



# Runway Excursion Accident Data 2004-2008

PART 1: 2004 Data



# Purpose

- This series of presentations is designed to provide a summary of air carrier runway excursion accidents during 2004-2008. These presentations are provided only for the purpose of education, and to reduce the possibility of future accidents.
- Data in this presentation was extracted from annual IATA accident reports and updated with published information from the corresponding investigation (when available). Conclusions regarding the cause of each accident should not be drawn from this presentation, and the appropriate investigative authority's official report should be accessed for that purpose.
- Significant risk factors in each accident have been highlighted

Note: Many of these accident investigations are still open, and findings are therefore subject to change. It is recommended that users refer to the appropriate investigative authority for the most current information



# DEFINITION of Runway Excursion

- When an aircraft on the runway surface departs the end or the side of the runway surface
  
- Runway Excursions can occur on takeoff or landing. They consist of two types of events:
  - Veer Off: A runway excursion in which an aircraft departs the side of a runway
  - Overrun: A runway excursion in which an aircraft departs the end of a runway



# EFFECT of Runway Excursion

- Death or injury to persons on board the aircraft and/or damage to the aircraft
  
- Death or injury to persons not on the aircraft and/or damage to airfield or off-airfield installations including other aircraft
  
- Airfield closure due to blocked runway and/or damaged airfield installations



# ACCIDENTS of Runway Excursions

- All accidents which involved a runway excursion
  
- Analysis based on IATA annual accident report database
  
- This presentation has been updated to be consistent with the 2009 accident classification system.
  - Therefore the analysis may differ from other publications



# OVERVIEW of Runway Excursions

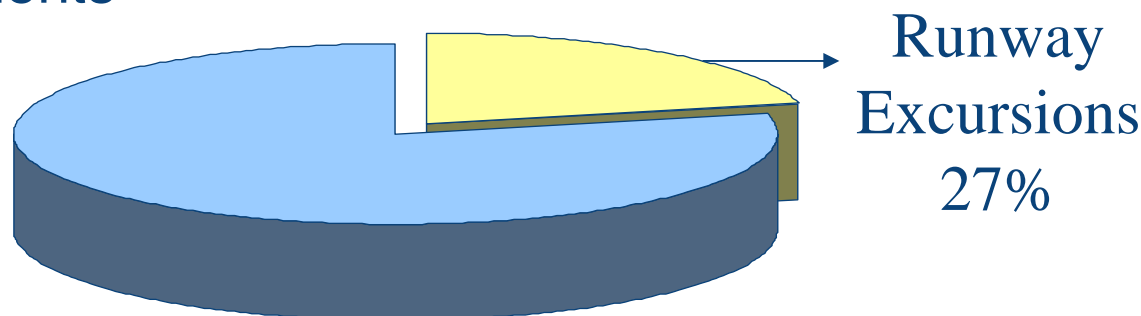
- Data analysis from 2004 – 2008
- Runway excursions only
- Accident analysis include:
  - Hull loss
  - Substantial Damage
  - Turbojet
  - Turboprop
  - Western-built aircraft
  - Eastern-built aircraft

