Air Transport News

2013 SAFETY

An Exceptional Year in Global Aviation Safety

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QUOTES

«I am very happy that 2012 was such a good year in terms of accidents, although safety is not just the absence of accidents. With the leadership of ICAO we all work together and safety is one thing that we can all agree on. Industry works together at various levels; we provide a lot of training materials and a lot of training to improve safety performance. However, safety is a continuous improvement. It's never done.»

ANGELA GITTENS, DIRECTOR GENERAL, ACI

«Safety is definitely the number one priority for ANSPs as much as it is for the rest of the Aviation community. The ANSPs at CANSO are always playing a major role on that with their excellence programmes. We will continue to further improve safety.»

JEFF POOLE, DIRECTOR GENERAL, CANSO

«We are very proud that 2012 was the safest year on records but that swipes the challenges on keeping 2013 the same or even better safety year. Our IOSA carrier's hull loss rate was zero and it can't be any better. For IOSA carriers I am expecting 2013 rate to be zero again.»

GUNTHER MATSCHNIGG, SVP SAFETY, OPERATIONS AND INFRASTRUCTURE, IATA

«The year 2012 was the safest year on records. We are definitely on the roll and numbers are really down mainly due the partnerships formed in order to improve safety. We have to work together and we have to work on priorities.»

NANCY GRAHAM, DIRECTOR AIR NAVIGATION BUREAU, ICAO

Safety Survey 2013

An exceptional year in global Aviation Safety

OVERVIEW

The following report presents a global Aviation Safety Analysis for calendar year 2012[1]. However, according to Flight Safety Foundation (FSF) and Aviation Safety Network (ASN) database, during 2012 a total of 105 multi-engine civil airlines accidents (fatal and non fatal) and occurrences were recorded. Over the year 2012 the ASN recorded a total of 23 fatal airliner accidents, resulting in 475 fatalities and 36 ground fatalities. The following Table 1 presents the 23 airliner's fatal accidents breakdown with some additional IATA general remarks:

Year 2012: A fatal hull loss multi engine civil airlines accident's breakdown and additional remarks		
Fatal accidents according to flight phase	**Fatal accidents according to flight nature**	**Additional IATA General Remarks**
1 Take off	9 Scheduled passenger	The year 2012 was the third year in a row with record global performance.
5 Initial Climb	5 Non scheduled passenger	IATA/IOSA members/carriers had no hull loss accidents on Western-built jets.
3 Enroute	7 Cargo	Global safety performance is at the best ever level recorded, 0.19 Western-built jets per million flights, which is 54% better than the same time last year
10 Approach	2 Ferry/Positioning	15% of all accidents were fatal versus 26% last year
Worst fatal hull loss accident for 2012		
The worst fatal accident for 2012 occurred on 3rd June. A Boeing MD-83, a domestic scheduled commercial flight originated at Abuja (ABV), operated by Dana Airlines Limited as flight 992 (DAN 992), crashed into a densely populated area during a forced landing following a total loss of power in both engines while on approach to Murtala Muhammed Airport (LOS), Lagos, Nigeria. Visual meteorological conditions prevailed at the time and the airplane was on an instrument flight plan. All of the 153 persons aboard the airplane, including the 6 crew members were fatally injured. There were 10 confirmed ground fatalities. The cockpit voice recorder (CVR) retained about 31 minutes of the flight at which time the captain and first officer were in a discussion of a non-normal condition regarding the correlation between the engine throttle setting and an engine power indication. However, they did not voice concerns then that the condition would affect the continuation of the flight.		

Table 1: Year 2012 accident's breakdown and additional remarks.

1. *Military accidents, corporate jet accidents, hijackings (and/or other criminal occurrences) are not included in the retrieved data..*

Compared to the ten years worldwide average 2002 – 2011 (i.e. years average 30 fatal accidents / 758 fatalities), in year 2012 there has been a further improvement for aviation safety (i.e. years average 29 fatal accidents / 730 fatalities). The following chapters I, II and III presents a more detailed statistical analysis of the year 2012 mirrored with last decade's fatal accidents/occurrences, while chapter IV adds an IATA's fruitful perspective.

I. STATISTICAL INFORMATION REGARDING THE GLOBAL AVIATION SAFETY DATA

a. Overall Data for years 2002-2012

The following table and charts presents useful statistical information regarding the global aviation safety. The overall data of worldwide fatal airliner hull-loss accidents and fatalities per year (2002-2012) are presented in Table 2. The data does not include corporate jet and military transport accidents.

Fatal Airliner Hull – Loss accidents and fatalities per year (2002-2012)											
Year	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
Fatal Hull Loss	37	27	28	36	27	26	32	30	29	28	**23**
Fatalities	1101	684	431	1062	889	750	577	757	831	507	**475**

Table 2: Worldwide Fatal Airliner Hull –loss accidents and fatalities per year (2002-2012).

b. Run Charts for years 2002-2012

The run charts in the following figures 1 and 2 respectively illustrate the airliner fatal hull loss accidents and fatalities for the years 2002-2012.

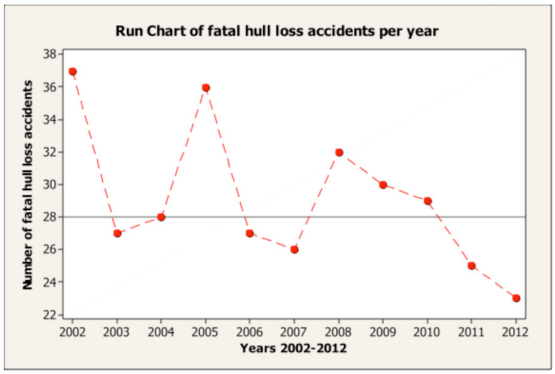

Figure 1: Airliner Hull Loss Accidents.

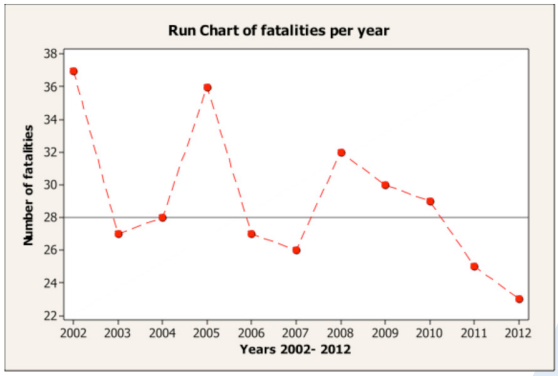

Figure 2: Airliner Fatalities.

c. Moving Average Charts for years 2002-2012

The next moving average charts illustrate that, the worldwide airliner fatal hull loss accidents and fatalities for years 2012 are distantly below to the moving average of 29.09 accidents and 730 fatalities for the years 2002-2012, as shown in figures 3 and 4 respectively.

