

**Iraqi Civil Aviation Authority  
Flight Safety Department**

**Aircraft Accident Report  
No. 12/36/105**

**Sky Lounge Services S.A.L. Hawker 850XP  
OD-SKY**

**Sulaimaniyah International Airport – Iraq**

**4<sup>th</sup> February, 2011**

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### Synopsis

On 4<sup>th</sup> Feb. 2011, at approximately 14:49 UTC (17:49 Local Time) a Hawker 850XP crashed on Suliamaniyah Int. Airport. All crew member and passengers were killed and the aircraft was destroyed and consumed by fire.



Figure 1: A photo of the aircraft

Registered operator	Sky Lounge services S.A.L.
Aircraft type	Hawker
Model	850XP
Registration	OD-SKY
Place of accident	Suliamaniyah Int. Airport , Iraq
	Latitude 35° 33' N
	Longitude 45° 08' E
Date and time	4 <sup>th</sup> Feb. 2011, 14:49 UTC (17:49) Local Time





Figure 2: Site map of the accident

## 1. Factual Information

### 1.1 History of Flight

The aircraft crashed immediately after takeoff and was consumed by fire on the right edge of the runway while skidding towards the taxi way where it stopped.

### 1.2 Injuries to Persons

Injuries	Crew	Passenger
Fatal	3	4
Serious	—	—
Minor	—	—
Total	3	4

### 1.3 Damage to the Aircraft

The aircraft was completely destroyed upon impact and fire.



Figure 3: Main wreckage

### 1.4 Other Damage

None (Slight scratches to the taxiway).

### 1.5 Personnel Information

#### 1.5.1 Pilot in Command (according to records provided by Lebanese CAA):

- Name: Dahleh, Marwan Sabri.
- Date of birth: 25<sup>th</sup> Sep. 1949.
- Address: Dohat Al Hoss, Doha residence, Naameh, Lebanon.
- Nationality: Jordanian/ American.
- Holding licenses and rating:
  - ATP (A) 4013 (HS125 from 1<sup>st</sup> July 2004 valid until 31<sup>st</sup> December 2011).
  - Last P-check done on 23<sup>rd</sup> Dec. 2010.
  - Total flying hours: 10152 up to 8<sup>th</sup> Dec. 2010.
  - Medical certificate: Last check done on 3<sup>rd</sup> Dec. 2010.

#### 1.5.2 First Officer (according to records provided be Lebanese CAA):

- Name: Yezbek, Abdallah Hassan.
- Date of birth: 7<sup>th</sup> Nov. 1977.
- Address: Chiah, Mouawed St., Abadi Building, Chiah, Lebanon.
- Nationality: Lebanese.
- Holding licenses and ratings:
  - CP (A) 4007 (HS125 from 1<sup>st</sup> Feb. 2006 valid until 31<sup>st</sup> Dec. 2011).
  - Last P-check done on 9<sup>th</sup> Dec. 2010.
  - Total flying hours: 1516 up to 30<sup>th</sup> Aug. 2010.
  - Medical certificate: last check done on 11<sup>th</sup> Dec. 2010.

#### 1.5.3 Cabin Attendant (according to records provided be Lebanese CAA):

- Name: Louca, Stephanie Elias.
- Date of birth: 10 Oct. 1981.
- Nationality: Lebanese.
- Total flying hours: 1460.

#### 1.5.4 ATC Controller.

The aircraft was handled by one certified controller (Heimin Hamid Aswad) holder of ATC license no. 378 with a valid tower rating and valid medical certificate assisted by another certified controller (Arian Othman Hassan) holder of ATC license no. 376 with a valid tower rating and valid medical certificate, in the presence of a senior controller who acts as a supervisor (Dana Mohammed Amin) holder of ATC license no. 389 with valid tower rating and a valid medical certificate.

#### 1.5.5 Passengers.

Name	Age	Nationality
Javier Zurita Gonxxi	37	Spanish
Basil Mohammed Jawad	58	Iraqi
Addallah Youssef Lahoud	38	British
Mourad Michael Megalli	54	American

## 1.6 Aircraft Information

### 1.6.1 Aircraft

#### a. Certificate of Registration:

- Issued by Republic of Lebanon  
Ministry of Public Works and Transport  
Directorate General of Civil Aviation
- Number: 356
- Nationality and Registration Marks: OD-SKY
- Date of Issue: 1<sup>st</sup> Nov. 2010
- Manufacturer: Raytheon Aircraft Company
- Manufacture's Designation: Hawker 850 XP
- Aircraft serial no.: 258804
- Name of owner: Club Aviation S.A.L.
- Address of owner: Berytus Bldg., Downtown,  
Beirut, Lebanon  
Tel: +961-1-974479  
Fax: +961-1-333303
- Name of operator: Sky lounge Services S.A.L.

#### b. Certificate of Airworthiness:

- Issued by Republic of Lebanon  
Ministry of Public Works and Transport  
Directorate General of Civil Aviation
- Number: 356
- Nationality and Registration marks: OD-SKY
- Manufacturer: Raytheon Aircraft Company
- Designation: Hawker 580 XP
- Aircraft serial no.: 258804
- Categories: Normal, passengers
- Aircraft conforms to type certificate no. A3EU.

c. Aircraft Maintenance:

According to documents provided by Lebanese CAA, last CRS was issued on 9<sup>th</sup> Sep. 2010. Maintenance tasks were carried out by Hawker Beechcraft holder of EASA approval no. UK.145.01118.

1.6.2 Engines

The aircraft was equipped with two engines model TFE731-5BR turbofan engine, the following information were recorded on 23<sup>rd</sup> Sep. 2010.

Position	S/N	TSN hrs	TSO hrs	Cycles
No.1	P129258	1480.38	1480.38	676
No.2	P129256	1480.38	1480.38	676

1.6.3 Fuel

Type of fuel used is JET A-1 has been tested by Daura Refinery and found conform to ASTM D 1655-04 specifications.

Note: See attachment 1 (Fuel Test Result).

1.7 Meteorological Information

The investigation committee reviewed the data that was collected on 4<sup>th</sup> Feb. 2011 after the accident, at the time of the accident, the actual weather at Sulaimaniyah Int. Airport is:-

Weather Information	Time	
	1426 UTC	1455 UTC
Wind	0.3 Knots	Calm
Weather	Snow	Snow
Visibility	1300	1100
Clouds	OVCSC 900	OVCSC 900
Temperature	1°C	0°C
Dew Point	0°C	0°C
QNH	1022	1022
QFE	933	933
Wind Shear	Nil	Nil

Note: See attachment 2 (Weather Report).

See attachment 3 (Wind Shear Information).

## 1.8 Aids to Navigation

Sulaimaniyah Int. Airport is (CAT 1) and there was no evidence that any of the relevant navigational aids were out of service.

Note: see the attachment 4 (Watch Checklist)

## 1.9 Communications

There were no reported problems with communications between the aircraft and Sulaimaniyah Int. Airport Air Traffic Control Tower.

Note: see attachment 5 (Sulaimaniyah ATCT Transcript).

## 1.10 Aerodrome Information

Information to pilot is provided by (AIP-IRAQ) and is confined to advising details of aerodrome traffic to assist pilots in preventing collision, informing aircraft of essential aerodrome information (i.e. the state of the aerodrome, its facilities ....etc). The main runway is oriented 130°/310° and measures 3500 meters by 45 meters with 7.5 meters shoulders on each side with concrete surface.

## 1.11 Flight Recorders

The aircraft was equipped with a Flight Data Recorder (FDR) and a Cockpit Voice Recorder (CVR), fitted in the aft section of aircraft and they were recovered from the wreckage in a very good condition

### 1.11.1 FDR

Part No.: 980-4710-003

Serial No.: 0453

Date code: 0216

It was sent to NTSB in USA through the Lebanese Civil Aviation Authority representatives for examination and its read out data was sent back for analysis.

Note: See attachment 6 (FDR Readout Curves).

