



PRELIMINARY REPORT

Accident Investigation Bureau

Preliminary Report on Accident involving a Bell 206B III Helicopter with nationality and registration marks 5N-BQW operated by Quorum Aviation Limited (QAL) which occurred at Opebi Area, Lagos On 28th August, 2020



5N-BQW

Registered owner and operator: Quorum Aviation Limited

Manufacturer: Bell Helicopter Textron, Canada

Aircraft type and model: Bell 206B III

Year of manufacture: 1980

Serial number: 3216

Nationality and registration marks: 5N-BQW

Location: Opebi, Lagos

Distance: 2.5 NM, 083° from Murtala Muhammed International Airport

Coordinates: 6°35'25.57 N, 3°21'46.77 E

Elevation: 88 ft

Date and Time: 28th August, 2020 at about 12:14 h

All times in this report are local time (UTC +1) unless otherwise stated



INTRODUCTION

Accident Investigation Bureau (AIB) was notified of the accident by an eyewitness on 28th August 2020. Investigators were dispatched to the accident site and commenced post occurrence assessments, under the provisions of Civil Aviation (Investigation of Air Accidents and Incidents) Regulations 2019 and ICAO Annex 13.

The purpose of this preliminary report is to provide details of the initial facts gathered so far including discussions and findings surrounding the occurrence, information gathered from the witness accounts and a post occurrence inspection of the wreckage at the scene.

The investigation is ongoing.



1.0 FACTUAL INFORMATION

1.1 History of the flight

On 27th August 2020, a Bell 206B III helicopter with nationality and registration marks 5N-BQW, operated by Quorum Aviation Limited, was topped up with 247 litres of fuel to full tank capacity on ground Port Harcourt Military airport (DNPM). The technical logbook entry revealed that there was an engine run for 10 minutes and a test flight of 20 minutes in preparation for a positioning flight the next day.

On 28th August 2020 at 09:15 h, 5N-BQW was started and at 09:20 h, the helicopter lifted off from DNPM as a ferry flight to EAN Aviation hangar, Murtala Muhammed International Airport, Lagos (DNMM). The flight was operated on a Visual Flight Rules (VFR) flight plan. According to the flight plan, on board were one pilot, an engineer and a fitter mechanic with fuel endurance of 3:15 h.

At 11:45:34 h, 5N-BQW established initial contact with Lagos Tower and passed its traffic information as coming from Port Harcourt, maintaining 1000 feet, estimating Lagos at 12:17 h, with three persons on board and one-hour endurance. Lagos Tower acknowledged the call.

At 11:46:05 h, Tower requested 5N-BQW to report again its distance to the field (LAG VOR). 5N-BQW replied 20 miles to the field. At 11:46:36 h, Tower requested 5N-BQW to verify that it was 20 miles to Lagos, its point of departure and the altitude it was maintaining. At 11:46:46 h, 5N-BQW replied that it was from Port Harcourt, maintaining 1000 ft, estimating Lagos at 12:18 h with three persons on board. At 11:46:54 h, Tower requested for 5N-BQW's endurance again. At 11:46:58 h, 5N-BQW replied one-hour endurance.



5N-BQW

At 11:47:08 h, Tower issued an inbound clearance to 5N-BQW and requested 5N-BQW to report estimate for control zone boundary. 5N-BQW replied estimate to the control zone boundary 10 minutes and Tower acknowledged and confirmed the estimate for 11:57 h.

At 11:54:34 h, Tower requested 5N-BQW to report distance to the field. 5N-BQW replied *a....I am....I am.....I am five minutes to the field...to the control boundary I will let you know when I will report to the field.* Tower acknowledged and requested the type of helicopter and landing apron. 5N-BQW replied *okay I am going to EAN hangar okay, and it's a Bell, Bell 206 helicopter.* At 11:55:01 h, Tower acknowledged.

At 12:01:36 h, Tower enquired from 5N-BQW if it had checked the control zone boundary. 5N-BQW confirmed that it had checked control zone boundary.

At 12:04:27 h, 5N-BQW enquired from Tower whether it was raining overhead the aerodrome and Tower replied *negative rain.*

At 12:10:59 h, 5N-BQW reported field in sight and Tower instructed her to report left downwind runway 18 left (18L). 5N-BQW replied *call you left downwind 18L, thank you Bravo Whisky.*

At 12:16:49 h, Tower raised 5N-BQW on radio as it was not on the left downwind position of the landing circuit as was expected. Tower continued to raise 5N-BQW but there was no response.

At 12:17 h, Tower informed Approach/Radar Control to look out for 5N-BQW on the radar screens. Apron Control was also notified and was asked for the name of the operator of the helicopter.

