

Virtual Denver ARTCC

Letter of Agreement between Denver Approach (D01) and Denver Center

Rev: 6/30/2016

1 DEFINITIONS

- **Group A:** All jet aircraft
- **Group B:** Non-jet aircraft with a filed true airspeed (TAS) of more than 210 knots
- **Group C:** Non-jet aircraft filed 210 knots or less
- **Legacy:** Non-RNAV departure or arrival procedures
- **Converging Runways:** Any runway configuration other than all north or all south
- **Long Side STARs:** MOLTN/FRNCH, ANCHR/KOHOE, JAGGR/ZPLYN, CREDE/PEEKK
- **Short Side STARs:** TSHNR/KAILE, KIPPR/WAHUU, PURRL/BOSSS, TELLR/LDORA
- **Gate Fixes:** LANDR/SAYGE, DANDD/QUAIL, POWDR/LARKS, RAMMS/TOMSN

2 ARRIVALS TO D01

- D01 has control for turns and descent on all terminal arrivals within 15NM of the Center/TRACON boundary within the Center arrival sectors at and below FL250 provided progress toward the Center/TRACON boundary is maintained.
 - Exception: Aircraft south of the FQF-220R in the southwest arrival gate are released for descent to 16,000' MSL. After acceptance of a radar handoff from Center, the TRACON southwest arrival controller is responsible for point outs required to TRACON south departure on arrival aircraft entering TRACON airspace at or below FL220
- All crossing instructions should be noted by amending the filed cruise altitude (F5 command)
- **Group A**
 - Speed restrictions (250 knots or otherwise coordinated) for Group A aircraft apply to all aircraft utilizing legacy procedures regardless of destination airport except high performance fighter jets landing BKF.
 - All Group A RNAV equipped and qualified aircraft must be on a RNAV STAR or SID
- **Group B**
 - Group B aircraft entering D01 between the DEN 001R clockwise to the DEN 140R shall enter D01 level at 10000
- **Group C**
 - Group C aircraft entering north departure airspace via V4 shall be at 11000
 - Group C aircraft entering departure airspace between the DEN 001R clockwise to the DEN143R shall enter D01 level at 8000 or 10000

- All **RNAV STARs** need to be verified to match the destination's landing configuration in accordance with table 2-1.
 - STAR changes must not be required for aircraft within 75 NM of the Center/TRACON common boundary due to a KDEN landing configuration change.
 - Once verified and the aircraft has been given the "Descend via" instruction, enter the first four characters of the RNAV STAR into the scratchpad (i.e. ANCH, BOSS, CRED) but do not change data tag altitude.
- Altitude assignments should not be amended on any RNAV STAR unless required for separation.
- TRACON TMU should only request gate crossing altitudes of 17,000' MSL and speeds of 250 knots on RNAV STARs to support KDEN converging runway operations in accordance with table 1-1, runway changes, and weather.
- When a "Descend Via" clearance will conflict with Group B or C aircraft routed over the same fix in the northwest or southwest arrival gate, Center must suspend use of descend via procedures for the affected aircraft. The Group A aircraft must be assigned the lowest available altitude in the STAR window at the gate fix and established on the RNAV STAR one fix prior to the gate fix.
- Arrival gates utilizing converging runway operations: Denver Group A arrival aircraft must be assigned the long side RNAV STAR to cross the gate fix at 17,000' MSL and 250 knots. Descend via procedures must not be used. Aircraft may be routed direct to the gate fixes.
- All other Denver terminal area arrivals must enter the arrival gates via the appropriate standard terminal arrival route (STAR), or STAR radial, and comply with the routes and altitudes in tables 2-2 through 2-5 unless otherwise coordinated.

RWY CONF.	RAMMS/TOMSN STAR ALTITUDE		POWDR/LARKS STAR ALTITUDE		DANDD/QUAIL STAR ALTITUDE		LANDR/SAYGE STAR ALTITUDE	
NORTH ALL	MOLTN (L)	DV	TELLR (S)	DV	PURRL (S)	DV	ANCHR (L)	DV
	FRNCH (L)	DV	LDORA (S)	DV	BOSSS (S)	DV	KOHOE (L)	DV
SOUTH ALL	TSHNR (S)	DV	CREDE (L)	DV	JAGGR (L)	DV	KIPPR (S)	DV
	KAILE (S)	DV	PEEKK (L)	DV	ZPLYN (L)	DV	WAHUU (S)	DV
NORTH & WEST	MOLTN (L)	DV	TELLR (S)	DV	PURRL (S)	DV	ANCHR (L)	170
	FRNCH (L)	DV	LDORA (S)	DV	BOSSS (S)	DV	KOHOE (L)	170
NORTH & EAST	MOLTN (L)	170	TELLR (S)	DV	PURRL (S)	DV	ANCHR (L)	DV
	FRNCH (L)	170	LDORA (S)	DV	BOSSS (S)	DV	KOHOE (L)	DV
SOUTH & WEST	TSHNR (S)	DV	CREDE (L)	DV	JAGGR (L)	170	KIPPR (S)	DV
	KAILE (S)	DV	PEEKK (L)	DV	ZPLYN (L)	170	WAHUU (S)	DV
SOUTH & EAST	TSHNR (S)	DV	CREDE (L)	170	JAGGR (L)	DV	KIPPR (S)	DV
	KAILE (S)	DV	PEEKK (L)	170	ZPLYN (L)	DV	WAHUU (S)	DV
NORTH & SOUTH	TSHNR (S)	DV	TELLR (S)	DV	PURRL (S)	DV	KIPPR (S)	DV
	KAILE (S)	DV	LDORA (S)	DV	BOSSS (S)	DV	WAHUU (S)	DV
EAST & WEST	MOLTN (L)	170	CREDE (L)	170	JAGGR (L)	170	ANCHR (L)	170
	FRNCH (L)	170	PEEKK (L)	170	ZPLYN (L)	170	KOHOE (L)	170
WEST ALL	MOLTN (L)	DV	CREDE (L)	DV	JAGGR (L)	170	ANCHR (L)	170
	FRNCH (L)	DV	PEEKK (L)	DV	ZPLYN (L)	170	KOHOE (L)	170
EAST ALL	MOLTN (L)	170	CREDE (L)	170	JAGGR (L)	DV	ANCHR (L)	DV
	FRNCH (L)	170	PEEKK (L)	170	ZPLYN (L)	DV	KOHOE (L)	DV

