

### **Mine Tour: Part Two, The Southwest**

This is a continuation of the Mine Tour, Part One, The Rocky Mountains. We last saw our tour group of prominent and respected mining and metallurgical engineers as they left our plane in Albuquerque, New Mexico. They are touring mining areas as the economic boom after WW II requires massive amounts of metals, more than those consumed during the war. After a short break and rest, they are back to continue their investigation of active and potential mining properties in the Southwest of the United States, lands once controlled by the Apache, Navajo, and the Spaniards. These charters will take them from Albuquerque to Magdalena, Hatch, and Silver City NM to Morenci, Globe/Miami, Superior, and Phoenix Arizona.

#### **Captains Notes:**

The airports in this series of flights are substantially different than those in the first part. Every one of the airports in this portion of the tour are in areas where daytime temperatures can be 90F or higher in the summertime, and many are at elevations higher than 5,000 ft. Density altitude needs to be considered for every landing and takeoff. In addition, many of these "airports" are primitive at best, and may not be ideally suited for an aircraft as large as a DC-3. In addition, two are very narrow paved runways and two are only grass strips. Runways that are marginal are best used in the early hours before daytime heating has much affect. You have 6 passengers and one hostess on board, and a prudent Captain will take on only enough fuel to get him to his next destination and enough extra for a good, solid alternate. Only two airports, Silver City and Phoenix have instrument approaches, and quite often you will be flying below local terrain on approach, so good visibility (5 miles) is essential. I would rate this series of flights as medium difficulty.

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. In addition, daytime heating affects are still not modeled to be as rough as they are, especially in the desert regions these flights are in.

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". Also, remember that in this time frame steam locomotive engines were still common, although rapidly being replaced by the diesel engine.

What follows is a short "travelogue" to give some meat to the bones of this charter.

Our first stop out of Albuquerque is Magdalena, NM. The mountain range to the left on arrival (to the east) is the Magdalena Mountains. On this end of this short chain is the Kelly Mining District, which is why the engineers have come here. The Kelly is an active district at this time, primarily in the production of lead and zinc. Mineralogically, it is unique. Everywhere else in the world, Smithsonite (zinc carbonate) is a white mineral. The Kelly mining district is the only known place where it is a lovely green color.

At the other end of the mountains is a restricted airspace, R-5113. This is over a lightning research area known as Langmuir Labs (or at least was when I was in this area), where rockets are sent into the skies to prompt lightning strikes. During the monsoon season (July-August) this area can see some violent thunderstorms, so be alert. To the west of Magdalena is the VLA, a very large assemblage of radio telescopes.

On leaving Magdalena on the way to Hatch, we will follow the Rio Grande river valley. As you pass over the Florida NDB (FIA) we will fly over a small town, called Socorro. Socorro's claim to fame is that it is the location of the New Mexico School of Mines, now known as the New Mexico Institute of Mining and Technology. The large mountain immediately to its west is known as M Mountain, although Microsoft obviously missed the large M (for Mines) painted on it.

As we progress further south along the Rio Grande, the area to the east is known as the Jornada del Muerto, or the journey of death. This valley presently houses the White Sands Missile Range. If you should fly to the Bingham Airfield and then go south, you would fly over the Trinity site where the first nuclear bomb was tested.

By the way, there is no mining at Hatch NM, although the mountains to the west in this area contain many silver mining districts. We are here to purchase some green chilies, as Hatch green chilies are known through the southwest as the best. If you wonder what they can be used for, next time around just south of Socorro is the small town of San Antonio, which is home to the Owl Bar, which makes the best green chili cheeseburgers I have ever had.

From Hatch we go on to Silver City, a nexus for extensive mining in the southern New Mexico. Tyrone, a large copper mine for Phelps Dodge; Santa Rita, a very large open pit copper mine owned by Kennicott. In the mountains to the north there are many smaller mining areas that mined lead, zinc, copper and silver. The range we passed over to get here is the southern extension of the Black Mountains, which held fabulous values in silver, in some mines so pure it had to be cut out with saws.

From Silver City we go to Morenci, another large copper mine owned by Phelps Dodge. The mountains to the north of here and Safford are Arizona's White Mountains, one of the regions most beautiful areas. As we continue west from here, you can see these mountains as they range across Arizona as a wall, and this wall is called the Mogollon Rim.

Our next stop west is Globe/Miami/Superior, an old but still operational copper mining area during this era. This is where we enter what I would consider true desert for the first time, as both Silver City and Morenci are on the borders of true desert.

