

Mine Tour: Part One, the Rocky Mountains

The background of this charter is that the sudden economic boom after WW II requires tremendous amounts of materials, including minerals and metals extracted from the earth. You are to take a group of prominent and respected mining and metallurgical engineers on a tour of the US southwest where they will be stopping at various historic (and not so historic) mining districts to perform mine and property evaluations for potential investors (investors like Anaconda, Kennecott, Phelps Dodge, et al.). The charter leaves Denver, winds its way across the Continental Divide, and ends at Albuquerque.

Captains Notes:

Every one of the airports in this leg is higher than 5,000 feet, and density altitude needs to be considered for every landing and takeoff. A wise captain will only take the fuel required for the next leg plus sufficient to reach a good, solid alternate. Runways seem long enough, but with the reduced power and lift at these altitudes, they can be marginal on a hot summer day. Please review the notes included in each flight. Most of these airports DO NOT have instrument approaches, so watch the weather and have good solid alternates in mind.

Flying in mountainous terrain takes some additional skills to overcome potential problems, although MS FS has not yet included most of them. Winds across the mountains creates considerable updrafts and downdrafts, the reason that the FAR's require 2000 feet terrain clearance vice the 1000 feet used elsewhere. These airports will definitely test your high altitude skills.

As a cultural aside, for those that have never spent much time out here or studied the region in depth, there are 3 main items that caused the settlement of the western United States. These three items are mining, ranching/farming, and the economic lifeline that ties the first two items to civilization, the railroads. Without these three elements, the west would have taken a lot longer to be "settled".

The region we are flying over in this charter has its origins in mining and railroads. I believe it would increase your enjoyment of the flight to dig a little into the history of the areas we are flying to and over. Leadville was known for gold and silver in the early years, and recently (in respect to the date of this charter, early 1950's) was known for Camp Hale, where the 10th Mountain Division trained. Telluride (one of the stories about its naming was "to h... u ride"), although tellurides (the mineral species) are an important source of gold and silver in these mountains. This area of the Rockies is also the area of the Rio Grande Southern and the Silverton and Durango railroads. Durango (and the closely associated Animas, named for the Animas canyon which you see to the north of the airport, in which the Silverton and Durango makes it way from Durango to Silverton) was a local collection area for the mines up the Animas and the surrounding mountains. Questa will become famous in a short period of time because of a large deposit of molybdenite in the mountains east of here, one of the largest primary molybdenum producers in the United States.

As the title states, this is part one. With any luck and interest, I will continue the trip through New Mexico, Arizona, and Nevada.

NOTE: I have added the Victor Airways to the descriptions for those amongst us that prefer to fly by chart and not FSNAV. For those of us that fly that way, there are several intersections that are not in the FAA database but are in the DCA database. These are RADTU (Radial Turn), DEPTU (Departure Turn), DCBOD (DCA Beginning of Descent), FINTU (Final Turn), and PROTU (Procedure Turn).

There is an anomaly in the HBU VORTAC, which requires you to subtract 3deg. from the suggested bearing. Therefore, whatever FSNav shows, to track HBU 233R you must fly a course of 233deg, but set the OBS to 230deg. This also applies to intersections based on bearings to HBU, when you must set the OBS as detailed in the flight notes, and not as shown on FSNav.