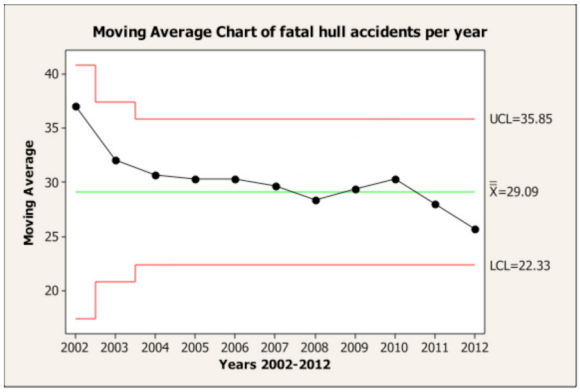

Figure 3: Airliner Hull Loss Accidents Average.

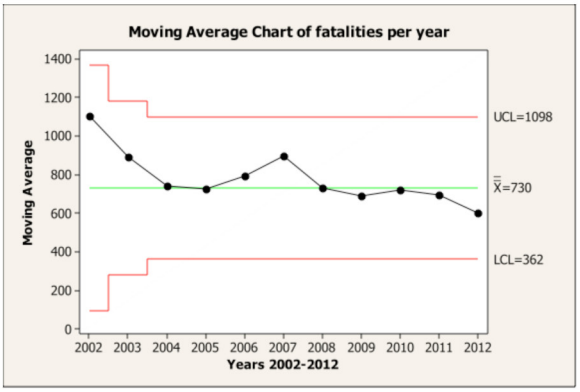

Figure 4: Airliner Fatalities Average.

d. Trend Analysis Plots for years 2002-2012

The following trend analysis plots in figures 5 and 6 illustrate correspondingly a continuing declined slope for worldwide airliner fatal hull loss accidents and fatalities for the years 2002-2012.

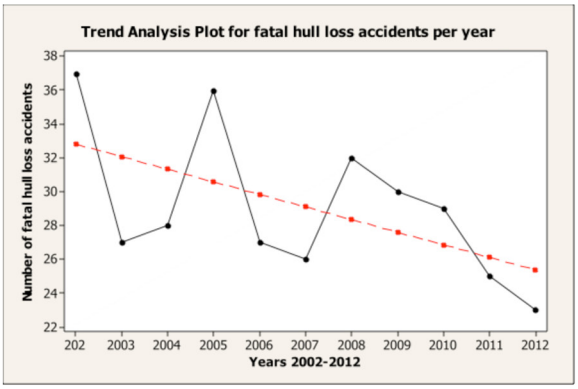

Figure 5: Trend Analysis - Hull Loss Accidents.

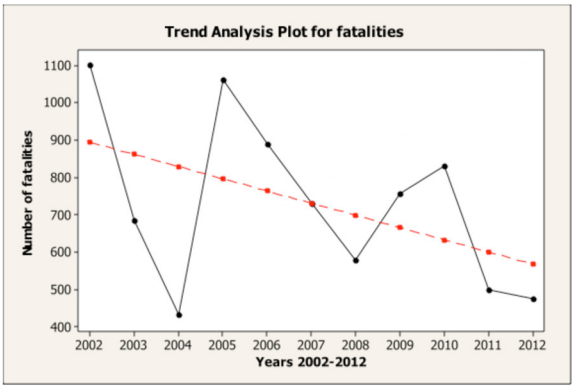

Figure 6: Trend Analysis - Fatalities.

II. STATISTICAL INFORMATION ON GLOBAL AVIATION SAFETY ACCORDING TO FLIGHT PHASE

a. Statistical Information regarding the Take Off flight phase

i. Overall Data / Take Off

The following table and plots presents useful statistical information regarding the Take off flight phase. The overall data of worldwide fatal airliner hull-loss accidents and fatalities at Take off flight phase per year (2002-2012) are presented in Table 3. The data does not include corporate jet and military transport accidents.

Fatal Airliner Hull –loss accidents and fatalities per year (2002-2012), regarding the Take Off flight phase											
Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2011
Fatal Hull Loss	2	3	2	1	1	1	4	3	0	0	1
Fatalities	17	165	13	7	49	1	162	9	0	0	4

Table 3: Worldwide Fatal Hull – loss accidents/fatalities regarding the take off phase (2002-2012).

ii. Trend Analysis Plots / Take Off

Besides, the next figures 7 and 8 illustrate respectively the trend analysis and down warded plots of worldwide airliner fatal hull loss accidents and fatalities regarding the Take Off flight phase, for years 2002-2012.

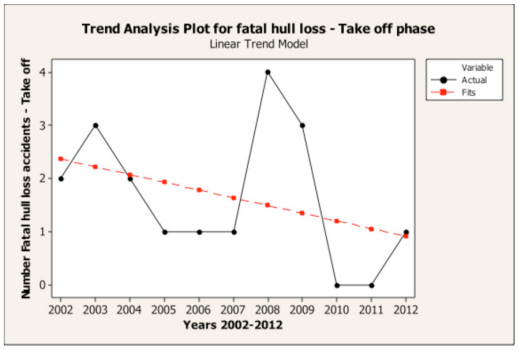

Figure 7: Fatal Hull Loss Accidents – Take Off.

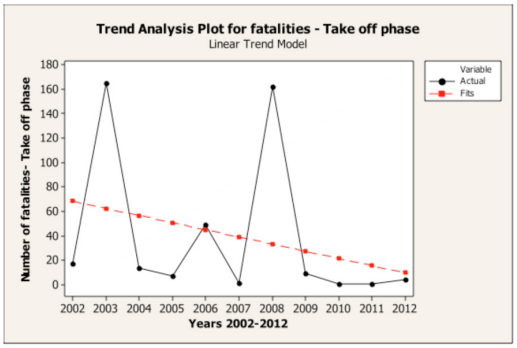

Figure 8: Fatalities – Take Off.

b. Statistical Information regarding the Initial Climb flight phase

i. Overall Data / Initial Climb

The following table and plots presents useful statistical information regarding the Initial Climb flight phase. The overall data of worldwide fatal airliner hull-loss accidents and fatalities at Initial Climb flight phase per year (2002-2012) are presented in Table 4. The data does not include corporate jet and military transport accidents.

Fatal Airliner Hull – loss accidents and fatalities per year (2002-2012)											
Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2011
Fatal Hull Loss	0	4	2	6	3	4	2	6	5	2	5
Fatalities	0	108	56	143	147	45	8	35	123	60	56

Table 4: Worldwide Fatal Hull – Loss accidents / fatalities regarding the initial climb phase (2002-2012).

ii. Trend Analysis Plots / Initial Climb

Besides, the next figures 9 and 10 illustrate respectively the trend analysis plots of worldwide airliner fatal hull loss accidents and fatalities regarding the Initial Climb flight phase, for years 2002-2012.

