Z-9 EH GHF 631 HELICOPTER ACCIDENT INVESTIGATION

PRESENTATION

MINISTRY OF DEFENCE (MOD)
ACCIDENT REPORT, OCTOBER 2025

INTRODUCTION

On Wednesday, 6th August 2025, the Z9–EH (GHF 631) helicopter, operating a scheduled flight from Accra to Obuasi, was involved in a crash at Dampia Forest Reserve of Anokyekrom Brofoyedru in the Adansi Akrofuom District, Ashanti Region. All three (3) crew and five (5) passengers on board died.

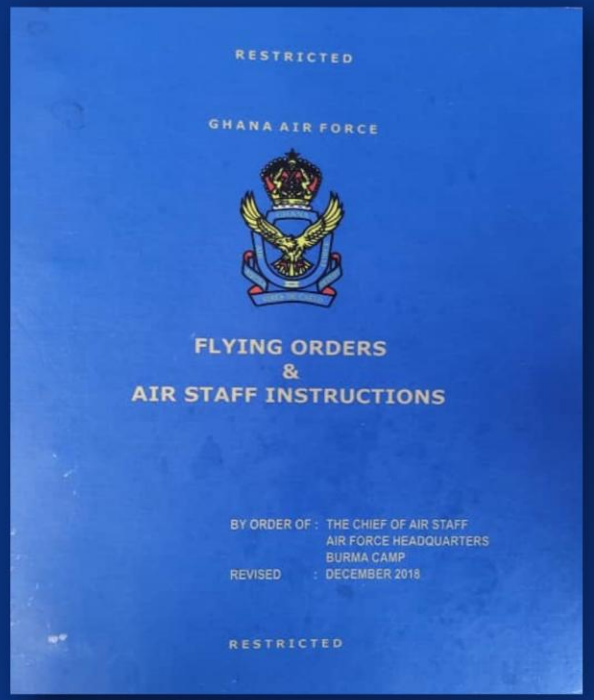
INTRODUCTION

The President of the Republic of Ghana, H.E. John Dramani Mahama directed the Acting Minister for Defence (MOD) to constitute an Accident Investigation Board. The MOD on 25th August 2025 announced through a press release the establishment of the Board mandated to enquire into cause(s) and circumstances leading to the Z9–EH Helicopter accident.

INTRODUCTION

This investigation has been conducted in accordance with:

- Ghana Airforce Flying Orders (GAFFOS).
- Air Staff Instructions (ASI).
- Annex 13 of the ICAO Convention on International Civil Aviation.



INTRODUCTION

Generally, investigations under these regulations are conducted to determine circumstances leading to the accident and prevention of future accidents and incidents.

INTRODUCTION

Final Report Format:

1. Factual information
2. Analysis
3. Conclusions
   - Findings.
   - Causes and/or contributing factors.
4. Safety recommendations.

METHODOLOGY OF INVESTIGATION

1. Composition of the Board

- National Security
- Aircraft Accident & Incident Investigation and Prevention Bureau
- Ghana Armed Forces
- USA Airforce Staff

METHODOLOGY OF INVESTIGATION

2. Factual Information/Evidence Collection

- Briefing by the Preliminary Investigation Team (PIT) on 26th August 25.
- Handing over of PIT Report, Flight Recorder (FDR and CVR) and some personal effects of passengers.
- Visit to the accident site from 28th August to 29th August 2025.

METHODOLOGY OF INVESTIGATION

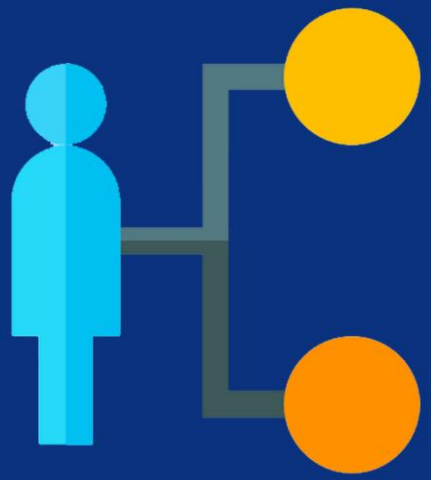
3. Technical Examination and Data Collection

Maintenance records, flight logs and crew qualification documents were reviewed.

The FDR and CVR were transported to the AVIC Flight Decoding Centre, Xian, China 12 Sep to 22 Sep 25.

