Flightglobal
AVIATION CONNECTED

AIRLINE SAFETY & LOSSES

ANNUAL REVIEW

2015

From the point of view of air safety, 2015 was yet another good year.

However, insurers did not have a good year, with incurred all-risk losses exceeding written premiums for the third year running.

Insurance – All-Risk[1]

We currently estimate that the cost of incurred airline hull and legal liability losses for 2015 is about $1,700 million. This is some $200 million less than the estimated cost of claims in 2014 but similar to that incurred in 2013 when estimated losses of about $1,650 million were incurred.

The cost of claims in 2015 easily exceeds the estimated $1.400 million of premiums written during the calendar year[2] and is the third year running where claims have exceeded premiums.

However, despite the expected cost of claims continuing to exceed written premiums, there is still little or no sign of the market hardening.

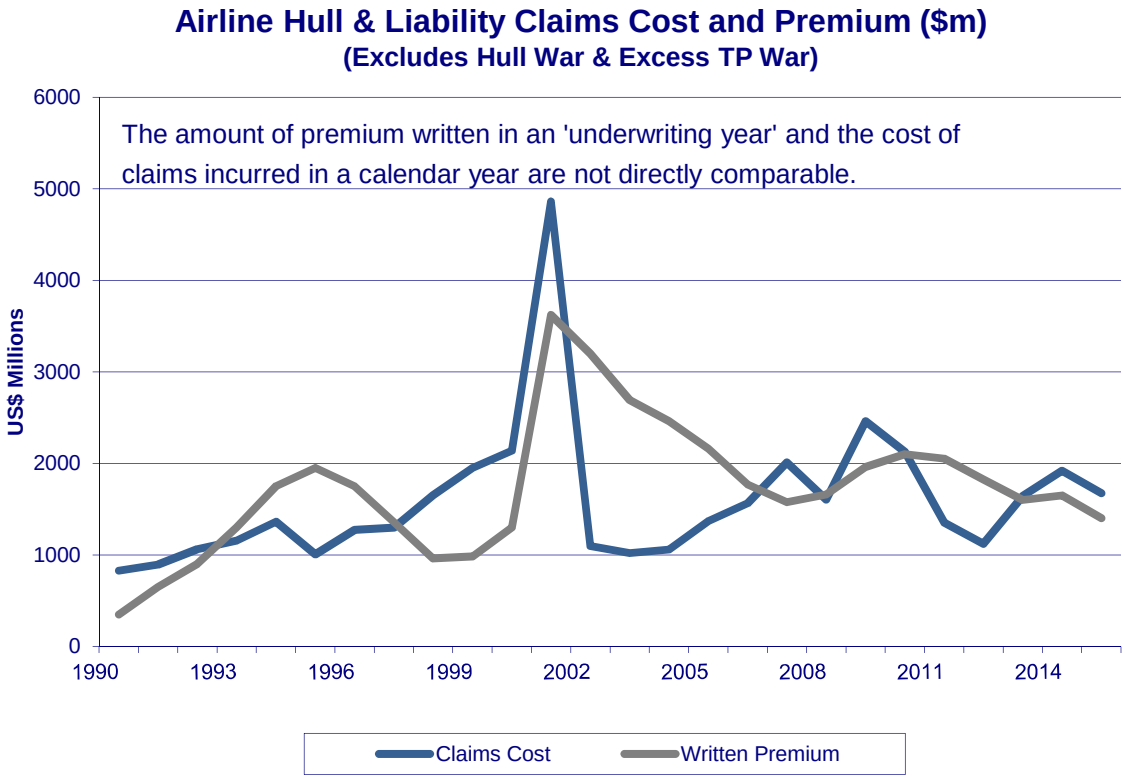
Unless there is a run of significant losses, which might result in a brief hardening of the market and/or a change in external conditions so that there is a withdrawal of capacity from aviation as an insurance class, the current premium level might be considered the new normal.

Airline 'All-Risk' Hull & Liability Claims Costs and Written Premium 2006 – 2015 (US$ Millions)

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015P
Written Premium	1,770	1,575	1,660	1,960	2,100	2,050	1,825	1,600	1,650	1,400
Hull Cost	662	855	817	864	1,263	734	466	767	495	650
Liability Cost	477	706	336	1,122	361	94	105	300	824	400
Minor Liability	425	450	450	475	500	525	550	575	600	625
Total Cost	1,564	2,011	1,603	2,461	2,124	1,353	1,121	1,642	1,919	1,675

[1] At the time of writing it is not known whether the disappearance of the Malaysia Boeing 777, MH370, in March 2014 or the loss of the MetroJet A320 in Egypt in 2015 will be confirmed as war losses. Currently, for the sake of these statistics, we are treating both losses as deliberate acts of violence. However, we understand that the hull claim in both cases is currently being met, 50/50, by all-risk and war-risk markets and this is reflected in our cost of hull claims numbers.

[2] The amount of premium written in an "underwriting year" and the cost of claims incurred in a calendar year are not directly comparable since, nowadays, the inception of the majority of airline policies occurs during the last quarter of the year with a large number being renewing during December. Therefore most of the premiums written in 2015 will not be earned until 2016 and, similarly, most of the 2015 losses will have fallen on 2014 policies.



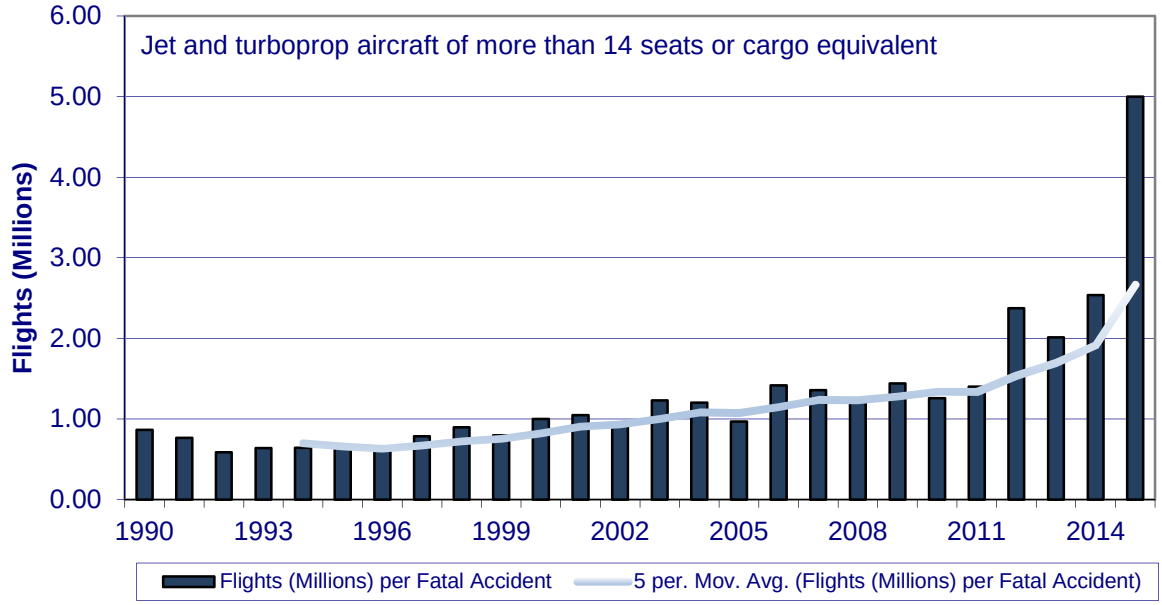
Accidents (Airline Operations)

The year 2015, despite the loss of the Germanwings and MetroJet Airbuses (both assumed, for the sake of these statistics, to have been the result of deliberate acts) was, in fact, by far the safest year ever, with a global fatal accident rate of one per 5.0 million flights and a revenue passenger fatality rate close to one per 40 million passengers carried. The previous "best year" was 2014 with a fatal accident rate of one per 2.54 million flights.

The fatal accident rate for 2013 was one per 2.01 million flights, for 2012 one per 2.37 million, for 2011 one per 1.4 million and for 2010 one per 1.26 million. The average for the last five years is now about one per 2.75 million flights.

Although some years have been better than others, the fatal accident rate has been improving for many years. At the start of the 1990s, the rate was about one per 0.6 or 0.7 million flights. Therefore, based on this metric, airline operations are now some four or five times safer than they were 20 years ago.

Flights (Millions) per Fatal Accident
(Excludes Acts of Violence)



The number of fatal accidents decreased in 2015, going from 15 in 2014 down to eight, there were 19 fatal accidents in 2013. These eight fatal accidents all involved turboprop aircraft operated by small, local carriers, which are probably unknown outside the markets they serve. Only three of the accidents happened on revenue passenger flights.

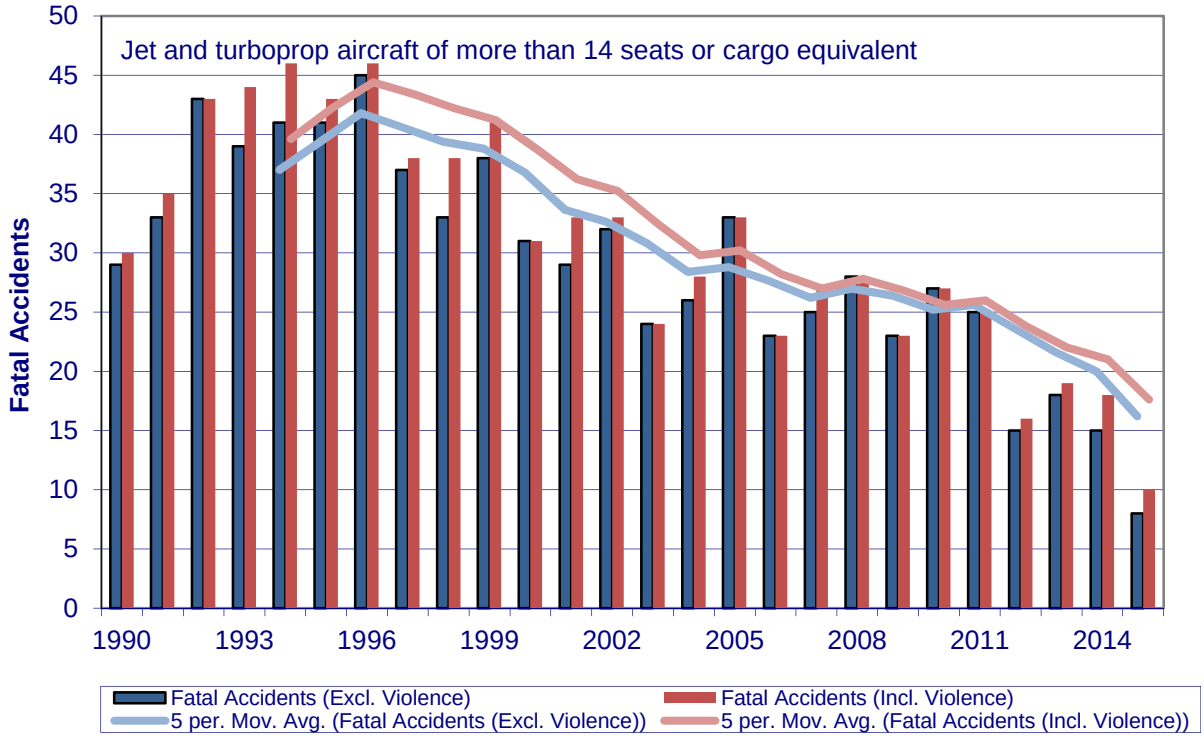
2015 has been an exceptionally good year for airline safety but, as in 2014, this good experience has been overshadowed by acts of violence.

The average annual number of fatal accidents for the current decade is 18.2. The annual average for the period 2000-2009 was 27.4 while the 1990s average was 37.9. The annual averages for the 1980s and 1970s were 33.1 and 40.0 respectively.

