

2015 ACCIDENTOLOGY ANALYSIS IN PROFIT ORIENTED ORGANIZATIONS AND LEISURE ACTIVITY

In 2014, the security and technical (CST) commission analyzed the accidentology in profit-oriented organizations. This year, we decided to analyze the whole accidentology of our activity. 2015 has been a tough year as we deplore 388 accident declarations up to the 21th of September. This means three accident declarations every two days.

Reminder Severity index for FFVL:

- 0 = not injured
- 1 = slightly injured
- 2 = heavy injured (more than 48 hours of hospitalization)
- 3 = Death (until the 30th day after the accident)

There are 152 declarations linked to profit-oriented organizations.

In instruction context : 9 level 0 ; 60 level 1 (49 in 2014) ; 37 level 2 (35 in 2014).
55 tandem declarations (21 in 2014) : 1 level 0 ; 37 level 1 (16 in 2014) ; 17 level 2 (5 in 2014).

There are 235 declarations linked with leisure activity.

215 solo declarations : 28 level 0 ; 41 level 1 ; 128 level 2 ; 18 level 3.
20 tandem declarations : 10 level 1 ; 10 level 2.

Reading the whole set of declarations, one can see that the consequences resulting from the same accident cause can differ a lot.

The line between a level 0 and a level 3 accident is sometimes very thin. As an example, an asymmetric collapse not being correctly handled can be seen in every category : 0, 1, 2 or 3.

Whatever the severity, every accident - and it could be the same with incidents - shall be analyzed with the same attention.

Tandem accidentology

In leisure activity

13 during landing

- 10 falls during landing (no braking, back wind, rocks)
- 1 stall
- 1 tree-landing
- 1 pilot crushes his passenger finger at landing

6 during takeoff

- 2 passenger falls
- 1 crew fall, being dragged on the ground due to strong wind
- 1 crew tree-landing (trajectory control problems)
- 1 return to the slope (locked brakes)
- 1 too low-speed takeoff

1 during flight

- cloud flying ending in the trees

In profit-oriented organizations

24 during takeoff

- 19 passenger falls (mostly without wind)
- 1 entangled lines in a GoPro with return to the slope
- 3 pilots blown by strong wind
- 1 locked brake with obstacle impact

5 during flight

- 1 collision between 2 tandems
- 1 cloud flying with terrain impact
- 1 unintended reserve opening
- 1 asymmetric collapse with impact
- 1 stall during climbing with a winch

26 during landing

- 17 violent landing (mostly turbulent conditions)
- 2 pilots dragged on the ground by strong wind
- 3 stalls during final approach
- 3 poor passenger landings
- 1 « horses » landing

Conclusions

We are facing these recurrent issues :

- **No wind takeoff with passenger falling (80% of takeoff accidents)**
- **« Violent » landings or final approach incidents linked with tandems flying in borderline conditions (84% of landing accidents)**

Level 0 accidentology

In profit-oriented organizations

- 4 landings in obstacles
- 2 reserve procedures (one of which after a collision)
- 1 takeoff ending in the trees and 2 damaged equipment declarations without accident

In leisure activity

- 6 landing in obstacles
- 5 reserves procedure (3 of which after a collision)
- 6 tree crashing and 1 cable car collision
- 7 during takeoff (technical skills problems)
- 4 damaged equipment declarations without accident

Conclusions

Level 0 accidentology is not insignificant. Reserve parachute saves lives.

Level 1 accidentology

In profit-oriented organizations

10 speed riding accidents. Each of them during landing with receptions problems.

34 during landing ; 12 of which during ground handling

Accidents during ground handling

- 5 falls due to the wing bypassing the pilot
- 5 poor receptions due to a lack of braking
- 1 pilot being blown by strong wind
- handicapped pusher not being able to stop his run

Accidents during landing

- 3 landings in obstacles
- 2 collisions during approach
- 7 falls due to lack of braking during landing
- 2 crashes due to asymmetric collapses during approach
- 2 premature braking with ground impact (in the surge)
- 4 falls due to poor positions in the harness
- 2 receptions uncertainties, in ground « holes »

16 at launch, 3 of which during ground handling

- 50 % concerning falls with wing bypassing the pilot
- remaining are either repositioning problems, touching ground impacts or muscular problems
- to mention : a low-speed takeoff ending in the trees

Conclusions

The most accident-prone phase is still landing with twice more accidents than launch.

We face the same issues as in 2014 :

- **Wing bypassing student during launch (50% of takeoff accidents).**
- **No assimilation of the brake input timing and poor anticipation of this phase (40% of landing accidents).**
- **Issues concerning the delay of instructions given to students by their instructors.**

In leisure activity

9 during launch

- 2 pilots dragged on the ground due to strong wind
- 1 harness clipping omission and pilot (competitor) falls from 2 meters high
- 2 uncontrolled trajectories
- 1 collision with a tandem preparing to land
- 3 falls not linked with takeoff

5 during ground handling

- 2 takeoffs by strong wind and impact on the ground
- 1 soaring flight with strong wind not allowing the pilot to go forward
- 1 imbalance leading to a fall
- 1 stall with impact on the ground

24 during landing

- 6 landings in various obstacles
- 4 back wind landings
- 3 collapses during final approach
- 3 landings during a turn
- 4 violent landings due to wind gradient
- 4 out of field uncontrolled landings

3 during flight

- 3 terrain crashes following analysis and positioning errors

Conclusions

Landing stays the phase most prone to accidents with more than half of them occurring during this stage.

