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

4th February, 2011

Table of Contents

Synopsis	4
1. Factual Information	5
1.1 History of Flight	5
1.2 Injuries to Persons	5
1.3 Damage to the Aircraft	6
1.4 Other Damage	6
1.5 Personnel Information	6
1.5.1 Pilot in Command	6
1.5.2 First Officer	7
1.5.3 Cabin Attendant	7
1.5.4 ATC Controller	7
1.5.5 Passengers	7
1.6 Aircraft Information	8
1.6.1 Aircraft	8
1.6.2 Engines	9
1.6.3 Fuel	9
1.7 Meteorological Information	9
1.8 Aids to Navigation	10
1.9 Communications	10
1.10 Aerodrome Information	10
1.11 Flight Recorders	10
1.11.1 FDR	10
1.11.2 CVR	11
1.12 Wreckage and Impact Information	12
1.12.1 General	12
1.12.2 Fuselage	13
1.12.3 Wings	15
1.12.4 Landing Gears	16
1.12.5 Engines	17
1.12.6 Instruments and Avionics	18
1.13 Medical and Pathological Information	19
1.14 Fire	19
1.15 Survival Aspects	19
1.16 Test and Research	19

1.17 Original and Management Information	19
1.17.1 Skylounge Services S.A.L.	19
1.17.2 The ATC	20
1.18 Additional Information	20
1.18.1 Search and Rescue Operation	20
1.18.2 Testimonies.	20
2. Analysis	21
2.1 Flight Status Prior to Impact	21
2.2 Meteorological Conditions	21
2.3 The Pilot	21
2.4 The Accident Sequence	21
3. Conclusions	21
3.1 Findings	21
3.2 Relevant Events and Factors	21
4. Safety Recommendations	22

Synopsis

On 4th 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 4th 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 be Lebanese CAA):
 - Name: Dahleh, Marwan Sabri.
 - Date of birth: 25th Sep. 1949.
 - Address: Dohat Al Hoss, Doha residence, Naameh, Lebanon.
 - Nationality: Jordanian/ American.
 - Holding licenses and rating:
 - ATP (A) 4013 (HS125 from 1st July 2004 valid until 31st December 2011).
 - Last P-check done on 23rd Dec. 2010.
 - Total flying hours: 10152 up to 8th Dec. 2010.
 - Medical certificate: Last check done on 3rd Dec. 2010.

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

- Name: Yezbek, Abdallah Hassan.
- Date of birth: 7th Nov. 1977.
- Address: Chiah, Mouawed St., Abadi Building, Chiah, Lebanon.
- Nationality: Lebanese.
- Holding licenses and ratings:
 - CP (A) 4007 (HS125 from 1st Feb. 2006 valid until 31st Dec. 2011).
 - Last P-check done on 9th Dec. 2010.
 - Total flying hours:1516 up to 30th Aug. 2010.
 - Medical certificate: last check done on 11th 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: 1st 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 9th 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 23rd 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 ASTMD 1655-04 specifications.

Note: See attachment 1 (Fuel Test Result).

1.7 Meteorological Information

The investigation committee reviewed the data that was collected on 4th 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 facilitiesetc). The main runway is oriented $130^{\circ}/310^{\circ}$ 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 14th Sep. 2009 and valid until 9th Nov. 2012 with operation specifications issued on 10th 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
 Others
 As per MCM & MS
 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, heaver 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

الالكتروني

STATE COMPANY

. DAURA REFINERY

TO: Oil products Distribution company / (state company)

SUBJECT: AVIATION TURBINE FUEL TEST

Ref. No. 11 /2010

Daura Batch 11 /2010

<u>Tank No.</u> 2148

The attached report (JET A-1) fuel batch No. (11 /2010) Daura Refinery

tank No. (2148) has been tested and found conform to

30/11

ASTM D 1655- 04 specification & AFQRJOS list issue 20- March 2005.

CHIEF CHEMIST

ANALYTICAL LAB. SUPERVISOR

2/12

MANAGER OF QUALITY CONTROL & RESEARCHES DEPT.

LATER WAHAB ALWAELI

C.C.TO:

- G.M.

- LIGHT PRODUCTS COMMISSION

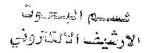
- ANALYTICAL SUPERVISOR

FILE

MIDLAND REFINERIES COMPANY

STATE COMPANY

DAURA REFINERY



الارتيان الاكتابوني

TO: Oil products Distribution company / (state company)

SUBJECT: AVIATION TURBINE FUEL TEST

Ref. No. 1 /2011

Daura Batch 1 /2011

<u>Tank No.</u> 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

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

CONTROLLER		METAK/SPECI ORSU	AVVILABLE AND	Remarks	QFE/RWY31	:	:	120 - 299	······································	:	QBBONC	QBA	ONY SALOSS	(ONT STONY	QAN	rimit \\25.urc.	
OBSERVER)		٠	HPAS	masb	is Jo-17 INS	DEW POINT Q	:	M) (ft)	M)(300.00 ft.)	KILOMETERS/METERS				KNOTS		
CONTROLLE	NO NS	METAR/SPECI	Remarks		QFE/RWY3	QFE / RWY1	QNH	TEMPRATURI	Ove sc	,	QBB	QBA	QNY	QNT		QAN	TIME.14.5.5	

ORSU MET. OFFICE ROUTINE WEATHER REPORT

CONTROLLER	METAR/SPECIORSU. O415 GO. ODOOCKI, NOO	QFE/RWY31 9.35 HPAS 2.5.2 INS	QNH	TEMPRATURE \mathcal{O} . \mathcal{O} \mathcal{C}' DEW POINT \mathcal{O} . \mathcal{O} \mathcal{C}'	(M) (OVE SC (100 M) (3000	((M) (QBB ((м) (QBA	QNY Smo S	QNTKNOTS	QANV DEGREESKNOTS	TIME.14.5.5UTC. DATE:04/62/209)	
OBSERVER	1 1100	6.2. INS	27.56 INS	a.	ft.)		ft)	ff)	METERS	0 6 8 8	(m)	TS •	162/209)	*