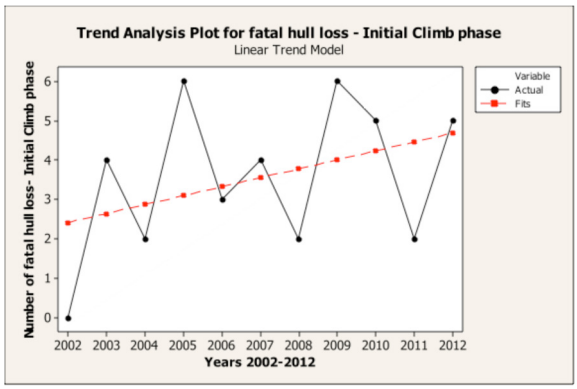

Figure 9: Fatal Hull Loss Accidents – Initial Climb.

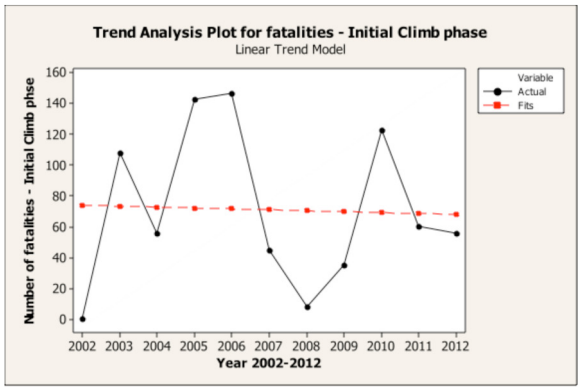

Figure 10: Fatalities – Initial Climb.

c. Statistical Information regarding the Enroute flight phase

i. Overall Data / Enroute

The following table and plots presents useful statistical information regarding the Enroute flight phase. The overall data of worldwide fatal airliner hull-loss accidents and fatalities at Initial Climb flight phase per year (2002-2012) are presented in Table 5. The data does not include corporate jet and military transport accidents.

Fatal Airliner Hull –loss accidents and fatalities per year (2002-2012), Regarding the Enroute flight phase											
Year	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
Fatal Hull Loss	14	9	8	14	14	11	12	8	10	11	**3**
Fatalities	484	62	185	678	397	283	135	461	171	99	**51**

Table 5: Worldwide Fatal Hull – Loss accidents / fatalities regarding the enroute phase (2002-2012).

ii. Trend Analysis / Enroute

Besides, the next figures 11 and 12 illustrate respectively the trend analysis plots of worldwide airliner fatal hull loss accidents and fatalities regarding the Enroute flight phase, for years 2002-2012.

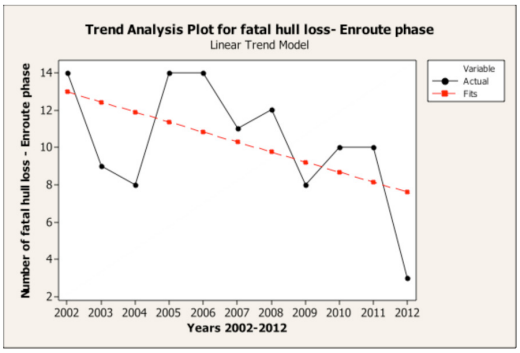

Figure 11: Fatal Hull Loss Accidents – Enroute.

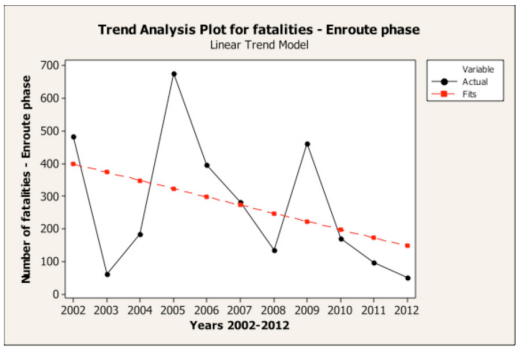

Figure 12: Fatalities – Enroute.

d. Statistical Information regarding the Approach flight phase

i. Overall Data / Approach

The following table and plots presents useful statistical information regarding the Approach flight phase. The overall data of worldwide fatal airliner hull-loss accidents and fatalities at Approach flight phase per year (2002-2012) are presented in Table 6. The data does not include corporate jet and military transport accidents.

Fatal Airliner Hull –loss accidents and fatalities per year (2002-2012), regarding the Approach flight phase											
Year	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
Fatal Hull Loss	17	9	10	8	3	3	10	7	9	11	**10**
Fatalities	589	336	106	114	136	103	208	222	317	230	**356**

Table 6: Worldwide Fatal Hull – Loss accidents / fatalities regarding the approach phase (2002-2012).

ii. Trend Analysis Plots – Approach

Besides, the next figures 13 and 14 illustrate respectively the trend analysis plots of worldwide airliner fatal hull loss accidents and fatalities regarding the Approach flight phase, for years 2002-2012.

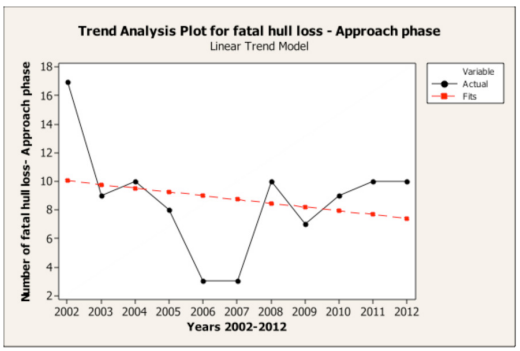

Figure 13: Fatal Hull Loss Accidents – Approach.

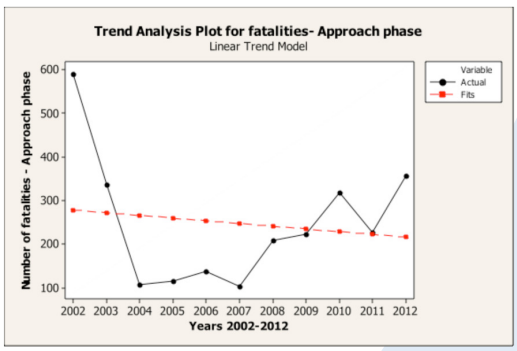

Figure 14: Fatalities – Approach.

e. Statistical Information regarding the Landing flight phase

i. Overall Data / Landing

The following table and plots presents useful statistical information regarding the Landing flight phase. The overall data of worldwide fatal airliner hull-loss accidents and fatalities at landing flight phase per year (2002-2012) are presented in Table 7. The data does not include corporate jet and military transport accidents.

