2. Statistics on Accident Occurrence

Out of the 65 accidents involving private small aircraft and gliders (31 small aircraft accidents and 34 glider accidents), investigation reports have been publicized for 59 accidents (27 small aircraft accidents and 32 glider accidents).

The following are statistical data for these accidents.

* Fig. 2 to Fig. 7 cover the 59 accidents for which investigation reports have already been publicized. However, as a case of in-flight collision of gliders is included, the number of the involved aircraft is 60 and that of pilots is 60.

Pilots' age

Pilots in their 50s and 60s both numbered 17, while eight were in their 20s, seven in their 40s, and six in their 70s (see Fig. 2).

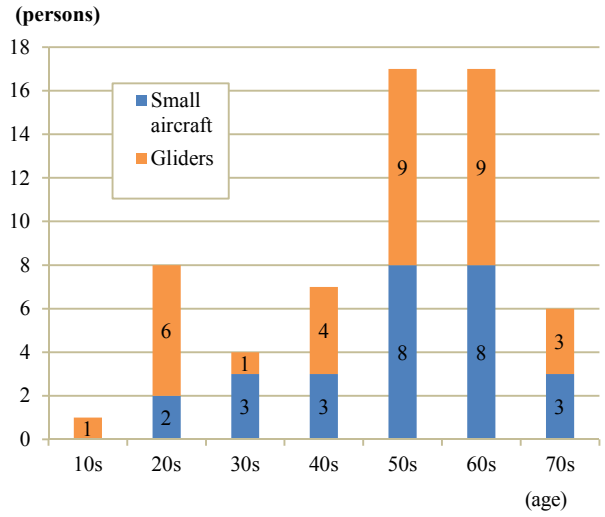

Fig. 2 Pilots' age

Pilots' flight time

The total flight time was 301 to 1000 hours for 22 pilots, 1001 to 3000 hours for 11 pilots, and 101 to 300 hours for ten pilots (see Fig. 3).

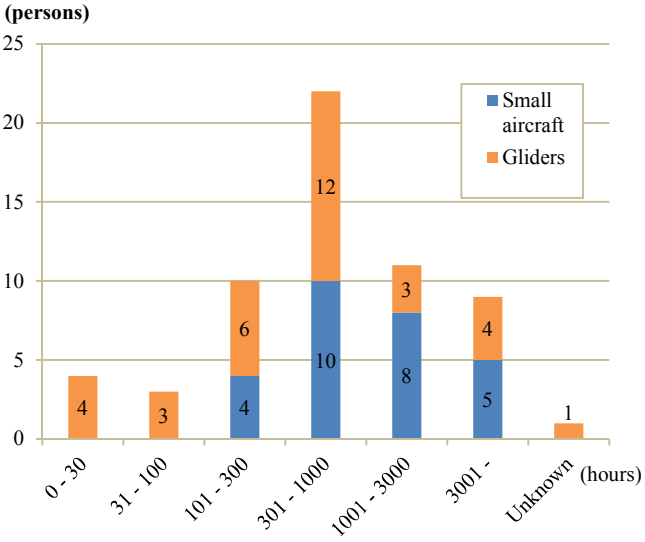

Fig. 3 Pilots' flight time

Flight purposes

Flight purpose at the time of accident occurred was for training or for familiarization for 31 aircraft and for leisure for 18 aircraft. These two purposes accounted for nearly 80% (see Fig. 4).

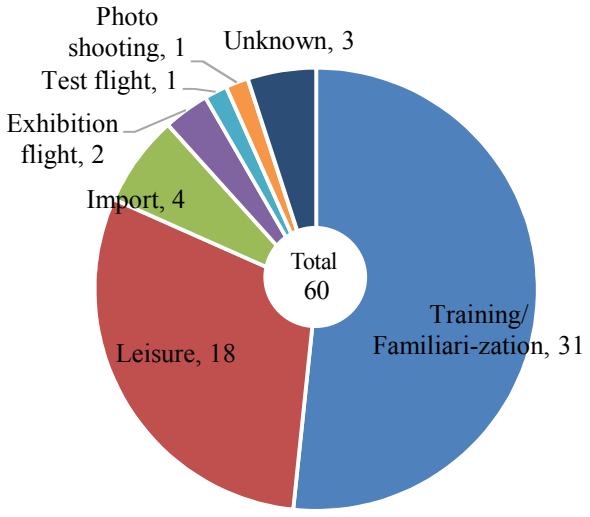

Fig. 4 Flight purposes

Casualties

Out of 131 people on board (the 60 aircraft), 48 were killed or injured. Out of those 48, 12 were killed, 20 were severely injured, and 15 were slightly injured, while 83 were unharmed(*) (see Fig. 5).

