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AS SANITIZED S SECRET **FROM** LEGAT, CARACAS (2-9) (P) SUBJECT: UNSUBS: SUSPECTED BOMBING OF CUBANA AIRLINES DC-8 NEAR BARBADOS, WEST INDIES COMMING Classified by 503 clclrne ALL INFORMATION CONTACTOR NM - CUBA - WEST INDIES HEREIN IS UNCLASSIFIED EXCEPT WHERE SHOWN Enclosed for the Bureau are three copies of a report entitled, "Examination of the Floating Wreckage (Flotsam) Recovered From Cubana Airlines DC8 CUT 1201," by Eric Newton of Great Britain. (5) The report was furnished on 12/8/76, in strictest confidence by Sub-Commissioner CARLOS FABBRI of the Directorate of Intelligence and Preventive Services (DISIP), Government of Venezuela, Caracas, Venezuela, who requested it not be disseminated outside the FBI. K(S) FABBRI is Chief of the Explosives Unit of DISIP and a frequent contributor to the FBI Bomb Data Program. 0-9 to Main for winged active FABBRI advised he had just returned to Venezuela from England, where he had been permitted to examine all evidence by NEWTON: NEWTON had stated during personal conversations that he was convinced in his own mind on the basis of the evidence that the Cubana Airplane was sabotaged, that the explosive device was nitroglycerine based, probably dynamite, that a fire had followed the explosion, and the explosives had been placed in the aft cargo hold of the aircraft. (XG) **REC- 13** FABBRI stated he was very surprised the blast had been the result of a nitroglycerine-based explosive as anti-Castro-Eubans have not typically used this explosive (5) DEC 21 1976 He added that the report would be placed in the hands of the Venezuelan judge in charge of the case on 12/9/76, and opined that it would be a serious setback for the prosecution as their case is based upon the concept that C-4 explosive was used, and that it was planted in the cabin area, perhaps a lavatory, by FREDDY LUGO and HERNAN RICARDO LOZANO. SECRET CONTRIBUTE COLOR TO THE STATE OF THE STATE O Bureau (Enc.3) Tremple on G. Calogory Date of Declassification andersingte. 1 - FLU Caraças WTP: jst いつつ Buy U.S. Savings Bonds Regularly on the Payroll Savings Plan.

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He pointed out that if the explosive had been placed in checked baggage, the baggage would had to have been checked through to Havana on the basis of a ticket to Havana. The possibility, of course, exists that the infernal device was placed on the aircraft as air freight at any stop between Georgetown, Guyana, and Bridgetown, Barbados.

FABBRI stated that a full forensic report of the examination of the recovered flotsam would be forthcoming, and he would endeavor to make that report available to Legat, Caracas,

Ambassador and CIA Station, Caracas, have been briefed.

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EXAMINATION OF THE ELOATING WRECKAGE (FLOTSAM) RECOVERED FROM CUBANA AIRLINES DC8 CUT 1201

bу

ERIC NEWTON ISO, MBE, C.Eng, FRAGS

Specialist Investigator & Adviser

#### 1. INTRODUCTION

On 6th October 1976, about 8 minutes after taking off from Barbados International (Seawell) Airport en route for Cuba via Jamaica, the pilot of the above aircraft reported to the control tower that there had been "an explosion" and that there was a "fire on board". About 5 mins later, whilst attempting to return to the airport the aircraft crashed into the sea about 5 miles off the West coast of Barbados and sank in deep water. All 73 occupants were killed. A small amount of floating wreckage and 15 bodies were recovered. The main wreckage has not been salvaged. An immediate investigation was initiated by the Barbados Civil Aviation and Police authorities.

### 2. STATUS IN THE INQUIRY

On 10th October 1976 I arrived in Barbados at the request of the Barbados Government to assist both the Civil Aviation and Police investigating authorities in the role of specialist investigator and adviser.

# 3. EXPERIENCE AND QUALIFICATIONS

I am an independent aircraft accident investigator specialist and adviser. I retired from the British Governments Accidents Investigation Branch in February 1975 after 33 years service. I was Principal Inspector in the engineering division and, in addition to normal aircraft accident investigations, I have made a special study, over the last 26 years, in the detection of explosive sabotage in aircraft wreckage. I have investigated a number of such cases in various parts of the world.

I am a Chartered Engineer (C.Eng) 1968 and a Fellow of the Royal Aeronautical Society (FRAeS) 1962.