Fatal Airliner Hull –loss accidents and fatalities per year (2002-2012), regarding the Landing flight phase											
Year	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
Fatal Hull Loss	2	0	3	4	5	7	4	4	5	4	**4**
Fatalities	6	0	66	114	160	318	64	28	210	118	**8**

Table 7: Worldwide Fatal Hull – Loss accidents / fatalities regarding the landing phase (2002-2012).

ii. Trend Analysis Plots / Landing

Besides, the next figures 15 and 16 illustrate respectively the trend analysis plots of worldwide airliner fatal hull loss accidents and fatalities regarding the Landing flight phase, for years 2002-2012.

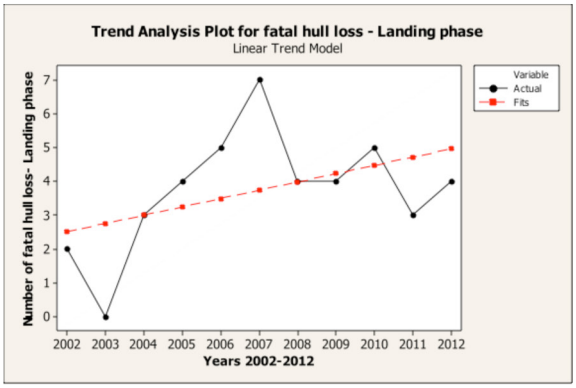

Figure 15: Fatal Hull Loss Accidents – Landing.

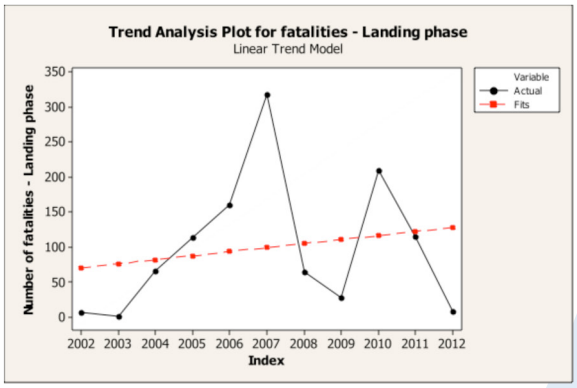

Figure 16: Fatalities – Landing.

III. STATISTICAL INFORMATION ON GLOBAL AVIATION SAFETY ACCORDING TO FLIGHT NATURE[2]

a. Statistical Information regarding the Domestic & International Scheduled Passenger flight accidents.

i. Overall Data / Domestic and International Scheduled Passenger

The following table and plots presents useful statistical information regarding the Domestic & International Scheduled Passenger flight accidents. The overall data of worldwide fatal airliner hull-loss accidents and fatalities of this nature per year (2002-2012) are presented in Table 8. The data does not include corporate jet and military transport accidents.

Fatal Airliner Hull –loss accidents and fatalities per year (2002-2012), regarding the Domestic & International Scheduled Passenger flight accidents

Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Fatal Hull Loss	13	8	8	14	11	11	11	11	15	15	9
Fatalities	743	524	227	744	809	642	459	676	754	370	363

Table 8: Worldwide Fatal Hull – Loss accidents/fatalities regarding the Domestic & International Scheduled Passenger flight accidents (2002-2012).

ii. Trend Analysis Plots / Domestic and International Scheduled Passenger

Besides, the next figures 17 and 18 illustrate respectively the trend analysis plots of worldwide airliner fatal hull loss accidents and fatalities regarding the Domestic & International Scheduled Passenger flight accidents, for years 2002-2012.

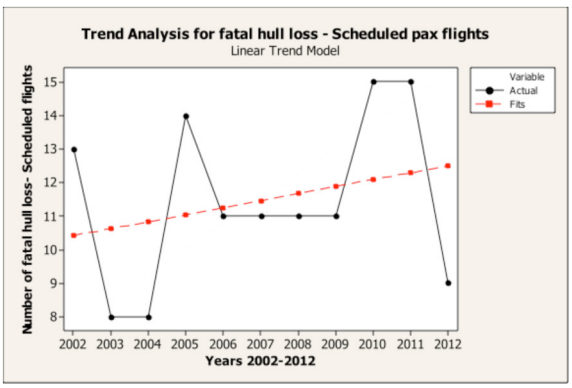

Figure 17: Fatal Hull Loss Accidents – Scheduled.

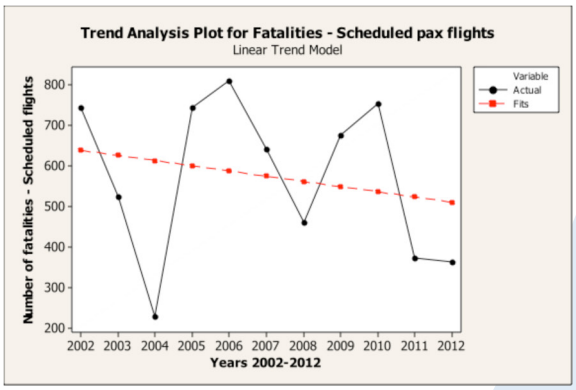

Figure 18: Fatalities – Scheduled.

2. *Due to small data numbers Ferry/Positioning and Training flight nature accidents are not statistically examined.*

b. Statistical Information regarding the Domestic & International Non Scheduled Passenger flight accidents.

i. Overall Data / Domestic and International Non Scheduled Passenger

The following table and plots presents useful statistical information regarding the Domestic & International Non Scheduled Passenger flight accidents. The overall data of worldwide fatal airliner hull-loss accidents and fatalities of this nature per year (2002-2012) are presented in Table 9. The data does not include corporate jet and military transport accidents.

Fatal Airliner Hull –loss accidents and fatalities per year (2002-2012), regarding the Domestic & International Non Scheduled Passenger flight accidents

Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Fatal Hull Loss	4	5	3	5	3	2	7	5	2	8	5
Fatalities	145	99	151	208	18	45	66	14	32	104	84

Table 9: Worldwide Fatal Hull – Loss accidents/fatalities regarding the Domestic & International Non Scheduled Passenger flight accidents (2002-2012).

ii. Trend Analysis Plots / Domestic and International Non Scheduled Passenger

Besides, the next figures 19 and 20 illustrate respectively the trend analysis plots of worldwide airliner fatal hull loss accidents and fatalities regarding the Domestic & International Non Scheduled Passenger flight accidents, for years 2002-2012.

