

2. Statistics

In 2011, a total of 14 accidents and serious incidents, including an accident in January in which a small aeroplane crashed into a mountain slope and two occupants suffered fatal injuries, an accident in July in which a small aeroplane during a training crashed into a mountain slope and three occupants suffered fatal injuries, resulted in a total of 7 fatalities and the injured (fatalities 5, missing 1 and the injured 1).

In addition, among the aircraft accidents and serious incidents which occurred during the period of October 2001 to October 2012, and for which the Board conducted investigations, the number of accidents and serious incidents involving small aeroplanes was 81 (accidents 62 and serious incidents 19), and among these cases, we have made investigation reports public for 74 cases (accidents 55 and serious incidents 19).

The below is the statistics on the situations of these accidents and serious incidents involving small aeroplanes for which the Board conducted investigation.

* Figures 1 to 4 show data for a total of 81 cases including accidents and serious incidents. under investigation, and Figures 5 to 9 show data for 74 cases whose investigation reports of accidents and serious incidents. have been made public.

* Please note that some of the accidents and serious incidents referred to in this digest are under investigation, and the figures may change.

Breakdown by the type of accidents

By the accident type, the number of crashes was 20 (32.3%), damage to aircraft when landing 14 (22.6%), belly landing 9 (14.5%) and others. Also, the total number of damage to aircraft was 28 (45.2%). (See Figure 1)

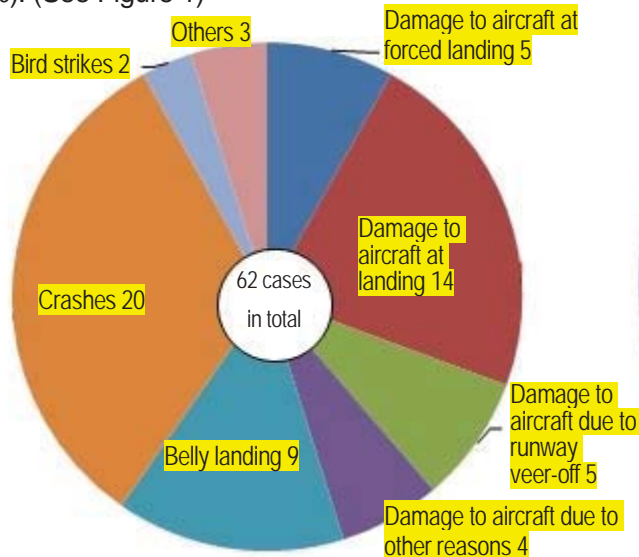


Figure 1: The number of cases by the type of accidents

Breakdown by the type of serious incidents

By the type of serious incidents, the numbers of runway excursions or runway incursions were 5 (26.3%) respectively, engine stopped 4 (21.1%) and others. (See Figure 2)

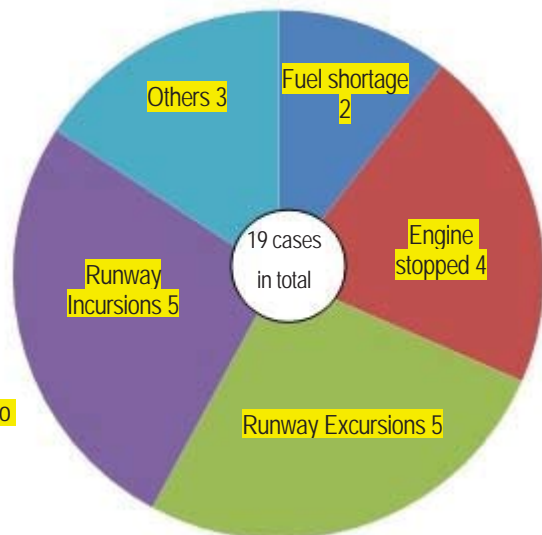


Figure 2: The number of cases by the type of serious incidents

Breakdown of fatalities and the injured

The total number of fatalities and the injured was 60. The breakdown is, fatalities 34 (56.7%), the seriously injured 14 (23.3%), the slightly injured 11 (18.3%) and others. (See Figure 3)