# 2004-2008 Accidents

- Total Accidents: 501
- Total Runway Excursions: 136

## Runway Excursions were responsible for:

- 27% of all accidents
- 463 fatalities

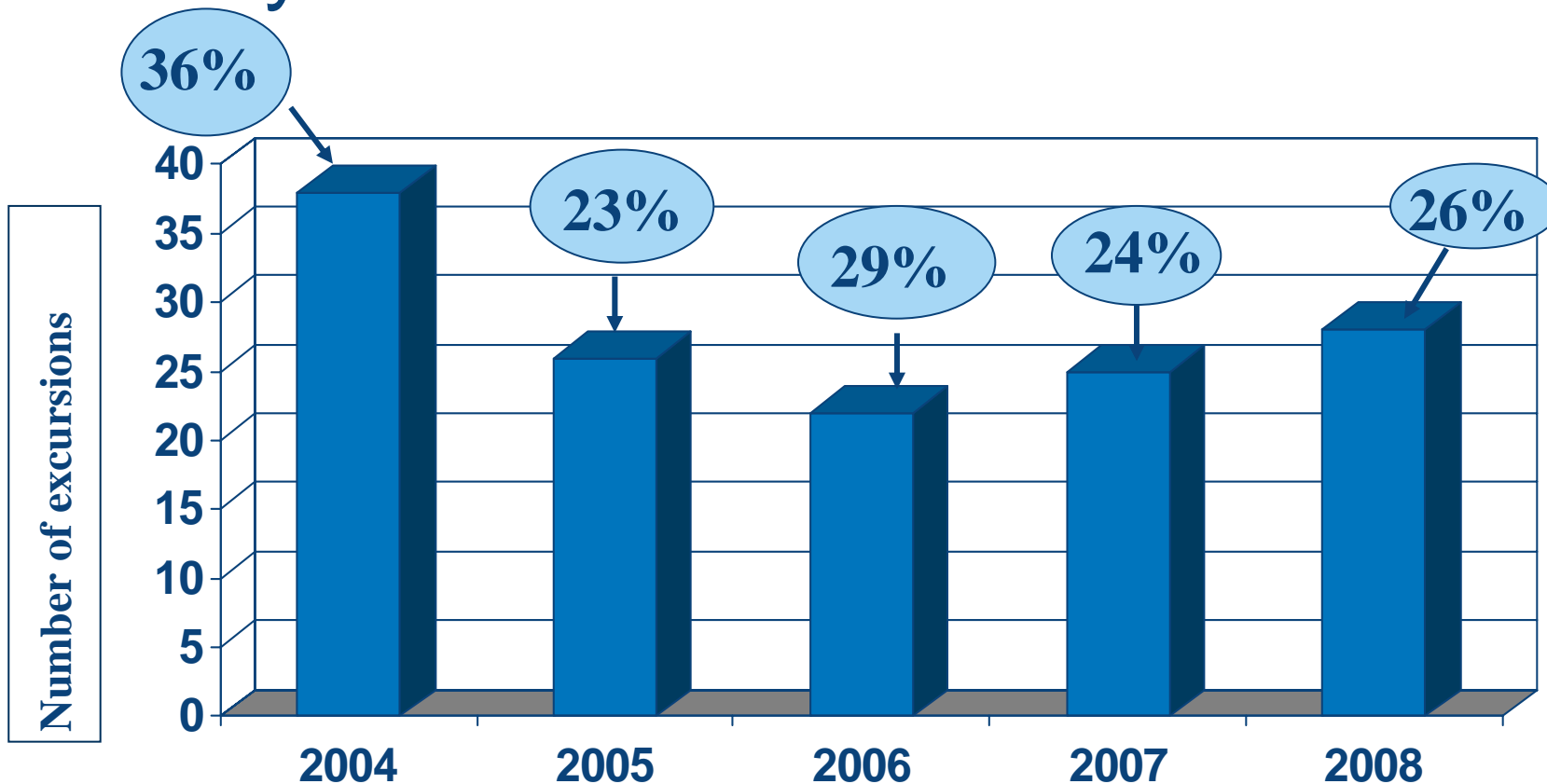


# Threat Identification

- The Runway Excursion Risk Reduction toolkit contains a “Risk Awareness Tool”. Flight crews should routinely evaluate the effects of all existing risks and take action to mitigate these risks.
- The risk of a runway incursion increases as the severity and number of existing risks increase. These risks include:
  - Contaminated runways
  - Strong crosswinds or tailwinds
  - Unstabilized approach
  - Darkness or reduced visibility
  - Heavy rain, thunderstorms or windshear conditions
- Conclusion:
  - Runway excursion risk can be reduced if flight crews are aware of these risks and take appropriate actions.



# Runway Excursions 2004 - 2008



The % is relative to the total number of accidents during that year

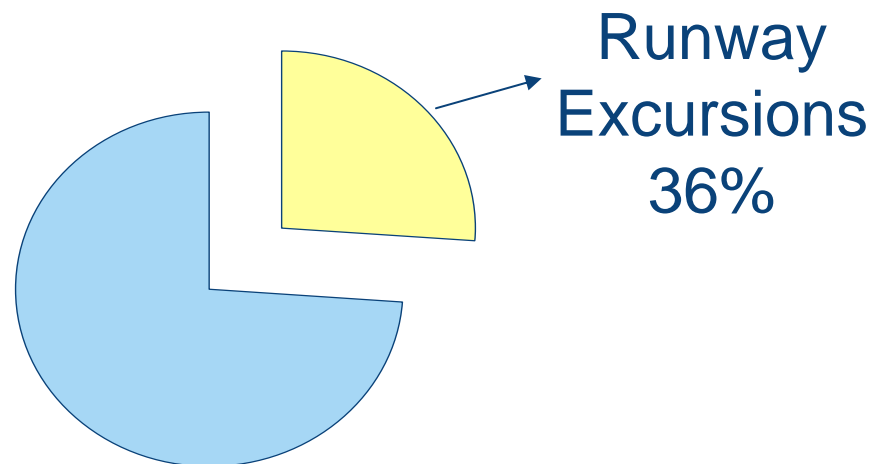


# 2004 Accidents

➤ [List of 2004 Accidents](#) 