From – To	Flight Description. "Allocated runways and related information may change when flying online or using Real Weather"				Course (Leg) Deg	Distance (Leg) nm	ETE (leg) HH+MM
	Dep. Rwy – 17L	Init. Hdg – 162deg	Init. Alt – 12,000ft	Apt Elev. – 5,430ft			
Denver (KDEN) Colorado, USA To Leadville (KLXV) Colorado, USA	Departure: To FQF VORTAC, 116.30. After take off turn left to 162deg, intercept FQF 162R and commence climb to 12,000ft. Direct to VOR.....				162	10.6	00+05
	Enroute: To Intersection TERRO. Turn right to 219deg and track 219R outbound from FQF (Airway V160). Waypoint at FQF DME 75.4.....				219	75.3	00+28
	To intersection LOZUL. Turn right to 233deg and track the HBU 230R towards HBU VORTAC, 114.90 (Airway V160). Waypoint at HBU DME 48.7.....				233	12.0	00+04
	From LOZUL onwards the route is VFR only as pilot must maintain clearance from mountains to west.						
	To intersection XIRBY. Turn right to 323deg. Waypoint at HBU 036R, DME 50.1.....				323	11.4	00+04
	Approach: To intersection MORYU. Turn left to 314deg, commence 500 FPM descent to 10,700ft MSL (pattern altitude for KLXV) and reduce speed to 120kts. Waypoint at HBU 030R, DME 50.8.				314	5.2	00+02
	To KLXV. Turn right to 337deg and head towards the aerodrome.....				337	10.4	00+04
	To Fix 02. Turn right to runway reciprocal 339deg for 1min – commence turn 30 secs after station passage KLXV.....				339	2.0	00+01
	To runway. Commence a 90/270 procedure turn. Make a left 90deg turn and as soon as you roll out on 249deg, commence a right 270deg turn to 159deg. If you maintain the same turn rate throughout both turns, you should roll out heading directly for the runway where you should make a visual approach.....				Final Hdg 159	8.3	00+05
	Land – Lake Co runway 16 Length – 6,306ft Width – 75ft Surface – Asphalt						
Flight No. 729-02-01	Arrival Airport Elev. – 9,924ft Estimated totals for this flight>>>					135nm	00+53

There is an anomaly in the HBU VORTAC, which requires you to subtract 3deg. from the suggested bearing. Therefore, whatever FSNav shows, to track HBU 250R you must fly a course of 250deg, but set the OBS to 247deg. This also applies to intersections based on bearings to HBU, when you must set the OBS as detailed in the flight notes, and not as shown on FSNav.

From – To	Flight Description. "Allocated runways and related information may change when flying online or using Real Weather"				Course (Leg) Deg	Distance (Leg) nm	ETE (leg) HH+MM
	Dep. Rwy – 16	Init. Hdg – 157deg	Init. Alt – 13,500ft	Apt Elev. – 9,924ft			
Leadville (KLXV) Colorado, USA To Telluride (KTEX) Colorado, USA	Departure: The route is VFR until station passage HBU. To intersection MORYU. Tune Nav 1 to HBU VORTAC, 114.90, and set the OBS to 030deg. After take off turn to 157deg and commence climb to 13,500ft. Waypoint at HBU 030R, DME 50.8.....				157	10.9	00+04
	Enroute: To intersection XIRBY. Turn left to 134deg. Waypoint at HBU 036R, DME 50.1.....				134	5.2	00+02
	To intersection RADTU. Turn right to 152deg. Waypoint at HBU 247R, DME 46.6.....				152	25.6	00+09
	To HBU. Turn right to 250deg, intercept HBU 247R (Airway V95), and climb to 14,000. Direct to VOR.....				250	46.6	00+17
	To MJT VOR/DME, 117.10. Turn right to 262deg, intercept MTJ 262R (Airway V244), and commence descent to 12,000ft. Direct to VOR.....				262	40.5	00+15
	To ETL VOR/DME, 110.20. Turn left to 199deg and intercept ETL 199R (Airway V68). When the DME reads 5nm, slow to 120kts. Direct to VOR.....				199	32.7	00+12
	Approach: To intersection ILSTU. Turn left to 111deg, track 111R outbound from ETL and commence descent to 11,100ft (MDA). Prepare to intercept the ITEX ILS/DME, 109.30.....				111	4.4	00+02
Flight No. 729-02-02	To runway. Turn left to 089deg and follow the offset localizer until the runway is in sight, then turn to runway heading 093deg and descend at pilot's discretion.....				089	12.6	00+06
	Land – Telluride Regl Rwy 9 Length – 6,858ft Width – 100ft Surface – Asphalt						
	Arrival Airport Elev. – 9,074ft					179nm	01+07
	Estimated totals for this flight>>>						

There is an anomaly in the DVC VORTAC and CEZ VOR/DME, which requires you to subtract 2deg. from the suggested bearing. Therefore, whatever FSNV shows, to track DVC 234R you must fly a course of 234deg, but set the OBS to 232deg. This also applies to intersections based on bearings to FMN, when you must set the OBS as detailed in the flight notes, and not as shown on FSNV.

