

## AIRCRAFT ACCIDENT FINAL REPORT # A0619890

**Landing Gear System Failure** 

Cambridge Air Services Limited Cessna 402C C6-KEV Freeport, Grand Bahama, Bahamas

**April 21, 2006** 



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## **Accident Final Report**

In accordance with Annex 13 to the Convention on International Civil Aviation, it is not the purpose of aircraft accident investigation to apportion blame or liability. The sole objective of the investigation and the Final Report is the prevention of accidents and incidents.

#### INTRODUCTION

Operator: Cambridge Air Services Limited

**Manufacturer:** Cessna Aircraft Company

Model: C402C Serial Number 402-0051

**Nationality:** Bahamas

**Registration:** C6-KEV

Place of Accident: Freeport International Airport, Freeport, Grand Bahama, Bahamas

**Date of Accident:** April 21, 2006

**Investigating Authority**: Flight Standards Inspectorate

**Investigator in Charge:** Delvin R. Major - Flight Standards Inspectorate

**Notification**: Aircraft Manufacturer - Cessna Aircraft Company

Propeller Manufacturer – McCauley Propellers Engine Manufacturer - Teledyne Continental Motors

**Releasing Authority:** Bahamas Civil Aviation Department

Mr. Cyril Saunders - Director

**Investigation Team:** Delvin Major

Philip Romer

**Date of Report:** 2006



Mrs. Glenys Hanna-Martin Minister of Transportation

Mr. Cyril Saunders Director of Civil Aviation

Captain Patrick Rolle Manager of Flight Standards Inspectorate

The attached report summarizes an investigation made into the circumstances of an accident involving Cessna C402C aircraft, registration C6-KEV Serial Number 402-0051 that crashed on landing at Freeport International Airport, Freeport, Grand Bahama on April 21, 2006. There were no serious injuries sustained in the accident.

This report is submitted pursuant to Part XII, Regulation 80, and Schedule 19 of the Bahamas Civil Aviation (Safety) Regulation (17 April 2001) and in accordance with Annex 13 to the Convention on International Civil Aviation (ICAO).

Delvin R. Major,

Aviation Safety Inspectors Flight Standards Inspectorate Bahamas Civil Aviation Department



**Methods of Investigation -** This investigation was conducted at the mishap site. On the investigation team were:

Delvin R. Major Investigator- in-Charge

Nassau, Bahamas Bahamas Civil Aviation Department

Philip C. Romer Accident Investigator – Airworthiness Nassau, Bahamas Bahamas Civil Aviation Department

#### SECTION A ABBREVIATIONS AND TERMINOLOGY

ADDS Aviation Digital Data Service

AGL Above Ground Level

BASR Bahamas Aviation Safety Regulations (April 17, 2001)

BDCA Bahamas Department of Civil Aviation BCAD Bahamas Civil Aviation Department

C of A Certificate of Airworthiness
C of R Certificate of Registration
CAD Civil Aviation Department
CFR Code of Federal Regulations

CG Center of Gravity

DCA Director of Civil Aviation

EDT Eastern Daylight Time (+5 hours to convert to UTC or Zulu time)

FAA Federal Aviation Administration FSI Flight Standards Inspectorate

FT / ft Feet

ICAO International Civil Aviation Organization

IFO International Field Office (FAA)

IFR Instrument Flight Rules

IMC Instrument Meteorological Condition

MEL Minimum Equipment List

METAR Meteorological Aerodrome Report

NM or nm Nautical Miles

NTSB National Transportation Safety Board

UTC Universal Coordinated Time
USA United States of America
VFR Visual Flight Rules

VMC Visual Meteorological Conditions

Z Zulu or UTC refers to time in reference to Greenwich Mean Time

#### SECTION B SYNOPSIS

This accident occurred around 0423UTC 12:23EDT on April 21, 2006 at the Freeport International Airport, Freeport, Grand Bahama, Bahamas. The Cessna 402C aircraft was owned and operated privately by Cambridge Air Services Limited.

The State of Manufacturer of the airframe - Cessna, engines - Teledyne Continental Motors and propellers - McCauley Propellers (United States) was advised of the accident. Instrument Meteorological Conditions (night) prevailed at the time of the accident (see meteorological info section 1.7 of this report). The aircraft sustained substantial damages. The occupants of the aircraft consisted of three (3) passengers and one (1) crew. The pilot in command held a commercial Pilot rating and was certificated by the Federal Aviation Administration, (FAA). The pilot had completed a Bi-annual Flight Review - Instrument on February 22, 2006; however a review of pilot's logbook revealed that many of the data was falsified.



#### SECTION C OVERVIEW OF THE ACCIDENT

At approximately 0423UTC on April 21, 2006 the pilot reported that approximately 20 miles out of Freeport, both hydraulic pressure lights illuminated on the annunciator panel. He extended the gear and noticed only the right gear safe light illuminated. The pilot obtained the assistance of a passenger, who retrieved the aircraft pilot operating hand book and read the appropriate procedures as the pilot followed the instructions for emergency gear extension.

The pilot stated that he landed the aircraft on the right main gear, hoping this action would release the left main and nose gear. After realizing that this manoeuvre was not successful, he decided to initiate a go-around. Before he could get the aircraft airborne the left propeller made contact with the ground.

The aircraft touched down approximately 9,000 feet from the threshold of runway 06; which has a total length of 11,000 feet. The aircraft travelled approximately 1,500 feet on its right main wheel before it veered off the left shoulder of the runway, struck several trees and finally came to rest pointing in a north westerly direction. The approximate final position was measured to be 180 feet from the side of the runway. The aircraft left wing burst into flames. The left wing and left side of the fuselage was substantially damaged by fire. The four occupants escaped with only minor injuries.

#### **SECTION 1 FACTUAL INFORMATION:**

#### 1.0 HISTORY OF THE FLIGHT

This private flight from Fort Lauderdale Executive Airport, Fort Lauderdale, Florida to Freeport International Airport, Freeport, Grand Bahama, Bahamas, was operated under Instrument Flight Rules (IFR). The accident occurred on landing at Freeport International Airport on April 21, 2006.

The pilot reported that on April 20, 2006, he flew C6-KEV to Fort Lauderdale Executive Airport to have the flight control work on. The pilot noted that during the removal of the rudder actuator he noticed what seemed to be a red fluid on the ground. The pilot stated that he reported his observation to Mr. Chris Mackey (one of the share holders of the aircraft) who instructed him to have Mr. E. Bernard (Beetle) Godet (– FAA Mechanic – from T & B Aero), check out the alleged defect. Pilot further stated that Mr. Godet found two chafed hydraulic lines. Mr. Mackey asked Mr. Godet for the part number so that he could get the part. Mr. (Beetle) Godet said he specialized in repairing those lines (hydraulic lines) and asked Mr. Mackey to go to Banyan and buy some 3/8' line so he could fix the defect.

The pilot stated that when he came back to the aircraft, after completing his shopping, he ran up the aircraft, bought fuel, loaded the aircraft and departed for Freeport, Grand Bahama, Bahamas.

The pilot reported that approximately 20 miles out of Freeport, both hydraulic pressure lights illuminated on the annunciator panel. He stated he extended the gear and noticed only the right gear safe light illuminated. The pilot obtain the assistance of a passenger, who retrieved the aircraft pilot operating hand book and read the appropriate procedures as he (pilot) followed the instructions for emergency gear extension.



