



## **B-757 Damaged by Ground Strike During Late Go-around from Visual Approach**

*Deviations from standard operating procedures, deficient crew resource management and crew distraction were cited as factors in a controlled-flight-into-terrain accident that caused substantial airplane damage but no injuries.*

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*FSF Editorial Staff*

On Jan. 1, 1998, the crew of an Airtours International Boeing 757-200 missed two nonprecision instrument approaches and then conducted a visual approach that ended in the aircraft striking the ground to the right of the runway at Gregorio Luperon International Airport in Puerto Plata, Dominican Republic.

The captain was making a right turn to position the airplane on final approach when his eyeglasses were dislodged. Momentarily distracted, the captain did not maintain a sufficient turn rate to align the airplane with the runway centerline. During subsequent, aggressive maneuvering, the airplane drifted to the right of the runway centerline. The crew initiated a go-around at approximately 50 feet.

The airplane's left main landing gear and tail section contacted the ground to the right of the runway surface. Damage was substantial, but none of the occupants was injured. The crew diverted to Santo Domingo, Dominican Republic, and landed the airplane without further incident.

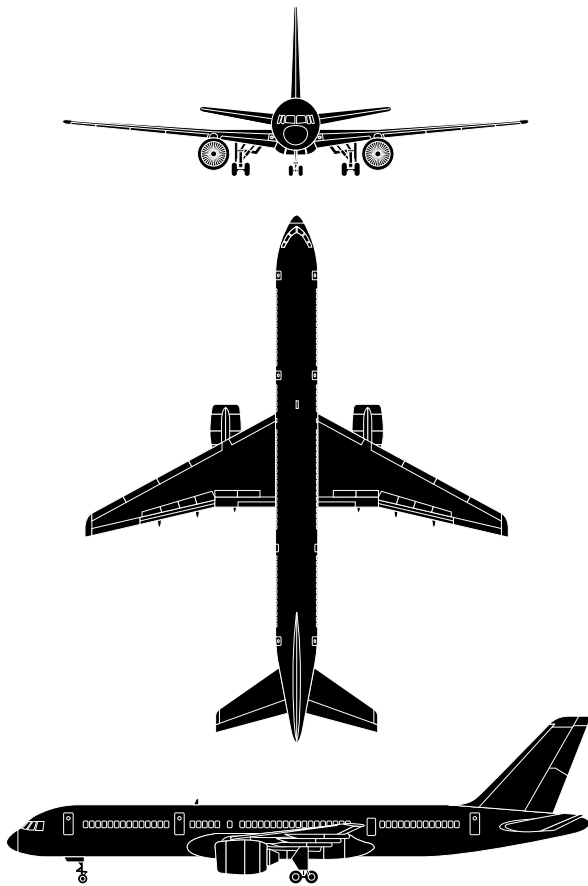
The accident was investigated by Dominican authorities, the U.K. Air Accidents Investigation Branch (AAIB, representing



the country in which the operator was based) and the U.S. National Transportation Safety Board (representing the country in which the airplane was designed and manufactured).

The report by the Dominican authorities, published by the AAIB, said that the causes of the accident were:

- “Numerous deviations from the operator’s standard operating procedures (SOPs) by the flight crew precluded the establishment of a stabilized approach, increased the commander’s [captain’s] workload and made a successful landing less likely from either of the instrument approaches;
- “After an unsuccessful second nonprecision instrument approach, the commander flew a visual circuit which ultimately required unusual and aggressive maneuvering of the aircraft, but he was still unable to place the aircraft on the runway;
- “The visual circling approach was not discontinued immediately after the commander’s spectacles became



## Boeing 757

The Boeing 757-200 series is a medium-range airliner designed to carry 186 passengers in a typical mixed-class configuration. The B-757 can accommodate up to 239 passengers in charter service, putting its capacity between that of the Boeing 737-400 and the Boeing 767. A longer range version and a freighter configuration of the B-757 are also available.