# 2004 Accidents

- 37 of the 104 accidents involved a Runway Excursion
- 22 Hull losses
- 15 Substantial Damage
- 39 Fatalities





# Accident at Sturt Island Apt

## 5 January 2004

During the daylight take-off roll in normal weather on Runway 14, the DHC-6 Twin Otter was accelerating through about 60kt when the flight crew steered towards the left in order to avoid an **area of standing water**. **Directional control** was lost and the aircraft ran off the left side of the runway. The Runway was 2535 ft (780m) long and has a 'grassed red clay' surface.

**Hull Loss - 100%. No Fatalities**



# Accident at Mulia Apt (WABQ )

## 19 January 2004

While on approach to the airstrip in daylight and in clear weather, the DHC-6 Twin Otter was caught by a **strong down draft** and its rate of descent increased markedly. The flight crew applied full power but were unable to fully recover the situation and the aircraft **touched down hard**, nose wheel first. The aircraft veered to the right, ground looped and eventually came to rest in a ditch at the side of the airstrip. The airstrip is in the mountains at an elevation of 5,500ft and has a short 'one way' asphalt runway sloping upwards in the direction of landing.

**Substantial Damage – 39%. No Fatalities**



# Accident at Cubango Apt

## 24 February 2004

During take-off roll in daylight and in fine weather, the flight crew heard a 'strange noise' from the area of the nose undercarriage DHC-6 Twin Otter began to veer to the right. The airstrip is about 195 ft (60m) wide and has a line of trees down its right side. The take-off was continued but, just after getting airborne, the right wing struck a tree at the side of the airstrip. Control was maintained and the aircraft climbed away. After evaluating the situation, the flight crew elected to continue the flight to their destination where a safe landing was made.

**Substantial Damage – 12%. No Fatalities**



# Accident at Edmonton Int'l Apt (CYEG)

## 25 February 2004

The runway visual range (RVR) provided to the flight crew prior to commencing the approach to Runway 12 was 1200 RVR, with a runway light setting of 5. The flight crew flew the instrument landing system approach in darkness and touched down on the infield to the left of the runway surface. The B737-210C traveled approximately 1600 ft (490m) before returning to the runway. One runway light, four taxiway lights, and one hold sign were struck by the aircraft.

Substantial Damage – 35%. No Fatalities



# Accident at Johannesburg Int'l Apt (FAJS)

## 25 February 2004

On landing Runway 03R **in darkness**, just before touchdown, B737-800 entered an area of **heavy rain** and the crew **lost visual reference with the runway**. The aircraft **yawed to the right and touched down partway off the runway**. The flight crew brought it back onto the runway centreline and, after completing the landing roll, stopped on a taxiway to allow an inspection to be carried out.

**Substantial Damage – 12%. No Fatalities**





# Accident at Baku Apt (UBBB)

4 March 2004

Some eleven minutes after takeoff, while climbing through an altitude of 9700 ft (3000m), the number 3 engine of the Il-76 suffered an uncontained failure. Debris destroyed the engine casing, damaged the number 4 engine as well as the fuselage. A runway excursion occurred during landing following a **loss of directional control**.

Hull Loss – 100%. 3 Fatalities



# Accident at Manhattan Regional Apt (KMHK) 15 March 2004

The Beech 1900D veered off the runway on landing Runway 03 in daylight and in VMC. The **nose undercarriage failed** and collapsed when the flight crew attempted to taxi back onto the hard surface.

**Substantial Damage. No Fatalities**



# Accident at Cairo Int'l Apt (HECA)

2 April 2004

On take-off **in darkness** from Runway 23L, as B707-320C accelerated through about 80kt, it was caught by a **strong gust of wind** and veered towards the left. Directional control was regained and the aircraft brought back onto the centre line. However, a few seconds later a **'cracking' noise was heard** and it began to settle on the right. The take-off was aborted. Meanwhile, the right main undercarriage had begun to collapse and the right wing struck the ground. The aircraft veered to the right and came to rest part way off the runway about 6,500ft (2,000m) from the threshold.

