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Sr. Air Safety Investigator
Office of Aviation Safety – Western Pacific Region

All persons listed were interviewed by NTSB personnel:

The following is a summary of conversation:

GARY MOSLEY (PRIOR OWNER)

Mr. Mosley emailed the following:

Jesse called me one morning and said when they took off and were climbing out and approaching pattern altitude to level off, they had a slight 'burble' - nose motioned downward slightly and then back up to before and did not reoccur the rest of the flight. I had never experienced what they described. I asked them if they have had time to go through the plane and check things as they had flown it by then more than I was in a year, etc. I suggested to check all the controls. Later that day he called and said an elevator trim tab on one side was slightly loose compared to the other side and they were able to tighten it.

Skybolt N202GM Builder / Previous Owner (Gary Moseley) Inputs:

1. Prior to starting the building, I attended the EAA Adult Air Academy in 1993 for one week of instruction and hands on training for welding, engine maintenance, Fabric covering, and other skills to build an Experimental Homebuilt. I also attended a welding class at the local community college for Oxi-Acetylene and Tig welding 93-94 timeframe.
2. During the building George Evans of Phoenix, AZ, and Lance Winter A&P at Chandler, AZ, both assisted and oversaw the build, covering, and first flights of the plane at Chandler, AZ.
3. While living in Cave Junction, OR Bill Gettle A&P at the county airport, performed engine maintenance such as Magnetos, timing, some fabric repair, etc.
4. The plane was based at (KMMV) McMinnville, OR, and Graham Goad A&P, performed periodic timing, maintenance, compression testing, and pre-buy inspection.
5. Upon my last flight on 11/2/2022, I had logged 728 hours of flight time in the Skybolt. The only aerobatics done were Spins, Loops, Hammerheads, and Rolls. Stopped frequent aerobatics 2015.

6. On 10/16/2022, Ben came to KMMV for prebuy inspection and flights. After a dual flight, Ben flew it solo, and then took his girlfriend, who had driven him from Portland that day, up for a flight. Because the Transponder was not current after Graham Goad confirmed it was not operable, I lowered the price \$5K to allow a new Transponder to be installed by Graham, if Ben and Jesse wanted, which they decided not to do – opting for a friend that had avionics shop back in CA.

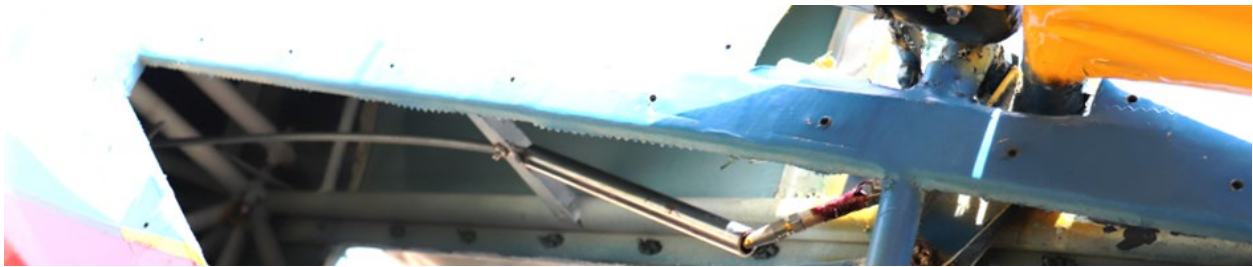
7. Ben took possession of the plane on 11/3. The day of his departure, he arrived at mid-morning, later than planned. He hurriedly tried to start the plane as my wife, and I were there to see the plane leave and observed him trying to start the engine until the battery would not turn over the prop. I walked over and asked if he was using the checklist given to him, and he was not. I asked if the gas was turned on and he scoffed at such a suggestion, and then noticed he had not turned on the gas selector. The plane started immediately, and he taxied to the gas pumps to top off. Although I told him not to fill the top tank pass one inch to the top, he overfilled, and gas overflowed onto the fuselage. About one hour after he took off, Ben texted me asking where the Transponder on switch was. I texted back reminding him it was not operable, and the switch was on the electrical panel to his right and labeled. I reminded him the plane was Day VFR and he should stop soon as night was coming soon. Later Jesse sent a video of Ben landing – fast final approach as it was getting dark.

