Executive Summary

On November 28, 2025, a National Air Service Corps (NASC) AS365N3 helicopter registered as NA-108, which took off from Taichung Ching-Cyuang-Gang Airport (RCMQ) at 1756 Taipei local time, was operating a night vision goggle training mission with 3 flight crew members on board: 1 instructor pilot, 1 captain, and 1 crew chief. Around 1825, while the aircraft was over the Da-Jia River estuary, about 2 nm from the mouth (120.55°E, 24.40°N), sparks and smoke burst from the lower center of the cockpit front instrument panel, accompanied by a wire-burning smell. On discovering this, the instructor pilot immediately terminated the training, took control of the aircraft, and headed for the RCMQ after executing the emergency procedures. Around 1833, the aircraft landed safely at RCMQ, with no injuries.

In accordance with the Transportation Occurrence Investigation Act of the Republic of China and referring to Annex 13 to the Convention on International Civil Aviation, the Taiwan Transportation Safety Board (TTSB), an independent transportation occurrence investigation agency, conducted the investigation. The investigation team also included representatives from Airbus Helicopters Southeast Asia Private Limited, Taiwan Branch (Singapore) and the NASC, Ministry of Interior. The TTSB sent the draft report to relevant organizations and authorities for comment, and it was subsequently reviewed and approved at the TTSB's 90th Board Meeting on 10 September, 2026.

The investigation identified 8 findings based on a comprehensive review of factual data and analyses and issued 4 safety recommendations to the relevant organizations.

Findings from the Investigation

Findings Related to Probable Causes

1. The wiring harness behind the 6α power control panel at the front of the cockpit was bundled rather loosely. When the instrument panel was in the locked position, the 2PJ1 wire, the power supply line for the voltmeter at the bottom of this harness, came into contact with the static pressure pipe behind the left-side dynamic-static pressure distributor. Under prolonged high-frequency vibrations generated by the rotorcraft's operation, continuous friction with the static pressure pipe damaged the 2PJ1 wire's insulating bushing and insulation layer. This exposed the wire's copper core, which then contacted the static pressure pipe's metal part and was grounded through a safety wire. This created a low-impedance short circuit, causing an instantaneous high-temperature arc and heat that melted the core, accompanied by sparks and smoke.

2. The 2PJ1 wire was the only voltage signal transmission path for the instrument panel in front of the cockpit, connecting the 6α power control panel selector knob to the 9α integrated monitoring instrument voltmeter. When the wire melted, it opened the monitoring circuit, and the voltmeter lost its function.

Findings Related to Risk

1. The current AS365N3 maintenance program lacked specific work orders for wiring inspections. It lacked checks and verification items for safe clearances between wiring and surrounding components in densely packed wiring areas (such as behind the instrument panel), making it difficult to proactively identify early signs of wiring degradation and friction.

2. Early aircraft did not fully incorporate maintenance operations and training programs based on the concept of electrical wiring interconnection system management. This might leave non-avionics professionals with insufficient awareness of the risk of wiring damage and friction during mechanical

maintenance or disassembly/reassembly work involving wiring areas.

Other Findings:

1. The flight crew held valid pilot certifications issued by the NASC, and their flight qualifications met NASC's requirements. No abnormalities were found in their training and evaluation records related to this case. The flight crew's rest and activities within the 72 hours before the accident were normal, and there was no evidence that medical conditions, medication use or alcohol impaired the crew's performance during the occurrence flight.
2. The aircraft's weight and balance was within the limits, and all pre-flight airworthiness records were normal.
3. The accident involved only the voltmeter failure on the integrated monitoring instrument panel in front of the cockpit. The aircraft's main power generation and supply systems (generators No. 1 and 2 and the battery) remained functional and did not affect the aircraft's power system.
4. The flight crew used a quick reference handbook of emergency procedures, which was not approved/issued by the NASC.

Transportation Safety Recommendations

To Airbus Helicopters Southeast Asia Private Limited, Taiwan Branch (Singapore)

1. Compile engineering instructions or specific inspection work orders based on the features of electrical wiring interconnection systems for specific areas, with reference to civil aviation guidance document (such as AC F120-102B), to address the limitations in the current maintenance program.
2. Establish basic training programs for all maintenance personnel on electrical wiring interconnection systems to improve their ability to identify and

prevent risks related to wiring friction, contamination, and installation interference, ensuring wiring maintenance quality meets airworthiness standards.

To the National Air Service Corps, Ministry of Interior

1. Require the AS365 helicopter commercial maintenance provider to compile engineering instructions or specific inspection work orders based on the features of electrical wiring interconnection systems for specific areas, as well as basic training programs, and incorporate them into the audit items.
2. Compile a quick-reference handbook of emergency procedures for the AS365 helicopter, incorporate it into relevant document management procedures, and establish a formal compilation, review, approval, and release control mechanism to ensure its content aligns with the manufacturer's documents, fleet mission requirements, and training procedures.