The B-757-200 is powered by two turbofan engines mounted in underwing pods. Engine pairs for the B-757 are provided by Pratt & Whitney (PW 2037 or PW 2040) and Rolls-Royce (535 series). The engines differ slightly in their static thrust.

The aircraft has a maximum takeoff weight of 104,325 kilograms (kg; 230,000 pounds [lb]) and engine thrust is rated between 170 kilonewtons (kN; 38,200 lb) and 197.1 kN (43,100 lb). At maximum takeoff weight with 186 passengers, the B-757 has a range of between 5,222 kilometers (km; 2,820 nautical miles [nm]) and 5,519 km (2,980 nm), depending on the engine installed. The B-757 has a top speed of Mach 0.86 and a normal cruising speed of Mach 0.80.

The two-pilot cockpit of the B-757 has a computerized, fully integrated flight management system (FMS) that provides automatic guidance and control of the aircraft from immediately after takeoff to final approach and landing. The FMS controls navigation, guidance and engine thrust to ensure that the aircraft flies the most efficient route and flight profile.

Source: *Jane's All the World's Aircraft*

displaced, which resulted in the aircraft not being stabilized on the runway centerline by 400 feet;

- “A very late go-around, initiated at a speed 14 knots below the target threshold speed [ $V_{REF}$ , reference speed for final approach] resulted in the underside of the aircraft’s tail striking the ground, thereby causing considerable damage to the aircraft; [and,]
- “The first officer (FO) did not contribute sufficiently towards the overall management of the flight and failed to challenge any of the commander’s flawed decisions as his crew resource management (CRM) training and experience should have equipped him to do.”

The airplane was on a charter flight to Puerto Plata from Bangor, Maine, U.S., with eight crewmembers and 220 passengers.

The commander, 53, had an airline transport pilot (ATP) certificate and 15,300 flight hours, including 760 flight hours in type.

“The commander learned to fly while serving in the U.K. Royal Air Force,” said the report. “On leaving the air force, he joined another operator for whom he flew [de Havilland] Comet and Boeing 727 aircraft for 17 years; the majority of this flying was as commander.

“When he joined his current company in 1991, he had a total of 11,700 hours. He then flew the [McDonnell Douglas] MD-80 aircraft until 1996, when he converted to the Boeing 757. All of his flying with this company was as commander. He had attended a two-day [CRM] course in 1995.”

The FO, 34, had an ATP certificate and 4,200 flight hours, including 850 flight hours in type.

“The FO had gained a private pilot’s license in 1987 and had then worked as a flying instructor in order to extend his flying experience,” said the report. “He gained a commercial pilot’s license, with a frozen [ATP certificate], in 1990. [The FO had completed the ATP examinations, but the ATP certificate was ‘frozen’ until he accumulated the minimum flight experience (1,500 hours) required for the certificate.]

“He joined his current company in 1996, at which time he had accrued about 3,000 hours, the majority of which were flying small turboprop aircraft. He had operated exclusively as an FO since joining the company.

“He had attended a CRM course with a previous employer but also attended one in December 1997 which had been arranged by his current company as part of their normal CRM training program.”

Airtours International began charter-flight operations in Europe with MD-83 airplanes in 1991. The company acquired another

tour operator that had a fleet of Airbus A320 and Boeing 757 airplanes in 1993.

“Shortly after this acquisition, long-haul operations were commenced ...,” said the report. “Following a period of sustained growth, the fleet now consists of three Boeing 767-300, six Boeing 757-200, 10 Airbus A320 and two Airbus A321 [airplanes]. All 767s and two 757s are used on long-haul operations, and both types operate regularly into the Dominican Republic.”

The accident airplane, G-WJAN, was built in 1997 and had accumulated 3,854 hours of service and 1,241 landings.

The airplane departed from Bangor at 1000 Eastern Standard Time (EST). [All times in this article are EST.] The commander was the pilot flying.

“The commander had never before flown an aircraft into [the Puerto Plata] airfield, although the first officer had,” said the report. “The flight crew spent the previous night at Bangor, and both had sufficient rest prior to the flight. ...

