Aviation Safety Investigation Report 199600800

Beech Aircraft Corp
Baron
Piper Aircraft Corp
Navajo

12 March 1996

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Aviation Safety Investigation Report

199600800

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: 199600800 **Occurrence Type:** Incident
Location: Perth, Aerodrome
State: WA **Inv Category:** 4
Date: Tuesday 12 March 1996
Time: 1110 hours **Time Zone** WST
Highest Injury Level: None

Aircraft Manufacturer: Beech Aircraft Corp
Aircraft Model: 58
Aircraft Registration: VH-SQF **Serial Number:** TH-1560
Type of Operation: Instructional Unknown
Damage to Aircraft: Nil
Departure Point: Perth WA
Departure Time: 1106 WST
Destination: Jandakot WA

Aircraft Manufacturer: Piper Aircraft Corp
Aircraft Model: PA-31
Aircraft Registration: VH-SJD **Serial Number:** 31-8012008
Type of Operation: Miscellaneous Unknown
Damage to Aircraft: Nil
Departure Point: Tuckabiana WA
Departure Time:
Destination: Perth WA

Approved for Release: Wednesday, October 9, 1996

FACTUAL INFORMATION

A Baron aircraft had completed a practice instrument landing system (ILS) approach to runway 21 at Perth and overshot with the intention of tracking to intercept the Perth to Cunderdin track. A Navajo aircraft, inbound to Perth from the east, was being sequenced for landing on runway 03 at Perth. The weather conditions were visual with a north-easterly breeze. Aircraft departures were from runway 06 and arrivals to runway 03.

There was a change of controller on the approach east control position and the new controller elected to radar vector the Baron to the east of the airport to achieve separation from the Navajo. The Baron was cleared to climb to 2,500 ft in compliance with the radar terrain clearance chart.

The out-going controller stated that the runway configuration made the management of traffic complex, a situation which required a high level of concentration. She had spent approximately one and half hours on duty and felt ready for a break. Consequently, once the new controller commenced in the approach east position, she relaxed. However, she remained at the console monitoring the audio program for approximately another 10 to 15 minutes but did not maintain a full appreciation of the new traffic sequence. She provided only limited coordination assistance to the new controller.

When the Navajo was north-east of Perth, the approach east controller radar vectored the aircraft to separate it from the Baron and to position it for right base runway 03. This was in compliance with a local instruction that required inbound aircraft which would overfly the departure end of a nominated runway to be maintained above 4,000 ft or radar separated from departing traffic. After radar separation was established with the departing Baron, the pilot of the Navajo was instructed to descend to 2,500 ft. When the Navajo was approximately 20 NM east of Perth, the approach east controller elected to track the aircraft for runway 11. The Navajo was radar vectored on a heading of 270 degrees for a left circuit to that runway.

Shortly after, the approach east controller observed the secondary surveillance radar altitude readouts from both aircraft and determined they would pass without adequate vertical or horizontal separation. The pilot of the Navajo was instructed to maintain 3,000 ft, which provided 500 ft vertical separation from the Baron. This was less than the required vertical separation of 1,000 ft. The approach east controller also instructed the pilot of the Baron to turn right onto a south-easterly heading for separation. As the controller further determined that both the horizontal and vertical separation standards were not going to be maintained, he passed traffic information to the pilot of the Baron. The pilot of the Baron subsequently sighted the Navajo and monitored the flightpath of the other aircraft until it was well clear.

The two aircraft passed with less than 3 NM horizontal separation and less than 1,000 ft vertical separation. There was a breakdown in separation.

ANALYSIS

The Navajo was the second of three aircraft being sequenced for runway 03. The controller determined the Navajo might eventually conflict with following traffic and considered changing the aircraft to runway 11. However, a pending Airbus departure to the east from runway 03 would have possibly have conflicted with the Navajo as it tracked downwind and thus it remained sequenced for runway 03.

When the Airbus from runway 03 was airborne, the controller reconsidered the earlier option of changing the Navajo to runway 11. Two larger and faster aircraft, following for runway 03, were closing and would require vectoring to maintain separation and spacing for landing. The controller decided to change the Navajo to runway 11. At this stage the Baron and Navajo were radar separated and assigned the same level. However, when the approach east controller turned the Navajo downwind for runway 11, he placed both aircraft on closing reciprocal radar headings without re-establishing vertical separation in accordance with local instructions.

The turn given to the pilot of the Baron was an attempt to maintain 3 NM separation. The controller was also aware that 500 ft was insufficient separation for IFR category aircraft but believed that under the circumstances it was better than having the aircraft at the same altitude. The provision of traffic information was appropriate and enabled the application of visual separation by the crew of one of the aircraft.

The out-going controller could have contributed more to assist the new controller in the period immediately following the handover/takeover. While the new controller would have appreciated the immediate disposition of aircraft on the radar display it takes some time to appreciate the plan for a developing sequence of air traffic. The basis of the handover/takeover and monitoring process is to ensure the out-going controller maintains the full disposition of aircraft and understands what actions are needed to manage and separate, immediate and pending aircraft until the new controller fully appreciates the disposition and sequencing plan of the control position. While the initial reaction of a controller to relax after handing over is understood, for an effective handover/takeover, all controllers at a control position should maintain a state of awareness commensurate with active controlling until the new controller indicates a complete comprehension of the traffic situation. Perth Approach Control Centre does not have specific handover/takeover instructions for controller guidance.

During the investigation, aspects of the restructure of Perth airspace scheduled for implementation by December 1996 were provided. The restructure will provide track crossover points outside 30 NM and separation assurance procedures. While these measures will not necessarily alleviate similar occurrences, they should provide an airspace environment better able to cope with similar situations.

SIGNIFICANT FACTORS

1. The aircraft were required to pass on approximately reciprocal tracks due to the runway configuration.

2. The approach east controller did not use separation assurance techniques when there was a possibility the aircraft would conflict.

3. The out-going air traffic controller did not fully monitor the new traffic sequence and only provided limited assistance to the new air traffic controller.

SAFETY ACTION

The Bureau of Air Safety Investigation is evaluating controller handover/takeover procedures. Any forthcoming recommendation will be published in the Quarterly Safety Deficiency Report.