METHODOLOGY OF INVESTIGATION

4. Human Factors and Operational Information



Medical and psychological records of the flight crew were examined.

Interviews were conducted with pilots, engineers and superiors to assess crew proficiency, training history and operational culture.

METHODOLOGY OF INVESTIGATION

5. Meteorological Information

Weather conditions were interpreted using METAR, TAF, eyewitness observations, and Ghana Meteorological Agency data.

METHODOLOGY OF INVESTIGATION

6. Organizational and Systemic Review

- The Board examined Ghana Air Force policies, Flying Orders, and operational oversight mechanisms.
- Crew authorization, Air Tasking Order (ATO) procedures, Air Force oversight, safety culture, and the adequacy of risk management systems.

METHODOLOGY OF INVESTIGATION

7. Analysis and Reconstruction.

- Using data from the FDR, CVR, radar tracks, and witness accounts, the flight path was reconstructed.
- The sequence of events leading to the accident.

8. Findings and Causes.

9. Recommendations.

Scope

- History of Flight.
- Weather.
- Machine.
- Human Factors (Man).
- Sequence of Events.
- Cause of Accident.
- Organisational and Systemic Factors.

HISTORY OF FLIGHT

Previous Flights:

SRL	DATE	ROUTE	FLIGHT TIME (HR)	PURPOSE
(a)	(b)	(c)	(d)	(e)
1.	2 AUG. 2025	TAKORADI – ACCRA	1:00	MEDEVAC
2.	3 AUG. 2025	ACCRA – CAPE COAST – ACCRA	1:20	MEDEVAC
3.	4 AUG. 2025	ACCRA – SALMAN – ACCRA	2:30	CARGO

THE CREW RESTED ON THE 5TH AUG 25

HISTORY OF FLIGHT

Accident Flight:

- On Wednesday, 6 August 2025, the crew for Z–9 EH GHF 631, Callsign IHRI planned to execute the Task Order for Ministry of Defence.
- The flight was scheduled to depart at 8am with an estimated enroute time of 50 minutes.
- The Captain delayed take off due to adverse weather in Accra, Kumasi and Obuasi.

HISTORY OF FLIGHT

Accident Flight:

- Take-off was at 09:12:14am.
- Throughout the flight, the altitude fluctuated and changed to avoid low clouds.

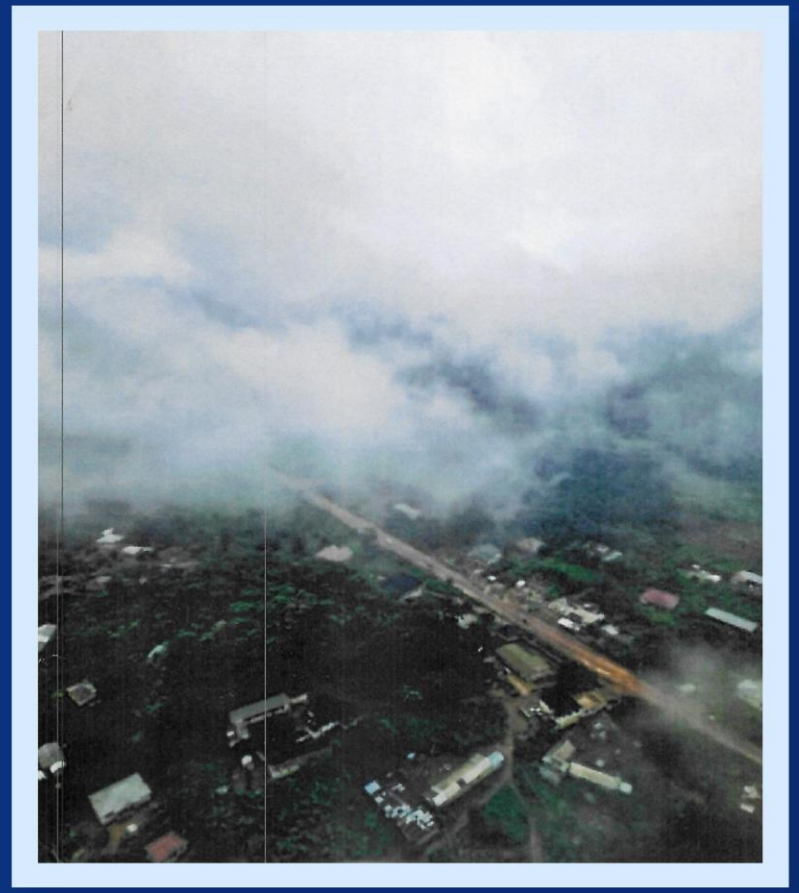
WEATHER

Morning Weather
09:00 hours

Afternoon Weather
12:00 hours

WEATHER

Picture of enroute weather from a passenger on-board the helicopter to a friend before the accident.