By the occupational category, the number of crew was 41 (68.3%), passengers 18 (30.0%) and others. (See Figure 4)

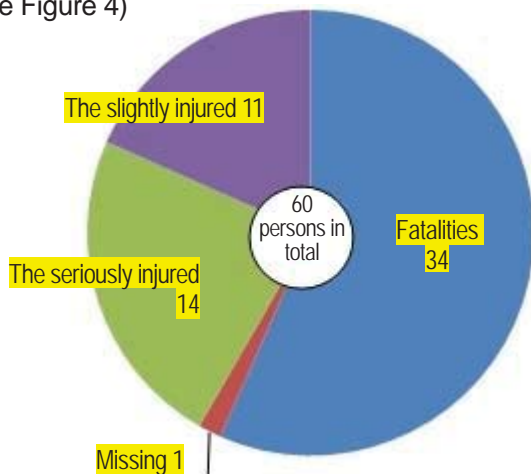


Figure 3: The number of fatalities and the injured

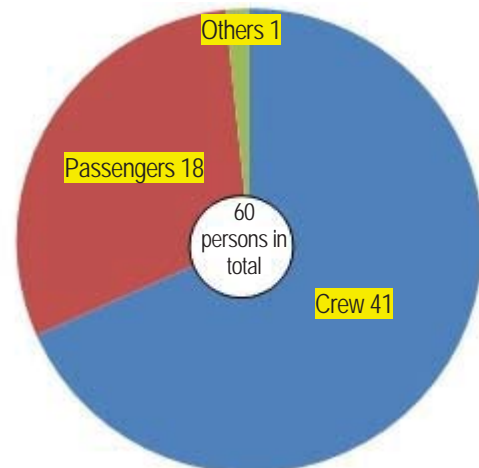


Figure 4: Breakdown of fatalities and the injured

Breakdown of aircraft damage categories

By the aircraft damage category, the number of destroyed aircrafts was 26 (35.1%), while substantially damaged aircrafts 28 (37.8%), slightly damaged aircrafts 9 (12.2%) and aircrafts with no damage 11 (14.9%). (See Figure 5)

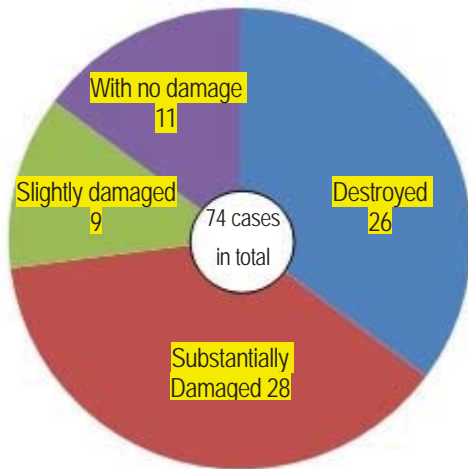


Figure 5: Breakdown of aircraft damage categories

Breakdown of accidents and serious incidents sites

By the accidents and serious incidents sites, the number of accidents and serious incidents that occurred at aerodromes/temporary aerodromes was 47 (63.5%), while mountains 8 (10.8%), flight routes 5 (6.8%), and others, and accidents and serious incidents at aerodromes/temporary aerodromes account for more than 60%. (See Figure 6)

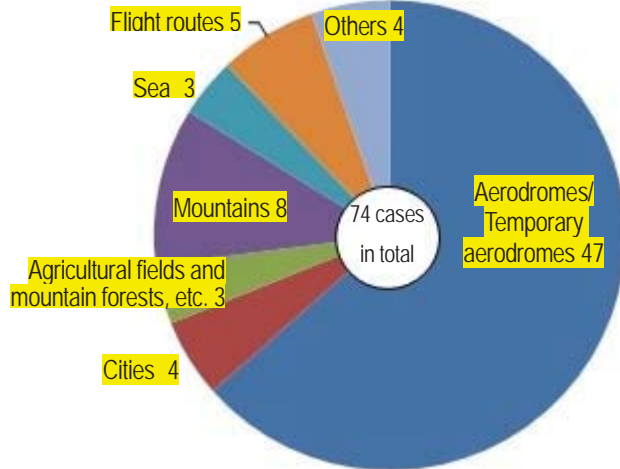


Figure 6: Breakdown of accidents and serious incidents sites

* Definition of "Aircraft Damage Categories"

