

**CIVIL AVIATION AUTHORITY OF THE PHILIPPINES**  
**Aircraft Accident Investigation and Inquiry Board**  
**Aircraft Serious Incident Report**

**BASIC INFORMATION**

Aircraft Registration	:	RP-C3336
Aircraft Type/Model	:	Airbus A330-301
Owner/Operator	:	Philippine Airlines Inc.
Address of Owner	:	PNB Financial Center, President Diosdado P. Macapagal Avenue, CCP Complex, Pasay City
Date/Time of S. Incident	:	October 7, 2013/2300H
Type of Operation	:	Commercial /Air Transport
Phase of Operation	:	Landing
Type of Occurrence	:	Aft cargo compartment fire
Place of S. Incident	:	Ninoy Aquino International Airport

**EXECUTIVE SUMMARY**

On 07 October 2013 at 2013H/1213Z PAL Flight PR 512, an Airbus A330-301 with Registry No. RP-C3336 with 214 persons on board (11 aircrew and 203 passengers) departed Singapore and landed in Manila at about 2300H/1500Z 07 October 2013. The whole flight until “aircraft on block” at Bay 43 of NAIA Terminal 2 was uneventful with only about 1.04G load factor on turbulence. When the aircraft was parked at Bay 43 and “on block” at 2305H, the PIC ordered the doors disarmed and opened for the passengers to disembark and cargoes unloaded. At about 2325H when the “securing the aircraft and parking checklist” was completed, the Electronic Centralized Aircraft Monitor (ECAM) warning indicated an aft cargo smoke. Then, the rear cabin crew heard crackling sounds and later noticed smoke coming from the rear of the cabin at about 2325H. One of the rear cabin crew rushed to the cockpit and personally relayed to the PIC the smoke in the rear cabin. At this point, the PIC with the FO went out of the cockpit and verified the smoke in the rear cabin then the PIC went back to the cockpit alone, and discharged the Fire Extinguishing Bottles for the aft cargo compartment then went out of cockpit. After awhile, upon remembering that the battery was already off, the PIC returned to the cockpit, put on the battery and repeated the firing of the fire extinguishing bottles for the aft cargo compartment. After this, at about 2355H the PIC departed the aircraft since the cause and source of the smoke was undetermined.

Outside the aircraft, the Ramp Service agent of MacroAsia (the ramp service provider of PAL) noticed that the aircraft arrived at Bay 43 at about 2306H much earlier than the

scheduled arrival at 2320H. At about 2310H, the agent was ready to open the aft cargo compartment door and there was no unusual indication observed. However, from his position at Lower Deck loader there was smell of burnt plastic/rubber. When he opened the aft cargo door there was thick smoke and hot air pushing out. The cargo loader immediately moved away from the aft cargo door and returned to close the door after 15 minutes then informed the Ramp Supervisor who called the MIA Fire protection unit.

Immediately 5 Firemen (without fire truck) arrived on site and used two (2) units of 10 lbs standby ramp fire extinguisher since the three (3) 150 lbs standby fire extinguisher failed to function.

At about 1133H the fire truck arrived and positioned at aft right of aircraft. As this developed, the ground personnel and the responding fire fighting entities helped out until the smoke and fire had been suppressed. Then the cargo loaders unloaded the Unit Loading Devices (ULDs) that were affected by fire under the close supervision of the Safety Office of PAL.

Burnt baggages were maintained intact and sealed per ULDs to secure and preserve the evidences for determining the source of fire and to safety office area for safekeeping. The aircraft was towed at Lufthansa Technik Philippines for quarantine to be ready for the conduct of safety investigation.

The report on the incident was received by the Chief of AAIIB at about 0900H the following day of 8 October 2013 by mobile phone from the operator (PAL) followed by a text message from ORCC, CAAP, at about 5 minutes later.

Initial investigation conducted showed that out of six (6) ULDs in the aft cargo compartment for baggages and cargoes, there were four (4) ULDs affected by the fire. The aft cargo compartment showed substantial damage by fire.

The four (4) ULDs affected by fire were subjected to Forensic Investigation by the joint local PNP and aircraft insurer's Forensic investigation experts on the week immediately after the incident.

## **PROBABLE CAUSE**

The Aircraft Accident Investigation and Inquiry Board determined that the probable causes of this accident are the following:

- **The inadvertent mixing of dangerous substances glycerin and potassium permanganate initiated the incipient fire in aft cargo compartment.**

The incipient fire at the aircraft Aft Cargo Compartment was triggered by inadvertent mixture of spilled contents of individual small containers of dangerous substances containing potassium permanganate and glycerin contained in luggages of passengers who were Kayak athletes placed at aft cargo compartment.

- **Contributory Factor**

- **Inadequate system of identifying contents of checked-in passengers' baggages that contain dangerous goods.**

The check-in baggages contain amounts of dangerous goods and other chemicals that when inadvertently spilled and made contact with each other will initiate fire. These dangerous goods in small quantities were not adequately covered by manual/psychological and technology inspection/monitoring at the aircraft point-of-origin and when not well-secured in luggages provide the probability of inadvertently mixing while on flight.

- **Inadequate proficiency of pilot in the timely implementation of the procedures for Aft Cargo Compartment Smoke Warning.**

The PIC upon indication of smoke warning after aircraft "on block" failed to immediately execute Level 3 procedure which include triggering of fire extinguishing bottles and call out for support from airport fire fighting capabilities.

- **Underlying Factor**

- **Inadequate passenger information and airport security procedure on the identification and control of the updated list of dangerous goods and its safety handling.**

The passengers are under informed on the safety aspects of handling or avoiding transport of dangerous goods. Likewise, airport security personnel still need dynamic update in training and equipage to closely inspect/monitor its transport by air.

## **SAFETY RECOMMENDATIONS**

As a result of this investigation, the Aircraft Accident Investigation and Inquiry Board made the following safety recommendations:

- CAAP CSIS shall:

Coordinate with counterpart ICAO security organization on the security aspects of the forensic related findings of this incident for widest dissemination to ICAO Member States' airport security organizations.

Coordinate with OTS, DOTC, National Aviation Security stakeholders and security staff of Air Operators, Service Providers, on the security findings of this report for urgent implementation on cargoes and passenger baggage inspections in all airports in the country.

- CAAP, FSIS shall ensure that simulator training of airline pilots shall include scenario on fire at any portion of the aircraft at any portion of flight including at parking Bay with standard procedures to be implemented by the aircrew and the updated syllabus of such training event.

- CAAP ANSOO shall ensure that all chartered airports in-country especially MIAA are advised to review the readiness status of its firefighting equipment and manpower on alert. Ensure that all Airports under CAAP supervision are periodically inspected and tested on its capability readiness.

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