## 2. Statistics on Accident and Damage Occurrence

### 1. Number of Accidents

Between 2001 and 2021, there were 55 accidents involving ultralight planes, etc., and when aggregated by year, except for 2005, between 1 and 5 accidents occurred each year (an average of approximately 2.6 accidents) (see Fig. 2) .

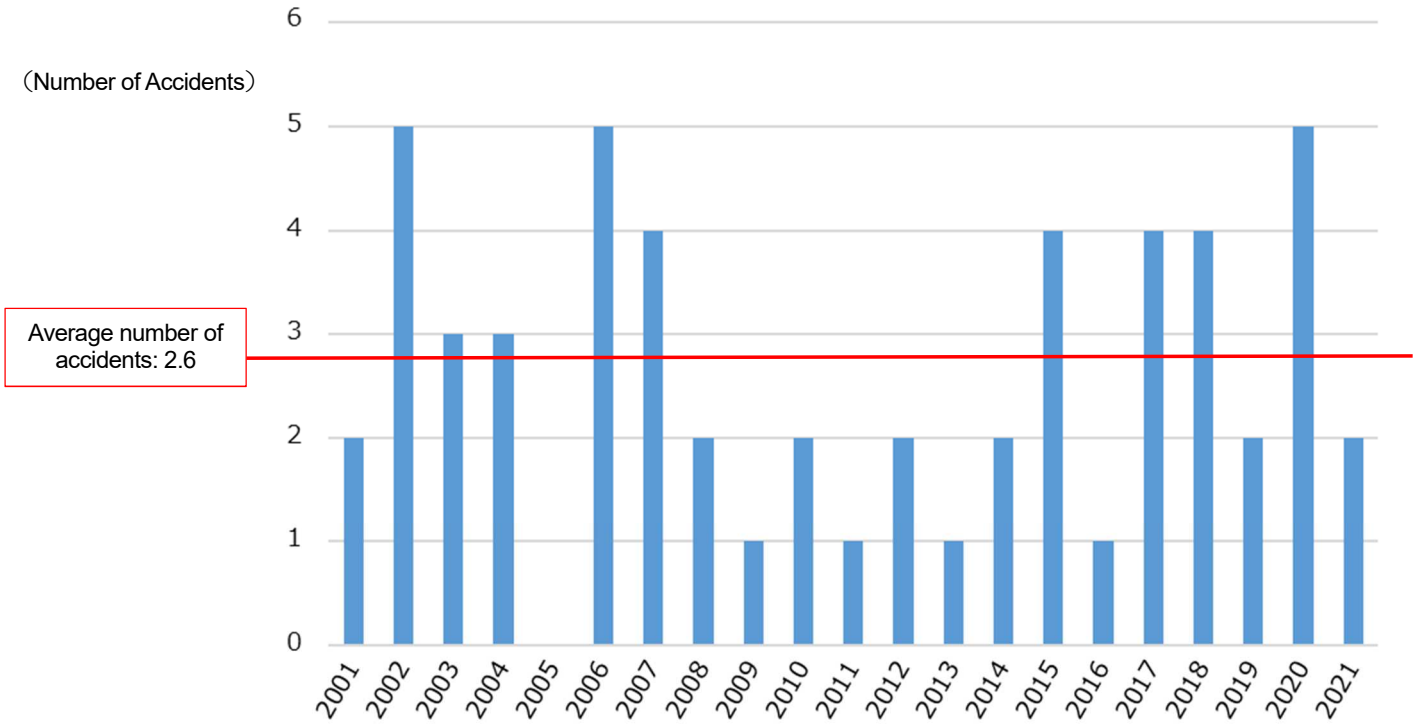



**Figure 2 Number of Accidents by Year**

Compared to the number of accidents by year for small aeroplanes and helicopters, the number of accidents for ultralight planes, etc. was higher for the three years from 2018 (see Figure 3).