WEATHER

- The weather in southern Ghana was poor which delayed departure for about an hour.
- In Accra, conditions were misty with visibility of about 5–7 kilometres and very low clouds starting at only 700–1,100 feet above the ground.
- While the situation improved slightly later in the morning, the early hours were dominated by haze and overcast skies.

WEATHER

- In Kumasi, the weather was worse, with drizzle reducing visibility to around 4 kilometres and heavy low clouds sitting just 600–900 feet above the ground.
- Only Accra and Kumasi aerodrome weather were available.

WEATHER

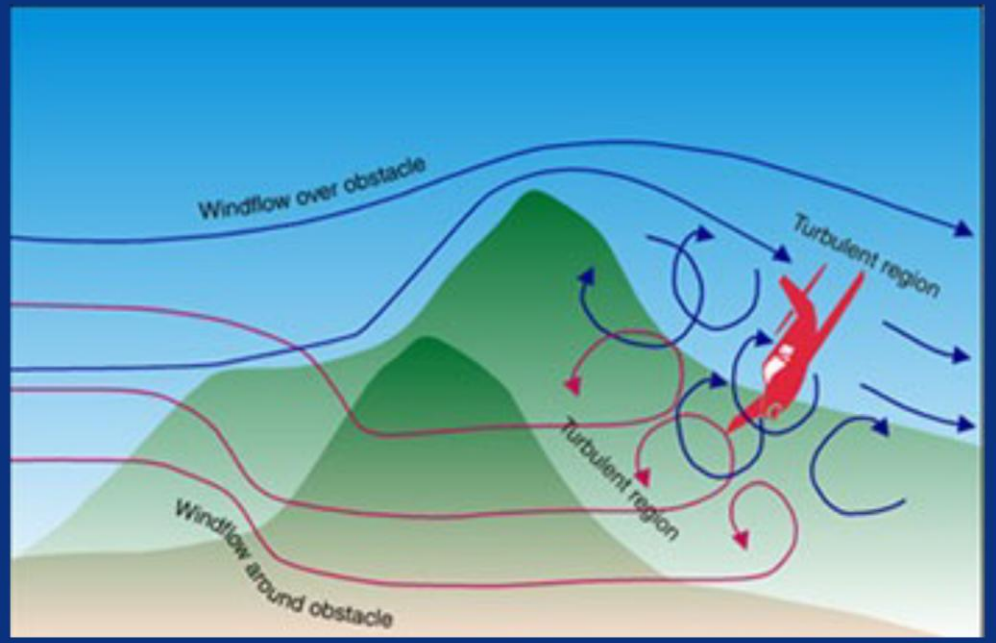
- There was no information on the weather along the flight route avaible to the pilot.
- Witnesses reported poor visibility due to fog and rain at Brofoyedru and its environs.
- The kind of rapid changes in environmental conditions over the terrain can result in turbulence, downdrafts and other phenomena

WEATHER

Downdrafts:

Turbulent wind currents usually occurring around ridge lines, mountains and hills generating sink rates in excess of 1,000 feet per minute in moderate wind conditions.

(Heliops, 2023)



www.atsb.gov.au

MACHINE

Now we assessed the aircraft to see if it was fit for the purpose.

- The helicopter entered GHAF service in May 2015 (manufactured 2012) and reached its 10-year service threshold on 18 May 2025.
- The aircraft received a 90-day extension (to 18 August 2025) with manufacturer's approval.

MACHINE

- The aircraft on the day of the flight was declared serviceable and duly signed off by the Captain.
- The FDR report indicates that the helicopter was in good working condition.
- The helicopter however, lacked some avionic safety enhancements.

MACHINE

Aircraft was serviceable and airworthy.