“There were no Notams [notices to airmen] regarding abnormalities for the landing aids at Puerto Plata or Santo Domingo (the alternate airfield), and the meteorological forecasts for both the destination and the alternate were good.”

The Puerto Plata airport is on the northern coast of the Dominican Republic. At the time of the accident, the airport had one runway (8-26) that was 3,081 meters (10,102 feet) long and 46 meters (151 feet) wide.

“This runway has no approach lighting system but is equipped with [a precision approach path indicator (PAPI)] which [is] set to a three-degree approach angle,” said the report. “The runway also has green threshold lights and white runway-edge lights.”

The airport had three instrument approaches to Runway 26: a VOR/DME (very-high-frequency omnidirectional radio/distance-measuring equipment) approach, a VOR approach and an NDB (nondirectional beacon) approach. Only circling approaches and visual approaches were authorized to Runway 8 because of high terrain west of the airport.

On the day of the accident, a cold front and rain showers were moving west across the Dominican Republic. The terminal area forecast was for visibility greater than 10 kilometers (six statute miles), scattered clouds at 2,500 feet and surface wind from 070 degrees at 10 knots (18.5 kilometers per hour [kph]). The visibility was forecast to decrease to eight kilometers [five statute miles] in rain between 0900 and 1400. (The estimated time of arrival at Puerto Plata was 1340.)

The airplane was in cruise flight at approximately 1230 when the cabin supervisor told the commander that a passenger was behaving in a disruptive manner.

“After consultation with the cabin supervisor, the commander wrote a report for the ground-handling agent at Puerto Plata relating to the behavior of this passenger,” said the report. “By the time that this issue had been dealt with, the aircraft was approximately 20 minutes from the top-of-descent (TOD) point. The commander then allowed a short flight-deck visit by one of the passengers before the crew completed a condensed predescent briefing.”

The crew planned to conduct the VOR/DME approach (Figure 1, page 4), but the commander’s predescent briefing did not include some details of how the crew would conduct the approach.

Company SOP required that the airplane be flown from the initial approach fix (IAF) with flaps at position 20 (flaps 20) and with the landing gear extended. Nevertheless, the commander planned to conduct the approach with the flaps at position 5 and with the landing gear extended until the crew acquired visual contact with the runway; then the crew would configure the airplane for landing.

The company’s operations manual said that certain SOPs might be inappropriate because of unforeseen circumstances, but that the flight crew must agree upon any deviation from SOP, conduct a briefing on the nonstandard procedure and fully understand the nonstandard procedure.

“The circumstances at Puerto Plata did not justify deviating from the SOPs, and no such deviation was briefed,” said the report.

The report said, “The purpose of the predescent briefing is to ensure that both crewmembers have a clear understanding of the proposed plan of action and are in complete agreement as to how this plan will be executed.

“This aim was not achieved since the FO was unaware of any proposed deviation from the SOP ... . There was also no evidence of a cohesive plan that would have allowed the aircraft to be flown level at the MDA [minimum descent altitude] prior to the MAP [missed-approach point].”

Before beginning the descent from Flight Level (FL) 370 at 1307, the crew requested an updated weather report from Santo Domingo Air Route Traffic Control Center (Santo Domingo Center). The controller said that at 1200, the airport reported scattered clouds at 1,200 feet, surface wind from 130 degrees at nine knots (17 kph), and surface temperature of 25 degrees Celsius (77 degrees Fahrenheit).

