Aviation Safety Investigation Report 199603166

General Dynamics Corporation
F111
Fairchild Industries Inc
Metro III

30 September 1996

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Aviation Safety Investigation Report

199603166

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: 199603166 **Occurrence Type:** Incident
Location: 9km S Ballina, Aerodrome
State: NSW **Inv Category:** 4
Date: Monday 30 September 1996
Time: 1800 hours **Time Zone** EST
Highest Injury Level: None

Aircraft Manufacturer: General Dynamics Corporation
Aircraft Model: F-111
Aircraft Registration: **Serial Number:**
Type of Operation:
Damage to Aircraft: Nil
Departure Point: Amberley, QLD
Departure Time:
Destination: Amberley, QLD

Aircraft Manufacturer: Fairchild Industries Inc
Aircraft Model: SA227-AC
Aircraft Registration: VH-UZP **Serial Number:** AC-498
Type of Operation: Air Transport Cargo
Damage to Aircraft: Nil
Departure Point: Ballina, NSW
Departure Time: 1733 EST
Destination: Coffs Harbour, NSW

Approved for Release: Thursday, February 13, 1997

FACTUAL INFORMATION

A Royal Australian Air Force (RAAF) F111 had been flight planned to conduct a flight from Amberley to Evans Head weapons range (designated Restricted Area 620 [R620]) and returning via overhead Coolangatta at flight level (FL) 160. R620 was activated for the flight and the highest useable level for aircraft on the range was 7,000 ft. The flight plan indicated that the intention was for the F111 to operate in R620 for 20 minutes below 7,000 ft. The aircraft departed Amberley and entered R620.

A Metroliner had been flight planned to operate a flight from Ballina to Coffs Harbour at FL120. The pilot of the Metroliner notified the Brisbane Sector 2R controller when the aircraft taxied at Ballina for departure. Sector 2R provided a radar advisory service (RAS) and a search and rescue alerting service for aircraft operating outside controlled airspace below 7,500 ft to the south of Coolangatta. The airspace above 7,500 ft is controlled airspace which is the responsibility of Sector 2G. The Sector 2R position was under the control of a trainee being supervised by a rated controller.

The crew of the Metroliner notified the Sector 2R controller when the aircraft taxied for departure at Ballina. The Sector 2R controller advised the Sector 2G controller that the Metroliner was taxiing at Ballina. The Sector 2R controller issued a secondary surveillance radar (SSR) squawk code to the crew of the Metroliner and also advised that a clearance, on climb, through R620 was not available. The crew advised that they would climb to 8,000 ft overhead Ballina and then track to Coffs Harbour. The Sector 2R controller issued traffic information on the F111, which was expected to depart R620 approximately 10 minutes later, and instructed the crew to remain outside controlled airspace and to standby for a clearance.

The Sector 2R controller advised the 2G controller of the Metroliner's departure time from Ballina and the crew's intentions. The Sector 2G controller advised that he had no restrictions for the Metroliner to climb to 8,000 ft and to track to Coffs Harbour as requested. The Sector 2G controller was busy with other aircraft in the northern part of his sector which were diverting around weather. The supervising controller on Sector 2R coordinated with the Sector 2G controller for the Metroliner to remain on the Sector 2R frequency as that aircraft would leave controlled airspace approximately 12 NM south of Ballina. The Sector 2R controller issued a clearance to the crew of the Metroliner to climb to 8,000 ft overhead Ballina and then to track to Coffs Harbour. The crew readback the clearance.

The Sector 2R controller identified the Metroliner overhead Ballina and verified the SSR altitude label on the radar display. She instructed the crew of the Metroliner that on reaching 8,000 ft they could track direct to Coffs Harbour. This was acknowledged by the crew.

The crew of the F111 contacted the Sector 2G controller for a clearance to climb to FL160 on track to Ballina as the aircraft departed R620. The departure from R620 was approximately 10 minutes earlier than expected based on flight planned time intervals and the aircraft's departure time from Amberley. The Aeronautical Information Publication (AIP) requires flight crews to notify air traffic services as soon as possible when the route segment time interval or estimate at the next reporting point varies by more than two minutes. The Sector 2G controller did not observe a radar return and issued a SSR code to the crew and instructed them to operate the aircraft's special position identification (SPI) function. The SPI function was used to enable the controller to radar identify the aircraft on the radar display. The controller did not instruct the crew that a clearance was not available or to remain outside controlled airspace, in accordance with air traffic control procedures.