The pilot further stated that he landed the aircraft on the right main gear, hoping this action would release the left main and nose gear. After realizing that this manoeuvre was not successful, he decided to initiate a go-around. Before he could get the aircraft airborne, the left propeller made contact with the ground. **The Pilot's statement is contained in Appendix** 

The aircraft touched down approximately 9,000 feet from the threshold of runway 06; which is a total length of 11,000 feet. The aircraft travelled approximately 1,500 feet on its right main wheel before veering off the left shoulder of the runway, hitting some trees and finally stopping in a north westerly direction approximately 180 feet from the side of the runway. The left wing and the left side of the fuselage was substantially damaged by post impact fire.

Post accident investigation involved an interview with Mr. Godet the mechanic who worked on the aircraft. Mr. Godet stated the following;

Mr. E. Bernard (Beetle) Godet confirmed he did inspect and found two rigid hydraulic lines leaking. He confirmed placing the aircraft on jacks, fabricating two replacement hydraulic lines, installing those lines, replenishing the hydraulic reservoir with MIL-H-5606 and finally that he <u>did</u> <u>not</u> carry out the retraction and leak checks, as the hydraulic mule was not available until the next day.

Mr. (Beetle) Godet stated, he informed Mr. Mackey about not being able to complete the checks until the following day, because he did not have the tooling (hydraulic mule) to complete it. Mr. Beetle stated that Mr. Mackey suggested he (Beetle) therefore run the aircraft on the jacks. Mr. (Beetle) then stated, he told Mr. Mackey that he would only carry out the checks with a hydraulic mule. Mr. (Beetle) then stated, that Mr. Mackey told him that he would take care of the retraction test in the Bahamas. Mr. (Beetle) further stated, he did not return the aircraft to service in the correct manner as he did not complete the required checks. Mr. Godet's statement is contained in Appendix

Post accident statement and interview with Grand Bahama Air Traffic Services revealed that the pilot never reported any discrepancies or the fact that he was experiencing problems with his landing gear. **ATC statements contained in Appendix.** 

#### 1.2 INJURIES TO PERSONS

Minor.

#### 1.3 DAMAGE TO AIRCRAFT

Aircraft substantially damaged.

#### 1.4 OTHER DAMAGE

Two [2] runway light destroyed after making contact with left wing of aircraft.

#### 1.5 PILOT INFORMATION

Captain David Nathan Hinds holder of airman license CP 436. He was 23 years old. A review of his logbook revealed the following;

• A biennial flight review was received on February 22, 2006 by Mr. Hinds. The name and license number of the instructor giving the review was illegible.



- On the same date and by the same instructor, an instrument competency check was received my Mr. Hinds.
- In both above checks, there are no indication of what type of aircraft the checks were conducted in.
- Flight training started in 2000.
- A private pilot airplane single engine land licence #2652636 was obtained on December 21, 2000 at approx 54.5 hours total time.
- A commercial / multi engine check ride was accomplished on May 17, 2001 in a BE-76 N6011E at approximately 207.6 hours total time, and 20.8 hour multi engine time. See APPENDIX.
- On December 15 2001, pilot total multi engine time showed 315.6 hours. One page later, total multi engine times for that page totalled 16.4 hours. The subsequent page totalled 21.4 hours, which for the last 3 pages totalled 353.1 multi engine hours. However pilot logbook shows a total of 525.9 hours an unexplained increase of 172.8 hours.
- Also on page where logbook totalled 16.4 hours, cross country hours totalled 367.5 hours and PIC time totalled 217.6 hours. The very next log page, total showed cross country time and PIC time increased to 525.9 hours a total unexplained increase of 158.4 hours for total cross country time and an increase of 308.3 hours for PIC time.
- On December 23 2001, pilot logged 4 flights in BE99 registration C6-RRM in logbook #2.
  - o Freeport to Nassau to Freeport
  - o Freeport to Governors Harbour to Freeport
  - o Freeport to San Andros to Nassau
  - o Freeport to Nassau
- However, in logbook #1 on same date of December 23, 2001, pilot logged 2 flights in a BE 200 N700MS in Orlando, Florida. Pilot logging flights, on same day in two different countries with two different aircraft.
- Numerous instances exist with pilot logging different aircraft numbers and flight times in different countries on the same day. Pilot kept two different logbooks and these different logbooks kept the running totals of the different aircraft and flight times on same day in different countries.
- In logbook #2, up to February 02, 2002, pilot total time was 182.8 hours, yet in another logbook #1 pilot total time was 565.5 hours for the same period up to January 31<sup>st</sup> 2002.
- In logbook #1up to June 23, 2002 pilot total time logged was 706.4 hours. In logbook #2, however his multi engine time was 787.7 for the same period, which surpassed his total time from previous logbook.
- On page 59 September 20 total multi engine time was 1119.9 hours. On page 60, 18.8 hours later, his total time had increased to 1157.5, a double increase of 18.8 hours.
- Time logged up to January 11, 2003 was 1506 hours second in command. On January 12 2003, times logged above as SIC mysteriously made their way in to the PIC column giving the pilot a brought forward PIC total from 0 hours to 1506 hours over the course of one day. (Page80)
- Up to May 11, 2003 there was no mention made of any time in a Cessna 402 aircraft.
- Also as of May 11 2003, logbook #2 ended with the following totals;
  - o PIC total time 1879.3



0	Cross country	1879.3
0	Turbine time	1879.3
0	Multi engine	1879.3
0	Total flight	1879.3

• However, logbook #3 which opened sometime in August 2003 shows an opening balance of;

PIC total	3013.2
Cross country	3263.2
Turbine	2913.8
Multi engine	3033.5
Total flight	3033.5
	Cross country Turbine Multi engine

 Therefore between May 2003 (close of old logbook) and August 2003 (beginning of new logbook) there exist an unexplained increase of;

0	PIC total	1133.9
0	Cross country	1383.9
0	Turbine	1034.5
0	Multi engine	1154.2
0	Total flight	1154.2

- Also of special interest is the addition of night time and actual instrument in logbook # 3 which started in August 2003, yet logbooks # 2 never made any reference to any night or instrument time being brought forward. However logbook #1 does have night and instrument times logged as night total 43.7 hours and instrument total 9.3 hours. No where else throughout the other logbooks( # 1 and # 2) is there logged any additional night or instrument time, yet in the brought forward total in logbook # 3, night was brought forward as 400.7 hours and instrument as 475.2 hours.
- From copy of medical certificate application made to the FAA on March 9, 2005 pilot wrote total time as 840 hours. However, up to March 2004, when logbook #3 started pilot total times brought forward was 3,033.5 hours.
- No record or logbook was available to show pilots time from march 2004 up to the time of the accident.

#### 1.6 AIRCRAFT INFORMATION AND HISTORY

The mishap aircraft, C6-KEV a Cessna C402C serial number 402-0051 was manufactured in the United States in 1979. The aircraft was owned by and registered to Cambridge Air Services Limited on June 17, 2002. The aircraft was previously registered as C6-TAS. On November 30, 2005 C6-TAS was lease to Ms Karen Major by Mr. Mario Donato, major shareholder of Cambridge Air Services Limited. On December 21, 2005 the registration was changed from C6-TAS to C6-KEV as per the request of Mr. Mario Donato, owner of the aircraft. The aircraft was privately operated.



