



INTERVIEW SUMMARY

Elliott Simpson
Aviation Accident Investigator
Western Pacific Region

Interview Date: June 14, 2018
Person Contacted: Ralph Royce [REDACTED]
NTSB Accident Number: WPR18LA163

Narrative:

During a telephone conversation Mr. Royce stated the following:

He was the Air Boss for the airshow.

He had seen Dan Buchanan perform the routine many times before, maybe three times per year, almost 100 times total. He stated that the performance appeared to be going to well, and the streamers were cut during the second lap as planned. However, during the final turn the hang glider was a little lower than normal and it performed a sudden circling maneuver that he described as a "pinwheel".

He commented to one of the tower crew that something was not right, and he assumed that due to the extreme nature of the maneuver, a flying wire had failed (when he arrived at the accident site all wires appeared ok). The hang glider appeared to stabilize and descend, and then performed another pinwheel maneuver before striking the ground in a nose-down attitude.

He did not see the line drop or the line parachute deploy at any time.

He had spoken to Dan Buchanan earlier in the morning during the show briefing, and all seemed normal. Mr. Buchanan had cancelled his appearance at the show the day prior due to high wind. The weather at the time of the accident was below the agreed limits of 6 knots, and was coming out of 050°. It was sunny, and the weather was starting to warm up.

At no time during the shows did he see any dust devils, and it was not until the briefing the following morning that he was told by BA Anders that a dust devil was seen.

During a series of follow up emails regarding the pyrotechnics, Mr. Royce stated the following:

“As I recall, Dan was near the apex of his tow or perhaps just after release before he began the smokers and sparklers (if he had them on). I do not recall any pyrotechnic activity during the accident and only observed a light whisp of smoke for about 3-4 minutes after impact. If it was Dan’s usual ordinance they were just smoke generators. I did not think the smoke was immediately adjacent to the impact point and assumed it was a smoker that was dislodged from the vehicle.”

“The pyro had been expended (and residual fires knocked down) approximately 1+30 before Dan flew. There were a couple of minor smoldering spots that were not a factor to the incident. There smoldering spots got active when the wind came up at about 1900 and the FD had to go out and knock them down again. The little spot at the site could have been there before but it was so light no one noticed.”

“The opening act included a flight of F-15Es with a planned “wall of fire”. The wind shifted more north to south just before the opening and when the “wall” went off some of the residual fire fell in the pyro area of the Close air support demo that was supposed to happen about 15 minutes later.. I received a call from the Shooter in Charge that he was going to have to blow the field because of uncontrolled burning – so for the next 10 minutes we has the entire CAS pyro set off. It was cool but really put a damper on the CAS demo.”



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Western Pacific Region

Interview Date: June 7, 2018
Person Contacted: Joseph Hughes [REDACTED]
NTSB Accident Number: WPR18LA163

Narrative:

During a telephone conversation Mr. Hughes stated the following:

Mr. Hughes works for Dan Buchanan Airshows, and his primary work function during the shows is that of the winch operator onboard the tow trailer. The tow driver is Ray Liercke.

Regarding a typical tow operation:

A tow trailer which contains a winch is pulled behind a pickup truck driven by Mr. Liercke. The winch is composed of a reel of about 3,000 ft of braided UHMW PE/Spectra cord, with a minimum tensile strength of 1,500 lbs. The winch is connected to a hydraulically controlled rotor brake assembly, which can be adjusted to a specific hydraulic pressure (100 psi typically), controllable by the winch operator as the reel unwinds. The winch can also be commanded to take back the cord slack and reel in during turns and after release. The winch cord passes under the glider cross bar and attaches to a quick release at the waste of Mr. Buchanan's harness. A parachute is attached to the end of the cord, to allow for a gentle descent after release. The cord needs to be rewound before it reaches the ground, otherwise it will be damaged—the parachute aids in the slow descent.

The glider initially rests on the back of the trailer and is held by the cross bar in a cradle with safety straps, and at its nose to a mast with a cable. A cable release lever is at the bottom of the mast. Mr. Buchanan then gets into the harness and maneuvers himself into position from his wheelchair and is connected to the glider frame. The glider is equipped with a whole-system parachute, mounted to the left side of the harness. The rocket motor is on the left shoulder of the harness, and Mr. Hughes believes that Mr. Buchanan uses his right hand to activate the rocket motor release cord.