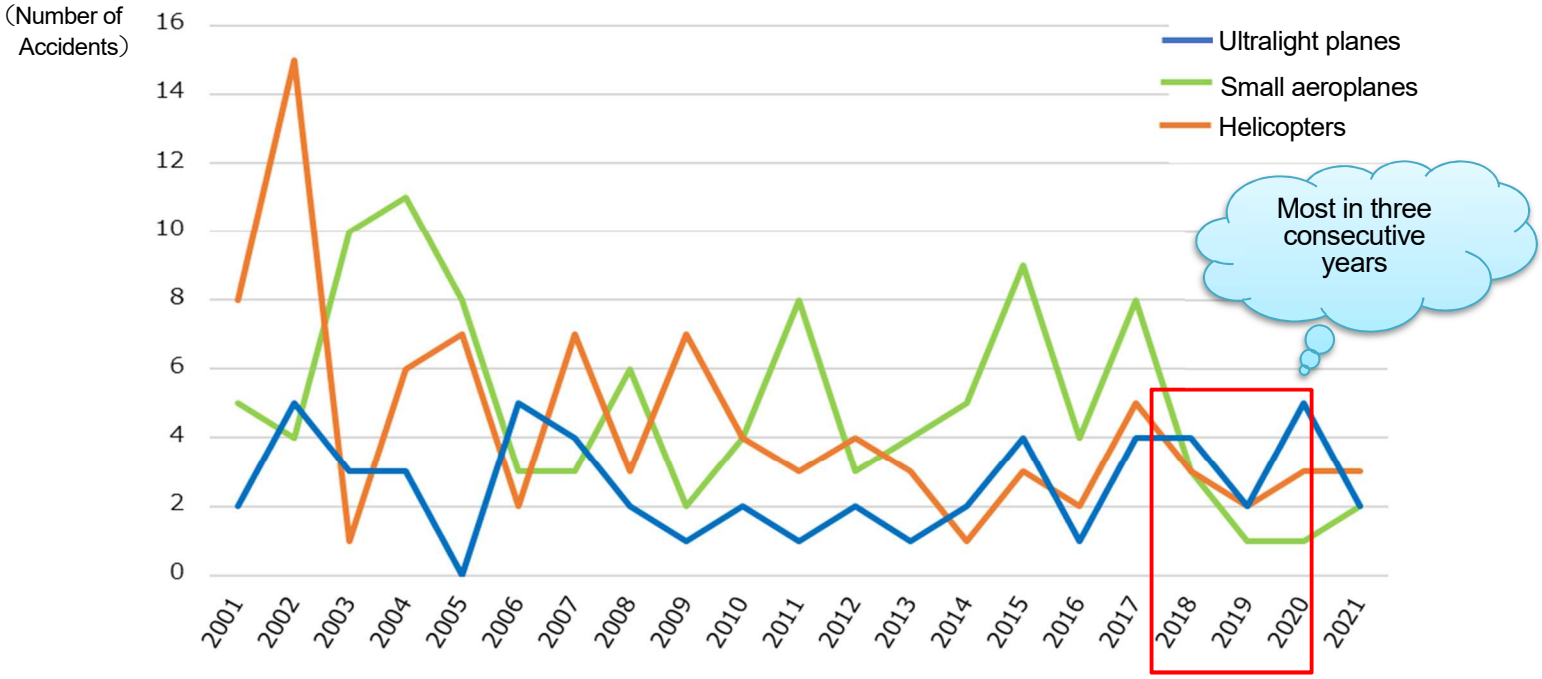



**Figure 3: Number of Accidents (by Type)**

## 2. Number of Accidents by Month and Day of Week

The monthly count of the number of accidents shows that May had the highest number with 9, followed by 7 in August. The four months from May to August accounted for 28 of the 55 cases, or about 50% of the total (see Figure 4).