Annual Fatal Accidents (jet and turboprop aircraft) – 2006 - 2015										
Year	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Fatal Accidents	23	25	28	23	27	25	15	19	15	8

	Fatal Accidents (jet and turboprop aircraft) – Decade Averages				
Period	**1970 - 1979**	**1980 - 1989**	**1990 - 1999**	**2000 - 2009**	**2010 - 2015**
Annual Average	40.0	33.1	37.9	27.4	18.2

Annual Airline Fatal Accidents



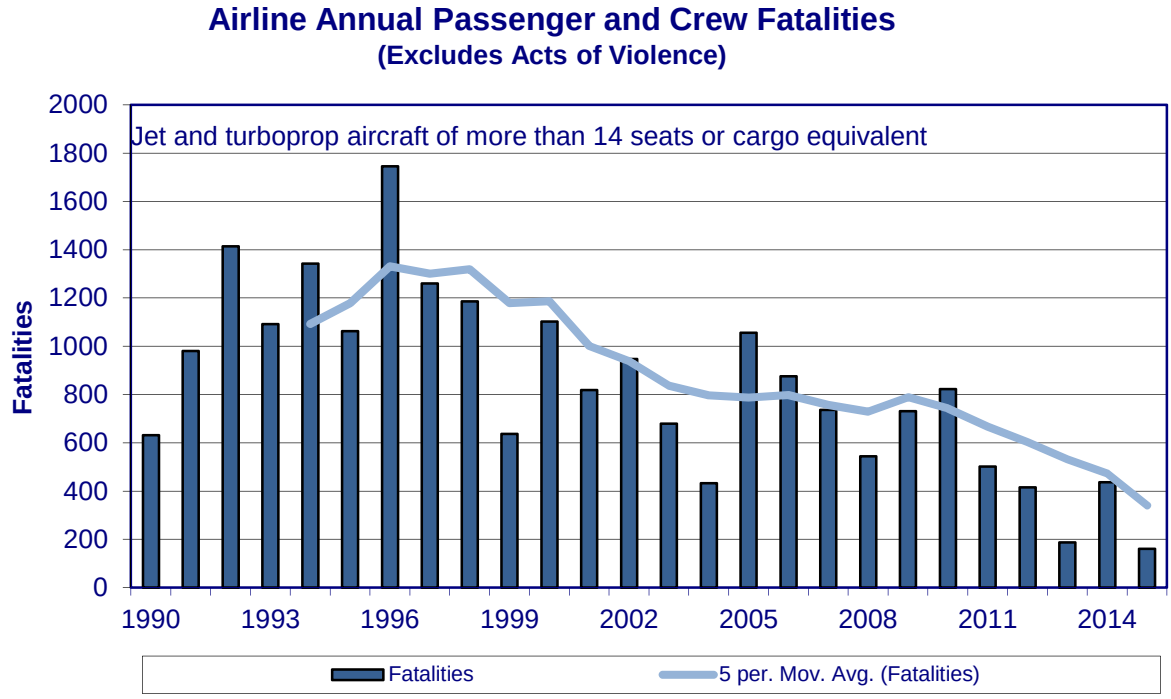
With fewer fatal accidents involving smaller aircraft in 2015 the number of passenger and crew fatalities was markedly lower last year than in 2014. The total number of passengers and crew killed in 2015 was 161, this the lowest number of fatalities in airline operation since at least 1946. However, with generally so few fatalities in airline operations nowadays, one "bad" accident can make all the difference to the result.

The annual average number of fatalities for the period 2000-2009 was 793 and that for the 1990s was 1,135. The annual average for the current decade (2010-2015) is just 354.

Annual Passenger & Crew Fatalities (jet and turboprop aircraft) – 2006 - 2015										
Year	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Fatalities	876	737	544	731	822	502	416	187	436	161

Passenger & Crew Fatalities (jet and turboprop aircraft) – Decade Averages					
Period	**1970 - 1979**	**1980 - 1989**	**1990 - 1999**	**2000 - 2009**	**2010 - 2015**
Annual Average	1467.4	1072.2	1135.0	792.5	354.0

To put these improvements into perspective, if the current decade's annual average is maintained, some 4,400 fewer passengers and crew will be killed in airline accidents during the period 2010-2019 than in the previous decade and over 7,800 fewer than during the 1990s.



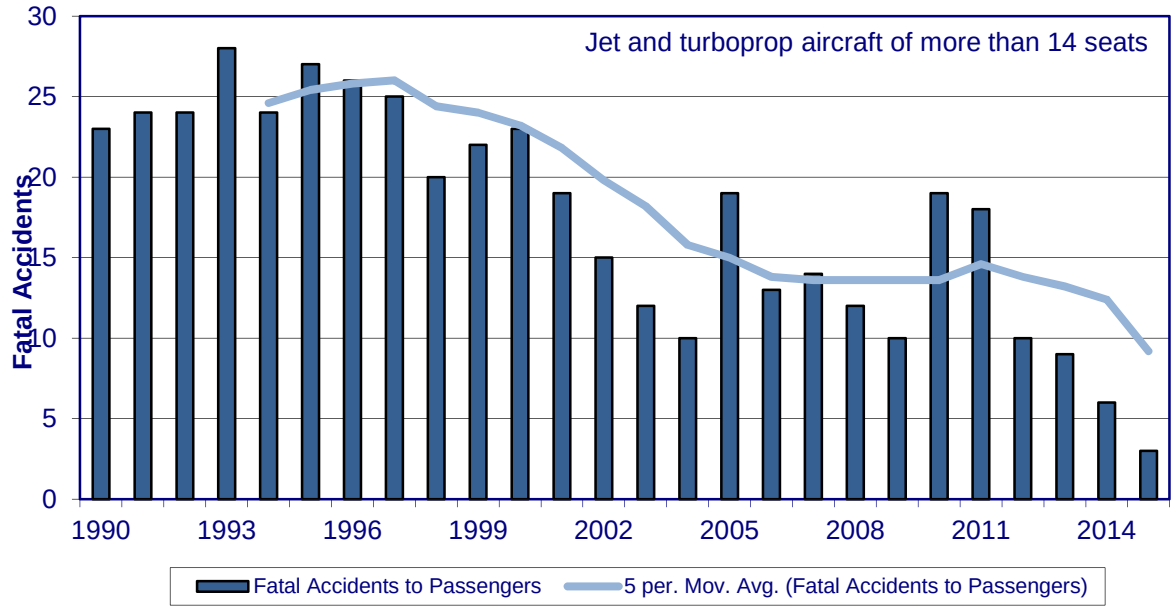
On a more restrictive basis, the three fatal accidents involving passenger deaths on revenue passenger flights in 2015 is also the lowest seen in any year since 1946. This is also less than the previous lowest years, 2014, 2013, 2010, which were all, in turn, “the best years ever”. However there were 18 such accidents in 2011 and 19 in 2010 so the annual average so far for this decade is still 10.8, not such a marked improvement on the previous 10 years (2000-2009) when the annual average was 14.7. The annual average number of fatal accidents involving revenue passengers for the 1990s was 24.3.

Again, as already noted and as in other recent years, all of the fatal accidents in 2015 involved small local or regional operators, which are probably little known outside of the communities they serve.

Annual Fatal Accidents to Passengers (jet and turboprop aircraft) – 2006 - 2015										
Year	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Fatal Accidents	13	14	12	10	19	18	10	9	6	3

	Fatal Accidents to Passengers (Jet and turboprop aircraft) – Decade Averages				
Period	**1970 - 1979**	**1980 - 1989**	**1990 - 1999**	**2000 - 2009**	**2010 - 2015**
Annual Average	28.8	24.6	24.3	14.7	10.8

Annual Fatal Accidents to Passengers
(Excludes Acts of Violence)



With few fatal accidents in 2015 there were just 98 revenue passenger fatalities during the year, again the lowest number killed in any year since 1946. There were 368 passenger fatalities in 2014 and 162 in 2013.

The annual average number of passenger fatalities so far this decade is now 348.8, almost half the average for the previous decade, which was 680.4, and very considerably less than the average for the 1990s, which was 962.0.

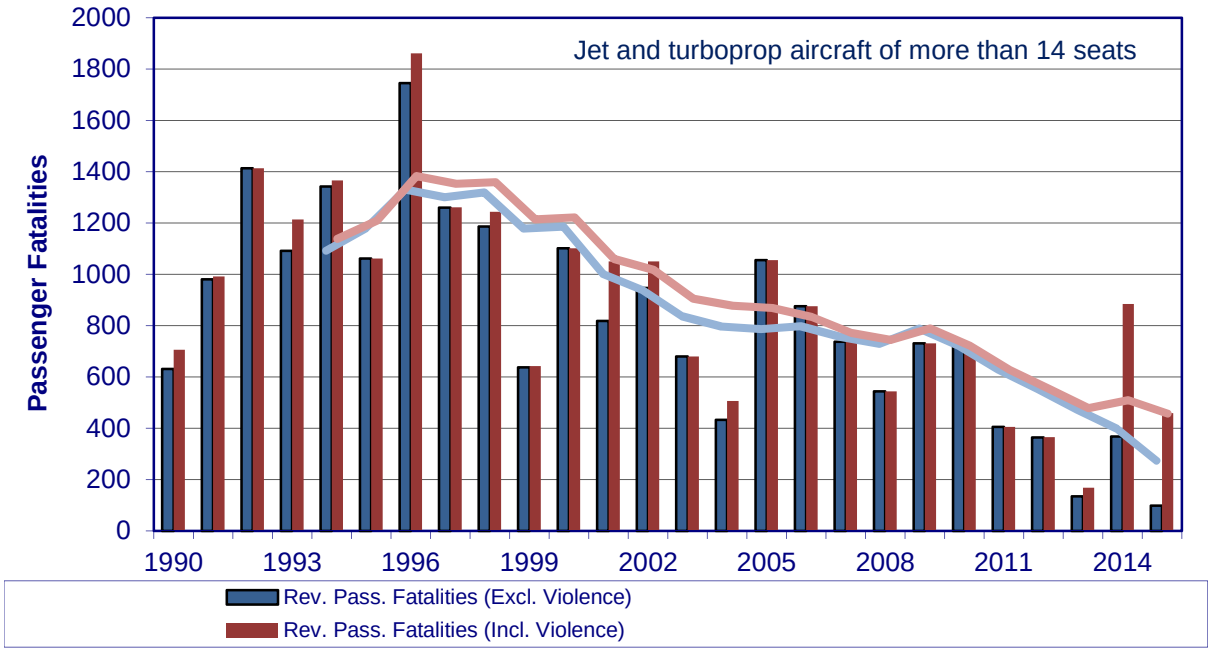
Annual Passenger Fatalities on Revenue Passenger Flights (jet and turboprop aircraft) – 2006 - 2015

Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Fatalities	790	633	456	614	722	406	364	135	368	98

Passenger Fatalities on Revenue Passenger Flights (jet and turboprop aircraft) – Decade Averages

Period	1970 - 1979	1980 - 1989	1990 - 1999	2000 - 2009	2010 - 2015
Annual Average	1289.3	945.0	962.0	680.4	348.8

Annual Passenger Fatalities on Revenue Passenger Flights

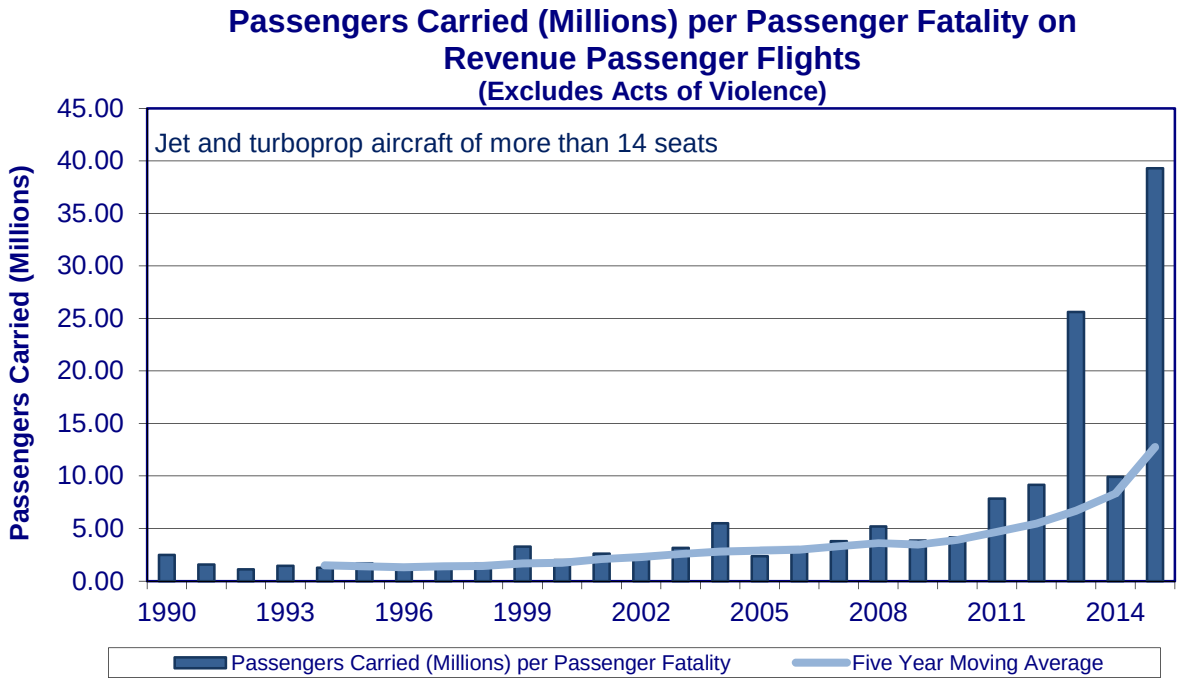


The estimated passenger fatality rate for 2015 was one per 39.3 million passengers carried. This is about four times better than the one per 9.9 million in 2014 and better than the one per 25.6 million carried in 2013, which was itself described as an “exceptional year”.

