A CASE STUDY

The Rogue Versus the Moose!

The official cause of this accident states *"The pilot, preoccupied with the filming of a moose, maneuvered his aircraft at low level and misjudged the aircraft's position in relation to the tree-lined river bank."*

But what made him decide to do that? Look carefully at all the circumstances; figure out the links in the chain that added up to an error in judgment and think carefully about what Safety nets might have helped prevent the accident.

"We must learn from the mistakes of others because we will never live long enough to make them all ourselves"

The following case study is part of the video "The Rogue verus the Moose," produced from actual footage taken by the pilot's camera. The persons in the video are the actual victims of the crash. The video has been produced by System Safety Services in the hope that it will help prevent accidents like this from happening.

System Safety Services
23100 Willett Ave
Richmond, BC Canada V6V 1G1
Phone/Fax: 604 526-3993
Email: dupontg@system-safety.com
Web: www.system-safety.com

The Rogue Verus the Moose

Synopsis

The pilot and four passengers departed, early morning, from a remote fishing lodge for a short flight to a rural town; likely for supplies. It was a clear, early summer day with a light wind.

A video camera, mounted in the V struts of the aircraft above the instrument panel recorded the final moments of the flight.

On route, the pilot spotted a moose in the river and made a steep descending left turn, likely in order to film the moose swimming in the river. The steep descending turn was reversed to the right as the moose was sighted. The trees on the riverbank appeared as engine power was increased and the stall warning sounded just before impact with the tops of the trees. All five were fatally injured in the crash and severe post crash fire.

The Crash Sequence

The aircraft struck the tops of the 60-foot tall trees lining the shoreline of the river at a high rate of speed. The right wing strut was broken off on the impact with the treetops and located 290 feet from the initial impact. The aircraft then rolled to the right and struck the ground in a steep, nose down inverted attitude 800 feet from the initial tree strike. A severe post crash fire from the fuel onboard consumed most of the aircraft.

Three Days Before and the Weight and Balance

A video taken by a friend of the pilot showed the loading of the aircraft for the weeklong fishing trip.

A Cessna TU 206 on amphibious floats has about 1000 lbs of useful load. There were five seats installed in the accident aircraft and the weights of the occupants were determined to total about 950 lbs. Any more then 50 lbs of fuel would have put the aircraft overweight. From the video, it would appear that far in excess of 50 lbs was loaded into the aircraft and the float storage compartments.

Fuel on Board

The exact amount of fuel on board was unknown but full fuel in the two long range wing tanks holding 92 US gallons would add 552 lbs (528 lbs usable.) However, one of the right float compartments had been converted into a fuel tank with an electric pump to boost the fuel into the system. This modification had never been approved, but it added about 55 US gallons of fuel or a further 330 lbs not including the weight of the modification. From the fire pattern at the wreckage, it can be determined that the tank contained fuel at the time of the crash but the exact amount could not be determined.

The Rogue Verus the Moose (Continued)

The Flight to the Cabin

The flight to the fishing lodge shows the aircraft flying at low level and at one point dipping even lower and pulling up in order to video tape a boat in the water. At another point an eagle is spotted and the aircraft chases it in order to video tape it. The aircraft is video taped flying low level up a river. Had any power lines crossed the river there would have been a possibility of collision with the wires.

The Pilot

The pilot flying the accident aircraft was also the owner and had owned the aircraft for a number of years.

He had about 2,800 hours of flying time, but the amount of flying time in the Cessna 206 could not be determined.

The pilot was an experienced aerobatic pilot but it is believed that he had not performed any aerobatic flights for a number of years.

Toxicology tests on the pilot revealed that he had blood alcohol content (BAC) of .03. (.08 is legally drunk when driving a car) as well as .02mg of valium and trace amounts of codeine, capoten and caffeine.

As this was a morning flight, it is likely that the BAC of .03 is the residual amount of alcohol remaining in the blood from a night of heavy drinking the evening before. It is likely that the pilot may have been feeling somewhat hung-over and taken a codeine tablet for the headache.

Capoten is a drug used to lower blood pressure and carries the warning to:

> *"Use Caution when driving, operating machinery as it may cause dizziness and drowsiness."*

Valium is a drug that is used principally to reduce anxiety, seizures or muscle spasms. The warnings with this drug include:

> *"Use Caution when driving, operating machinery as it may cause dizziness and drowsiness. Avoid alcohol when taking valium as alcohol will increase the risk of dizziness, fainting and drowsiness. Valium is very habit forming."*

A diary of one of the passengers as well as several video camera clips indicate that fairly heavy drinking took place prior to the accident and one of the reasons for the flight was to restock the liquor cabinet. **They never made it.**

Post Script

The pilot's attitude was that of a **Rogue**. A **Rogue** is a person who feels that their superior intellect somehow exempts them from following all of the rules of the air. They have become very complacent and are a danger to themselves and others. They have lost awareness of the dangers and take ever increasing risks until an accident occurs or they become aware of the danger of not following the rules.What would you have done if you were going on that aircraft?

In the CHAIN OF EVENTS

A Link in the Chain of Events is:

Any event, that is a contributing factor,

and which if broken or removed,

might prevent the occurrence

If we can break the chain
the occurrence <u>likely</u> doesn't happen

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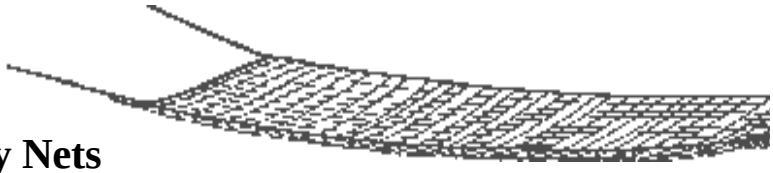

Safety Nets

What can we put in place to help ensure this error or one like it never occurs in the future?

- **A Safety Net is a Regulation, Policy, Practice or Procedure which, if in place might break a link or prevent a link in the chain of events**
- **The regulatory body controls the regulations**
- **The company controls the policies**
- **The individual controls the practice or procedures.**

Watch out for the "*Motherhoods*"; those responses that look good but are Safety nets ONLY if there is a practical means of accomplishing it.
For example: *Introduce better communication*. Sure, the <u>how</u> you do that is the Safety net. *Better, more, improved* and *increased* likely indicate a "Motherhood."

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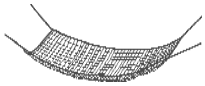

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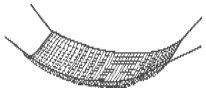

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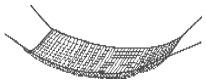

5.

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7.

8.

What would you have done if you were going on that aircraft?
Are you sure?
What if your friend was going?
What if you observed the loading of the aircraft? Would you do or say anything?

Safety is everyone's business
A Safety net is often the last chance to stop an error from becoming an accident