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ATSB TRANSPORT SAFETY INVESTIGATION REPORT

Aviation Occurrence Report – 200605091

Final

Rejected takeoff – Hervey Bay, Qld

25 August 2006

VH-KEX

Fairchild Industries Inc SA227-DC Metroliner

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ISBN and formal report title: see 'Document retrieval information' on page iii.

DOCUMENT RETRIEVAL INFORMATION

Report No.	Publication date	No. of pages	ISBN
200605091	16 February 2007	7	1 921164 44 1

Publication title

Rejected takeoff – Hervey Bay, Qld – 25 August 2006 – Fairchild Industries Inc SA227-DC

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Abstract

On 25 August 2006 at 1610 Eastern Standard Time a Fairchild Industries Inc SA227-DC Metroliner (Metroliner) aircraft, registered VH-KEX, commenced its take-off roll on runway 29 at Hervey Bay Aerodrome, Qld. The aircraft was being operated under the instrument flight rules (IFR) on a scheduled passenger service to Brisbane, Qld. After reaching 60 kts, and while still on the runway, the pilot in command observed a Eurocopter EC 135 P2 (EC 135) helicopter, registered VH-ESZ, on final approach to land on runway 11 at Hervey Bay Aerodrome. The EC 135 was being operated under the visual flight rules (VFR) on a short flight from the Hervey Bay Hospital to Hervey Bay Aerodrome to refuel. The pilot in command of the Metroliner rejected the takeoff.

THE AUSTRALIAN TRANSPORT SAFETY BUREAU

The Australian Transport Safety Bureau (ATSB) is an operationally independent multi-modal Bureau within the Australian Government Department of Transport and Regional Services. ATSB investigations are independent of regulatory, operator or other external bodies.

The ATSB is responsible for investigating accidents and other transport safety matters involving civil aviation, marine and rail operations in Australia that fall within Commonwealth jurisdiction, as well as participating in overseas investigations involving Australian registered aircraft and ships. A primary concern is the safety of commercial transport, with particular regard to fare-paying passenger operations. Accordingly, the ATSB also conducts investigations and studies of the transport system to identify underlying factors and trends that have the potential to adversely affect safety.

The ATSB performs its functions in accordance with the provisions of the *Transport Safety Investigation Act 2003* and, where applicable, relevant international agreements. The object of a safety investigation is to determine the circumstances in order to prevent other similar events. The results of these determinations form the basis for safety action, including recommendations where necessary. As with equivalent overseas organisations, the ATSB has no power to implement its recommendations.

It is not the object of an investigation to determine blame or liability. However, it should be recognised that an investigation report must include factual material of sufficient weight to support the analysis and findings. That material will at times contain information reflecting on the performance of individuals and organisations, and how their actions may have contributed to the outcomes of the matter under investigation. At all times the ATSB endeavours to balance the use of material that could imply adverse comment with the need to properly explain what happened, and why, in a fair and unbiased manner.

Central to the ATSB's investigation of transport safety matters is the early identification of safety issues in the transport environment. While the Bureau issues recommendations to regulatory authorities, industry, or other agencies in order to address safety issues, its preference is for organisations to make safety enhancements during the course of an investigation. The Bureau prefers to report positive safety action in its final reports rather than making formal recommendations. Recommendations may be issued in conjunction with ATSB reports or independently. A safety issue may lead to a number of similar recommendations, each issued to a different agency.

The ATSB does not have the resources to carry out a full cost-benefit analysis of each safety recommendation. The cost of a recommendation must be balanced against its benefits to safety, and transport safety involves the whole community. Such analysis is a matter for the body to which the recommendation is addressed (for example, the relevant regulatory authority in aviation, marine or rail in consultation with the industry).

FACTUAL INFORMATION

History of the flight

On 25 August 2006 the crew of an instrument flight rules (IFR) Fairchild Industries Inc SA227-DC Metroliner (Metroliner) aircraft, registered VH-KEX, taxied for a departure from runway 29 at Hervey Bay Aerodrome, Qld. The aircraft was being operated on a scheduled passenger service to Brisbane, Qld.

The pilot in command of the Metroliner reported that the flight crew had complied with all mandated radio transmissions in support of the planned taxi and takeoff. Those transmissions were made on the Hervey Bay Common Traffic Advisory Frequency (CTAF) of 126.55 Mhz.