NOTE: Very few of these flights are along or even near Victor Airways, so if you wish to fly by chart it may be well to take some time to study the flights. They tend to have interesting doglegs at times, but this was done to insure as complete as possible coverage by radio navigation aids, especially in getting lined up with some of the more "interesting" airports

**Leg 1**

All climbs and descents are at 500 FPM. Flight should be done in visibility of 5 nm or greater until familiar with area. N29 is difficult to see, due to mountains to east right hand pattern is suggested if direct approach and landing not feasible on initial airport sighting.

From – To	Flight Description.				Course (Leg) Deg	Distance (Leg) nm	
Albuquerque <b>(KABQ)</b> New Mexico, USA  To  Magdalena <b>(N29)</b> New Mexico, USA	To ABQ VOR/DME. After take off turn direct to VOR/DME and climb to 8,000 ft...				258	10.2	
	To ONM VOR/DME. On station passage ABQ turn left to 166 deg and track inbound to ONM.				167	42.0	
	To waypoint WP1. On station passage turn right to course 231 deg and track ONM 231R outbound. At ONM DME 21 commence descent to 7,700 ft. Waypoint at ONM DME 24 on ONM 231R				231	24.0	
	To runway at WP1 turn left to course 202. Magdalena is 5 miles away on this heading. This heading is also runway heading.				Final Hdg 202	5.0	
<b>Flight No. 729-03-01</b>	<b>Arrival Airport Elev. – 6,725 ft</b>						

**Leg 2**

All climbs and descents are at 500 FPM. Flight should be done in visibility of 5 nm or greater until familiar with area. EO5 is difficult to see and is sunken in terrain. Left and right hand patterns are acceptable if direct approach and landing not feasible on initial airport sighting.

From – To	Flight Description.				Course (Leg) Deg	Distance (Leg) nm	
Magdalena (N29) New Mexico, USA  To  Hatch (EO5) New Mexico, USA	To intersection WP1. Take off, maintain runway heading, and climb to 8,000 ft Waypoint WP1, ONM VOR/DME 233R 23.5 DME.....				22	5.0	
	To waypoint WP2. Turn right to course 54 deg, tracking inbound on ONM 233R. Waypoint WP2 is ONM 233R 14.0 DME.				54	9.5	
	To WP3. From WP2, turn right to course 124 deg fly to WP2				124	11.8	
	To TCS VOR/DME. From WP3 turn right to 188 deg and track inbound to TCS.				188	53.0	
	To waypoint WP4. From TCS turn left to course 167 deg tracking the 167R of TCS outbound. At TCS 16.5 DME commence decent to 5000 ft. Waypoint WP3 is TCS 169R 35 DME.				167	35.0	
	To runway turn left to course 111 deg. You are now aligned with runway 11 of EO5, 4.9 miles distant from the threshold.....				111	4.9	
<b>Flight No. 729-03-02</b>	<b>Arrival Airport Elev. – 4,081 ft</b>						

**Leg 3**

All climbs and descents are at 500 FPM. Flight should be done in visibility of 5 nm or greater until familiar with area. KSVC is an easy airport to find airport and left and right hand patterns are acceptable if direct approach and landing not feasible on initial airport sighting.

From – To	<u>Flight Description.</u>				Course (Leg) Deg	Distance (Leg) nm	
Hatch <b>(EO5)</b> New Mexico, USA  To  Silver City <b>(KSVC)</b> New Mexico, USA	Take off. Climb to 8,000 ft.				292	2.7	
	<b>Enroute:</b> Turn left to course 257 deg				257	46.0	
	<b>Approach:</b> Track inbound on ILS approach to KSVC.						
<b>Flight No. 729-03-03</b>	<b>Arrival Airport Elev. – 5,446 ft</b>						

**Leg 4**

All climbs and descents are at 500 FPM. Flight should be done in visibility of 5 nm or greater until familiar with area. KCFT is a difficult airport to find. It is to the left of the conical hill, across the river you will see on final. Left hand patterns are preferable if direct approach and landing not feasible on initial airport sighting.

From – To	Flight Description.				Course (Leg) Deg	Distance (Leg) nm
Silver City (KSVC) New Mexico, USA  To  Morenci (KCFT) Arizona, USA	Takeoff and maintain runway heading and commence climb to 9,000 ft.				267	62
	To Waypoint WP1. Turn right to course 267.					
	To waypoint WP2. At WP1 turn right to course 339 degrees				339	10.8
	At WP2 turn right to course 72 deg. Fly this course 10 miles to airport.....				072	10.4
Flight No. 729-03-04	Arrival Airport Elev. – 3,819 ft					

**Leg 5**

All climbs and descents are at 500 FPM. Flight should be done in visibility of 5 nm or greater until familiar with area. P13 is an easy airport to find airport (look for the large green patch in the desert) but is a sunken airport. Both and left and right hand patterns are acceptable if direct approach and landing not feasible on initial airport sighting, however, terrain rises on both sides of the airport so be alert.