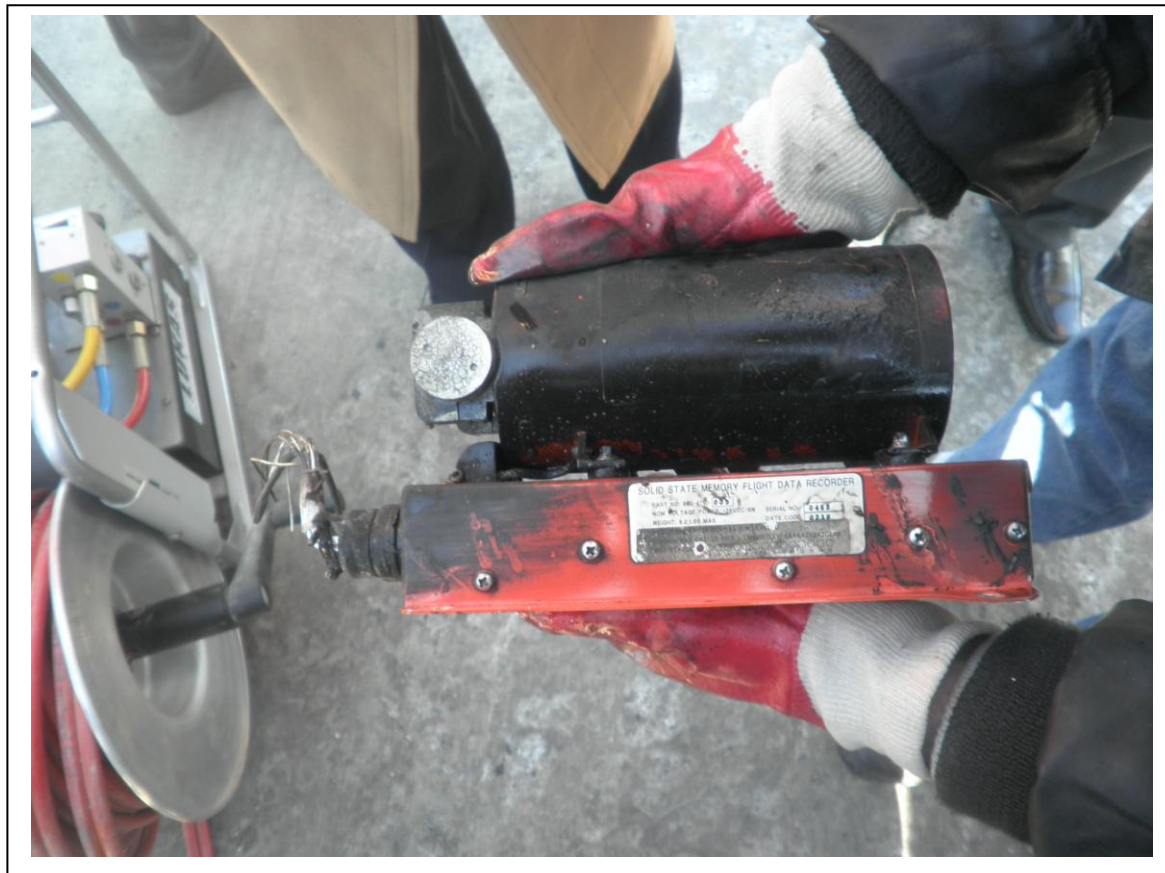


Figure 4: FDR

#### 1.11.2 CVR

Type: CVR-120  
Part No.: 1603-02-12  
Serial No.: 1625  
SCN: 10

It was taken to France by the Lebanese Civil Aviation Authority representatives for examination and its read out data was sent back for analysis.

Note: See attachment 7 (CVR Transcript).





Figure 5: CVR

## 1.12 Wreckage and Impact Information

### 1.12.1 General

From examination of the accident site and the wreckage, it was established that the aircraft struck the ground 2091meters from runway 31 threshold and about 40m from the right edge of the runway with a very high impact causing it to skid towards the taxiway and caught fire which was evident from the aircraft parts that were spread of over a distance 170m from the point of impact with some parts found about 50m from both sides of the skidding path.





Figure 6: Skidding path

#### 1.12.2 Fuselage

The whole body of the airframe including the empennage stood still on the taxiway after skidding and consumed by fire. There was evidence that the right side of the cockpit had hit the ground during impact. The fuselage was cut by the fire and rescue men to recover the bodies.



Figure 7: Empennage



### 1.12.3 Wings

While the left wing was still fitted to the fuselage, the right wing which hit the ground firstly during impact had been broken into pieces over the skidding path.



Figure 8: Left and right wings

#### 1.12.4 Landing Gears

Both main and nose landing gears were in place and fully retracted.



Figure 9: Main and nose landing gears



### 1.12.5 Engines

Both engines were still fitted to the aircraft and consumed by fire.



Figure 10: Left and right engines

#### 1.12.6 Instruments and Avionics

Due to impact and fire, the cockpit was completely damaged and all instruments and avionics were unreadable.



Figure 11: Cockpit

### 1.13 Medical and Pathological Information

The two flight crew, the cabin attendant and the passengers on board the aircraft sustained fatal injuries as the result of the accident; the mortal remains were given a post mortem where possible by the post mortem department in the ministry of health in Kurdistan Regional Government/Iraq. Pathological examination showed some fractures and burn by fire. The cause of death of all was attributed to the burn of fire.

Note: See attachment 8 (Sulaimaniyah Medical Institute Report)

### 1.14 Fire

The Hawker 850XP (OD-SKY) caught fire after it struck the ground.

### 1.15 Survival Aspects

Although fire brigade arrived immediately after the crash to distinguish the wreckage and recover the bodies but the accident was not survivable due to the severity of impact and immediate fire of the large fuel quantity.

### 1.16 Test and Research

It was possible to reconstruct the flight path of the aircraft based on the transcript of the original recording of sequence of events between the aircraft and Sulaimaiyah International Airport Control Tower, the transcript of the CVR and the FDR read-out data curves.

Note: See attachment 9 (Combined CVR/ATC Recording Transcript)

### 1.17 Original and Management Information

#### 1.17.1 Skylounge services S.A.L.

The operator of the aircraft is a holder of AOC No. TSM-C030 first issued by the Lebanese Civil Aviation Authority on 14<sup>th</sup> Sep. 2009 and valid until 9<sup>th</sup> Nov. 2012 with operation specifications issued on 10<sup>th</sup> Nov. 2010 with following particulars:-

- Types of Operation                      commercial air transport (passengers)
- Area of Operation                        Worldwide, provided the required insurance covers the whole areas
- Special Limitation                        None
- Special Authorizations
  - Dangerous Goods                        No

- Low Visibility Operation
  - Approach and Landing: No specific approval OAT1  
RVR550m  
DH 200 ft
  - Take-off: No specific approval RVR 400m
- RVSM Yes
- ETOPS No
- GNSS Navigation No
- FMS Navigation Yes
- Continued Airworthiness As per MCM & MS
- Others Yes (RNAV, RNP5)

#### 1.17.2 The ATC

The Iraqi CAA controls the ATC services located at Sulaimaiyah International Airport, twenty certified air traffic controllers divided into five groups each one consist of one supervisor and two or three controllers, each group work as in the table below:-

Day 1	Day 2	Day 3	Day 4	Day 5
08 – 14	14 – 20	20 – 08	OFF	OFF

#### 1.18 Additional Information

##### 1.18.1 Search and Rescue Operation

Since the accident occurred immediately after takeoff, the whole wreckage was located on the taxiway within the airport area and it was handled by fire brigade immediately after the crash and no further rescue operation were required.

##### 1.18.2 Testimonies

Eye witnesses reported concerns about the weather low visibility) and seeing fire at the time of accident.

Note: See attachment 10 (Testimonies)



## 2 Analysis

### 2.1 Flight Status Prior to Impact

The accident investigator believes that snow and ice contaminations had occurred on the wings and the tail section.

### 2.2 Meteorological Conditions

The weather was calm and snowing.