Hull Loss – 100%. No Fatalities



# Accident at Johannesburg Int'l Apt (FAJS)

## 9 April 2004

On take off, the A340-310 took so long to get airborne that it overran runway 21R by about 150m past the end of the runway. The aircraft struck lighting, causing damage to the aircraft, but returned immediately and landed safely. However, at a speed of 70kt (130km/h) the **brakes failed**. It came to a halt just before the runway end.

**Substantial Damage – 16%. No Fatalities**



# Accident at Moscow Sheremetyevo Apt (UUEE)

## 27 April 2004

During the take-off roll in daylight and in clear weather, the B737-500 began to veer to the left side of runway 07L. **Directional control** was not regained and the aircraft ran off the side of the runway at a point about 650 ft (200m) from the start of the abort. After leaving the runway, its nose undercarriage failed and collapsed rearwards.

**Substantial Damage – 49%. No Fatalities**



# Accident at Bogotá Eldorado Apt (SKBO)

## 28 April 2004

The DC-10-30F hit a **pot hole** on landing Runway 13L **in darkness**. The aircraft overran the runway, striking ILS localizer equipment. The left hand horizontal stabilizer was almost completely sheared off, as was the undercarriage. The aircraft came to rest in a field.

Hull Loss – 100%. No Fatalities



# Accident at Gaziantep Apt (LTAJ)

## 29 April 2004

B737-800 overran on landing in daylight but in 'poor weather'. The aircraft ran beyond the end of the runway coming to rest 160-200 ft (50 - 60 m) further on soft ground. The runway was 9,100ft (2,800m) long and was wet at the time of the accident.

Substantial Damage – 39%. No Fatalities



# Accident at Luis Munoz Marin Int'l Apt (TJSJ) 9 May 2004

The ATR-72-210 made a **hard landing** due to **strong crosswinds**. One of the **tires blew** and the aircraft hit the runway with its wing and skidded off.

**Hull Loss – 100%. No Fatalities**





# Accident at Kigali Int'l Apt (HRYS )

1 June 2004

The AN-32 suffered **some problems with the left main undercarriage** after takeoff, the flight crew heard a 'loud bang' and subsequent visual inspection revealed that the **right undercarriage bogie had fallen away**. Meanwhile, the cabin would not pressurize and there was a **loss of hydraulic pressure**. The flight crew elected to divert to Kigali and, after using up fuel, made an **emergency landing on an unpaved runway**. During the landing roll the stub of the right main undercarriage dug in and the aircraft veered off the side of the runway. It continued across a ditch and collided with a number of baggage carts on the ramp.

Hull Loss – 100%. No Fatalities



# Accident at Geneina Apt (HSCN )

7 June 2004

The flight crew carried out a straight in approach to Runway 22. However, on landing, An-26 floated and **did not touchdown until about 3,200 ft (1,000m)** beyond the runway threshold. The aircraft then overran the end of the runway and onto rough ground. It crossed an unpaved road and a number of ditches before eventually coming to rest some 650-800ft (200 to 250m) beyond the end of the runway.

**Hull Loss – 100%. No Fatalities**



# Accident at Chitral Apt (OPCH )

16 June 2004

On landing in daylight and in 'good' weather, the F27-200 aircraft **skidded off** and was not stopped before the end of the runway and overran. The Runway was 5,800ft (1780m) long and had an asphalt surface.

**Hull Loss – 100%. No Fatalities**



# Accident at Khartoum Apt (HSSS)

17 June 2004

Following a 'straight in' **non-precision approach in darkness** to Runway 18, the A300 **landed long**, not touching down until almost halfway along the runway. It was then not stopped before the end of the runway and overran by about 650ft (200m), through the approach lights and onto rough ground. The Runway was 9,700ft (2,980m) long and has an asphalt surface. The runway was dry.

Substantial Damage – 16%. No Fatalities



# Accident at Wau Apt (HSWW)

26 June 2004

During the take-off roll in daylight and in good weather on Runway 26, just after Vr, a flock of birds flew across the path of the aircraft and, a number was ingested into the No.1 and 2 engines. Both engines then lost power. The An-12 aircraft yawed to the left, directional control was not regained and it veered off the side of the runway. The aircraft came to rest outside the airfield boundary, some 650ft (200m) from the runway, where a post-crash fire, destroyed it.