The passenger fatality rate for the last five years is almost one per 13 million passengers carried. The rate for the last decade (2000-2009) it was one per 3.7 million and for the 1990s one per 1.8 million. On this basis, passenger air travel is now, on average, over seven times safer than it was in the 1990s.

The worst accidents in 2015 were **1)** the Trigana Air ATR 42 which flew into a mountain while on approach to Oksibil, Papua, Indonesia on 16 August, killing all 49 passengers and 5 crew on board. **2)** the TransAsia ATR 72 on 4 February which stalled and crashed into the Keelung River shortly after take-off from Taipei, Taiwan killing 43 of the 58 passengers and crew on board **3)** the Allied Services Antonov AN 12 on 4 November which failed to climb after take-off from Juba, South Sudan and crashed on the banks of the White Nile killing the six crew and 31 of the 32 non-revenue passengers on board.

The losses giving rise to the greatest number of passenger and crew fatalities in 2015 are both believed to have been deliberate acts of violence rather than accidents. These losses were the Germanwings A320 that is believed to have been deliberately flown into the ground by the co-pilot killing all 144 passengers and six crew on board and the MetroJet A321 on 31 October which is believed to have been destroyed by a bomb shortly after take-off from Sharm el Sheikh, Egypt killing all 217 passengers and seven crew on board.



Western-Built Jets

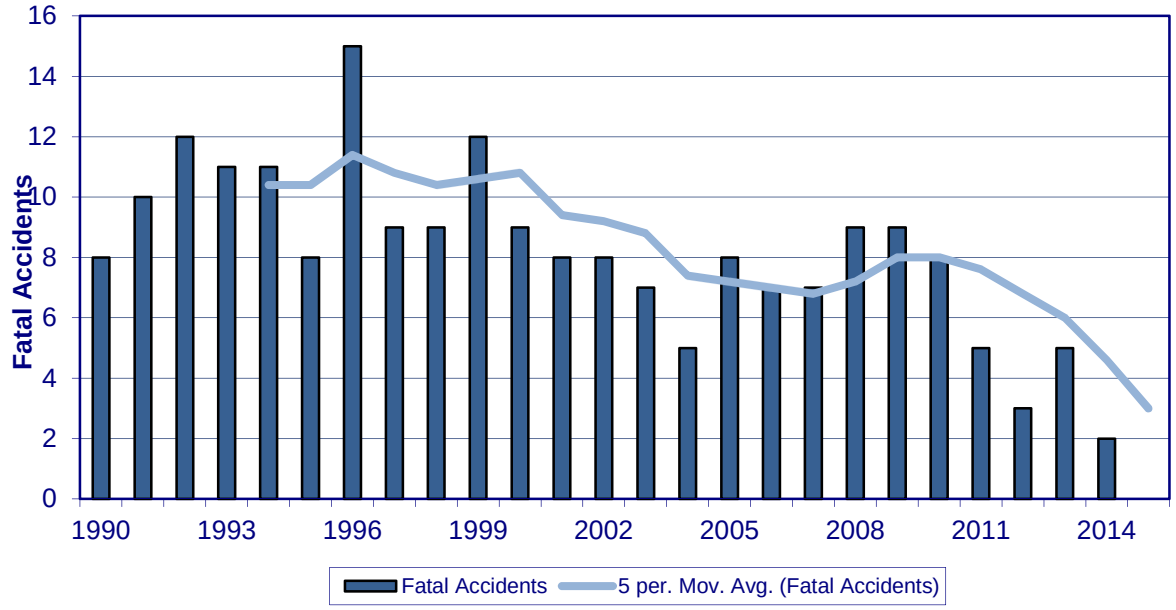
During 2015, western-built jets, which carry more than 90% of the world's traffic, suffered no fatal accidents (There were, of course, two losses as the apparent result of deliberate acts of violence, which killed a total of 374 passengers and crew, during the year). This is the first year ever that the class has suffered no fatal accidents.

With no fatal accidents in 2015, the annual average for the current decade has fallen to 3.8. The annual average for the previous decade was 7.7 and that for the 1990s, 10.5.

Annual Fatal Accidents (western-built jets) – 2006 - 2015										
Year	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Fatal Accidents	7	7	9	9	8	5	3	5	2	0

Fatal Accidents (western-built jets) – Decade Averages					
Period	**1970 - 1979**	**1980 - 1989**	**1990 - 1999**	**2000 - 2009**	**2010 - 2015**
Annual Average	12.1	10.5	10.5	7.7	3.8

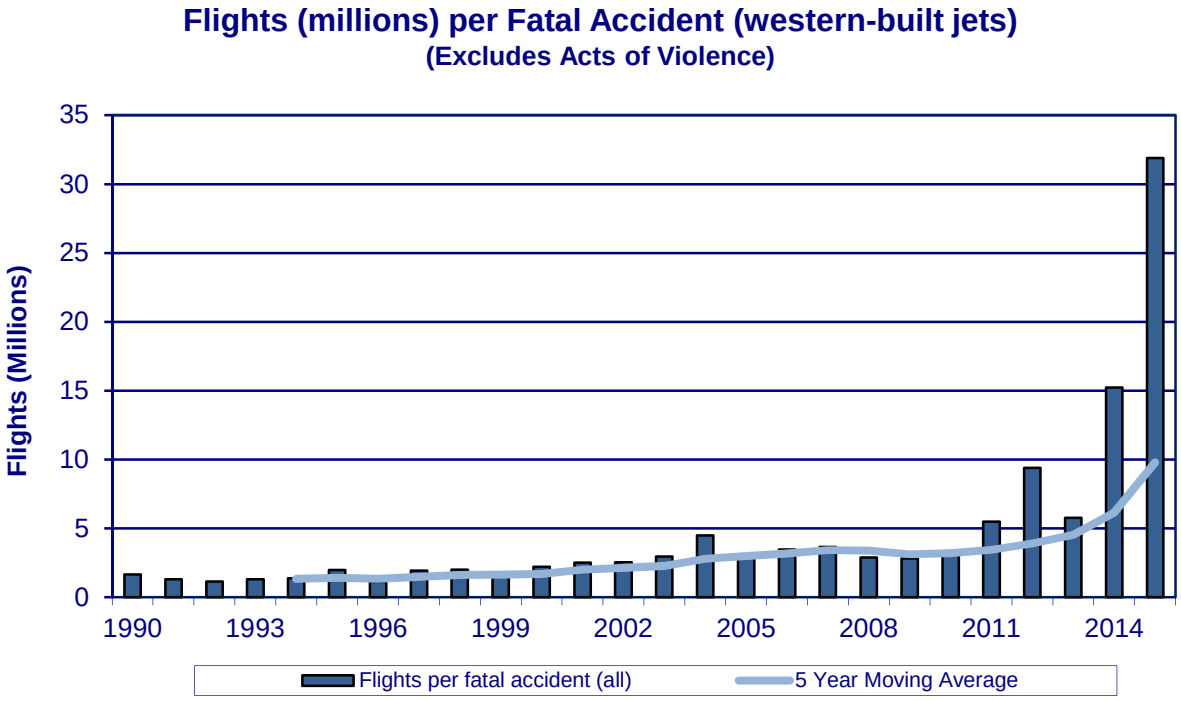
Annual Fatal Accidents - Western-Built Jets
(Excludes Acts of Violence)



Western-built jets made some 32 million flights in 2015 and the fatal accident rate for the last five years has now improved to about one per 10 million flights. The fatal accident rate for western-built jets in 2014 was one per 15.2 million flights, in 2013 it was one per 5.8 million flights and, in 2012, one per 9.4 million flights.

The fatal accident rate for the current decade is one per 7.5 million flights. This makes worldwide western-built jet operations more than twice as safe now as they were 10 years ago, almost five times safer than in the 1990s, seven times safer than in the 1980s and more than 10 times safer than in the 1970s.

Fatal Accident Rate (western-built jets)					
Period	**1970 - 1979**	**1980 - 1989**	**1990 - 1999**	**2000 - 2009**	**2010 - 2015**
Flights (millions) per Fatal Accident	0.67	1.05	1.49	3.0	7.5



The annual average for passenger and crew fatalities, so far, for the current decade (2010-2015) is 233.8, that for the previous decade was 511.6 and the average for the 1990s was 657.8.

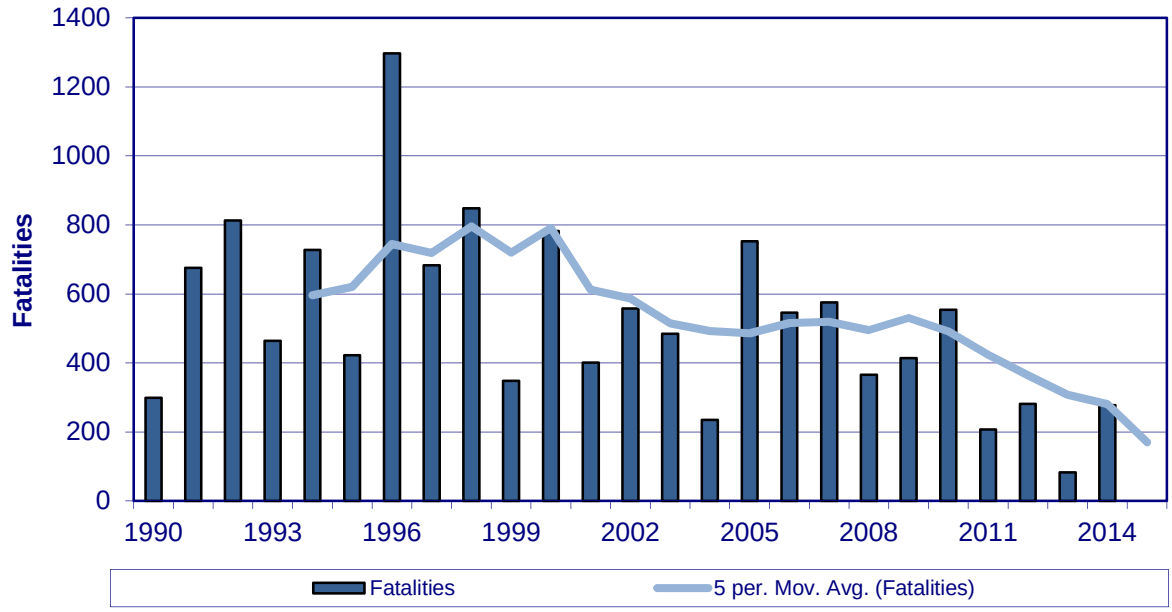
Annual Passenger & Crew Fatalities (western-built jets) – 2006 - 2015										
Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Fatalities	546	576	366	414	554	207	281	83	278	0

