

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

BASIC INFORMATION

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|-----------------------|---|---|
| Aircraft Registration | : | RP-R1191 |
| Aircraft Type/Model | : | Grumman Agcat G-164A |
| Owner/Operator | : | Mindanao Rainbow Agricultural Development Services Inc. |
| Address of Operator | : | Solidwood Hangar Old Airport Sasa, Davao City |
| Date/Time of Accident | : | June 16, 2013 0820H/ 0020 UTC |
| Type of Operation | : | Agricultural Spraying |
| Phase of Operation | : | Cruising Flight |
| Type of Occurrence | : | Forced Landing |
| Place of Accident | : | Purok Pag-asa Camoning, Asuncion Davao del Norte |

EXECUTIVE SUMMARY

On June 16, 2013 on or about 0820H/ 0020 UTC, AGCAT G-164A type of aircraft with Registry No. RP-R1191 took off at Mamacao Airstrip bound for Purok Pag-asa Camoning, Asuncion Davao del Norte to perform aerial spraying. After the third pass to release the chemicals, the engine encountered engine oil leaks splashing to the aircraft windshield. The pilot immediately dumped the remaining chemicals and decided to perform a forced landing. The engine lost compression, lost airspeed and subsequently lost altitude. Upon forced landing, the aircraft stumbled and rested upside down on the banana plantation. The engine assembly was separated from the aircraft upon impact. The aircraft sustained substantial damages. The pilot egressed the aircraft safely but with fractured injury on the right hand

PROBABLE CAUSE

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

- **Primary Factor:**

Separation of engine cylinder head #3 resulting in Engine power-loss. Material Factor. This failure may occur due to excessive cylinder head temperature and excessive manifold pressure. The Cylinder heads usually fail when the tensile strength of the material has been lowered by excess heat.

SAFETY RECOMMENDATIONS

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

- a.** CAAP, Airworthiness Department shall require the operator to establish a good recording and monitoring system regarding the compliances on the following Airworthiness Directives:
- b. FAA AD 56-06-02-** was issued to provide maintainer and operators specific technical instructions (Visual and Magnaflux Inspections) in order to address problems associated with cylinder barrel flange distortion and cracks.
- c. FAA AD 78-08-07-** was issued to help detect and prevent separation of the cylinder head and cylinder barrel. Inspection of cylinder assembly (Visual and Ultrasonic Inspections) was mandated to detect and then remove cracked cylinders that exceeded specified limits.
- d.** CAAP, Airworthiness Department shall monitor the mandatory compliance as per Airworthiness Directives 78-08-07, that Cylinders ultrasonically inspected shall inspect 150 hours time in service after effective date of AD, and thereafter at intervals not to exceed 150 hours.