From – To	Flight Description. "Allocated runways and related information may change when flying online or using Real Weather"				Course (Leg) Deg	Distance (Leg) nm	ETE (leg) HH+MM
	Dep. Rwy – 9	Init. Hdg – 274deg	Init. Alt – 12,000ft	Apt Elev. – 9,074ft			
Telluride (KTEX) Colorado, USA To Animas (00C) Colorado, USA	Departure: To intersection DEPTU. Tune Nav 1 to ETL VOR/DME, 110.20, and set the OBS to 235deg. After take off make a steep right climbing turn to 274deg and commence climb to 12,000ft. Waypoint at ETL 235R, DME 3.0.....				274	24.4	00+09
	Enroute: To DVC VORTAC, 114.60. Turn left to 234deg and intercept DVC 232R. Direct to VOR (Airway V68)				234	31.8	00+11
	To CEZ VOR/DME, 108.40. Turn left to 133deg, intercept CEZ 131R and commence descent to 10,000ft. Direct to VOR (Airway V391).				133	30.6	00+11
	To intersection DCBOD. Turn left to 113deg, track 111R outbound from CEZ Tune Nav 2 to FMN VORTAC, 115.3 and set the OBS to 347deg. Waypoint at FMN 347R, DME 22.9....				113	27.3	00+10
	From DCBOD onwards the route is VFR only as pilot must be VFR to find Animas To intersection FINTU. Commence your descent to 8,000ft and continue to track 111R outbound from CEZ, and reduce speed to 120kts. Waypoint at FMN 008R, DME 19.4.....				113	8.5	00+04
	Approach: To runway. Turn left to 010deg, track 008R outbound from FMN and descend at pilot's discretion for a visual approach. Be careful of the low hills that are just in front of the runway threshold.....				010	9.6	00+05
Land – Animas Rwy 1 Length – 5,013ft Width – 50ft Surface – Asphalt							
Flight No. 729-02-03	Arrival Airport Elev. – 6,683ft Estimated totals for this flight>>>					132nm	00+50

There is an anomaly in the DRO VOR/DME and TAS VORTAC, which requires you to subtract 2deg. from the suggested bearing. The anomaly in the CIM VORTAC requires you to subtract 3deg from the suggested bearing. Therefore, whatever FSNV shows, to track TAS 098R you must fly a course of 098deg, but set the OBS to 096deg. This also applies to intersections based on bearings to DRO and CIM, when you must set the OBS as detailed in the flight notes, and not as shown on FSNV.

Note this flight is VFR, except for the DRO to TAS leg.

From – To	<u>Flight Description.</u> "Allocated runways and related information may change when flying online or using Real Weather"				Course (Leg) Deg	Distance (Leg) nm	ETE (leg) HH+MM
	Dep. Rwy – 1	Init. Hdg – 118deg	Init. Alt – 13,000ft	Apt Elev. – 6,683ft			
Animas (00C) Colorado, USA To Questa (N24) New Mexico, USA	Departure: To DRO VOR/DME, 108.20. After take off turn right to 118deg, intercept DRO 116R and commence climb to 13,000ft. Direct to VOR.....				118	8.6	00+04
	Enroute: To intersection BRAZZO. Turn left to 099deg and track 097R outbound from DRO (Airway V211). Waypoint at DRO 097R, DME 56.2.....				099	56.2	00+21
	To TAS VORTAC, 117.60. Intercept TAS 096R, at TAS DME 5.0 reduce speed to initial approach speed and begin 500 FPM descent to 8800 ft. Direct to VOR.....				098	38.0	00+14
	Approach: To intersection FINTU. Turn left and track 055R outbound from TAS. Tune Nav 2 to CIM VORTAC, 116.40, and set the OBS to 096. Waypoint when Nav 2 OBS needle centers (TAS DME 15.9).....				057	15.9	00+06
	Be careful not to overshoot FINTU by too much, as there are some very solid cumulo-granite clouds directly in front of you with tops around 13,000 ft. To runway. Turn left to 350deg and descend at pilot's discretion for a visual approach.....				350	5.0	00+03
Land – Questa Mun Nr 2 Rwy 35 Length – 6,867ft Width – 75ft Surface – Asphalt							
Flight No. 729-02-04	Arrival Airport Elev. – 7,867ft Estimated totals for this flight>>>					124nm	00+48

