



RECORD OF COMMUNICATIONS

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Air Safety Investigator
Western Pacific Region

Date: Through February 22, 2019
Person Contacted: Mr. Terry Bolstad (Builder/Owner/Pilot)
NTSB Accident Number: WPR17LA181

Narrative:

The following are excerpts of email exchanges between the NTSB and Mr. Bolstad on the noted dates:

January 30, 2019

NTSB Query

I was looking at the RANS spec sheet and it specified two different engines, the Rotax 582 (65hp) and Rotax 912 (100hp)

I noticed you had a Rotax 503 (52 hp) in yours

Did you talk to/communicate w anyone re the suitability of that lower HP engine, and if so who/what was the input/feedback?

Pilot Response

I talked with the factory rep and the original S-9 had the 503 and 582 as the options. When the 503 went out of production they changed it to the 582 and the 912 (80hp). I also talked with Don Zank at Zanklites - he was dealer for both Challengers and Rans in the early days and had an S-9 with a 503 on it. He said the only thing it didn't do well was vertical maneuvers. I had considered the 582, but the 503 was on the bench in the shop.

February 21, 2019

NTSB Query

Currently Rans only specifies only two maximum takeoff weights; one for airplanes equipped with a 65hp engine (710 lbs) and one for 80/100 hp engines (810lbs).

It looks like you used 710 lbs as your MTOGW

When you asked them about the 503, did you ever ask them for a max TO weight value?
If so what was it?

Pilot Response

When I asked about the 503 I also asked about the GW differences on the 582 and 912 and whether there were structural changes involved. I was told there were no structural changes except motor mounts for any of the S-9's for gross weights. Higher horsepower could still get the aerobatic performance with higher GW's. I picked the lower GW figure for my GW based on structural integrity and assumed performance based on past history of the airplane.

February 22, 2019

NTSB Query

So to be clear, Rans/etc didn't specify a GW at all, or did they tell you to go with 710 (or was that published somewhere?)

Pilot Response

The number I chose was 710, the current advertised GW for the 582. The flying weight of the 503 is similar to the 582. If you look at the advertised GW's the 912 equipped a/c is listed at 810 - the engine is 100 pounds heavier than a 582, so again no structural changes, just upping the GW numbers for a bigger engine. It being Experimental - Amateur Built, the GW it is up to the builder. DAR's and FAA inspectors I've conversed with wouldn't require a new stress loading test unless there were no GW's suggested or the builder's GW exceeded the max stated by the designer. All of this is based on structural strength. No analysis of performance or handling qualities is required. Since there are still many S-9 continuing to fly with 503's I wasn't worried too much about the expected performance. Taxi tests were done and results were evaluated. I wasn't happy with my first results and talked with Rotax and Warp Drive about the prop length and pitch. I sent the prop back to Warp Drive to have it modified and repeated static engine runs and taxi tests. I was satisfied with those results and got ready for first flight.

Pilot Response re Possible Cause

my feeling is that there was nothing wrong with the airplane and it should have flown okay. I lost sight of the trees at the end and to the sides due to the mid-wing design - my head was level with the wing. My only take-away from this is to suggest a longer runway with no obstructions at the end for first flight. However, the trade-off is ground handling for a tail-dragger is more demanding on asphalt than for a grass field.