The airport also had reported that visibility was six kilometers (3.7 statute miles) in rain, but the controller did not provide

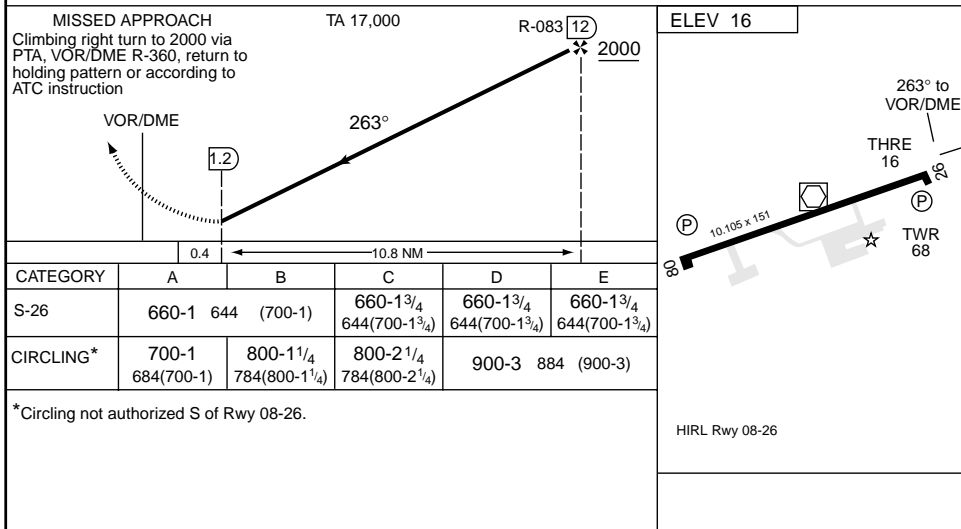
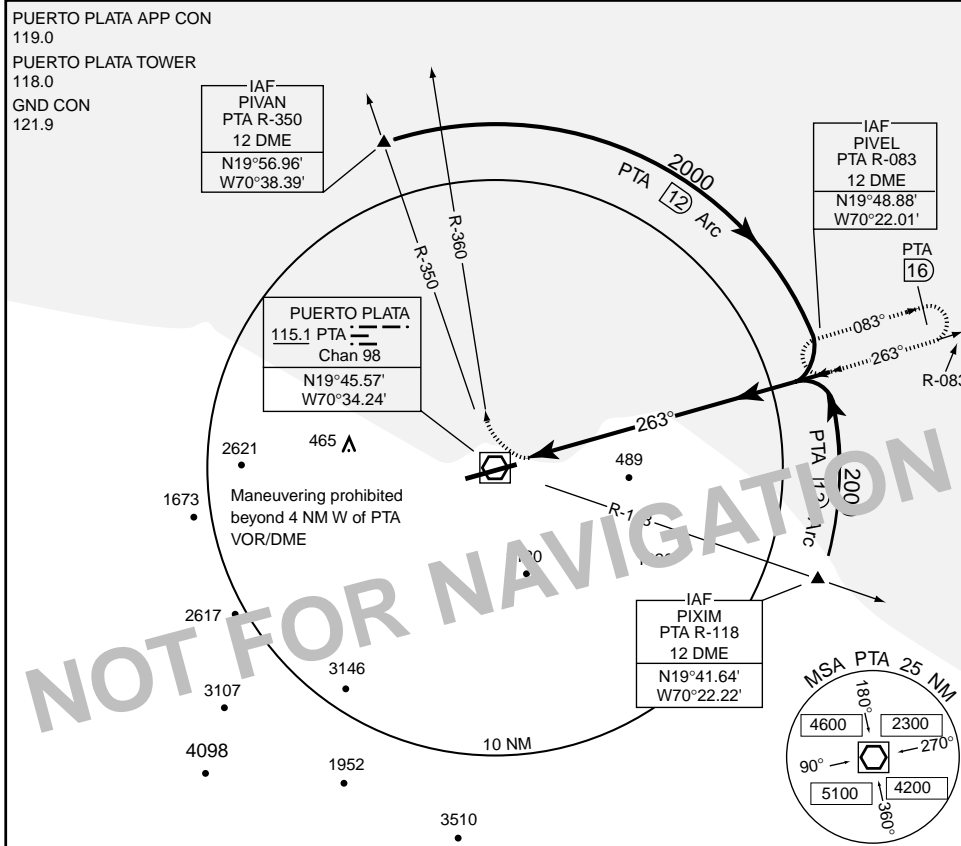
# Very-high-frequency Omnidirectional Radio/Distance-measuring Equipment Approach to Runway 26, Puerto Plata, Dominican Republic