Attachment no. 3 Wind Shear Information

(1) (2) CREATE DATE, LLWAS_RW1	(3) (4) LLWAS_RW2	(5) (6) LLWAS_RW3	(7) (8) LLWAS_RW4	(9)
2011-02-04 14:00:08, 31A	130 04, 13D	130 04, 13A	130 03,31D	130 03
2011-02-04 14:00:18, 31A	130 04 , 13D	130 04 , 13A	130 03,31D	130 03
2011-02-04 14:00:28, 31A	120 04 , 13D	120 04, 13A	130 03, 31D	130 03
	120 04 , 13D	120 04, 13A	130 03, 31D	130 03
2011-02-04 14:00:38, 31A	130 04 , 13D	130 04, 13A	120 03, 31D	120 03
2011-02-04 14:00:48, 31A	130 04 , 13D	130 04, 13A	130 03, 31D	130 03
2011-02-04 14:00:58, 31A	130 04 , 13D	130 04, 13A	130 03,31D	130 03
2011-02-04 14:01:08, 31A	130 04 , 13D 130 04 , 13D	130 04, 13A	130 03,31D	130 03
2011-02-04 14:01:18, 31A	130 04 , 13D	130 04, 13A	120 03, 31D	120 03
2011-02-04 14:01:28, 31A	130 04 , 13D	130 04, 13A	130 03, 31D	130 03
2011-02-04 14:01:38, 31A		130 04, 13A	130 03, 31D	130 03
2011-02-04 14:01:48, 31A	130 04 , 13D	130 04, 13A	130 03, 31D	130 03
2011-02-04 14:01:58, 31A	130 04 , 13D	130 04, 13A	130 03, 31D	130 03
2011-02-04 14:02:08, 31A	130 04 , 13D	130 04, 13A	120 03, 31D	120 03
2011-02-04 14:02:18, 31A	130 04 , 13D	130 04, 13A 130 04, 13A	130 03, 31D	130 03
2011-02-04 14:02:28, 31A	130 04 , 13D	130 04, 13A	130 03, 31D	130 03
2011-02-04 14:02:38, 31A	130 04 , 13D		140 03, 31D	140 03
2011-02-04 14:02:48, 31A	130 04 , 13D	130 04 , 13A 130 04 , 13A	130 03, 31D	130 03
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2011-02-04 14:03:28, 31A	130 04 , 13D	130 04 , 13A	130 03, 31D	130 03
2011-02-04 14:03:38, 31A	120 04 , 13D	120 04 , 13A	130 03, 31D	130 03
2011-02-04 14:03:48, 31A	120 04 , 13D	120 04 , 13A	130 03, 31D	130 03
2011-02-04 14:03:58, 31A	130 04 , 13D	130 04 , 13A		130 03
2011-02-04 14:04:08, 31A	130 03 , 13D	130 03 , 13A	130 03 , 31D 130 03 , 31D	130 03
2011-02-04 14:04:18, 31A	120 04 , 13D	120 04 , 13A	130 03, 31D	130 03
2011-02-04 14:04:28, 31A	120 04 , 13D	120 04 , 13A	130 03, 31D	130 03
2011-02-04 14:04:38, 31A	120 03 , 13D	120 03 , 13A	130 03, 31D	130 03
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2011-02-04 14:05:18, 31A	120 04 , 13D	120 04 , 13A 120 04 , 13A	130 02, 31D	130 02
2011-02-04 14:05:28, 31A	120 04 , 13D	120 04 , 13A 120 04 , 13A	140 03, 31D	140 03
2011-02-04 14:05:38, 31A	120 04 , 13D	120 04 , 13A 120 04 , 13A	140 03, 31D	140 03
2011-02-04 14:05:48, 31A	120 04 , 13D	120 04, 13A 120 04, 13A	130 03, 31D	130 03
2011-02-04 14:05:58, 31A	120 04 , 13D	120 04, 13A 120 04, 13A	130 03, 31D	130 03
2011-02-04 14:06:08, 31A	120 04 , 13D	120 04, 13A 120 04, 13A	130 03, 31D	130 03
2011-02-04 14:06:18, 31A	120 04 , 13D		140 03, 31D	140 03
2011-02-04 14:06:28, 31A	120 04 , 13D	120 04 , 13A 120 04 , 13A	140 03,31D	140 03
2011-02-04 14:06:38, 31A	120 04 , 13D	120 04, 13A 120 04, 13A	140 03, 31D	140 03
2011-02-04 14:06:48, 31A	120 04 , 13D		130 03, 31D	130 03
2011-02-04 14:06:58, 31A	120 04 , 13D	120 04 , 13A	140 02, 31D	140 02
2011-02-04 14:07:08, 31A	120 03 , 13D	120 03 , 13A 120 04 , 13A	140 02, 31D	140 03
2011-02-04 14:07:18, 31A	120 04 , 13D		140 03, 31D	140 03
2011-02-04 14:07:28, 31A	130 04 , 13D	130 04, 13A	130 03, 31D	130 03
2011-02-04 14:07:38, 31A	120 03 , 13D	120 03 , 13A	130 03, 31D 130 03, 31D	130 03
2011-02-04 14:07:48, 31A	120 03 , 13D	120 03, 13A	130 03, 31D 130 02, 31D	130 03
2011-02-04 14:07:58, 31A	120 03 , 13D	120 03, 13A	140 03, 31D	140 03
2011-02-04 14:08:08, 31A	130 03 , 13D	130 03 , 13A	130 03, 31D	130 03
2011-02-04 14:08:18, 31A	130 03 , 13D	130 03 , 13A	130 03, 31D	130 03
2011-02-04 14:08:28, 31A	130 03, 13D	130 03, 13A	130 03, 310	100 00