(DV = "Descend via" clearance)

Long Side Star (L) / Short Side STAR (S)

Table 2-1: Denver Runway/Arrival Gate Configuration Matrix

NORTHEAST ARRIVALS

RNAV				
Airport	Type Nav	Aircraft Group	STAR	Altitude
DEN	RNAV	Group A - Short Side	KIPPR/WAHUU	Descend Via
DEN	RNAV	Group A - Long Side	ANCHR/KOHOE	Descend Via
FNL/GXY/BJC	RNAV	Group A	KIPPR	Descend Via
APA	RNAV	Group A	PUFFR	Descend Via
LEGACY				
Airport	Type Nav	Aircraft Group	STAR / Route	Altitude
DEN	Non-RNAV	Group A	LANDR	17,000
DEN	Non-RNAV	Group A	SAYGE	FL190
DEN	ALL	Group B	LANDR	13,000
APA	Non-RNAV	Group A	SAYGE	FL190
FTG/BKF <small>non-fighters</small>	ALL	Group A	SAYGE	12,000
APA/FTG/BKF <small>non-fighters</small>	ALL	Group B	SAYGE	10,000
FNL/GXY/BJC	Non-RNAV	Group A	LANDR	17,000
FNL/GXY/BJC	ALL	Group B	LANDR	10,000
BKF <small>fighters</small>	ALL	Group A	SAYGE	FL230

Table 2-2: Denver Terminal Area Northeast Arrival Routes/Restrictions

NORTHWEST ARRIVALS

RNAV				
Airport	Type Nav	Aircraft Group	STAR	Altitude
DEN	RNAV	Group A - Short Side	TSHNR/KAILE	Descend Via
DEN	RNAV	Group A - Long Side	MOLTN/FRNCH	Descend Via
FNL/GXY/FTG	RNAV	Group A	TSHNR	Descend Via
LEGACY				
Airport	Type Nav	Aircraft Group	STAR / Route	Altitude
DEN	Non-RNAV	Group A	RAMMS	17,000
DEN	Non-RNAV	Group A	TOMSN	FL190
DEN	ALL	Group B	V4.GLL	13,000
DEN	ALL	Group B	TOMSN	17,000
DEN	ALL	Group C	RAMMS/V4	14,000/11,000
BJC	ALL	ALL	TOMSN	17,000/FL190*
APA/BKF <small>non-fighters</small>	ALL	Group A	TOMSN	FL190/FL200*
APA/BKF <small>non-fighters</small>	ALL	Group B & C	TOMSN	17,000
FNL/GXY/FTG	Non-RNAV	Group A	RAMMS	17,000
FNL/GXY/FTG	ALL	Group B	RAMMS	15,000
FNL/GXY/FTG	ALL	Group C	RAMMS	14,000
BKF <small>fighters</small>	ALL	Group A	TOMSN	FL230

* When conflicting traffic exists

Table 2-3: Denver Terminal Area Northwest Arrival Routes/Restrictions

SOUTHEAST ARRIVALS

RNAV				
Airport	Type Nav	Aircraft Group	STAR	Altitude
DEN	RNAV	Group A - Short Side	PURRL/BOSSS	Descend Via
DEN	RNAV	Group A- Long Side	JAGGR/ZPLYN	Descend Via
APA/BJC/BKF <small>non-fighters</small>	RNAV	Group A	DUNNN	Descend Via
LEGACY				
Airport	Type Nav	Aircraft Group	STAR / Route	Altitude
DEN	Non-RNAV	Group A	DANDD	FL190
DEN	Non-RNAV	Group A	QUAIL	17,000
DEN	ALL	Group B	QUAIL	13,000
APA/BJC/BKF <small>non-fighters</small>	Non-RNAV	Group A	BRK.FQF	Per ZDV/COS LOA
APA/BKF <small>non-fighters</small>	ALL	Group B	QUAIL	11,000
FNL/GXY	ALL	Group A	DANDD	FL230
FTG	ALL	Group A	DANDD	12,000
FNL/GXY/FTG	ALL	Group B	DANDD	11,000
BJC	ALL	Group B	BRK.FQF	Per ZDV/COS LOA
BKF <small>fighters</small>	ALL	Group A	QUAIL	FL230

