Aviation Safety Investigation Report 199701187

Piper Aircraft Corp
Chieftain
de Havilland Canada
Dash 8

16 April 1997

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Aviation Safety Investigation Report

199701187

The Bureau did not conduct an on scene investigation of this occurrence. The information presented below was obtained from information supplied to the Bureau.

Occurrence Number: 199701187 **Occurrence Type:** Incident
Location: 19km SW Taree, Aerodrome
State: NSW **Inv Category:** 4
Date: Wednesday 16 April 1997
Time: 1421 hours **Time Zone** EST
Highest Injury Level: None

Aircraft Manufacturer: de Havilland Canada
Aircraft Model: DHC-8-102
Aircraft Registration: VH-TQF **Serial Number:** 067
Type of Operation: Air Transport Low Capacity Passenger Scheduled
Damage to Aircraft: Nil
Departure Point: Taree NSW
Departure Time: 1406 EST
Destination: Sydney NSW

Aircraft Manufacturer: Piper Aircraft Corp
Aircraft Model: PA-31-350
Aircraft Registration: VH-AUG **Serial Number:** 31-7952132
Type of Operation: Charter Passenger
Damage to Aircraft: Nil
Departure Point: Bankstown NSW
Departure Time: 1336 EST
Destination: Coffs Harbour NSW

Approved for Release: Wednesday, March 25, 1998

FACTUAL INFORMATION

The pilot in command (PIC) of an instrument flight rules (IFR) Piper Chieftain (PA-31-350), enroute from Bankstown to Coffs Harbour, was cleared via Williamtown to Kempsey at 9,000 ft. The aircraft was overhead Williamtown at 1406 EST and estimated to be at Kempsey at 1440. Williamtown approach coordinated the position report with Sydney flight service, the next air traffic services (ATS) unit responsible for the flight. The planned track of the PA-31-350 remained in Williamtown airspace until approximately 10 NM south-west of Taree. North of this position the flight would be in Class G airspace from ground to flight level (FL) 125.

A De Havilland Canada Dash 8 (DHC-8) taxiied at Taree and the crew made broadcasts and reports to flight service in accordance with procedures for operations in Class G airspace. The DHC-8 was an IFR regular public transport (RPT) flight to Sydney via Craven, a position 41 NM north-north-west of Williamtown. The crew of the DHC-8 had planned to operate at FL160.

North of Williamtown, the PA-31-350 was radar vectored to the west of track due to other traffic. When the aircraft was approximately 30 NM north of Williamtown the approach controller, cancelled the radar vector and instructed the PIC to track direct to Kempsey. The aircraft was 2 NM west of track and was within the tolerance of the primary tracking navigation aid. The approach controller was not required to advise flight service that the aircraft was west of track under the circumstances and there was no further coordination with flight service.

Prior to being instructed to transfer to the flight service frequency and while the aircraft was in Williamtown airspace the PIC of the PA-313-350 established radio communications with flight service. The flight service operator requested an estimate for abeam Taree. The PIC advised flight service to standby while he calculated the estimated time. At about the same time the crew of the DHC-8 reported the departure from Taree to flight service and was instructed by the flight service operator to contact Brisbane Centre approaching FL110.

The PIC of the PA-31-350 reported to flight service that the aircraft would be abeam Taree at 1428. Neither crew were given traffic information on the other aircraft although the DHC-8 was estimated to be at Craven at 1429. The PIC of the PA-31-350 heard the departure report from the crew of the DHC-8 but was not concerned because the flight service operator did not provide traffic information about that aircraft.

The PIC of the PA-31-350 was instructed by Williamtown approach to transfer to the flight service frequency. He reported to flight service that the aircraft was maintaining 9,000 ft and this was acknowledged by the operator. Shortly after, the PIC requested the callsign of the regional airline aircraft departing Taree from flight service and advised that it had just climbed through his level, about 400 ft in front of his aircraft. The crew of the DHC-8 did not see the PA-31-350.

The flight service operator was required to pass traffic information on IFR flights in accordance with criteria from the Manual of Air Traffic Services (MATS), to the pilots and crews of all IFR flights operating in Class G airspace. The operator used procedural methods and was also required to use the criteria from MATS to establish whether the aircraft would conflict or not. There was radar coverage in the area above approximately 7,000 ft which was used by ATS for the management of aircraft above FL125, in controlled airspace, but there was no radar display or access to radar information in the flight service centre.

The workload for the flight service operator was light and he was nearing the completion of an eight hour shift. The operator assessed that the PA-31-350 would pass about 5 NM to the south-west of Taree and this aspect coupled with the similar estimates for the next positions (Taree and Craven) for both aircraft led him to believe that they would not conflict. The operator twice re-assessed the information on the two aircraft but did think that they would be in conflict. He did not plot the tracks of the aircraft on the chart display at the console. The Williamtown to Kempsey track and the Taree to Craven track cross 12 NM to the south-west of Taree. It was estimated that the aircraft passed at a position approximately 15 NM south-west of Taree.