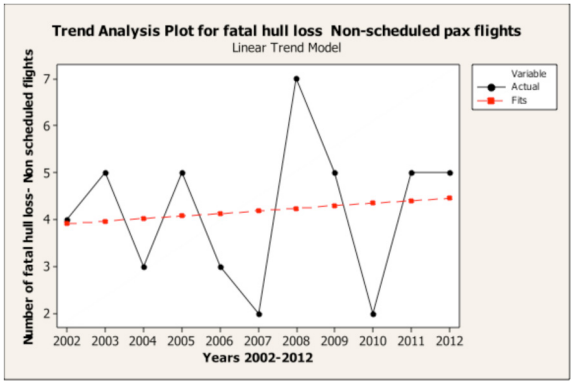

Figure 19: Fatal Hull Loss Accidents – Non Scheduled.

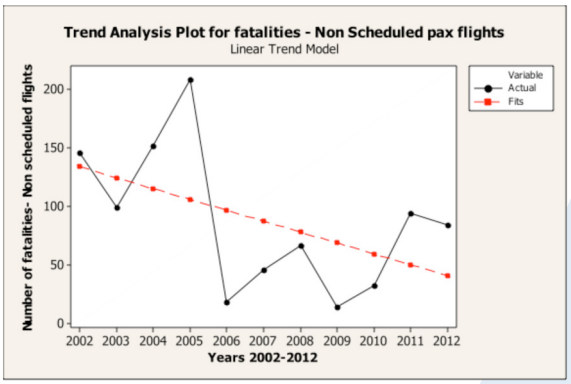

Figure 20: Fatalities – Non Scheduled.

c. Statistical Information regarding Cargo flight accidents

i. Overall Data / Cargo

The following table and plots presents useful statistical information regarding the Cargo flight accidents. The overall data of worldwide fatal airliner hull-loss accidents and fatalities of this nature per year (2002-2012) are presented in Table 10. The data does not include corporate jet and military transport accidents.

Fatal Airliner Hull –loss accidents and fatalities per year (2002-2012), regarding the Cargo flight accidents											
Year	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
Fatal Hull Loss	9	7	13	9	6	7	10	10	8	5	7
Fatalities	51	32	43	40	26	56	29	45	36	33	22

Table 10: Worldwide Fatal Hull – Loss accidents / fatalities regarding the Cargo flight accidents (2002-2012).

ii. Trend Analysis Plots / Cargo

Besides, the next figures 21 and 22 illustrate respectively the trend analysis plots of worldwide airliner fatal hull loss accidents and fatalities regarding the Cargo flight accidents, for years 2002-2012.

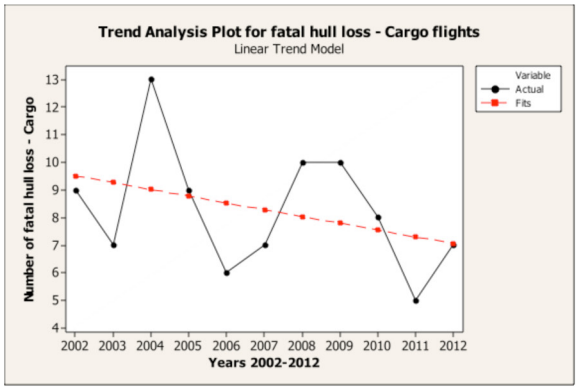

Figure 21: Fatal Hull Loss Accidents – Cargo.

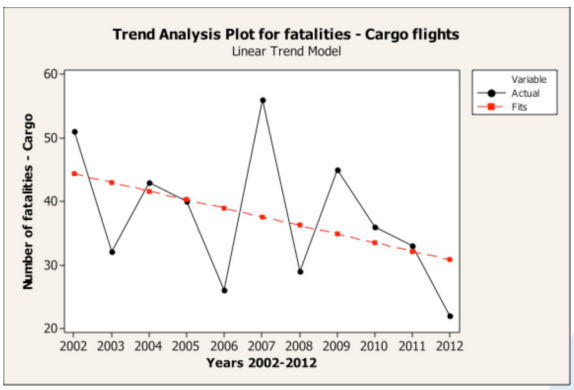

Figure 22: Fatalities – Cargo.

IV. AN IATA'S FRUITFUL PERSPECTIVE FOR WESTERN-BUILT JET AIRCRAFT[3]

a. Overview analysis

According to International Air Transport Association (IATA) Media Day Press release the aviation safety performance for 2012 showing that the year's accident rate was the lowest in aviation history. According to IATA, the 2012 global accident rate[4] (measured in hull losses per million flights) was 0.19. That is equal to one accident for every 5.3 million flights. This is a significant improvement of the 0.37 rate recorded in 2011 (one accident for 2.7 million flights). The IATA member's 2012 rate was ZERO and the best ever recorded in aviation history, for Western built jet aircrafts and well below the world's accidents rate of 0.41 for year 2011. The following figure 23 presents the overall IATA and Industry safety performance rates for year 2012, as of 30 Nov 2012.

