

**VIRTUAL AIR TRAFFIC SIMULATION NETWORK
UNITED STATES DIVISION
ALBUQUERQUE ARTCC**

**ORDER
ABQ ATCT
7110.1A**

**Effective Date:
09/01/2007**

SUBJ: Albuquerque (ABQ) Air Traffic Control Tower Standard Operating Procedures

This order establishes standard operating procedures for air traffic operations in the Albuquerque Air Traffic Control Tower (ATCT) terminal area. 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). If a conflict arises in the interpretation of the instructions and/or guidelines of this order, controllers shall use good judgment to maintain a safe operation. The procedures contained within this order, in conjunction with FAA Orders 7110.10, 7110.65, and 7210.3, will be the basis for performance evaluations, training, and certification.

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CHAPTER 1. APPLICATION

1. **PURPOSE.** This order prescribes air traffic control procedures, specific position responsibilities, and airspace designations for operating positions at the VATUSA ABQ ATCT.
2. **DISTRIBUTION.** This order is distributed to all VATUSA Albuquerque ARTCC controllers, visitors, and other interested parties.
3. **CANCELLATION.** Reserved
4. **EFFECTIVE DATE.** The effective date of this order is 09/01/2007.
5. **DEVIATIONS FROM PROCEDURES.** Deviations from the procedures in this order may be effected on an individual basis after appropriate coordination has been required. It is recommended that coordination be kept to a minimum during heavy traffic periods.
6. **DEFINITIONS.**
 - a. **High Performance Aircraft.** All jet and multiengine turboprop aircraft (e.g. – B737 or C130).
 - b. **Low Performance Aircraft.** All piston-driven and single engine turboprop aircraft (e.g. – BE58 or C208).
 - c. **Operating Positions**

Position	Symbol	Login Callsign	Frequency	Voice Server / Channel
North Radar *	AN	ABQ_N_APP	127.4	rw.liveatc.net/ABQ_N
South Radar	AS	ABQ_S_APP	123.9	rw.liveatc.net/ABQ_S
Final Radar	AF	ABQ_F_APP	126.3	rw.liveatc.net/ABQ_F
Local Control	AT	ABQ_TWR	120.3	rw.liveatc.net/ABQ_T
Ground Control	AG	ABQ_GND	121.9	rw.liveatc.net/ABQ_G
Clearance Delivery	AC	ABQ_DEL	119.2	rw.liveatc.net/ABQ_C

* North Radar is the default combined ABQ ATCT radar position

d. Standard Flows

Flow:	East *	West	Northeast	Southwest
Arrival Runway(s):	8 & 3	26 / 30	3	21
Departure Runway(s):	8	26 / 30 & 21	3	21

* East Flow is the preferred calm wind flow

- e. **Non-Standard Flow.** A runway configuration where runway(s) not specified in the Standard Flows are used (e.g. – strong wind or pilot request). Affected controllers shall coordinate the runway(s) in use as appropriate. Note – Due to traffic conflicts, Runway 17/35 should only be used when necessary.
- f. **Over the Top.** The procedure used, when necessary, to overfly a specific runway to enter the pattern for another runway. This procedure is used as follows:

Flow	Landing Runway	Overfly Runway	Direction of Downwind
East	3	17	Right
West	30	17 *	Right

* At the numbers of Runway 17, enter **close** right downwind for Runway 30

7. **RADAR MODE.** Controllers shall use the radar mode appropriate to the position being staffed (e.g. – North Radar uses STARS or ARTS, Local uses Tower, etc.).
8. **TRACON/TOWER TRANSFER OF RADAR IDENTIFICATION.** This shall be accomplished via radar handoff. Information displayed in the data block constitutes transfer of radar identification for arrivals and departures between the Tower and TRACON.
 - a. TRACON shall initiate a radar handoff to the Tower as soon as possible, but no closer than 5 NM from the landing runway. Overhead approaches shall be handed to tower no closer than 10 NM from the airport.
 - b. Aircraft without a full data block shall be manually handed off prior to communication transfer.
 - c. Upon acceptance of a hand off, Tower assumes responsibility for separation between departures and the arrival aircraft. It shall not constitute coordination for use of a non-advertised runway.
9. **OVERHEAD PATTERN.** To minimize traffic confliction, the overhead pattern direction is as follows:
 - a. Runways 8 / 17 / 35 / 3 / 21 – Right Break
 - b. Runway 26 – Left Break