Lacked Key Safety Equipment:

- **Terrain Awareness and Warning System (HTAWS/EGPWS).**
- **Advanced navigation with terrain mapping.**
- **Automatic Flight Control System (AFCS).**
- **These safety equipment could have enhanced situational awareness.**

We have recommended strongly for aircraft with these additional safety enhancments to be acquired immediately.

HUMAN FACTORS (MAN)

The Captain:

To rule out any potential human causes, we examined the qualifications, experience and competence of the crew.

- Post Graduate Certificate in Safety and Accident Investigation from Cranfield University, UK in 2024.
- The Captain was a qualified FAA commercial and instrument-rated pilot from Bristow Academy Florida (USA) in April 2015.

HUMAN FACTORS (MAN)

The Captain:

- Within the Ghana Air Force (GHAF), he was recategorized in March 2025 as a Category C pilot (Qualified Captain) on Z9–EH helicopter with a Green instrument rating.

HUMAN FACTORS (MAN)

The Copilot:

- The Copilot was also a qualified FAA commercial and instrument-rated pilot from Bristow Academy Florida (USA) in April 2023.
- In December 2024, he was recategorized within GHAF as a Category D pilot on helicopter type with a White instrument rating.

HUMAN FACTORS (MAN)

To rule out any potential human causes, we examined the medical and psychological records of the crew.

- A review of medical and personal records revealed no known medical or psychological conditions in the Captain, Copilot or technician at the time of the flight.
- All 3 were described by witnesses as calm, prepared and professional during preflight activities.
- Fatigue or medication was not considered to have materially affected their performance on the day of the flight.

