

AVIATION OCCURRENCE REPORT

AIR PROXIMITY - SAFETY NOT ASSURED

**BETWEEN
TIME AIR
SHORTS SD360 C-FCRB
AND
DEPARTMENT OF NATIONAL DEFENCE
LOCKHEED CT-133, T-BIRD 133543
VANCOUVER, BRITISH COLUMBIA 17 nm S
31 AUGUST 1994**

REPORT NUMBER A94P0206

The Transportation Safety Board of Canada (TSB) investigated this occurrence for the purpose of advancing transportation safety. It is not the function of the Board to assign fault or determine civil or criminal liability.

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Summary

Time Air flight TAF 1236, a Shorts SD360, was following the published visual flight rules (VFR) route from Victoria to Vancouver at 1,500 feet above sea level (asl). At 1315 Pacific daylight time, the aircraft's traffic collision avoidance system (TCAS) alerted the crew of conflicting traffic and issued a resolution advisory for an immediate climb. At the same time the crew saw a CT-133 military jet aircraft crossing directly in front of them from right to left. The Shorts SD360 captain made a right turn to increase lateral spacing. There was no injury or damage and the two aircraft continued to their destinations without further incident. The incident occurred in visual meteorological conditions and in daylight.

Other Factual Information

The pilot of the CT-133 (Nite 35) was en route from Naval Air Station (NAS) Whidbey Island, Washington, to Canadian Forces Base (CFB) Comox, British Columbia. He had climbed to 4,500 feet after departure but upon reaching Canadian airspace he began a descent to intercept a military approved low-level route to Comox that crossed the published Transport Canada (TC) approved VFR route between Victoria and Vancouver.

The SD360 was three nautical miles (nm) ahead when the CT-133 pilot first saw it, but he was not able to determine the type of aircraft and its direction of flight until it was 1.5 nm away. He did not alter his course at that time because he felt that there was sufficient clearance. He estimated that when he crossed in front of the other aircraft, about 18 seconds later, there was 5,000 feet lateral and 500 feet vertical spacing.

The recorded radar data from the Vancouver Area Control Centre (ACC) showed the two aircraft on parallel northbound tracks prior to the incident; the CT-133 was overtaking the SD360 on the right hand side. The CT-133 then began a wide descending turn to the left with a rate of descent of 1,000 feet per minute and a groundspeed of 300 knots; the SD360 showed a groundspeed of 150 knots. As the CT-133 crossed in front of the SD360, the altitude readouts were 1,800 feet and 1,600 feet asl respectively, indicating 200 feet of vertical spacing. The horizontal distance between the two aircraft was .67 nm, that is, approximately 4,000 feet.

The International Civil Aviation Organization (ICAO) defines an air proximity event as a situation in which, in the opinion of a pilot or air traffic services personnel, the distance between aircraft as well as their relative positions and speed have been such that the safety of the aircraft involved may have been compromised. Although it is not official Department of National Defence (DND) policy, DND pilots indicated that they imagine a 1,000-foot "bubble" of protected airspace around their aircraft as a general separation guideline. In their view, a risk of collision would occur only if another aircraft penetrated that bubble.

TC has established VFR routes for traffic travelling between the Vancouver and Victoria airports. Although the routes are not mandatory, air traffic control (ATC) generally expects traffic to follow these routes. Outside of the airport control zones, these routes are flown in Class E airspace, where VFR traffic can operate without ATC clearance, and ATC provides traffic information only if the controller's workload permits. On 29 July 1994, thirty days before the incident, TC Pacific Region issued an Aviation Notice to the commercial operators in the area advising them to remain in communication with either Vancouver or Victoria Tower while following the VFR routes. The notice announced that, effective 06 August 1994, the area between the control zones, along the VFR routes, would become a VFR Advisory Area and that the Vancouver and Victoria Towers would provide radar traffic information to all aircraft within the area. The CT-133 pilot was not aware of this notice.

The VFR routes between Vancouver and Victoria are depicted in three major publications: Vancouver Terminal Area chart (VTA), as a supplement to the Aeronautical Information Publication (AIP), and in the Canada Flight Supplement (CFS). The CFS is also used by the DND as Flight Information Publication GPH-205; however, the military pilot was unaware of the VFR route.

The approved DND low-level route between NAS Whidbey and CFB Comox crosses the TC approved VFR routes between Vancouver to Victoria. The Vancouver ACC was unaware of this military route.

The SD360 crew were in radio contact with Vancouver Tower, but the tower controller was not aware of the presence of the military aircraft. The CT-133 pilot was not in radio contact with ATC.

Following this incident, the safety officer at CFB Comox alerted the base military pilots to the location of the TC VFR routes and the procedures to be followed in that area. Vancouver ACC has also obtained information concerning the DND routes.

Analysis

Analysis of the ATC radar data indicates that the two aircraft would not have collided even if the SD360 had not altered course. The analysis also reveals that when the military pilot identified the civilian aircraft, it was 1.5 nm ahead and 500 feet below. The CT-133 pilot did not alter his course to increase the distance between the two aircraft before he turned, about 18 seconds later, to pass in front of the SD360, because he believed that there was no risk of collision. However, the SD360 crew were concerned about the spacing because they believed that the other pilot had not seen them.

Findings

1. In the area of the incident, there are VFR routes established by the DND and TC that cross each other. Prior to this incident, neither department was aware of the other's route.
2. Neither pilot was aware of the other's VFR route.
3. Civilian and military pilots use different criteria to establish spacing between themselves and other VFR aircraft.
4. The CT-133 pilot crossed in front of the SD360 at a distance that caused the SD360 pilot to be concerned for the safety of his aircraft.

Causes and Contributing Factors

The air proximity incident occurred when the CT-133 pilot crossed in front of the SD360 at a distance that caused the SD360 pilot to be concerned for the safety of his aircraft. Military and civilian pilots having differing concepts of acceptable spacing between aircraft contributed to the incident.

This report concludes the Transportation Safety Board's investigation into this occurrence. Consequently, the Board, consisting of Chairperson, John W. Stants, and members Gerald E. Bennett, Zita Brunet, the Hon. Wilfred R. DuPont and Hugh MacNeil, authorized the release of this report on 28 February 1995.