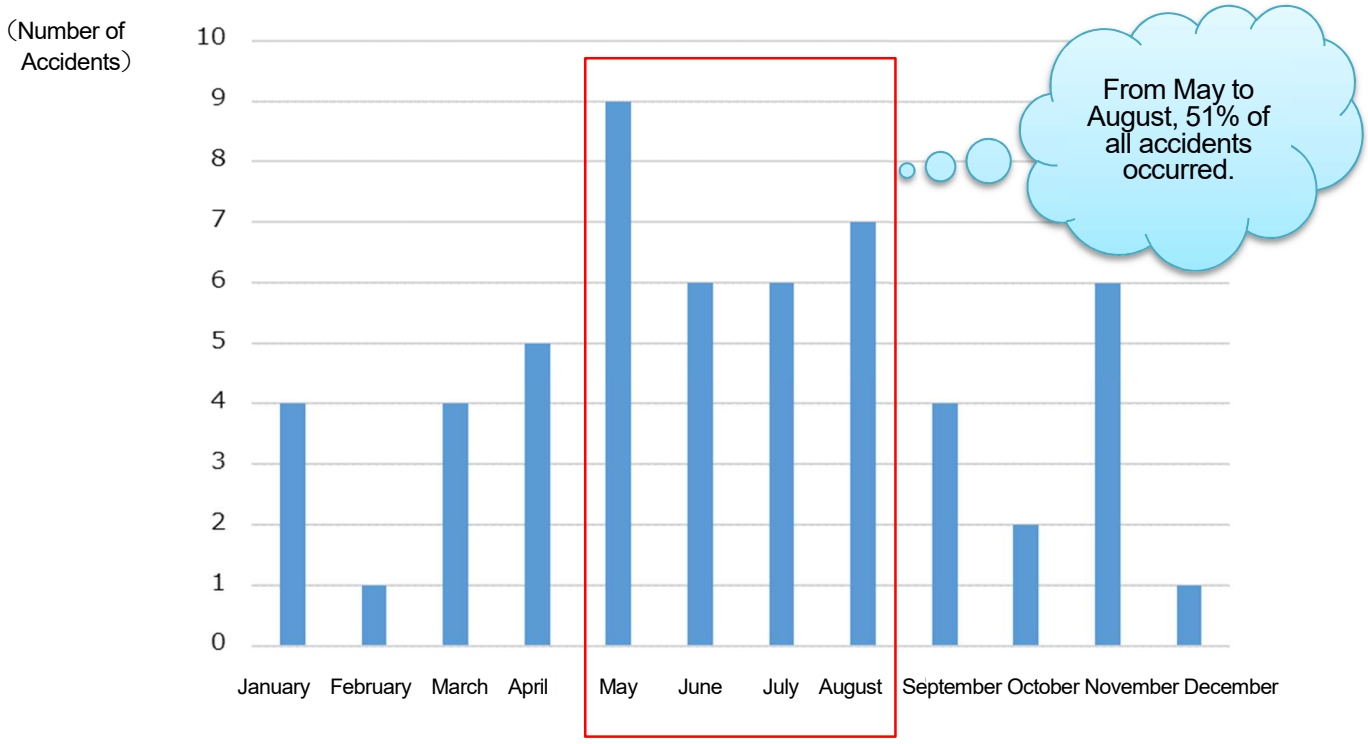



**Figure 4 Number of Accidents by Month**

When aggregated by day of the week, 42 of the 55 accidents occurred on Saturdays, Sundays, and holidays, accounting for nearly 80% of the total (see Table 1).

| | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday |
|---|---|---|---|---|---|---|---|
| Number of Accidents | 2 | 6 | 6 | 2 | 2 | 13 | 24 |
| Number of Accidents on holidays | 1 | 1 | 2 | 0 | 1 | | |

Number of accidents occurring on Saturdays, Sundays, and holidays (in yellow) : 42

76% of accidents are on holidays.

**Table 1 Number of Accidents by Day of Week**

Since ultralight planes, etc. are popular as sky leisure activities, many people enjoy them during seasons and holidays when it is easier to be outdoors, and accidents are likely to occur more frequently during such periods.