CHAPTER 2. TOWER POSITIONS AND RESPONSIBILITIES

1. GENERAL:

a. Helicopter Operations

- (1) Ground Control (GC) is the designated owner of all helicopter pads.
- (2) GC shall advise Local Control (LC) of helicopter departures prior to frequency change.
- (3) LC shall coordinate with GC all departures and arrivals. LC shall advise GC "Landing/Departing (*location*).” GC shall respond "Landing/Departing (*location*).”

b. General Aviation (GA) Parking. As a general rule, GA aircraft should not be directed to the airline terminal area west of Taxiway C and north of Taxiway A. To the extent practical, encourage GA aircraft to park at the General Aviation Area (southwest of Runway 12, northwest of Runway 3). This shall not be construed so as to force specific parking locations, but shall be used to assist in segregation of air carrier and GA aircraft when necessary, particularly during heavy traffic periods.

2. CLEARANCE DELIVERY (CD):

a. **Radio Frequency:** 119.2

b. ABQ IFR Departures

- (1) **Initial Altitude.** Assign initial altitudes to IFR departures as follows (altitudes in 100's of feet MSL):

Flow:	East	West	Northeast	Southwest
High Performance: (Req. 100 and Higher)	100	100	100	100
High Performance: (Req. Below 100)	Northbnd – 90 * Southbnd – 80 *	As Filed	As Filed	As Filed
Low Performance:	Northbnd – 70 Southbnd – 100 or Lower Filed	70	100 or Lower Filed	100 or Lower Filed

* Mandatory initial altitude for terrain. North/South based on first departure fix, see Departure Frequency table.

NOTE – If an aircraft's filed altitude is below the MEA/MVA along the filed route, advise the pilot to expect the minimum enroute altitude correct for the direction of flight (e.g. –130 SE to CNX).

- (2) **Departure Frequency.** When radar positions are combined, assign the departure frequency as appropriate for the position(s) staffed. When both North Radar (NR) and South Radar (SR) radar positions are open, assigned the departure frequency based on the first departure fix as follows:

Flow:	East		West		Northeast		Southwest	
N/S Freq:	N	S	N	S	N	S	N	S
First Fixes:	ALS	CNX	ALS	CNX	CNX	ALS	ZUN	ALS
	FTI	ONM	FTI	ONM	GUP	FTI	GUP	CNX
	GUP	SJN	GUP	SJN	ONM	TCC	RSK	FTI
	RSK	TXO	RSK	TXO	RSK	TXO		ONM
	TCC		TCC		SJN			SJN
	ZUN		ZUN		ZUN			TCC
								TXO

- c. **ABQ Local IFR Clearances.** After obtaining sufficient information, modify the filed flight plan as appropriate and issue a local IFR clearance to a point within ABQ ATCT airspace as follows:

Examples:

- (1) Practice Instrument Approaches – “CLEARED TO (FAF) VIA RADAR VECTORS, MAINTAIN (appropriate initial altitude).”
- (2) ABQ to Satellite Airport – “CLEARED TO (airport) VIA RADAR VECTORS, MAINTAIN (appropriate initial altitude).”

- d. **ABQ VFR Clearances.** Prepare or modify a flight plan as appropriate with the following information:

- (1) **Route.** Determine from the pilot or flight plan the initial heading or route to be flown.

NOTE: This is critical in order to anticipate the pilot’s actions. Note this in the remarks as needed.

- (2) **Departure Frequency.** When radar positions are combined, assign North Radar (N), South Radar (S), or the proper center frequency as appropriate. When radar positions are de-combined, then the frequency and altitude shall be assigned based on the first departure fix as follows:

Flow	Requested Hdg (Direction)	Dep Frequency
East	255 - 074° (W to NE)	N
	075 - 254° (E to SW)	S
West	255 - 074° (W to NE)	N
	075 - 254° (E to SW)	S
Northeast	350 - 170° (N to SE)	N
	171 - 349° (S to NW)	S
Southwest	030 - 199° (NE to S)	N
	200 - 029° (SW to N)	S

- (3) **Initial Altitude.** Assign departure altitudes as follows:

- (a) High Performance: Maintain VFR at or below 10,000 MSL.
- (b) Low Performance: Maintain VFR at or below 7,500 MSL.

- e. **Beacon Code Assignment.** For all aircraft requiring one, issue a computer assigned beacon code.