There is an anomaly in the ALS, TAS, SAF and ABQ VORTACs, which requires you to subtract 2deg. from the suggested bearing. Therefore, whatever FSNV shows, to follow TAS 233R you must fly a course of 233deg, but set the OBS to 231deg. This also applies to intersections based on bearings to ALS, when you must set the OBS as detailed in the flight notes, and not as shown on FSNV.

Note this flight is VFR to DEPTU.

From – To	Flight Description. "Allocated runways and related information may change when flying online or using Real Weather"				Course (Leg) Deg	Distance (Leg) nm	ETE (leg) HH+MM
	Dep. Rwy – 35	Init. Hdg – 174deg	Init. Alt – 12,000ft	Apt Elev. – 7,867ft			
Questa (N24) New Mexico, USA To Albuquerque (KABQ) New Mexico, USA	Departure: To intersection DEPTU. Tune Nav 1 to TAS VORTAC, 117.60 and set the OBS to 231deg. Tune Nav 2 to ALS VOR/DME, 113.90 and set the OBS to 151deg. After take off turn left to 153deg, intercept ALS 151R, and commence climb to 12,000ft. Waypoint when Nav 1 OBS needle centers (ALS 151R, DME 44.9).....				153	9.7	00+04
	Enroute: To TAS VORTAC, 117.60. Turn right to 233deg and intercept TAS 231R. Direct to VOR....				233	16.4	00+06
	To SAF VORTAC, 110.60. Turn left to 176deg and track 174R outbound from TAS (airway V83), and commence a 500FPM descent to 11,000. At TAS DME 30.0 transfer to SAF VORTAC 174R. Direct to VOR.....				176	64.6	00+24
	To intersection HISET. Turn right to 234deg and track 232R outbound from SAF (Airway V19). Commence 500FPM descent to 10,000ft, tune Nav 2 to ABQ VORTAC, 113.20, and set the OBS to 203deg. Waypoint when Nav 2 OBS needle centers (SAF 232R, DME 25.4)				234	25.4	00+09
	To ABQ VORTAC, 113.20. Turn left to 205deg and intercept ABQ 203R (Airway V19). Direct to VOR.....				205	23.4	00+09
	Approach: To intersection PROTU. Turn right to 257deg and track 255R outbound from ABQ. Commence 500FPM descent to 8,000ft and reduce speed to 120kts. Waypoint at ABQ 255R, DME 5.0.				257	5.0	00+03
	To ABQ. Commence a right procedure turn. Make a right 45deg turn to 302deg and fly heading for one minute. Make a left 180deg turn to 122deg, and intercept ABQ 077R.....				Final Hdg 079	10.3	00+05
	To runway. Start 500FPM descent to 7,400ft, tune NAV 1 to Rwy 8 ILS, 111.90 and set the OBS to 079. On glide slope intercept, make an ILS approach.....				079	9.6	00+05
Land – Albuquerque Intl Rwy 8 Length – 13,774ft Width – 150ft Surface – Concrete							
Flight No. 729-02-05	Arrival Airport Elev. – 5,354ft Estimated totals for this flight>>>					164nm	01+05