## 3. Accident Types and Occurrence of Casualties and Airframe

With regard to the 54 accidents for which investigation reports have been published, a breakdown by accident shows that " crashes and falls" accounted for 34 (63%), followed by "airframe damage during emergency landing" in 10 (19%), together accounting for 44 of the 54 accidents, or approximately 80% of all accidents (see Figure 5 on the next page).

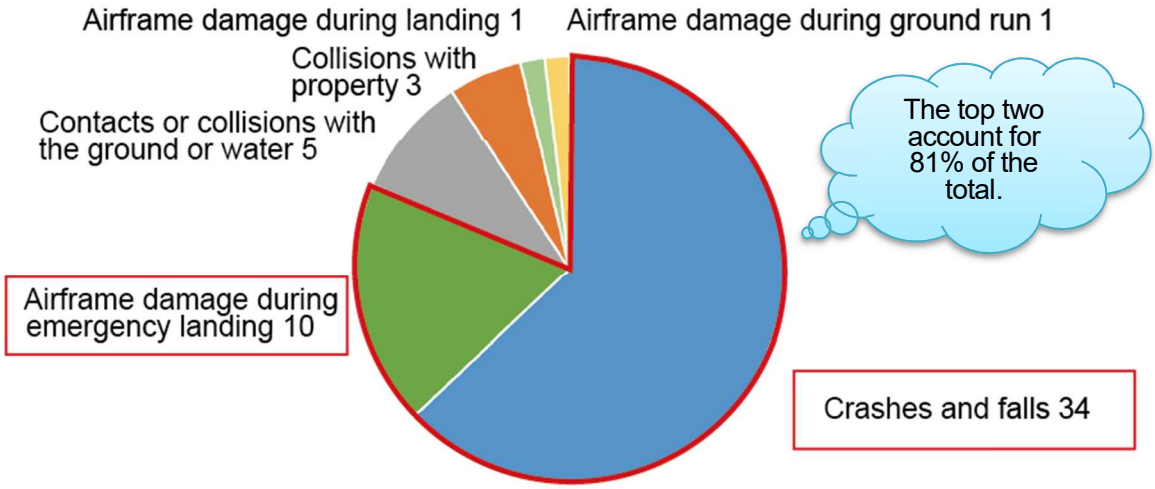



**Figure 5 Occurrence by Accident Types**

In terms of casualties, 15 accidents (28%) involved fatalities and 27 (50%) involved serious injuries, together accounting for 42 out of 54 accidents, or about 80% of the total (see Figure 6).

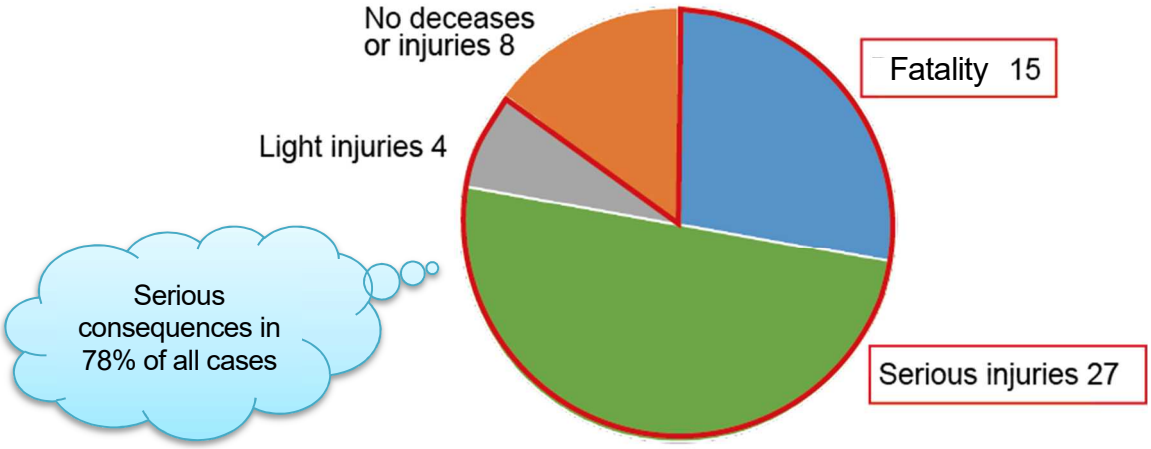



**Figure 6 Statistics of Casualties**

Regarding the damage to the aircraft, 39 (72%) cases of wrecks and 8 (15%) cases of medium damage occurred, together accounting for the greater part, nearly 90% of the total of 47 out of 54 cases (see Figure7).

