



## 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.

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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.

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### 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)

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### 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 break input and pilot stays sitted 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).

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