The aircraft airframe, propeller and engine logbooks have been reviewed and revealed the following: -

Aircraft: C6-KEV
Owner by: Cambridge Air
Operated: Privately

Annual Inspection: 657.5 Hobbs time 20<sup>th</sup> December 2005

A/F Time prior to flight: 659.7 Hobbs 5375.7 A/F hours 20<sup>th</sup> April 2006

Avionics & Radio Checks: 10<sup>th</sup> November 2005 Weight & Balance: 22<sup>nd</sup> December 2005 AD Checklist: 21<sup>st</sup> April 2006

Left Hand Engine: P/n TSIO-520VBCNBCVB(2), S/n 248270-R,

Installed at 286.0 in TSO condition 14<sup>th</sup> December 2005

Right Hand Engine: P/n TSIO-520VB(1), S/n 242406-R

Installed at 182.00 in TSO condition 14<sup>th</sup> December 2005 both engine supplied by Certified Engines along with

Airworthiness Directives compliance list.

Left Hand Propeller: P/n 3AF32C505/82NEA S/n 002537

Installed in New condition at 182.7 A/F hobbs 25<sup>th</sup> April 2002

Right Hand Propeller: P/n 3AF32C505/82NEA S/n 011126

Installed in New condition at 182.7 A/F hobbs 25<sup>th</sup> April 2002

#### 1.7 METEOROLOGICAL INFORMATION

The weather report for Grand Bahama from 0000 UTC revealed no significant weather. The forecast called for winds variable at 3 knots, few clouds at 3,000 feet, scattered clouds at levels 2,200 and 2,500 feet.

#### 1.8 AIDS TO NAVIGATION

Navigational Aids not a factor in this mishap. Pilot use the navigational aids to navigate to Freeport and subsequently shot the Freeport ILS Runway 6 Approach.

#### 1.9 COMMUNICATIONS

Communications not a factor. Communication was established with the Freeport Air Traffic Control.

#### 1.10 AIRCRAFT LOADING

Load manifest recovered after the accident showed the aircraft at a maximum takeoff weight of 6,808 and aircraft center of gravity at 154 inches aft of data. From data provided aircraft appeared to be within the maximum allowable range.

#### 1.10.1 AIRCRAFT PERFORMANCE

Based on the loading of the aircraft and the center of gravity being within the allowable envelope, aircraft performance should not have been a factor in this accident.

#### 1.11 COCKPIT VOICE RECORDER

Regulations did not require this aircraft to be outfitted with a cockpit voice recorder.



#### 1.12 WRECKAGE AND IMPACT INFORMATION

Aircraft wreckage and impact information diagram (not drawn to scale) contained in Appendix.

#### 1.13 MEDICAL AND PATHOLOGICAL

Only minor injuries were reported. No fatalities or serious injuries reported.

#### **1.14** FIRE

There was a post impact fire, for details refer to **Photos APPENDIX**,

#### 1.15 SURVIVAL ASPECTS

The accident was survivable.

#### 1.16 TESTS AND RESEARCH

It has been determined from post accident inspection that the cable that connects the emergency blow down bottle system in the nose well of the aircraft to the T-handle in the cockpit, exhibited excessive play.

Although the cable was pulled to its fullest extent, it did not allow movement of the pin that would have provided activation of the system. (Annual inspection report completed in December 2005 revealed that the portion of the Annual Inspection that required inspection of the emergency blow down bottle was not signed off by the mechanic as having been accomplished. However, the aircraft was returned to service with this discrepancy outstanding).



#### **ANALYSIS:**

#### 2.1 Immediate Causes of the Accident

#### **Technology**

- Aircraft hydraulic lines separated from actuator fitting.
- Aircraft lost all hydraulic fluid.
- Aircraft backup system blow down bottle did not discharge.
- Left main and nose gear did not extend.

#### **Environmental Factors and Effects**

- Aircraft departed late at night.
- Accident occurred at night.
- Aircraft burst into flames after coming to rest on the side of the runway.

#### **Organisational**

- Operator allowed an un-airworthy aircraft to be flown.
- Operator made decision to complete maintenance in Freeport as maintenance facility in Florida could not complete the required maintenance at that time.
- The operator allowed an un-authorized mechanic to perform work on a Bahamas registered aircraft.

#### **People & Human Factors**

- Pilot failed to determine the airworthiness status of the aircraft prior to acting as pilot in command (contrary to BASR Schedule 10).
- Pilot made poor decision and landed the aircraft more than 8,000 feet from the threshold of Runway 06. (More than half of the runway was not used initially).
- Pilot failed to execute a go around even though the aircraft was position well above the required glide path for making a safe landing within the appropriate landing zone.

#### 2.2 Root Causes of the Incident

#### **Technology**

- Improper maintenance conducted on hydraulic lines.
- Failure of the hydraulic system.
- Depletion of Hydraulic fluid.
- Failure of the back up emergency blow down bottle system. It has been determined from inspection that the cable that connects the emergency blow down bottle system in the nose well of the aircraft to the T-handle in the cockpit, exhibited excessive play. Although the cable was pulled to its fullest extent, it did not allow movement of the pin that would have provided activation of the system. (Annual inspection report completed in December 2005 revealed that the portion of the Annual Inspection that required inspection of the emergency blow down bottle was not signed off by the mechanic as having been accomplished. However, the aircraft was returned to service with this discrepancy outstanding).
- Landing gear, left main and nose, failed to extend.



#### **Environmental Factors and Effects**

- Accident occurred at night.
- Aircraft departed late at night

#### **Organisational**

- Operator allowed aircraft to be flown in an un-airworthy condition.
- Operator allowed unqualified and not current pilot to be in command of aircraft.
- Operator allowed unqualified individual to perform maintenance on aircraft.

#### **People & Human Factors**

- Pilot exercised poor judgement by assuming command of an un-airworthy aircraft.
- Pilot's poor decision making ability and his failure to make corrective action in a timely manner indicative of pilot fatigue, as pilot stated that he was out all day shopping and left at such a late hour.
- Possibility exists that pilot may not have been qualified and / or current on type of aircraft, as numerous incidences where pilot falsified qualification and hours of experience on type of aircraft were noted in pilot's logbook.
- Pilot unfamiliar with systems and emergency procedures in type of aircraft evident based on his statement of his actions when he encountered the problem.
- Pilot failed to alert ATC of problem with landing gear system which further underscores his unfamiliarity with this aircraft's systems and emergency procedures and his not realizing the seriousness of his predicament.
- Pilot failed to declare emergency even though he was aware of the problem well in advance. This action seems to further downplay his accepting the seriousness of his condition.
- Review of aircraft records, revealed Annual inspection was completed in December 2005. It was also revealed that the portion of the Annual Inspection that required inspection of the emergency blow down bottle was not signed off by the mechanic as having been accomplished, yet the aircraft was returned to service.
- Mechanic failed to carryout maintenance in accordance with standard maintenance practises.

#### **Others**

- Aircraft left wing burst into flames after landing. Left side of the fuselage was extensively damaged and approximately 75% of the left wing was destroyed.
- Annual inspection report completed in December 2005 revealed that the portion of the Annual Inspection that required inspection of the emergency blow down bottle was not signed off by the mechanic as having been accomplished. However, the aircraft was still returned to service with this discrepancy existing.
- The mechanic was not authorized by the Bahamas Civil Aviation Department to perform work or return to service a Bahamas Registered aircraft.
- The mechanic did not complete the appropriate maintenance entry & return to service as required by BASR Schedule 5.