				ENGINE NO
2011-02-04 14:08:38, 31A	130 03, 13D	130 03, 13A	130 03, 31D	130 03
2011-02-04 14:08:48, 31A	130 03, 13D	130 03, 13A	130 03,31D	130 03
2011-02-04 14:08:58, 31A	130 03, 13D	130 03, 13A	130 02, 31D	130 02
2011-02-04 14:09:08, 31A	130 03, 13D	130 03, 13A	140 02, 31D	140 02
2011-02-04 14:09:18, 31A	120 03, 13D	120 03, 13A	130 03, 31D	130 03
2011-02-04 14:09:28, 31A	130 03, 13D	130 03, 13A	130 03, 31D	130 03
2011-02-04 14:09:38, 31A	120 04, 13D	120 04, 13A	120 03, 31D	120 03
2011-02-04 14:09:48, 31A	130 03, 13D	130 03, 13A	120 03, 31D	120 03
2011-02-04 14:09:58, 31A	130 04, 13D	130 04, 13A	120 03, 31D	120 03
2011-02-04 14:10:08, 31A	130 04, 13D	130 04 , 13A	130 03, 31D	130 03
2011-02-04 14:10:18, 31A	130 04, 13D	130 04, 13A	120 03, 31D	120 03
2011-02-04 14:10:28, 31A	130 04, 13D	130 04, 13A	130 04, 31D	130 04
2011-02-04 14:10:38, 31A	130 04, 13D	130 04, 13A	120 03, 31D	120 03
2011-02-04 14:10:48, 31A	130 04, 13D	130 04, 13A	120 03, 31D	120 03
2011-02-04 14:10:58, 31A	130 04, 13D	130 04, 13A	130 03, 31D	130 03
2011-02-04 14:11:08, 31A	130 04, 13D	130 04, 13A	130 03,31D	130 03
2011-02-04 14:11:18, 31A	130 04, 13D	130 04, 13A	120 03, 31D	120 03
2011-02-04 14:11:28, 31A	130 04, 13D	130 04 , 13A	120 03, 31D	120 03
2011-02-04 14:11:38, 31A	130 04, 13D	130 04, 13A	130 03, 31D	130 03
2011-02-04 14:11:48, 31A	130 04, 13D	130 04, 13A	130 03, 31D	130 03
2011-02-04 14:11:58, 31A	130 04, 13D	130 04, 13A	120 03,31D	120 03
2011-02-04 14:12:08, 31A	120 04, 13D	120 04, 13A	130 03, 31D	130 03
2011-02-04 14:12:18, 31A	130 04, 13D	130 04, 13A	130 02, 31D	130 02
2011-02-04 14:12:28, 31A	130 04, 13D	130 04, 13A	120 03, 31D	120 03
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2011-02-04 14:49:08, 31A	130 05, 13D	130 05 , 13A	000 00, 31D	000 00
2011-02-04 14:49:18, 31A	130 05, 13D	130 05, 13A	000 00, 31D	000 00
2011-02-04 14:49:28, 31A	130 04, 13D	130 04, 13A	000 00,31D	000 00
2011-02-04 14:49:38, 31A	130 05, 13D	130 05, 13A	000 00, 31D	000 00
2011-02-04 14:49:48, 31A	130 05, 13D	130 05, 13A	000 00, 31D	000 00
2011-02-04 14:49:58, 31A	130 05, 13D	130 05, 13A	000 00, 31D	000 00
2011-02-04 14:50:08, 31A	130 04, 13D	130 04 , 13A	000 00, 31D	000 00
2011-02-04 14:50:18, 31A	130 04, 13D	130 04, 13A	000 00, 31D	000 00
2011-02-04 14:50:28, 31A	130 05, 13D	130 05, 13A	000 00, 31D	000 00
2011-02-04 14:50:38, 31A	130 04, 13D	130 04, 13A	000 00, 31D	000 00
2011-02-04 14:50:48, 31A	130 04, 13D	130 04 , 13A	000 00,31D	000 00
2011-02-04 14:50:58, 31A	130 04, 13D	130 04, 13A	000 00,31D	000 00
2011-02-04 14:51:08, 31A	130 05, 13D	130 05, 13A	000 00, 31D	000 00
2011-02-04 14:51:18, 31A	130 05, 13D	130 05, 13A	000 00, 31D	000 00
2011-02-04 14:51:28, 31A	130 05, 13D	130 05, 13A	000 00, 31D	000 00
2011-02-04 14:51:38, 31A	130 04, 13D	130 04, 13A	000 00,31D	000 00
2011-02-04 14:51:48, 31A	130 05, 13D	130 05, 13A	000 00,31D	000 00
2011-02-04 14:51:58, 31A	140 05, 13D	140 05, 13A	000 00,31D	000 00
2011-02-04 14:52:08, 31A	140 04,13D	140 04, 13A	000 00,31D	000 00
2011-02-04 14:52:18, 31A	130 04, 13D	130 04, 13A	000 00,31D	000 00
2011-02-04 14:52:28, 31A	130 04, 13D	130 04, 13A	000 00,31D	000 00
2011-02-04 14:52:38, 31A	140 04, 13D	140 04, 13A	000 00,31D	000 00
2011-02-04 14:52:48, 31A	140 05, 13D	140 05, 13A	000 00,31D	000 00
2011-02-04 14:52:58, 31A	140 05, 13D	140 05, 13A	000 00,31D	000 00
2011-02-04 14:53:08, 31A	130 05, 13D	130 05, 13A	000 00,31D	000 00
2011-02-04 14:53:18, 31A	140 04, 13D	140 04, 13A	000 00,31D	000 00
2011-02-04 14:53:28, 31A	140 04, 13D	140 04, 13A	000 00,31D	000 00