8. Some days later, Jesse informed me that they had damaged the Canopy latch and replaced it. One day Jesse called to ask what I thought about something new that they experienced, and it was also new to me. I suggested going through the controls to ensure all were tight, and he found one of the elevator trim tabs were loose and tightened it. I reminded him to do an annual asap and ensure all ok. No more contacts or questions after that.

1. Summer weather items that should have been done per POH:
 - a. Retorque Prop at temperature changes and every 50 hours as the wood prop shrinks in dry hot weather.
 - b. Oil cooler plate labeled Winter with smaller diameter hole was to be replaced with the Summer plate with larger air hole, or taken off if temps above 90 F. Bolted on at the back of the engine baffling where oil cooler duct intake is mounted. May cause overheating of the oil.
 - c. Heater muff taken off to allow for fresh air. Heat and smells coming out of the vent if muff still on could add to confusion about engine.
2. Having a strong tail wind on base would be difficult to turn quickly onto final. I recommended and used the Bud-Davison taught Downwind turn to final without doing an actual base, especially in strong winds. The turn to final would be easily overshoot in a strong tailwind and a tight high-G turn to final to compensate and line back up to final, could quickly cause a stall/spin and unrecoverable at that altitude.
3. The GPS display in front of the pilot shows ground speed, and it would show a faster than indicated air speed on the panel when on the strong tail wind base. This may have led

them to think they had enough high wind buffer than they actually did via indicated airspeed if they were not using the Airspeed indicator.

Thoughts came to me as I tried to imagine flying in such a strong gusty wind, as I limited myself to 15 Knot wind max, even with the thousands of tailwheel time (700+ in Skybolt). The plane was light - strong winds were miserable to fly in as you would bounce around viciously and be using the controls vigorously to control the plane.



This is not what I installed. No tube, and no red grease. When talking with Jesse and Ben they did not bring up this modification. Very odd. I remember a conversation very early upon their getting it home in Nov. when they told me of breaking the canopy latch that they also backed the plane into something but did not elaborate as I recall.....perhaps they hit one of the trim tabs and pushed it down so hard as to bow or bend this section of cable and instead of replacing the cable the tube was put on to keep it from bowing.....(?).

I have been thinking about the first phone call Jesse made to me, which was the next day or days, but within a week of taking the plane home. He was in a zestful mood and joking about how they 'no sooner got the plane home' that they dropped the canopy breaking the latch and backed it into something when putting it away. No advice was being sought; it was more a 'sorry about damaging your beautiful plane' joking call.

Shortly thereafter, Jesse showed me the different latch (then what broke off) they installed on the canopy. Shortly thereafter came a call about the odd 'burble' climbing out to pattern altitude and asking me if I ever experienced anything like that - which I had not. I suggested to go through all the controls as a start. I think he sent a video of the issue, and then informed me they fixed the issue, without elaborating on what was the problem or how it was fixed.

Complete speculation here: Perhaps the 'backing in the hangar' damage resulted in a bent or kinked elevator trim control rod, and instead of replacing the control rod they put a tube over it and put red grease on where the end may have slid into the tube.

The elevator trim control cable movements I recall when flying were very subtle - about 1/4" - 1/2" fore and aft.