# 4. INSPECTION OF AVAILABLE WRECKAGE

All the available wreckage was confined in a Police Building near Seawell Airport under strict security. This flotsam consisted mainly of light structure, personal baggage, and cabin furnishings, and included 20 seat cushions, 14 suitcases in various states of damage, 5 life rafts, one escape chute, one main wheel, one nose wheel, pieces of wing structure fairing, aileron trim tab and spoiler, one fire extinguisher, 3 exygen bettles, one rear passenger cabin lavatory door and bulkhead, pieces of the forward bar and a piece of forward cabin bulkhead. The flight recorders were not recovered. The Journey Log was

# 4.1 Explosive blast evidence

A detailed examination of the available suitcases revealed 3 Cuban made suitcases, of black plastic simulated leather, and all of the same pattern damaged extensive

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and in a significant manner consistent with them having been exposed close to an explosive blast. Numerous small perforations and shredding of material with signs of heat were noted. A number of very small metal fragments were found embedded in these suitcases (see list at Appendix A). These were extracted for further examination under the scanning electron microscope. Preliminary examination on site showed that some of these fragments were similar to fragments that have been explosively produced. Their very small size coupled with the fact that they had penetrated into the suitcase also indicates that they had been subjected to extreme velocity. There is no aircraft mechanism or system which could fail or explode or cause a mechanical explosion in which such small fragments of metal are produced and accelerated with explosive velocity. They appeared mainly of aluminium metal. Some of these fragments, when examined microscopically revealed small fibres of white fibre glass adhering to them and white fibre glass strands were noted embedded in other items. In the D.C.8, panels made from white fibre glass line the under floor cargo/baggage holds.

Further evidence consistent with explosive blast was a side curtain from the passenger cabin window. This took the form of numerous perforations and local shredding of the material. One passenger seat cushion cover also showed numerous small perforations. A tangled and compressed mass of mixed fibres, similar to a passenger seat cushion material, was found jammed into a life raft which is normally stowed in the ceiling compartment in the rear part of the passenger cabin.

These items were subjected to forensic detail examination at the RARDE laboratories in the United Kingdom (see separate report).

#### 4.2 Fire evidence

It was evident, from the burnt condition of the left hand rear lavatory door and bulkhead, and a piece of coat room bulkhead, that there had been a fire at the rear part of the passenger compartment. The lavatory door and bulkhead had been torn from their locations and their surfaces were burnt particularly at the bottom. The blackened fractures suggested that these items had been torn off before the fire. The hand fire extinquisher and oxygen bottles which are normally stowed in the rear part of the passenger cabin also showed signs of heat and soot. It was noted that the fire extinquisher was empty and the sealed safety wire on the operating trigger was broken. The oxygen bottles, which had been torn from their locations, were also empty. However, though they showed signs of heat and soot; they showed no other damage or disruption. One economy passenger seat cushion and its cover showed evidence of burning, and damage in one corner after the burning. A small area of the life raft, which is normally stowed in the ceiling compartment at the rear of the passenger. compartment, was burnt. The general fire pattern appeared to track from floor level up to the roof of the rear passenger cabin.

There was no evidence to support fire at the forward end of the passenger cabin.

The fire is considered to be a secondary feature to the explosion.

#### 5. POST MORTEM BODY XRAYS

Examination of a number of Xray negatives taken at Queen Elizabeth's Hospital, Barbados, on some of the victims revealed in - Subject 'A' a fragment of metal embedded in the knee, and in Subject 'E' were numerous fragments of metal and

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other material embedded in the lower torso. These fragments were later removed and have been subjected to forensic examination in the forensic explosive laboratory in the United Kingdom (see separate report). The very small size of some of these fragments, together with signs of heat and extreme velocity is consistent with the subject being in the vicinity of an explosion. Some of the material is foreign to that of the aircraft structure.

#### 6. AIRWORTHINESS ASPECTS

Nothing was found in the small amount of aircraft structure recovered which indicates, or suggests, that any mechanical defect or failure caused or contributed to this disaster. In addition the Journey Log for this aircraft, which was recovered, showed no recorded defects up to the time of the disaster.

#### 7. FORENSIC EXPLOSIVE LABORATORY EXAMINATION

A number of specimens (see Appendix A) were selected and with the agreement of the Barbados Government Investigating authorities these items were sealed and sent to the United Kingdoms Government Forensic Explosives Laboratories at the Royal Armament and Development Establishment (RARDE), Fort Halstead and Woolvich for examination. These physical and chemical examinations, using advanced techniques, suggested that a high explosive device had been detonated. Traces of nitroglycerine were found from the surfaces of the suitcases.

#### 8. ANALYSIS

Analysis of the material evidence obtained from the available wreckage, together with the circumstantial evidence including the R/T messages from the aircraft, indicates a sudden and unexpected occurrence unconnected with the airworthines of the aircraft or its operating crew. This occurrence, whilst the aircraft was flying en route over the sea, took place about 8 mins after taking off. There is little doubt, from the urgency in the voice recorded on the R/T tape, that a dire emergency existed in the aircraft at this time. Examination of the small amount of floating wreckage recovered does not indicate, or suggest, any technical defect or failure of the aircraft or its systems which could have led up to this emergency. The recorded R/T message reported that an explosion had occurred in this aircraft and that a fire existed. Inspection of a number of suitcases, furnishings and post mortem examination of a number of bodies revealed evidence consistent with a detonation of a high explosive device. Forensic physical examination, metallographic and chemical analysis is consistent with a severe disruption having taken place. The finding of traces of nitroglycerine on the suitcases suggests that an explosion probably occurred

The fire is considered to be secondary to the explosion and affected the rear of the passenger cabin. There was no evidence to support fire existing at the front part of the aircraft although there could well have been smoke.

