

The accident with a Super Petrel in Brazil

On January 4, 2015 an amphibious aircraft Super Petrel – PU-PEK fell in Brazil and killed the 19 years old pilot, Vitor Augusto Gunha da Costa. The young pilot's father, Augusto Fonseca da Costa, who is also a pilot with more than 40 years' experience, began an unwearied investigation in attempt to understand what had happened. By means of effective and verifiable actions, Augusto came at conclusions that pointed very serious problems in the Brazilian light sport aviation.

It is hard to believe, but the manufacturer of the Super Petrel that Vitor flew and died, **FAILED TO COMPLY WITH AN ALERT SERVICE BULLETIN** from ROTAX, the engine manufacturer. **THIS BULLETIN WARNED FATAL INJURY**, and imposed the immediate replace of a fuel hose before next flight!

The WORST is that the manufacturer of Super Petrel, despite not having complied with that crucial alert service bulletin, **FALSELY** consisted in the aircraft manual that the Bulletin was properly complied, removing any chance to solve the problem and save the life of the young pilot. The noncompliance with the bulletin was the main cause of the accident.

It was the MAIN CAUSE, but not the ONLY.

The authorized ROTAX maintenance workshop did a detailed analysis of the fuel system and found that was a small fragment of the hose (**not replaced** by the manufacturer as warned in the **bulletin**), that broke off and blocked the fuel passage causing oscillations in engine RPM, destabilizing uncontrollably the aircraft, which stability is massively affected by the high traction line, causing the crash to the ground.

Unfortunately, the FALSE STATEMENT of COMPLIANCE with the mandatory bulletin was not the only irregularity that came out...

The investigations also found that the manufacturer of the Super Petrel falsely declared on the aircraft approval form that the Super Petrel fuselage **was made of carbon fiber/Kevlar**, but actually the fuselage was made mainly of fiberglass, material cheaper, heavier and weaker than carbon fiber.

“It looks like a **MOUSE TRAP**”. This was the conclusion of the reputed aeronautical engineer, Shailon Ian A. Menezes, who did a detailed technical analysis on the injured aircraft. (The whole document can be accessed by clicking on the link: [Technical Report](#)):

*“Additionally, we verified that some critical items such as the engine mount had no suitable structural anchoring. As for the engine mount, after disassembly of the cradle, **a plywood board where the engine bolts are attached was found.***

Such wood appeared not to be suitably connected with any significant structural item, such as to properly distribute the engine efforts, and more importantly, to protect the pilot in case of an emergency landing.

The lack of an appropriate structural connection, through connected cases and boosters, according to the good practice of aeronautical design, in the event of a collision or an emergency or hard landing causes the engine cradle to move towards the cockpit.

*Such constructions, in addition to not being a good design practice, are popularly known as **mouse traps** since the pilot has no chance to escape being pressed by the poorly anchored aircraft structure”.*

That plywood structure would never be found, because it was covered by a thin layer of carbon fiber.

In addition to that was discovered that the Skyview System that displays the speed information, altitude, RPM etc. suffers strong interference from the electrical system, due to the bad installation and to a bad cable magnetic insulation, causing adulteration of the information on significant values.

This terror scenario was never revealed because the accidents with this category of aircraft, were NEVER investigated. This only official investigation was enough to show a lot of irregularities in the experimental, home-built, light sport segment.

These irregularities involve not only aircraft manufacturers, but mainly the leniency of ANAC's official regulation. But the accident that killed Vitor was not the only accident, check below:

In the 1990's, the Petrel caused deaths in the US. NTSB investigation reported ***“inadequate quality control during the manufacturing process”***.

- **NTSB Identification report CHI92FA223ⁱ**

*August 3rd, 1992 – Oshkosh, WI: Two people died on a Petrel registration number N109SB. During the EAA Fly-in, the empennage and tail boom assembly separated from the fuselage/hull during a descent, in the second day of flying. The NTSB says: “Post-crash examination revealed that the tail boom was constructed with only four of the six required carbon fiber laminate plies. In addition, the strips utilized to hold the tail boom together were also minus one carbon fiber laminate ply”. The tail boom came assembled from a kit manufactured in Brazil. The National Transportation Safety Board determines the probable cause(s) of this accident as follows: **INADEQUATE QUALITY CONTROL DURING THE MANUFACTURING PROCESS RESULTING IN THE IN-FLIGHT STRUCTURAL FAILURE OF THE TAIL BOOM.***

- **NTSB Identification: BFO95LA005ⁱⁱ**

October 16th, 1994 – Center Village, OH: One person (the pilot) was injured when crashed while on final approach during a power-off forced landing following a loss of engine power during climb. According to the NTSB report: “The pilot reported that he flew down the runway for picture taking purposes. He stated that during climb out at 500 feet above the ground and 3/4 mile from the airport the engine lost power. He stated that during the forced landing the airplane impacted in a freshly cut corn field. The aircraft was examined by an FAA Aviation Safety Inspector. The examination revealed that the engine driven fuel pump was inoperable”. Once again, technical failures were the cause of the accident.