At about 1608 Eastern Standard Time[1], a visual flight rules (VFR) Eurocopter EC 135 P2 (EC 135) helicopter, registered VH-ESZ, became airborne at the Hervey Bay Hospital Helicopter Landing Site (HLS). The short flight was to Hervey Bay in order to refuel the helicopter. The pilot of the EC 135 reported making the following radio transmissions on the Hervey Bay CTAF:

- a taxi call prior to the takeoff from the HLS, including with the pilot's intentions
- an airborne call at about 200 ft above ground level (AGL), including with advice of the intent to track to a position at 3 NM on the extended approach centreline for runway 11 at Hervey Bay
- at 1,000 ft above mean sea level (AMSL) and 3 NM from Hervey Bay, including with the pilot's intent to conduct a straight-in approach to land on runway 11. That transmission was corroborated by a fencing contractor who was inspecting the aerodrome security fence and was monitoring the Hervey Bay CTAF at the time of the occurrence.

The pilot of the EC 135 reported hearing no radio transmissions from any other aircraft during the flight and approach to Hervey Bay.

At about 1610, the pilot in command of the Metroliner commenced the take-off roll. The pilot in command reported that, after reaching 60 kts, and while still on the runway, a helicopter was observed travelling in the opposite direction on final approach to land on runway 11. The pilot in command rejected the takeoff.

The pilot in command of the Metroliner reported that, while backtracking on runway 29 for a second takeoff attempt, radio communication was established with the pilot of the EC 135. In addition, during that backtrack, another aeroplane was identified awaiting takeoff at the holding point for runway 29.

The pilot in command of the Metroliner reported hearing no radio transmissions from any other aircraft prior to establishing communications with the pilot of the EC 135 during the backtrack.. In addition, the fencing contractor could not recall

1 The 24-hour clock is used in this report to describe the local time of day, Eastern Standard Time (EST), as particular events occurred. Eastern Standard Time was Coordinated Universal Time (UTC) + 10 hours.

whether he had heard any radio transmissions from the pilots of the Metroliner or of the aeroplane waiting at the runway 29 holding point.

Neither pilot in command indicated any problems with their respective aircraft's radio equipment, or its performance during or subsequent to the occurrence. In addition, the pilot of the EC 135 reported that he made no adjustments to the helicopter's radio selections or volume adjustment between the time he made the transmission at 3 NM and when communications were subsequently established with the Metroliner.

Communications information

In order to assist pilots to confirm the selection of the correct Very High Frequency (VHF) CTAF frequency, the Hervey Bay Aerodrome communications equipment included an Aerodrome Frequency Response Unit (AFRU) facility. That facility provided an automatic response to pilots' radio transmissions on that frequency as follows:

- when there had been no transmission on the CTAF for at least 5 minutes, a more than 2 seconds transmission by a pilot would cause the automated transmission 'Hervey Bay CTAF'
- when a pilot had made a more than 2 seconds transmission within the last 5 minutes, a 300 millisecond tone was transmitted by the facility.

An additional safety enhancement as a result of the AFRU facility was the capability for pilots to confirm the operation of their aircraft's transmitter and receiver, and that the volume of that equipment was correctly set. The pilot in command of the Metroliner later reported that he received a 'beep' in response to his first transmission.

The operator of the Hervey Bay Aerodrome had installed recording equipment in order to record all aircraft arrivals and departures, and to facilitate the collection of airfield charges where appropriate. An examination of the recording equipment revealed that there were no transmissions recorded on that equipment prior to the occurrence. That included transmissions by the pilots of the Metroliner, the EC 135 or the third aircraft awaiting takeoff at the runway 29 holding point.

In order to understand the extent and potential implications of this, and any similar previous occurrences at Hervey Bay, the investigation examined the Australian Transport Safety Bureau accident and incident database. That examination confirmed that there were no previous reports of any similar occurrences at Hervey Bay.

ANALYSIS

The report by the pilot in command of the Metroliner of the receipt of a 'beep' in response to his initial radio transmission indicated that:

- he had correctly selected the Hervey Bay Common Traffic Advisory Frequency (CTAF)
- the aircraft's radio was serviceable, and that the volume was appropriate
- another aircraft had transmitted on that frequency within the previous 5 minutes. The lack of any recordings on the aerodrome operator's recording equipment prevented the identification of that/those aircraft, or the substance of any radio transmissions.

The receipt by the fencing contractor of the helicopter pilot's radio transmission indicated that:

- the pilot of the EC 135 had correctly selected the Hervey Bay CTAF
- the helicopter's radio equipment was transmitting correctly.

The lack of any previously reported occurrences at Hervey Bay of a similar nature appeared to indicate that there were no identifiable communication problems at that location that might have contributed to the development of this occurrence. On that basis, the investigation was unable to determine the reason for the crews' inability to establish radio communications prior to the time of the backtrack of the runway by the pilot in command of the Metroliner for the second takeoff attempt.

Despite the presence of procedural and communications defences affecting aircraft operations at CTAF aerodromes such as Hervey Bay, this occurrence reinforces the need for pilots to remain especially vigilant when operating in the vicinity of those locations. That includes vigilance for pilots to see and avoid other aircraft.