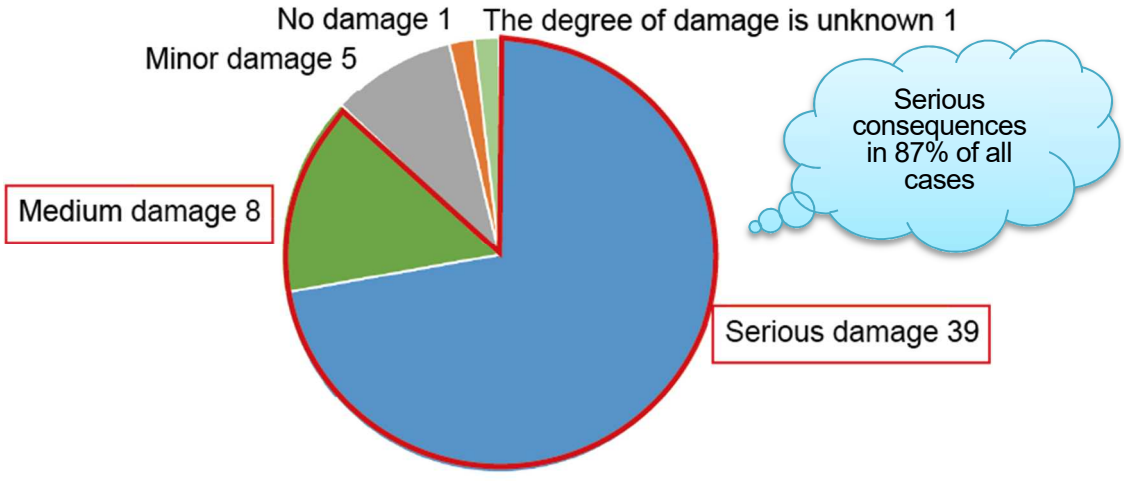



**Figure 7 Damage Levels to Airframe**

Of the 14 cases in which the flight altitude immediately prior to the accident was generally 10 meters or lower due to takeoff, landing, or jump flight, 12 (86%) involved fatalities or serious injuries, and 10 (71%) involved destruction of airframe, accounting for the vast majority of the accidents.

In addition, the proportion of accidents with fatalities, serious injuries, and destruction of airframe involving ultralight planes, etc., among accidents that occurred between 2001 and 2021 was higher compared to that of small aeroplanes and helicopters (see Fig. 8).