The finding of numerous pieces of white fibre glass fragments in the upper rear cabin, suitcases and a body, and the general blast direction upwards through the rear passenger cabin suggests that the explosive device detonated in the rear underfloor cargo/baggage hold, the walls and roof of which are lined with panels of white fibre glass.

Although there is no positive evidence to show precisely why the aircraft eventually crashed into the sea after flying for several minutes after reporting the explosion, it is considered likely that this was associated with the crews

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inability to control the aircraft. The flying controls (steel cables) are located under the passenger cabin floor and routed towards the rear centrally along the roof of the cargo/baggage holds. Disruption of these cables by an explosion would, of course, result in loss of control. This, apparently did not occur immediately and the aircraft was able to turn and be flown for several minutes towards the airport after reporting "an explosion". The explosive blast could therefore have been to one side of the flying control cables probably close to the fuselage side wall. A severe fire at floor level in the rear cabin could, eventually, cause the fair leads, pulleys and structur supporting the tensioned cables to collapse with consequent loss of pitch and direction control.

A likely alternative, in this particular case, and a known hazard from internal fires or cargo hold explosion, would be the obliteration of inside and outside reference by dense smoke and fumes in the cockpit resulting in loss of control.

#### FINDINGS

- A high explosive device detonated within this aircraft.
- (2) The location was probably in the rear underfloor cargo/baggage hold.
- (3) As a result of this explosion a fire developed in the rear passenger cabin.
- Control of the aircraft was lost, whilst attempting to return to the airport and the aircraft crashed into the sea.

#### CONCLUSION : 10.

The aircraft was lost following the detonation of a high explosive device on board the aircraft.

15 November 1976.

ERIC NEWTON, ISO, MBE, C.Eng, FRAeS. Released under the John F. Kennedy Assassination Records Collection Act of 1992 (44 USC 2107 Note)

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APPENDIX A

# CUBANA DC-8 C.U.T.1201 OFF BARBADOS 6th OCTOBER 1976

#### SPECIMENS SELECTED FROM WRECKAGE

Reference				Brief	descript	ion o	of s	pecimen
	 270	10 mm		 	<del></del>			<del></del>

EN/1. Two metal fragments (alum.) 5 x 2 mm and 2 mm x 3 mm extracted from black suitcase (Cuban).

EN/2. One small metal fragment (alum.) about 1 mm extracted from black suitcase (Cuban)

EN/3. One small metal fragment (globules) alum. 2 mm round.
Found in black suitcase (Cuban).

EN/4. One piece of red glass or hard plastic 6 mm x 2 mm extracted from black suitcase (Cuban).

EN/A. Cushion cover from economy passenger seat with many perforations. (Sample 6" x 4" given to Cubans).

EN/B. Tangled mass of woven material (from cushion) found jammed in life raft cover normally stowed in roof of passenger cabin.

EN/C. Cushion with suspect flash burns and evidence of blast and heat.

EN/D. Curtain from a fuselage side window passenger cabin with blast shredding and tearing.

EN/E. Piece of life raft (Raft No.178) with holes and burning.

EN/F.

Black suitcase with holes in lining and suspect heat with two other black suitcases and one odd lid of black suitcase.

EN/PATH/1. Pieces of alum. probably from aircraft, reported stuck in one of the victims. Handed in by Cubans.

EN/PATH/2. Piece of dark stained metal from knee of subject 'A' also 3 pieces of plastic, brown in colour.



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ROYAL ARMAMENT RESEARCH AND DEVELOPMENT ESTABLISHMENT

Investigation of Flotsam Recovered from Cubana DC8 Aircraft

C.U.T.1201 Lost off Barbados on 6th October 1976

(Additional to Interim Report)

Further to the trials (experiments) described in paragraph 4 of our interim report, we are now able to confirm that significant traces of nitroglycerine were present on the surfaces of some of the suitcases submitted to us for examination.

Considerable complications with the analyses for NG were experienced because the suitcases had been immersed in sea water for some hours and had become very heavily contaminated with kerosene.

19-11-76

D G HIGGS
Forensic Explosives Laboratory,
EM2 Branch

Explosives and Materials Department,
Royal Armament Research and Development Establishment,
Fort Halstead,
Nr Sevenoaks,
KENT.

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