Destroyed: It is extremely difficult to recover the aircraft's airworthiness due to the damage.

Substantially damaged: The aircraft needs a major repair to recover its airworthiness due to the damage.

Slightly damaged: The aircraft needs a minor repair or simple component replacement to recover its airworthiness due to the damage or failure.

Breakdown of operation phase

Nearly 90% of accidents and incidents occur during landing or cruising phase

By the operation phase at the time of the accidents and serious incidents, the number of accidents and serious incidents during landing phase was 39 (52.7%), during cruising phase 25 (33.8%), take-off phase 5 (6.8%) and others. Accidents and serious incidents landing and cruising phase account for nearly 90%. (See Figure 7)

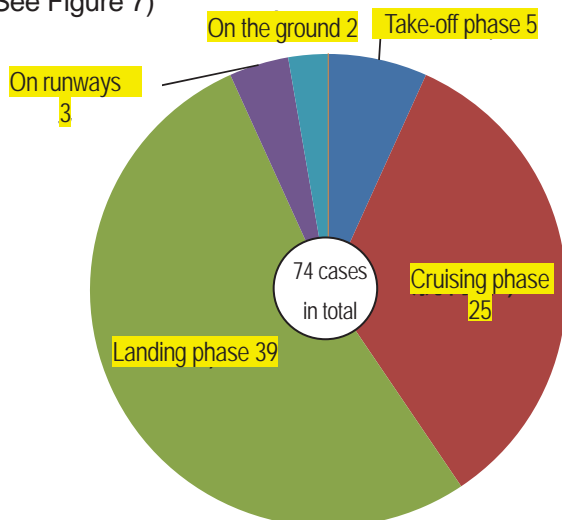


Figure 7: Breakdown of operation

Breakdown of flight purposes

Leisure, training and familiarity flight account for approx. 70%

By the flight purpose, the number of leisure flights was 21 (28.4%), familiarity flights 16 (21.6%), flight training 15 (20.3%) and others. These three categories account for approx. 70%. (See Figure 8)

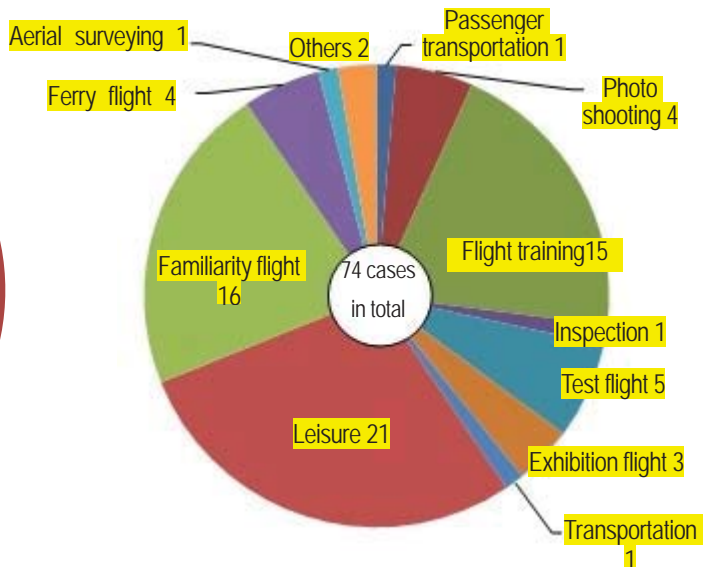


Figure 8: Breakdown of flight purposes

Breakdown of cause categories

Approx. 80% of accidents and incidents are caused by human factors

When the causes of accidents and serious incidents in the investigation reports are categorized into four categories; human, mechanical, environmental and organizational factors, the number of accidents and serious incidents caused by human factors is 38 (51.4%) while human and environmental factors 18 (24.3%), human and mechanical factors 5 (6.7%) and others. Approximately 80% accounts for “human factors or combination of multiple factors involving human factors”. (See Figure 9)