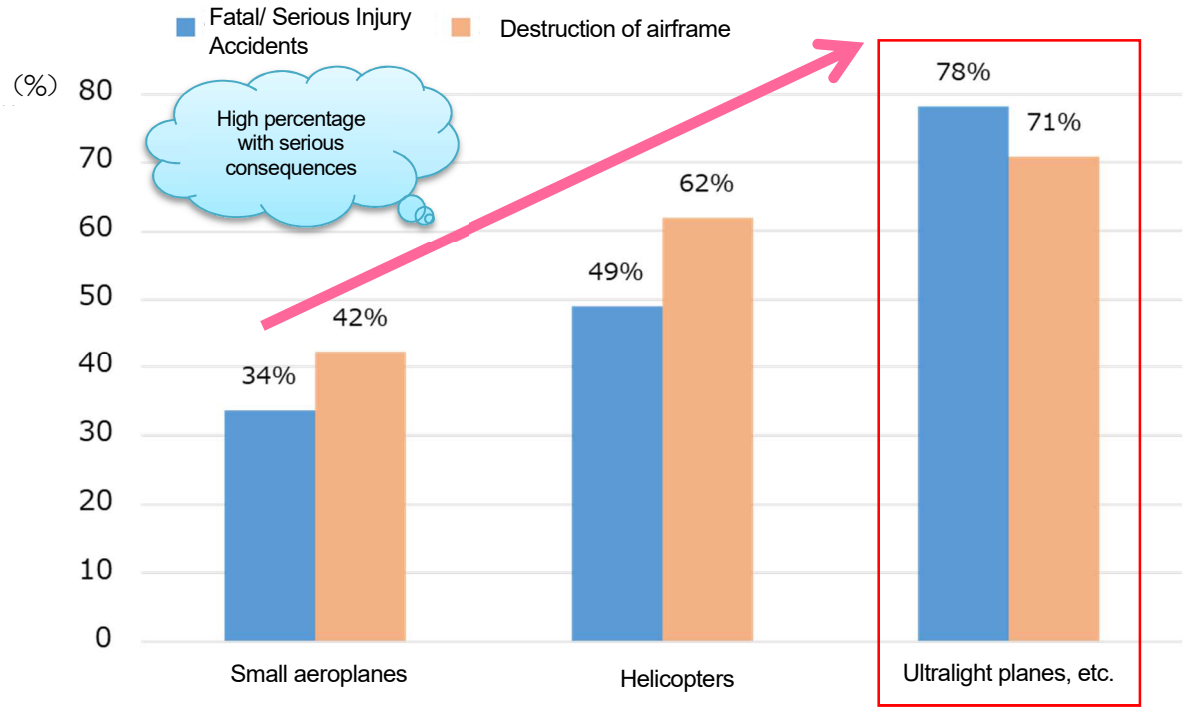
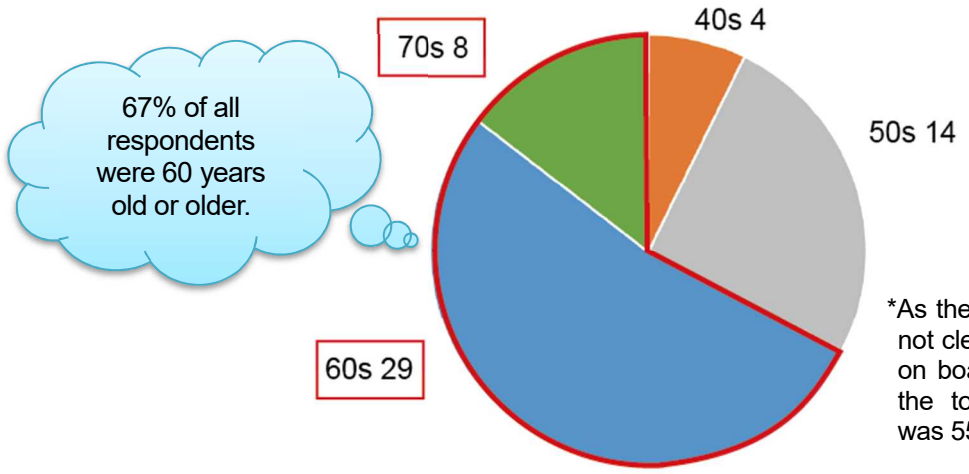



**Figure 8 Comparison of Percentage of Fatal/ Serious Injury Accidents and Wrecks**

**These show that ultralight planes, etc. having a simple structure are often accompanied by serious damage if an accident occurs.**

## 4. Statistics on Accidents by Age of

The ages of the 55* pilots ranged from 43 to 77, with 29 (53%) in their 60s and 8 (15%) in their 70s; those in their 60s to 70s accounted for about 70% of the total (see Fig. 9).




*As there was a case where it was not clear which of the two persons on board was piloting the aircraft, the total number of passengers was 55.