### 2.3 The Pilot

There is evidence that the pilot's endorsement training was adequate and no deficiencies identified during the training. There is no evidence that the pilot was fatigued on the night of the accident.

### 2.4 The Accident Sequence

- a. Before takeoff the aircraft was at ramp area for more than three hours and the weather was calm and snowing.
- b. According to CVR the crew discussed removing the ice and snow from the wings but didn't take any action to remove the snow that has been accumulating on the wings, tail section and the body.
- c. After takeoff the aircraft crashed immediately and was consumed fire on the right edge of the runway while skidding towards the taxiway where it stopped.

## 3 Conclusions

### 3.1 Findings

- a. The wings, elevator and horizontal stabilizer top surface were contaminated with ice and snow.
- b. The crew was in a hurry due to early passenger arrival.
- c. The crew didn't remove the snow and ice contamination from the control surfaces nor did he call for de-icing actions.

### 3.2 Relevant Events and Factors

- a. Ice and snow contamination on tail section most likely cause sluggish rotation during the takeoff; this will resulting in over rotation and wing stall.

- b. Snow and ice contamination on the wing, fuselage and tail will compromise the normal takeoff characteristics.
- c. A combination of snow and ice causing disruptive air flow, heavier actual weights and over rotation, the combination of which most likely didn't activate the stall warning safety design. The aircraft could stall asymmetrical without warning during takeoff.
- d. That was the probable cause of the accident.

#### 4 Safety Recommendations

Air crew should remember that contaminated ice and snow on wings, fuselage, tail, elevator and horizontal stabilizer must be removed prior to takeoff additionally, pilots should call for de-icing prior to takeoff if ice and snow contamination exists on any of the control surfaces otherwise they should not fly their aircraft.

# Attachment no. 1

## Fuel Test Result

# **MIDLAND REFINERIES COMPANY**

مكتب البحوث  
والسيطرة الإلكتروني

## **STATE COMPANY**

### **DAURA REFINERY**

**TO: Oil products Distribution company / (state company)**

**SUBJECT: AVIATION TURBINE FUEL TEST**

**Ref. No. 11 /2010**

**Daura Batch 11 /2010**

**Tank No. 2148**

The attached report (JET A-1) fuel batch No. ( 11 /2010) Daura Refinery tank No. ( 2148 ) has been tested and found conform to ASTM D 1655- 04 specification & AFQRJOS list issue 20- March 2005.

  
CHIEF CHEMIST

ANALYTICAL LAB. SUPERVISOR

  
MANAGER OF QUALITY CONTROL & RESEARCHES DEPT.

LATEF WAHAB ALWAEI

C.C.TO:

- G.M.

- LIGHT PRODUCTS COMMISSION

- ANALYTICAL SUPERVISOR

- FILE



# **MIDLAND REFINERIES COMPANY**

## **STATE COMPANY**

### **DAURA REFINERY**

شركة البترول  
الأرمنية الكاتروني

**TO: Oil products Distribution company / (state company)**

**SUBJECT: AVIATION TURBINE FUEL TEST**

شركة البترول  
الأرمنية الكاتروني

**Ref. No.** 1 /2011

**Daura Batch** 1 /2011

**Tank No.** 2150

The attached report (JET A-1) fuel batch No. ( 1 /2011) Daura Refinery  
tank No. ( 2150 ) has been tested and found conform to  
ASTM D 1655- 04 specification & AFQRJOS list issue 20- March 2005.

  
CHIEF CHEMIST

ANALYTICAL LAB. SUPERVISOR

  
12/1/10  
MANAGER OF QUALITY CONTROL & RESEARCHES DEPT.

C.C.TO:

- G.M.

- LIGHT-PRODUCTS COMMISSION

- ANALYTICAL SUPERVISOR

- FILE



# Attachment no. 2

## Weather Report

ORSU MET. OFFICE  
ROUTINE WEATHER REPORT

TIME 1426 UTC.

DATE 04/02/2001

QAN 1423 DEGREES 03 KNOTS  
..... DEGREES

QNT ..... KNOTS

QNY snow

QBA 1300 KILOMETERS/METERS

QBB 01 SC (0000) M ) ( 3000 ft.)

..... M ) ( ..... ft.)

..... M ) ( ..... ft.)

..... M ) ( ..... ft.)

TEMPERATURE 01 C DEW POINT 00 C

QNH 1022 HPAS 30.19 INS

QFE / RWY13 933 HPAS 29.56 INS

QFE / RWY31 935 HPAS 27.61 INS

Remarks .....

METAR/SPECI ORSU .....

CONTROLLER

OBSERVER

ORSU MET. OFFICE  
ROUTINE WEATHER REPORT

TIME 1455 UTC.

DATE 04/02/2001

QAN 0414 DEGREES 1 KNOTS  
..... DEGREES

QNT ..... KNOTS

QNY snow

QBA 1100 KILOMETERS/METERS

QBB ..... M ) ( ..... ft.)

..... M ) ( ..... ft.)

ONE SC ( 1000 M ) ( 3000 ft.)

..... M ) ( ..... ft.)

TEMPERATURE 00 C DEW POINT 00 C

QNH 1022 HPAS 30.19 INS

QFE / RWY13 933 HPAS 27.66 INS

QFE / RWY31 935 HPAS 27.62 INS

Remarks .....

METAR/SPECI ORSU 041500 000000 1100

SN 000030 000000 01022

CONTROLLER

OBSERVER

Attachment no. 3

Wind Shear  
Information





2 - 8



4 - 8

0 - 8







人 - 8



# Attachment no. 4

## Watch Checklist

DATE: 04.02.2011

## WATCH CHECKLIST

On Watch Time : 0510

\*\*\*\*\*

Before signing On-Watch Controller must take the required actions to check the status of the following:

Equipment	Status
AFTN System	OK
ATIS	us
AWOS	OK
FREQUENCIES	
118.3 MHZ TX/RX	OK
121.5 MHZ TX/RX	OK
121.7 MHZ TX/RX	-
243 MHZ TX/RX	OK
Hot Line Telephones	
Fire Fighting	OK
Meteorology	OK
Administration	OK
Other Telephones	
Public Telephones	OK
Erbil Telephone	OK
Kirkuk Telephone	OK
VSAT	
Baghdad	us
Kirkuk	us
Others	us
Navigation Aids	
NAV.AIDS.Monitoring Panel	us
ILS Localizer RWY 31	OK
ILS Glide Path RWY 31	OK
DME/P RWY 31	OK
ILS Localizer RWY 13	OK
ILS Glide Path RWY 13	us
DME/P RWY 13	OK
VOR / DME	OK
Lighting Systems	
Runway Edges	OK
Threshold RWY 31	OK
Approach RWY 31	OK
PAPI RWY 31	OK
Threshold RWY 13	OK
Approach RWY 13	OK
PAPI RWY 13	OK
Taxiway Edge Lights	OK
Flood Lights	OK
Runway, Taxiway and Apron Conditions	
Runway	OK
Taxiway	OK
Apron	OK

Contrôller Initial / Signature

RSI

DATE: 04.02.2011

## WATCH CHECKLIST

\*\*\*\*\*

On Watch Time : 1200

Before signing On-Watch Controller must take the required actions to check the status of the following:

Equipment	Status
AFTN System	OK
ATIS	W/S
AWOS	OK
FREQUENCIES	
118.3 MHZ TX/RX	OK
121.5 MHZ TX/RX	OK
121.7 MHZ TX/RX	-
243 MHZ TX/RX	OK
Hot Line Telephones	
Fire Fighting	OK
Meteorology	OK
Administration	OK
Other Telephones	
Public Telephones	} OK
Erbil Telephone	
Kirkuk Telephone	
VSAT	} W/S
Baghdad	
Kirkuk	
Others	
Navigation Aids	
NAV.AIDS.Monitoring Panel	W/S
ILS Localizer RWY 31	} OK
ILS Glide Path RWY 31	
DME/P RWY 31	
ILS Localizer RWY 13	W/S
ILS Glide Path RWY 13	OK
DME/P RWY 13	OK
VOR / DME	OK
Lighting Systems	
Runway Edges	} OK Half low intensity
Threshold RWY 31	
Approach RWY 31	
PAPI RWY 31	
Threshold RWY 13	
Approach RWY 13	
PAPI RWY 13	} REIL of Right side W/S
Taxiway Edge Lights	
Flood Lights	
Runway, Taxiway and Apron Conditions	
Runway	} OK
Taxiway	
Apron	