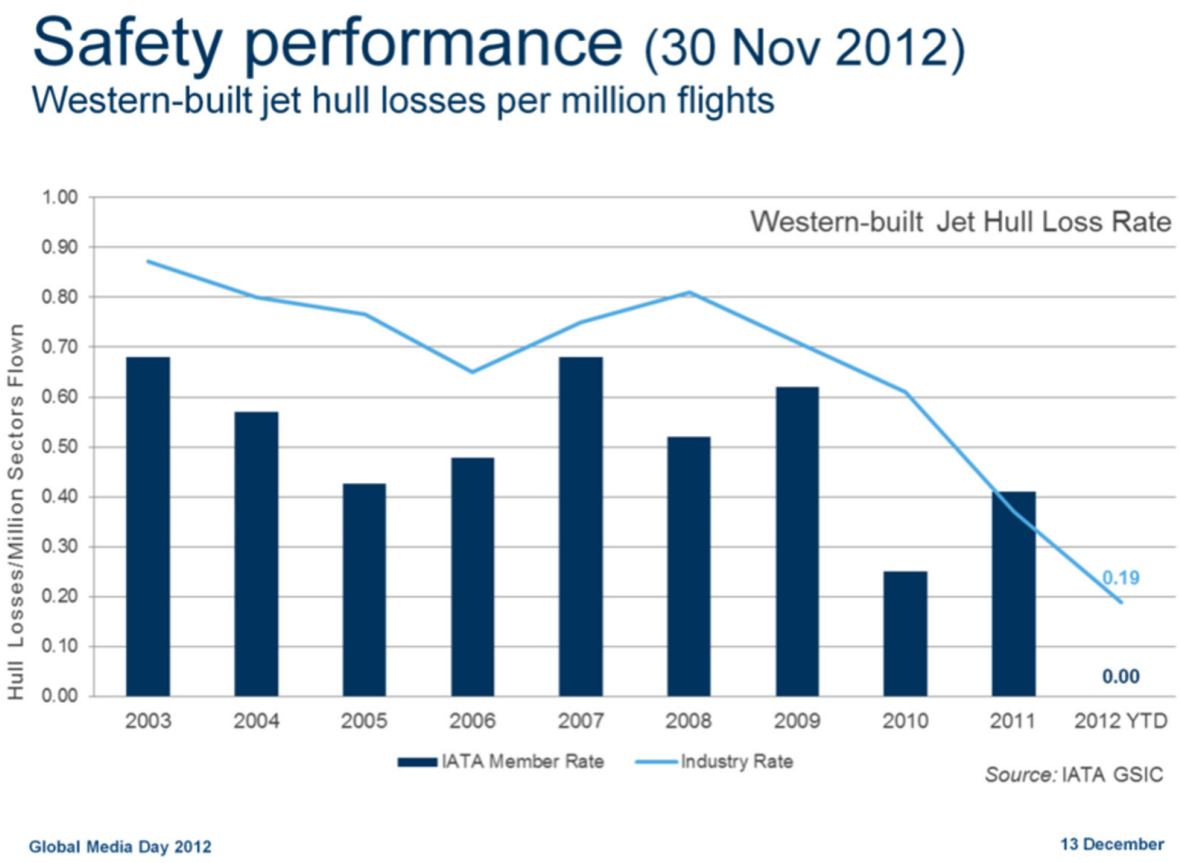

Figure 23: Overall IATA and Aviation Industry safety performance and Trend.

Finally, the 2012 total Western-built hull losses were 5 vs. 11 at the same time last year.

3. IATA, 2012 Safety Performance.

4. The intention of the flight is limited to normal commercial aviation activities, specifically scheduled/charter passenger or cargo service. Executive jet operations, positioning or maintenance/test flights are all excluded. multi-engine, turbine powered, and has a certificated Maximum Take-Off Weight (MTOW) of at least 5,700KG (12,540 lbs) for Turboprops and 15,000KG (33,000 lbs) for Jets.

b. Regional perspective

The following figure 24 presents the regional differences in the Western built jet hull loss accident rates[5] for years 2011 and 2012 respectively, as of 30 Nov 2012.

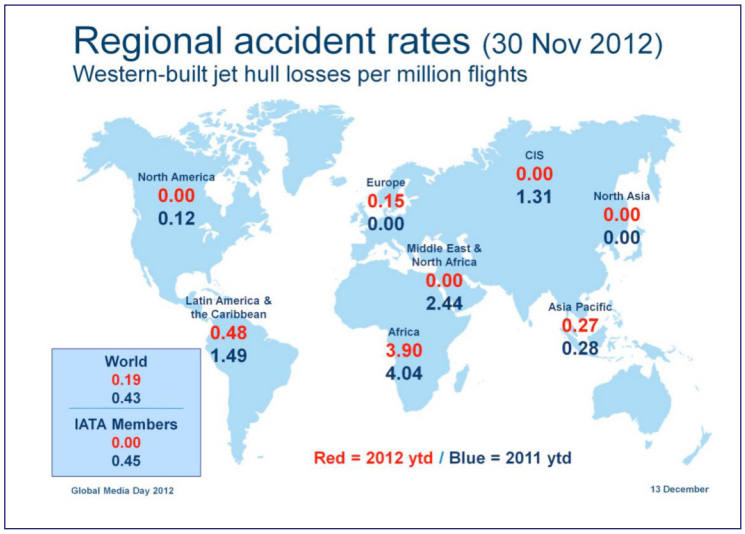

Figure 24: Regional differences in the Western built jet hull loss accident rate.

In 2012, although Africa had a slight reduction of the number of total accidents compared to 2011 still is far above the global average. Middle East & North Africa, North Asia, North America and CIS had also achieved zero number of total accidents. Latin America and the Caribbean had a significant improvement compared to 2011 and the total number of accidents in Asia-Pacific, remained almost unchanged[6]. On the other hand Europe was the only region that marked a slight increment of western built jet hull loss accident rate (i.e 0.15 compared to 0.00 at 2011). IOSA carriers had a zero hull loss rate in 2012. Finally, the following figure 25, re-presents the total accident rates including both Eastern - Western built jets and turboprop aircrafts.

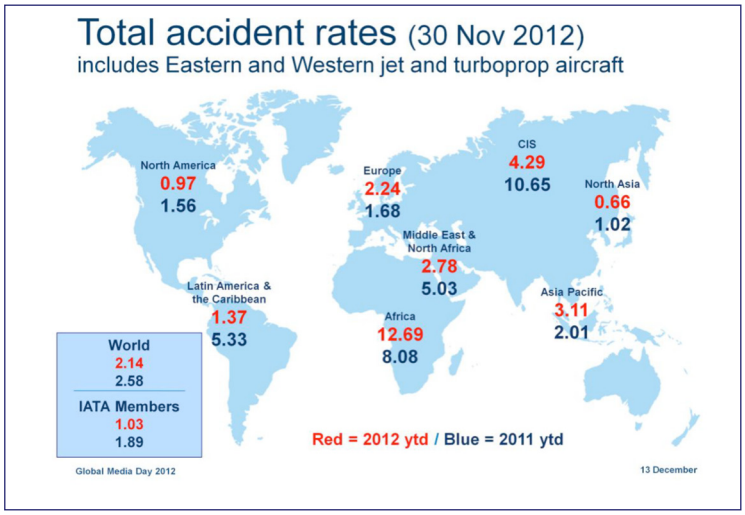

Figure 25: Regional Eastern / Western built jet and turboprop hull loss accident rate.

5. *IATA, ibid.*

6. *Ibid.*

V. RUNWAY EXCURSIONS[7]

Runway excursions, events in which an aircraft veers off or overruns the runway surface during either takeoff or landing, are the most common type of accident reported annually both in the European region and elsewhere in the world. NLR-ATSI has been monitoring runway excursion occurrences (both accidents and incidents) since 2010, as shown in Figure 26.