3. **GROUND CONTROL (GC):**

a. **Radio Frequency:** 121.9

b. **Departures.** GC shall:

- (1) Assign departure runways / intersections as appropriate for the flow in use. Requests for other runways shall be coordinated with Local Control (LC).
- (2) Advise LC of runway / intersection assignments or notate in the remarks section of the flight plan.
- (3) Coordinate intersection departures by stating the runway number and intersection. LC shall respond with the runway number and intersection.

Example: GC – “INTERSECTION DEPARTURE, RUNWAY 8 AT C.”
LC – “RUNWAY 8 AT C.”

(4) Provide, to the extent practical, aircraft information to LC in order of departure sequence.

c. **Runway Crossings.** GC shall coordinate with LC specific locations to cross an active runway with aircraft. Aircraft may remain on GC frequency for normal crossings (e.g. – Crossing Runway 8 at D, remaining on taxiway D). Aircraft shall change to LC frequency for any other crossing requiring operation on an active runway. The following standard phraseology shall be used to request, approve, or deny runway crossing:

- (1) GC – “CROSS RUNWAY ____ WITH (# of aircraft) AT TAXIWAY ____.”
LC – “CROSS RUNWAY ____ WITH (# of aircraft) AT TAXIWAY ____.”
Or
LC – “UNABLE (*reason*).”

Example: GC – “CROSS RUNWAY 8 WITH 1 AIRCRAFT AT D”
LC – “CROSS RUNWAY 8 WITH 1 AIRCRAFT AT D”

d. **Inactive Runway.** GC shall approve or deny a request by LC to depart an aircraft on an inactive runway.

Example: LC – “REQUEST TO DEPART RUNWAY 17”
GC – “DEPART RUNWAY 17 APPROVED”
Or
GC – “UNABLE (*reason*).”

4. **LOCAL CONTROL (LC):**

a. **Radio Frequency.** 120.3

b. **Airspace and Responsibility.** Tower airspace is defined laterally by the surface area of the ABQ Class C airspace surface area (generally a 5 NM radius from the airport), and vertically from the surface up to, but not including, 7,500' MSL. LC provides separation service and traffic advisories to all aircraft within tower airspace, including overflights, departures, and arrivals. LC further assumes separation responsibility for arriving aircraft when handoff and communication transfer has been completed.

c. **Radar Display.** LC shall monitor at least 15 NM (no more than 60 NM) of airspace on the radar display.

d. **Runway Safety Responsibility.** LC shall:

- (1) Except for normal crossings, control any aircraft operating on an active runway on LC frequency.
- (2) Respond to GC when an intersection departure request is received.
- (3) Coordinate with and receive acknowledgement from GC prior to using an inactive runway.
- (4) Advise and receive acknowledgement from GC when the inactive runway operation is complete.

e. **Arrivals**

- (1) LC shall coordinate with the appropriate radar controller any condition affecting arrivals or the use of simultaneous arrivals, or any change or maneuver that will affect the approach sequence.
- (2) Traffic flows should be in accordance with procedures described in Chapter 1.

f. **Missed Approach Procedures.** LC shall, as quickly as practical:

- (1) Assign missed approach instructions as shown in the table below
- (2) Coordinate with the appropriate radar controller after a missed approach commences.

Flow:	East			All Others	
Landing Runway:	8		3	All	
Aircraft Perf. Type:	High	Low	All	High	Low
Missed Apch Hdg:	310°		190°	See Departure Headings	
Missed Apch Alt (MSL):	10,000	7,000	8,000	8,000	7,000

g. Departures. LC shall:

- (1) **Releases.** Have automatic releases for departures using the designated departure runway(s) for the flow in use. Aircraft departing other runways shall be coordinated with the affected radar position(s).
- (2) **Rolling Notification.** Notify the appropriate departure controller when any departing aircraft begin their takeoff roll. This message shall include aircraft callsign, departure runway, and first fix. No approval or reply is required for designated departure runways. Notification may be suspended with coordination between LC and the affected departure radar controller(s).

