



**Aviation Safety Council
Taipei, Taiwan**

**TRANSASIA Airways FLIGHT GE 517
AIRCRAFT TYPE ATR72-212A
NATIONALITY MARK AND
REGISTRATION NO.B22810 CABIN
SMOKE AFTER DEPARTING FROM
SONGSHAN AIRPORT THEN
RETURNED**

Executive Summary

Executive Summary

On September 5, 2002, TransAsia Airlines Flight GE 517, nationality mark and registration no.B22810, aircraft type ATR72-212A, scheduled to depart from Taipei SongShan Airport to PengHu Magong Airport. At 1814 Taipei time, the aircraft took off from Songshan Airport and climbed to 500 feet, the Tower notified that there was flames and smoke coming out from the tail of the aircraft, engine 2 fire alarm also activated at the same time; At 1814:50, the aircraft continued climbing to 800 feet, meanwhile the pilot non-flying discovered smoke coming out from the cockpit, In-Flight Shutdown and Fire Extinguishing Procedures were executed immediately and they decided to return. The aircraft landed in Songshan Airport at around 1839. 2 pilots, 2 cabin crew and 43 passengers were safe, the aircraft was normal except engine 2 (right side) was damaged.

Findings related to the probable causes

1. The maintenance personnel did not keep continuous awareness for the warning of the fuel nozzle installation steps; The maintenance personnel did not follow the standard operating procedures of Required Inspection Items (RII) to inform the inspector to conduct on-site inspection; The inspector did not follow standard operating procedures of RII to conduct the inspection, causing no.11 fuel nozzle of engine 2 to be installed in the reverse direction during maintenance operation.

Findings Related to the Risks

1. The execution of the notification propaganda of “awareness of new type fuel noggle installation task” and employee trainings of TransAsia were not solid enough, causing part of the maintenance personnel not able to read notifications instantaneously and accept complete trainings, losing the effects of the notification and the opportunities to avoid installations in a reverse direction.
2. The maintenance personnel had complete understandings of RII standard operating procedures, although propagandas were made again but the defects of RII happened again in a short time, revealing that the key points of the problem did not lie in the propagandas of RII standard operating procedures, instead existed in the implementation of the RII standard operating procedures.
3. The maintenance inspector understood that the RII was an important item which affected aviation safety, and also recognized that during the RII inspection, the mechanics and inspectors had difficulties in execution, affecting the RII inspecting results.
4. When the flight crew conducted Engine Fire Procedures, they did not follow the standard operating procedures to identify the fire engine with standard callout and then shutdown the engine.
5. The installed nozzle did not have “FWD” marked on it.

Other Findings

1. No abnormal records were found in the registration license, airworthiness certificate and technical log book of the aircraft.

2. The captain, first officer possessed qualified training and licenses, the alcohol test after the accident revealed 0, activities 72 hours before the accident was normal.
3. The maintenance personnel possessed qualified civil aviation ground mechanic licenses.
4. The maintenance inspector possessed qualified ground mechanic licenses.
5. The latest A check contained the replacement of fuel nozzles of engine 2 and engine BSI etc...
6. According to the Aircraft Maintenance Manual provided by Transasia, the fuel nozzle installation procedures of fuel nozzle replacement w/o belonged to RII, inspectors must be notified by maintenance unit staffs to construct jointly.
7. The fuel nozzle replacement w/o has a RII square stamp on the left side of the installation procedures, the step contained fuel nozzle installation warnings. Same warnings appeared on the Engine Maintenance Manual.
8. The new nozzle design could be installed in the reverse direction easily, engine manufacturer had already added "FWD" on the nozzle type, increase the correctness of installation and the feasibility of inspection afterwards.
9. Before the aircraft speed reached V1, the pilot's decision to continue takeoff with engine high exhaust temperature situation conformed to the procedures.
10. Although the execution timing of the in-flight fire procedure by the flight crew did not comply with standard operating

procedures, but the cockpit was accessed by smoke which could be considered as a proper decision.

11. When engine fire occurred, the pilots could still maintain the maneuverability of the aircraft, therefore the pilots did not declare emergency, which was conformed to the regulations of the company
12. The cabin crew actively and correctly executed the emergency procedures, revealed the familiarity with the contents of “Safety and Emergency Response Manual”.

Safety Recommendations

To Transasia Airlines

1. Implement the mechanism for personnel trainings and notification propagandas etc... (ASC-ASR-03-11-01)
2. Implement RII standard operating procedures. (ASC-ASR-03-11-02)
3. Implement emergency procedure of Engine Fire for flight crew. (ASC-ASR-03-11-03)

To Civil Aeronautics Administration, CAA

1. Adjust CAA maintenance inspector manual about RII operation inspection frequencies, implement and pay attention to the carryout of RII maintenance operations. (ASC-ASR-03-11-04)

Intentionally Left Blank