DO YOU THINK FLYING IS DANGEROUS?

This is certainly a legitimate question, one many pilots, confessedly or not, sooner or later come to ask themselves.
Surprisingly enough, the answer is at everybody's reach:

THE ANSWER LIES INSIDE OURSELVES

Let's unveil the truth right away: flying, in itself, isn't more dangerous than a large number of human activities, including several apparently innocuous everyday occupations. Unfortunately however, flying is exceedingly unforgiving of carelessness and foolish behaviour:

"Flying becomes highly dangerous when safety margins are eroded"

So, it's the conscious or unconscious reduction of safety margins which leads to an accident. Easy – so far: but how do we know when safety margins are sufficient – thin – inexistent? Let's start with a definition:

"keeping a safety margin"

means, in plain language:

"not being left without an alternative, should the unexpected happen."

We are of course all willing to allow ourselves the most ample safety margins possible. We are pilots, after all, not Russian roulette players.
What is less obvious is that we sometimes let the safety margins jeopardize for a variety of reasons which may or may not be known to us.

Safety margins can unconsciously be reduced because of:

- ⚠ ***lack of EDUCATION***
- ⚠ ***lack of TRAINING***
- ⚠ ***lack of CURRENCY***
- ⚠ ***excess of SELF-CONFIDENCE***

EDUCATION:

the ability to make sound decisions

TRAINING:

the establishment of proper automated reactions

CURRENCY:

the constant practice of the skills required in flying

SELF-CONFIDENCE:

the onset of complacency coming from a high degree of familiarity with flying

One or more of these factors can seriously affect our perception of the safety margins we are allowing us at any time during a flight. Sit back for a minute and think: you are most likely to find at least a couple of instances when this happened ***TO YOU.***

Safety margins can consciously be reduced because of:

⚠ *a high level of RISK ACCEPTANCE*

Risk is part of the game – every game. The level of risk which players are ready to accept is extremely variable among individuals, and subject to alterations, which may be temporary or permanent, in dependence of too many factors to be listed here.
To some, risk in itself represents an important attraction, to the point that , confessedly or not, the quest for danger can be the strongest reason behind the decision to take part in a certain activity.
It's not necessary to put one's life in danger in order to experience high risk situations: think of casino gambling games, where substantial amounts of money change of hand in a few seconds.
Even those who don't usually seek danger often like watching other people doing so: extreme sports always attract big spectators' crowds.

Even those who don't usually seek danger can raise their risk acceptance level in force of a strong motivation, which pushes them to minimize or even ignore warning signals

which appear down the road, and are clearly perceived.

DID YOU EVER REALIZE IT?

Now, we said that keeping a safety margin means not being left with an alternative, should the unexpected happen. This key concept is founded on two important principles:

PLANNING:

setting up an action plan for every anomaly which can be foreseen

PREPARATION:

mental anticipation of a possible event aimed to offset the surprise effect

"don't forget that in case of an

EMERGENCY

Our life can depend on the way we manage the events"

How to deal with an emergency:

1. ***recognize the emergency –*** *think quickly, spare precious time!*
2. ***keep flying the aircraft! –*** *no one is going to fly it while you think*
3. ***try resolving the emergency –*** *if you know how to do it*
4. ***adopt alternative plan –*** *you must have one*

"piloting is essentially an endless chain of decisions, supported by a few good automated reactions"

We make these decisions following a mental process which is called

"the operational chain":

1.PERCEPTION
2.RECOGNITION
3.EVALUATION
4.PROJECTION
5.DECISION
6.ACTION

PERCEPTION

It's the picture the brain makes up with information received from the senses. Unfortunately, being an interpretation, it can be significantly different from the real thing.

"The brain sees mainly what it wants to see, and ignores what at first glance seems absurd or undesirable."

RECOGNITION

The result of perception is compared with known situations extracted from the memory.

"Memory is a faculty over which we have a very limited control. It can easily let many important information fade away, and at the same time remember lots of totally useless details."

EVALUATION

The recognised situation is evaluated to assess whether it matches the desired one.