#### 3.0 CONCLUSION

#### 3.1 Probable Cause

The investigation determines that the probable causes of this accident to be the following;

- **Substandard maintenance that was performed.** (Due to the improper flange on the hydraulic line, the hydraulic line came loose from its housing and depleted the fluid from the hydraulic reservoir).
- Failure of the back up emergency blow down bottle system. It has been determined from inspection that the cable that connects the emergency blow down bottle system in the nose well of the aircraft to the T-handle in the cockpit, exhibited excessive play. Therefore even though the cable was pulled all the way to its fullest extent, it did not allow movement of the pin that would have provided activation of the system. Annual inspection report completed in December 2005 revealed that the portion of the Annual Inspection that required inspection of the emergency blow down bottle was not signed off by the mechanic as having been accomplished. However, the aircraft was returned to service with this discrepancy outstanding.
- Pilot's lack of qualification and unfamiliarity with this aircraft, its systems and emergency procedures. ( Evidence of falsification of qualification and time requirement exists in pilot's logbook)
- Pilot's poor decision making and impaired judgement. (Possibility of impaired judgement due to pilot fatigue).
- Pilot's failure in assessing the severity of his situation.
- Pilot's failure to notify ATC of his problem. (Problem was discovered 20 miles prior to the accident).
- Pilot's failure to properly assess the conditions for landing and maintain vigilant situational awareness while manoeuvring the aircraft after landing. (From post accident inspection, it was noted that the flaps were not extended for the landing. Had it been extended the aircraft glide path as well as the distance required for roll out after landing may have been greatly decreased).
- Pilot's failure to take immediate action once he realized his predicament. (Pilot stated that after the propeller made contact with the ground, he decided to apply power and go around, but it was too late. Failure to act also can be attributed to possible pilot fatigue as (pilot was out all day shopping and then decided to leave at such a late hour) well as pilot's unfamiliarity with aircraft systems and performance capabilities).
- Pilot's failure to request Emergency Service Assistance. Had this service been requested in a timely manner, preparations could have been made to prevent the fire from spreading to the degree in which it did.

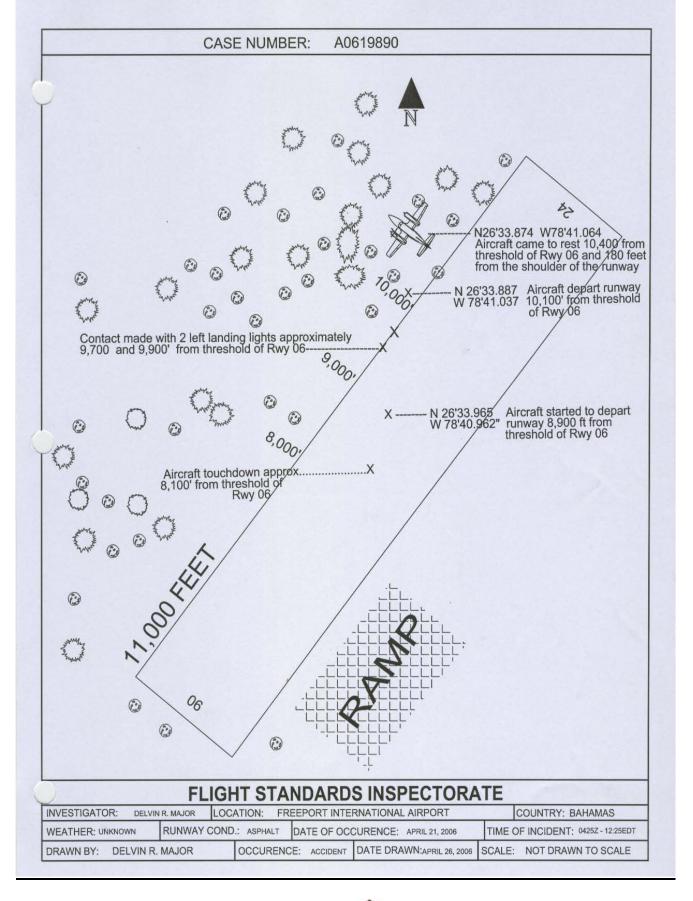


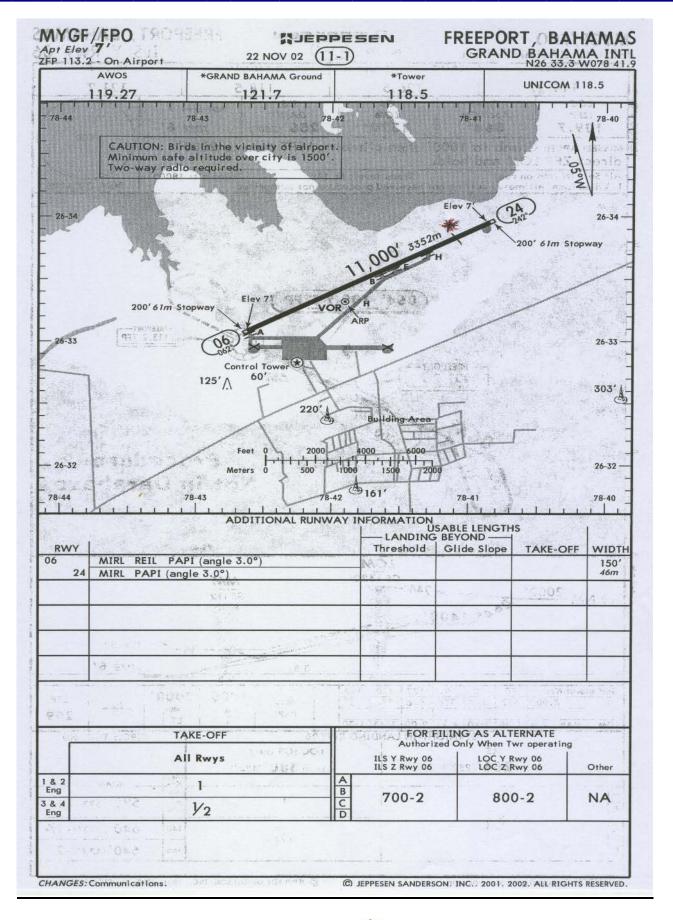
### 4.0 SAFETY RECOMMENDATIONS:

#### **Recommendations of the Investigation**

- Recommend that the Flight Standards Inspectorate initiate enforcement action against pilot for flying when not current and qualified and for falsification of records.
- Recommend that the Civil Aviation Department through the Flight Standards Inspectorate develop guidelines that provide stiffer penalties for individuals that violate the regulations by flying when not current or qualified, which could include license suspension or revocation.
- Recommend that the Civil Aviation Department through the Flight Standards Inspectorate develop
  guidelines to provide stiffer penalties for individuals that violate the regulations by falsifying
  records, which could include license revocation.
- Recommend that the Flight Standards Inspectorate initiate an investigation into the circumstances
  that led to an unauthorized mechanic performing work on a Bahamian Registered aircraft and
  make recommendations so as to prevent this from happening again in the future.
- Recommend that the Flight Standards Inspectorate develop policies that would ensure that all individuals or companies that intend to have their aircraft registered in the Bahamas, are made aware that no one that is not authorized by the department, can perform maintenance on any aircraft that is Bahamian registered.
- Recommend that an investigation be made to determine why gear backup blow down system did not activate as it was supposed to.
- Recommend that an investigation be made to determine why gear backup blow down system check was not accomplished as required by Annual Inspection.
- Recommend that enforcement action be initiated, if it is determined that mechanic was negligent in omitting this inspection required by the Annual Inspection Summary Sheet for this aircraft