Orig 98113

## VOR/DME RWY 26

[USA] AL-2518 [DGAC]

GREGORIO LUPERON INTL (MDPP)  
PUERTO PLATA, DOMINICAN REPUBLIC



## VOR/DME RWY 26

19° 46' N-70° 34' W

PUERTO PLATA, DOMINICAN REPUBLIC  
GREGORIO LUPERON INTL (MDPP)

Note: This chart is provided for information purposes to better understand the accident. The chart was published after the accident occurred and contains some minor changes, but it remains essentially the same as the chart in effect at the time of the accident.

Source: U.S. Department of Defense

Figure 1

this information to the crew. Nevertheless, the crew received indications that weather conditions at the airport were worse than forecast or reported.

“During the descent, it was clear from the indications on the [airplane’s] weather radar display that there was significant weather over the airfield,” said the report. “Also, prior to the approach, the commander spoke to the crew of another aircraft that was holding because of the poor weather.”

Nevertheless, the report said that the commander’s decision to conduct an instrument approach was “entirely reasonable.” Santo Domingo Center cleared the crew for the VOR/DME approach. The crew flew the airplane over the IAF at 3,000 feet and 210 knots; the published IAF crossing altitude is 2,000 feet. The crew turned the airplane right to intercept the final approach course (263 degrees), selected flaps at position 1 and began a descent to 2,000 feet.

“Once established on the inbound radial, and at a range of 7.25 [nautical miles; 13.4 kilometers] DME, flaps 5 was selected while at 2,300 feet and 210 knots; the gear was selected down at 6.5 [nautical miles (12 kilometers)] DME,” said the report. “The aircraft was still at 2,000 feet at 5.25 [nautical miles (9.7 kilometers)] DME when the pilot disconnected the autopilot and commenced the descent to the published [MDA] of 660 feet.”

Because the airplane was being flown higher and faster than appropriate for the approach, and a tail wind was increasing its groundspeed, the crew had less time than normal to assess flight conditions for the visual segment of the approach.

“The approach chart that was used for the VOR/DME approach for Runway 26 does not have time/height checks, nor is it possible to construct easily a descent profile that approximates a normal three-degree glideslope and brings the aircraft to the MDA at a suitable distance from the runway threshold in order to continue the descent to land,” said the report.

Thus, the crew had to acquire the necessary visual references before reaching the MAP, so that they could fly a three-degree glide path from the MDA to the runway. The published MAP was at 1.2 (nautical miles [2.2 kilometers]) DME and 0.3 nautical miles (0.6 kilometers) from the runway threshold. [Approach charts published after the accident show the distance from the MAP to the runway to be 0.4 nautical miles (0.7 kilometers).]

“The aircraft reached the MDA at 1.25 [nautical miles (2.3 kilometers)] DME and then briefly flew level at this altitude, but no visual contact was established with the ground until just prior to commencing the go-around, which was initiated at 0.25 [nautical mile (0.5 kilometer)] DME by engaging the go-around switches,” said the report.

Continuing level flight at the MDA for one nautical mile (1.9 kilometers) beyond the MAP did not comply with the operator’s Route Manual, which said that an immediate go-around must be initiated if the required visual reference has not been established at minimums (the MAP in this situation).

While conducting the published missed approach procedure, the crew requested clearance to fly a holding pattern. They were told to hold at 25 (nautical miles [46 kilometers]) DME on the VOR 360-degree radial at 9,000 feet. The airplane remained in the holding pattern for 25 minutes. The report said that during this time, the crew learned that the crews of other aircraft had diverted to their alternates without conducting an approach to Puerto Plata, and that two “local” aircraft had landed at Puerto Plata.

The crew obtained an updated weather report, which said that the visibility was four kilometers (2.5 statute miles), the ceiling was overcast at 800 feet, and surface wind was from 090 degrees at 15 knots (28 kph).