Examples of human factors

Forgot

- “Forgot” to extend the landing gears.
- “Forgot” to retract the flaps to the take-off position.
- The controller “forgot” to close the runway.

Assumed

- “Assumed” that the aircraft could fly for more than approx. 6 hours when the fuel tank was full.
- “Assumed” that he had retracted the flaps to 36° for landing.

Not confirmed

- Did “not confirm” the meteorological information of the flight route.
- Concentrated on the landing procedures and did “not confirm” the movements of the aircraft flying ahead.
- Did “not confirm” the wind direction and velocity before landing.
- Did “not check” the fuel amount before the flight.

Inappropriate/insufficient operation

- “Inappropriate flight operation” for go-around
- “Insufficient operation” of aircraft rotation
- “Inappropriate” speed down
- Over-run due to the “ground speed being too high”

Wrong judgements/belated decisions

- “Wrong judgement” on returning to the departed airport or destination change
- “Inappropriate judgement” on the night flight feasibility
- “Belated decision” on go-around

Others

- Confirmation activities having “lost substance”
- Landing check “not performed”
- “Carelessness” due to being accustomed to the activity too much
- “Not sufficiently familiar” with terrain features of the mountainous area
- “Too confident” due to abundant flight experiences
- “Lack of experience” in crosswind landing
- “Insufficiently prepared” in advance for selecting safe altitudes and routes based on terrain features
- Landing “without sufficient space” between the outbound aircraft
- “Misused” the flaps lever for the landing gear

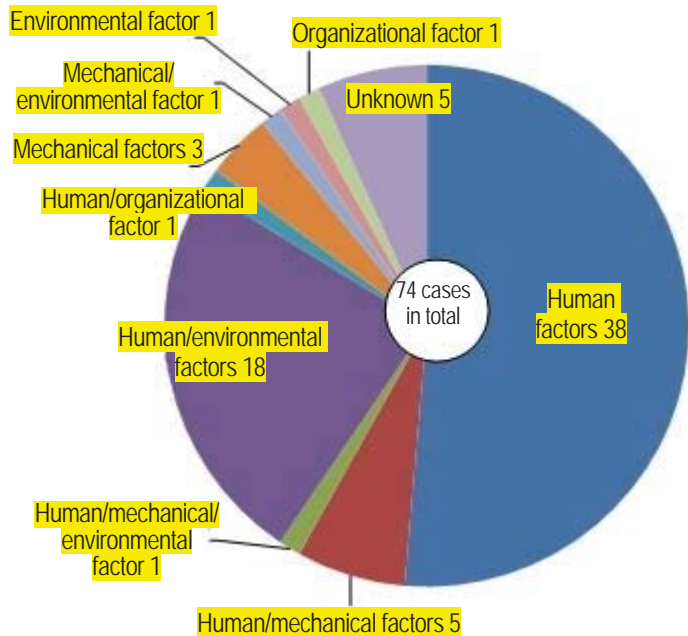


Figure 9: Breakdown of cause categories

Examples of mechanical factors

- Cracks effected by corrosive action
- Bumper rings deteriorated with age
- Inaccurate fuel gauge
- Bolts coming off due to engine vibration

Examples of environmental factors

- Sudden changes in airflow
- Strong crosswind and turbulence
- Situation where it is difficult to fly VFR due to a fog
- Local heavy rain
- Bright sunrays
- Wake turbulence

Examples of organizational factors

- Training guidelines are not prepared
- Education/training not thoroughly provided for the compliance with the operational standards, etc.