Controller Initial / Signature

DM



DATE: 04.02.2011

WATCH CHECKLIST  
\*\*\*\*\*

On Watch Time : 1700

Before signing On-Watch Controller must take the required actions to check the status of the following:

	Equipment	Status
AFTN System		OK
ATIS		OK
AWOS		OK
118.3 MHZ TX/RX		} OK
121.5 MHZ TX/RX		
121.7 MHZ TX/RX		
243 MHZ TX/RX		
Fire Fighting		} OK
Meteorology		
Administration		
Public Telephones		} OK
Erbil Telephone		
Kirkuk Telephone		
VSAT		} OK
Baghdad		
Kirkuk		
Others		
NAV.AIDS.Monitoring Panel		} OK
ILS Localizer RWY 31		
ILS Glide Path RWY 31		
DME/P RWY 31		
ILS Localizer RWY 13		
ILS Glide Path RWY 13		
DME/P RWY 13		
VOR / DME		
Runway Edges		} OK
Threshold RWY 31		
Approach RWY 31		
PAPI RWY 31		
Threshold RWY 13		
Approach RWY 13		
PAPI RWY 13		
Taxiway Edge Lights		} OK
Flood Lights		
Runway		} OK
Taxiway		
Apron		

Controller Initial / Signature

MJ

Attachment no. 5  
Sulaimaniyah ATCT  
Transcript

1405 P: Tower (السلام عليكم) ODSKY.

1405 C: ODSKY Sulaimanyah tower go ahead.

1405 P: ODSKY we know the weather is snowing request current weather at Sulaimanyah (لو سمحت).

1406 C: ODSKY service wind calm weather snowing visibility 1500m cloud OVC SC 1100m temperature 01 'c dew point 00'c QNH1022HP runway in use 13.

1407 P: Copy 13 QNH1022 (شكرا) confirm our flight plan from sulaimanyah (الى) Istanbul (ان شاء الله).

1406 C: ODSKY that affirmative.

1406 P: (شكرا ببارك الله فيك).

1432 P: Sulaimanyah ODSKY.

1433 C: ODSKY Sulaimanyah TWR go ahead.

1433 P: Good afternoon ODSKY request start up clearance.

1433 C: ODSKY check your transmitter please.

1434 P: How do you read ODSKY.

1434 C: Now reading you 5 go ahead.

1433 P: ODSKY request start up clearance.

1433 C: ODSKY stand by for start up.

1434 P: ODSKY stand by for start up OKY.

1442 P: Sulaimanyah TWR good afternoon again

ODSKY stand by for start up.

1442 C: ODSKY area around your aircraft not clear stand by for start up oky.

1443 P: Stand by for start up OKY.

1443 P: TWR oky now we can start up and remain follow me for taxi.

1443 C: OK ODSKY start up approved QNH 1022HP expect RWY31.

1443 P: Clear to start 1022 expect RWY31 OKY and confirm you send follow me to Taxi.

1443 C: SKY say again.

1444 P: We need follow me.

1444 C: Roger.

1444 P: OKY request taxi.

1444 C: ODSKY taxi to holding point RWY 31 Service wind calm QNH1022HP time check

1444 P: Clear via taxi to hold short 31 OKY.

1444 C: OKY follow the follow me track.

1445 P: Follow the follow me OKY.

1446 C: ODSKY copy AT clearance.

1446 P: Go ahead.

1446 C: ODSKY clear to LTBA airport via flight plan route climb maintain FL310 while in control area after departure follow Kirkuk one departure climb initially 13000 feet then contact Kirkuk approach sequwak 5315 read back.

1447 P: Clear to destination via flight plan route Kirkuk one departure climb initially 13000 feet sequwak 5315.

1447 C: OKY ATC clearance correct.

1447 C: ODSKY revise ATC clearance climb over (Slu VOR) until reaching 13000 feet as restricted by Kirkuk approach and report ready for departure.

1447 P: TWR reclear to climb over slu 13000 feet OKY then contact Kirkuk control.

1447 C: ODSKY report ready for departure.

1448 P: ready for departure.

1448 P: OKY ready for departure.

1449 C: ODSKY RWY31 line up service wind calm clear for take off.

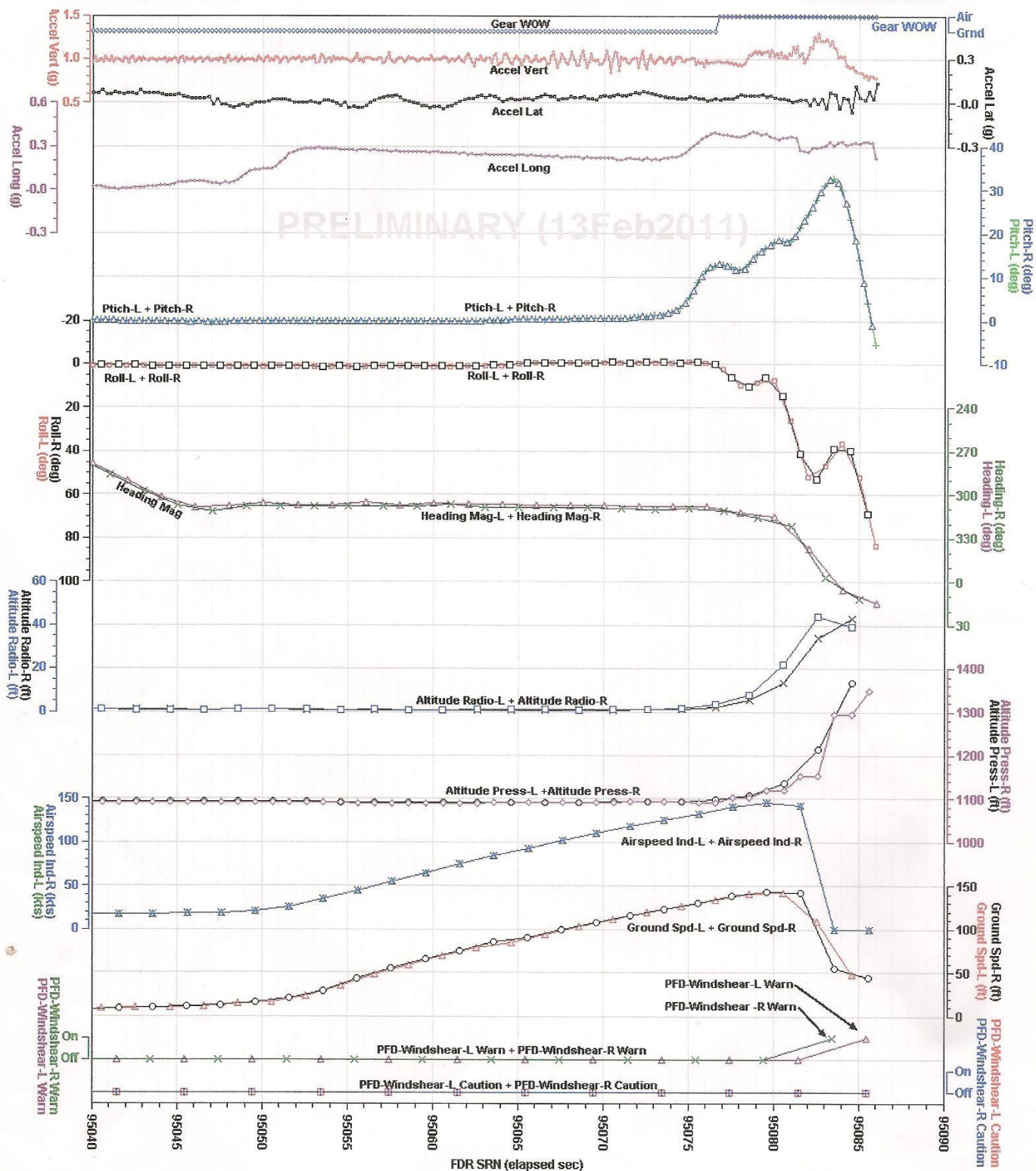
1449 P: clear for take off RWY31 OKY.