				2022 122
2011-02-04 14:53:38, 31A	140 05, 13D	140 05, 13A	000 00,31D	000 00
2011-02-04 14:53:48, 31A	140 04, 13D	140 04, 13A	000 00, 31D	000 00
2011-02-04 14:53:58, 31A	140 04, 13D	140 04, 13A	000 00,31D	000 00
2011-02-04 14:54:08, 31A	140 04, 13D	140 04, 13A	000 00, 31D	000 00
2011-02-04 14:54:18, 31A	140 04, 13D	140 04, 13A	000 00,31D	000 00
2011-02-04 14:54:28, 31A	150 04, 13D	150 04, 13A	000 00, 31D	000 00
2011-02-04 14:54:38, 31A	150 04, 13D	150 04, 13A	000 00, 31D	000 00
2011-02-04 14:54:48, 31A	140 05, 13D	140 05, 13A	000 00, 31D	000 00
2011-02-04 14:54:58, 31A	140 04, 13D	140 04, 13A	000 00,31D	000 00
2011-02-04 14:55:08, 31A	150 04, 13D	150 04, 13A	000 00,31D	000 00
2011-02-04 14:55:18, 31A	140 05, 13D	140 05, 13A	000 00,31D	000 00
2011-02-04 14:55:28, 31A	150 05, 13D	150 05, 13A	000 00,31D	000 00
2011-02-04 14:55:38, 31A	150 04, 13D	150 04, 13A	000 00,31D	000 00
2011-02-04 14:55:48, 31A	140 04, 13D	140 04, 13A	000 00,31D	000 00
2011-02-04 14:55:58, 31A	150 03, 13D	150 03, 13A	000 00,31D	000 00
2011-02-04 14:56:08, 31A	150 04, 13D	150 04, 13A	000 00,31D	000 00
2011-02-04 14:56:18, 31A	150 04, 13D	150 04, 13A	000 00,31D	000 00
2011-02-04 14:56:28, 31A	150 04, 13D	150 04, 13A	000 00,31D	000 00
2011-02-04 14:56:38, 31A	150 05, 13D	150 05, 13A	000 00,31D	000 00
2011-02-04 14:56:48, 31A	150 05, 13D	150 05, 13A	000 00, 31D	000 00
2011-02-04 14:56:58, 31A	150 04, 13D	150 04, 13A	000 00,31D	000 00
2011-02-04 14:57:08, 31A	150 04, 13D	150 04, 13A	000 00,31D	000 00
2011-02-04 14:57:18, 31A	140 03, 13D	140 03, 13A	000 00, 31D	000 00
2011-02-04 14:57:28, 31A	150 04, 13D	150 04, 13A	000 00,31D	000 00
2011-02-04 14:57:38, 31A	150 04, 13D	150 04, 13A	000 00,31D	000 00
2011-02-04 14:57:48, 31A	150 05, 13D	150 05, 13A	000 00,31D	000 00
2011-02-04 14:57:58, 31A	140 05, 13D	140 05, 13A	000 00,31D	000 00
2011-02-04 14:58:08, 31A	140 05, 13D	140 05, 13A	000 00,31D	000 00
2011-02-04 14:58:18, 31A	140 04, 13D	140 04, 13A	000 00,31D	000 00
2011-02-04 14:58:28, 31A	140 05, 13D	140 05, 13A	000 00,31D	000 00
2011-02-04 14:58:38, 31A	140 04, 13D	140 04, 13A	000 00,31D	000 00
2011-02-04 14:58:48, 31A	150 04, 13D	150 04, 13A	000 00,31D	000 00
2011-02-04 14:58:58, 31A	140 04, 13D	140 04, 13A	000 00,31D	000 00
2011-02-04 14:59:08, 31A	150 05, 13D	150 05, 13A	000 00,31D	000 00
2011-02-04 14:59:18, 31A	140 05, 13D	140 05, 13A	000 00,31D	000 00
2011-02-04 14:59:28, 31A	140 05, 13D	140 05, 13A	000 00,31D	000 00
2011-02-04 14:59:38, 31A	140 05, 13D	140 05, 13A	000 00,31D	000 00
2011-02-04 14:59:48, 31A	140 05, 13D	140 05, 13A	000 00,31D	000 00
2011-02-04 14:59:58, 31A	140 04, 13D	140 04, 13A	000 00,31D	000 00
2011-02-04 15:00:08, 31A	150 05, 13D	150 05, 13A	000 00,31D	000 00
2011-02-04 15:00:18, 31A	150 05, 13D	150 05, 13A	000 00,31D	000 00
2011-02-04 15:00:28, 31A	140 04, 13D	140 04, 13A	000 00,31D	000 00
2011-02-04 15:00:28, 31A	150 04, 13D	150 04, 13A	000 00,31D	000 00
2011-02-04 15:00:48, 31A	150 05, 13D	150 05, 13A	000 00,31D	000 00
2011-02-04 15:00:58, 31A	150 04, 13D	150 04, 13A	000 00,31D	000 00
2011-02-04 15:01:08, 31A	140 05, 13D	140 05, 13A	000 00,31D	000 00
2011-02-04 15:01:18, 31A	150 05, 13D	150 05, 13A	000 00,31D	000 00
2011-02-04 15:01:28, 31A	150 05, 13D	150 05, 13A	000 00,31D	000 00
2011-02-04 15:01:38, 31A	150 05, 13D	150 05, 13A	000 00,31D	000 00
2011-02-04 15:01:48, 31A	150 05 , 13D	150 05, 13A	000 00,31D	000 00
2011-02-04 15:01:58, 31A	150 05, 13D	150 05, 13A	000 00,31D	000 00
2011-02-04 15:01:08, 31A	150 05, 13D	150 05, 13A	000 00,31D	000 00
2011-02-04 15:02:18, 31A	150 05, 13D	150 05, 13A	000 00,31D	000 00
2011-02-04 15:02:28, 31A	150 05 , 13D	150 05, 13A	000 00,31D	000 00
2011-02-07 13.02.20, 31A	120 00 , 102		295020000 1 5	

	150.05 120	150 05, 13A	000 00,31D	000 00
2011-02-04 15:02:38, 31A	150 05 , 13D	150 05, 13A	000 00,31D	000 00
2011-02-04 15:02:48, 31A	150 05 , 13D	150 05 , 13A	000 00,31D	000 00
2011-02-04 15:02:58, 31A	150 05 , 13D	150 05, 13A	000 00,31D	000 00
2011-02-04 15:03:08, 31A	150 05 , 13D 150 05 , 13D	150 05 , 13A	000 00,31D	000 00
2011-02-04 15:03:18, 31A		150 05 , 13A	000 00,31D	000 00
2011-02-04 15:03:28, 31A	150 05 , 13D	150 05 , 13A	000 00, 31D	000 00
2011-02-04 15:03:38, 31A	150 05 , 13D 150 06 , 13D	150 05, 13A	000 00, 31D	000 00
2011-02-04 15:03:48, 31A		150 06 , 13A	000 00,31D	000 00
2011-02-04 15:03:58, 31A	150 06 , 13D	150 05, 13A	000 00,31D	000 00
2011-02-04 15:04:08, 31A	150 05 , 13D 150 06 , 13D	150 05 , 13A 150 06 , 13A	000 00,31D	000 00
2011-02-04 15:04:18, 31A		150 05 , 13A	000 00,31D	000 00
2011-02-04 15:04:28, 31A	150 05 , 13D	150 05 , 13A	000 00,31D	000 00
2011-02-04 15:04:38, 31A	150 05 , 13D	150 05 , 13A	000 00,31D	000 00
2011-02-04 15:04:48, 31A	150 05 , 13D	150 05, 13A	000 00,31D	000 00
2011-02-04 15:04:58, 31A	150 05 , 13D		000 00,31D	000 00
2011-02-04 15:05:08, 31A	150 05 , 13D	150 05 , 13A	000 00, 31D	000 00
2011-02-04 15:05:18, 31A	140 05 , 13D	140 05 , 13A 150 05 , 13A	160 02, 31D	160 02
2011-02-04 15:05:28, 31A	150 05 , 13D		170 02,31D	170 02
2011-02-04 15:05:38, 31A	150 05 , 13D	150 05 , 13A 150 05 , 13A	000 00, 31D	000 00
2011-02-04 15:05:48, 31A	150 05 , 13D	100	000 00, 31D	000 00
2011-02-04 15:05:58, 31A	150 05 , 13D	150 05 , 13A	000 00, 31D	000 00
2011-02-04 15:06:08, 31A	150 05 , 13D	150 05 , 13A	000 00,31D	000 00
2011-02-04 15:06:18, 31A	150 05 , 13D	150 05 , 13A	000 00,31D	000 00
2011-02-04 15:06:28, 31A	150 05 , 13D	150 05 , 13A	000 00,31D	000 00
2011-02-04 15:06:38, 31A	140 05 , 13D	140 05 , 13A	000 00,31D	000 00
2011-02-04 15:06:48, 31A	140 05 , 13D	140 05 , 13A	000 00, 31D	000 00
2011-02-04 15:06:58, 31A	140 05 , 13D	140 05 , 13A	000 00, 31D	000 00
2011-02-04 15:07:08, 31A	140 05 , 13D	140 05, 13A	000 00, 31D	000 00
2011-02-04 15:07:18, 31A	140 05 , 13D	140 05 , 13A	160 02, 31D	160 02
2011-02-04 15:07:28, 31A	140 05 , 13D	140 05 , 13A	160 02, 31D	160 02
2011-02-04 15:07:38, 31A	140 05 , 13D	140 05 , 13A		000 00
2011-02-04 15:07:48, 31A	140 04, 13D	140 04 , 13A	000 00 , 31D	000 00
2011-02-04 15:07:58, 31A	140 05, 13D	140 05, 13A	000 00 , 31D	000 00
2011-02-04 15:08:08, 31A	140 05, 13D	140 05 , 13A	000 00 , 31D	000 00
2011-02-04 15:08:18, 31A	140 05, 13D	140 05, 13A	000 00, 31D	000 00
2011-02-04 15:08:28, 31A	140 05, 13D	140 05 , 13A	000 00 , 31D	
2011-02-04 15:08:38, 31A	130 05, 13D	130 05, 13A	000 00 , 31D	000 00
2011-02-04 15:08:48, 31A	140 05, 13D	140 05, 13A	000 00 , 31D	000 00
2011-02-04 15:08:58, 31A	140 05, 13D	140 05 , 13A	160 02, 31D	160 02
2011-02-04 15:09:08, 31A	140 05 , 13D	140 05, 13A	000 00 , 31D	000 00
2011-02-04 15:09:18, 31A	140 05, 13D	140 05 , 13A	000 00 , 31D	000 00
2011-02-04 15:09:28, 31A	140 05, 13D	140 05, 13A	000 00 , 31D	000 00
2011-02-04 15:09:38, 31A	130 05, 13D	130 05, 13A	150 02, 31D	150 02