Passenger & Crew Fatalities (western-built jets) – Decade Averages					
Period	1970 - 1979	1980 - 1989	1990 - 1999	2000 - 2009	2010 - 2015
Annual Average	761.5	587.0	657.8	511.6	233.8

Average Passenger & Crew Fatalities per Fatal Accident (western-built jets) – 2006 - 2015										
Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Average Fatalities	78.0	82.3	40.7	46.0	69.3	41.4	93.7	16.6	139.0	-

Passenger & Crew Fatalities per Fatal Accident (western-built jets) – Decade Averages					
Period	1970 - 1979	1980 - 1989	1990 - 1999	2000 - 2009	2010 - 2015
Average Fatalities	62.9	55.9	62.6	66.5	61.0

Annual Passenger and Crew Fatalities- Western-Built Jets
(Excludes Acts of Violence)

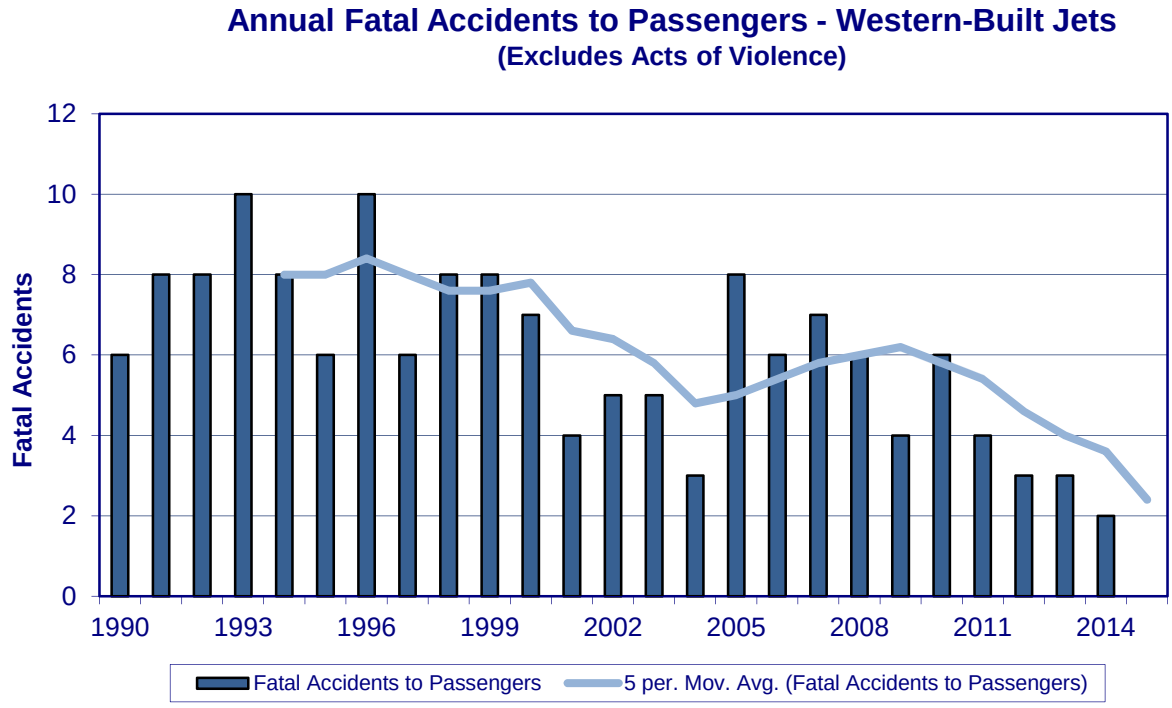


There were two fatal accidents in 2014 involved passenger fatalities on revenue passenger flights. There were three such accidents in 2013, three in 2012 and four in 2011. The two fatal accidents in 2014 gave rise to 165 passenger fatalities. In 2013, the three fatal accidents resulted in 63 passenger deaths while the three fatal accidents in 2012 killed 269 passengers.

Annual Fatal Accidents to Passengers (western-built jets) – 2006 - 2015										
Year	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Fatal Accidents	6	7	6	4	6	4	3	3	2	0

Fatal Accidents to Passengers (Western-Built Jets) – Decade Averages					
Period	**1970 - 1979**	**1980 - 1989**	**1990 - 1999**	**2000 - 2009**	**2010 - 2015**
Annual Average	9.1	8.5	7.8	5.5	3.0

The average annual number of fatal accidents (to passengers) so far this decade is 3.0, about 45% down on the last decade's average of 5.5 and considerably better than that for the 1990s of 7.8.

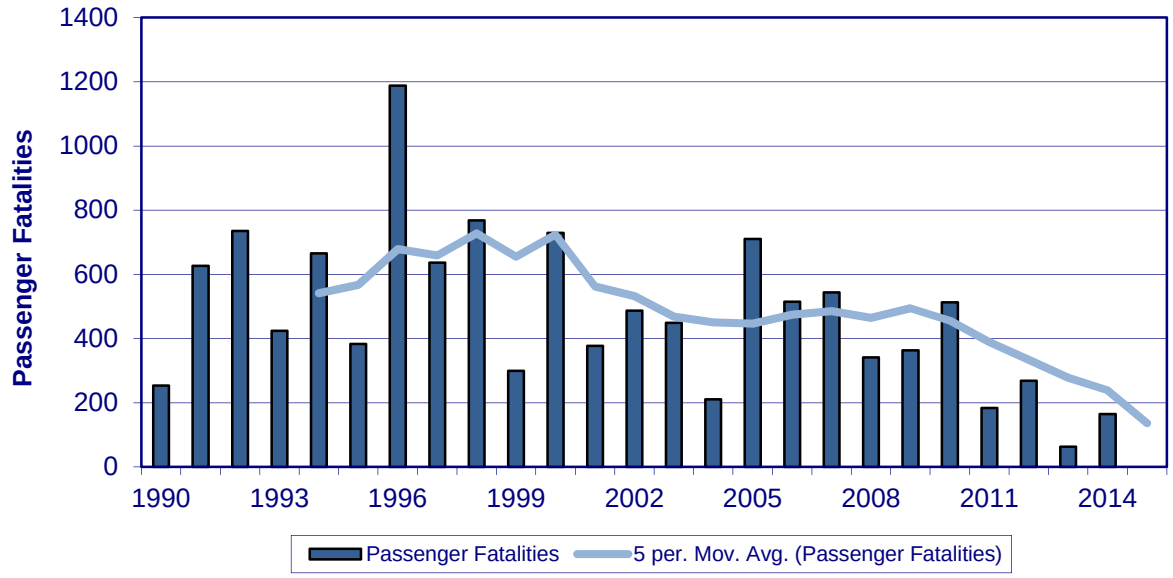


The annual average number for passenger fatalities for the current decade so far is 199, that for the previous decade, 472.6, and for the 1990s, 598.

Annual Passenger Fatalities on Revenue Passenger Flights (western-built jets) – 2006 - 2015										
Year	**2007**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Fatalities	515	544	341	363	513	184	269	63	165	0

Passenger Fatalities on Revenue Passenger Flights (western-built jets) – Decade Averages					
Period	**1970 - 1979**	**1980 - 1989**	**1990 - 1999**	**2000 - 2009**	**2010 - 2015**
Annual Average	695.3	539.6	598.0	472.6	199.0

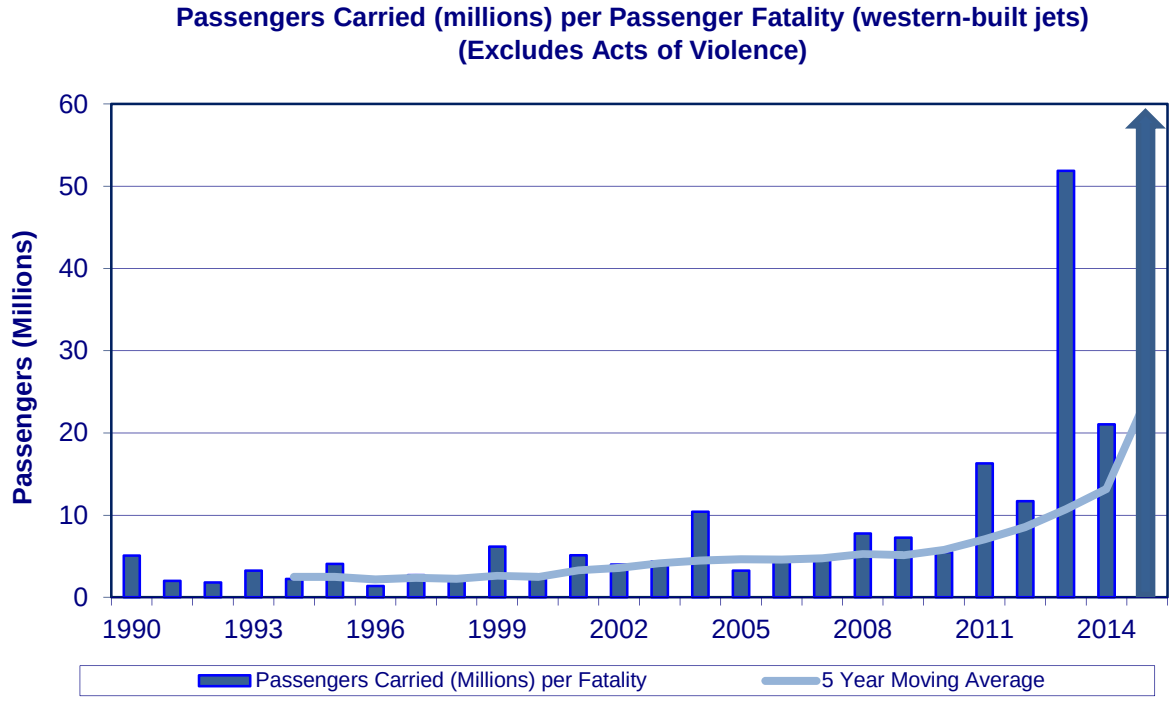
Annual Passenger Fatalities on Revenue Passenger Flights - Western-Built Jets
(Excludes Acts of Violence)



Some 3.7 billion passengers were carried on western-built jets in 2015 without a single one being killed in an aircraft accident. The passenger fatality rate in 2014 was one per 21 million passengers carried and in 2013, one per 51.9 million carried.

The passenger fatality rate for the current decade so far is about one per 16.2 million passengers carried while that for the period 2000-2009 was one per 4.8 million and for the 1990s, one per 2.5 million. This suggests that, as far as accidents are concerned, passengers on western-built jet flights are now over three times as safe as in the 2000s more than six times safer than during the 1990s and 15 times safer than in the 1970s.