The report said, “The weather-radar display indicated that the previous significant weather returns had cleared from overhead the airfield.

“The commander briefed for another VOR/DME approach for Runway 26 and specifically included in the brief the presence of the tail wind as well as his intention to divert immediately to Santo Domingo if a go-around was required.”

The crew was cleared for the approach. They flew the airplane over the IAF at 2,000 feet and turned right, onto the final approach course.

“The commander flew the initial element of this approach at an airspeed of 175 knots, with flaps 5 and the gear up,” said the report. “He leveled [the airplane] at 700 feet, from where he had visual contact with the coast but not [with] the airfield.”

When the airplane was at 2.75 (nautical miles [five kilometers]) DME, the crew selected flaps at position 20 and gear down, and disengaged the autopilot. “Flaps 30 was selected at 1.75 [nautical miles (3.2 kilometers)] DME, at which point the airspeed was 155 knots,” said the report. “The aircraft then entered a slow descent to a minimum of 350 feet while the speed reduced to 132 knots. [ $V_{REF}$  was 130 knots.] Both pilots were satisfied with the tracking, but neither [pilot] could yet see the airfield or the runway.”

The descent to 350 feet did not comply with a company Route Manual requirement that flight crews acquire specified visual references before descending below the published MDA. “The specified visual reference in this case [was] the aiming point at touchdown [on the runway] since no approach lighting was available,” said the report.

The commander saw the PAPI; but all of the PAPI lights were white, which showed that the airplane was on a glide path of more than 3.5 degrees.

“The FO saw the PAPI [lights] at the same time as he saw the runway, but this was slightly later than the commander,” said the report. “As they approached the MAP, the commander saw that the area to the right of the airfield, over the sea, was clear, and so he decided to enter a right-hand visual circuit to land on Runway 26.”

The commander told the FO his intentions and increased power. “He retained the landing configuration of flaps 30 and gear down, and climbed straight ahead to 700 feet before entering a right turn onto the downwind leg,” said the report.

“The FO asked the commander if he was intending to land on Runway 26 or [to] do a tear-drop turn to position [the airplane to land on] Runway 8. The commander confirmed that the circuit was for Runway 26, since he was confident that this approach was clear and he was unsure about the weather conditions on the approach to Runway 8,” said the report.

During the turn to downwind, the airplane’s bank angle increased to 34.5 degrees. The commander rolled the airplane out of the turn on a magnetic heading of 97 degrees. Thus, the airplane was flying toward the runway, rather than parallel with the runway.

“While on the downwind leg, the commander climbed the aircraft up to 800 feet briefly, but it went into cloud, so he regained 700 feet, from where both crewmembers could clearly see the runway,” said the report.

The descent to 700 feet after entering the clouds at 800 feet did not comply with International Civil Aviation Organization (ICAO) Procedures for Air Navigation – Aircraft Operations (PANS – OPS). “[PANS – OPS] requires that the missed approach must be followed once visual contact is lost,” said the report. “However, instead of executing the missed approach, the commander descended the aircraft to 700 feet and ultimately 620 feet by the end of the downwind leg.

“Although he believed that he was over the sea at this stage, by descending below the published [circling] MDA of 800 feet, he could no longer be sure of protection from obstacles.”

The commander did not have the runway constantly in sight during the visual approach, and he relied on the FO for guidance on positioning the airplane. He turned the airplane to a magnetic heading of 070 degrees to position the airplane on downwind. “The FO, in the right seat of the aircraft, was satisfied with the orientation and positioning while on the downwind leg,” said the report.

The commander began timing with a stopwatch when the airplane was abeam the threshold of Runway 26. After 25 seconds, he began a descending, right turn from 620 feet.

“In electing to fly a right-hand, low-level visual circuit from the left seat, the commander placed himself in a difficult and unfamiliar situation,” said the report. “This is evidenced by the poor accuracy of flying during the maneuver.

“Furthermore, lack of familiarity with this maneuver is apparent in his decision to enter the final turn after only 25 seconds beyond the point abeam the threshold and to immediately commence a slight descent from an altitude of 620 feet.

