

No. 36

Indian Airlines Corporation, DC-3C, VT-COJ, accident near Damroh, North East Frontier Agency, on 25 June 1958. Report released by the Civil Aviation Department, Government of India, 28 August 1958.

Circumstances

The aircraft took off from Mohanbari at 0902 hours Indian standard time for a supply dropping sortie to Damroh. It was in contact with Mohanbari at 1028 hours when it was over Pasighat awaiting the weather to clear over Damroh. There was no further contact. At about 1345 hours the Duty Officer, Jorhat Control Tower received a message from Assistant Political Officer, Damroh that the aircraft had crashed at 1100 hours and four crew had been killed. In all there had been 3 flight crew and 4 ejection crew aboard the aircraft. One of the three seriously injured survivors died subsequently. The aircraft was damaged beyond repairs.

Investigation and Evidence

The aircraft had flown for 1 711 hours 20 minutes since overhaul and 12 576 hours 5 minutes since manufacture.

A pre-flight inspection was carried out by an aircraft maintenance engineer before the aircraft started its operations on the day of the accident.

The captain had a total flying experience of 7 131 hours including 6833 hours on DC-3 type aircraft. He had 248 hours of instrument flying experience. He reported for NEFA operations on 29 May 1958 and was checked out by the officer-in-charge of freight operations on six supply dropping missions before operating as a commander on these sorties. He had undertaken a total of 62 sorties of which 19 were landing sorties. He had done two sorties to Damroh previous to the accident.

The co-pilot's total flying experience was 2 115 hours including 1 797 hours on Dakota type aircraft.

Weather

There is no meteorological office at Damroh or on the route Mohanbari to Damroh except at Pasighat. NEFA authorities obtain the information regarding the actual weather conditions from Damroh through W/T. Such observations are made twice a day - once at 0530 hours and again at 0800 hours by the W/T operator who transmits the message to Mohanbari. This information is passed on to the pilots before they take off. The information received from Damroh at 0530 hours and at 0800 hours also on 25 June indicated that the weather was 'foggy'.

The meteorological observatory nearest to the place of the accident is at Pasighat about 27 miles south-southeast of Damroh. An extract from the current weather observations between 0900 hours and 1100 hours recorded at Pasighat is as follows:

	0900 hrs 8 Oct	1000 hrs 8 Oct	1100 hrs 8 Oct
Total amt. of cloud			
Surface wind	calm	calm	calm
Visibility	10 kms	10 kms	4 kms
Present weather	drizzle	light intermittent rain	rain in last hours

Individual cloud layer
or mass

	Lowest layer	Second layer	Lowest layer	Second layer	Third layer	Lowest layer	Second layer
Am. of cloud	2	8	1	3	8	4	5
Type of cloud	CU	AS	ST	CU	AS	CU	AS
Ht. of base above ground level	700	3 000 ±	240 ±	700 ±	2 000 ±	700 ±	3 000 ±

Dropping Zone at Damroh

It is located at 28° 27' N and 91° 10' E and is situated at a height of 3 700 ft above mean sea level. It is on the bank of the River Yamni, one of the tributaries of the Dihang (Brahmaputra) River. The direction of dropping is 340° or 170° with an oval circuit or a figure of 8. The surface of the dropping zone is uneven and gradually rises towards the southeast.

Experienced pilots state that the flying is normally smooth in the Damroh valley.

The Flight

The aircraft departed from Jorhat at 0658 hours on the first dropping sortie of the day to Panchang. After dropping the supplies it arrived at Mohanbari at 0828 hours.

The aircraft was refuelled under the supervision of a mechanic with 75 imperial gallons of fuel, thus making a total of 280 gallons of fuel on board distributed equally in both the main tanks. There was no auxiliary tank.

The second dropping sortie was to be at Damroh. It was reported that the fog would lift by the time the aircraft arrived over Damroh. The aircraft took off at 0902 hours and reported its position at 0907 hours as 10 miles from Mohanbari. At 1028 hours when circling over Pasighat it reported "Heavy rain over Damroh. Unable to get in. Waiting for clearance." At about 1035 hours Pasighat Tower informed Mohanbari that the aircraft had set course for Damroh. As the aircraft failed to return at the expected time, Mohanbari originated alert signals at 1148 hours and started overdue action at 1230 hours. At 1345 hours word was received that VT-COJ had crashed near Damroh, killing the captain, the co-pilot and seriously injuring three persons.

Loading

The aircraft was refuelled at Mohanbari and was loaded with 7 527 lbs of salt to be dropped at Damroh. The all-up weight of the aircraft was 26 884 lbs which was within the maximum permissible limits. The load was equally distributed on the cabin floor.

As usual with the flights of NEFA supply-dropping operations the pilot did not file any flight plan nor did he obtain any briefing for weather. The clearance

for the flight was obtained on R/T when the aircraft taxied out at 0901 hours.

Statements of Witnesses

The aircraft was seen entering the valley from the south. The height of the aircraft was estimated as about 800 to 1 000 ft above the river bed - i.e. about 300 ft below the dropping zone. The aircraft regained height by circling to the south of the dropping zone and then proceeded to the north. After completing a circuit, it flew over the dropping zone at a height estimated to be 30 ft above the ground.

The load was not ejected over the dropping zone. The two survivors stated that on hearing the bell ring they pushed out 12 to 14 bags. It would appear that the signal for the drop was given too late and the first drop of salt bags was ejected out over the jungle to the north of the dropping zone from where it could not be recovered.

The aircraft was seen to return to the south along the valley at a height lower than the dropping zone. After taking a turn to the left, the aircraft was seen climbing and proceeding straight ahead leaving the dropping zone to the left. It had now, however, gained sufficient height to clear the hills ahead. During the course of a turn to the right to avoid hitting the hills the aircraft cut through tree tops and the port wing tip grazed the hillside thus causing the aircraft to swerve to the left and crash. It came to rest facing the direction from which it had come.

Partial dismantling of the engines showed evidence of adequate lubrication and no evidence of overheating. The filters were clean. No useful information could be obtained from the instruments, controls and the equipment in the cockpit and radio compartment due to the extensive damage.

Examination of the fuel system showed that both the engine fuel selectors

in the centre section were selected to the starboard tank. There was no damage to the actual selectors or the cable operating drum but the operating cables had failed in tension. The starboard main tank was dry although there was no external damage or apparent leak. In the attitude of about 15° left wing low in which the aircraft was resting, fuel was flowing out of the port fuel tank cap.

The day following the accident 16 gallons of fuel were taken out of this tank. In the absence of adequate draining facilities it was not possible for the investigator to drain the tank completely and measure the fuel. The Assistant Political Officer at Damroh subsequently made arrangements for draining the fuel and a report from him stated that 63 imperial gallons were recovered from the tank in addition to the 16 gallons previously drained. It was calculated that the tank would have to contain a minimum of 105 imperial gallons for it to flow out of the filter cap with the aircraft in the attitude at which it came to rest.

It remained a probability that the fuel system was mismanaged thus causing the starboard tank to empty while retaining in full the contents of the port tank. Temporary cutting of the engine(s) when manoeuvring in the dropping zone area would have caused a loss of height, diverted the attention of the pilot and thus contributed to the accident. The time available and the height of the aircraft above the terrain were both insufficient for jettisoning the load to obtain a better rate of climb and to diagnose the trouble for taking corrective action.

Probable Cause

While manoeuvring at a low height in mountainous terrain during a supply dropping mission the port wing grazed the side of a hill thus causing the aircraft to slew and crash. A contributory factor might have been the mismanagement of the fuel system which caused temporary loss of engine power and height.

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