From – To	Flight Description.				Course (Leg) Deg	Distance (Leg) nm	
Morenci <b>(KCFT)</b> New Mexico, USA  To  Globe <b>(P13)</b> Arizona, USA	<b>Departure:</b> To waypoint WP1. Take off and maintain runway heading. Climb to 9,000 ft				252	10.0	
	<b>Enroute:</b> To waypoint WP2. Turn left to course 159 and track VOR/DME SSO. WP2 is defined as SSO 31.0 NM.....				159	9.2	
	To waypoint WP3. Turn right to course 267. WP3 is defined as SSO 51.6 DME...				267	33	
	To waypoint WP4. Turn right to course 302. At SSO 68.3 DME commence descent to 5000 feet. WP4 is defined as SSO 81.9 DME.....				302	31	
	To waypoint WP5. Turn right to course 346. WP5 is defined as NDB GAZ bearing 271 degrees at 10 miles.				346	7.4	
	Turn right to course 272 and track inbound to GAZ on 272. Airport is 10 miles ahead and you are lined up with runway 27.....				272	10	
<b>Flight No. 729-03-05</b>	<b>Arrival Airport Elev. – 3,234 ft</b>						

**Leg 6**

All climbs and descents are at 500 FPM. This is a contact only flight with no radio navigation aids. Flight should be done in visibility of 5 nm or greater until familiar with area. In addition, the landing at E81, Superior, would be challenging enough as it is a grass field at the head of a valley, but in addition it is sunken with some obstructions on the approach to runway 22. However, with good short field techniques one can easily set the plane down and stop before the end of the runway. If you should decide to fly the pattern, be advised that left pattern for runway 22 is not advised due to rising terrain in that direction.

From – To	Flight Description.				Course (Leg) Deg	Distance (Leg) nm	
Globe (P13) Arizona, USA  To  Superior (E81) Arizona, USA	To waypoint Globe. Take off and turn to a course that follows the highway just north of P13 (Arizona Highway 70). The heading of this course is 287. Climb to and maintain 5,000 ft.....				287	5.3	
	To waypoint Miami. Turn to 285 and following Arizona 70. At 10 to 11 o'clock a lake at slightly lower elevation than yours but higher than the valley floor will appear. To the south of the lake there is a southwest heading road on the valley floor. This is the road that we will follow at the intersection marked by Miami. This road is Arizona Highway 60.....				285	3.7	
	To waypoint CanyE. Turn left to course 228 at Miami, the intersection of Highway 70 and 60. Follow Highway 60 past the lake and up the valley. As the road enters the canyon you are at CanyE.....				228	5.5	
	To waypoint Pass1. Turn right to course 237 and continue following the road. The road continues uphill until it reaches the pass. Pass1 is located at the highest point of the pass. From here, at approximately 11 o'clock there is a notch in the mountain range with a conical hill that can be seen behind it. Arry1 is the head of that valley and E81 is at the base of the conical hill. ....				237	4.3	
	To waypoint Arry1. At Pass1 turn left to course 227. Commence landing preparations as the final descent begins at Arry1 down the arroyo that leads to E81. As the descent is rather steep gear and ½ flaps at Arry1 are recommended. Also, try to cross Arry1 at 4500 ft.....				227	3.5	
	<b>Approach:</b> Turn left to course 225 at Arry1 and commence descent to E81, which is visible as the green area at the base of the conical mountain ahead.....				225	4.0	
<b>Flight No. 729-03-06</b>	<b>Arrival Airport Elev. – 2,647 ft</b>						



Leg 7

From – To	<u>Flight Description.</u>				Course (Leg) Deg	Distance (Leg) nm	
Superior <b>(E81)</b> Arizona, USA  To  Phoenix <b>(KPHX)</b> Arizona, USA	<b>Departure:</b> Take off and track VOR/DME PXR in Phoenix...				220	1.0	
	<b>Enroute:</b> Climb and maintain 5000 ft. Descend through 4000 ft at 15 miles from PXR.				271	29	
	<b>Approach:</b> Tune the ILS for an instrument approach.				271	15	
<b>Flight No. 729-03-07</b>	<b>Arrival Airport Elev. – 1,133 ft</b>						