Passenger Fatality Rate (western-built jets)					
Period	**1970 - 1979**	**1980 - 1989**	**1990 - 1999**	**2000 - 2009**	**2010 - 2015**
Passengers Carried (Millions) per Passenger Fatality	1.05	2.0	2.5	4.8	16.2

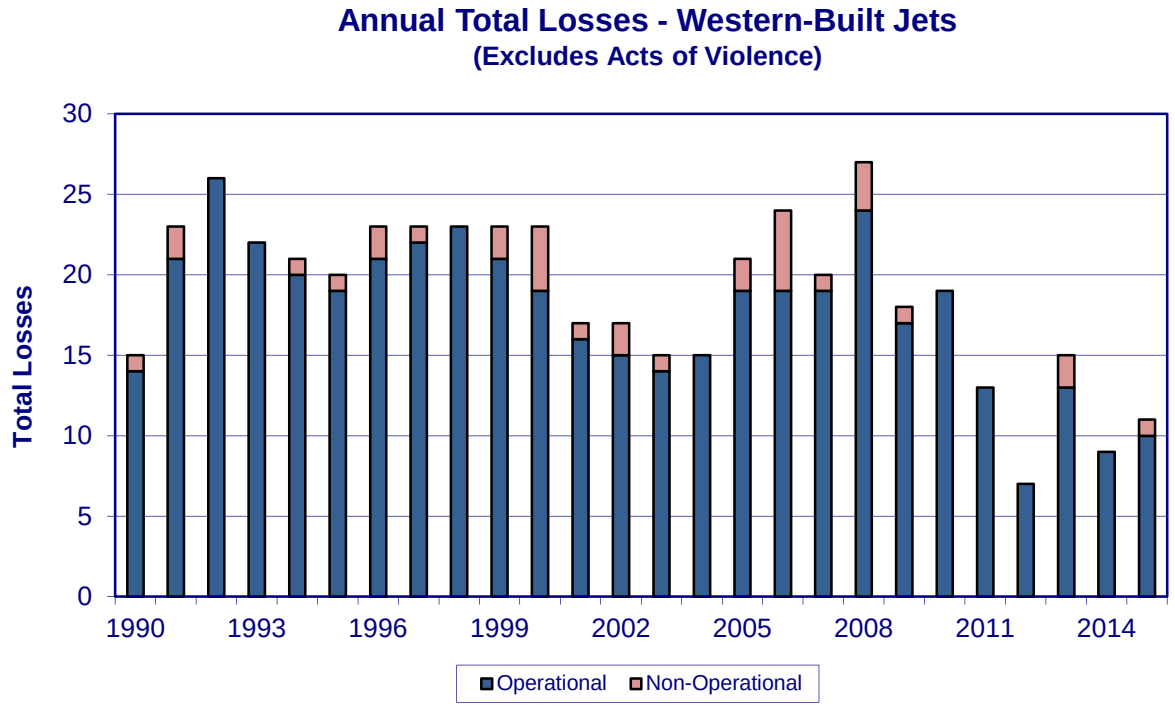


At the time of writing, western-built jets had suffered 11 confirmed all-risk insurance total losses during 2015. This is two more than in 2014 but four less than in 2013.

The average annual number of operational total losses for the current decade is 11.8, increasing to 12.3 if non-operational losses are also included. For the previous decade, it was 17.7 (19.7 including non-operational losses) and for the 1990s, 20.9 (21.9).

Annual All-Risk Total Losses (western-built jets) – 2006 - 2015										
Year	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Operational	19	19	24	17	19	13	7	13	9	10
Non-Operational	5	1	3	1	0	0	0	2	0	1
All	24	20	27	18	19	13	7	15	9	11

All-Risk Total Losses (western-built jets) – Decade Averages					
Period	**1970 - 1979**	**1980 - 1989**	**1990 - 1999**	**2000 - 2009**	**2010 - 2015**
Annual Average Operational	17.6	16.5	20.9	17.7	11.8
Annual Average All	18.1	17.4	21.9	19.7	12.3



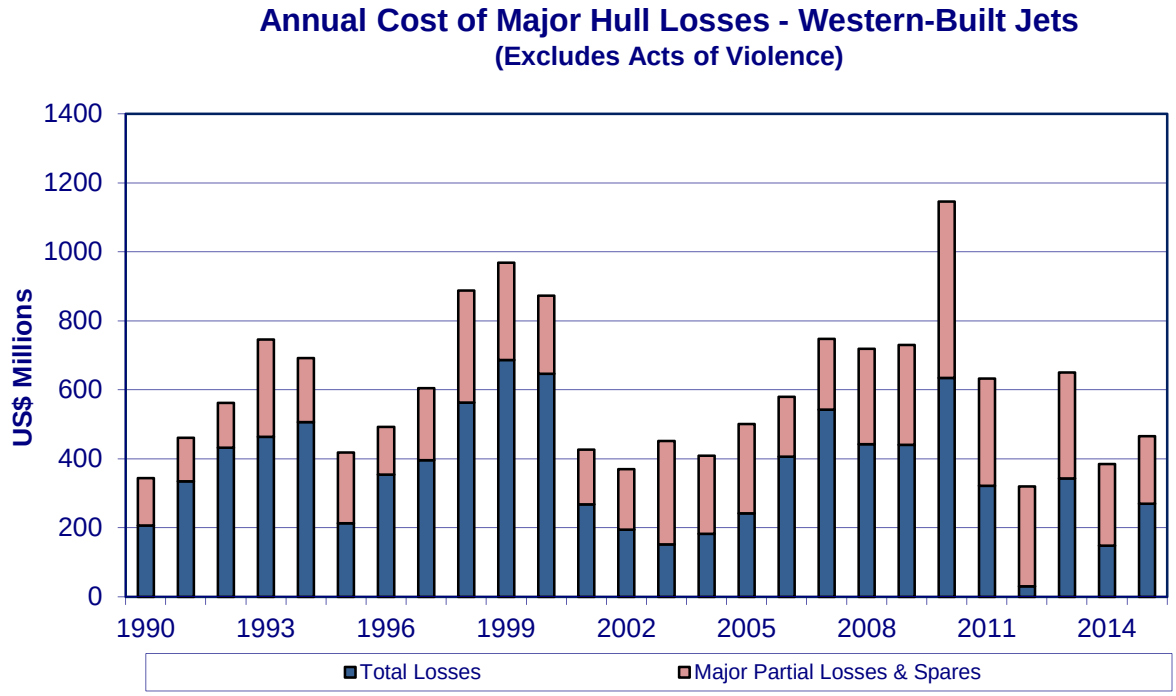
The estimated cost of major hull claims (total losses and major partial losses) in 2015 is provisionally estimated at $466 million. This is a worse result than 2014 when losses totaling some $385 million were incurred but markedly better than the $650 million cost of claims in 2013. The worst recent year was 2010 when the cost of major hull claims totaled $1,146 million.

The result for 2015 compares favourably to the annual average for the current decade of $600 million. The annual average for the previous decade was $580.7 million and for the 1990s, $617.7 million.

Annual Cost of Major Hull Claims $m (western-built jets) – 2006 - 2015										
Year	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Total Losses	406	543	442	440	635	322	30	343	148	270
Major Partial	174	205	277	290	361	225	280	307	222	196
Spares*	0	0	0	0	150	86	10	0	15	0
Total	580	748	719	730	1,146	633	320	650	385	466

* Spares – significant losses falling on the airline's hull policy only.

Cost of Major Hull Losses $m (western-built jets) – Decade Averages					
Period	**1970 - 1979**	**1980 - 1989**	**1990 - 1999**	**2000 - 2009**	**2010 - 2015**
Annual Average Total Losses	121.0	194.2	415.6	351.6	291.3
Annual Average Major Partial	31.1	92.6	202.1	227.6	265.2
All (including spares)	152.1	286.8	617.7	580.7	600.0



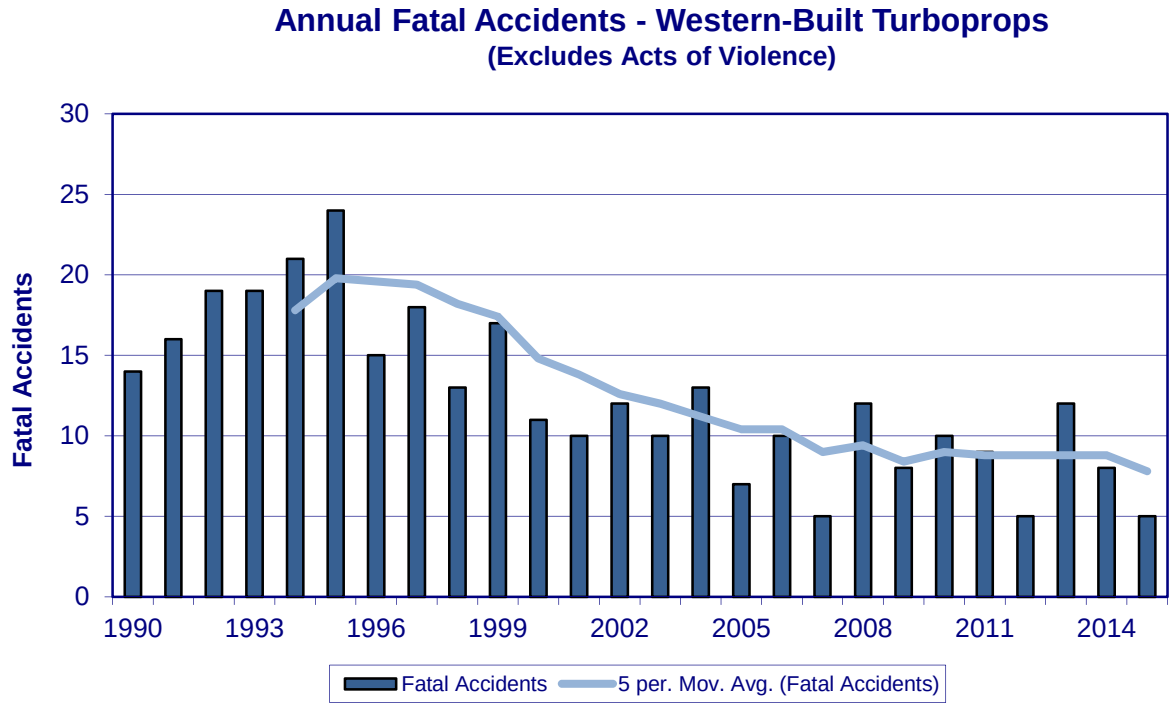
Western-Built Turboprops

During 2015, western-built turboprops (of more than 14 passenger seats or cargo equivalent) suffered five fatal accidents resulting in 117 passenger and crew deaths. This shows a reduction in the number of fatal accidents when compared to 2014, when there were eight, but an increase in the number of fatalities.

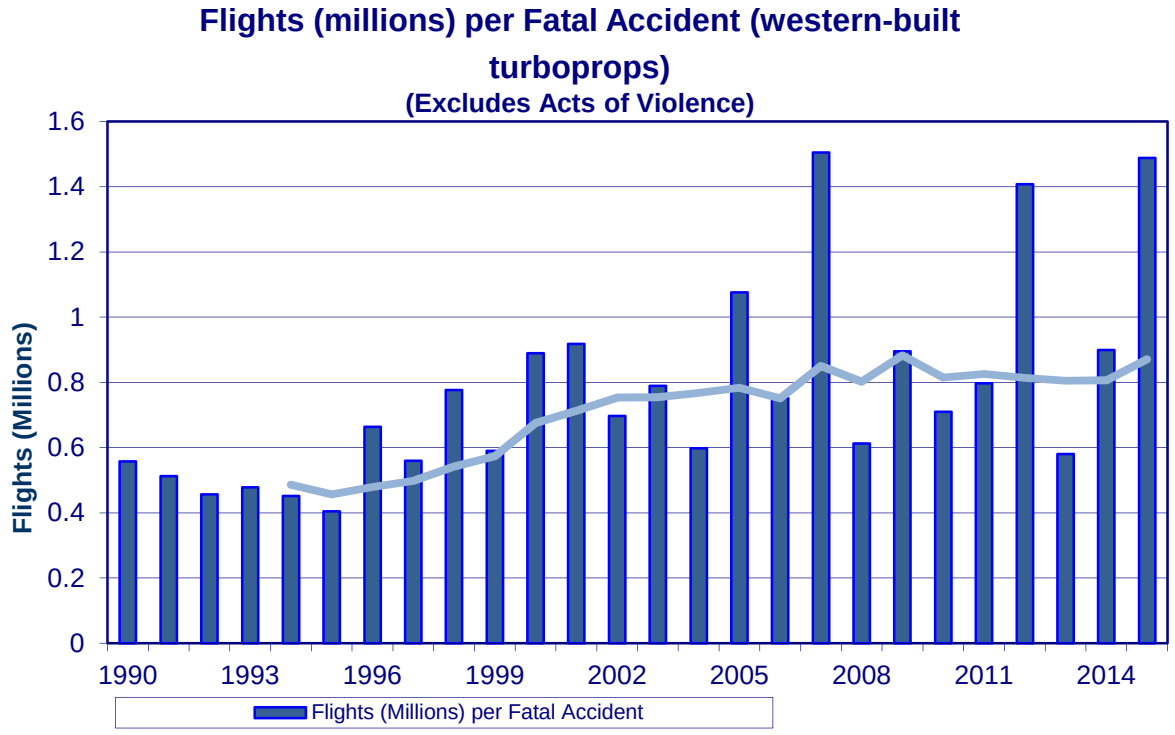
The average annual number of fatal accidents so far in this decade (2010-2015) is 8.2 while the average for the previous decade was 9.8. In comparison, the annual average for the 1990s was 17.6.