Table 2-4: Denver Terminal Area Southeast Arrival Routes/Restrictions

SOUTHWEST ARRIVALS

RNAV				
Airport	Type Nav	Aircraft Group	STAR	Altitude
DEN	RNAV	Group A - Short Side	TELLR/LDORA	Descend Via
DEN	RNAV	Group A- Long Side	CREDE/PEEKK	Descend Via
APA/FTG/BKF <small>non-fighters</small>	RNAV	Group A	ZOMBZ	Descend Via
LEGACY				
Airport	Type Nav	Aircraft Group	STAR / Route	Altitude
DEN	Non-RNAV	Group A	POWDR	FL190
DEN	Non-RNAV	Group A	LARKS	17,000
DEN	ALL	Group B	LARKS	16,000
DEN	ALL	Group C	LARKS	15,000
APA/FTG/BKF <small>non-fighters</small>	Non-RNAV	Group A	LARKS	17,000/16,000
APA/FTG/BKF <small>non-fighters</small>	ALL	Group B	LARKS	16,000
APA/FTG/BKF <small>non-fighters</small>	ALL	Group C	LARKS	15,000
FNL/GXY	ALL	Group A	POWDR	FL230
BJC	ALL	Group A	POWDR	17,000
FNL/GXY/BJC	ALL	Group B	POWDR	16,000
FNL/GXY/BJC	ALL	Group C	POWDR	15,000
BKF <small>fighters</small>	ALL	Group A	LARKS	FL230

Table 2-5: Denver Terminal Area Southwest Arrival Routes/Restrictions

3 DEPARTURES FROM D01

- Aircraft departing D01 shall exit through the appropriate departure gate.
- ZDV has control for climb on all departures to filed altitude.
- ZDV has control for turns up to 30 degrees within 15NM of the center boundary.
- D01 shall ensure departures are established on their route of flight or vectored out the most appropriate departure gate within 10NM of the D01/ZDV boundary, except:
 - Departures filed over CYS or RAP (YELLOWSTONE Departure) may be cleared direct either fix.
 - Departures filed over PUB (PIKES Departure) may be cleared direct ADANE or PUB.
 - Aircraft on a radar vectored departure initially filed over points outside of the D01 lateral boundary where the direct course passes through a departure gate shall be issued direct to that point.
- All departures shall be cleared to FL230 or lower filed altitude except:
 - Aircraft requesting 7000, exiting the east gate shall be assigned 9000.
 - Group B and C departures exiting the east gate shall not be assigned higher than 13000.
- D01 shall provide 5 miles constant or increasing at the time of handoff to ZDV.

4 OVERFLIGHTS

- Overflights shall enter D01 through an arrival gate and leave D01 through a departure gate unless coordinated at least 30 NM from the common boundary.
- Group A and B Colorado Springs (COS) arrivals must be at FL230 or lower filed altitude when on the following routes:
 - From the northwest: TOMSN FQF BRK COS
 - From the northeast: SAYGE FQF BRK COS or LANDR DVV BRK COS
- Group C COS arrivals entering departure airspace from the DEN 001R clockwise to the DEN 134R must be routed FQF BRK COS or DVV BRK COS 10000' or 8000'
- Between 2300L-0600L, or during very slow traffic periods, overflights may stay on their filed route

5 ARRIVALS TO COS

- Denver Center shall point out aircraft on the DEBERRY arrival into COS to D01 Pueblo sector.

6 DEPARTURES FROM PUB

- D01 shall ensure all aircraft are established on their filed route and climbing to 12,000' or lower filed cruise altitude prior to handoff to ZDV.
 - Aircraft initially filed over points outside of D01 Pueblo airspace shall be issued direct to that point.
- D01 shall separate PUB departures by 5 miles constant or increasing prior to handoff to ZDV

7 ARRIVALS TO PUB

- ZDV shall hand off arrivals to PUB at or below 10,000' routed direct to the PUB VOR at 220kts or less.
- ZDV shall separate PUB arrivals by 5 miles or greater prior to handoff to D01

8 DEPARTURES FROM GJT

- D01 shall ensure all aircraft are established on their filed route and climbing to 14,000' or lower filed cruise altitude prior to handoff to ZDV.
 - Aircraft initially filed over points outside of D01 Grand Junction airspace shall be issued direct to that point.
- D01 shall separate GJT departures by 5 miles constant or increasing prior to handoff to ZDV

9 ARRIVALS TO GJT

- ZDV shall hand off arrivals to GJT at 13,000' or lower filed altitude routed direct to the JNC VOR at 250kts or less.
- ZDV shall separate GJT arrivals by 5 miles or greater prior to handoff to D01