

NA103 Occurrence Investigation

Executive Summary

On April 7, 2020, The National Air Service Corps of the Ministry of the Interior (NASC), AS-365 N2 helicopter, registration numbered NA-103, took off from Kaohsiung Airport at about 1405. The co-pilot sits in the right seat as the pilot flying, and the captain sits in the left seat as the pilot monitoring, conducted the annual recurrent training in Liugui airspace. The aircraft arrived at the destination at approximately 1425 hours and performed the training between the altitude of 4,000 feet and 1,000 feet. At about 1501, they completed the training and returned to base.

At about 1516, the flight crew contacted Kaohsiung Tower and requested to perform the emergency procedures include governor failure and the tail rotor failure during approach at the runway. The tower approved and informed that the Runway 09 was in use, the wind direction was 290, and the wind speed was 9 knots. There were 1 pilot, 1 co-pilot, and 3 crew members on board. After approaching the runway at about 1530 hours, the aircraft lost control to the right at low altitude and low speed. The main rotor touched the runway surface and crashed on the runway. No personnel were injured.

According to the Transportation Occurrence Investigation Act of Republic of China (ROC) and the content of Annex 13 to the Convention on International Civil Aviation Organization, the National Transportation Safety Board (TTSB), an independent transportation occurrence investigation agency, was responsible for conducting the investigation. The investigation team also included NASC, the distance representative from BEA, France and the Airbus representative in Taiwan.

The draft final report was reviewed and approved by TTSB 21th Board Meeting on January 8th, 2021. The final report was published afterward.

There are totally of 10 findings from the Final Report and 7 safety recommendations issued to the related organizations.

Findings

Findings related to the probable cause

1. The captain had insufficient knowledge of the characteristics of the tail rotor failure and complete operating procedures. When performing the tail rotor failure operation, he failed to comply with the operating procedures and grasp operating principles. In addition, the captain did not place his feet on the rudder paddle during the operations, which resulted that he could not correct immediately when the aircraft was deviated to the right, causing the main rotor to hit the runway surface and crash on the runway.

Findings related to the risk

1. The captain did not make necessary assessments and preparations for the wind information obtained before conducted the emergency procedures, which shows that his situation awareness was not sufficient.
2. The captain did follow the procedure to conduct the mission briefing, but did not report and discuss the emergency procedure training they performed in this flight. In additions, the NASC did not provide the detailed briefing procedures for training flight, it may affect training effectiveness and flight safety.
3. The NASC do not provide the complete training and check standard to the crew. There is no following mechanism for related assessment results and comments, and the training periods of relevant emergency

procedures has not been defined, which affects the overall training effectiveness.

4. The NASC failed to continuously implement the current line-oriented CRM training, which affected the effectiveness of CRM training.
5. The NASC did not properly established the simulator training and check standard mechanism to control the training quality.
6. The NASC risk assessment actions and verification mechanisms are inconsistent, which may affect the safety of training and mission conduct.

Other findings

1. The relevant certificates of the flight crew comply with the provisions of the existing NASC regulations. The crew activities for 72 hours before the accident are normal. There is no evidence show that any alcohol drugs affected the flight crew during the flight.
2. The occurrence was irrelevant to weight and balance, the airplane system and maintenance of the helicopter.
3. In accordance with the operating limitation data, the wind direction and speed are within the limit during the approach and hover.

Safety recommendation

To Ministry of the Interior

1. Review and evaluate the establishment of a complete safety regulatory mechanism for NASC to improve the flight safety.

To the National Airborne Service Corps, Ministry of the Interior

1. Enhance the flight crew's knowledge of tail rotor failure, review the detailed of related training procedures, and ensure the flight crew comply with related operating procedures and regulations in flight.

2. Define the detailed briefing procedures for the training flight to facilitate the flight crew to follow.
3. Review the overall flight crew training and assessment mechanism (including simulator training), and establish a clear emergency procedure training periods to ensure the effectiveness of the training.
4. Consider and plan alternatives to the flight crew's inability to travel to Malaysia for simulator training during the pandemic.
5. Implement line-oriented CRM training for continuous CRM training proficiency.
6. Review the consistency of the safety management risk assessment and verification mechanism to improve flight safety.