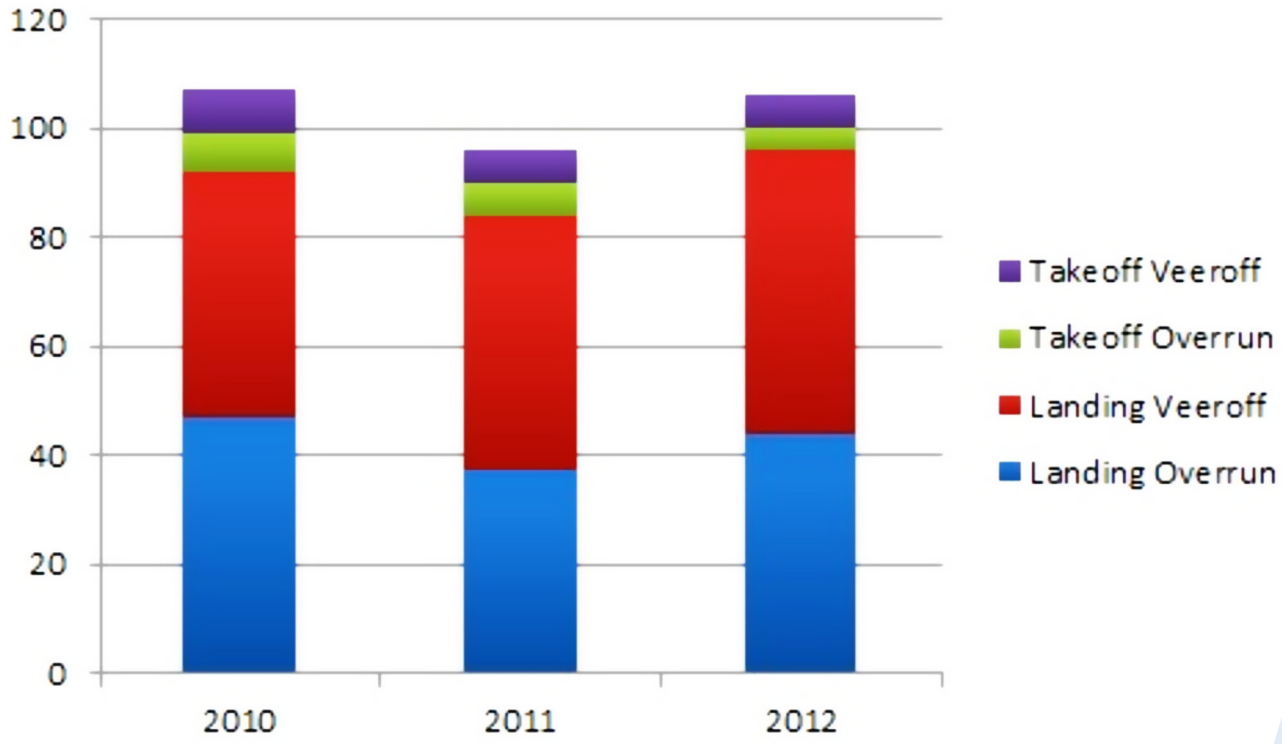

Figure 26: Rwy excursions since 2010 onwards.

In 2010 NLR-ATSI recorded 107 excursions with commercial and executive aircraft operations worldwide. This number dropped to 98 in 2011 and increased again to 106 excursions in 2012. Total annual traffic volumes were stable during these three years. In 2012 there were on average two excursions per week. The average hull loss rate in runway excursion accidents remained stable at around 20% during the last three years. There were 8 fatal runway excursions during 2010-2012. Most excursions occurred during the landing phase. This share has slightly risen from 86% in 2010, to 88% in 2011 and 91% in 2012. Veeroffs and overruns during the landing show an equal share. Slippery runways, strong (gusty) cross- and tailwind conditions, late use of stopping devices, and long landings are among the most common causal factors reported in these runway excursions. The following Table 11 shows the total worldwide Runway excursions for year 2012 only for the reason to highlight the most significant safety issue aviation industry is facing today.

7. *All information in this chapter retrieved from NLR-ATSI, NL.*

#	DATE	AIRCRAFT TYPE	COUNTRY	RUNWAY EXCURSION OCCURRENCE	PHASE
1	07.01.12	MA60	Indonesia	Veer-off	Landing
2	09.01.12	B737-700	Canada	Overrun	Landing
3	10.01.12	CL890	Canada	Overrun	Landing
4	13.01.12	Turbo Commander	USA	Veer-off	Landing
5	13.01.12	PA-46	USA	Veer-off	Landing
6	14.01.12	B777-200	Brazil	Overrun	Landing
7	16.01.12	PC12	Canada	Overrun	Landing
8	19.01.12	B737-700	Canada	Overrun	Landing
9	24.01.12	Cessna V	USA	Veer-off	Landing
10	27.01.12	Sabreliner	Dominican Republic	Veer-off	Landing
11	30.01.12	G150	USA	Veer-off	Landing
12	02.02.12	LR 35	USA	Veer-off	Takeoff
13	03.02.12	Saab 2000	Romania	Veer-off	Takeoff
14	07.02.12	A320	Indonesia	Overrun	Landing
15	10.02.12	TBM 850	USA	Veer-off	Takeoff
16	11.02.12	LR31	USA	Veer-off	Landing
17	12.02.12	GIV	Congo	Overrun	Landing
18	13.02.12	LR55	USA	Veer-off	Landing
19	13.02.12	A320	Philippines	Overrun	Landing
20	17.02.12	ATR72	Myanmar	Veer-off	Landing
21	22.02.12	EMB145	USA	Overrun	Landing
22	24.02.12	A330	Brazil	Veer-off	Landing
23	01.03.12	ATR42	Ukraine	Veer-off	Landing
24	07.03.12	LR35	USA	Veer-off	Landing
25	08.03.12	JS31	UK	Veeroff	Landing
26	10.03.12	A320	Tunisia	Veer-off	Landing
27	10.03.12	MU-300	USA	Overrun	Landing
28	12.03.12	A320	Indonesia	Overrun	Landing
29	17.03.12	B1900	Canada	Veer-off	Landing
30	17.03.12	ATR72	Germany	Veer-off	Landing
31	29.03.12	F-50	Sudan	Veer-off	Landing
32	29.03.12	C208	Suriname	Veer-off	Landing
33	30.03.12	F-50	Mongolia	Veer-off	Takeoff
34	06.04.12	B737-400	Russia	Overrun	Landing
35	09.04.12	DHC8-300	Tanzania	Overrun	Takeoff
36	05.05.12	ERJ-145	Russia	Veer-off	Landing
37	06.05.12	A321	Vietnam	Overrun	Landing
38	06.05.12	Sukhoi Superjet	Russia	Veer-off	Landing
39	16.05.12	MD82	Taiwan	Overrun	Landing
40	17.05.12	ATR72	Germany	Veer-off	Landing
41	15.05.12	B737-500	Mali	Overrun	Takeoff
42	31.05.12	EMB145	USA	Veer-off	Landing
43	01.06.12	B737-400	Indonesia	Veer-off	Landing
44	02.06.12	B727	Ghana	Overrun	Landing
45	06.06.12	A320	Kenya	Veer-off	Landing
46	18.06.12	Beech jet 400	USA	Overrun	Landing
47	20.06.12	Gulfstream I	Congo	Overrun	Landing
48	26.06.12	ATR42	UK	Veer-off	Landing
49	10.07.12	DHC8-400	Canada	Overrun	Landing
50	13.07.12	GIV	France	Overrun	Landing
51	17.07.12	B737-800	Indonesia	Veer-off	Landing