# CESSNA AIRCRAFT COMPANY MODEL 402 MAINTENANCE MANUAL INSPECTION TIME LIMITS MODEL 402C

18.	Nose Gear	Steering Sto	p Block	- Inspect	for	condition
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- Nose Gear Steering Bellcrank Inspect for condition and security.
- 20. Nose Gear Fork Inspect for condition and security.
- 21. Landing Gear Wheel and Tire Check wear, pressure and condition.
- Landing Gear Doors Inspect for condition and security.
- Brake System Plumbing Inspect for leaks, hoses for bulges and deterioration, parking brake for operation.
- Brake Assemblies Inspect for wear of lining and disc warpage.
- 25. Brake Master Cylinders Service.
- Parking Brake Handle Shaft and Pivot Points -Service.
- 27. Landing Gear Actuators and Control/Indicating System Functional Test Perform test every one year or anytime the landing gear emergency blow-down bottle has been discharged or a landing gear actuator is replaced. (Refer to Chapter 32).
- Nose Landing Gear Drag Brace Inspection For drag braces that have been in service for a total of 4,000 hours. Refer to Expanded Inspection for procedure.
- 29. Nose Landing Gear Drag Brace Inspection For drag braces that have been in service for a total of 4,000 hours and have required crack removal. Refer to Expanded Inspection for procedure.

#### Hydraulic Landing Gear.

- Nose Gear Actuator Piston Rod End Inspect for condition and security.
- Main Gear Actuator Piston Rod End Inspect for condition and security.
- Emergency Blowdown System Perform blowdown test.
- Emergency Gear Blowdown Bottle Check pressure and hydrostatic test date.
- Emergency Gear Blowdown Bottle Perform hydrostatic test.
- Emergency Gear Blowdown Control Cable Inspect for condition, security and proper rigging.

DAGE!	EACH 100	EACH 200	SPEC	TIONS
FIRST 100 HOURS	HOURS OR EVERY YEAR	OR EVERY YEAR	HOURS	YEARS
•				
		•		
		2		
•		8		
•		Detage &		
		*		
	=	X		
		13		
		EUTH	EVERY	-
		ACC	600	EVERY
				1
			EVERY 400	
	1		EVERY	
			200	
	•			
	•			
				EVERY 1
				EVERY
				EVERY
				5

5-10-01

Page 17 Dec 2/96

5-10-01 Inspection Time Limits



DATE	TOTAL TIME	TACH OR RECORDING	DESCRIPTION OF WORK PERFORMED—	
DATE	IN SERVICE	METER TIME	SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK	4
	11,134.6	TOTAL brou	ight forward from previous page	
30-Nav03	11,134-6	523.7		
			DATE: 30-10-2003 HOBBS: 523.7 AC REG: C6-TAS AC S/N: 4002C0051	
			REPLACED ELT BATTERY IAW CESSNA 402C MM CHPT 34-43-00.	
			PEFORMED FUNCTION TEST. PERFORMANCE SATIFACTORY.  END	
	-		GARY JOHNSON  JAN 304	
	*			
120/200	11,260.4	657.8	Performed and complete annual Inspection in accordance	
10.010		#	with Cessna's maintenance manual check sheet	
			05-10-01. Washed aircraft down as required. Washed	
			down all landing gears and greased as required.	
			Placed aircraft on jacks. Inspect all tives for	-
-41			wears, cuts and uneven balancing. Removed	
			all wheels and inspect bearings for free	
			movement and operation repacked bearings	
			with greased and remodolled all wheels	
			in occordance with cessno's maintenance	
W =			manual Inspect main wheel brake	
			linings for wear and condition. Inspect	-
	of.		gear shock struts for evidence of leakage	,
		1	and proper extension. Inspect nose goor	
			torque links for condition and security.	
*	14 4	1 3 2	Inspect main wheel open torque links	
			for condition and socurity. Cleaned oil	
			landing goar micro-switches with contact.	(
	1	SUB-TOTA	L this page P.J. D.	

v v				Page No
	DATE	TOTAL TIME IN SERVICE	TACH OR RECORDING METER TIME	DESCRIPTION OF WORK PERFORMED— SIGNATURE & CERTIFICATE NO. OF PERSON PERFORMING WORK
			TOTAL bro	ught forward from previous page Confi
	12/20/2005	11,268.4	657.8	cleaner. Serviced hydraulic and broke reservoirs
				with mil 5606 fluid. Performed retraction
				test as required. Retraction performed satis-
				tactory. Removed all seats and floorboards
				from aircraft interior removed all inspection
				plates and fairings from arrandf. Inspect all
				dight controls and trim tobs for proper operation
				and travel. Inspect all roller bearings, turnbulles,
				pulleys and cook for condition and operation
				Subricole unside of aircraft flooring with
				LPS #3. reinstalled all inspection plats
				and flanels removed for inspection. removed arrared from lacks as required check
				operation. cleaned surface corresion from aircraft
Ň				
				ond right main landing gears bolts part nos.
				AN176-31 and AN176-42. Removed and replaced
				left and right main gener splack roller bearing's
				part number. 5141206-1. Replaced nose gear
				uplack roller bearing part no. 5141208-1.
				I carify that this air oralf has been inspected
				in accordance with an annual inspection is
			w	was aldermined to be in an arrowalty
				Condition.
				MM 786IY
0		-	-	
			SUB-TOTAL	
			TOTAL—Car	rry forward to next page



Name Inquiry Page 1 of 1

FAA Registry Name Inquiry Results

#### DAVID NATHEN HINDS

Address

Street

233 FLYING FISH ST

City

**FREEPORT** 

County Country

BAHAMAS

State

**Zip Code** 

F41181

Medical

Medical Class:

First

**Medical Date:** 

03/2005

Certificates

1 of 1

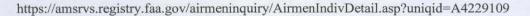
Certificate:

