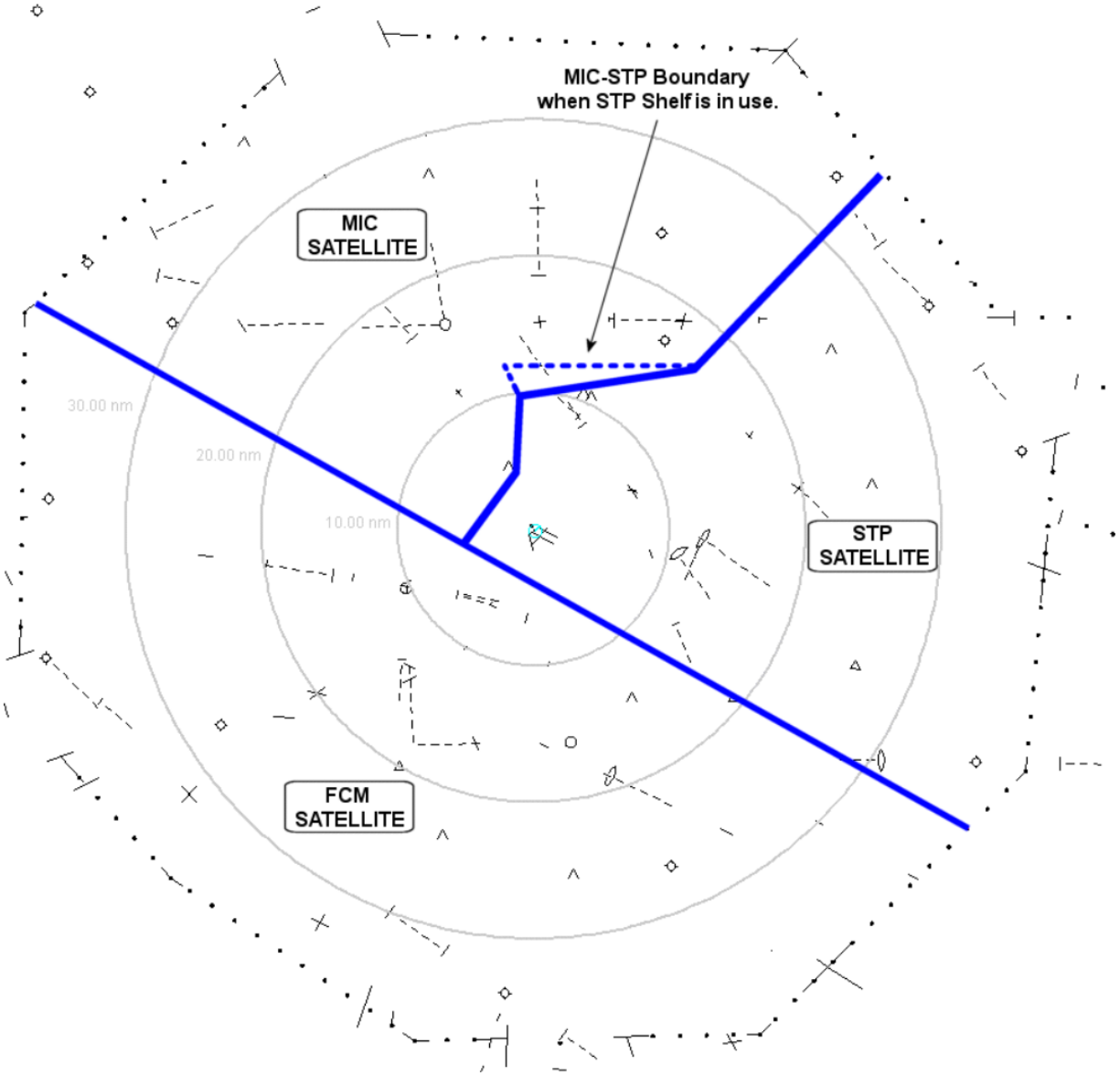
Land 35 – Depart 35, 30, 4
Land 17 – Depart Any
Land 22 – Depart Any
Land 4 – Depart Any