**Figure 9: Age Composition of Pilots of Distressed Aircrafts**

## 5. Causes of Accidents

Categorizing the direct causes of 54 accidents, "decrease in airspeed/stall" accounted for 16 (30%), followed by "contacts with property (during flight)" in 9 (17%) and "decrease in engine power/engine stop" in 7 (13%) (see Fig. 10).

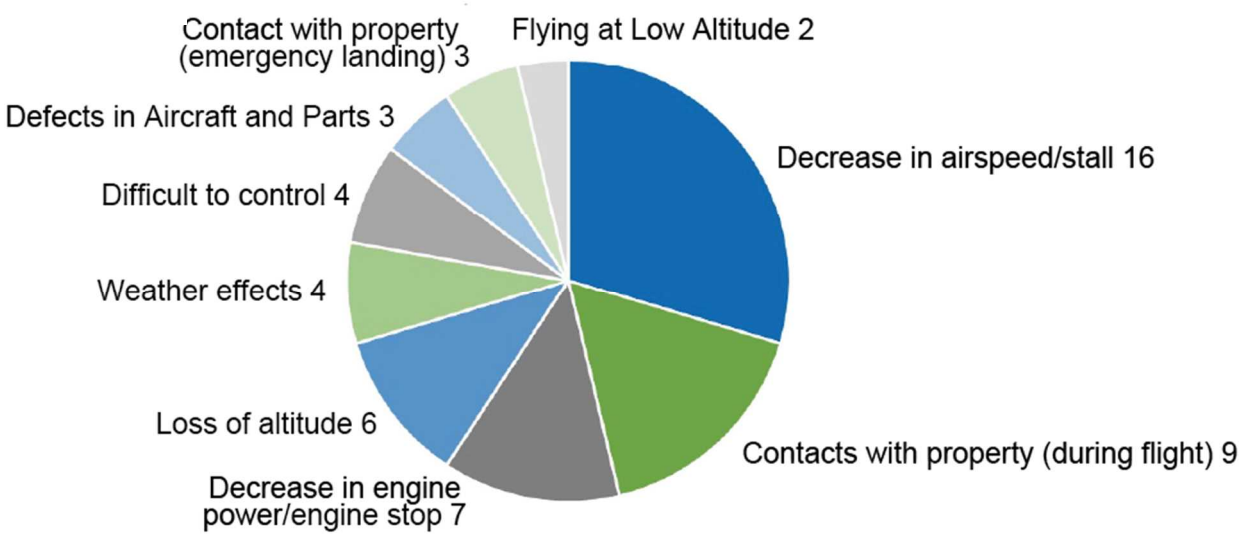



**Figure 10 Causes of Accidents**

# 3. Tips for Safe Enjoyment of the Sky ~Analysis of Factors That May Have Contributed to the Accidents~

To safely enjoy flying, it is enough to avoid the situation that caused the accident, but to do so, it is effective to focus on the factors behind the cause (safety risks) and take action to reduce those risks. It is also important to consider what needs to be done for safety from multiple perspectives, as a single accident may involve multiple factors.

In this chapter, we will consider what can be done to reduce risk during flight based on factors that may have had a role in the cause.

In the investigations of the 54 accidents analyzed in this study, 11 major factors were identified that may have played a role in the causes of the accidents (see Table 2). “Improper maneuvering" was a factor in 40 accidents, while "weather effects" and "lack of knowledge, skill, and experience" each accounted for 19 accidents. When several factors are involved in a single accident, the total is higher than the 54 accidents because the number of cases is counted for each of the several factors.

| | | | |
|---|---|---|---|
| Improper piloting | 40 | Lack of Detection, Recognition and Knowledge | 6 |
| Weather effects | 19 | Flying at Low Altitude | 6 |
| Lack of Knowledge, Skill, and Experience | 19 | Deviation from Operational Limits and Lack of Checks | 6 |
| Defects in Aircraft and Parts | 12 | Flight Characteristics | 3 |
| Flawed Safety Management | 11 | Improper Assembly | 2 |
| Improper Inspection and Maintenance | 9 | Others | 6 |

**Table 2 Factors That Probably Played a Role in the Accidents**