At 12:18 h, Tower contacted OAS, another helicopter operator located at Maryland to know whether 5N-BQW had diverted to its helipad. No clear information was gotten.



At 12:21 h, Tower contacted Caverton Helicopters and EAN Aviation to find out if either of them was the operator of 5N-BQW and to know if they had any information that might assist Tower to know of its whereabouts. Both companies reported that 5N-BQW was not their helicopter. EAN representative later called to inform Tower that 5N-BQW was expected to pick up passengers from their Hangar.

At 12:36 h, Aerodrome Rescue and Fire Fighting Service (ARFFS) notified Tower of a reported helicopter crash on a residential building at Opebi.

The accident occurred at 12:14 h in daylight in Visual Meteorological Conditions.

All the three occupants of the helicopter were fatally injured.

1.2 Injuries to persons

Injuries	Crew	Passengers	Total in the aircraft
Fatal	3	Nil	3
Serious	Nil	Nil	Nil
Minor	Nil	Nil	Nil
None	Nil	Nil	Nil
Total	3	Nil	3

1.3 Damage to aircraft

The helicopter was destroyed.

1.4 Other damage

Part of the roof of a building, a fence and two cars.

1.5 Personnel information

1.5.1 Pilot

Nationality:	Nigerian
Age:	37 years
Licence type:	Airline Transport Pilot Licence (H)
Licence validity:	Valid till 24 th June 2023
Aircraft ratings:	Bell 206, Sikorsky S-76
Medical validity:	Valid till 6 th August 2020
Proficiency Check:	Valid till 24 th August 2020,
Total flying time:	2,206:40 h
Total On type:	37.55 h
Total On type (PIC):	37.55 h
Last 90 days:	20 mins
Last 7 days:	20 mins
Last 24 hours:	20 mins

There was no evidence to show that applications for the exemption provided by the All Operators' Letters AOL DG018/20 and AOL DG020/20 respectively had been submitted to the Nigerian Civil Aviation Authority.

1.5.2 Engineer

Nationality:	Nigerian
Age:	66 years
Licence Type:	Aircraft Maintenance Engineers' Licence
Licence Validity:	Valid till 14 th February 2022
Aircraft Ratings:	Category A&C Agusta/Bell 206, Bell 212, Sikorsky S76, Eurocopter EC 155 helicopters

1.6 Aircraft information

Type:	Bell 206B III
Manufacturer:	Bell Helicopter Textron, Canada
Year-of manufacture:	1980
Serial number:	3216
Certificate of Airworthiness:	Valid till 29 th October 2020
Certificate of Insurance:	Valid till 8 th October 2019
Certificate of Registration:	Issued 14 th February 2017
Noise Certificate:	Issued 23 rd January 2014
Airframe time:	12,449.32 h
Cycles Since New (CSN):	20,617

No fuel jettisoning capability on this helicopter.

1.6.1 Power plant

Manufacturer	Rolls-Royce (Allison)
Model	Allison 250-C20B
Serial number	CAE-833257
Time since new	17,449.59 h
Cycle since new	4,391
Year of Manufacture	1980

1.6.2 Main rotor blades

	Number 1	Number 2
Manufacturer	Bell Helicopters Textron	
number	Allison 250-C20B	
Serial	A6979	A6982
Time since new	1,175.38	1,175.38

Fuel Type Used: Jet A-1



1.7 Meteorological information

LOCATION	DNPM		
Time	1000Z	1100Z	1200Z
Wind	260/06 kt	260/06 kt	200/05 kt
Visibility	10 km	10 km	10 km
Weather	NIL	NIL	NIL
Cloud	BKN 270 m FEW 600 m CB (NE-SW)	BKN 270 m	BKN
Temperature /Dew Point	27/23°C	27/23 °C	27/23°C
QNH	1013 hPa	1013 hPa	1014 hPa
TREND	NOSIG	NOSIG	NOSIG

LOCATION	DNMM		
Time	1000Z	1100Z	1200Z
Wind	260/09 kt	260/07 kt	240/10 kt
Visibility	10 km	10 km	10 km
Weather	NIL	NIL	NIL
Cloud	BKN013	BKN 013	BKN 013
Temperature /Dew Point	29/23°C	30/23 °C	30/23°C
QNH	1015 hPa	1015 hPa	1014 hPa
TREND	NOSIG	NOSIG	NOSIG

1.8 Aids to navigation

The helicopter was equipped with a Garmin GNC 420 GPS.