Land 17 and 22
Depart 17, 22, 12L/R

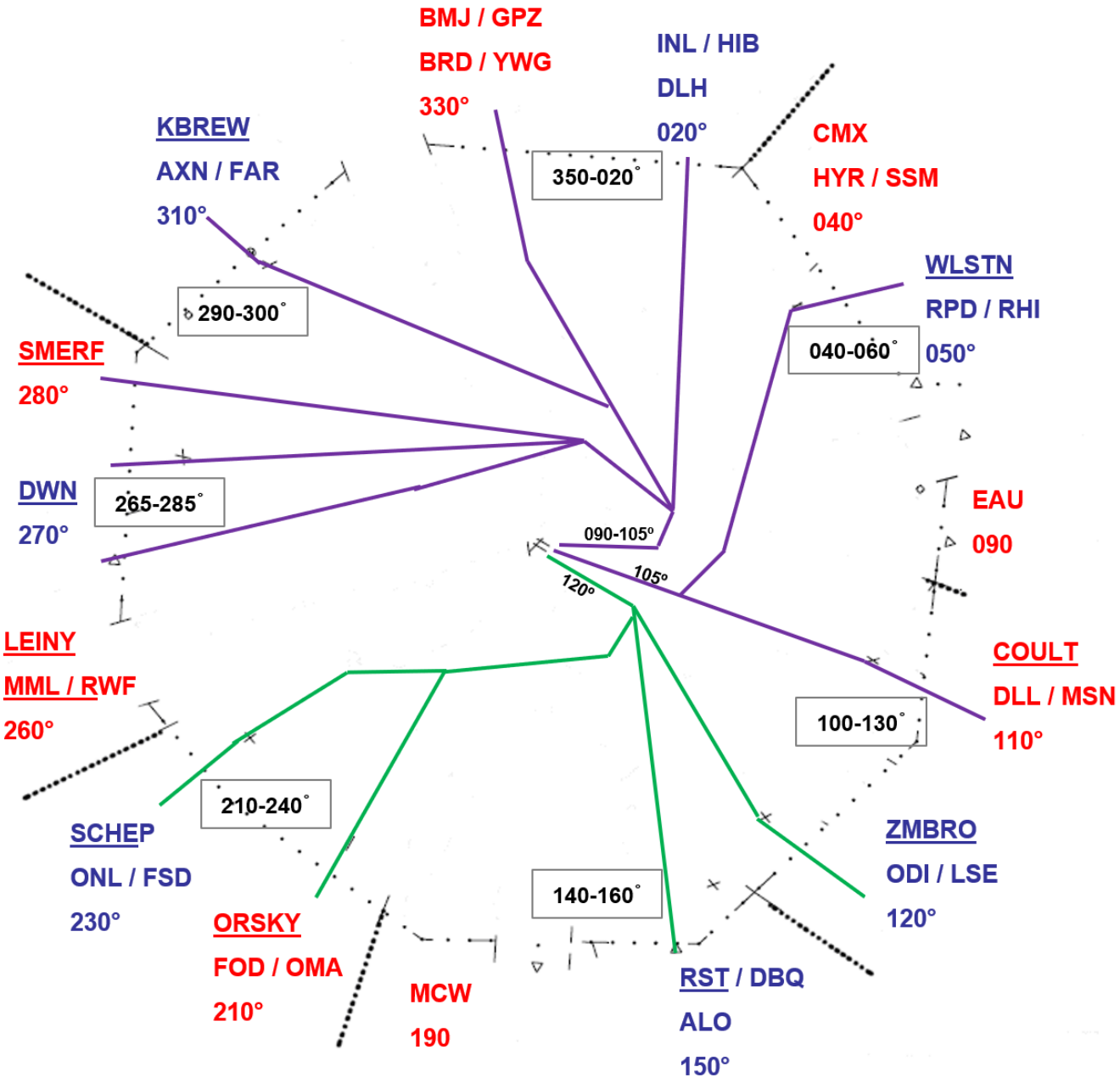


Appendix I Satellite Airspace Split

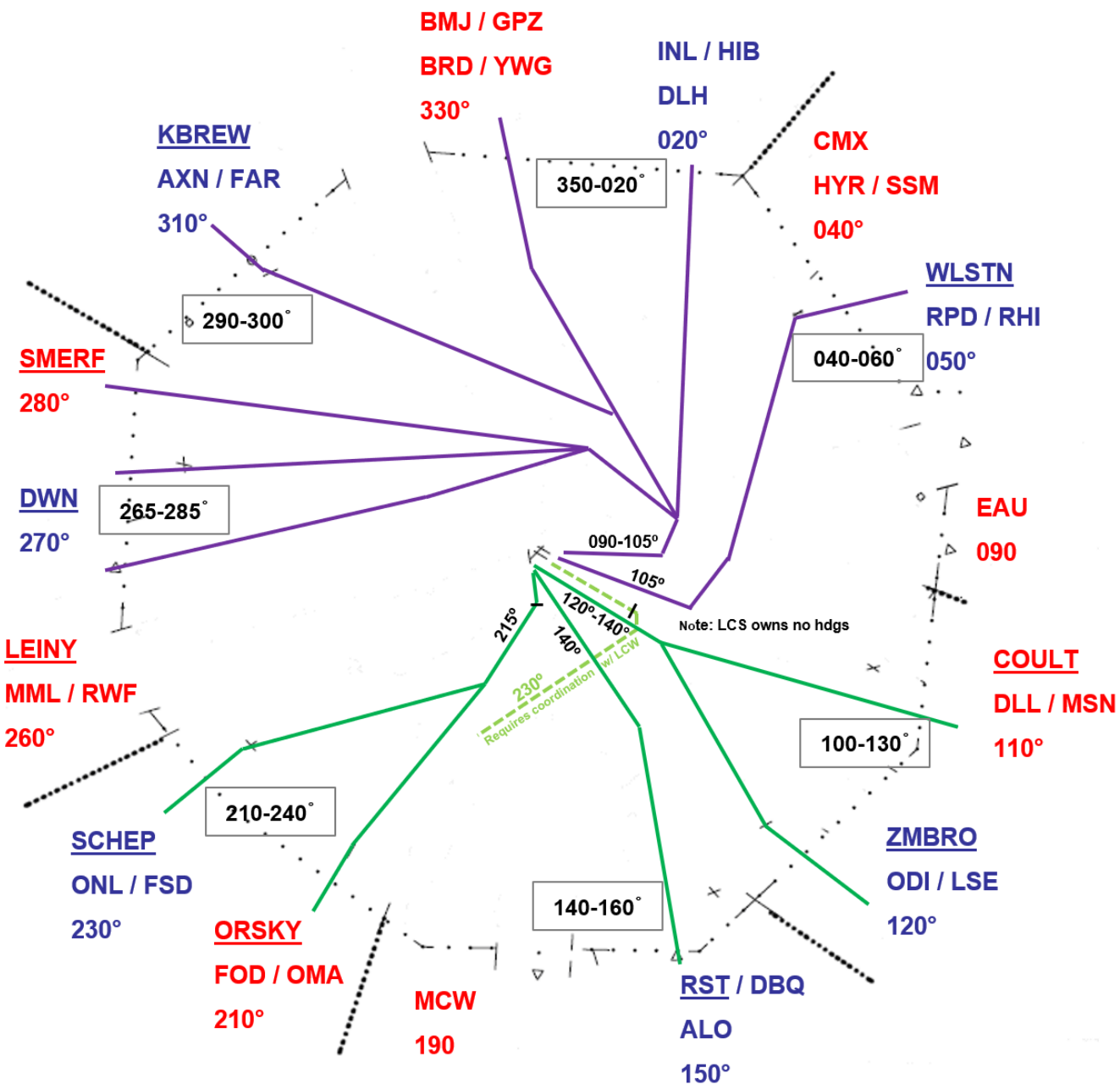


Appendix J Preferential Tower Assigned Headings

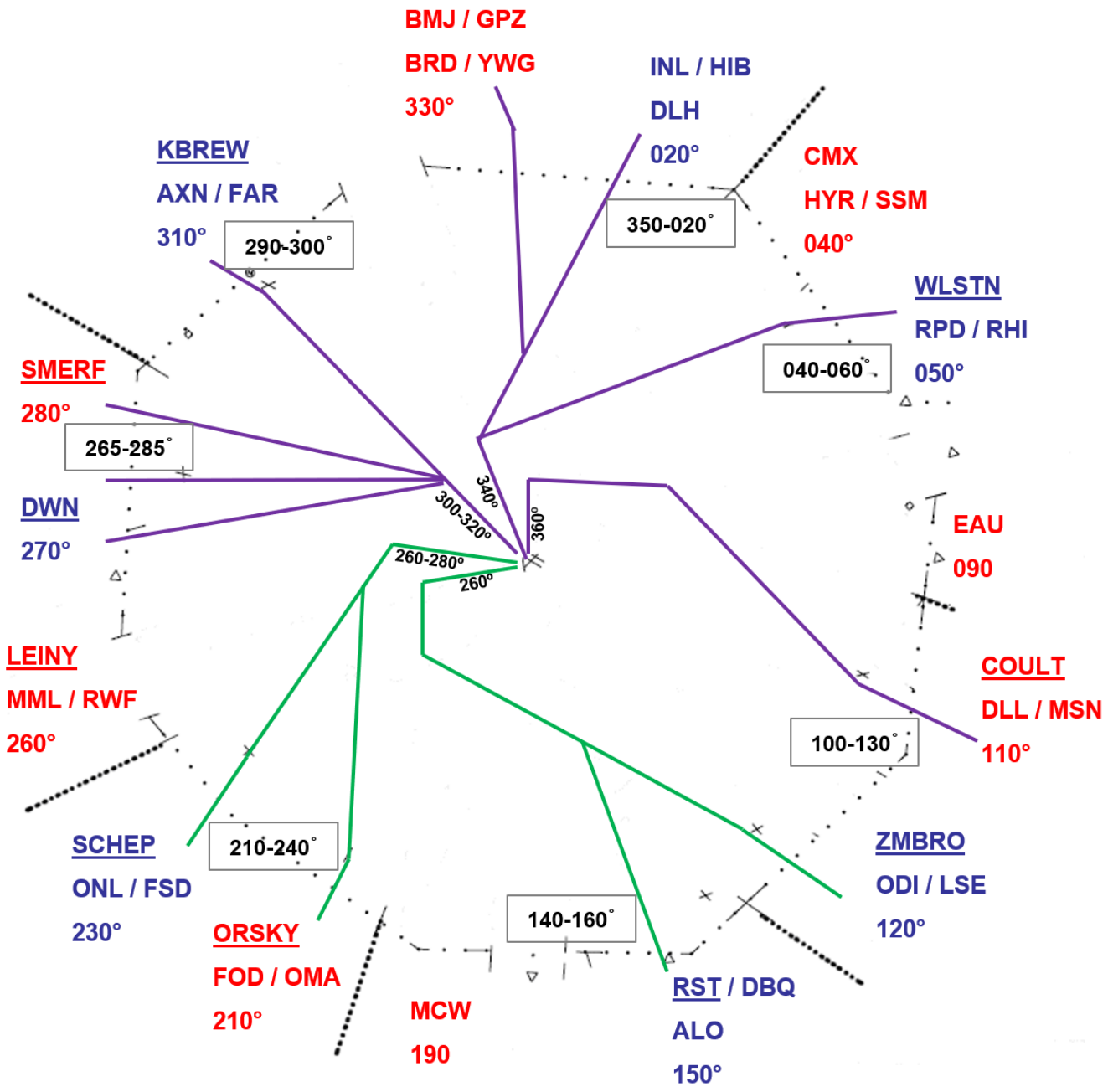
Runway 12



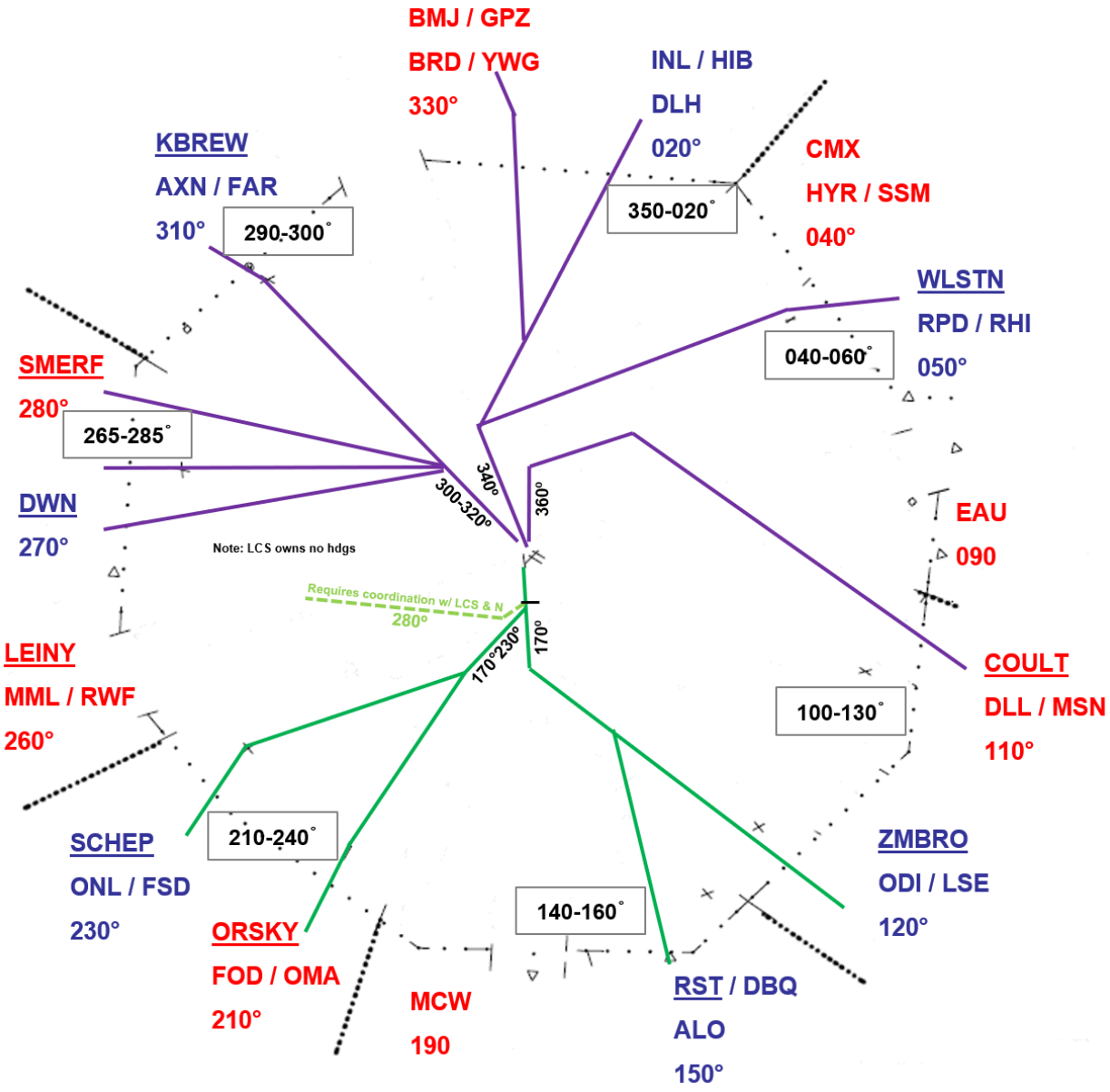