COMMERCIAL PILOT

FOR INFORMATION ON THIS AIRMAN'S CERTIFICATE YOU MUST CONTACT THE AIRMEN CERTIF TOLL FREE AT (866) 878-2498



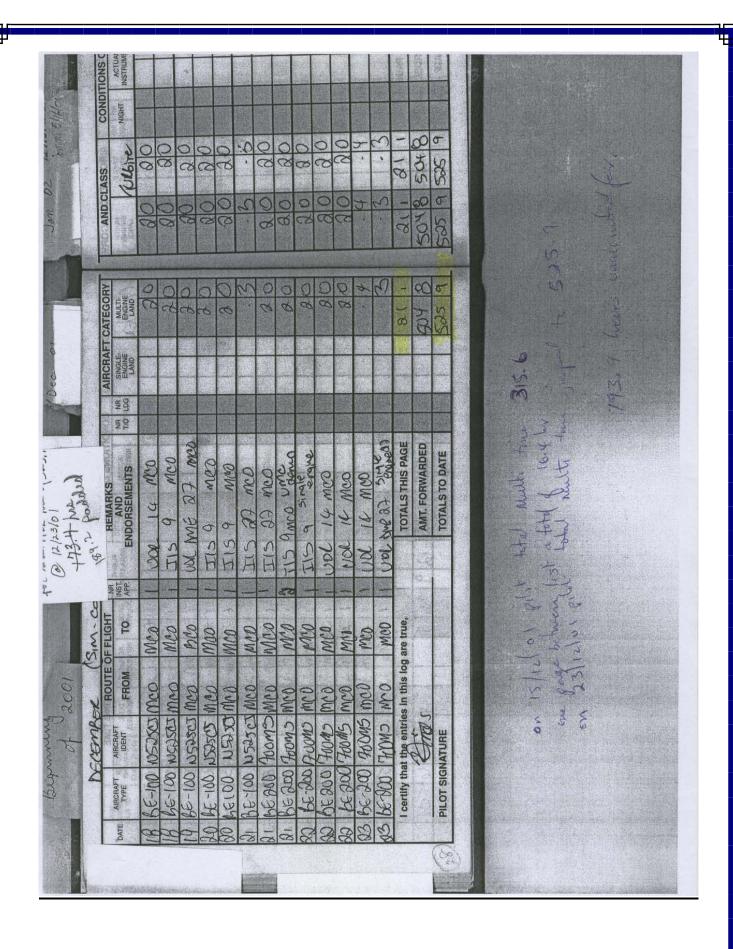


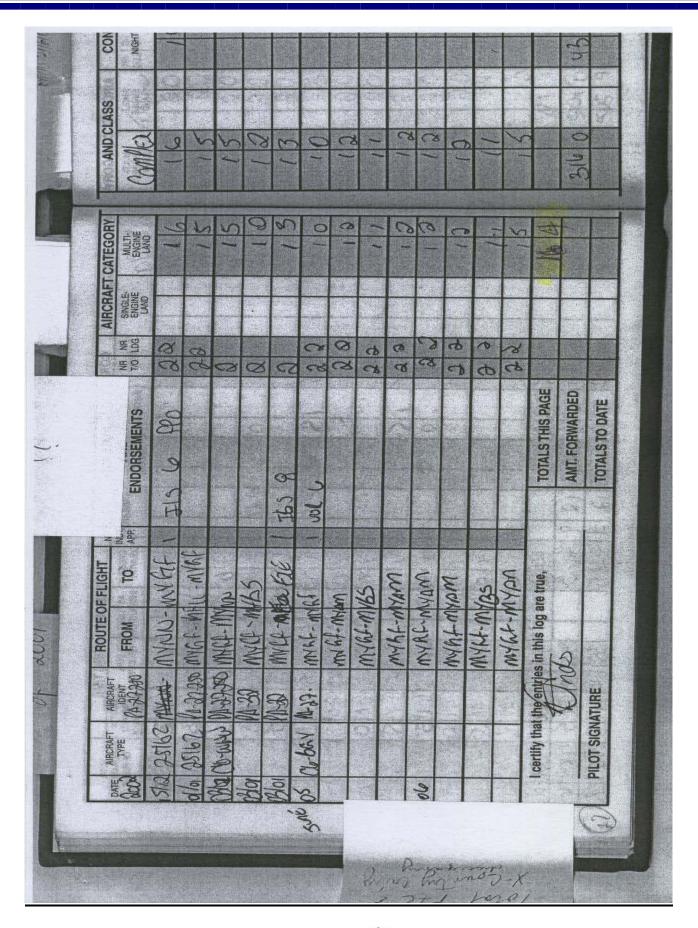


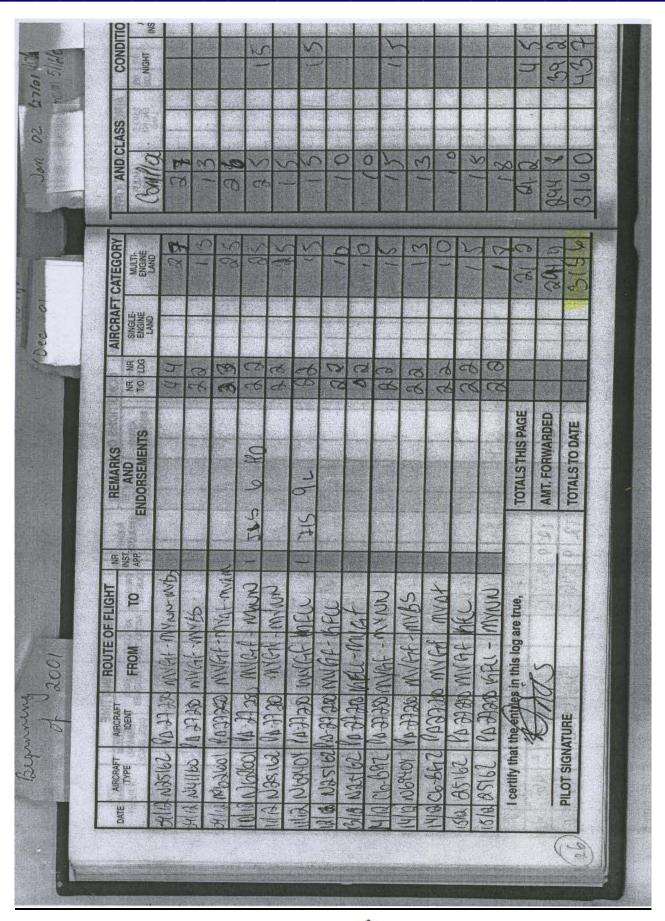


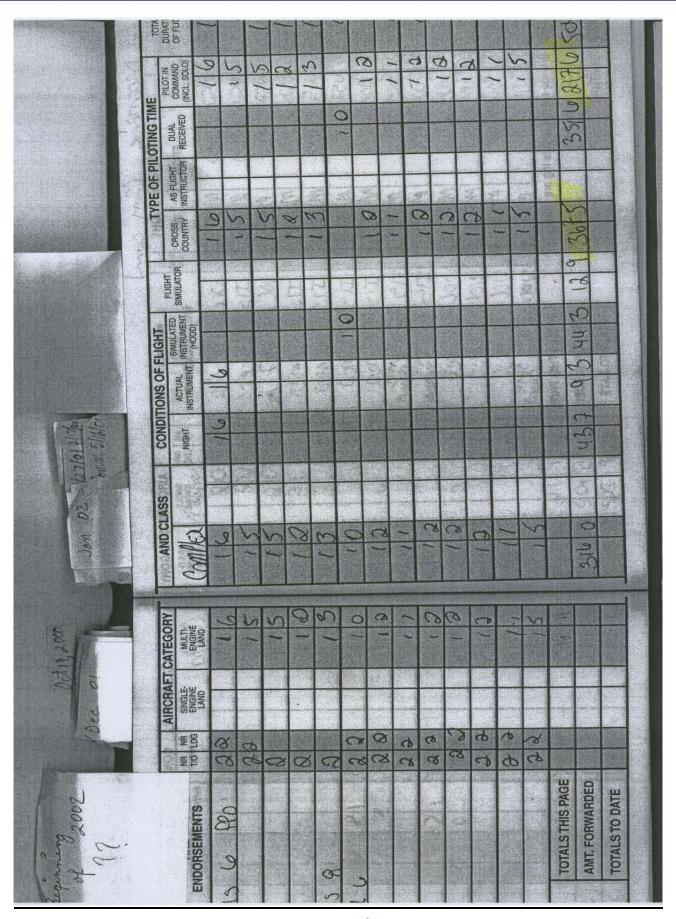
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+ (WCAISM1) ----- (AYSONR7 ) +
                       CAIS Information - Basic Information
| ISIS Airman Report
Name-Sfx:
| Name: HINDS, DAVID NATHEN
| DOB: 1982 03 03 Sex: M Hair: BLACK Eyes: BROWN Ht: 69 Wt: 238
POB: FREEPORT, BAHAMAS
                Info: Name/Address Source: Airm
| Status:
| Date of Address Update: 2005 04 18 Citizenship: BAHAMAS
| Street: 233 FLYING FISH ST
                                 County:
                      State: Zip: F41181
| City: FREEPORT
| Country: BAHAMAS
TOT CIVIL HOURS: 00840
 THIS INFORMATION IS PROTECTED BY THE PRIVACY ACT. FOR OFFICIAL USE ONLY.
+ (WCAISM3) ----- (Ar
                                             ----- (AYSONR7 ) +
                                               Information
| Cert Pfx: Cert No: 2652636 Cert Sfx:
| Medical Information for: HINDS, DAVID NATHEN
                 First
 Class:
 Certificate Desc.: CLEAR
| Medical Date: 2005 03 09 Medical ID#: 200002399050
| Restriction:
 THIS INFORMATION IS PROTECTED BY THE PRIVACY ACT. FOR OFFICIAL USE ONLY.
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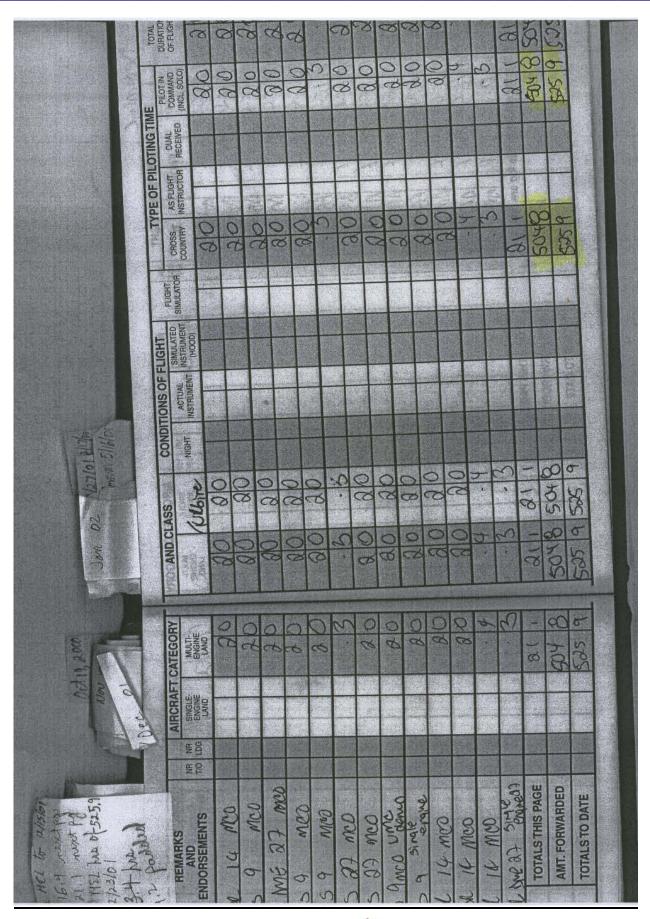
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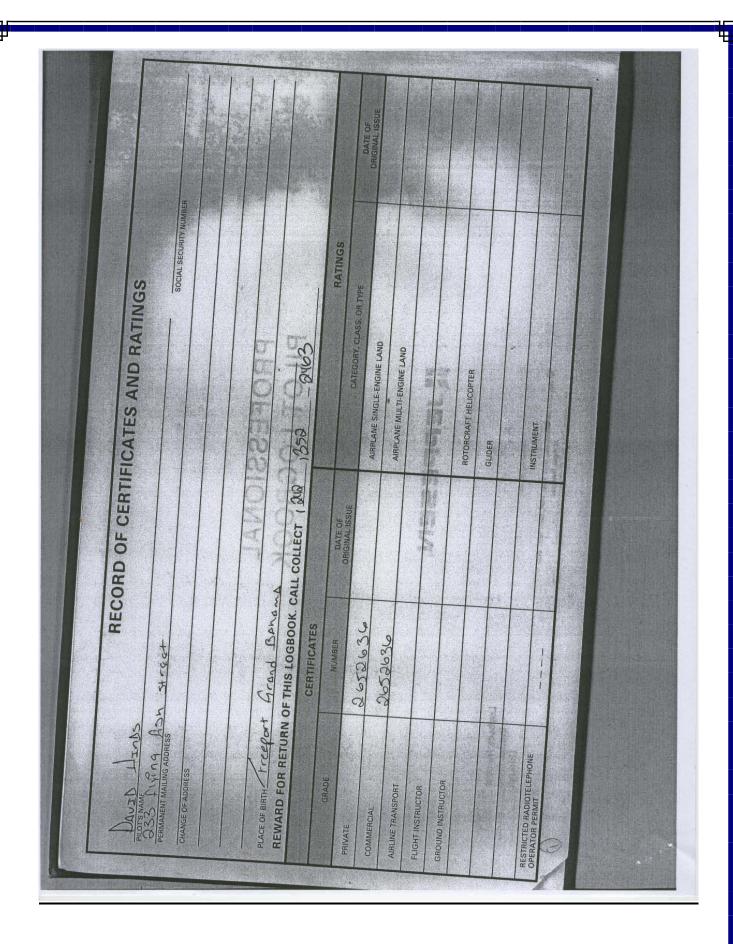






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PRIVATE			AIRPLANE MULTI-ENGINE LAND	
COMMERCIAL	2652636	THE T	INSTRUMENT	
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## OFFICAL STATEMENT

#### **INSTRUCTIONS**

Print or type. Do not write in shaded areas, these are for DCA use only. Submit original only to the Flight Standards Inspectorate or a DCA-FSI Authorized Person. If additional space is required, use an attachment

NAME:	DAYJO HTMAS
POSITION	PRIOT
EMPLOYER	CAMBRIDGE APE
PHONE NUMBER	(242) 352-0463
E-MAIL	HINDS 885 6 HOTMARI. COM
ADDRESS	953 FILPRO FRSU SHECET