“These two actions made it difficult for him to ensure that the aircraft was stabilized on the [runway extended] centerline by 400 feet as required by the Boeing 757 Operations Manual.”

The company derived its SOPs for Boeing 757 operations from the Boeing 757 Operations Manual. The manual provides the following guidance on conducting a stabilized approach:

“On all approaches, the aircraft is to be stabilized in the landing configuration with the engines spooled up and checks complete by 700 feet on the radio altimeter (RA). If the aircraft is not on the [runway] centerline and in a stabilized condition by 400 feet above airfield level, a go-around should be made.”

[Table 1 shows Flight Safety Foundation Approach-and-landing Accident Reduction Task Force recommendations for a stabilized approach. These recommendations were not included in the official B-757 accident report.]

The commander did not have the runway in sight when he began the turn. “As he entered the turn, he had already lost sight of the runway but could see the bay and associated coastline clearly,” said the report. “The FO had good visual contact with the runway and commented that the initial element of the turn looked satisfactory.

“The commander still had the VOR/DME display but was not using it; he had also selected his flight director off. However, the FO selected the runway heading on the mode-control panel as the turn was initiated.”

The commander leaned forward in his seat and turned his head to the right in an attempt to see the runway through the FO’s side windows. He saw that the runway was in the expected position.

“However, as he raised his head, his headset cable caught on the control column, possibly on the map holder,” said the report. “The left earpiece was pulled from his head, and his glasses were dislodged.

“He was distracted for a period of a few seconds; and when he replaced his glasses, he realized that the angle of bank had reduced [from 26 degrees] to about 15 degrees and that

## Table 1 Elements of a Stabilized Approach

*Note: A suggested definition or policy that might be considered by operators could be as follows: "All flights shall be stabilized by 1,000 feet height above touchdown (HAT) in instrument meteorological conditions (IMC) and by 500 feet HAT in visual meteorological conditions (VMC)." An approach is considered stabilized when all of the following criteria are met:*

1. The aircraft is on the correct flight path;
2. Only small changes in heading and pitch are required to maintain that path;
3. The aircraft speed is not more than  $V_{REF} + 20$  knots indicated airspeed (KIAS) and not less than  $V_{REF}$ ;
4. The aircraft is in the proper landing configuration (approach configuration for light multi-engine airplanes);
5. Sink rate is maximum 1,000 feet per minute; if an approach requires a sink rate greater than 1,000 feet per minute, a special briefing should be performed;
6. Power setting is appropriate for configuration and is not below the minimum power for approach as defined by the aircraft operations manual;
7. All briefings and checklists have been performed;
8. Specific types of approaches are considered stabilized if they also fulfill the following: An instrument landing system (ILS) approach must be flown within one dot of the glideslope or localizer; a Category II or Category III approach must be flown within the expanded localizer band. Visual approach — wings must be level on final when the aircraft reaches 500 feet HAT. Circling approach — wings must be level on final when aircraft reaches 300 feet HAT; and,
9. A unique approach, such as the "old" Hong Kong Airport approach or the DCA (Washington, D.C.) River Visual Approach to Runway 18, requires a special briefing.

Source: Flight Safety Foundation Approach-and-landing Accident Reduction (ALAR) Task Force

an increased bank angle would be required in order to gain the extended runway centerline."

The airplane was descending through 460 feet and was turning through a heading of 163 degrees when the commander increased the bank angle.

"The remainder of the right turn, which lasted ... 36 seconds, showed average bank angles of between 22 degrees and 30 degrees, but with a peak of 36.5 degrees during the latter stages when the height was 320 feet," said the report. "The recorded DME at that point was 1.5 nautical miles [2.8 kilometers], and the airspeed during the turn had slowly reduced from 140 knots to 130 knots."

The airplane was below 100 feet when it intercepted the extended runway centerline. The commander used left aileron

and left rudder to align the airplane with the centerline, but the airplane continued drifting to the right.