1449 C: Roger.

Attachment no. 6  
FDR Readout Curves



Sky Lounge, Hawker 850XP, Flight #, OD-SKY, Take-Off Roll until End of FDR Recording  
 Location, Date: Iraq, 02/04/11 NTSB No. DCA11WA024



Revised: 13 February 2011

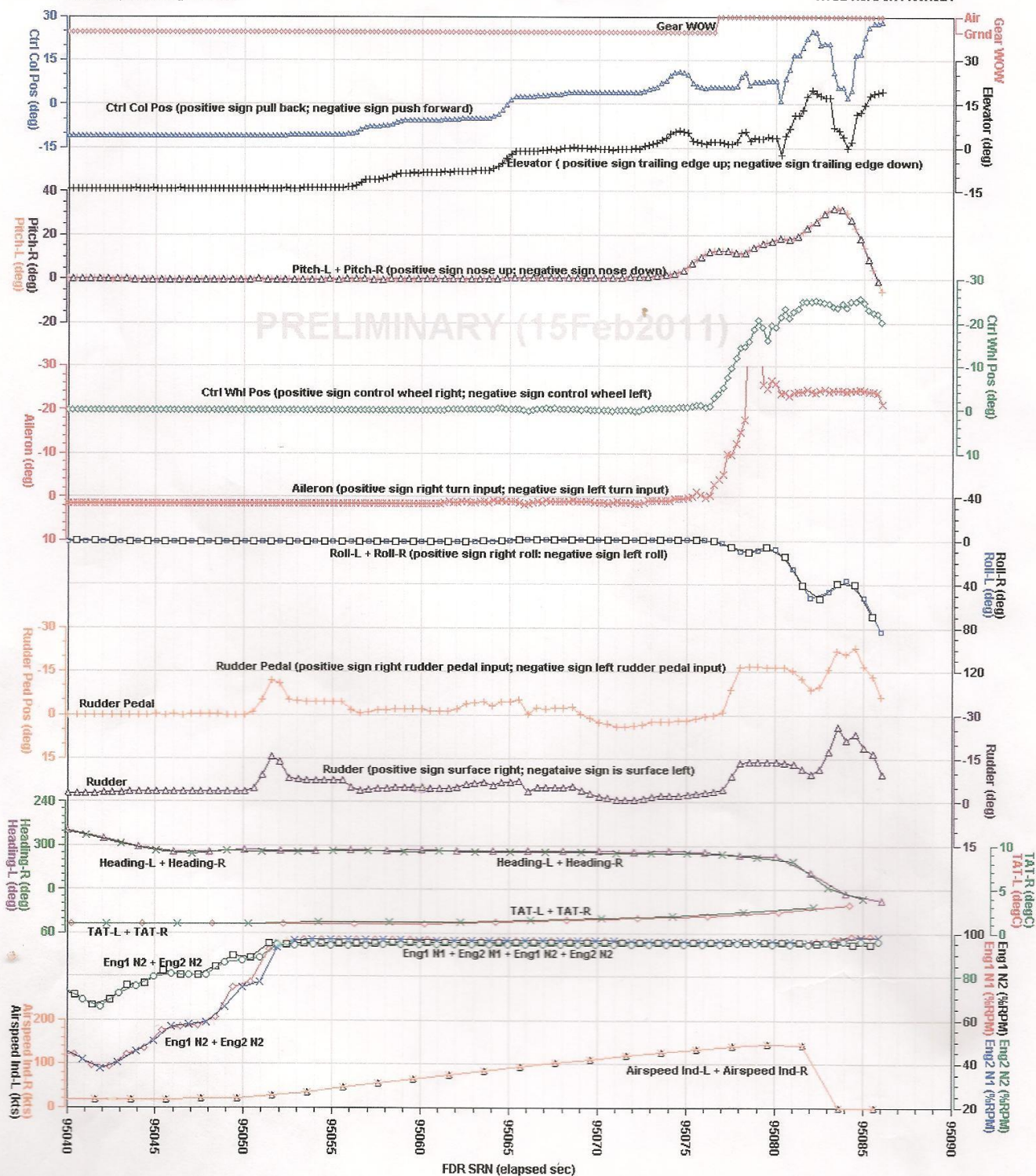
Basic Parameters (Take-Off Roll until End of FDR Recordin...

National Transportation Safety Board

# Sky Lounge, Hawker 850XP, Flight #, OD-SKY, Take-Off Roll until End of FDR Recording

Location, Date: Iraq, 02/04/11

NTSB No. DCA11WA024



Revised: 15 February 2011

Flight Ctrls + Eng N1+N2 + TAT (Take-Off Roll to End of FDR)

National Transportation Safety Board

Attachment no. 7  
CVR Transcript



Accident of OD-SKY

Page 1

Time	Captain	First Officer	Other (ATC, Public address, etc..)	Remarks, sounds, Translations
01:48:27		مرحبا يا كاسا		Did the passengers arrive?
01:49:38		Sulaimanqah OD-SKY		
01:49:44			OD-SKY Sulaimanqah Tur brokeed	
01:49:48		Good afternoon. OD-SKY request start up Good service	OD-SKY check your transmitta	
01:49:56				
01:50:02		Transmitter ?		
01:50:03	# 1			Put # 1
01:50:04	مرحبا يا كاسا			Hello Captain
01:50:05	Put # 1 & # 2 ready			Put # 1 & # 2 ready
01:50:08	طاكسيه حلق بيننا نعمل شاريه من الامامه كاسا، كاسا، كاسا، كاسا والا فليخبرنا اذا طاكسيه بيننا			He Captain, we want for start now but it is answering, how reliability & if it works 100M the airport will close
01:50:10		Yes, now how do you read OD-SKY?		
01:50:13		OD-SKY now reading you 5, 85 asked		
01:50:17		Yes, OD-SKY request start-up please	OD-SKY stand by for start-up	
01:50:20	طاكسيه حلق بيننا انا طاكسيه حلق بيننا			about it is 100 and a bit, but if it works 100 the airport will close
01:50:23				
01:50:25	الف حلق	Stand by for start-up OD-SKY		100 M
01:50:28	على كل حلق بنقول اذا قررنا اذا بقينا ادرم طاكسيه حلق بيننا			Anyway, we will try now if we can, if we see the runway we will take off if we will see clear, how much did you give me this morning, just reminder.
01:50:34	اسمع عانت قديم عطيني العيج عطيني كاسا			Yes, you gave me 8,000 this morning, correct
01:50:38	اه عطيني 8 آلاف العيج ع			Yes, OK, it is fine. We paid you for the fuel they only accepted cash. No problem the will not accept there, only handling, we will pay from our pocket, not problem.
01:50:43	اه عكا ع ما بين ايجال هو في حلقنا البرج عا، فليخبرنا اذا طاكسيه حلق بيننا ما بيننا فليخبرنا اذا طاكسيه حلق بيننا من بيننا فليخبرنا اذا طاكسيه حلق بيننا			Yes, OK, it is fine. We paid you for the fuel they only accepted cash. No problem the will not accept there, only handling, we will pay from our pocket, not problem.
01:50:54	مرحبا يا كاسا اذا طاكسيه حلق بيننا بدرجنا عا فليخبرنا اذا طاكسيه حلق بيننا	2500 طاكسيه		Yes, OK, it is fine. We paid you for the fuel they only accepted cash. No problem the will not accept there, only handling, we will pay from our pocket, not problem.
01:50:55				And we gave you 2500
01:50:58				And we gave you 2500
01:51:03	اه عكا ع ما بين ايجال هو في حلقنا البرج عا، فليخبرنا اذا طاكسيه حلق بيننا ما بيننا فليخبرنا اذا طاكسيه حلق بيننا من بيننا فليخبرنا اذا طاكسيه حلق بيننا			Yes, OK, it is fine. We paid you for the fuel they only accepted cash. No problem the will not accept there, only handling, we will pay from our pocket, not problem.