I CERTIFY THE FOLLOWING TO BE TRUE: I dants that holder of certificate asbord a commercial Priori careyed are aircentt (cu nev) gasons 4000 to the cireplane united glates of america (executive airport) to get are cireplane united glates of america (executive airport). I arejust in hori insolvidate executive check this was (20 april 2004). I arejust a short and taxiber aloud 11:50en thresday morning clared customs and taxifed Duel to BANYAN and lake mnown that I was to take in to the (Chaelie eamp). Apond beaching the hingel the machine Shalted to work on the (Acuatous) FIAP, Eudder, cleudor, elevator, along in the middle of the work, HE Noticed that there assented to be on the floor some hydrolic fluid he then finis Ed the abuators and then Spered to jook for the hydrolic lears ne found I chape 3'8 line and other spected to chape to so then he put jacks under the plane for support and then take the a limes out, I then went to banyon APK paets for the 3'8 Line that he sold he weeded, deop the Line off to nim and then neaded into town for some and then return book to the amport and the mac was already on the amplane. so I want and started working alound the anaplane and all the parts that was worked on I checked over and over, and also abech the hydrolic Resulve for hydrolic fluid which I notice was full so I went and started a PREFLIGHT. Auro during the compleaning of the airplane I started to load the dippine according to weight Continued to Page # Back half SIGNATURE DATE 0/104/04

Page	of	Pages		
WITNESSED			DATE	
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FSI Form AIFN 002

Accident Investigation Official Statement



so the applane was loaded and 3 stated, the engine of well and then went into the run up lapice for are sind when I lake took of headed for freeport. In flight, around PADUS INTERSECTION about 20 miles south west of freePORT j. Notice my left and light hydrolio light came on. So I imposed! I've steet gear down left the switch down for a man her the right main indicator was green but the Left and the NOSE Stayed up so I dishy were the Recycle the good to see if It care down but didnot so I called ou for geal energency Chech list and Started complying for the check lift. The I then Slow the PIANE to the distinct speed which is 130 mots full the geal hydrolic cilevit breaker and full the 1 mondle end nothing accorded & 30 5 went bach to the check list and went over it again and reach he same proceeded over again still No right so 7 sterted down and theyied to land hard on He right to SEE if -I could get the left and the NOSE to go unlocked but didn't my intention is to go around and declared emergency but she left prop hit the ground before i could go around again resulting a prop strike and lost of lift resulting in a ceash.