Attachment no. 4 Watch Checklist

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	०१८
	FREQUENCIES
118.3 MHZ TX/RX	OK
121.5 MHZ TX/RX	PIC
121.7 MHZ TX/RX	_
243 MHZ TX/RX	०।८
7 =	Hot Line Telephones
Fire Fighting	o K
Meteorology	
Administration	OIC
	Other Telephones
Public Telephones	_°K
Erbil Telephone	OIT
Kirkuk Telephone	0)<
VSAT Baghdad	uş
Kirkuk	ng
	we we
Others	
	Navigation Aids
NAV.AIDS.Monitoring	Navigation Aids
Panel	us
ILS Localizer RWY 31	ok
ILS Glide Path RWY 31	015
DME/P RWY 31	OK
ILS Localizer RWY 13	o k
ILS Glide Path RWY 13	u Š
DME/P RWY 13	ok .
VOR / DME	OK
TORT DIVID	Lighting Systems
Runway Edges	
Threshold RWY 31	OK
Approach RWY 31	ok Half law intensity
PAPI RWY 31	ok Half low intensity
Threshold RWY 13	017
Approach RWY 13	o)(
PAPI RWY 13	PIC .
Taxiway Edge Lights	e I a
Flood Lights	bic Right side of REIL out of service
	Runway, Taxiway and Apron Conditions
Runway	ok
Taxiway	• IK
Apron	
•	ox Since the second sec
	Controller Initial / Signature

Controller Initial / Signature

Bi

DATE: 64.02.2011

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	
in System	o K
ATIS	
	ug
AWOS	
	ok .
	FREQUENCIES
118.3 MHZ TX/RX	OK
121.5 MHZ TX/RX	o K
121.7 MHZ TX/RX	
243 MHZ TX/RX	017
	Hot Line Telephones
Fire Fighting	oK
Meteorology	016
Administration	
	ा(
	Other Telephones
Public Telephones	7
Erbil Telephone	tok
Kirkuk Telephone	
	3
VSAT	
Baghdad	1110
Violent.	(415
Kirkuk	
Others	
Others	J
	Navigation Aids
NAV.AIDS.Monitoring	Navigation Aids
Panel	415
ILS Localizer RWY 31	
ILS Glide Path RWY 31	
DME/P RWY 31	(0)
ILS Localizer RWY 13	- 3
ILS Glide Path RWY 13	w
DME/P RWY 13	OK
VOR/DME	or and the second secon
	Lighting Systems
Runway Edges	Lighting Systems
Threshold RWY 31	
Approach RWY 31	Half low intensity
PAPI RWY 31	OK TOWN
Threshold RWY 13	
Approach RWY 13	
PAPI RWY 13	
Taxiway Edge Lights	the second of th
Flood Lights	I REIL of Right side 419
- 1234 Might	Runway, Taxiway and Apron Conditions
Runway	Adminay, Taxinay and Apron Conditions
Taxiway	COK
Apron	
	J
	Controller Initial / Signature

Controller Initial / Signature

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:

AFTN System	Equipment Status
	ak
ATIS	1116
AWOS	415
AWOS	OK
118.3 MHZ TX/RX	FREQUENCIES
121.5 MHZ TX/RX	7 6 0K
121.7 MHZ TX/RX	
243 MHZ TX/RX	
Fire Fighting	Hot Line Telephones
Meteorology	
Administration	- 1°01<
	Other Telephones
Public Telephones	7
Erbil Telephone	010
Kirkuk Telephone	
VSAT	
Baghdad	7
- Juguana	MIS
Kirkuk	
Others	J
NAV.AIDS.Monitoring	Navigation Aids
Panel	WS .
ILS Localizer RWY 31	ok
ILS Glide Path RWY 31	0/6
DME/P RWY 31	الم الم
ILS Localizer RWY 13	_PIC
ILS Glide Path RWY 13 DME/P RWY 13	w ⁸
DME/P RWY 13 VOR/DME	PIT .
VOR / DIVIE	अ ट्रे
Runway Edges	Lighting Systems
Threshold RWY 31	7017
Approach RWY 31	or But Half with lowingensity
PAPI RWY 31	2 1344 11417 2011 100 11/10/01
Threshold RWY 13	
Approach RWY 13	OK
PAPI RWY 13	
Taxiway Edge Lights Flood Lights	- REIL side out of service
Flood Lights	
Runway	Runway, Taxiway and Apron Conditions
Taxiway	laz
Apron	5017
	Controller Initial / Signature

Controller Initial / Signature

W.J

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 (ربسمت).