CYR Time St.	Captain	First Officer	Other (ATC, Public address, etc...)	Remarks, sounds
02:01:57			OKY follow the Follow Me buck	
02:02:00		Follow the Follow Me OKY		
02:02:19		I will set the Night Mode		
02:02:19		OK		Yes
02:02:24		(This step) I will check it check it		
02:02:29	Affirmative	Checked		OK! Not open much! Let it
02:02:34	Subsidiary OK			Yes. OK.
02:02:35				
02:03:03	OK: Take off standard FRR 48 ft we have any problem we will abort departure OK			Yes
02:03:16			OD-SKY copy ATC clearance	
02:03:19		Yes ahead		
02:03:21			OD-SKY cleared for 5315 ft as per after departure. Kibuk 1 departure climb initially 13,000 ft then climb from Kibuk 1 approach speed 5315	
02:03:39		When to destination via FRR Kibuk 1 climb initially 13,000 ft square 5315 OKY		
02:03:51			OKY ATC clearance correct	
02:03:57	Yes! We have to climb initially 13,000 ft?			It means we have to climb initially 13,000 ft?
02:04:01		Yes. 13,000 ft. Kibuk 1 Dep.		
02:04:14	Yes! We have to climb initially 13,000 ft?			You have it here on the departure route?
02:04:20		Kibuk 1 departure		
02:04:22	Yes! We have to climb initially 13,000 ft?			No climb to 13,000 feet of all?
02:04:23			OSY re-clearance is to climb, maintain 5315 instructed by Kibuk 1 approach, and report	
02:04:34				
02:04:48			OD-SKY report ready for departure	

C/R Time St.	Captain	First Officer	Other (ATC, Public address, etc...)	Remarks, sounds
02:04:52		Ready for departure OKY		
02:05:02	الله			Go ahead! (Told him)
02:05:06		OKY ready for departure		
02:05:09			OB-SKY Running 31 wind to cabin clear for take-off	
02:05:13		Clear for take-off running 31 OKY		
02:05:17		طوبى لى		Get me evace there
02:05:20	الله لا اله الا الله			OK finish climb overhead
02:05:30	الله لا اله الا الله			Take our picture please! Or you have a camera
02:05:31			(low voice)	
02:05:38				OK! now we shall put
02:05:49	Engine anti-ice is ON	بى الله		
02:05:45				
02:05:53		Engine anti-ice ON GPS EPR Start timing Speed alive		
02:05:54				
02:05:55				
02:05:58				
02:06:01		70 knots		
02:06:03	My Control	80 knots You have control		
02:06:03		V1		
02:06:08		<del>the aircraft is not ready for take-off</del> Positive Rate of Climb		
02:06:16	Gear up	OH HH		
02:06:17		gear is up		
02:06:19				
02:06:20			(voice from the cabin) out loud!	(After call) Bank Angle - Bank Angle
02:06:22		الله		OK good!
02:06:23			(voice from the cabin)	(After call) Wind Speed - Wind Speed 22-23 OK good! OK good! OK good! OK good!

END

OK RECORDING

7- 500

Attachment no. 8  
Sulaimaniyah Medical  
Institute

اقلیم کوردستان - العراق

مجلس الوزراء

وزارة الصحة

معهد الطب العدلي / السليمانية



Kurdistan Region Government  
Council of Ministers  
Ministry of Health  
Sulaimani Medicolegal Institute

هه‌ریتمی کوردستان - عێراق

نه‌نجومه‌نی وه‌زیران

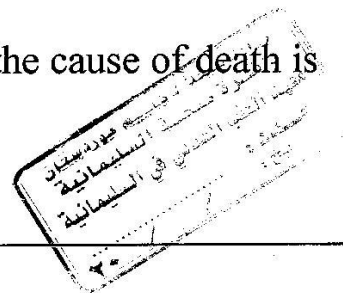
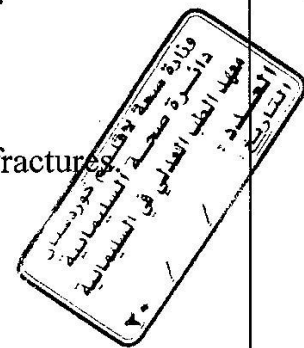
وه‌زاره‌تی ته‌ندروستی

په‌یمانگای پزیشکی دادیی / سلیمانی

- On 4<sup>th</sup> February . 2011 evening an air traffic accident happened in Sulaimany international airport / Kurdistan – Iraq led to death casualties.  
At 7<sup>th</sup> pm same day seven dead persons from this accident brought to medico-legal institute of Sulaimany as listed below:

- 1- **MARWAN SABRI ASAD DAHLEH** (62 years). Jordanian :  
Total body living burn by fire + compound anterior skull fracture just postmortem.
- 2- **JAVIER ZURITA GONXXI** (37 years). Spanish :  
Total body living burn by fire.
- 3- **ABDALLAH YOUSSEF LAHOUD** (38 years). British :  
Total body living burn by fire.
- 4- **STEPHANE LOUCA ALLIAS** (30 years). Lebanese :  
Total body living burn by fire + closed right humerus fracture.
- 5- **BASIL MAHAMMED JAWAD** (58 years). Iraqi :  
Total body living burn by fire.
- 6- **MOURAD MICHAEL MEGALLI** (54 years). American :  
Total body living burn by fire.
- 7- **ABDALLAH YAZBEK HASSAN** (34 years). Lebanese :  
Total body living burn by fire + crushed head just postmortem.

NOTE: in all seven persons above the cause of death is  
**Burn by fire.**



Attachment no. 9  
Both Sulaimaniyah Tower  
and CVR Transcript



## Combined CVR/ATC recording transcript

TWR/CVR Time	Tower and/or CVR Transcript
..... / 01 49 27	(Aircraft): Did the passengers arrive? CVR only
14 32 / 01 49 38	(Aircraft): Sulaimaniyah ODSKY Both
14 33 / 01 49 44	(Tower): ODSKY Sulaimaniyah Tower go ahead Both
14 33 / 01 49 48	(Aircraft): Good afternoon ODSKY request start up Both
14 33 / 01 49 56	(Tower): ODSKY check your transmitter please Both
..... / 01 50 02	(Aircraft): Transmitter! CVR only
..... / 01 50 03	(Aircraft): Put number 1 CVR only
..... / 01 50 04	(Aircraft): Hello captain CVR only
..... / 01 50 05	(Aircraft): Put number 1 and number 2 ready
..... / 01 50 08	(Aircraft): Ha captain we want to start now but it is snowing, low visibility and if it reaches 1000 the airport will close. CVR only
14 34 / 01 50 10	(Aircraft): Yes now how do you read ODSKY Both
14 34 / 01 50 13	(Tower): ODSKY now reading you 5 go ahead Both
14 34 / 01 50 17	(Aircraft): Yes ODSKY request start up clearance Both
14 34 / 01 50 20	(Tower): ODSKY standby for start up Both
..... / 01 50 23	(Aircraft): Now it is 1000 and a bit but if it reaches 1000 the airport will close. CVR only
14 34 / 01 50 25	(Aircraft): ODSKY standby for start up OK Both
..... / 01 50 28	(Aircraft): 1000 meters CVR only
..... / 01 50 30	(Aircraft): Any way we will try now if we can, if we see the runway we will take-off if not we will see CVR only
..... / 01 50 34	(Aircraft): Listen, how much did you give me this morning, just remind me. CVR only
..... / 01 50 38	(Aircraft): Yes you gave me 8000 this morning , correct? CVR only
..... / 01 50 43	(Aircraft): Yes OK, it is fine we paid here for the fuel they only accepted cash no problem we will not refuel there only handling we will pay from our pockets no problem. CVR only
..... / 01 50 54	(Aircraft): Tell him we gave 2500
..... / 01 50 55	(Aircraft): And we gave...no if anything we will manage but we need to pay handling in Turkey. CVR only
..... / 01 51 07	(Aircraft): Yes 1000 and a bit. If anything we will pay the difference and claim them from you later, of course Khaled took 2500 from me, OK bye. CVR only
..... / 01 51 17	(Aircraft): I will not talk to you now, they are coming now on board, I cannot take the message, if we take-off we will see we will try. CVR only
..... / 01 51 30	(Aircraft): Yes but the airport here is between mountains, the airport is between mountains, they have 1000 meters limitation, we will try, we will see, we will try now, bye. CVR only
..... / 01 51 43	(Aircraft): He gave me 8000 CVR only
..... / 01 51 47	(Aircraft): Ten CVR only
..... / 01 51 47	(Aircraft): What ten ha ha 8000. CVR only
..... / 01 51 59	(Aircraft): Standby to start CVR only