April 26 06

To: Flight Standards Inspectorate.

Attn: Mr. Delvin R. Major/Mr. Philip Romer

I David Hinds pilot of the twin Cessna 402 C6-KEV arrived in fort Lauderdale around 10:30am Thursday 20th 2006 .the airplane arrived at (beetle's) hanger around 11,11:30 that morning .He started to work on the airplane as soon as we reached. Starting with the left aileron working his way around to the rudder of the airplane, followed by the elevator. During the removal of the rudder actuator he noticed what seemed to be a red fluid on the ground. So one of the share holders (CHRIS MACKEY) told him to check it out, so he looked into it a found out it was two chafed lines, so Mackey then asked him for the part number so he could get the item, he (beetle) then said he specializes in repairing those lines meaning the (hydraulic lines) so he said to go to banyan and buy a 3/8' line so he can fix it. So Mackey and I went out to buy the line and brought it to him. Then I went out came back and jacks were under the plane and the lines was done. Mackey then asked if he did the gear retraction, he(beetle) said he don't need to do it just put the jacks under the plane for support and start the right engine to check for any leaks. At the point and time that I was there at the facility, Mr. Stanley Hudson was present during the time the airplane was in for service.



E. Bernard Godet 1805 NW. 51ST Place Hangar #8 Ft Lauderdale, FL 33309

April 27, 2006

Department of C.A.D. Flight Standards Office, Bahamas Airport, 59244 P.O. Box, Nassau, Bahamas

Attn: Mr. Devlin Majors

With reference to work performed on Cessna 402C S/N 0051 Bahamas registered C6-KEV.

The above mentioned aircraft was brought to us for servicing of flight control surface trim tab actuators, aileron, rudder and elevators. After servicing the actuators, they were installed and rigged I.A.W. Cessna 402C Service Manual. All trim actuators function normally to their full ranges and were reset to their center positions. See the attached log

entry given to the owner. All actuators were functionally check good.

I was informed by the owner/agent that the aircraft needed hydraulic systems serviced after each flight. The owner/agent then asked me to troubleshoot the cause of the problem. After inspecting the hydraulic system I found two rigid lines leaking, located in the floor panel behind the pilot seat. The aircraft was placed on jacks and the defective lines removed. I then fabricated two lines and installed them. The hydraulic reservoir was replenished with MIL-H-5606. I notified the owner/agent that I would need to perform a retraction test, which could not be accomplished until the following day. The owner/agent suggested that I run the aircraft engines, while the aircraft was still on jacks in order to perform the retraction test. I then replied that I will only do the test with a hydraulic mule. The owner/agent then responded that he would take care of the retraction test in the Bahamas. As a result of the owner/agent's response, I could not return the aircraft to service in the correct manner with a logbook entry due to the fact the job task being incomplete for return to service.

Respectfully,

E. Bernard Godet

**CIVIL AVIATION** DEPARTMENT

APR 2 8 2006

RECEIVED FLIGHT STANDARD INSPECTORATE



Department of Civil Aviation Flight Standards Inspectorate Nassau International Airport, Nassau Bahamas.

Stanley Hutson 3224 N.W. 84<sup>TH</sup> Ave Suite 232 Sunrise Florida 33351.

To Whom It May Concern:

I Stanley Hutson holder of authorization number CAD/2666033/IA issued to me by the officials of the Bahamas Flight Standard Inspectorate/Civil Aviation Department to release aircraft registered under the said authority had been approached by Mr. E.Bernard Godet A&P 2875795 to overhaul three trim tab actuators, (Aileron, Rudder and Elevator trims) after supervising him performing overhaul/service inspections and installation of the units afore mentioned, having exclusive rights by means of current approved technical data (CESSNA 402C Maintenance Manual provided by E.A. Management Services.

On April 20<sup>th</sup> 2006 at approximately 4:45 PM I had given him the release for the maintenance performed on the trim tab Actuators and was not privilege to know about any other maintenance activities that was supposed to have been performed on the aircraft, neither had I seen any additional work being done.

The following morning I learned by means of a voice mail from Mr. Bernard that the aircraft had developed landing gear problems landing at Freeport International Airport some time around 1:00am in the morning and did not make a safe landing resulting in a catastrophe.

As a reputable Aviation professional I regret that much could not have been done to prevent this accident based on the fact that I was not informed of the additional maintenance activities performed.

I will however continue to assist the Authority in any way I can with fort coming information.

Sincerely

Stanley Hutson

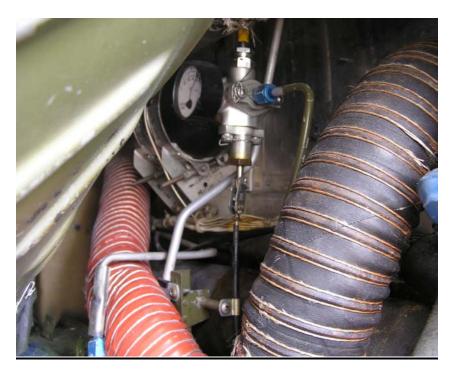
LIC#: CAD/2666033IA







Emergency gear extension system cable prior to selector handle being pull to activate system.



Emergency gear blow down bottle after handle pulled to activate system. Although handle was pulled, back up system did not activate due to the excessive play in the cable linking the emergency gear blow down bottle activation handle and the emergency system located at the firewall in the nose of the aircraft.



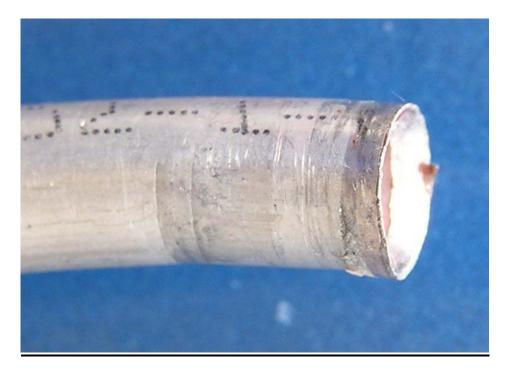
Emergency gear blow down bottle showing a positive pressure charge on the nitrogen bottle.



Hydraulic line shown as it disengaged from the housing.



Improper flange on hydraulic line cause line to separate from housing resulting in all hydraulic fluids being depleted from hydraulic system.



Enlarged shot showing flange work carried out on hydraulic line.





Signature marks of touchdown point on Runway 06 approximately 8,100 feet from the threshold of the 11,000 feet runway.



The aircraft departed the runway approximately 9,700feet from the threshold of Runway 06. Aircraft came to rest approximately 10,400 feet from the threshold of Runway 06 and 180 feet from the shoulder of the runway. Aircraft hit trees and rock prior to stopping. Aircraft burst into flames on the left side shortly thereafter.



































