2015 – Business as usual?

Provisional figures for the number of civil helicopter\(^1\) accidents, fatal accidents and fatalities in 2015 suggest ‘business as usual’ and are disappointing when compared to the good result seen in 2014. Overall, globally, safety for this class of aircraft is still improving and the trend in accident rates is still down but this is only just keeping up with increases in exposure. On average, the number of accidents each year is hardly changing.

In 2015, civil western-built turbine helicopters suffered 173 known accidents, of which 61 resulted in fatalities; killing 148 passengers and crew. In 2014, although there were more known accidents, 182, there were markedly fewer fatal accidents. In that year there were just 38 accidents with fatalities, giving rise to 96 passenger and crew deaths. The year 2015, is disappointing in comparison with 2014 but is more in line with the annual averages for the last five years of 204 accidents, 55 fatal accidents and 136 fatalities.

During 2015 there were no known accidents involving deaths or serious injuries on the ground. In the last five years there have been five accidents where people have been killed on the ground and another four where people were seriously injured.

Fatal Accident Rates

The Western-built turbine helicopter fatal accident rate in 2015, at about one per 380 helicopters in service\(^2\), was disappointing being almost 60% worse than in 2014 when the rate was about one per 600 helicopters. 2014 was; however, the safest year ever, on this basis, for this class of helicopter and 2015’s result is more or less in line with the annual average over the last five years.

Although seeming poor in comparison with 2014, the 2015 fatal accident rate still compares very favorably with earlier years – the turbine helicopter fatal accident rate for the decade of the 1990s was one per 223 helicopters while that for the 2000s was one per 313 helicopters. The rate for this decade so far (2010-2015), is one per 394 helicopters. On average, Western-built turbine helicopters are now about twice as safe as they were at the start of the 1990s.

The fatal accident rate for multi-engine helicopters in 2015 was one per 555 helicopters. During the decade of the 1990s, the rate was one per 233 helicopters while that for the 2000s was one per 333. The rate for this decade (2010-2015) is one per 526 helicopters.

The fatal accident rate for single-engine helicopters in 2015 was one per 323 helicopters, slightly worse than the annual average for the first six years of this decade (2010-2015) which was one per 344 helicopters. The fatal accident rate for the 1990s was one per 229 helicopters and for the 2000s one per 303 helicopters.

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\(^1\) Western-built turbine helicopters only. Includes helicopters operated by government agencies whether civil registered or not. Excludes deliberate acts of violence.

\(^2\) Accident Rates. Currently we do not have good data for the number of flights etc on a global basis for this class of aircraft to allow us to calculate accident rates in the form of, for instance, “fatal accidents per million flights”. However, we do have good fleet data and this allows us to use “aircraft years” (average number of aircraft in the fleet) and “seat years” as measures of exposure when calculating accident rates. Nevertheless, although these rates do give a good indication of trends over the longer term, possible changes in utilisation from year to year should be borne in mind when comparing one year to another.
The underlying trend in the fatal accident rate for Western-built turbine helicopters, both as a whole and separately for single and multi-engine helicopters, is down and has been improving since about 2000. However, the fall in the accident rate for single-engine helicopters as a whole has not been keeping up with that for multi-engine helicopters in recent years and, over the last five years, the multi-engine helicopter fatal accident rate has been almost 40% better than that for the singles.

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Fatal accidents per 100 helicopters at risk

Excludes military operators but includes government agencies
Fatal Accidents

Turbine helicopters suffered a total of 61 fatal accidents last year, 23 more than in 2014, when there were only 38 such accidents, but the same number as in 2013. There were fewer fatal accidents in 2014 than in any year since at least 1990 but 2015 was more in line with what might be expected. The year 2011, with 69 fatal accidents, was the worst year since 1990.

Despite the improving fatal accident rate and the relatively good result in 2014, there has been no significant improvement in the annual number of fatal accidents for many years with, on average, still about 56 a year. The number of helicopters in operation has been increasing so safety must, currently, be keeping up with the expansion of the industry, but has not improved to the point where the number of fatal accidents in a year begin to decline.