52	18.07.12	A330	Vietnam	Veer-off	Landing
53	01.08.12	YAK 42	Russia	Veer-off	Landing
54	06.08.12	Phenom 300	Switzerland	Overrun	Landing
55	11.08.12	ATR72	Romania	Veer-off	Landing
56	12.08.12	A330	Taiwan	Veer-off	Landing
57	13.08.12	ATR72	Venezuela	Veer-off	Takeoff
58	13.08.12	IL76	Canada	Overrun	Landing
59	17.08.12	EMB190	Taiwan	Overrun	Landing
60	19.08.12	ATR72	Finland	Veer-off	Landing
61	24.08.12	SC7	USA	Veer-off	Landing
62	24.08.12	MD82	Venezuela	Veer-off	Landing
63	27.08.12	F50	Indonesia	Overrun	Landing
64	28.08.12	TU154	Russia	Overrun	Landing
65	31.08.12	ATR42	Pakistan	Veer-off	Landing
66	13.09.12	A330	Taiwan	Veer-off	Landing
67	18.09.12	Beech jet 400	USA	Overrun	Landing
68	21.09.12	DHC6	Nepal	Overrun	Takeoff
69	21.09.12	B737-300	UK	Overrun	Landing
70	22.09.12	Premier I	India	Overrun	Landing
71	22.09.12	B737-500	Ukraine	Veer-off	Landing
72	28.09.12	ATR72	Brazil	Veer-off	Landing
73	01.10.12	Learjet 35	Canada	Veer-off	Landing
74	09.10.12	Caravan	Kenya	Veer-off	Takeoff
75	10.10.12	Phenom 100	Brazil	Veer-off	Landing
76	10.10.12	ATR72	Canada	Veer-off	Landing
77	16.10.12	CRJ700	France	Overrun	Landing
78	17.10.12	F27	Indonesia	Overrun	Landing
79	19.10.12	B737-400	Indonesia	Overrun	Landing
80	20.10.12	B200	USA	Overrun	Takeoff
81	22.10.12	B90	USA	Overrun	Landing
82	30.10.12	Citation	Canada	Veer-off	Landing
83	30.10.12	L410	Congo	Veer-off	Landing
84	31.10.12	P180 Avanti	USA	Overrun	Landing
85	01.11.12	B737-400	Indonesia	Overrun	Landing
86	05.11.12	TU204	Russia	Overrun	Landing
87	07.11.12	DHC6	Malaysia	Veer-off	Landing
88	09.11.12	Metro III	USA	Veer-off	Landing
89	11.11.12	Citation CJ3	Brazil	Overrun	Landing
90	14.11.12	AN26	Sudan	Overrun	Landing
91	15.11.12	F50	Sudan	Veer-off	Landing
92	16.11.12	A300	Slovakia	Veer-off	Landing
93	18.11.12	B737-800	Russia	Overrun	Landing
94	21.11.12	AN26	Russia	Overrun	Landing
95	23.11.12	Metro 23	Canada	Veer-off	Landing
96	24.11.12	B737-600	Switzerland	Veer-off	Landing
97	29.11.12	B737-800	Ecuador	Overrun	Landing
98	01.12.12	B737-800	Russia	Overrun	Landing
99	08.12.12	B737-800	Japan	Overrun	Landing
100	20.12.12	TU-204	Russia	Overrun	Landing
101	21.12.12	Citation II	USA	Overrun	Landing
102	25.12.12	CRJ-200	Japan	Veer-off	Landing
103	29.12.12	TU-204	Russia	Overrun	Landing
104	30.12.12	B737-400	Indonesia	Veer-off	Landing
105	31.12.12	J31	Honduras	Veer-off	Landing
106	31.12.12	MA60	Indonesia	Veer-off	Landing

Table 11: Total Worldwide Runway excursions for year 2012, Source: NLR-ATSI.

CONCLUSIONS

Although the tables, charts and plots speak quite clearly a couple of comments are worth point out for the year 2012 (by number of fatal/hull loss accidents):

- ***Overall, airliner aviation safety has achieved a significant improvement regarding 2002-2012 accident averages.***
- ***According to Flight Safety Foundation since 1945 the year 2012 was safest year by number of accidents and marked the longest period without a fatal airliner accident in modern aviation history. This record period of 68 days ended on January 30 with the crash of an Antonov 28.***
- ***According to IATA the year 2012 was the safest year ever, by total accident's rate.***
- ***The estimated average for years 2002-2012 is 29.09 fatal multi-engine civil airliner accidents, resulting in an average of 730 fatalities.***
- ***There is a significant fatal accident rate improvement (worldwide).***
- ***Again, as in 2011, most of the fatal accidents in 2012 involved small local operators, which are probably little known outside of the communities they serve.***
- ***Comparing to previous 10 years average (i.e 34 fatal accidents / 773 fatalities) there was significant reduction in the number of fatal accidents and fatalities.***
- ***Although, as noted, there was a marked reduction in the number of fatal accidents in 2012, two accidents with a high death toll during the year – the Bhoja Air Boeing 737 in April, which killed 127 passengers and crew, and the Dana Air MD-83 in June, which killed 153 passengers and crew plus another 10 people on the ground – meant that the drop in fatalities was not as great as might otherwise have been expected.***
- ***A significant percentage of accidents occurred on the initial climb, approach and landing phases. However, the overall 2002-2012 trend is continuing to go down.***
- ***Three out of 23 accident airplanes (13%) were operated by airlines on the E.U. "black list" as opposed to 25% the year before. The E.U. added a total of 38 airlines to their list of airlines banned within the EU, and removed two airlines based on improved safety records.***
- ***Africa still is the least safe continent accounting for 22% of all fatal airliner accidents while the continent only accounts for approximately 3 percent of all world aircraft departures.***
- ***Initial climb and Landing phase accidents/fatalities trends are still remaining upwards.***
- ***There is a significance trend change (downward) for cargo fatal accidents and fatalities.***
- ***More than 75% of fatal accidents occurred with scheduled passenger flights.***
- ***No airliner fatal accident occurred in Middle East & North Africa, North Asia, North America and CIS. Over the last decade, Europe and North America still remains as the safest civil airliner continent while Africa, once again had the worst accident rate record in the world.***
- ***Unfortunately, runway excursions were again the most common cause of accidents (fatal, non fatal and by number of casualties, all included). The absolute number of runway excursions remained almost the same as in 2011. In 2012 there were on average two excursions per week[8]. The average hull loss rate in runway excursion accidents remained stable at around 20% during the last three years.***
- ***The accident rate for carriers on the IATA Operational Safety Audit (IOSA) registry was zero.***
- ***Total accident rates improved from 2011 in all regions except Europe.***

8. *NLR-ATSI, NL database.*