The report said, "It is apparent that neither crewmember was aware of the consequences of attempting to maneuver aggressively such a large aircraft and the effect of inertia in relation to the resultant ground track.

"It is partly for this reason that the Boeing 757 Operations Manual requires that if the aircraft is not on the centerline and in a stabilized condition by 400 feet, then a go-around should be made."

The airplane was at 45 feet and in a 15.8-degree left-wing-down attitude when thrust was reduced. Airspeed decreased to 116 knots. "The inertia of the aircraft was still taking it to the right as the aircraft crossed the runway threshold," said the report.

The FO said "go around" soon after the RA called out 50 feet. The commander reduced bank angle to 5.6 degrees, increased the pitch attitude to 10.2 degrees nose-up and fully advanced both thrust levers.

"One second later, at [1432], the aircraft struck the ground in scrub land to the right of the runway surface ...," said the report. "The descent rate was calculated as 360 feet per minute [110 meters per minute]."

The report said that the left main landing gear and the tail section received the brunt of the impact, which occurred as thrust was increasing to the go-around setting. The commander believed that the left main landing gear had contacted the runway.

"The left main gear struck the ground 5.3 meters (17 feet) beyond the right-hand edge of the runway surface," said the report. The left main landing gear was not damaged but accumulated vegetation during the ground strike. The lower tail section was substantially damaged. Engine exhaust propelled debris from the ground that dented and punctured the horizontal stabilizer.

The crew retracted the landing gear and flaps, conducted the missed approach procedure and diverted the flight to Santo Domingo, which is on the southern coast of the Dominican Republic.

"The transit was flown at FL 200, and there were no problems with the aircraft handling or systems," said the report. "There were no EICAS [engine indication and crew-alerting system] warnings, and the APU [auxiliary power unit], which had been running since the first approach, continued to function normally."

The crew landed the airplane at 1500 and shut down the engines. Passengers began disembarking from the forward-left cabin door. When cabin crewmembers opened the rear-left cabin door, they smelled fuel and reported this to the flight crew. The commander told the FO to shut down the APU, which is in the tail section.

The FO selected the APU “off” switch, and the APU stopped functioning after a normal 60-second cool-down period.

Ground-strike damage to the aft firewall had ruptured the APU fuel-supply line. The report said that the FO could have pulled the APU fire switch to immediately shut down the APU.

The FO asked Santo Domingo Tower to alert aircraft rescue and fire-fighting services. “The commander considered ordering an emergency evacuation, but since the [evacuation] slides were now disarmed and about a third of the passengers were already off the aircraft, he decided not [to] make such an announcement,” said the report.

The flight crew did not know the extent of damage to the airplane when they were told about the suspected fuel leak. “It may have been wise to request more information, rather than just dismiss the idea of calling for an emergency evacuation,” said the report. “A brief discussion with the cabin supervisor may have produced a more urgent disembarkation.”

In a summary, the report said, “Throughout both instrument approaches and the subsequent visual circuit, the commander deviated on a number of occasions from the company SOPs and regulations. The FO made little contribution to the successful management of the flight but was content to rely

totally on the commander’s judgment and ability. Neither the commander nor the FO demonstrated the most basic principles of CRM during these approaches.”

The report made the following recommendations:

- “The operator should ensure that a program to review, on a routine basis, disidentified FDR [flight data recorder] records in order to assess adherence to SOPs by its crews, is introduced as soon as possible;
- “The operator should review, in general terms, the operating procedures to ensure that they are providing the most effective guidance to pilots in order to ensure safe and efficient approach procedures; [and,]
- “The airfield authority should provide an effective form of approach lighting for Runway 26 at Puerto Plata.”♦

Editorial note: This article, except where specifically noted, was based entirely on U.K. Air Accidents Investigation Branch Aircraft Accident Report 3/99: *Report by the Dominican Republic Authorities into the Accident to Boeing 757-200, G-WJAN, at Puerto Plata Airfield, Dominican Republic on 1 January 1998*. The 54-page report contains diagrams, photographs and appendixes.

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