..... / 01 52 02	(Aircraft): He wants to get the clearance now. CVR only
..... / 01 52 07	(Aircraft): Chief, chocks off?
..... / 01 52 29	(Aircraft): By God it is getting stronger
..... / 01 52 30	(Aircraft): Yes
..... / 01 52 35	(Aircraft): We might need a follow me to take us to the runway.
..... / 01 52 43	(Aircraft): I will ask him, I will ask him now
..... / 01 52 46	(Aircraft): We will talk to the tower, if it is like that we need a follow me to take us to the runway.
..... / 01 53 20	(Aircraft): Tell him the door open or close? He doesn't know, shall I tell him you opened the door or closed.
..... / 01 54 15	(Aircraft): It means before.
..... / 01 54 17	(Aircraft): One hour before you have time
..... / 01 54 19	(Aircraft): We put the local time here, now you are still on Lebanon time right?
..... / 01 54 23	(Aircraft): Yes
..... / 01 54 29	(Aircraft): Hopefully there is no ice on the wings man
..... / 01 54 29	(Aircraft): Oh let me check.
..... / 01 54 32	(Aircraft): Yes go ahead please
..... / 01 55 27	(Aircraft): Oh God, yes captain there is some
..... / 01 55 30	(Aircraft): Is it light?
..... / 01 55 31	(Aircraft): Yes, I mean I mean yes, they have to bring us something.
..... / 01 55 44	(Aircraft): OK let them bring us a sweeping brush to wipe them, OK, ask him.
..... / 01 55 47	(Aircraft): Clear
..... / 01 55 48	(Aircraft): Ah, but make sure they do not break the vortex generators, you do it.
..... / 01 56 45	(Aircraft): OK clear did the passengers arrive?
..... / 01 57 04	(Aircraft): Ready, ready, I am ready ( Cabin Crew).
..... / 01 57 08	(Aircraft): OK captain ready if the passengers are here forget it.
..... / 01 57 10	(Aircraft): OK let us go, where are they?
..... / 01 57 21	(Aircraft): But if we are going to be further delayed we will (word not clear) now.
..... / 01 57 25	(Aircraft): No no he will not be late
..... / 01 57 30	(Aircraft): No he will be late
..... / 01 57 40	(Aircraft): OK bring the passengers
..... / 01 57 50	(Aircraft): Are we able to start?
..... / 01 57 52	(Aircraft): No, he told me to standby
..... / 01 58 12	(Aircraft): Oh God, there is no power but from God
..... / 01 58 24	(Aircraft): One, the temperature is one
..... / 01 58 25	(Aircraft): Even this if it sticks we would see, we don't want to go
..... / 01 58 35	(Aircraft): I will ask him again
..... / 01 58 37	(Aircraft): Yes engine start, tell him requesting
14 42 / 01 58 38	(Aircraft): Sulaimaniyah Tower good afternoon again, ODSKY standby for start
14 42 / 01 58 48	(Tower): ODSKY area around your aircraft not clear standby for start up OK
14 43 / 01 58 55	(Aircraft): Standby for start up OK

..... / 01 59 03	(Aircraft): What not clear? Those people
..... / 01 59 12	(Aircraft): How long has he been gone that one? How long tell him
..... / 01 59 23	(Aircraft): Hi, let me help you, hi, hello (Cabin Attendant)
..... / 01 59 28	(Aircraft): Four passengers, correct
..... / 01 59 36	(Aircraft): Finish captain shall I close? Bye thank you (Cabin Attendant)
..... / 01 59 38	(Aircraft): OK tell him we need follow me to the runway
..... / 01 59 44	(Aircraft): Look total four? (Talking to the Cabin Attendant)
..... / 01 59 46	(Aircraft): Yes total four, tell him tell him
14 43 / 01 59 50	(Aircraft): Tower, OK, now we can startup and we need follow me to Taxi
14 43 / 01 59 54	(Tower): ODSKY, start up approved, QNH 1022 HP, expect runway 31
14 43 / 02 00 05	(Aircraft): Clear to start, 1022, expecting runway 31
14 43 / 02 00 13	(Aircraft): And confirm you will send follow me to Taxi
14 43 / 02 00 17	(Tower): SKY say again
14 44 / 02 00 21	(Aircraft): We need follow me
14 44 / 02 00 25	(Tower): Roger
..... / 02 00 27	(Aircraft): So it is runway 31, OK?
..... / 02 00 29	(Aircraft): Yes yes
..... / 02 00 31	(Aircraft): It is set
..... / 02 00 37	(Aircraft): Yes man Yes
..... / 02 00 38	(Aircraft): OK
..... / 02 00 40	(Aircraft): Did he remove the chokes
..... / 02 00 41	(Aircraft): Let him take his time
..... / 02 00 43	(Aircraft): He didn't remove the chokes yet, tell him I have start No. 1
..... / 02 00 45	(Aircraft): Start No. 1
..... / 02 00 53	(Aircraft): We will put the flaps on the runway
..... / 02 01 12	(Aircraft): 36+N
..... / 02 01 22	(Aircraft): Start power OFF
..... / 02 01 23	(Aircraft): Hi captain, every thing under control? (Voice from the cabin)
..... / 02 01 24	(Aircraft): You are welcome
..... / 02 01 25	(Aircraft): Inshallah if we see the runway we see it, if we don't we might not take-off
..... / 02 01 31	(Aircraft): De-icing, no de-icing? No problem
..... / 02 01 33	(Aircraft): OK, no, no, it did not accumulate yet
..... / 02 01 35	(Aircraft): OK
14 44 / 02 01 38	(Aircraft): OK, request taxi
14 44 / 02 01 43	(Tower): ODSKY taxi to holding point runway 31, surface wind calm, QNH 1022 HP, time check 1444
14 44 / 02 01 52	(Aircraft): Clear to taxi to hold short 31 OK?
..... / 02 01 53	(Aircraft): Yes yes OK
14 44 / 02 01 57	(Tower): OK follow the follow me truck
..... / 02 02 00	(Aircraft): Follow the follow me truck
..... / 02 02 17	(Aircraft): I will set the flight mode
..... / 02 02 19	(Aircraft): Yes
..... / 02 02 24	(Aircraft): This you didn't check it but this I will check it
..... / 02 02 29	(Aircraft): Affirmative , checked
..... / 02 02 34	(Aircraft): OK, do not open much to it, let it