"Ability to anticipate as much as possible recognition and evaluation based on the very first clues is extremely important. Accident statistics show that often the primary cause is a serious delay in the recognition of a potentially dangerous situation."

PROJECTION

An array of possible sceneries consequent to the observed situation are imagined, each one with its own further developments.

"This phase can be time consuming if there are many possibilities to choose from. Quite often, a bad decision stems from an excessive number of possible choices. Hence, when flying, it's desirable that decisions be reduced to the simple selection between two alternatives."

DECISION

The action to be made is selected.

"When confronted with critical situations, pilots should avoid whenever possible to commit to an irreversible decision, by keeping a second possibility in store as long as they are allowed to."

ACTION

The circle closes.

When performing the described task, our brain works much like a computer.

Unfortunately, our processor is quite slow. The best decision rate it can achieve is 2-3 per second, but as the task becomes more complex, performance drops dramatically.

Want an example?

when the road ahead is empty, the decision of overtaking is easy, and quickly made

but if the space available is marginal we hesitate, and making a decision requires more time

Uncertainity sensibly slows down the decisionmaking process: Right when we need a quick action, the brain finds it more difficult to decide.

THERE IS MORE.

What we said so far should have convinced you that a flawless decision making process is one of the fundaments of safe flying.

But there's more to the picture than meets the eye.

When our decisionmaking process becomes seriously perturbed we are most at risk, and the eventuality of an accident increases.

There are a few known syndromes and character features which can negatively affect the way a pilot makes his/her decisions.

Let's look deeper inside ourselves...

...we might realize we are missing something.

PECULIAR CHARACTER FEATURES:

⚠ ***Anti-authority:***
"rules can be broken, they are useless to me"

⚠ ***impulsive:***
"must do something now, anything"

⚠ ***invulnerable:***
"it will never happen to me"

⚠ ***macho:***
"whatever happens, I can manage it"

⚠ ***resigned:***
"there's nothing I can do about it"

"there's a little bit of this all inside each of us. Trouble is when one of these features is overwhelming, or missing altogether"

SYNDROMES PERTURBING THE DECISIONMAKING PROCESS:

⚠ ***A long period without an accident***

⚠ ***The attraction of a goal***

⚠ ***Following the leader***

⚠ ***"I've done it before"***

⚠ ***"I know somebody who does it"***

A long period without an accident

The longer things go on smoothly, the less conscious we become of the risks involved in our activities. Who has been involved in, or has witnessed an accident tends to be extra cautious immediately thereafter, but attention slowly fades again with time. It's human nature, and we can't do much about it. If a pilot, out of ability and sheer luck, manages to avoid all accidents in his flying career, he has never been confronted with a high risk situation, and this could dramatically show in his behaviour when a true emergency occurs.

"despite the false sense of security, this is the situation when we are most at risk!"

The attraction of a goal

Mountain climbers say that withdrawing before having reached the summit is exceedingly difficult. Visualizing our goal before actually seeing it has a mystical effect: it attracts and fascinates us, and induces us to minimize or even ignore the clear signs of danger we find along our path.

"a strong motivation puts us inside a mental tunnel, from which too often there is no exit."

Following the leader

Blind-folded faith in somebody who runs before us, or whom we trust to be much more knowledgeable than us, is the same behaviour of an animal in a herd. The leader, in panic, jumps to death from a cliff, and the herd follow suit.

"leaving risk assessment to somebody else rather than using judgement can result in disaster."

"I've done it before"

Imagine that somebody you trust wants to convince you that crossing a motorway on foot and blindfolded is perfectly safe, because he has done it the day before and is still alive. You'd think he's crazy.

"and what do you call a pilot who ventures into high risk situations just because he has done it before, and has always been lucky?"

"I know somebody who does it"

Being a responsible individual means knowing <u>your</u> limits, and never trespassing them. Trying to reach, or worse beat, <u>somebody else's</u> limits is a potentially deadly behaviour.

"just the fact that somebody is doing something is no guarantee that this makes sense, or is safe"

AND THEN,

did we say flying is dangerous? We didn’t. But we didn’t say the contrary, either. Hopefully, we now know where to look for the answer to our original question.

FLY SAFELY, HAVE FUN.