Annual Fatal Accidents (western-built turboprops) – 2006 - 2015										
Year	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Fatal Accidents	10	5	12	8	10	9	5	12	8	5

Fatal Accidents (Western-Built Turboprops) – Decade Averages					
Period	**1970 - 1979**	**1980 - 1989**	**1990 - 1999**	**2000 - 2009**	**2010 - 2015**
Annual Average	15.8	15.1	17.6	9.8	8.2



The fatal accident rate for western-built turboprops in 2015 is estimated at about one per 1.5 million flights, which is considerably better than in 2014 and 2013 and better than any year since 2007. Despite 2015's good result, there has been no significant sustained improvement in the fatal accident rate for this class of aircraft, which, on average, has now been at around one per 0.8 or 0.9 million flights for more than 10 years.



The number of passenger and crew killed on western-built turboprops in 2015, 117, is worse than in 2014 when 82 people were killed on board this class of aircraft.

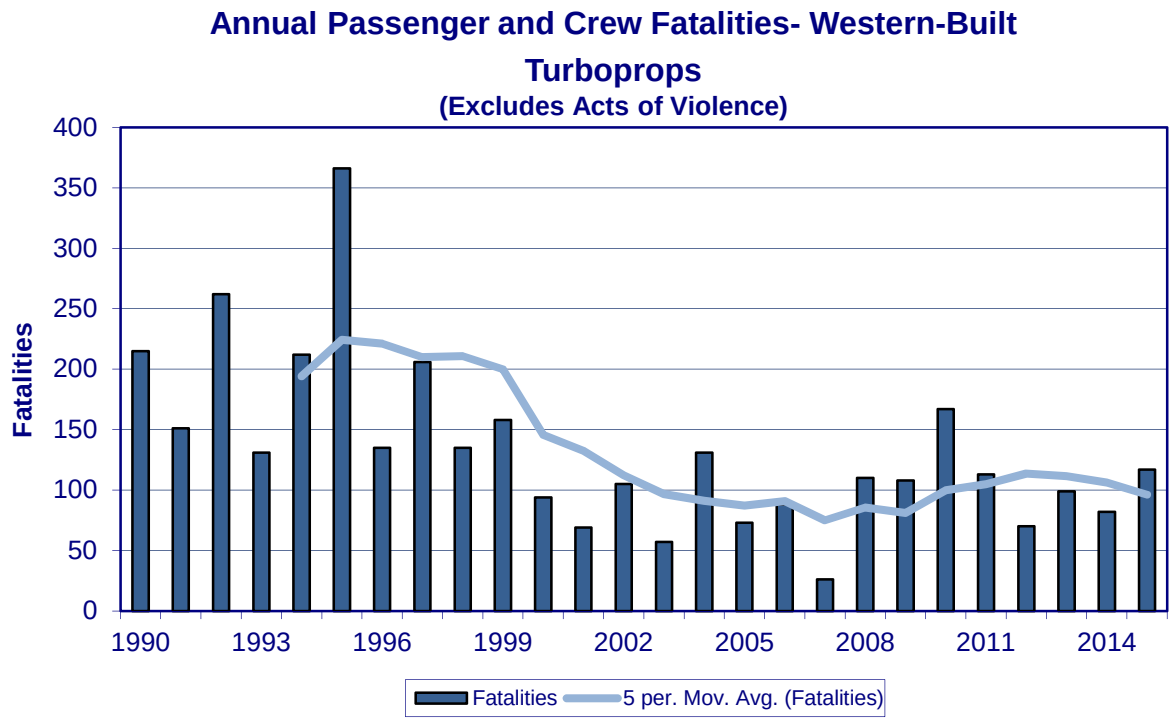
The annual average for passenger and crew deaths on this class of aircraft so far in this decade is 108.0 which is about 25% worse than the annual average for the previous decade of 86.1. The average for the 1990s was 197.1, for the 1980s, 199.1, and for the 1970s, 258.9.

Annual Passenger & Crew Fatalities (western-built turboprops) – 2006 - 2015										
Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Fatalities	88	26	110	108	167	113	70	99	82	117

Passenger & Crew Fatalities (western-built turboprops) – Decade Averages					
Period	1970 - 1979	1980 - 1989	1990 - 1999	2000 - 2009	2010 - 2015
Annual Average	258.9	199.1	197.1	86.1	108.0

Average Passenger & Crew Fatalities per Fatal Accident (western-built turboprops) – Last 10 Years										
Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Average Fatalities	8.8	5.2	9.2	13.5	16.7	12.6	14.0	8.3	10.3	23.4

Passenger & Crew Fatalities per Fatal Accident (western-built turboprops) – Decade Averages					
Period	1970 - 1979	1980 - 1989	1990 - 1999	2000 - 2009	2010 - 2015
Average Fatalities	16.4	13.2	10.9	8.8	13.2

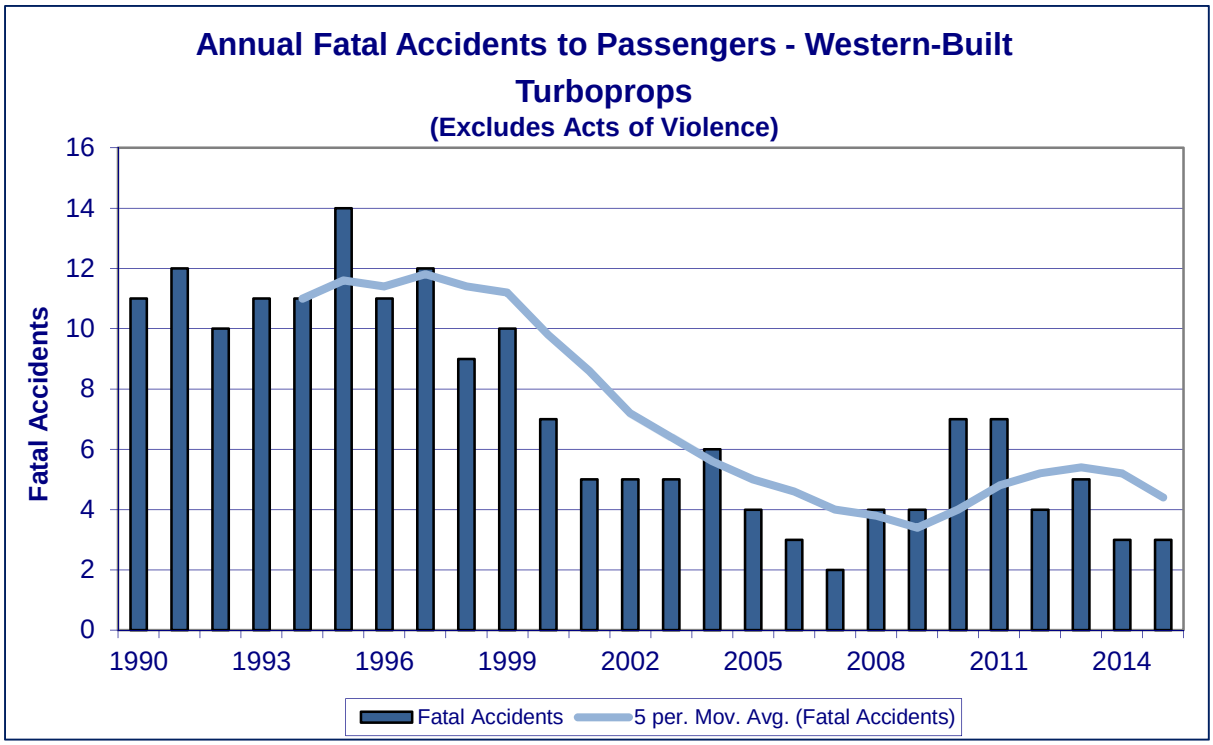


There were three fatal accidents to passengers on revenue passenger flights during 2015; the same number as in 2014. This is the lowest number since 2007 when there were only two such accidents. However, the three accidents in 2015 resulted in 98 passenger deaths, considerably more than the 61 killed in 2014.

The average annual number of fatal accidents (to passengers) for the current decade is 4.8, much the same as that for the previous decade, 4.5. The average for the 1990s was 11.1.

Annual Fatal Accidents to Passengers (western-built turboprops) – 2006 - 2015										
Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Fatal Accidents	3	2	4	4	7	7	4	5	3	3

Fatal Accidents to Passengers (western-built turboprops) – Decade Averages					
Period	1970 - 1979	1980 - 1989	1990 - 1999	2000 - 2009	2010 - 2015
Annual Average	10.6	10.0	11.1	4.5	4.8