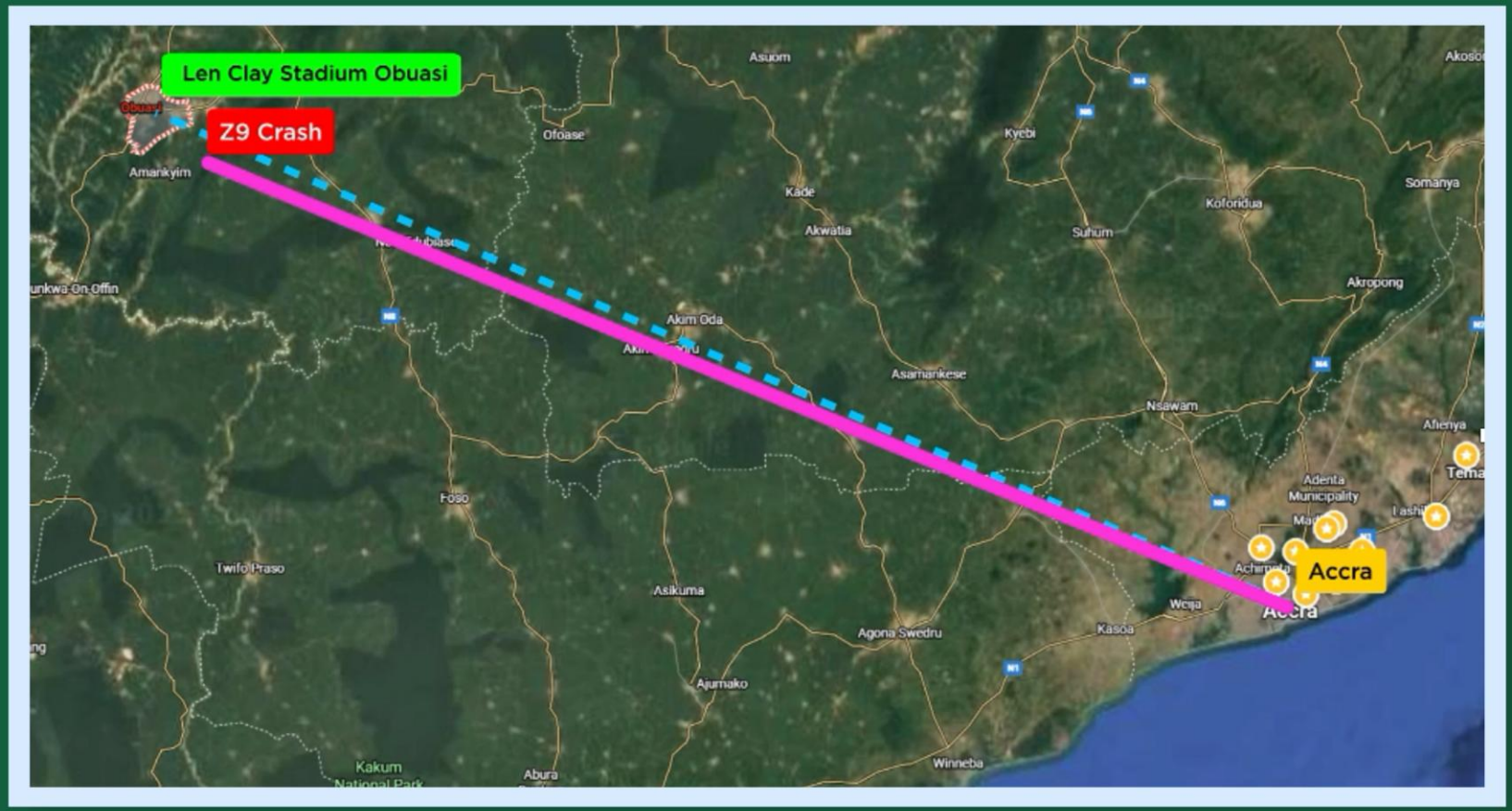
SEQUENCE OF EVENTS

- The flight departed Accra under VFR in marginal weather.
- The flight to Brofoyedru was uneventful (approximately 90NM out of 100NM)
- At 0956, the crew entered IMC (clouds) and transitioned into IFR.
- Seconds before impact, the crew stated they could see high ground below.

SEQUENCE OF EVENTS

- Suddenly after, the helicopter lost height without change of power or pitch attitude and impacted a ridgeline at 1,370 feet above sea level, about 6.5 miles from destination at 09:58.

SEQUENCE OF EVENTS



FINDINGS

- The helicopter was airworthy but lacked additional safety enhancements (HTAWS/EGPWS) for flying safer in the weather phenomena over that terrain.
- Environment: Adverse weather, limited visibility, rising terrain and no ground based navigational aid en route.
- Emergency response was timely.

CAUSE OF ACCIDENT

The investigation determined that the accident was caused by the sudden loss of altitude and lift due to downdraft.

This loss of altitude without change in power or pitch attitude is consistent with downdraft associated with changing environmental conditions over high terrain.

ORGANISATIONAL & SYSTEMIC FACTORS

- Limited national navigational capability for en route and remote areas weather services.
- Enhanced Training: – No simulator training
- Flight Monitoring: – No Flight Data Monitoring (FDM).
- Flight Following: – No Secondary Surveillance Radar (SSR), Automatic Dependent Surveillance–Broadcast (ADS–B) Real time tracking etc.

SAFETY RECOMMENDATIONS

Modernise the fleet of the Ghana Air Force.

- Acquire modern aircraft with TAWS/EGPWS and modern navigation systems.
- CVR/FDR with audio visual capable types.
- Invest in flight simulators for recurrent training.
- Contract certified aviation weather provider.
- En route navigational aids.
- Flight Data monitoring.
- En route tracking systems.
- Ground Support equipment.

CONCLUSION

- The Z-9 EH accident was an unfortunate and sudden weather related accident.
- Implementing the safety recommendations will prevent recurrence of accidents.

Accident Investigation Board

The Board was composed as follows:

COP Abdul–Razak Osman (National Security Coordinator)	– Chairman
Air Cdre DA Akrong (Aircraft Accident Investigator)	– Lead Investigator
Gp Capt NA Aryeetey (Pilot, Director, VSI)	– Member.
Wg Cdr AR Mustapha (Pilot, Z–9EH Helicopter, CFI)	– Member.
Wg Cdr A Shaibu (Aviation Medical Specialist)	– Member.
Sqr Ldr BB Agbosege (Aircraft Accident Investigator (Eng).	– Member.
Lt (GN) TN Amoako (Clinical Psychologist)	– Member.
Capt Paul Forjoe (Aircraft Accident Investigator)	– Member.
Engr. Eric Ewusie (Aircraft Accident Investigator)	– Member.
Maame Afua Asor Danquah, ESQ (National Intelligence Bureau)	– Member/Secretary.

Accident Investigation Board

The Board was assisted by a team of Aircraft Accident Investigators from the USA Government:

1. Captain Dena McFadden (USAF Mishap Investigator).
2. Captain Timothy Hayes (USAF Mishap Investigator).
3. Sherilyn Klueber (NCIS/Force Protection Detachment, US Embassy – Ghana).

Questions and Clarifications