Example: (Callsign), (Departure Runway), (First Fix)

FFT336, 8, ALS

- (3) **Departure Heading Assignment.** Assign headings to departing aircraft as follows:

Flow	Departure Direction	All IFR and High Perf VFR Departure Headings (Primary / Secondary)	Low Perf. VFR Departure Headings
East	N	310° / 290°	NFL than 280°
	S and All Military or Heavy Aircraft	190° / (170°)*	NFR than 190°
West	N	Runway 26: 260° / 275° Runway 21: 275° / 290°	NFR than 350°
	S	210° / 240°	NFL than 170°
Northeast	N	310° / 330°	NFL than 260°
	S	350°	NFR than 080°
Southwest	N	210° / 225°	NFR than 260°
	S	170° / 190°	NFL than 120°

* 170° heading available only for aircraft assigned 10,000 due to MVA

NFL = No Further Left / NFR = No Further Right

- (4) **Radar Acquisition.** Monitor departures to ensure a full data block appears within LC airspace. If this does not occur, manually hand off the aircraft to the appropriate departure controller.
- (5) **Radar Service.** Hand off departing aircraft to the appropriate departure controller or, for VFR aircraft not requesting flight following, terminate radar service when leaving Class C airspace.
- (6) **Transfer of communication and control.** LC shall transfer communication of departing aircraft to the appropriate radar position prior to leaving LC airspace. Transfer of communication constitutes transfer of control for climb and turns.

CHAPTER 3. TRACON POSITIONS AND RESPONSIBILITIES

1. GENERAL:

- a. **Airspace.** North Radar (NR), South Radar (SR), and Final Radar (FR) airspace is depicted in Appendix 1.
- b. **Final Approach.** Ensure IFR arrival aircraft turn final outside tower airspace.
- c. **Non-Standard Flow.** Arrivals to runways other than for the current flow in use shall be coordinated with LC and, if necessary, the controller having sequencing authority to a conflicting runway.
- d. **Sequence Authority.** When multiple radar positions are open, the controller with sequence authority works with adjacent controllers to establish the final approach sequence as specified below. A sequence constitutes coordination to enter the airspace of the approving controller without a radar handoff.
 - (1) When FR is open, FR has sequence authority.
 - (2) When FR is closed, NR has sequence authority, except:
 - (a) **East Flow** – SR has sequence authority to Runway 3.
 - (b) **West Flow** – SR has sequence authority Runway 26 and Runway 30.
 - (c) **Non-Standard Flow** – NR and SR shall coordinate who has sequence authority.
- e. **Scratch Pad Information.** The initial controller to work an aircraft entering Albuquerque Terminal Airspace shall ensure one of the following items appears in the data block scratch pad:
 - (1) **ABQ Arrivals**
 - (a) Runway assignment for visual approaches or VFR aircraft (e.g. – R08, R26, etc.).
 - (b) Instrument approach, or type approach for military aircraft as assigned (e.g. – I03, OH8, etc.).
 - (2) **Overflights and Satellite Arrivals.** The destination airport identifier.
- f. **Required Coordination.** Coordinate with LC the following as necessary:
 - (1) Flights of one or more aircraft.
 - (2) Aircraft not making a full stop landing.
 - (3) Aircraft executing an overhead or simulated flame out approach.
 - (4) Aircraft not displaying a full data block.
- g. **Practice/Missed Approaches.** If an aircraft requires or requests a missed approach, assign missed approach instructions according to the table in the Local Control section and coordinate with LC.
- h. **Opening/Closing Positions.** Notify LC when opening or closing a TRACON position.
- i. **LARGO SID.** The Zuni (ZUN) transition of the LARGO SID lies in NR airspace. Aircraft being worked by SR shall be pointed out to NR prior to radar handoff to center.

j. Procedures for Feeding Final Radar. NR and/or SR, when FR is open:

- (1) Shall vector high performance aircraft to enter downwind at 11,000' MSL and 210 knots.
- (2) May vector for base/straight-in approach if FR accepts radar handoff prior to 5 NM from FR airspace.
- (3) Shall vector low performance aircraft until a radar handoff, point out, or sequence is obtained from FR.
- (4) Shall transfer communication to FR as soon as practical after radar handoff is accomplished.

2. NORTH RADAR (NR):

a. Radio Frequency. 127.4

b. East Flow. When FR is open, unless FR has accepted radar handoff prior to 5 NM from their airspace boundary, vector high performance aircraft to enter left downwind for Runway 8.

c. West Flow. When vectoring for a left downwind to Runway 26:

- (1) FR Closed – Transfer communication to SR when the aircraft is turning or established on downwind.
- (2) FR Open – A sequence authorizes NR to enter SR airspace west of FR airspace. Radar handoff and communication transfer to FR shall occur prior to the Runway 35 centerline.

