KCHO Flight Check Findings

On February 20, 2002, aircraft 317UE, operated by Atlantic Coast Airlines, was flown from the KIAD airport to the KCHO airport for a routine training flight. During the course of this flight, the following information was collected relating to the accident involving aircraft 323UE in December of 2000.

Flight Conditions:
Time of Day: 1830-1930 EST (Dark)

Weather: Winds 210 at 20G25,
Temperature 17 / Dewpoint 10
Altimeter 29.81
Windshear: +/- 3-5 knots on approach below 500 ft

Aircraft weight: 18,100 lbs.

Aircraft Info: It is the opinion of the flight crew that the idle setting on the right engine was approximately 3-5% above what is normal and customary. (This condition was written up in the aircraft logbook and reported to maintenance personnel at the conclusion of the flight) In flight with the power levers at flight idle and the condition levers at 96% the right engine would produce approximately 30-32% torque, while the left engine would produce approximately 25-27% torque, which is closer in line to the fleet average. In theory the difference in torque would lead to an increase in the distance required to flare the aircraft and in the landing roll all other factors being equal.

Investigation One

Purpose: To determine where the aircraft would touch down on runway 21 if the crew followed the guidance provided by the VASI down to the point of touchdown. For this purpose of this check, the aircraft was flown at the correct speeds for its current weight and using standard ACA flight profiles and techniques.

Supporting information: Runway 21 at KCHO is served by a non-precision approach. Vertical guidance is provided by a standard two-bar VASI on the left side of the runway. There are distance remaining markers on the right side of the runway.

Findings: Two visual approaches were flown to runway 21 at KCHO. The first approach was flown straight in following approximately the same course as that flown by the accident aircraft. The aircraft was flown using the VASI for vertical guidance until such time as it was necessary to flare the aircraft for landing. The aircraft touched down approximately parallel to the 4000 foot remaining marker. Normal deaccleration using reverse and a very light application of braking just prior to initiating the turn off the runway at approximately 40 knots was more than adequate to allow the aircraft to comfortably stop by the second to the last intersection.

The second visual approach was flown as a circling visual approach from the ILS to runway 3. The findings of this approach were essentially the same as those on the first approach and landing.

Summary: The headwind component of approximately 20 knots most likely reduced the distance necessary to complete the flare and the landing roll from that experienced by the accident aircraft. However, as noted in the statement of aircraft condition, the effect of the headwind was somewhat mitigated by the extra torque produced by the right engine at flight idle.

It is the estimation of the flight crew that the accident aircraft, if it followed the same flight path, would have landed somewhat further down the runway, at perhaps the 3700-3800 foot remaining point. This conclusion is supported by the fact that the accident aircraft touched down at a slower speed than that achieved by the crew of aircraft 317UE. (If I recall correctly from the FDR readout aircraft 323UE touched down at a speed of approximately 97 knots versus approximately 102 knots for aircraft 317UE - indicating a slightly longer flare.)

Investigation Two

Purpose: To determine the approximate speed the aircraft would achieve on the ground roll with the condition levers at the full forward or flight position and the power levers at the flight idle position which is just ahead of the gate. Secondly to determine the same with the condition levers at the full aft or taxi position.

Supporting information: This was accomplished by performing a high-speed taxi from a standing start using the Static Takeoff Profile from the Atlantic Coast Airlines J41 Flight Standards Manual. It consist of holding the brakes and advancing the power levers to a setting of approximately 30-40% torque before brake release. After brake release the power is advanced to 100% torque or the limiting temperature. The aircraft was allowed to accelerate to approximately 70 knots with the power at 100% before the power levers were brought back against the flight-idle gate.

Findings: The aircraft continued to accelerate to a speed of approximately 81 knots before it stabilized. When the condition levers were brought back to the full aft or taxi position the aircraft started to accelerate once again. It was still accelerating through 85 knots when the high-speed taxi was discontinued.

Summary: The headwind component of approximately 20 knots would in theory reduce the ground speed at which the aircraft was travelling by a like amount. However the airspeed should be fairly accurate. Once again the effect of the extra 3-5% torque on the right engine most likely increased the speed the aircraft was able to achieve by some amount.

It is the estimation of the flight crew from the physical sensation of aircraft acceleration experienced that the aircraft would have stabilized at approximately 90-92 knots with the condition levers in the full aft or taxi position.

ED, Fill out a TA-100 for me showing 1.9 hours on that day (night) with three takeoffs and landings for the purpose of accomplishing the flight proficiency check required under 61.XXX .