..... / 02 02 35	(Aircraft): Yes OK
..... / 02 03 07	(Aircraft): OK, take-off standard (flox) 44 if we have any problem we will abort, flaps 45 OK
..... / 02 03 12	(Aircraft): Yes
14 46 / 02 03 16	(Tower): ODSKY copy ATC clearance
14 46 / 02 03 19	(Aircraft): Go ahead
14 47 / 02 03 21	(Tower): ODSKY clear to LTBA airport via flight plan route climb maintain flight level 13000 ft while in control area after departure follow Kirkuk one departure climb initially 13000 ft then contact Kirkuk approach squak 5315
14 47 / 02 03 39	(Aircraft): Clear to destination via flight plan route Kirkuk one departure climb initially 13000 ft squak 5315
14 47 / 02 03 51	(Tower): OK ATC clearance correct
..... / 02 03 57	(Aircraft): It means we have to climb initially 13000 ft
..... / 02 04 01	(Aircraft): Yes 13000 set, TA/RA, Kirkuk one departure
..... / 02 04 14	(Aircraft): You have it here on the departure route
..... / 02 04 20	(Aircraft): Kirkuk one departure
..... / 02 04 22	(Aircraft): First of all we climb to 13000
14 47 / 02 04 23	(Tower): ODSKY revise ATC clearance climb overhead Sulaimaniyah VOR until reaching 13000 ft as instructed by Kirkuk approach and report ready for departure
14 47 / 02 04 34	(Aircraft): Clearance is to climb overhead Sulaimaniyah 13000 then contact Kirkuk control
14 47 / 02 04 48	(Tower): ODSKY report ready for departure
14 48 / 02 04 52	(Aircraft): Ready for departure, OK
..... / 02 05 02	(Aircraft): Go ahead tell him
14 48 / 02 05 06	(Aircraft): OK ready for departure
14 49 / 02 05 09	(Tower): ODSKY runway 31, line up surface wind calm, clear for take-off
14 49 / 02 05 13	(Aircraft): Clear for take-off runway 31 OK
14 49 / .....	(Tower): Roger
..... / 02 05 17	(Aircraft): Let me erase these
..... / 02 05 20	(Aircraft): OK finish climb overhead
..... / 02 05 30	(Aircraft): Take a picture for us please, do you have a camera (talking to the cabin attendant)
..... / 02 05 31	(Aircraft): (low voice)
..... / 02 05 38	(Aircraft): OK, now we will put
..... / 02 05 43	(Aircraft): Engine anti-ice is ON
..... / 02 05 45	(Aircraft): Engine anti-ice ON, GPS ON
..... / 02 05 53	(Aircraft): EPR armed
..... / 02 05 54	(Aircraft): Start timing
..... / 02 05 55	(Aircraft): Speed alive
..... / 02 05 59	(Aircraft): 70 knots
..... / 02 06 01	(Aircraft): 80 knots
..... / 02 06 03	(Aircraft): My control you have control
..... / 02 06 03	(Aircraft): V1
..... / 02 06 11	(Aircraft): Rotate

..... / 02 06 13	(Aircraft): Positive rate of climb
..... / 02 06 14	(Aircraft): Gears up
..... / 02 05 16	(Aircraft): Ohhh
..... / 02 05 17	(Aircraft): Gear is up
..... / 02 05 19	(Aircraft): Oh oh (voice from cabin) ..... (Auto call) bank angle , bank angle
..... / 02 05 20	(Aircraft): Oh God
..... / 02 05 22	(Aircraft): (Auto call) wind shear , wind shear 22-23
..... / 02 05 23	(Aircraft): Oh God , Oh God .... (voice from the cabin) : Oh God

# Attachment no. 10

## Testimonies



## 1. Air Traffic Controller In Charge (Mr. Heimin Hamid Aswad)

OD-SKY requested weather and I gave him weather reported by Met office.

OD-SKY called us but due to his low voice we couldn't understand and at that time Mr. Aryan (another air traffic controller on duty) was nearer the frequency and asked him to check his transmitter, after that we read him okay and he requested start-up, as one continuous call Mr. Aryan told him to stand by for start-up. After passing departure information to Kirkuk Approach and making coordination with follow me staff, follow me told us he is not ready for departure and the pilot again requested start-up but I told him that "Area around your aircraft is not clear stand by for start-up". The pilot again told me that he is okay with follow me and follow me informed us that he is okay for start-up. I gave OD-SKY start-up clearance then he requested follow me and it is passed to follow me. I gave taxi clearance to OD-SKY. I gave ATC clearance to OD-SKY. After coordination with Kirkuk Approach to get release to OD-SKY, Kirkuk Approach gave us restriction to climb overhead SUL VOR until 13000 ft. I gave OD-SKY that revise and asked him to report when ready for departure. The pilot acknowledged the restriction then I again asked him to report ready for departure. The pilot reported ready for departure. I gave take-off clearance to OD-SKY. I saw the Aircraft just airborne then I wrote airborne time and due to bad visibility which was 1300 meters and I usually wait for one or two minutes to give the traffic airborne time and transfer him to Kirkuk App. And after seconds I saw fire on the ground and as I mentioned before, due to bad visibility I couldn't indicate the exact position of the A/C. All department concerned were informed as soon as possible.

## 2. ATC supervisor (Mr. Dana Mohammed Amin)

First of all the pilot requested Sulaimaniyah weather and the controller gave him weather information. Then after a while he requested start-up clearance but he was not ready for start-up so the controller told him to stand by. After the aircraft was ready for start-up with coordination with follow me we passed information to Kirkuk Approach. The controller gave the pilot start-up then taxi clearance and then we received a permission for release from Kirkuk Approach with a restriction. The controller gave the pilot take-off clearance. The aircraft departed then I saw a

fire on the ground then immediately we informed all department concerned (fire fighting, follow me, ground operation).

### 3. Air Traffic Controller (Mr. Aryan Othman Hassan)

I am Aryan Othman Hassan. Friday 4/2/2011, when I was a coordinator with my friends (Dana and Heman) when I want to talk about the accident happened at that day at the aircraft fired. I saw the aircraft just airborne and immediately after airborne I saw a huge fire on ground. Due to bad visibility, I didn't know the position of that fire either on runway or taxiway and I passed this information to all department concerned.

### 4. Follow me truck driver (Mr. Pavel Anwar Saeed) – Translation

I have been informed by the ATCT that the aircraft needs follow me to guide him to runway 31 and he (the pilot) followed me to runway 31. I stopped in the safety area and the aircraft entered runway 31 with speed and didn't stopped in the beginning of the runway and I left towards the taxiway and saw the aircraft took-off and I informed ground operation of that. After less than 20 seconds I saw the aircraft exploded in the air Q1: What was its height? Answer: It was as high as the ATCT.

Q2: Can you estimate its distance from take-off point? Answer: No.

Q3: How did you know the aircraft has took-off? Answer: I saw a red beacon light underneath it.

Q4: Did you see the Aircraft crashed on the ground? Answer: No. I was afraid and left back to the apron, took a friend with me to the taxiway where I saw firemen fighting the burned aircraft.

### 5. Chief Rescue and Fire Fighting In Charge (Mr. Shaho Yasin Ahmed) – Translation

As a normal procedure the fire fighting vehicle with all crew is ready in each take-off and landing, we were in front of the fire station and we saw the Aircraft when it took-off and when it reaches a height of about 150 meters I saw a flame in the right side of the Aircraft and then it failed on the right side between the runway and

taxiway and it skidded to the taxiway. When we saw the accident we drove towards it and did our job.

#### 6. Airport Ground Services In Charge (Eng. Haider Abdullah) - Translation

On 4 February OD-SKY arrived and stopped in the ramp we put the chokes and I asked the captain about any services he needs, he requested toilet service and full tank fuel, both were done and the fuel quantity supplied was 4189 liters. The crew went to the terminal and came back to the aircraft after about three hours when the passengers were on board the first officer came off the aircraft to check it then I asked him to provide me with the Aircraft technical log but he answered me they don't have it and he went on board again and closed the aircraft door and point out to me to lift the chokes then engines were operated and the aircraft left towards the runway, after that we heard a call from the follow me that the aircraft had departed so we left the apron then we heard light explosion sound and we heard a call from the ATCT that the aircraft crashed so we went to the aircraft and saw it burning.