

From: [George Braun](#)
To: [Malinowski Edward](#)
Subject: Pitts Crash 5-26-2017 N67PN Sheboygan, WI D.D. Hall P.I.C.
Date: Tuesday, August 8, 2017 15:56:02
Attachments: [Pitts comparisons excerpts.pdf](#)
[Molidor Expert Opinion.docx](#)
[NTSB Appeal of Circumstances.docx](#)

Ed, et al.

Please see attached one very expert opinion on situation at time of engine failure, my perspective summation and recommendation, and excerpts from an article that I thought relevant enough to propose a regulatory consideration for Pitts 2A, going forward.

Intentionally did not address cause of power failure since physical evidence or lack thereof, will drive that opinion.

Please acknowledge receipt and ability to open attachments.
V/R George Braun-sends

Gerald Molitor



Hi George,

Speed would be a BIG factor. If starting from 100 mph, the decision on a landing sight and time to touch down would be very quick - 10 to 15 seconds. Best glide speed would be approximately 95 mph (+/- 3) and if speed were allowed to decay below that, it would result in a higher rate of descent to check further speed reduction at a really bad time. A heavy airplane would compound the issue. CG would not be a factor from what I have read in the preliminary report. The best achievable glide ratio in a Pitts would be approximately 4:1 and probably worse.

If the aircraft were allowed to slow, there are many variables that would play into aircraft control. Bottom line, if the aircraft was near critical angle of attack with any yawing/side slip present, it would roll in that direction abruptly. This could also be exacerbated by aileron use if not simultaneously countered by rudder. In crisis mode, control inputs become critical. If an engine loss were to occur at 200 feet at 100 mph and procedures were followed perfectly, the aircraft would land approximately 800 feet away. Anyone would have their hands full under these circumstances.

Re Credentials:

Gerry Molitor
CFI/CFII MEL SEA
B777 Capt. / LCA
Have Built & Owned Christian Eagle
Owned a Pitts S2B
Currently Own Sukhoi SU-29 (Formerly owned SU-26m)
President Emeritus of the International Aerobatic Club / Current Director
Three time US Advanced Champion (1995, 96, 97)
US Intermediate Champion (1993)
Captain of 1997 Gold Medal Winning US Advanced Aerobatic Team

Hope this is of some use.

Kind regards,

Gerry
> <NTSB Preliminary Report N67PN 5-26-2017.pdf>

Summation of opinions on P.I.C. circumstances at time of power loss

RE: Accident # CEN17FA197 occurring 5/26/2017 Aerotek Pitts S 2A (N67PN).

The 2 Fatal Injuries to pilots on board occurred on impact between Sheboygan County Memorial Airport, WI (SBM) and Road America Race Track, near Plymouth, WI. At about 1230 CDT.

Ref: NTSB Preliminary Report

Ed, et al.

Please consider the opinions and comments offered within, to evaluate and conclude that the presumed P.I.C. Dennis Hall, was not inept or guilty of failing to control the aircraft under the sudden changing aerodynamic envelope caused by a surprise complete power loss at a low, but not an inherently dangerous altitude... considering the relatively flat terrain below.

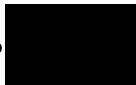
A survivable dead-stick approach and landing requires maintaining 95 mph +/- 3 mph in balanced flight to maneuver and flare horizontally at touch down. See attached. (Molidor w/credentials)

The pilot passenger in the front seat was 6'3" tall and about 175 lbs. CG limits likely not a factor but front cockpit leg room paucity and exposed rudder cables could have been a source of control interference at the most critical time and that could have accelerated the stall/spin entry, and not expected by the P.I.C.!

Having had a familiarization flight with Dennis Hall in the subject Pitts 2A, I recommend considering a regulatory physical size restriction for front seat pilots/passengers to: 6 Feet tall and 160 pounds. Reducing front seat pilot/passenger weight limit also allows for more fuel capacity in weight and balance preflight planning.

Summation not intended to address possible causes of the instant power loss.

V/R /s/ George F. Braun

Captain - FAA Check Airman, United Airlines, ATP  retired.

Colonel - USMC, retired: Former Combat Flight Leader, Air Combat Instructor F-4 Phantom, and Marine Air Group Legal Officer, while on active duty.

Aviation Maintenance Officer (AMO) for VMA-543, A-4 Skyhawks, USMCR. NAS Glenview, IL

Neither the seats nor the rudder pedals are adjustable. The ergonomics are the same as the A and B in the rear cockpit and are simply not competitive with modern aerobatic cockpit design. The front seat is the same as the B and is quite comfortable, especially when compared to the A. The airfoil and wing design is essentially the same as all of the S-2 wings with the exception of the ailerons which are of the S-1-11B type.

The empty weight of the C that I flew was 1,249.5 pounds. The maximum aerobatic gross weight is still 1,625 pounds, and therein lies the problem. The useful load of three hundred and seventy five pounds will limit legal aerobatic instruction to two very small people. To put this in perspective, a typical B has an approximate empty weight of 1,200 pounds. This only leaves 425 pounds for two pilots, their chutes, and fuel. My A has an empty weight of 1,040 pounds and a maximum aerobatic weight of 1,500 pounds. Even with 460 pounds of useful load to get the job done, I frequently have to turn away students due to gross weight issues.

I felt a few basic performance figures might be helpful for comparison purposes. The rate of climb begun from 500 foot density altitude was 2,500 feet per minute (altimeter and stop watch method). The outside air temperature was 48 degrees F on the surface and the wind was dead calm. Maximum indicated airspeed was 191 mph IAS at 2,300 MSL. Vertical penetration from those conditions with a 4.5 "G" pull was 1,300 feet with no rolls on the up line. All of these data points were with one pilot and 14 gallons of fuel for an operating weight of 1,540 pounds.

To put these figures in perspective, an S-2A with comparable pilot and fuel weights (a 1,330 pound aircraft) will produce a 2,050 foot per minute climb rate and generate 1,500 feet of vertical penetration from identical entry speed, density altitude, and temperature conditions. Yes, I know. The A had more vertical penetration from the same entry conditions, but not from the same weight. That extra 200 pounds of empty weight becomes 900 pounds at 4.5 "Gs" with a corresponding increase in induced drag to "get around the corner".

I checked the positive 1 "G" power off stall speed four times and experienced nose and left wing "break" at 69, 71, 71, and 70 mph IAS respectively from straight and level flight. The inverted "break" occurred at 76 mph. This is very similar to the B models that I have flown in that they generally produce an upright one "G" power off stall break around 71 mph IAS. An A at the same gross weight will experience a similar nose "break" at about 61 mph. Interestingly, the positive left side of the VG diagram for the A, B, and C are the same and show a stall speed of 62 mph at maximum gross weight for the B and C and 61 for the A.

Footnote: The author was a former member of the Society of Experimental Test Pilots and has logged 3,705 hours in the S-2 series with 2470 being in the A, 850 in the S-2S, and 395 in the B in addition to 44 hours in the S-1-11B and 78 in S-1S/T models.