Single-engine helicopters suffered 45 fatal accidents in 2015, 16 more than in 2014 but the same number as in 2013. The lowest number of fatal accidents in any year since at least 1990 was in 2002 when there were 27. The year with the most such accidents was 1992 when there were 53. The number of single-engine fatal accidents in 2015 was above the long-term trend of 39 or 40 per year.

There were 16 fatal accidents to multi-engine helicopters in 2015, seven more than in 2014 but on the long-term trend.

Although there have been individual good and bad years, neither single nor multi-engine helicopters have shown any significant improvement in the frequency of fatal accidents for more than 25 years.
Fatal accidents involving passenger and/or crew deaths

Annual Fatal Accidents (Western-built Turbine Helicopters) – Last 10 Years

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Fatal accidents involving passenger and/or crew deaths
Fatalities

A total of 148 passengers and crew died in the 61 fatal accidents during 2015, giving a simple average of about 2.4 fatalities per accident. There were 52 more fatalities in 2015 than in 2014 but last year’s result was very similar to 2013’s when there were 145 people killed. The long-term trend is currently at about 140 fatalities per year.

Some 116 passengers and crew died in the 45 fatal accidents suffered by single-engine helicopters in 2015, giving a simple average of about 2.6 fatalities per fatal accident. This is markedly up on 2014, when this class of helicopter suffered 29 fatal accidents killing 66 passengers and crew. The 2015 result was also worse than the long-term trend of about 92 fatalities per year. As with the trend in the number of fatal accidents, there has been no improvement in the number of fatalities per year on this class of helicopter for more than 25 years.

Only 32 passengers and crew died in the 16 fatal accidents suffered by multi-engine helicopters in 2015, giving a simple average of 2.0 fatalities per fatal accident. The 2015 death toll was similar to that in 2014 when 30 people died in 16 fatal accidents. Unlike single-engine helicopters, there has been some improvement in the annual number of fatalities in accidents involving multi-engine helicopters over the period since 1990.
The worst accidents in 2015 included:-

- Colombia National Police UH-60L (PNC-0608) on 4 August, which killed the four crew and 12 passengers when it crashed on high ground in poor weather near Piedras Blancas, Colombia.
- Solaire Helicopters AS365N3 (9M-IGB) on 4 April, which went out of control and crashed while en route in Malaysia, killing the pilot and five passengers.
- SonAir AS365N3 (D2-EWA), on 2 July, which crashed en route in Angola, killing the pilot and five passengers on board.
- Bristow Helicopters Sikorsky S76C+ (5N-BGD) on 12 August, which crashed into the waters of Lagos Lagoon after the forward main servo input control pushrod assembly failed. The two crew and four of the ten passengers were killed with the other six passengers sustaining serious injuries.

**Fatality Rates**

Fatality rates in 2015, on a deaths per 1,000 seats basis, showed a mixed experience with single-engine helicopters producing one of the worse results in recent years while multi-engine helicopters produced a relatively good result.
Single-engine helicopters produced a significantly worse result than in 2014, going from about one death per 990 seats, to about one per 580 seats last year. Multi-engine helicopters, however, produced a better result with a fatality rate in both 2014 and 2015 of one per 3,125 seats compared with one per 1,670 in 2013.

Fatality rates for turbine helicopters as a whole are still improving and, on this basis, the class is about twice as safe as it was 25 years ago.

| Annual Fatality Rates (Western-built Turbine Helicopters) – Last 10 Years |
|--------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| All                      | 1.01             | 1.08             | 1.42             | 1.23             | 1.08             | 1.26             | 0.72             | 0.94             | 0.60             | 0.89             |
| Single                   | 1.27             | 1.70             | 1.71             | 1.65             | 1.42             | 1.92             | 1.28             | 1.42             | 1.01             | 1.73             |
| Multi                    | 0.78             | 0.58             | 1.19             | 0.92             | 0.84             | 0.80             | 0.33             | 0.60             | 0.32             | 0.32             |

Fatalities (passengers and crew) per 1,000 seats in service

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