Burt, about Canards

t Rutan (CA) - 06 June 02 We have recently received a number of inquires relative to the use of the two different canard airfoils that are used on the Long-EZ aircraft. The original Vari-Eze and Long-EZ used a University of Glasow GU25 airfoil section known for its high lift at the low Reynolds number (500,000) seen by the canard. This section, while having excellent lift, tended to be affected by the transition as the airfoil went from laminar flow to turbulent flow. While we found excellent characteristics on all of our prototype aircraft, beginning in 1979, builders reported that their aircraft would change its trim position when they flew into and out of a rain shower. This trim change was, in general, a minor annoyance where the pilot had to change trim position when wet and then again as the airplane dried out after the rain encounter.

later, in the early 80's, we began to get reports that some Long-EZs had relatively strong nose down trim change, even beyond the trim capability of the aircraft, such that the pilot had to trim aft and then still apply some aft stick force as the airplane flew through the rain shower.

RAF did extensive testing to investigate this phenomenon and with the help of airfoil guru John Roncz, developed a new canard design that essentially eliminated the rain trim change. This new canard, made no change on some airplanes, was to be found desirable on others, and in a few cases, highly desirable and mandatory since the trim change was objectionable.

While extensive tests were done with many airfoils and dozens of airplanes were measured, RAF was never able to determine by visual inspection which airplanes should have the trim change and which would not. These measurements always provided conflicting data. Thus, the only way to determine whether a previously built airplane should be upgraded to the Roncz 1145MS canard was through flight test.

After the Roncz 1145MS canard plans became available, it was recommended for all new construction on Long-EZs and recommended as a replacement on those aircraft that exhibited a strong nose down trim change.

For those of you out there that don't spend nearly every waking hour cruising through your Canard Pusher newsletters, Tonya did a search on the CD-ROM for "trim changes" and found the following archival information dating back to 1979 in order to give you a complete picture of the trim-change-related support that RAF has provided builders and flyers:

CP 22 pg 3-4; CP 30 pg 4; CP 38 pg 4; CP 39 pg2; CP 43 pg1-2; CP 46 pg 3; CP 48 pg 3; CP 50 pg 1; CP 66 pg 11; CP

Dennis Jacobs' Death

ED:- I am sorry to report the loss of Vari-Viggen builder/pilot, Dennis Jacobs. On June 16, he was reported to have departed Urbana, IL airport on runway 27 en route to Yellow Spring, Ohio.