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National Transportation Safety Committee

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Media Release

Subject: **Final NTSC investigation report into the Boeing 737 accident at Yogyakarta on 7 March 2007 involving Garuda Indonesia flight GA200**

On 7 March 2007, a Boeing Company 737-497 aircraft, registered PK-GZC, was being operated by Garuda Indonesia on an instrument flight rules (IFR), scheduled passenger service, as flight number GA200 from Soekarno-Hatta Airport, Jakarta to Adi Sucipto Airport, Yogyakarta. There were two pilots, five flight attendants, and 133 passengers on board.

The pilot in command (PIC) was the pilot flying, and the copilot was the support/monitoring pilot.

The PIC intended to make an instrument landing system (ILS) approach to runway 09 at Yogyakarta and briefed the copilot accordingly. Yogya Approach cleared the aircraft for a visual approach, with a requirement to proceed to long final and report runway in sight. Although the crew acknowledged the visual approach clearance, they continued with the ILS approach, but did not inform the controller. The descent and approach were conducted in visual meteorological conditions.

At 23:55:33, when the aircraft was 10.1 miles from the runway, it was 1,427 feet above the initial fix of 2,500 feet published in the approach chart, and the airspeed was 283 knots. The pilot in command descended the aircraft steeply in an attempt to reach the runway, but in doing so, the airspeed increased excessively. As the aircraft was being flown at speeds that were in excess of the wing flaps operation speed, the copilot elected not to extend the flaps as instructed by the PIC. During the approach, the Ground Proximity Warning System (GPWS) alerts and warnings sounded 15 times and the copilot called for the PIC to go around.

The PIC continued the approach with flaps 5 degrees, and the aircraft attained the glideslope near the runway 09 threshold. Flaps 5 degrees is not a landing flap setting. The aircraft crossed the threshold, 89 feet above the runway, at an airspeed of 232 knots, 98 knots faster than the required landing speed for flaps 40 degrees. The wind was north easterly at 9 knots. The groundspeed was 235 knots. The aircraft touched down at an airspeed of 221 knots, 87 knots faster than landing speed for 40 degrees flap. Shortly after touching down, the copilot called, with high intonation, for the PIC to go around.

The aircraft overran the departure end of runway 09, to the right of the centerline at 110 knots. The aircraft crossed a road, and impacted an embankment before stopping in a rice paddy field 252 meters from the threshold of runway 27 (departure end of runway 09). The aircraft was fired by the impact forces and an intense, fuel-fed, post-impact fire. There were 119 survivors. One flight attendant and 20 passengers were fatally injured. One flight attendant and 11 passengers were seriously injured.

The aircraft was flown at an excessive airspeed and steep flight path angle during the approach and landing, resulting in an unstabilized approach. The PIC did not follow company procedures that required him to fly a stabilized approach, and he did not abort the landing and go around when the approach was not stabilized. His attention was fixated or channelized on landing the aircraft on the runway and he either did not hear, or disregarded the GPWS alerts and warnings and calls from the copilot to go around.

The investigation determined that the flight crew's compliance with procedures was not at a level to ensure the safe operation of the aircraft.

The copilot did not follow company procedures and take control of the aircraft from the PIC when he saw that the pilot in command repeatedly ignored the GPWS alerts and warnings. The Garuda Simulator Pilot – Proficiency Check records showed no evidence of training or proficiency checks in the vital actions and responses to be taken in the event of GPWS or EGPWS alerts and warnings, such as 'TOO LOW TERRAIN' and 'WHOOP, WHOOP, PULL UP'.

The Garuda Basic Operation Manual instructed a copilot to take control of the aircraft from the PIC, and execute a go around, when an unsafe condition exists. The records also showed no evidence that the copilot had been checked or received simulator training in the appropriate vital actions and responses required to retrieve a perceived or real situation that might compromize the safe operation of the aircraft.

The Directorate General of Civil Aviation's flying operations surveillance of Garuda was not effective in identifying these and other safety deficiencies.

The Yogyakarta Airport's rescue and fire fighting services vehicles were unable to reach the accident site and some did not have appropriate fire suppressant. The delay in extinguishing the fire, and the lack of appropriate fire suppressant agents, may have significantly reduced survivability. The airport emergency plan and its implementation were less than effective.

The report highlights that deviations from recommended practice and standard operating procedures are a potential hazard, particularly during the approach and landing phase of flight, and increase the risk of approach and landing accidents. It also highlights that crew coordination is less than effective, if crew members do not work together as an integrated team. Support crew members have a duty and responsibility to ensure that the safety of a flight is not compromized by non compliance with standard operating procedures and recommended practices.

The report includes a number of recommendations made by the NTSC, with the intention of enhancing the safety of flight by Indonesian airlines. These recommendations are drawn to the attention of DGCA, and Indonesian airport and airline operators and maintainers, and include flying operations procedures, training and checking, safety and regulatory oversight and surveillance, serviceability of flight recorders, and airport emergency planning and equipment.

A number of safety actions by Angkasa Pura I to address safety deficiencies with respect to airport emergency preparedness and associated services and equipment are also included. Since the accident, an access road between the airport perimeter and the area of the accident site has been constructed.

On 2 April 2007, Garuda issued a notice to its pilots reinforcing its mandatory policy relating to a pilot monitoring to take control of an aircraft and execute a go around in instances of unstabilized approach, when the pilot flying does not make an appropriate response. The notice assures pilots that the company will not take disciplinary measures for a go around executed under any unsafe or unstabilized approach.

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CHAIRMAN

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