The actual position and separation between the aircraft could not be ascertained from radar data recordings. The cloud in the area at the time of the incident was a layer of broken cloud between 7,000 and 9,000 ft.

ANALYSIS

The flight service operator did not plot the intended tracks of the aircraft. He relied on his mental ability to assess the potential for conflict. If he had plotted the tracks he would have appreciated that the DHC-8, was going to cross the track and would probably climb though the level of the PA-31-350, and that there was a potential for conflict. He was also nearing the end of his shift period and may have become complacent due to the low level of traffic. This may explain why he did not apply the MATS criteria to assess the potential for conflict.

The flight service operator was using procedural methods to monitor traffic in his area of responsibility. Some of the airspace within his area, near Taree, was within radar coverage. However, flight service did not have a radar display. The greater use of the available radar coverage in Class G airspace would have enabled ATS to more readily assess potential traffic conflicts.

The Taree departure report for the DHC-8 was broadcast during the period when the PIC of the PA-31-350 was calculating the abeam Taree estimate. The PIC of the PA-31-350 heard the Taree departure report but did not appreciate the significance of the information. Flight service did not provide information about the DHC-8 as possible conflicting traffic and because he was concentrating on the estimate calculation, the PIC of the PA-31-350 may have been distracted from monitoring aircraft reports for potential traffic conflicts. One of the reasons for reports in Class G airspace was to provide information to pilots to assist them to maintain situational awareness with regard to potential traffic conflicts. This was additional to the traffic information that flight service was required to provide to the pilots of IFR flights. Maintenance of situational awareness by pilots was part of the defence mechanism of the airspace system.

The layer of cloud under the PA-31-350 would have hindered the PIC in sighting the climbing DHC-8. Additionally, as the layer of cloud commenced at approximately 7,000 ft the crew of the DHC-8, during their climb, would have been restricted in their ability to maintain a lookout for aircraft.

SIGNIFICANT FACTORS

1. The flight service operator did not have access to radar information and was required to use procedural ATS procedures.

2. The flight service operator did not plot the tracks of the aircraft on the chart.

3. The flight service operator did not assess the traffic in accordance with the Manual of Air Traffic Services criteria.

4. The flight service operator did not provide traffic information in accordance with the Manual of Air Traffic Services.

5. The PIC of the PA-31-350 did not have sufficient information to maintain situational awareness with regard to potential traffic conflicts.

6. The DHC-8 was operating in an area of restricted visibility prior to, and climbing through the level of the PA-31-350 .

SAFETY ACTION

Bureau of Air Safety Investigation safety action

Because of this and other occurrences the Bureau reviewed aspects of the increased use of available radar coverage for improved safety and fowarded Interim Recommendation 970112 to Airservices Australia on the 14 July 1997. The Interim Recommendation stated:

"The Bureau of Air Safety Investigation recommends that Airservices Australia review the provision of air traffic services to maximise the use of the currently available radar coverage particularly on routes used by regular public transport aircraft."

Airservices Australia replied on the 17 October 1997 and stated that:

"Airservices Australia is reviewing the provision of air traffic services with regard to maximising the use of radar services both within and outside controlled airspace.

As you are aware, the Airspace 2000 proposal which Airservices planned to introduce on the 26th February 1998, comprehensively addresses the extension of radar services. These radar enhanced services include:

- Radar Class E airspace from Cairns to Melbourne above 8500 feet.

- A Radar Information Service (RIS) in Class G airspace within radar coverage.

The Board of the Civil Aviation Safety Authority (CASA) has deferred making a decision on the proposal.

Regardless of the outcome of the Airspace 2000 review by CASA, Airservices intends proceeding with three initiatives to enhance radar services on the 26th of February 1998.

1. Radar Class E airspace will be introduced between 8500 feet and FL125 outside existing Class C airspace from Grafton to Canberra within radar coverage.

2. Brisbane Enroute will provide radar services within the Class C control area steps over Coffs Harbour down to 4500 feet.

3. Sydney Terminal Control Unit will provide radar services to 45nm Sydney in non controlled airspace on a discrete frequency.

These initiatives will increase Airservices use of existing radar coverage for air traffic services. Further expansion of radar services is limited pending decisions on Airspace 2000 by CASA."

On 26 February 1998 Airservices Australia implemented radar Class E airspace services in the area between Canberra and Grafton within radar coverage.

Local safety action

The regional airline safety department was planning to use the incident in their safety journal to highlight problems that may be encountered in Class G airspace.