



Dick (left) and Tom Green with N191DG.

Homebuilt Aerobatics

Father—Son Team

From the cockpit of a Continental 747 airliner to the building of a competition aerobatic plane, Tom and Dick Green share a very special father-son relationship in aviation.

Flying together is in the past since the elder Green's retirement but jointly building and modifying their homebuilt aircraft, the latest of which is a modified Starduster called a Super-Starduster, is very much in the present. The 71-year-old Tom readily admits that he especially likes constructing airplanes and just plain working on them in general now.

"I like to work with my hands. I'm a tinkerer," he describes himself while pausing to answer questions during the 1984 U.S. National Aerobatic Championships in Texas the last week in September.

The Greens' orange with white Super-Starduster rests on the ramp at the Grayson County Airport, site of this year's Nationals. The wind whistles and whips hair, clothing and any loose object it contacts as the amiable twosome kneel beside their creation and speak into a tape recorder.

It's Monday and Dick plans to fly in the Unlimited category. Not known yet is the fact that the Unlimiteds will not even leave the ground to compete for the Nationals 84 crowns. "Mother Nature" has not yet revealed what she has in store for this particular annual competition. SPORT AER-

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OBATICS asks the duo about the efforts that went into the making of N191DG.

"Well, the wing was modified from an Acroduster I wing and the fuselage was modified from a Starduster I fuselage essentially," Tom answers. Then he continues, "We took the Acroduster I wing and put symmetrical ailerons on it. Instead of spades for the ailerons we elected to use servotabs which assist the pilot in reducing aileron back pressure on the control stick. We also have a servo-tab on the elevator.

"One real unique feature we have in the airplane is a mixer that changes the neutral position of the ailerons with the fore and aft position of the stick. In other words, with the ailerons in neutral, an aft movement of the stick lowers all four ailerons and, with the stick forward, they react just in the reverse so that if you were inverted and went to do a pushup from inverted, the ailerons would essentially act as flaps and give you a little more lift to turn around the corner."

"The primary reason we did that," interjects Dick, "is to give it a positive

airfoil no matter what you did — whether you were inverted or right side up. Now, primarily, it helps when you're going straight up and come out of the top of a maneuver very slow. It keeps you from sinking and it also, I think, enhances the snap characteristics of the aircraft."

Tom notes that the use of the mixer does create a problem however. "It's hard to know where to put your aileron stop because you have so many different neutrals to start from on the ailerons," this California resident explains.

Dick indicates that when his dad sees something wrong they see that it gets remedied. Otherwise the plane is not flown. Basically their teamwork follows the pattern of Tom doing the building, Dick doing the flying and both solving the design problems generally together. Their present handiwork is preceded by Tom's construction of a Starduster II for himself and an Acroduster II for Dick.

Why is a Starduster their choice as the foundation for their aerobatic craft's design instead of a Pitts, Eagle, Laser or any other type? "We simply wanted to incorporate some of these modifications that are not on the other aircraft," replies Dick.

What they now possess is "pretty much of a new design with some input from some of the old," according to the younger Green. He repeats the

fact that the fuselage is a Starduster I and the wings are modified Acroduster I wings. He adds, "The leading edge has been blunted to some degree and also this mixer incorporated. The ailerons are oversized."

Starting chiefly from scratch this homebuilt project covers the span of approximately two years. Fond du Lac 84 has the distinction of being the contest where N191DG first flew in competition and Dick first flew in the Unlimited category. He placed seventh out of a field of 15 there. He affirms no changes were necessary to the plane after the event.

"It's essentially the same airplane," Dick avows. But he mentions, "I would like to have a little bit more throw on the ailerons. There are some changes that we do plan to do after this contest (Nationals 84). I'd like to get some more throw on the ailerons primarily . . . to increase roll rate."

He maintains this particular plane has very good potential in the future in Unlimited competition. As to whether or not it has a better future than the Pitts or Eagle or Laser, he honestly concedes that he doesn't know "that much about the other aircraft." He points out he has very little time in Pitts aircraft but imagines his would be comparable.

He feels the reliability of the super horsepower engines, like the 300 or 400 type appearing on the aerobatic

scene now, is a problem — "getting too much horsepower out of an engine and deteriorating the lifespan of it or increasing the possibility of an engine failure." He declares, "I think reliability counts for a lot when you make a lot of contests."

Dick also believes the composite props are "always a controversial subject." He bases his opinion here on the premise that "the reliability of a composite prop is not as good as a metal prop but the metal prop imposes more stress on the crankshaft and crankshaft flange because of the weight."

Switching from the subject of planes to themselves, the son reveals his father spurred the desire to pursue aviation as a career. "He started me out in a Cub when I was 12," Dick relates. Laughingly he carries on, "He's responsible for my start and all my desires and where I am right now — which isn't very far."

Jocularly prevails and Tom joins in with, "Which is out of a job!"

Dick sheds light on the cause for the merriment: "I was one of the Continental pilots until they had all their troubles . . . There's a bunch of Continental people expecting to put a new airline in the air and I expect to fly for them."

Tom, who started flying for a living in 1940, spent 30 years with that same airline before retiring in 1973.

His last three years found him in a 747 with the final six months as captain over his son who filled the copilot's seat. Father is also the source of son's interest in aerobatics. When Tom built the Starduster II, Dick flew it and began doing aerobatics with it.

"I got bit by the bug and from there we bought the Acroduster II and I began to compete," the 43-year-old Texan recounts.

Does Tom compete? "No, I've been straight and level for so many years," comes his ready response amid a lingering chuckle.

Both their wives enjoy aviation too. Dick's wife, Fara, is actively involved as a "brand new private pilot," an International Aerobatic Club judge and a critiquer for her husband's endeavors in our sport. "She's responsible for how well I do or don't do," he states. Tom's wife, Marie, has a more passive enjoyment. "She likes to fly on the big airliners where they serve champagne," he discloses with a mischievous sparkle in his eye and grin curving his mouth.

As the tape filled with the Greens' comments is signed off, father and son return to tending the mechanical needs of N191DG in preparation for its and Dick's entrance into the Nationals' aerobatic competition box. Little do they realize that the elements will prevent such a venture this year.