Hull Loss – 100%. No Fatalities



# Accident at ET Joshua Airport (TVSV)

30 June 2004

**Directional control** was lost during the take-off roll. The DHC-6 Twin Otter aircraft subsequently veered off the runway, ran through a fence and eventually came to rest in a storm drain.

**Substantial Damage – 75%. No Fatalities**



# Accident at near Tsichu River

## 4 July 2004

On take-off from 222 airstrip in daylight and VMC, immediately after getting airborne, the DHC-6 Twin Otter was caught by a **strong gust of wind** from the right and settled back onto the strip. Its left main wheel then contacted willows, which had overgrown the edge of the strip, and it lost speed. The aircraft failed to get airborne again, overran the end of the strip and came to rest in a shallow creek. The airstrip was 1,500ft (460m) long and had a gravel surface.

Hull Loss – 100%. No Fatalities



# Accident at Mexico City Int'l Apt (MMMMX)

## 21 July 2004

On take-off from Runway 05, the DC9-14 aircraft encountered **wind shear** just after rotation and was 'forced' back onto the runway. **Control was not regained** and it ran off the side of the runway. The accident happened in daylight but in **'severe' weather with very heavy rain.**

Hull Loss – 100%. No Fatalities





# Accident at Istanbul Ataturk Int'l Apt (LTBA)

## 25 July 2004

The **left main undercarriage collapsed** after landing in **darkness** on runway 06/24, causing the F-100 to skid off the runway into a field.

**Substantial Damage – 59%. No Fatalities**



# Accident at Ua Pou Apt (NTMP)

## 26 July 2004

Following a normal visual approach and touchdown on Runway 14 in daylight and in fine weather, and after nose wheel contact, the DHC-6 Twin Otter began to veer to the right. **Directional control** was not regained and it ran off the side of the runway. The runway was 2,723ft (840m) long and had an asphalt surface with a variable slope. Because of high ground in the vicinity, the runway can be effected by variable cross winds.

**Substantial Damage – 33%. No Fatalities**



# Accident at near Freetown Lungi Int'l Apt (GFLL) 11 August 2004

During the daylight take-off run in 'fair' weather and light winds on runway 12, on rotation the flight crew 'sensed a loss of power' and the B737-2R6B veered off the left side of the runway. The flight crew applied full power and the aircraft briefly became airborne before settling back. The right main undercarriage failed and the right engine struck the ground and was torn away. The aircraft veered to the right and eventually came to rest on the stop way beyond the departure end of the runway. The Runway was 10,400ft (3200m) long and 46m wide.

Hull Loss – 100%. No Fatalities



# Accident at Gisenyi Apt (HRYG)

## 28 August 2004

When the Flight crew experienced "technical problems" on approach to Goma, an emergency landing was carried out at nearby Gisenyi Airport. Upon landing the SE-210 Caravelle 11R aircraft veered off the runway and caught fire close to the control tower building.

**Hull Loss – 100%. No Fatalities**



# Accident at Khwaja Rawash Apt (OAKB)

## 16 September 2004

The airplane returned to Kabul after **one of the engines failed**. The AN-26 overran the runway by over 650ft (200m) in **unfavorable meteorological conditions**. The accident happened in daylight but in **poor weather with reduced visibility in blowing sand and strong, gusting winds**.

**Hull Loss – 100%. No Fatalities**



## Accident at Le Ronge Barber Field Apt (CYVC) 21 September 2004

The Metro III aircraft's left main undercarriage collapsed after touchdown in daylight. The aircraft subsequently veered to the left and ran off the side of the runway. It eventually came to rest about 250ft (80m) from the side of the runway.

**Hull Loss – 100%. No Fatalities**



# Accident at Douala Apt (FKKD)

01 October 2004

The Emb-110 lost **directional control** on takeoff in daylight and in 'normal' weather, when the **number 1 engine failed**. It suddenly yawed to the left at a late stage in the take-off run. **Directional control** was not regained and it ran off the side of the runway.

Hull Loss – 100%. No Fatalities



# Accident at Sylhet Osmani Int'l Apt (VGSY)

## 08 October 2004

F-28 landed 'long and fast' in daylight but in poor weather with reduced visibility in heavy rain and was not stopped before the end of the runway. It subsequently overran by about 100ft and fell into a drainage canal. The Runway was 9,000ft (2,770m) long and has a part concrete, part asphalt surface.