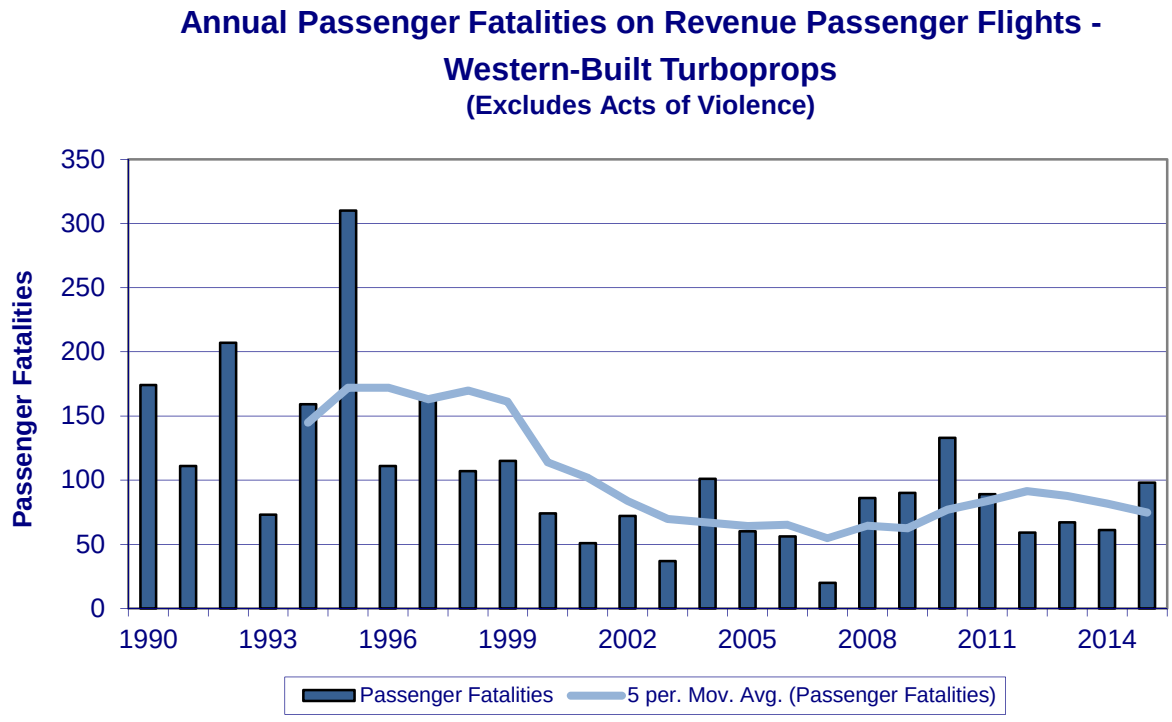


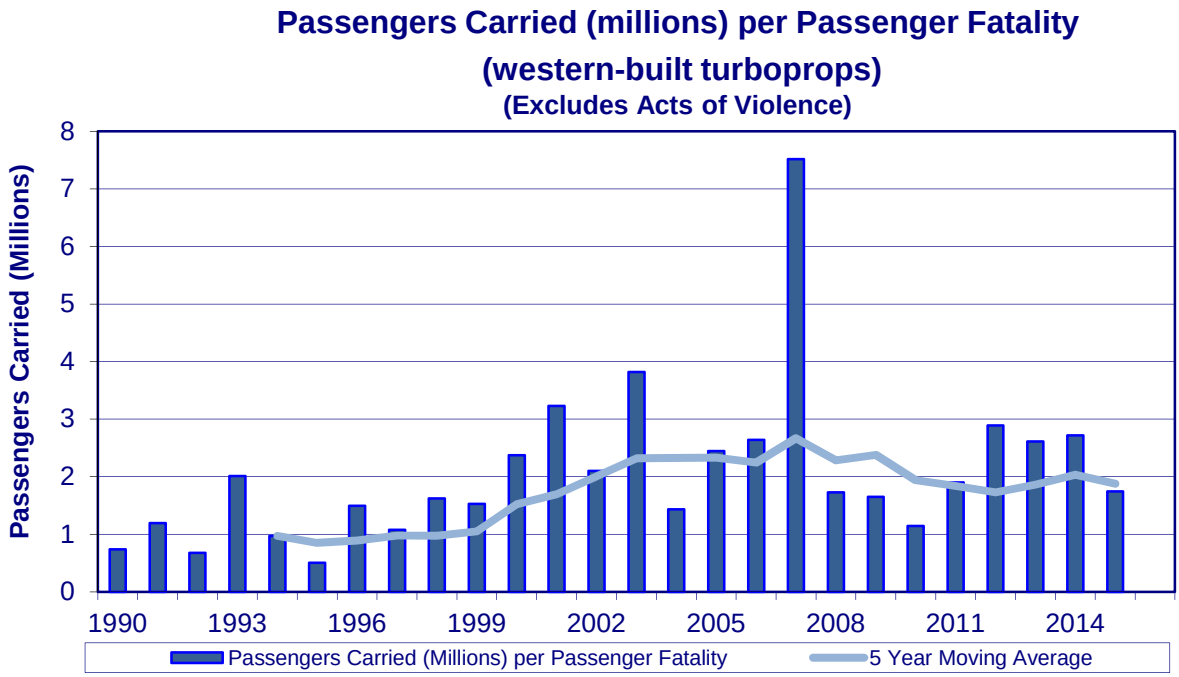
There were 98 passengers killed on revenue passenger flights operated by western-built turboprops during 2015. This is considerably worse than the 61 passengers killed on these aircraft in 2014 and is also disappointing when compared to other recent years.

The result for 2015 is similar that experienced in the years between 2008 and 2011 and increases the current decade's annual average to 84.5. The annual average for the previous decade (2000-2009) was 64.7 and that for the 1990s was 152.9.

Annual Passenger Fatalities on Revenue Passenger Flights (western-built turboprops) – 2006 - 2015										
Year	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Fatalities	56	20	86	90	133	89	59	67	61	98

Passenger Fatalities on Revenue Passenger Flights (western-built turboprops) – Decade Averages					
Period	1970 - 1979	1980 - 1989	1990 - 1999	2000 - 2009	2010 - 2015
Annual Average	213.4	155.2	152.9	64.7	84.5





The passenger fatality rate in 2015 for western-built turboprops was one per 1.75 million passengers carried. This is markedly down on 2014 when the rate was one per 2.7 million passengers carried and also worse than the three years before that. Unfortunately, 2015 might be considered as being typical of the current level of safety for this class of aircraft overall, which seems to have shown no improvement over at least the last 10 years.

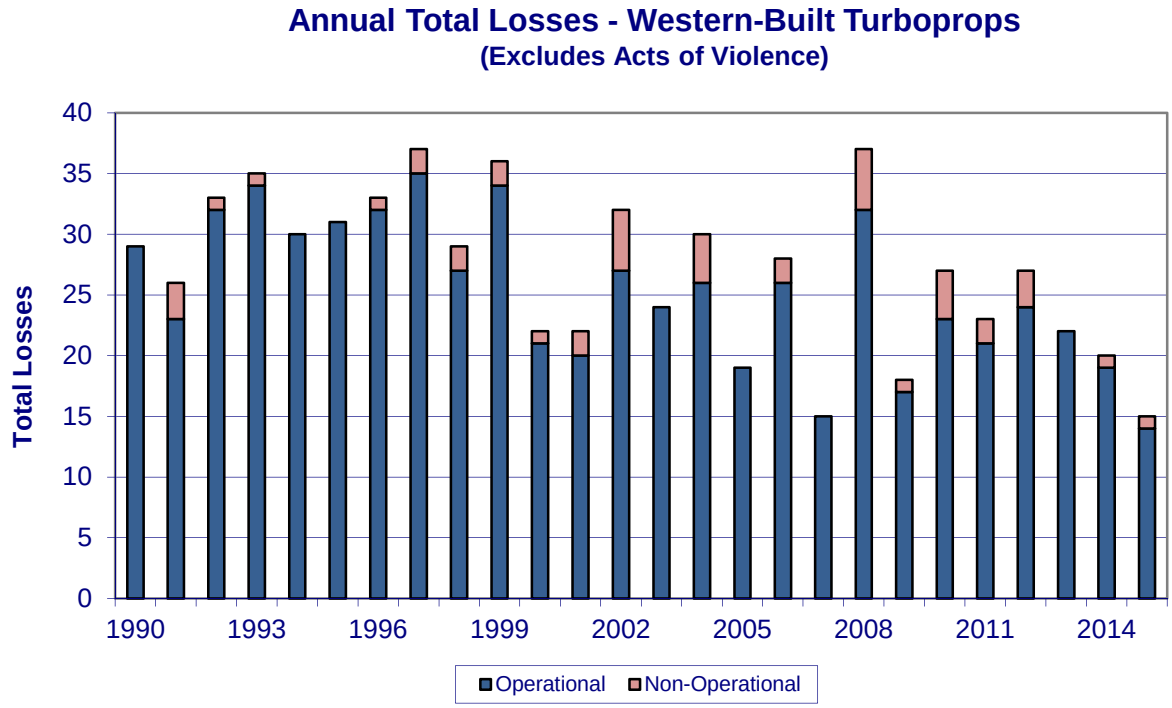
The number of confirmed airline insurance total losses suffered by western-built turboprops during the year, currently standing at 15 (including one non-operational loss), is five less than the 20 total losses in 2014 and seven less than in 2013.

Based on experience, it is thought likely that more total losses will be confirmed in the coming months but that the final figure for 2015 will probably still end up less than that for 2014 and the average for the 2000s.

The annual average for the current decade so far is 20.5 (23.3 including non-operational losses), for the previous decade 23.1 (25.1) and for the 1990s, 30.7 (31.9).

Annual Total Losses (western-built turboprops) – 2006 - 2015										
Year	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Operational	26	15	32	17	23	21	24	22	19	14
Non-Operational	2	0	5	1	4	2	3	0	1	1
All	28	15	37	18	27	23	27	22	20	15

Total Losses (western-built turboprops) – Decade Averages					
Period	**1970 - 1979**	**1980 - 1989**	**1990 - 1999**	**2000 - 2009**	**2010 - 2015**
Annual Average Operational	26.2	27.8	30.7	23.1	20.5
Annual Average All	27.7	29.5	31.9	25.1	23.3



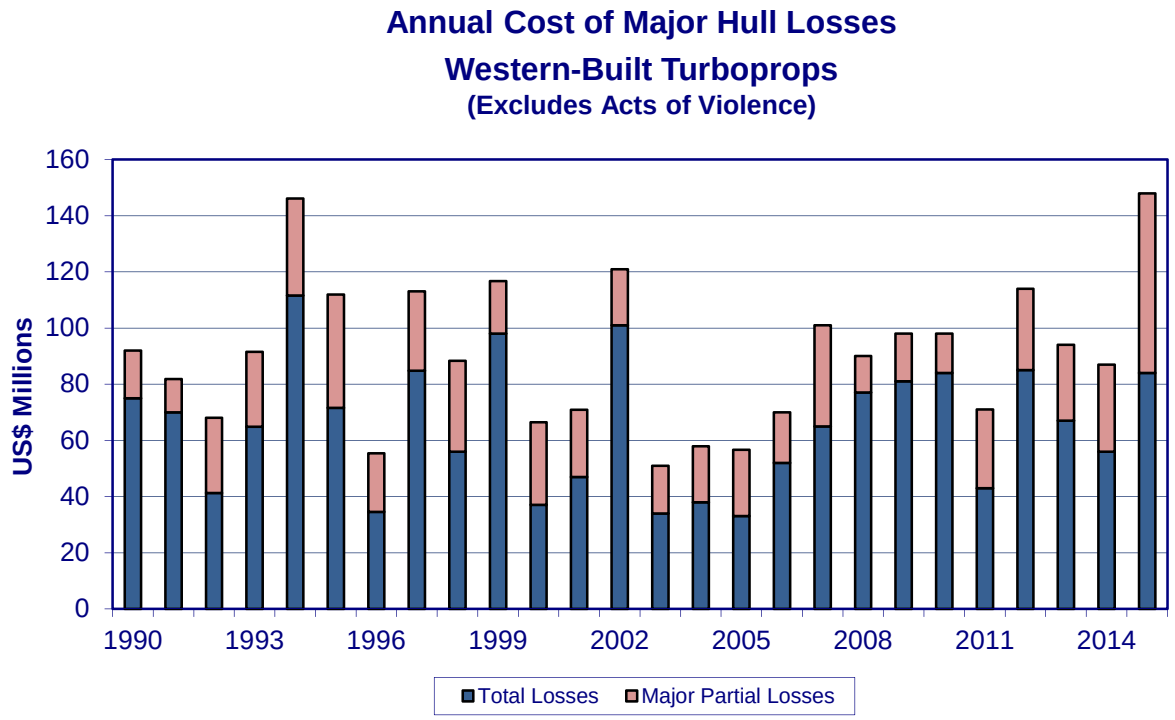
The estimated cost of major hull claims (total losses and major partial losses) in 2015 for western-built turboprops is provisionally estimated at $148 million. This is considerably worse than the $87 million incurred in 2014 and probably makes 2015 the most expensive year since this class of aircraft first entered service. The only year to have come close to 2015 was 1994 when losses totaling an estimated $147 million were incurred.

The result recorded in 2015 increases the annual average for the current decade to $101.0 million, about 30% worse than the annual average for the previous decade of $77.7 million. The annual average for the 1990s was $96.5 million.

	Annual Cost of Major Hull Losses $m (western-built turboprops) – 2006 - 2015									
Year	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Total Losses	52	65	77	81	84	43	85	67	56	84
Major Partial	18	36	13	17	14	28	23	27	31	64
Spares*	0	0	0	0	0	0	6	0	0	0
Total	70	101	90	98	98	71	114	94	87	148

* Spares – significant losses falling on the airline's hull policy only.

Cost of Major Hull Losses $m (Western-Built Turboprops) – Decade Averages					
Period	**1970 - 1979**	**1980 - 1989**	**1990 - 1999**	**2000 - 2009**	**2010 - 2014**
Annual Average Total Losses	24.9	48.8	70.8	56.4	69.8
Annual Average Major Partial	2.9	11.1	25.7	21.3	31.2
All (including spares)	27.8	59.9	96.5	77.7	101.0



Eastern-Built Jets

Airline-operated eastern-built jets suffered no fatal accidents again in 2015; the third year running. This is now also the fourth year running where no revenue passengers have been killed. However, the eastern-built jet fleet has reduced very considerably over recent years and, in 2015, these aircraft probably accounted for only about one percent of the world's total airline operations. With so little exposure it is not surprising that the fleet has been loss free.