The crews of F111 aircraft departing R620 normally contacted Sector 2G in preference to Sector 2R due to better communications with the former. Also, F111s departing R620 are only in Sector 2R's area of responsibility for a short period before entering Sector 2G. When the crew of the F111 did not have a clearance as the aircraft passed 7,000 ft the crew halted the aircraft's climb and maintained 8,000 ft. At that level, the F111 was within controlled airspace. The crew was unsure of the status of the airspace above R620 and commenced a slow descent. The Sector 2G controller conducted coordination with a number of other air traffic control positions and communicated with a number of aircraft before returning his attention to the F111.

The Sector 2R controller observed the F111 departing R620 on a heading that would conflict with the Metroliner. The controller advised the crew of the Metroliner that the F111 was 10 NM away and heading in the opposite direction. Due to the high rate of closure between the two aircraft the Sector 2R supervising controller instructed the crew of the Metroliner to turn right immediately and also advised that the F111 was maintaining 8,000 ft and was not on the sector frequency. Analysis of the radar data indicated that just prior to the Metroliner turning right, the two aircraft were 7.5 NM apart, on reciprocal headings, with a vertical separation of 100 ft and a groundspeed rate of closure of 750 kts.

The Sector 2R supervising controller advised the Sector 2G controller to issue traffic information to the F111 crew on the Metroliner. The Sector 2G controller transmitted the information and instructed the crew to turn right to avoid the Metroliner. This was acknowledged by the F111 crew. The Sector 2G controller did not observe the radar symbol for the F111 until it was pointed out to him by the Sector 2R supervising controller. The Sector 2R and Sector 2G radar displays receive radar data from different radar sensors and generally Sector 2R displayed aircraft at lower levels over R620 than Sector 2G.

The Sector 2R supervising controller updated the traffic information to the crew of the Metroliner when the aircraft were approximately 4 NM apart and the two aircraft passed shortly after. The radar data showed that the horizontal separation was 4.4 NM and the vertical separation was 600 ft. The required separation was 5 NM horizontally or 1,000 ft vertically. The Sector 2G controller identified the F111 and issued a clearance for the aircraft to enter controlled airspace on a heading of 360 degrees on climb to FL160. There was a breakdown in separation.

ANALYSIS

The Sector 2G controller normally instructed crews of aircraft requesting clearances to enter controlled airspace that a clearance was not available and to remain outside controlled airspace. However, due to the problems with aircraft diversions as a result of weather, he did not use the standard phrase to the crew of the F111. He may have thought that this would save some time or may have forgotten to use it because of his workload.

The reason for the crew of the F111 departing R620 earlier than planned could not be ascertained. The crew should have remained within the confines of R620 or outside controlled airspace until a clearance was issued by ATC. If they had remained outside controlled airspace the crew would have had to change frequency to the Sector 2R RAS frequency. A change to the RAS frequency would have provided an opportunity for the crew of the F111 to receive traffic information on aircraft outside controlled airspace.

Advice from the crew of the F111 to ATS of the amended departure time from R620 would have provided an increased level of safety. Notification of the earlier departure time would have assisted the sector controllers to plan the safe and expeditious entry of the F111 into controlled airspace.

The Sector 2R controllers were aware that the F111 may conflict with the departing Metroliner and consequently passed traffic information to the crew of the Metroliner at the earliest opportunity. The controllers were able to provide avoidance instructions to the crew of the Metroliner when it appeared that they may conflict with the F111.

SIGNIFICANT FACTORS

1. The crew of the F111 departed R620 approximately ten minutes earlier than that indicated by the flight plan.

2. The crew of the F111 did not advise ATS of the revised flight estimates.

3. The Sector 2G controller did not instruct the crew of the F111 that a clearance was not avalable and to remain outside controlled airspace.

4. The crew of the F111 entered controlled airspace without a clearance.

5. The Sector 2R supervising controller provided directions to the crew of the Metroliner to avoid the F111.