Hull Loss – 100%. No Fatalities





# Accident at Halifax Int'l Apt (CYHZ)

14 October 2004

The B747-200SF crashed shortly after takeoff **in darkness** from Runway 06. It **failed to lift-off** after rotation and its tail struck the runway about 820ft (250m) before end of runway. The aircraft's nose was then lowered briefly before pitching up again and the tail struck the runway for a second time. The aircraft overran the end of the runway with its tail still in contact with the ground. It may then have briefly become airborne but its tail struck an earth mound 985ft (300m) beyond the end of the runway and broke away. The aircraft continued into a wooded area where it eventually came to rest. The aircraft was destroyed by impact and post impact fire.

**Hull Loss –100%. 7 Fatalities**



# Accident at Taipei Sungshan Apt (RCSS)

## 18 October 2004

The A320 overran on landing **in darkness**. Weather; Wind 010deg/4kt. and visibility 2.4 nm (4.500km) in **light rain**. The aircraft overran on landing and its nose undercarriage fell into a ditch.

Substantial Damage –20%. No Fatalities



# Accident at Kota Kinabalu Int'l Apt (WBKK)

## 7 November 2004

During the landing roll on Runway 20 in daylight but in 'bad' weather with heavy rain, directional control was lost and B737-300 ran off the left side of the runway. At some point the aircraft's nose undercarriage failed and collapsed. The Runway was 9800ft (3000m) long and had an asphalt surface.

Substantial Damage –65%. No Fatalities



# Accident at Sharjah Int'l Apt (OMSJ)

## 7 November 2004

On take-off roll in daylight and normal weather on Runway 12, as the B747-230F approached V1, there was a 'loud bang' and ATC subsequently advised the flight that they had seen smoke coming from beneath the aircraft. The flight crew elected to abort the take-off and applied maximum braking and reverse thrust but did not stop the aircraft before the end of the runway. The flight crew decided to steer off the runway to one side to avoid hitting the approach lights. It subsequently ran down a slight slope into an area of soft sand where its nose undercarriage dug in and was torn away. It eventually came to rest at a position out 650 (200m) from the runway. The runway was 13,200ft (4,060m) long and had an asphalt/concrete surface.

**Hull Loss – 100%. No Fatalities**



# Accident at Caracas Simon Bolivar Apt (SVMI) 18 November 2004

On landing in daylight but **in poor weather associated with local thunderstorm activity** on Runway 09, the Jetstream 31 aircraft veered to the right and ran off the side of the runway. It subsequently collided with the airport fire station and was destroyed.

Hull Loss – 100%. 4 Fatalities



# Accident at Barcelona Apt (LEBL)

28 November 2004

The B737-400 suffered a **bird strike** during take off, causing damage to the nose wheel steering. The gear was retracted normally and there was no abnormal indication in the cockpit. The flight crew reported the impact to the ATC and the flight continued normally to LEBL. The aircraft touched down on runway 25R in **darkness**. After touchdown of the nose landing gear, the aircraft started deviating to the left of the runway centreline. The veering to the left continued and the aircraft left the paved surface of the runway and went through an area of soft sand where some construction works were being carried out.

Hull Loss – 100%. No Fatalities



## Accident at Solo Adi Sumarmo Wiryokusumo Apt (WRSQ) 30 November 2004

On landing Runway 26 **in darkness and heavy rain**, the MD-82 **landed long**, not touching down until about halfway along the runway, and then **bounced** before touching down again. The aircraft overran the end of the runway 'at high speed', crossed a road and then struck a concrete support for the ILS system. The Runway was 8,530ft (2,600m) long and had an asphalt surface.

**Hull Loss – 100%. 25 Fatalities**



# Accident at Oshawa Airport (CYOO)

16 December 2004

The Shorts 360 overran on landing Runway 30 **in darkness and in poor weather**. During the landing roll, the flight crew noted **poor braking action** and observed the runway end lights approaching. He rejected the landing and conducted a go-around procedure. The aircraft became airborne, but it started to descend as it flew over lower terrain, striking an airport boundary fence. It continued until it struck rising terrain and then a line of forestation, where it came to an abrupt stop. The runway was **snow covered** and was 4,000ft (1,230m) long.

**Substantial Damage. No Fatalities**





This concludes Part One  
and 2004 accidents—  
Part Two continues with  
2005-2006 accidents