3. SOUTH RADAR (SR):

a. Radio Frequency. 123.9

b. East Flow. When FR is open:

- (1) Unless FR has accepted radar handoff prior to 5 NM from FR airspace, vector high performance aircraft to enter a right downwind for either Runway 3 or Runway 8.
- (2) LAVAN arrivals may be vectored for base leg or straight-in approach provided FR has accepted radar handoff prior to the lateral boundary of FR airspace.

c. Southwest Flow. When vectoring for a right downwind to Runway 21, assign aircraft no lower than 12,000' MSL until a sequence is obtained from NR, and:

- (1) FR Closed – Transfer communication to NR prior to the Runway 3 extended centerline.
- (2) FR Open – A sequence authorizes SR to enter NR airspace south of FR airspace. Radar handoff and communication transfer to FR shall occur prior to the Runway 8 centerline.

4. FINAL RADAR (FR):

a. Radio Frequency. 126.3

b. Control of Aircraft. FR shall have control on contact, but shall protect for automatic release departures.

c. Quick Look. FR shall use quick look at all times.

CHAPTER 4. GOOD OPERATING PRACTICES

1. LOCAL CONTROL:

- a. Resolve conflicts between departures prior to changing frequencies to radar positions.
- b. Only route VFR aircraft to the radar controller's airspace that will initially work the aircraft. Prior coordination is required with the other affected controller(s) if this is not possible.
- c. Traffic permitting, approve "on course" for VFR departures, except for headings required to protect final airspace as defined in the local control departure heading assignments table.
- d. Select Runway 17/35 for use only in extreme wind conditions. Use of this runway causes conflicts with all other runways. Additionally, the runway is not stressed for the weight of most commercial aircraft.
- e. During busy periods LC should maintain an Arrival/Departure Log. Record aircraft identification (ACID) and indicate the runway they are using by placing the ACID in a column representing that runway. Place a check mark next to the ACID when the aircraft is cleared to land or depart. Place a line through the ACID when LC has completed all necessary operations with that aircraft (clear of runway / changed to departure).

2. RADAR POSITIONS:

- a. If traffic requires, advise VFR aircraft to remain clear of Class C airspace. Remember that establishing 2-way radio communication is the only requirement to enter Class C airspace. Give an expected delay time.

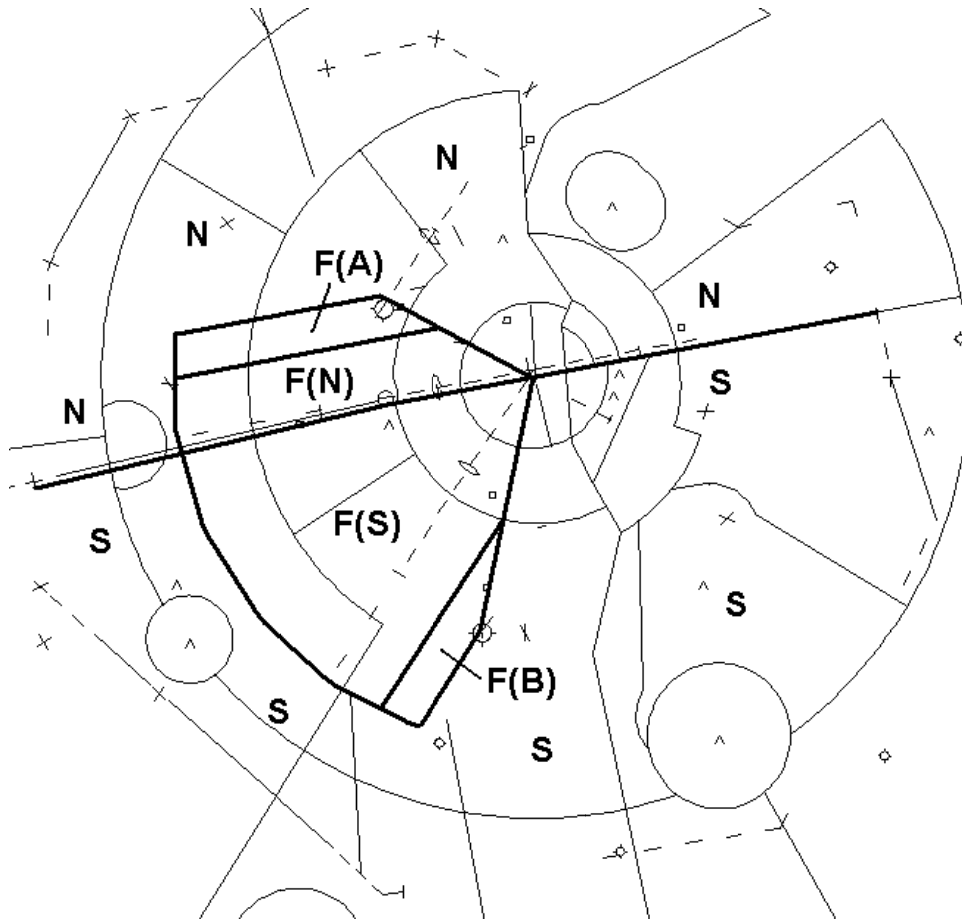
Example: "N12345, remain outside charlie airspace, expect five minute delay."
- b. Consider the effects of arrivals and overflights in the departure quadrants, especially IFR aircraft. Northbound or southbound aircraft below 10,500' MSL should pass west of the airport when Runway 8 is in use and east of the airport when Runway 26 is in use.
- c. Although separation between two VFR aircraft is not required, traffic alerts for aircraft receiving radar service are still required. Point out or accomplish coordination with other controllers if an aircraft you are working will penetrate their airspace.
- d. When Runway 26 is in use, and traffic permits, aircraft from the east should remain on or south of the Runway 26 extended centerline to allow the aircraft to join final on a modified "base/straight in" approach. This should not be enforced in lieu of an established sequence or maintaining separation between aircraft.