Runway 12-17


BMJ / GPZ
BRD / YWG
330°
INL / HIB
DLH
020°
KBREW
AXN / FAR
310°
350-020°
CMX
HYR / SSM
040°
WLSTN
RPD / RHI
050°
290-300°
040-060°
SMERF
280°
DWN
270°
265-285°
EAU
090
090-105°
105°
215°
120°-140°
140°
Note: LCS owns no hdgs
230°
Requires coordination w/ LCW
LEINY
MML / RWF
260°
COULT
DLL / MSN
110°
100-130°
210-240°
SCHEP
ONL / FSD
230°
ZMBRO
ODI / LSE
120°
140-160°
ORSKY
FOD / OMA
210°
MCW
190
RST / DBQ
ALO
150°

Runway 30 and 30/35



Runway 30-17


BMJ / GPZ
BRD / YWG
330°
INL / HIB
DLH
020°
CMX
HYR / SSM
040°
KBREW
AXN / FAR
310°
290-300°
350-020°
WLSTN
RPD / RHI
050°
040-060°
SMERF
280°
265-285°
DWN
270°
340°
300-320°
360°
EAU
090
Note: LCS owns no hdgs
Requires coordination w/ LCS & N
280°
170°
170°230°
LEINY
MML / RWF
260°
COULT
DLL / MSN
110°
100-130°
SCHEP
ONL / FSD
230°
210-240°
ZMBRO
ODI / LSE
120°
ORSKY
FOD / OMA
210°
140-160°
MCW
190
RST / DBQ
ALO
150°