

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

BASIC INFORMATION

Registration	:	RP-C3699
Make and Model	:	Eurocopter MBB BO-105
Owner/Operator	:	Aviation Enterprise Inc.
Address of Operator	:	Hangar 7224, DMIA, CSEZ, Clarkfield, Pampanga
Date/Time of Accident	:	24 November 2013 / 0814Z UTC
Type of Operation	:	General Aviation Flight
Phase of Operation	:	Cruising
Type of Occurrence	:	Simultaneous loss of power on both engines
Place of Accident	:	18 Nautical miles NNW of Manila

EXECUTIVE SUMMARY

On a humanitarian mission to the Typhoon Yolanda affected areas in the Visayas, a BO 105 Bolkow twin-engine type of helicopter, with Registry Number RP-C3699, owned and operated by Aviation Enterprise Inc. with postal address located at Hangar 7224, DMIA, CSEZ, Clarkfield, Pampanga, initially took-off Clark on or about 1200H 22 November 2013 for Caticlan (RPVE) and then to Mactan (RPVM), Cebu as destination, where it arrived on or about 1500H. The following day, November 23, 2013, RP-C3699 conducted several sorties of relief operations to the different remote areas in Samar and Leyte provinces where it rested overnight (RON) at Mactan, Lapu Lapu City, Cebu. On a generally good weather condition on or about 1605H 24 November 2013, RP-C3699, a Bolkow 105M type of helicopter, with a Pilot-in-Command (PIC) and one (1) passenger on board encountered a simultaneous dual engine power failure enroute to Manila-Clark from Mactan (RPVM) via Caticlan (RPVE) coming from a humanitarian mission in the aftermath of Typhoon Yolanda. Initially, RP-C3699 took off from RPVM on or about 1330H 24 November 2013 via RPVE to refuel. It was at around 1417H when the chopper took-off from RPVE, that while cruising at traffic altitude, a short flickering illumination on the battery bus warning light was observed for a second and extinguished instantly. According to the pilot, after that battery warning light illumination, no additional unusual indication was noticed in all the flight instruments which prompted the pilot to proceed with his flight mission. Surprisingly, on or about 1605H, RP-C3699 declared "Mayday" through a US C130 PAGASA 47 approximately 7 nautical miles over Manila Bay which was then transmitted to Manila Approach. Later on, at about 1620H, Manila Tower likewise received the Mayday call of PAGASA 47 who then called ORCC that subsequently alerted the Philippine Coast Guard (PCG) Alert Center. Based on the pilot's accounts, RP-C3699 encountered a dual engine power failure, as well as a shuddering vibration of the chopper. The pilot instinctively performed an emergency power-off autorotation while cruising at 1,200 feet altitude and ditched at the shores, heading 320° about 18 nautical miles northwest of Manila Bay or about 2 nautical

miles along the coastline west offshore of Obando, Bulacan at coordinates 14°43'67"N120°49'21"E. (Annex 1) With presence of mind, both of the pilots' doors were jettisoned before touchdown and both the pilot and the passenger were able to egress from the left side pilot's door of the chopper before it slowly sank. The chopper was equipped with the required individual life-vest preserving units (LPUs) located inside an emergency bag. However, during that particular time, the 2 survivors were not wearing any. While floating in the waters for about one and a half (1½) hours, the passenger with the use of a handheld VHF radio, was able to contact the pilot of a nearby US C130 flying overhead which maneuvered and timely dropped a 4-man inflatable life-raft rubber boat that was used effectively by the survivors. Within the period of 30 minutes, the survivors were finally rescued by local fishermen and later turned-over to the Philippine Coast Guard (PCG). On or about 2005H, both survivors were checked by the Medical Team of the PCG at their headquarters and declared physically fit without any injury. The ill-fated chopper was later located by local fishermen underwater adjacent the coastal towns of Bulacan when their net entangled with the chopper. They dragged it about 6 kilometers to the shallow waters 4 kilometers from shoreline of Obando, Bulacan a week after. This was finally retrieved out of the bay 11 days after the date of accident. The chopper was severely damaged incurring 3 detached main rotor blades as well as 1 detached tail rotor blade. Most of the aircraft parts were damaged due to salt water exposure, while engine parts, electrical wirings, battery and generators were partially burned as both of the RH and LH Pilot's doors were missing. Moreover, the airframe fuselage as well as tailboom incurred an undetermined number of dents. The fuel and oil lines were found to be contaminated with salt water. The left overhead skyline was cracked and broken and approximately and 50% Jet A-1 Fuel was contaminated with salt water when drained from the main fuel tanks.

PROBABLE CAUSE

The Aircraft Accident Investigation and Inquiry Board determined that the probable cause of this accident was:

- **Cause Factors**

- **Primary Cause Factor**

The cause of the simultaneous dual engine failure as claimed by the pilot cannot be determined in the course of the investigation. The result of the teardown inspection revealed no abnormalities with its operation at the time of the accident.

- **Contributory Factors**

- a. Failure on the part of the pilot to immediately land and determine the cause of the illumination of the battery warning light before continuing with the flight mission. (Human Factor)
- b. Failure on the part of the pilot to properly recognize and apply the correct emergency procedures during the occurrence of the simultaneous dual engine

power failure. (Human Factor)

- c. Though there were Life-vest Preserving Units (LPU) available inside the chopper, the pilot and passenger failed to wear these safety personal equipment during flight. (Human Factor). Fortunately, a US C-130 that witnessed the accident was able to drop a four (4) man inflatable life raft rubber boat at the site which was effectively used by the survivors in their safe journey back to the shoreline.

SAFETY RECOMMENDATIONS

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

- CAAP-FSIS shall strictly enforce the performance of all emergency events during annual proficiency check rides of all Pilot-in-Command (PIC) of twin-engine helicopters including one (1) engine, as well as two (2) engines inoperative emergency procedures.
- CAAP-FSIS shall firmly make certain that during regular check rides, the specific instruction for all rotary pilots to strictly adhere to the operators/pilots checklist especially when confronted by warning lights indication during flight.
- CAAP-FSIS shall ensure the inclusion of simulator training to PIC of single-engine and multi-engine helicopters especially on critical engine failure emergency events.
- CAAP-FSIS shall strictly enforce flight safety procedures, such as the mandatory wearing or use of the Life Preserving Units (LPU) by all aircraft occupants (aircrew and passengers) when flying or operating over bodies of water.