3. CLEARANCE DELIVERY:

- a. Although initial headings will not be assigned to most VFR departures, during heavy traffic periods, inform aircraft that they may be assigned a departure heading prior to being cleared on course.
- b. If doubt exists as to which departure frequency to assign when multiple radar positions are open, query a radar controller prior to issuing departure instructions or an IFR clearance.

APPENDIX 1. TRACON Airspace

EAST FLOW

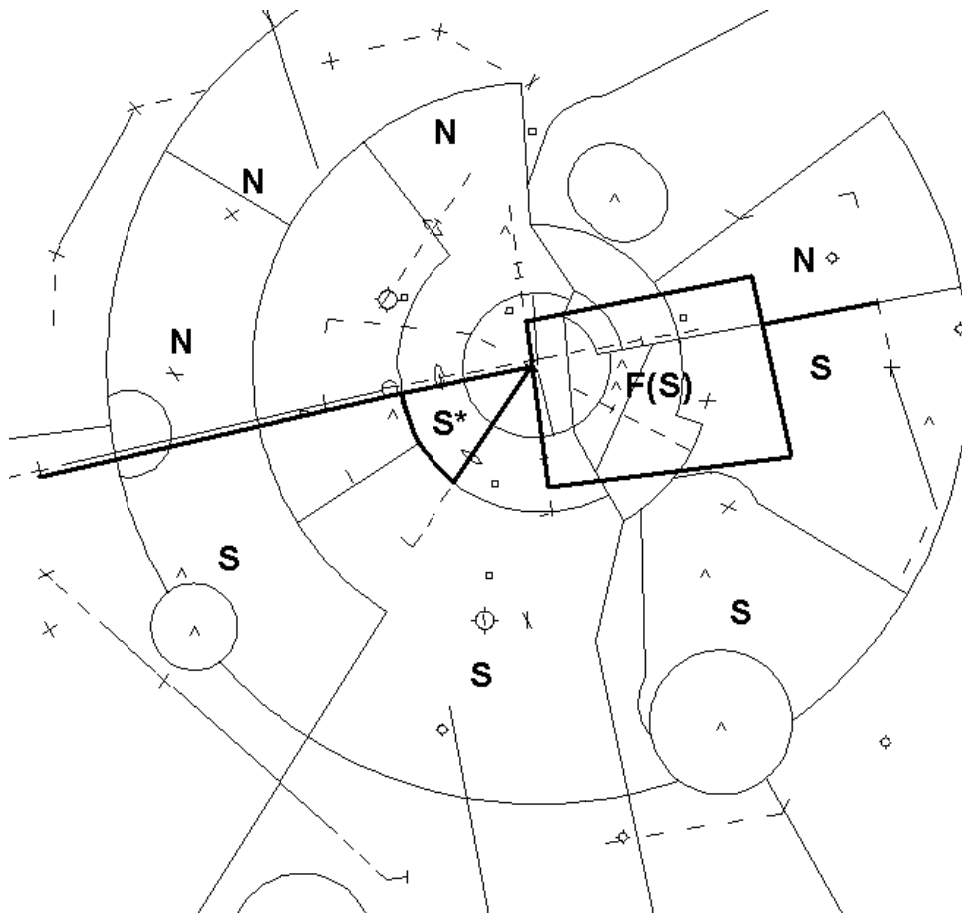


Symbol	Airspace Description	Symbol	Airspace Description
N	NR: SFC – FL200	S	SR: SFC – FL200
F(N)	NR: Above 10,000' MSL FR: SFC – 10,000' MSL	F(S)	SR: Above 10,000' MSL FR: SFC – 10,000' MSL