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.

1406 C: ODSKY that affirmative.

. (شكر ا بارك الله فيك) : 1406 P

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.

1.434 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.

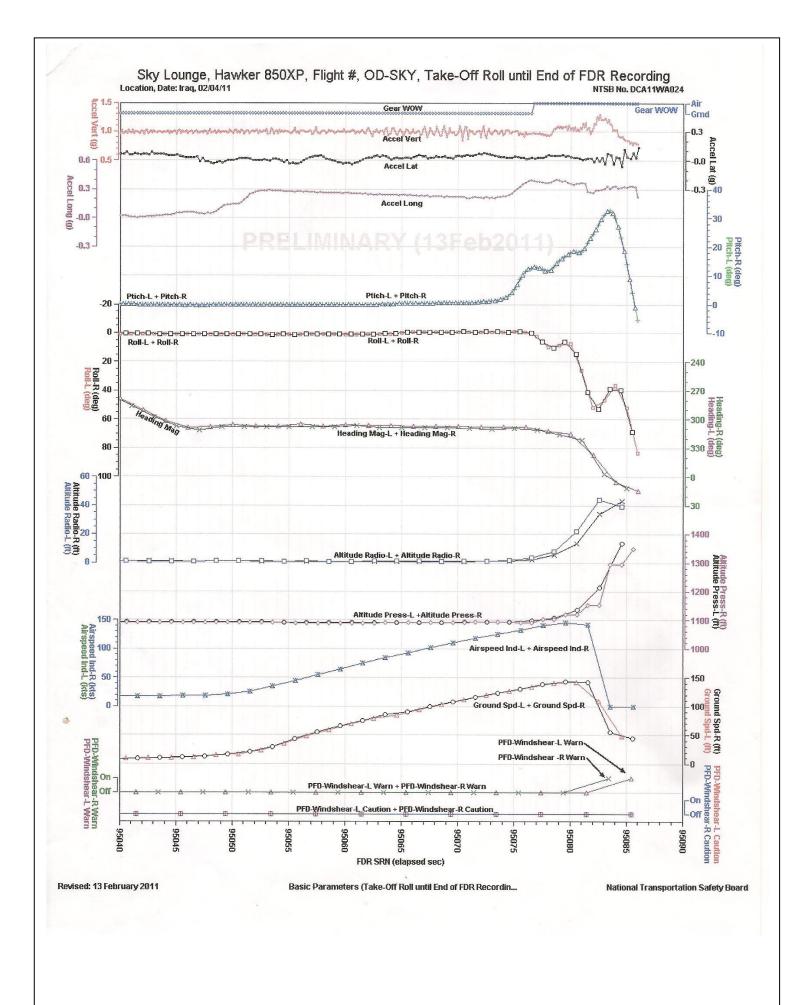
1448 P: OKY ready for departure.

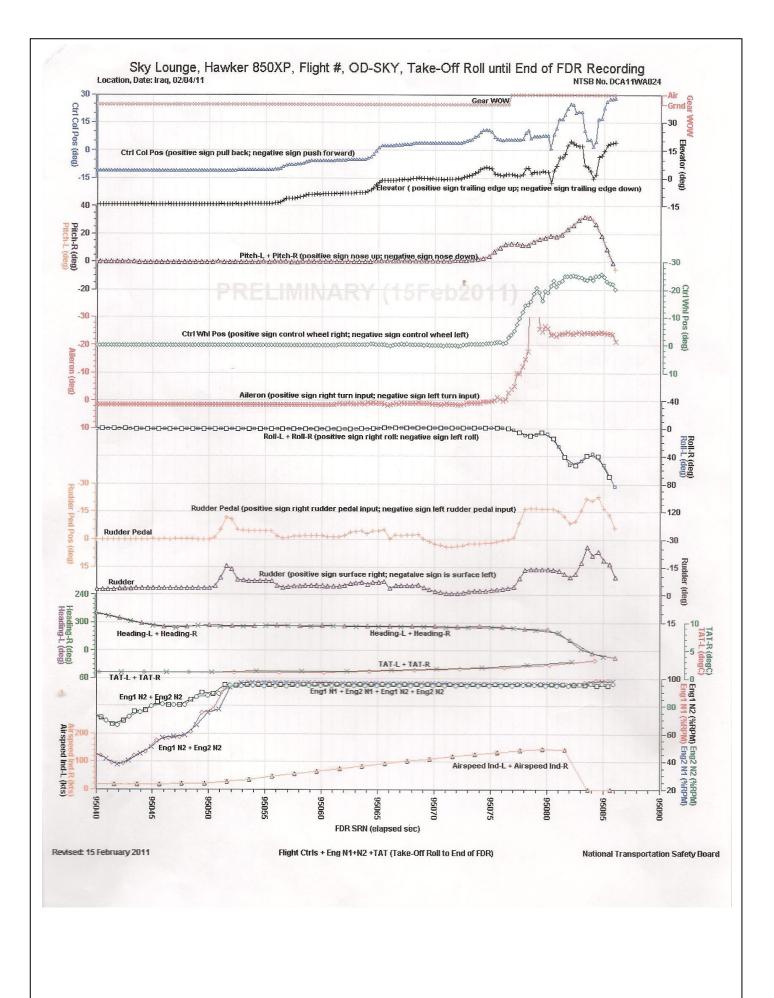
1449 C: ODSKY RWY31 line up service wind calm clear for take off.