Once in position at the end of the runway and facing into the wind, the safety straps securing the gliders cross bar to the cradle, and the nose release "safety" are removed. The operation accelerates once approved by the Air Boss. As they reach about 40 mph, Mr. Buchanan calls for the release, and the tow

operator activates the nose release lever at the bottom of the mast. Climb is immediate, and the next 3-4 seconds are the most dangerous because the speed is great, but the ground is close and limited control is available. The cord unwinds as the glider begins to rapidly climb. After reaching a predetermined location on the runway, usually 3,000 to 4,000 ft, the truck stops, and Mr. Buchanan calls over the radio for it to make a 180 ° turn. Mr. Buchanan begins to turn the glider downwind, while the winch operator releases the brake and takes out the slack by reeling the cord back in if necessary. Mr. Buchanan then calls for the truck to accelerate again, and they proceed down the runway as before.

They are now traveling with a tailwind, and the winch operator needs to be especially vigilant of slack and reel it in if necessary. Mr. Buchanan makes calls on the radio to adjust both speed and cable tension, typically calling for 50 mph about this point. As they reach the end of the runway, the group initiate another 180 ° turn maintaining coordination as before. The group continues back upwind down the runway as before and repeat the 180 ° routine at the end. Shortly after traveling back, Mr. Buchanan releases from the tow. The tow cord descends under a small parachute, while the tow operator reels it back in. Mr. Buchanan then performs the maneuvers for the show.

Regarding the accident:

Mr. Buchanan went to the orthopedic surgeon on May 29, 2018, due to longstanding issues he had with his left shoulder. Specifically, he had progressively began to lose the full function of his shoulder with only 37% of his left rotator cuff remaining. At that visit he received four cortisone shots to the shoulder.

Mr. Hughes had been helping Mr. Buchanan more with the day-to-day physical operations as Mr. Buchanan's shoulder started to progressively deteriorate. Mr. Buchanan had stated that his goal was to just get through the 2018 show season and decide the future of the operation at the end of the year.

The last time he flew a practice run was the Thursday before the show. Mr. Buchanan's day-to-day functions, such as showering and getting in and out of his truck were being curtailed both at the hotel and when he visited Mr. Hughes home, in an effort to spare wear and tear on his left shoulder. The same applied for getting in and out of the glider harness where he required more help than in the past. Mr. Buchanan confided that he was not so willing to take practice flights anymore, because of the shoulder injury and pain he endured getting into and out of the glider and harness.

Mr. Buchanan was planning on performing at the airshow the day prior but declined due to high wind conditions.

The group had driven in from Dayton, NV and were staying in a local hotel. Mr. Buchanan went to bed about midnight, which was his normal routine. They departed for the airport at 0650, where the briefing started at 0800.

The briefing was routine, and the group met with the Air Boss and Announcer. The group then drove the flight line, established show center, checked the wind, and discussed the various launch, turn and release points. They arrived back at the hangar at 0930, and then did a "meet and greet" with the attendees. Mr. Buchanan seemed in good spirits and wanted to watch the "wall of fire" pyrotechnics show. He stayed behind and had some food and talked to the airshow pilots as Mr. Hughes went back to the hangar to prepare.

Mr. Buchanan came back at about 1215 and performed his preflight checks. He usually carries a water bottle and was drinking from it throughout the morning. Once the check was complete, the group assisted Mr. Buchanan getting into the glider. Everything was normal and casual, and between 1250 and 1310 they drove to the taxiway. They then waited for the previous Ferrari show to finish. Mr. Hughes stated that the time spent in the harness was not excessively long leading up to the flight, and about usual. By the time they reached the runway end, the wind had picked up and was gusting about 75-80 ° across the runway.

