

Operations Group Chairman Factual Report
Attachment 19 – Alternate Airport Information
WPR09MA159



National Transportation Safety Board

Memorandum

Date: February 16, 2011

Subject: WPR09MA159 – Alternate Airport Information

The airplane's position was plotted using radar data supplied by the Federal Aviation Administration, for the portion of the flight from 1915 to 2025 (all times presented are UTC). The airplane's position relative to several selected airports along its flightpath is depicted in the tables and charts below. The airplane's position was plotted in five-minute increments, and its approximate distance in nautical miles (nm) from the airports, along with flight time to each airport was (based on a ground speed of 250 knots) is presented.

The following alternate airports were selected for their proximity to the airplane's route of flight, and were equipped with at least one runway equal to or greater than 3,000 feet in length, a weather reporting facility, and at least one instrument approach procedure.

- Boise, Idaho (BOI)
- Pocatello, Idaho (PIH)
- Twin Falls, Idaho (TWF)
- Dillon, Montana (DLN)
- Challis, Idaho (LLJ)

Distances and times from the airplane's original destination, Bozeman, Montana (BZN), as well as the diversion airport, Butte, Montana (BTM) were also calculated.

Weather information was evaluated and each airport was categorized under visual meteorological conditions (VMC), marginal visual meteorological conditions (MVMC), or instrument meteorological conditions (IMC), and accordingly color coded on the tables and charts as follows:

- VMC (green): Ceiling greater than 3,000 feet above ground level (AGL), visibility greater than 5 miles
- MVMC (orange): Ceiling between 1,000 – 3,000 feet AGL, and/or visibility 3 – 5 miles
- IMC (red): Ceiling 500 – below 1,000 feet AGL, and/or visibility 1 mile to less than 3 miles

The first alternate airport along the airplane's route of flight was BOI. The airplane reached its closest proximity from BOI at 1935, at a distance of approximately 24 nm and a flight time of approximately 6 minutes. The weather reporting facility at BOI indicated that visual meteorological conditions (VMC) prevailed from 1915-2025.

After passing BOI, the next alternate airport along the airplane's route of flight was LLJ, approximately 91 nm and 22 minutes from the airplane's position at 1940. The closest alternate airport at this time was TWF, approximately 73 nm and 18 minutes, however, TWF was located southeast of the airplane's position and in the opposite direction of the established route of flight. Both LLJ and TWF reported VFR conditions.

LLJ remained the closest alternate airport under VFR conditions until 2000, when the airplane passed approximately 16 nm and 4 minutes to the southeast of the airport. At 2002, the airplane's flightpath changed, and the airplane began tracking direct to BTM. By 2005, established on its new flightpath, the airplane passed LLJ and the next alternate airport along its route was DLN, located approximately 63 nm and 15 minutes to the northeast of the airplane's position.

At 2015, the airplane passed approximately 30 nm and 7 minutes west of DLN. At this time, the airplane was approximately 96 nm and 23 minutes from BZN, and 55 nm and 13 minutes from BTM. The weather reporting facilities at DLN, BZN, and BTM indicated that the airports were all under VFR conditions.

Table 1 - Time and Distance Data

Time (UTC)	BOI	PIH	TWF	DLN	LLJ	IDA	BTM	BZN
1915	103 nm / 25 min	227 nm / 55 min	140 nm / 34 min	287 nm / 69 min	204 nm / 49 min	257 nm / 62 min	318 nm / 76 min	355 nm / 85 min
1920	81 nm / 20 min	207 nm / 50 min	121 nm / 29 min	263 nm / 63 min	182 nm / 44 min	235 nm / 56 min	294 nm / 70 min	330 nm / 80 min
1925	59 nm / 14 min	187 nm / 45 min	104 nm / 25 min	240 nm / 57 min	158 nm / 38 min	214 nm / 51 min	270 nm / 64 min	307 nm / 73 min
1930	40 nm / 10 min	170 nm / 41 min	89 nm / 21 min	218 nm / 52 min	136 nm / 32 min	194 nm / 47 min	248 nm / 60 min	286 nm / 68 min
1935	24 nm / 6 min	151 nm / 37 min	79 nm / 19 min	195 nm / 47 min	113 nm / 27 min	173 nm / 42 min	229 nm / 54 min	263 nm / 63 min
1940	28 nm / 7 min	136 nm / 33 min	73 nm / 18 min	173 nm / 41 min	91 nm / 22 min	154 nm / 37 min	204 nm / 49 min	240 nm / 58 min
1945	44 nm / 11 min	123 nm / 30 min	75 nm / 18 min	151 nm / 36 min	70 nm / 17 min	137 nm / 33 min	184 nm / 44 min	217 nm / 52 min
1950	65 nm / 16 min	112 nm / 27 min	84 nm / 20 min	127 nm / 31 min	46 nm / 11 min	120 nm / 29 min	162 nm / 39 min	195 nm / 47 min
1955	84 nm / 20 min	105 nm / 25 min	95 nm / 23 min	106 nm / 26 min	28 nm / 7 min	106 nm / 26 min	139 nm / 34 min	173 nm / 42 min
*2000	107 nm / 26 min	103 nm / 24 min	112 nm / 27 min	83 nm / 20 min	16 nm / 4 min	97 nm / 24 min	119 nm / 29 min	152 nm / 37 min
2005	125 nm / 30 min	114 nm / 27 min	133 nm / 32 min	63 nm / 15 min	22 nm / 6 min	96 nm / 23 min	97 nm / 24 min	130 nm / 31 min
2010	143 nm / 34 min	127 nm / 31 min	152 nm / 37 min	44 nm / 11 min	40 nm / 10 min	105 nm / 25 min	75 nm / 18 min	111 nm / 27 min
2015	160 nm / 39 min	140 nm / 34 min	171 nm / 41 min	30 nm / 7 min	56 nm / 14 min	114 nm / 28 min	55 nm / 13 min	96 nm / 23 min
2020	176 nm / 42 min	153 nm / 37 min	189 nm / 45 min	25 nm / 6 min	73 nm / 18 min	123 nm / 30 min	37 nm / 9 min	83 nm / 20 min
2025	195 nm / 47 min	169 nm / 41 min	208 nm / 50 min	31 nm / 8 min	94 nm / 23 min	137 nm / 33 min	18 nm / 4 min	70 nm / 17 min
			VMC	Marginal VMC	IMC			
			*Actual diversion at 2002					