1449 P: clear for take off RWY31 OKY.

1449 C: Roger.

Attachment no. 6 FDR Readout Curves





Attachment no. 7 CVR Transcript

tage 1

60: \$5:10	01:20 : 22	45:05:10	, , , , , , , , , , , , , , , , , , ,	3 3	e1:50:34	06:30:10	01:50:28	01:50:25	01:50:23	01:50:20	41:05:10	01:50:13	81:50000	01:50:08	01:50:05	01:50:04	01:80:03	01:50:02	01:49:56	84:63:48	01:43:44	88: 64:10	01:49:27	28 STEERS SY
ا و المناسك بعضرية عن الدرطيقا المهذر موجع المناسك بعضرينا - خالدطيقا المهذر موجع المناسك الم		10000	البغزين عارضما إلى رمان عود عدادهما ما بغزي عدادهما ما داع دهي وتريين فيناك (لهدلع عما بنده ع		Ch				علق الف وسعرية بسب اطا مصلت نالف					نعمل منعارت مند نه عمدمه غربستم للمطار	5 ready #2 1) + 1 11 to	مر حيا كا بَنن	3 # 1 11 4	2	8	8	if the state of th	a	+	Captain
s		كالوعطينا 0 625						Stand-by for start-up OD-SKY			Year, Ob-SKY request start up clearence		Yea, now how do you read ob-SKY?					Fransmitter ?)		Good afternoon. Ob SKY request start-y		Suleimanijah OD-SKY	وصلوا الركارے ؟	First Officer
										OD-SKY stand- by for stort-up		OD-SKY now redig you 5, go alread		,			, age		Ob-SKY check four transmitte		ob-SKY Suleinanizah Tur for afeed	Print the state of		Other (ATC, Public adress, etc)
pey the difference and claim then from for take. If course whaled took 2500 from	manage but we reed to pay handing in Turkey	Tell dim me gave 2500	they only accepted cash - No purcham we will not represented each - No purcham we will pay from our problem, we problem.	Yes, you gave me 8,000 this more, correct	daton, how much did you give me this morning, just remind me.	house the riman we will take of if not we will see	1000 M		reaches 1000 the airport will close					He Captain, we want to start now but it is snowing, low visibility of it waskes 1000 M the airport will close	Put # 1 & # 2 ready	Hello Captain	fut # 1		C				Did the possenger arrive?	Remarcs, sounds, Franslating

Accident of OB - SKY

	49:55:	01:55:46		77 55 77	30.	2 3	. 39	52: 45:	29 : /3	61: 45:		: 53:20	36	78. 05:	0/ :32:33	52:30	: 52 :	60:25:10	01:52:02	85:15:10	1 10 10 10 10 10 10 10 10 10 10 10 10 10	5	84: 15:10	0/:3/:30	3	41: 15:10	CKAR Time St.
آ د ، بسن اسمع أوعاالعثورتاس جیئیمیتوریسروطن د انت سامیمان	الم ع السكاني إيا هي الله عليه عليه عليه الما يحتاد الم	5, 5, 5	दक्षां के		ر بي اخرل بالله		بسما عايمون في بع عميناها ي يا زمهي		متومیت لسنان ۱ ۵ ۶		ربعني فبل ؟	عَلَمُ سَعَمَى البابِ والله سكر؟	ا مدیا عمدر ق	الما الما الماء ال	Risklip I we might read following to				5 clearance is i so ids		الم عرق (ها ها دي يركم دي أ		اعطان المرف اعطاعي.	رين اليبال عندن وخلف الله المواهدة الم	اعدولا المادية الموادية المادية	ما را و احکرے حقق حیلق خواص عا راہ با الم بچ حکمت حین جاربین علطہا ہے ا ڈاطلفا اردو میں ایک الم	Captain
	Clean	(ي. نعت بعت اوي لازم بحييماننا		مر الله يا كا بن في سيوي		let me check ido su		۲)		مَعِل سائيءَ ، عندك ومنت .				Jiwill ask him was worker	A		مرالله عم سمير!	5 chocks aff 6 foxo		Stand-by to start		2 1					First Officer
											,	(celin Ciar) is per lo					By God, it is getting stronger -						8 8 8				Other (ATC, Public adress, etc)
to, but make one day do not beek any vorten generator - you do it	OK, let them bring us a sweeping brish to wipe them, OV, ask them him.	yes. I mean - I wear yes. They have	dight bein	Some	Yes - go ahead allage	The start let wo show	But, what if there is any is on the win	Xea Xea and when the	ile put the foral time here whom you are	Inchara sejore 1	It is a support the state of th		We will talk to the tower. If it is	OK, I will ask him now	we might need a follow we to take us to the	Xeo		Chief, chocks off?	He wants to get the clearance now!	The state of the s	Whatten? Ha, ha! 8,000	b :	the gave me 8,000	The airport is between mountains. They have good limitation. We willbuy will made out, bye.	yes, but the airport how is between wounted as	Swill not talk to you now. They are coming now on board. I cannot take the increase of we to half no . They have	Remarcs, sounds

tage 2

Fige 3

	25: 20: 20		1159:		107:36	3 5 5 5	: 63:	01:58:12	81:59:03	01:58:55	1 7		45 : 85 : 10		01: 28: 72 0	52: SS: 10	21:85:40.	01:58:52	01: 83:50	01:88:40	01:53:50	82: 25:10	01:57:21	01:57:10	80: 45: 10	40: 57: 10	54: 95:10	CV/ LESS Time St.
		ري ارزمة ملاو عللو	1	ري عموعما وب بيد معومي للرئوي .				١ ديش الوراع جيدا ؟ ١ديش الو؟					اي ١٠ جن ستارت ، طلو ركوسمنج		عن ها در از از ار ورا ما بدورتموم مابرنای				The we able to start?	The state of the s		نز لز ما ميطول		طیعب یللا و بیزین ۶				Captain
	start and we need follow me to		لیکی ء ترزال خور ۱			ار بع رياري، ميك ؟			شو ئدست كلير؟ هولخي الهالم ؟	stand by for start up OKY		your ob-sity standing by for		راع إرجع الملب منو		مراهد. دروة الحرارة مراهد	يا الله كد مدل ملا عَدة إلا بالله	stand by July - 1		بللا بيسوا الركاب	لا بيطول أحجر		بسس ا مدًا بدنا تدارش بعدر بدرنا ال 2 ملق		ملص بهدمه كايتن ادا اجواله الزيز		يللدكلير - إجدامكا ب ؟	First Officer
	A		100 00 1000		معلق کابت یک و بازد در این می ایک این		(calin her) Hi det me help you.				is not clear. Stand by for start up.			10000		- mm ₂ =										(casin in): Ready, Ready, by ready		Other (ATC, Public adress, etc)
v		Yes four, tell him, tell him	dook, total four?	OK. Tell him was need follow the to the runway.	Finish Captain shall I close ? Byp, Henk you.	4 presenges, correct?		How long has he been gothe that one? how long?	What not clear ? Those people?				Yea. Engine start Tell him requesting	I will ask him again	Even this if it sticks we would see we don't want to so	One . The temperature is one		ab. He told me to stand by		ok bring the passengers	no he will take longer	No to to will not be late	Ent of we are going to be further deflyed, we was	ox, les so, where are they?	are twee of fartest it. If the passengers	Ready, ready, I am readly	of ! Chur. Rid the prosengers arrive?	Remarcs, sounds