1.9 Communications

There were two communications between the helicopter (5N-BQW), Osubi Tower and another aircraft (5N-BVL) and also between 5N-BQW and Lagos Tower as shown below:

1.9.1 Transcript of Osubi ATC/Pilot voice record of 5NBQW Bell 206



5N-BQW

Station: Osubi Control Tower

Date: 28th August 2020

TIME STATION COMMUNICATION

08:51 RELAY FROM ANOTHER AIRCRAFT (5NBV)-THOUSAND DESTINATION LAGOS, ESTIMATE FOR LAGOS IS 1108, ABEAM OSUBI 0951, THREE SOULS AND ENDURANCE 0255, CONFIRM COPIED

TWR---CREW ON BOARD

A/C----03, 3 SOB

TWR--- ADVICE THE AIRCRAFT TO CALL ME ABEAM OSUBI AND WHAT IS THE LEVEL PLEASE

A/C---- 1000

TWR---QNH 1014

A/C---- QW CONFIRM YOU COPY CONFIRM YOU COPY

A/C----OSUBI VL TWO WAY WITH ESCRAVOS

09: 00 TWR---I AM READING YOU STRENGTH ONE STRENGTH ONE WHAT IS YOUR POSITION

BQW—I AM SHOWING 17NM TO YOUR AIRFIELD

TWR---REPORT ABEAM OSUBI

BQW---ROGER SIR

09:10 BQW---QW SHOWING 2NM TO THE AIRFIELD NOW PERMISSION TO CROSS THE AIRFIELD

OVERHEAD SIR

TWR---OK REPORT CROSSING AND WHAT IS THE OPERATING COMPANY

BQW---QUORUM QUORUM QUORUM QUORUM AVIATION

---COMPLIMENTARY GREETING FROM OTHER PILOTS IN FLIGHT

BQW---OSUBI QW OSUBI QW OSUBI QW IS CALLING YOU

TWR---GO AHEAD

BQW---OK I WILL JUST GO ABEAM YOUR AIRFIELD FROM HER I AM NOT COMING OVER



5N-BQW

TWR---ROGER

1.9.2 Transcript of Lagos ATC/PILOT voice record of 5NBQW BELL 206

Station: Lagos Control Tower

Date 28th August 2020

TIME	STATION	COMMUNICATION
10:45:34	5NBQW	LAGOS TOWER 5NBQW
10:45:39	118.1	5NBQW INBOUND LAGOS CONFIRM
10:45:51	5NBQW	YES MA FROM DNPO 1.0 NOW ESTIMATING EH... AT 17 LAGOS PAST THE HOUR, WITH 3 EH... ENDURANCE IS NOW EH...ONE HOUR
	118.1	SAY AGAIN DIST. REPORT DISTANCE TO THE FIELD
10:46:05	5NBQW	A...I'M 33 SHOWING ABOUT....TWENTY MILES TO THE FIELD
10:46:26	118.1	5NBQW LAGOS TOWER HOW DO YOU READ
10:46:28	5NBQW	READ YOU LOUD AND CLEAR MA GO AHEAD
10:46:36	118.1	VERIFY 20 MILES TO LAGOS AND... SAY AGAIN REPORT....POINT OF DEPARTURE, ALTITUDE MAINTAINING
10:46:46	5NBQW	OKAY OUT OF DNPO MAINTAINING ONE THOUSAND AH...ESTIMATING LAGOS AT 1118 ON BOARD WE 3 ENDURANCE NOW IS....AH.....
10:46:54	118.1	5-WQ SAY AGAIN FUEL ENDURANCE
10:46:58	5NBQW	I GOT ONE HOUR.... ONE HOUR ENDURANCE MA
10:47:08	118.1	5NBQW CLEARED TO THE FIELD ONE THOUSAND FEET QNH 1015 CLEAR OF CLOUD AND INSIGHT OF TERRAIN REPORT ESTIMATE FOR CONTROL ZONE BOUNDARY
10:47:13	5NBQW	OKAY...CORRECTION I AM 5NBQW
10:47:20	118.1	5NBQW REPORT ESTIMAT FOR CONTROL ZONE BOUNDARY
10:47:28	5NBQW	OKAY MA ESTIMATE TO THE CONTROL BOUNDARY IS IN THE NEXT TEN MINUTES, SO LET....AT....ONE ZERO
10:47:34	118.1	ESTIMATING CONTROL ZON NOUNDARY AT...ONE-ZERO FIVE-SEVEN CONFIRM
10:47:35	5NBQW	YES MA
10:47:40	118.1	FIVE...QW REPORT ZONE BOUNDARY INBOUND
10:47:42	5NBQW	WILCO QW/NOT CLEAR
10:54:34	118.1	5NBQW REPORTDISTANCE TO THE FIELD
10:54:42	5NBQW	A....I AM....I AM....I AM FIVE MINUTES TO THE FIELD....TO THE CONTROL BOUNDARY I WILL LET YOU KNOW WHEN I WILL REPORT TO THE FIELD MA
10:54:50	118.1	AH... COPIED REPORT....TYPE OF HELICOPTER AND AH DESTINATION APRON
10:54:56	5NBQW	OKAY I AM GOING TO EAN HANGAR OKAY, AND IT'S A BELL.. BELL 206 HELICOPTER
10:54:59	118.1	TWO ZERO SIX, BELL TWO-ZERO-SIX