- *In June 25th, 2011, another fatal accident with a Super Petrel occurred in Lake Jindabyne, Australia, killing two people: the pilot, a “48-year-old flying instructor,*

safety expert” and his passengerⁱⁱⁱ. According to the Sydney’s Daily Telegraph^{iv}: “Friends of the pilot said he was an excellent aviator and it appeared the plane suffered mechanical failure” (ATSB investigation report: AE-2011-078^v).

On the web, there are also many evidences of accidents with Petrel/Super Petrel related to low quality of the product. See part of this French article:^{vi} *“(…) I must also mention the fatal accident in Italy, which of course ended the career of PETREL there. At this time, the wing was separated from the fuselage in flight. After investigations, it appeared that the fixing axis of the main mast came out, probably because the safety pin that blocks was gone, or had been forgotten, or more likely had broken (a pin to 1.5 francs, and there are dozens on a plane!)^{vii}”.*

How about in Brazil, where the Petrel/Super Petrel are manufactured, how are the accidents records? Unfortunately, there are poor official accidents records there.

Important to say that the Brazilian Aeronautical Accidents Investigation and Prevention Center – CENIPA, similar to NTSB, does not investigate accidents with Experimental aircrafts as the NTSB does, but due to the severity, CENIPA exceptionally investigated the accident that killed Vitor. (CENIPA's final report with a sworn translation into English is available on the link: [PU-PEK’S FINAL REPORT](#))

It is also important to mention that the Super Petrel – PU-PEK was sold in Brazil as an S-LSA but it was actually framed by government agency - ANAC as an Amateur-built aircraft despite being entirely built by the industry Edra Aeronautica (SuperPetrelUSA in U.S.A.) and sold as an S-LSA despite not meeting the consensus standards – ASTM. ANAC simply allows ALL Brazilian experimental manufacturers to certify themselves as LSA even though NONE of them meet the ASTM rules.

ANAC is a regulatory agency similar to FAA, but ANAC allows the same interested experimental industries to be the ones who create it’s regulation for the lightsport/experimental/homebuilt segment. **The manufactures are the one who ‘legislates’.**

ANAC, similar to FAA, is a typical case of “captured agency”.

In Brazil the LIGHT SPORT AVIATION, the Experimental segment and the home-built segment are not regulated by ANAC...

ANAC does not worry about safety, check what the agency said, into a Lawsuit:

*“It is up to the consumer to assess whether wants to pay for a safety certificate issued by the State or not, in which case the consumer should surround himself with the safeguards he deems appropriate (**such as contracting a qualified professional to evaluate the aircraft in question, to do other technical evaluation that seems to be appropriate, etc)**”.*

Well, because of those distortions, ANAC seems to be part of the problem, not of the solution! The SAFETY is set aside. Due to this scenario, American people must be careful when buying a Brazilian aircraft experimental, light sport, homebuilt, or whatever it's called.

In Brazil the Super Petrel's sales dropped to zero. The Super Petrel is now being sold in USA.

FAA has already been alerted about the irregularities discovered. The Safety Report number is S20160707009.

Considering the information gathered in the investigations conducted in Brazil we recommend that before buying an aircraft the consumer check if that aircraft actually meets the safety standards, and if the features of the aircraft actually match what is disclosed.

All the facts and arguments described here are supported by documental and material evidences; notarial minutes and technical analysis issued by certified professionals and are available for anyone, in sworn translation into English, at any time.

For further information about these facts, please contact ABRAVAGEx (Brazilian Experimental & General Aviation Accidents Victim's Association). Contact us at: acosta@abravagex.org.br

ⁱ http://www.nts.gov/_layouts/nts.aviation/brief.aspx?ev_id=20001211X15342&key=1&queryId=ca49bc49-2beb-465f-8a45-ca06fa07df92&pgno=5&pgsize=50

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http://www.nts.gov/_layouts/nts.aviation/brief2.aspx?ev_id=20001206X02386&ntsno=BFO95LA005&akey=1

ⁱⁱⁱ <http://www.theaustralian.com.au/news/nation/two-die-as-seaplane-test-flight-plunges-into-snowy-mountains-lake/story-e6frg6nf-1226081628347>

^{iv} <http://www.dailytelegraph.com.au/ultra-light-plane-crashes-on-north-coast/story-fn6b3v4f-1226081529602>

^v https://www.atsb.gov.au/publications/investigation_reports/2011/aair/ae-2011-078/

^{vi} http://puuceduciel.free.fr/imprim-article.php3?id_article=11

^{vii} Original text: "Pour en rester aux choses tristes, je dois aussi évoquer l'accident mortel en ITALIE, qui bien entendu mit fin à la carrière du PETREL dans ce pays (c'était avant l'accident d'OSKOSH) : Cette fois, c'est une aile qui s'est détachée en vol. Après enquête approfondie, il est apparu que l'axe de fixation du mât principal est sorti, sans doute parce que l'épingle de sûreté qui le bloque n'y était plus, ou avait été oubliée, ou plus probablement s'était cassée (une épingle à 1,5 franc , et il y en a des dizaines dans un avion!)"