tage 4

to to ox			8 X 5 7 5 1	02:01:53
		OKY		25:10:25
	OD-SKY toxi to holding point rungy Blowfacewindcolor BNH 1012 HP the cleft 1440	-		02:01:43
		OKY request taxi		02:01:38
	200			02:01:38
on no no . It did not accumulate yet			را عي الدلا الاساما على الموموليين	02:01:33 C
de-icited, no de-icing? no problem?	ر مي اين عادي ايد بي نو مرور الم			02:01:35
Sushallah. If we see the runway we see it			امت الله إذا عفنا لمنوى عفناه إذ اماعهنا هايه	1
you are welcome_			ا جدین. یمک	02:01:24
	(voice from the cobin) Hi Captiein!	#48		er :01: 23
			Start Power OFF	02:01:22
		36 + N		65:01: 18
we will put the flaps on the rumsy.		المفلابس علم نوي بنحطن	10000 000 100 100 100 100 100 100 100 1	02:00:43
			Start we I	02:00:43
Hedid not remove the chocks! Tell him start u. I.			I have start no 1 old on soul politic	·02:00:43 3
Let him take his time!		محمر صلوا ما تمامن!		02:00:41
Did he remove the chocks?			م) ل المرحب ؟	04:00:40
		NO	-	02:00 38
Yes man yes			ر ممرح محمد من ا	82:00:37
Yes, it is set				02:00:31
Yes Yes			ريم ايم	02:00:18
So it is annual 31, ok?		فادن رنواي الا أوكي ؟		02:00:27
	Roger			02:00:25
		We need follow the		02:00:81
	SKY say again			El 1 00 1 70
		2-5		21:00:13
	(ART) 10 Bright Art Art	clear to start 1022 enjecting		02:00:05
	(ATC) 02-SKY start up approved. BNH 1020 HP expect aunual 31			15: 55: 10
Remarcs, sounds	Other (ATC, Public adress, etc)	First Officer	captain	77

Accident of OD-SKY

tage 5

Page 6

		[] .	300	16: 90: 30	t1: 90: 20	31:90: 70	1.1	01:06:03	:06:03	08:06:01	02:05:59	55:50:30	205:	02:05:50	02:05:45	02:05:43 E	85:50:38	15: 50: 20	.02	505	1	200	02:05:05	: 05 ;	20:50:10	02:04:52	CVK TEET Time St.
41						CERT 140			My Contral							Engine anti-ice is on			ميوريدًا بالله! معلى كا ميرا ؟	ای خلص کلرسمی او مرهد					كالملو		Captain
7	71178 7117			Lar 10 nb	(10 HH)	Tale of L	But accorde of was later.	You have control	80 Knot	to Knote	speed alive	start timing		EPS anti- ice of		طبیب هلوی بعط			مهورين		فالهين عجمي لهلا ومي	clear for take off running 31 OKY		OKY ready for departure	, <u>Ł</u>	Ready for departure oxy	First Officer
5	الله يا له		(voice from the cabin) out loute! (A															Now Tork				wer ter care of	1				Other (ATC, Public adress, etc)
) 600	Ch fod! an fod! / OR fod! Of	ch God!	(Auto call) Bank Angle - Sank Angle												,	OK! now we shall fut	Vince	Take our picture please! Do you have a Comer-	Oh finish climb overhead	0	det me erase these			To encery : Les well	4-1-11-000	. The latest properties	Remarks counds

Attachment no. 8 Sulaimaniyah Medical Institute

اقليم كوردستان - العراق مجلس الوزراء وزارة الصحة معهد الطب العدلي/ السليمانية



ههریخمی کوردستان – عینراق نه نجومهنی ومزیران ومزارمتی تهندروستی بهیمانگای یزیشکیی دادیی/ سلیمانیی

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

- On 4th February . 2011 evening an air traffic accident happened in Sulaimany international airport / Kurdistan – Iraq led to death casualties.

At 7th 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 humorous 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**.

faridon@hotmail.com

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 gaveno if anything we will manage but we need to
/01.51.05	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.
/ 01 51 17	CVR only (Aircraft): I will not talk to you now they are coming now on board. I
/ 01 31 1/	(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
/ 01 31 30	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 31 37	(Therate). Standoy to Start Corn 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	
to take us to the runway. (Aircraft): Tell him the door open or close? He doesn't know, shall I tell him you opened the door or closed. (Aircraft): It means before. (Aircraft): We put the local time here, now you are still on Lebanon time right? (Aircraft): We put the local time here, now you are still on Lebanon time right? (Aircraft): We put the local time here, now you are still on Lebanon time right? (Aircraft): Hopefully there is no ice on the wings man (Aircraft): Hopefully there is no ice on the wings man (Aircraft): Yes go ahead please (Aircraft): Yes go ahead please (Aircraft): Is it light? (Aircraft): OK let them bring us a sweeping brush to wipe them, OK, ask him. (Alircraft): OK let them bring us a sweeping brush to wipe them, OK, ask him. (Alircraft): Aircraft): Clear (Aircraft): Aircraft): Aircraft): Aircraft: Aircraft): Aircraft: Aircraft): Aircraft: Aircraft): Aircraft: Aircraft: Aircraft: Aircraft): Aircraft: Ai	/ 01 52 46	
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		± .
	/ 01 54 15	
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OK	11.10.101.70.10	
	14 42 / 01 58 48	1 · · · · · · · · · · · · · · · · · · ·
14 43 / 01 58 55 (Aircraft): Standby for start up OK	11101015555	
	14 43 / 01 58 55	(Aircraft): Standby for start up OK

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/ 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
/ 02 04 24	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,
14 44 / 02 01 52	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 02 33	` '
/ 02 03 07	(Aircraft): OK, take-off standard (flox) 44 if we have any problem we will
/ 02 02 12	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 initially13000 ft then contact Kirkuk
	approach sqwak 5315
14 47 / 02 03 39	(Aircraft): Clear to destination via flight plan route Kirkuk one departure
	climb initially 13000 ft sqwak 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 IS ON (Aircraft): Engine anti-ice ON, GPS ON
/ 02 05 43	(Aircraft): EPR armed
/ 02 05 54	(Aircraft): Start timing
/ 02 05 55	(Aircraft): Start tilling (Aircraft): Speed alive
/ 02 05 59	(Aircraft): 3peed anve
/ 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 startup. 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 tookoff 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 takeoff 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.