From: Gary moseley

Sent: Saturday, September 17, 2022 4:19 PM

Jesse,

Attached is the article I mentioned. Some other information for you about the plane as well:

There was a prebuy inspection done in June (buyer wanted me to carry a portion of the agreed upon price, which is a no-go for me), and the local A&P here in McMinnville (Graham Goad of NW Air Repair) said: "The welds are solid, the wings immaculate, and I would let my wife or kids do aerobatics in it." Compression was 76, 76, 77, 76/80. Bore scope, mag timing, etc was done. 517 Tach hours since new and 731.3 TT. I do not fly it enough to warrant keeping it as I am getting older and life events seem to get in the way more often. However, I do fly it regularly, just not enough.

If you want to see many years of the more memorable flights set to music, send me a Facebook request. More pictures of the build, and previous paint scheme, etc... A great video my daughter did from the front seat when landing at McMinnville gives you an idea of the landing. With the spring steel gear (like new Pitts have, and Skybolts are more being built with rather than Bungee cords or Stinson-like rubber doughnuts – tried that, not good in strong cross winds, switched to the spring steel) – tracks and handles like a Citabria and you can put one wheel firmly into a strong gusty cross wind and it will track straight. Docile Taildragger.

Couple of thoughts on Skybolts In General

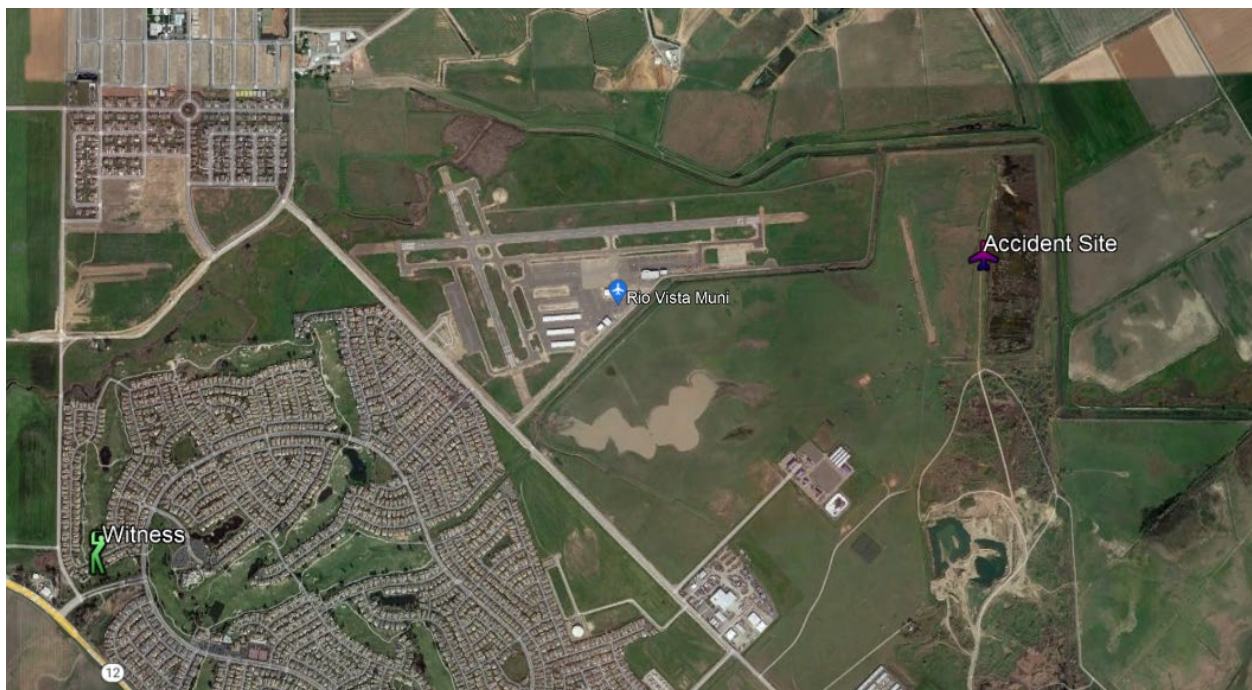
This is not in lieu of training from an instructor in a Skybolt, or Pitts Special, which is highly recommended.