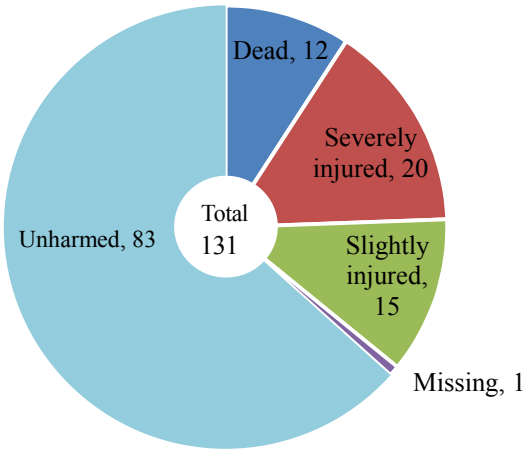

Fig. 5 Casualties among those on board

* A part from the people on board one ground worker killed in an accident

Accidents involving private small aircraft and gliders were mostly caused by human factors

When categorizing causes of accidents stated in investigation reports into human factors, environmental factors and others, 40 accidents were caused by human factors (17 for private small aircraft and 23 for gliders) and 13 by human and environmental factors combined (six for private small aircraft and seven for gliders). All the 59 accidents, except for two private small aircraft accidents, were somewhat related to human factors (see Fig. 6 and Fig. 7).

Human factors mostly occurred while flying, but some occurred before takeoff or otherwise during non-flight times.

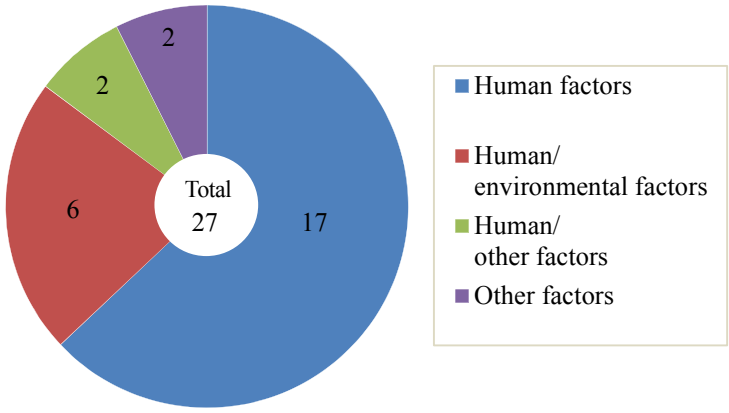

Fig. 6 Private small aircraft accidents by causal factors

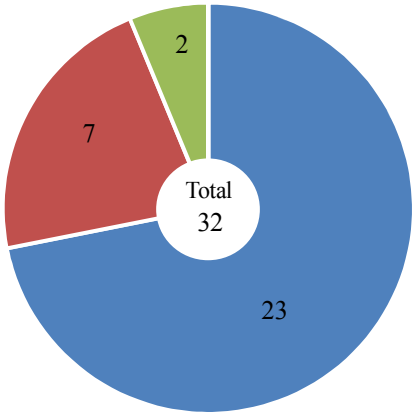

Fig. 7 Glider accidents by causal factors

<Major causes of private small aircraft accidents>

Examples of human factors

- ○ Insufficient nose-up
- ○ Failure to extend the landing gear **Case 4**
- ○ Inappropriate go-around operations
- ○ Overconfidence due to affluent experience
- ○ Failure to properly maintain knowledge and skills
- ○ Engine shut-down due to fuel exhaustion **Case 2**
- ○ Omission of maintenance work prior to flight
- ○ Lack of knowledge on the landform of mountainous areas

Examples of environmental factors

- ○ Turbulence, tail wind
- ○ Flights in cloud, poor visibility

Examples of other factors

- ○ Trouble in the generator during flight
- ○ Fuel exhaustion as a result of the check valve becoming stuck in the closed position due to aging of the valve or the existence of foreign substances
- ○ Cracks in the connecting pipe being affected by corrosive action
- ○ A skydiver's failure to follow basic procedures

<Major causes of glider accidents>

Examples of human factors

- ○ Insufficient nose-up
- ○ Lack of required altitude upon landing and during flight **Cases 1 and 3**
- ○ Inappropriate air brake operation
- ○ Lack of attention to power lines
- ○ Underestimation of the influence of strong cross wind
- ○ Insufficient prior check of weather information
- ○ Flying too close to a mountainside
- ○ Misjudgment on when to return
- ○ Failure to start a motor glider's engine due to fuel exhaustion **Case 1**
- ○ A defect in a motor glider's engine causing an excessively banked turn and a stall
- ○ Inappropriate training and instructions **Case 3**
- ○ Insufficient briefing before the flight
- ○ The towing personnel's suspension of winch towing causing a stall before starting to lower the nose

Examples of environmental factors

- ○ Turbulence, strong cross wind
- ○ Influence of wind gradient

Examples of other factors

- ○ Break of the towline safety gear