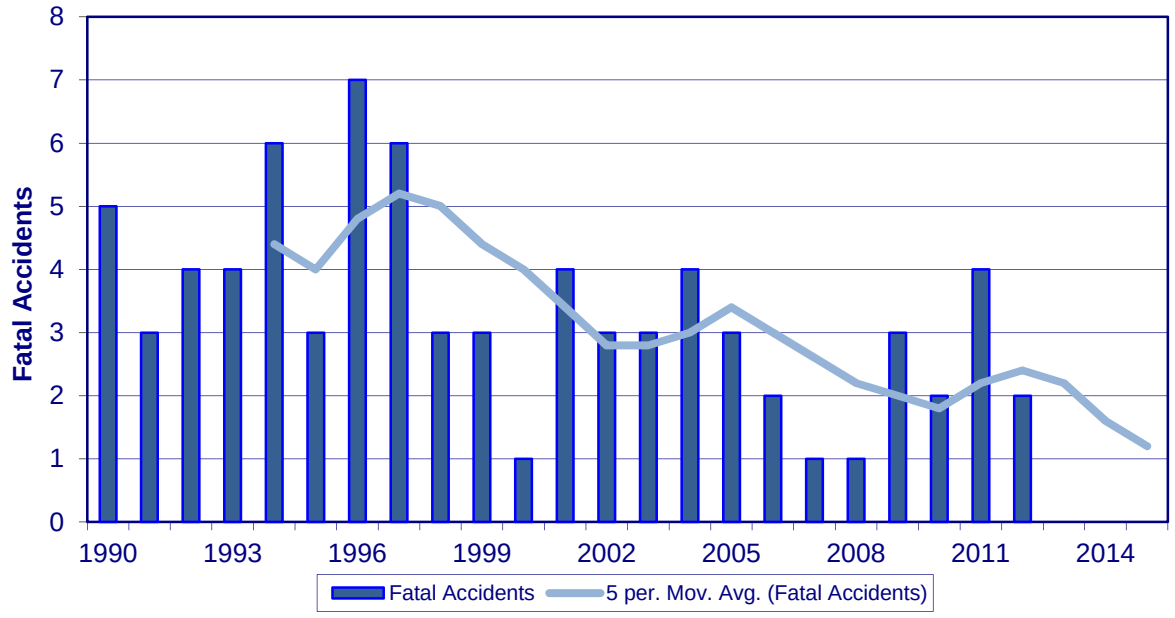
	Annual Fatal Accidents (eastern-built jets) – 2006 – 2015									
Year	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Fatal Accidents (All)	2	1	1	3	2	4	2	0	0	0
Fatal Accidents (Passengers)	2	1	0	2	1	3	0	0	0	0

Fatal Accidents (eastern-built jets) – Decade Averages					
Period	**1970 - 1979**	**1980 - 1989**	**1990 - 1999**	**2000 - 2009**	**2010 - 2015**
Annual Average (All)	5.5	3.8	4.4	2.5	1.3
Passenger Accidents	4.7	3.5	3.0	1.3	0.7

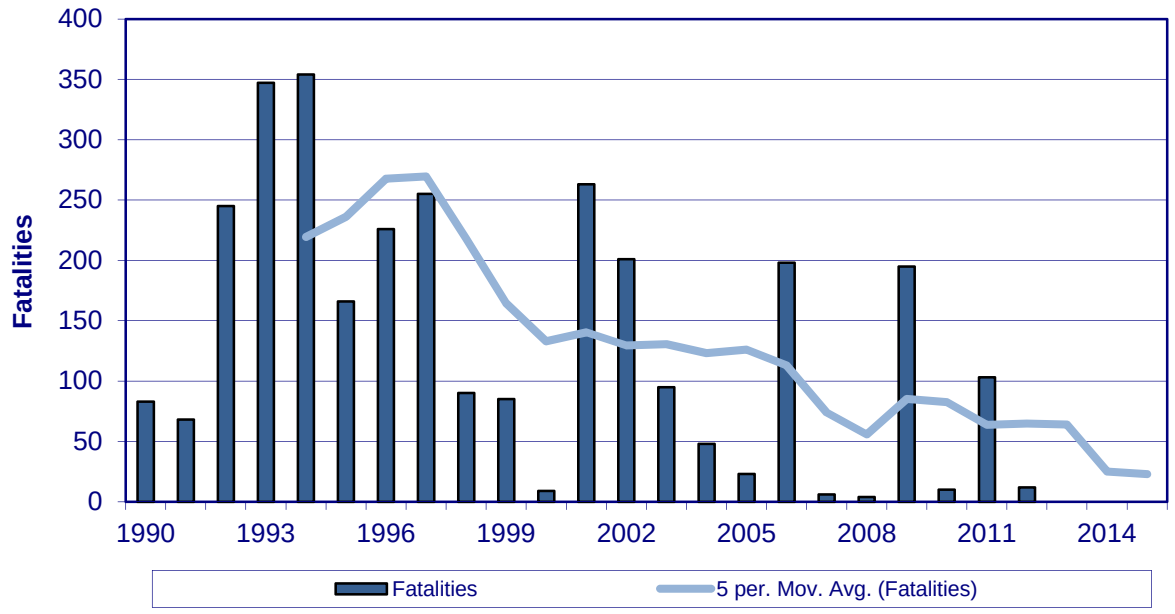
	Annual Fatalities (eastern-built jets) – 2006 - 2015									
Year	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Fatalities (All)	198	6	4	195	10	103	12	0	0	0
Fatalities (Passenger)	188	6	0	161	2	77	0	0	0	0

Annual Fatalities (eastern-built jets) – Decade Averages					
Period	**1970 - 1979**	**1980 - 1989**	**1990 - 1999**	**2000 - 2009**	**2010 - 2015**
All Accidents	234.6	219.7	191.9	104.2	20.8
Passenger Accidents	207.0	200.5	155.9	84.5	13.2

Annual Fatal Accidents - Eastern-Built Jets
(Excludes Acts of Violence)



Annual Passenger and Crew Fatalities - Eastern-Built Jets
(Excludes Acts of Violence)



Eastern-Built Turboprops

Eastern-built turboprops suffered three fatal accidents (including a mid-air collision counted as two accidents) during 2015, two less than in 2014 and down on the annual average for the current decade so far of 4.7. The annual average for the previous decade (2000-2009) was 7.4.

A total of 44 passengers and crew died in these accidents. Again this is lower than in 2014 when 76 people were killed and some 25% better than the annual average for the six year period 2010-2015 which was 58.0.

There were no fatal accidents involving revenue passenger fatalities during 2015. This is the first year since 2009 in which no revenue passengers have been killed. The annual average for passenger fatalities for the current decade is 35.

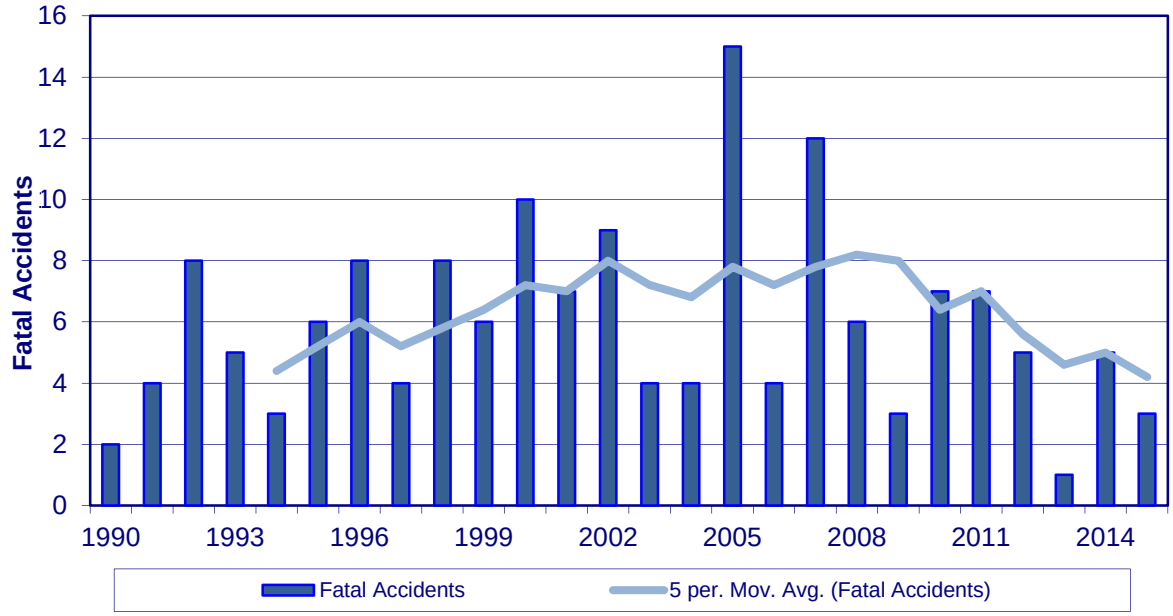
Annual Fatal Accidents (eastern-built turboprops) – 2006 - 2015										
Year	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Fatal Accidents (All)	4	12	6	3	7	7	5	1	5	3
Fatal Accidents (Passengers)	2	4	2	0	5	4	3	1	1	0

Fatal Accidents (eastern-built turboprops) – Decade Averages					
Period	**1970 - 1979**	**1980 - 1989**	**1990 - 1999**	**2000 - 2009**	**2010 - 2015**
Fatal Accidents (All)	6.6	3.7	5.4	7.4	4.7
Passenger Accidents	4.4	2.6	2.4	3.4	2.3

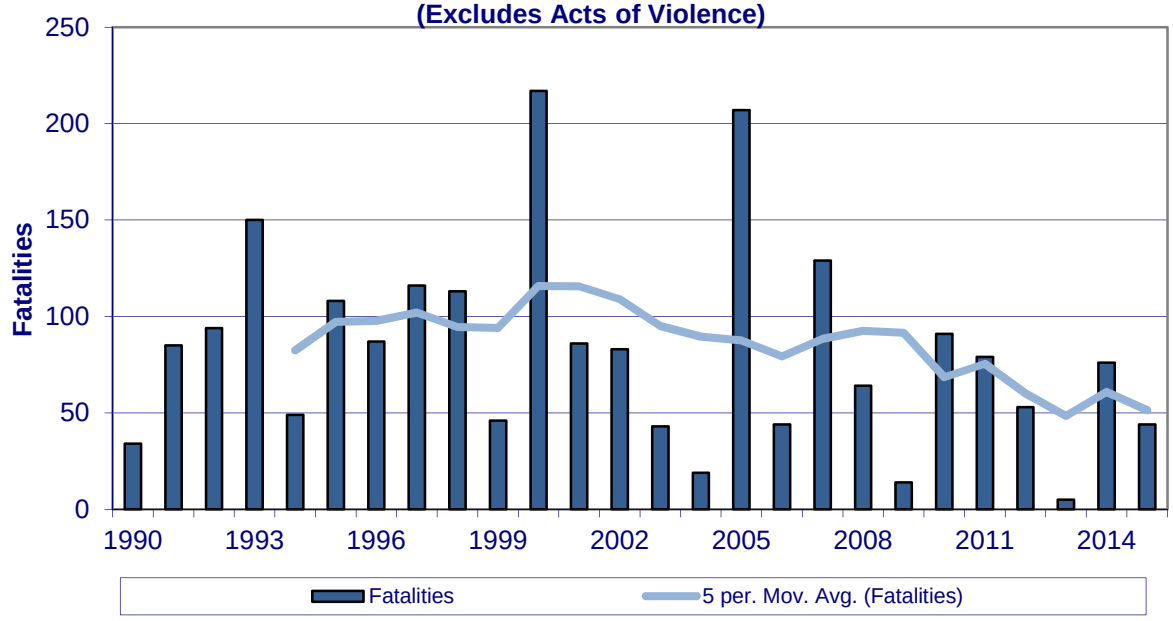
Annual Fatalities (eastern-built turboprops) – 2006 - 2015										
Year	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
Fatalities (All)	44	129	64	14	91	79	53	5	76	44
Fatalities (Passenger)	31	63	29	0	74	54	36	5	42	0

Annual Fatalities (eastern-built turboprops) – Decade Averages					
Period	**1970 - 1979**	**1980 - 1989**	**1990 - 1999**	**2000 - 2009**	**2010 - 2015**
All Accidents	212.4	66.4	88.2	90.6	58.0
Passenger Accidents	173.6	49.7	55.2	58.6	35.2

Annual Fatal Accidents - Eastern-Built Turboprops
(Excludes Acts of Violence)



Annual Passenger and Crew Fatalities - Eastern-Built Turboprops
(Excludes Acts of Violence)



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