1. Start Up: Make sure the fuel selector is on the Main tank for takeoffs and landings. Cold start on Fuel injected engines require to run boost pump (switch on right side panel) for ~8 seconds to prime the engine, with mixture rich, and throttle cracked to low setting. Hot Start requires the mixture be in full cut off and throttle cracked to low setting, when cranking the starter, and only after the engine catches to then advance the mixture. As the engine warms up turn on switches needed such as Alternator, Fuel indicator, Radio, etc...
2. Fuel Indicator: The fuel indicator for the main tank has a yellow dot slightly above empty, which is where the fuel indicator arm will no longer travel to the bottom of the tank due to the horizontal baffle needed for inverted flight. Consider the yellow dot on the gas gauge to be your empty indicator and do not plan on using any of the approximately four gallons under the baffle. There is no fuel indicator for the top tank.

3. Taxi out and run up: Keep the engine at idle and S turn a lot for both safety of clearance on the Taxiways and to get the feel of the tailwheel as well as brakes. Apply both foot pedal brakes and idle at 1000. Run up to 1700 and check mixture (lean and then enrich beyond when the engine runs smooth again – be generous on the mixture, not aggressively lean). Check mags, oil, etc... Memorize the visual of where the taxiways and runway meets the cowling, as your peripheral vision will be used when in tail low attitudes and you can gently alight down to the visual where the runway meets the cowling when landing.
4. Take Off and Climb out: (Stalls at 50 MPH indicated, but higher if in a turn) Advance throttle smoothly (expect some slight right rudder may be needed to stay straight) and start to release back pressure on the elevator allowing the tailwheel to rise slightly and allow the plane to fly off the mains in that tail low attitude. Climbing out is 90-100 MPH indicated or more if gusty winds dictate.
5. Cruise: Throttle back as needed to keep RPMs out of the red – 2350 RPM seems to be the most economical, but if speed is needed go up as needed. The elevator trim lever on the left side of the seat on the floor controlling the two elevator trim tabs, is very sensitive to movements and elevator pressures, so be sure to have a good grip on the stick when adjusting the elevator trim, as it won't take much movement of the lever to adjust trim – gently.
6. Approach: Recommend normal 45-degree entry to downwind, as the biplane has more wings to look past to see traffic. Abeam the numbers on Downwind throttle back to 1500 and slow down / trim accordingly to 90 MPH indicated (more if gusty winds). Start Base turn to come in a bit high to a normal approach planning to slip on final for visibility. Once kicking out any slip well above the runway, slow down to about 70 mph or more if gusty winds and start looking for that intersection of the runway to the cowling / base of cabane struts that you memorized earlier, and plan on landing main wheels first with a wheel into the wind if any crosswind. Don't let the vertical rate of descent cause you to be jerky with the elevator as the runway approaches – ease in throttle to arrest the vertical rate, as it is easy to induce Pilot Induced Oscillations at this point and bounce down the runway – best to go around if needed. Fully throttle back once fully on the mains, if not already throttled back, and ease the tail down as the plane slows down – don't put the tailwheel down at fast speeds as it may chatter. It tends to track straight in three points down to how it is pointed once all wheels on the ground. If there is any tailwheel chatter, ease up on the elevator back pressure until slowed down and then keep back elevator when taxiing.
7. Maintenance thoughts:
 - a. Grease bearings for all controls using the two different sized grease fittings to pressure grease through the bearings.
 - b. 20W/50W Phillips Oil with Cam Guard. Tends to throw out the eight quart so seven quarts full is OK, but down to six, add a quart with Cam Guard percentage called for.