Once the Air Boss gave the all clear, Mr. Buchanan cleared the truck driver to accelerate to 40 mph. He then gave the release call, and Mr. Hughes released the glider's nose from the mast and the glider climbed appropriately. As they approached the end of the turn point, all was normal, and Mr. Buchanan gave the call to turn back. The group turned around following the standard procedures, and then Mr. Buchanan began to initiate the "comedy" routine with Brad, the pilot of the Extra 300, and the show announcer over the radio. They then reached the end of the runway and turned back while Mr. Hughes reeled in some of the cord. They reached the runway end, and turned around for the third leg, and a short time later the Extra 300 maneuvered into place and cut the streamers on the back of the glide as planned.

After reaching the turnaround point, the truck stopped, ready from the turnaround call from Mr. Buchanan and the impending release. Mr. Buchanan gave the call to turn around. The truck and trailer turned around, and a brief time later Mr. Hughes looked up and noticed that the cord angle was lower than normal, and the glider was now way below the altitude it was a few seconds prior, maybe 400-600 ft lower. Mr. Hughes thought this was very strange, and he saw the cord become very slack. Mr. Buchanan then made a call for 50 mph, and then a brief time later the glider then dove an additional 500 ft. Mr. Hughes released the winch to allow for slack in the cord, giving Mr. Buchanan more maneuverability. He then thought he saw the glider land, then take back off again and initiate a steep left climb. It then rolled left and struck the ground nose-down.

The truck driver then turned around and drove towards the crash site. At no time did they see the cord parachute release, and Mr. Hughes stated that the glider appeared to still be connected to the cord through to the crash. When they arrived, the fire department and EMT's were already on scene. The "weak link" cord had been cut, and Mr. Hughes assumed this happened during the ground impact.



INTERVIEW SUMMARY

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Western Pacific Region

Person Contacted: Samuel T. (Tim) Huff
NTSB Accident Number: WPR18LA163

Narrative:

In an email dated June 6, 2018, Mr. Huff stated the following:

My account of Dan Buchanan's hang gliding accident at Mountain Home AFB 2 June. 2018:

I was working as a volunteer for my squadron at the airshow on Saturday 2 June 2018. A few minutes before Dan Buchanan started his part of the airshow, I saw a dust devil to the west of the runway, a bit past the ATC tower. It was a very well defined vortex that was not visible from the ground to about 200 feet above the ground. At about 200 feet AGL there was a small amount of dust that clearly outlined the vortex's shape. I pointed it out to my co-worker who was also able to see it. A few minutes after sighting the dust devil I walked from the hangar area to the concession area (located nearer the runway) to get lunch. As I walked, I watched Dan Buchanan perform his routine. All seemed to be going well. Dan appeared to be in full control of the glider, and as I continued to watch, he set up what looked to me to be a good landing approach heading west, about 10 to 15 feet off the ground, wings level, with good airspeed. To my surprise, the nose of the hang glider suddenly pitched steeply upwards and I thought to myself "what is he doing? He is too low to be doing a wing over...maybe it is part of the show?". I had never seen Dan perform before, but what I saw didn't look right. In the next second or two, the glider gained about 30 to 40 feet of altitude, apparently stalled due to the extreme angle of attack, and then fell off on one wing. The glider was pointed straight at the ground and impacted very hard. I was shocked.

I don't know if the tow rope was still attached to Dan and the hang glider when the accident occurred, (I didn't see it). I thought about what could have caused the accident shortly after it occurred, and one thing seemed certain, something had added a lot of energy to the hang glider while Dan was landing. The model of glider he was flying is not a high performance wing,

and should not have had the energy retention necessary to climb at such a steep angle during the landing. I remembered seeing the dust devil earlier, and my conclusion was that Dan had most likely flown into it or another one that had formed over the hot asphalt and concrete of the old flight line located west of the runway.

I have been a hang glider pilot since 1980, and possess an advanced rating. I was unable to find any videos on line showing a hang glider encountering a dust devil on landing, but did find this one (in German) that shows the incredible forces one of these things can exert on hang gliders and paragliders (<https://www.youtube.com/watch?v=Q3QcMB2owFc>)

I had a close call with an invisible dust devil near Flagstaff, AZ in the early 1990s that I was lucky to have come out uninjured.