5N-BQW

10:55:00	5NBQW	YES MA
10:55:01	118.1	COPIED
11:01:36	118.1	A FIVE...QUEBECK WHISKY CONFIRM...CONTROL ZONE BOUNDARY, CHECK CONTROL ZONE BOUNDARY
11:01:37	5NBQW	YOU ARE VERY CORRECT MA
11:01:40	118.1	COPIED, REPORT FIELD IN SIGHT
11:01:41	5NBQW	ROGER MA
11:04:21	5NBQW	AND....LAGOS TOWER FIVE QUEBECK FIVE WHISKEY
11:04:23	118.1	FIVE QUEBECK WHISKY GO AHEAD
11:04:27	5NBQW	CONFIRM IF THERE IS RAIN OVERHEAD AH...THE...AERODROME
11:04:32	118.1	NEGATIVE RAIN
11:04:35	5NBQW	ALRIGHT MA, NEXT WILL BE FIELD IN SIGHT MA
11:04:37	118.1	COPIED
11:10:59	5NBQW	AND....LAGOS TOWER FIVE QUEBECK WHISKY WE HAVE FIELD IN SIGHT NOW
11:11:03	118.1	FIVE BRAVO QUEBECK WHISKY REPORT LEFT DOWN WIND RUNWAY 18 LEFT
11:11:06	5NBQW	CALL YOU LEFT DOWN WIND 18 LEFT THANK YOU BRAVO WHISKY
11:16:49	118.1	FIVE NOVEMBER BRAVO QUEBECK WHISKY REPORT POSITION
11:17:01	118.1	5NBQW, LAGOS TOWER HOW DO YOU READ
11:17:18	118.1	5NBQW, LAGOS TOWER HOW DO YOU READ
11:17:37	118.1	5NBQW, LAGOS TOWER HOW DO YOU READ
11:17:52:28	118.1	5NBQW, LAGOS TOWER HOW DO YOU READ

1.10 Aerodrome information

Murtala Muhammed Airport with location indicator DNMM has two parallel runways with designations 18R/36L and 18L/36R.

Runway 18L/36R has a dimension of 2,745 m by 45 m. Aerodrome Reference Point is 06°35'49.23" N 003 °19'43" E and an elevation of 135 ft AMSL.

1.11 Flight recorders

The helicopter was not equipped with a flight data recorder or a cockpit voice recorder. Neither recorder was required by the relevant aviation regulations but was equipped with a Garmin GNC 420 Global Positioning System.

1.12 Wreckage and impact information

The helicopter crashed into the roof of a building and a wall fence impacting two vehicles parked in the compound. The mast and main rotor blades were found intact during the post-crash inspection. Post occurrence examination revealed that the fuel tanks were empty.



Figure 1: The wreckage of 5N-BQW at the site of the crash

2.0 Initial Findings

1. The Pilot's last medical examination was valid till 6th August, 2020. There was no evidence to show that an application for the exemption provided by the All Operators' Letter AOL DG020/20 had been submitted to the Nigerian Civil Aviation Authority.
2. The Pilot's last Proficiency Check was valid till 24th August 2020. There was no evidence to show that an application for the exemption provided by the AOL DG018/20 had been submitted to the Nigerian Civil Aviation Authority.
3. The helicopter had a valid Certificate of Airworthiness.
4. The helicopter was topped to full tank capacity on 27th August, 2020.
5. After refuelling, 10 minutes of engine run and 20 minutes of test flight were carried out on 27th August, 2020 at Port Harcourt.
6. The helicopter was fitted with a range-extender fuel system.
7. No fuel jettisoning capability on this helicopter.
8. The helicopter has an endurance of 3:24 h.
9. The operational flight plan filed by the pilot indicated an endurance of 3:15 h and an estimated flight time of 2:45 h.
10. The helicopter engine was started at 09:15 h.
11. The helicopter took off at 09:20 h.
12. The helicopter crashed at 12:14 h.
13. There was no fuel left in the fuel tanks after the crash.
14. The mast and main rotor blades were found intact during the post-crash inspection.



Further investigative action:

1. Download of the Garmin GNC 420 GPS