- c. Keep the wood propellers horizontal when not in use to allow for even absorption of moisture. Always retorque prop when moisture content changes between seasons, or 50 hours flight time, per propeller manufacturer (see the Sensenich manuals included as this is very important).
- d. Tire Pressures: Mains 28-30 psi, tailwheel 50 psi.
- e. Winter Oil Cooler Air Inlet restrictor is in place – replace with summer plate with larger entrance hole when temps above 60 F on average. If flying in very hot temperatures, say 90-100 F plus, you may need to take off the summer restrictor plate all together.
- f. Recommend using two shop lights under the oil pan inside the engine compartment and then putting towels or blankets on the outside of engine compartment and cover engine air inlets during temperatures below 40. The engine heater on the engine oil pan smokes when used due to slight oil seepage from engine onto the heat wrap over time, so have not used it much, especially not needed if you use shop lights.
- g. If you do some aerobatics in the future, consider using the Steen Aerolab canopy frame system, for which blueprints are included, as that would then make the canopy jetsonable. They also sell the frame, and you can still reuse the canopy. The parachute needs repacking and expect the rubber bands to need replacement.
- h. The exhaust heater is in place and exits the fisheye outlet in the front cockpit. Take off the heat muff and reroute air ducts to allow for fresh air entry through the fisheye outlet. Both airflows are controlled by the center (looks like prop control) throttle quadrant = it is labeled.

HANK PAGLIAROLI (WITNESS)



My name is Hank Pagliaroli I live here at Trilogy at Rio Vista,

I witnessed the aircraft going down from the tee box 8th hole of the Trilogy golf course (looking east). Best I can tell the airplane was about 1000-1500 in altitude and began to spiral about 7-8 times before what I saw was trying to pull up then disappeared behind the trees.

I noticed it for it was a biplane, thinking it was a crop duster that was really high in altitude doing it's turn. Then it did what looked like an air show stunt but never pulled out.

I did not hear any engine noises, but what caught my eye was movement just above eye level across a clear blue sky moving left to right. I saw the plane flying level for about less than two seconds before it started to do a 45-50 degree clockwise lazy spin, straight down without any corrections.

Attached are photos from where I was standing on the eighth hole and the best descriptive drawing according to what I saw, lined up directly with the trees in the palm trees in the distance

For which wing was down , the plane was traveling left to right and then the right wing started to go into a clockwise spiral .

No, I am not a pilot, but I'm an Air Force brat to grow up on SAC bases, and I've seen many of the airshow and can recognize biplane stunts, and this look like it was beginning to be one, but he never pulled up. My best guess for attitude is 750-1000 ft. With all the aircraft traffic round the Rio Vista airport it seemed an average attitude.





Gerry Nolan

A witness reported that he was listening to the airport UNICOM frequency while at the airport and on his bicycle leaving the airport. He heard a transmission on the radio stating “Experimental bi-plane, engine out.” The witness looked up and observed the accident airplane cross over the airport at midfield of runways 25 and 07, flying from the north on a southerly heading to join a nonstandard left downwind leg for runway 25. Thereafter, the airplane banked left, presumably onto the left base leg for runway 25. At the conclusion of the transmission, entering the left base leg for runway 25, the aircraft lost total control and within 10 seconds impacted the ground. It was not a spiral, it was not a flat spin. The aircraft looked as if it had lost

total control from within the aircraft. Previous statement that the nose dropped and a spin/spiral occurred are not accurate. The aircraft was heading nose down at a rapid speed. The witness stated that he heard the engine and the flight looked normal, at pattern altitude of 1000 feet and under power, until the sudden lost of control and within 10 seconds impacted the ground.

The call I heard on the UNICOM was at the left downwind left base runway 25 location. Seems your photo has the transmission earlier.

Rebecca Shreve

The spouse of the front-seated pilot stated that her husband that he flew corporate. He would have wanted to get home right away.

Jessica Buckner

The spouse of the aft-seated pilot stated that her husband was flying the airplane to pick up the front-seated pilot. She added that the two pilots and one of her husband's flight students formed a three-member limited-liability company that owned the airplane. According to her, the pilots always topped off the fuel tanks after every landing, and her husband normally flew more