F(A)	NR: Above 10,000' MSL FR: 8,000' – 10,000' MSL NR: Below 8,000' MSL	F(B)	SR: Above 10,000' MSL FR: 8,000' – 10,000' MSL SR: Below 8,000' MSL

Airspace descriptions exclude LC airspace (Below 7,500' MSL within 5 NM)

NOTE – When FR is closed, NR owns F(N) and F(A) airspace and SR owns F(S) and F(B) airspace.

WEST FLOW



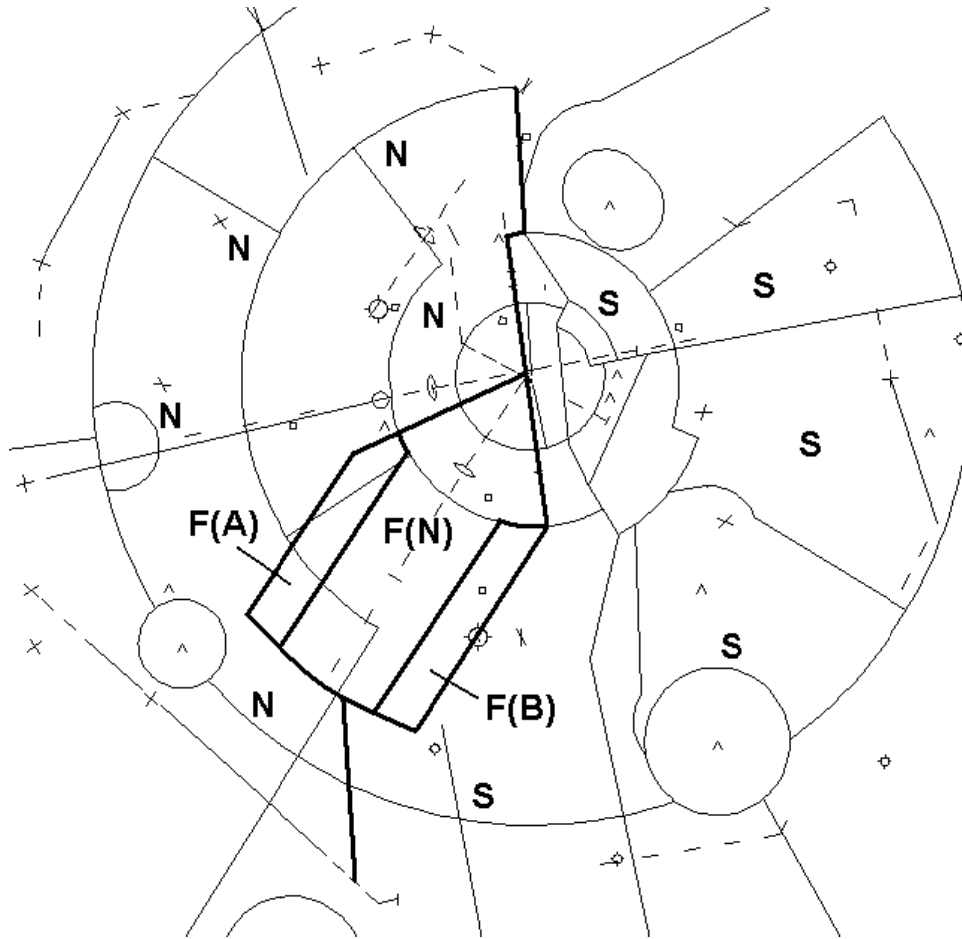
Symbol	Airspace Description	Symbol	Airspace Description
N	NR: SFC – FL200	S	SR: SFC – FL200
		F(S)	SR: Above 10,000' MSL FR: SFC – 10,000' MSL
		S*	SR: SFC – FL200 (See * Below)

Airspace descriptions exclude LC airspace (Below 7,500' MSL within 5 NM)

NOTE – When FR is closed, SR owns F(S) airspace.