We are facing the following issues :

- **Not enough anticipation and preparation of the landing phase (80% of accidents during landing)**
- **Lack of technical skills in strong wind**
- **Lack of conditions analysis in relation with the pilot's level**
- **Lack of renunciation**

Level 2 accidentology

In profit-oriented organizations

6 during takeoff

- 3 falls due to wing bypassing the pilot
- 1 asymmetric collapse and spin after launch
- 1 fractured fibula during pilot reversal
- 1 instructor not stopping his run at the end of a takeoff

6 during ground-handling

- 3 falls due to wing bypassing the pilot
- 2 falls during landing (no brake input and pilot stays seated in his harness)
- 1 student blown by strong wind while inflating

4 during flight

- 1 asymmetric collapse ending in the trees
- 2 trees impact while relief proximity flying
- 1 collision

21 during landing

- 2 frontal collapses in final approach
- 4 asymmetric collapses in final approach
- 1 collapse on the lee-side of trees
- 4 impacts on obstacles (1 of which in speed riding)
- 4 landing while turning
- 3 landing without brake input and violent impact
- 1 landing with back wind during base leg
- 1 premature brake input with impact in the following surge
- 1 poor reception

Conclusions

Landing stays the phase most prone to accidents with more than half of them occurring during this stage

We are facing the following issues :

- **Collapses during approach linked with turbulent aerology (30% of landing accidents).**
- **No assimilation of the specific gesture of landing (20% of landing accidents).**
- **Poor preparation of the landing stage (25% of landing accidents).**
- **Wing bypassing pilot at launch (45% of takeoff accidents).**
- **Inadequate distance margins while flying near the relief.**

In leisure activity

74 during landing

- 3 impacts on the ground in speed riding (flying errors)
- 4 top-landings in inadequate conditions
- 24 full stalls in final approach (too much brake in turbulent conditions)
- 13 uncontrolled collapses in final approach (very turbulent conditions)
- 10 landing with back wind
- 10 uncontrolled landing with impact
- 8 obstacles (4 trees, 1 car, 3 rocks, 1 landing in the city).

34 in flight

- 16 asymmetric collapses and a frontal collapse with impact on the ground (2 reserves thrown)
- 10 relief impacts (7 uncontrolled trajectories)
- 3 avoidance maneuvers
- 1 obstacle
- 2 ground impacts following a stall
- 1 impact following wingovers
- 1 roof fall, 1 tree fall

20 at launch

- 7 pilots blown by strong wind
- 3 asymmetric collapses and 1 spin at the end of a takeoff
- 3 falls on the takeoff (1 wing bypassing pilot)
- 3 stalls following takeoff (clipping omission and unsuccessful top-landing)
- 1 dust devil
- 1 injured arm in paramotor propeller
- 1 collision with a spectator while landing
- 1 low speed takeoff ending in the trees

Conclusions

Landing stays the phase most prone to accidents with more than half of them occurring during this stage.

The main issues we have to face are the following :

- **Pilots flying in too strong conditions for their experience and aptitudes in flight. Analysis problems and lack of renunciation.**
 - **Not handled in-flight collapses (50% of flight accidents). Only 2 reserves thrown out of 16 collapses leading to an accident.**
 - **Uncontrolled trajectories in relief proximity flying. No safety margin (30% of flight accidents).**
 - **Lack of technical control at launch with sustained wind (30% of takeoff accidents).**
 - **Lack of landing phase preparation (40% of landing accidents).**
 - **Not handled collapses during landing (often in final approach) (50% of landing accidents).**
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Level 3 accidentology

This year's accidents are only related to leisure activity. To this day, we deplore 18 deadly accidents.

4 during landing

- 1 drowning in a lake
- 1 lee side landing with multiple collapses
- 1 stall in final approach
- 1 obstacle (tree) with fall to the ground

2 at launch

- 1 crash into rocks in speed riding
- 1 return to the slope

12 in flight

- 1 crash in speed riding following uncontrolled spiral
- 3 asymmetric collapses with autorotation to the ground
- 1 asymmetric collapse with reserve thrown in "hostile" environment
- 1 power lines impact
- 1 autorotation following voluntary frontal collapse in order to execute quick descent
- 1 cable impact
- 1 hangliding aerobatics accident (reserve entangled in the wing)
- 3 pilots found dead without explanation in an accident / Mt Blanc area

Conclusions

Level 3 accidents do not differ much from level 2 and level 1 in what causes them. However, they nearly all happen in strong to very strong conditions.

Overall conclusions

Main accident causes (80% of the accidentology (tandem not included)) are as follows :

- **Delay of instructions given to students by their instructors. (mainly brake input at landing and at launch)**
- **Not enough anticipation and preparation of the landing phase (20% of the accidentology)**
- **Not handled collapses during landing (often in final approach) linked with turbulent aerology (15% of accidents)**
- **No assimilation of the specific gesture of landing. (10% of accidentology)**
- **Wing bypassing the pilot at launch. (20% of schools accidents)**
- **Pilots flying in too strong conditions for their experience and aptitudes of flying. Analysis problems and lack of renunciation**
- **Not handled collapses in flight. Only 2 reserves thrown out of 25 collapses leading to an accident (10% of the accidentology)**
- **Uncontrolled trajectories in relief proximity flying. Inadequate safety distance margins while flying near the relief. (10% of the accidents)**

Lack of technical control (mainly during takeoff) with sustained wind (10%)