* – The airspace denoted by the symbol S* in the diagram above represents Prearranged Coordination Airspace between North Radar (NR) and South Radar (SR) for aircraft departing ABQ. NR may work aircraft departing Runway 26 or Runway 21 absent coordination with SR provided departing aircraft are vectored toward NR airspace as soon as practical. Slow turning aircraft may need to be pointed out to SR west of this airspace.

NORTHEAST FLOW

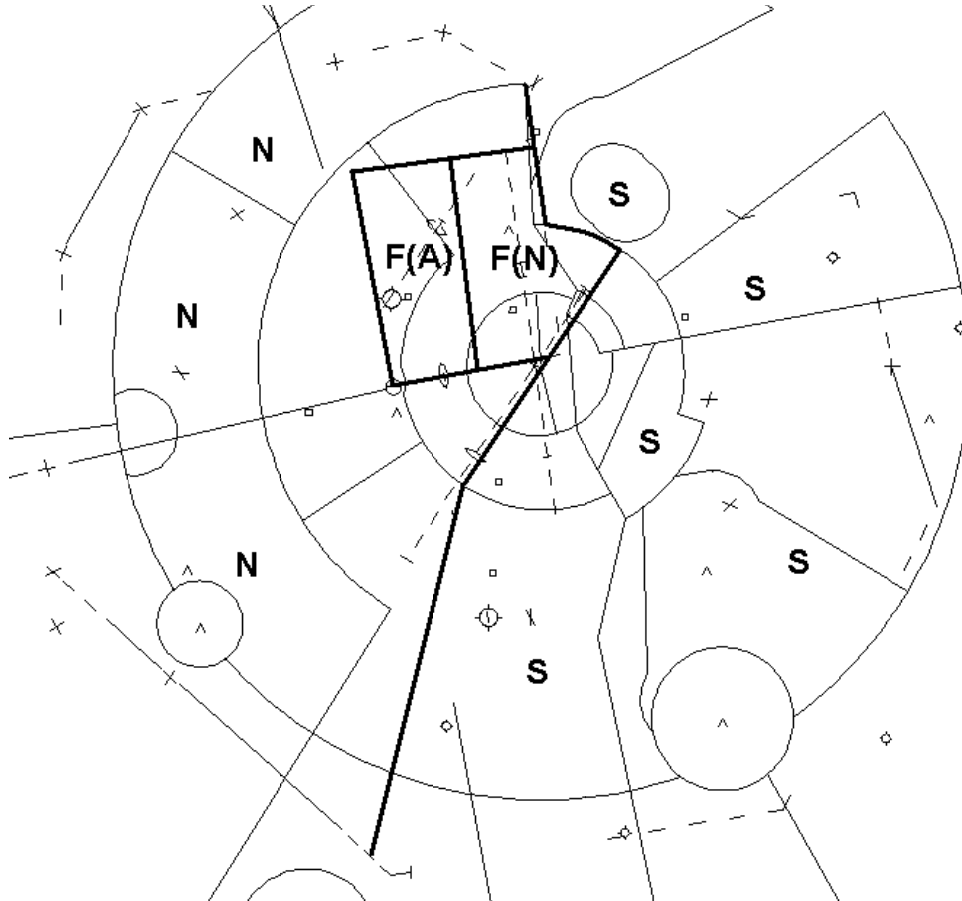


Symbol	Airspace Description	Symbol	Airspace Description
N	NR: SFC – FL200	S	SR: SFC – FL200
F(N)	NR: Above 10,000' MSL FR: SFC – 10,000' MSL		
F(A)	NR: Above 10,000' MSL FR: 8,000' – 10,000' MSL NR: Below 8,000' MSL	F(B)	SR: Above 10,000' MSL FR: 8,000' – 10,000' MSL SR: Below 8,000' MSL

Airspace descriptions exclude LC airspace (Below 7,500' MSL within 5 NM)

NOTE – When FR is closed, NR owns F(N) and F(A) airspace and SR owns F(B) airspace.

SOUTHWEST FLOW



Symbol	Airspace Description	Symbol	Airspace Description
N	NR: SFC – FL200	S	SR: SFC – FL200
F(N)	NR: Above 10,000' MSL FR: SFC – 10,000' MSL		
F(A)	NR: Above 10,000' MSL FR: 8,000' – 10,000' MSL NR: Below 8,000' MSL		

Airspace descriptions exclude LC airspace (Below 7,500' MSL within 5 NM)

NOTE – When FR is closed, NR owns F(N) and F(A) airspace.