



THE ENGINE BEAT

Our new columnist says he's "been there, bent that."

By John M. Larsen

When Dave Martin suggested I write the "Engine Beat" column, he said he wanted the column to take a deep look at the questions and issues that face the home-builder and pilot. We will be going after feedback from pilots who are using various types of aircraft engines in the field, and we expect to present in-depth examinations of the technical aspects of new products coming on the market.

Hugging Engines

I have had a love affair with engines since I first discovered that they were what went *chug* when the car started to move. My first "aircraft" engine was a Rogers 29. I ordered it from the back of a funny book for \$4.95 (if anyone can remember 1946, that was big money), and I actually made it *run* a couple of times.

I did the hot-rod-Chevy thing in my youth, and later raced and sold motorcycles. As a motorcycle dealer I got into engine modifications and spent hundreds of hours on a dynamometer, hopping up racing engines until the machines either flew or blew.

As time went on, I became a contributing editor or technical editor for several motorsport magazines and was the originator of the first motorcycle how-to article with step-by-step pictures for illustrations. I wrote the 250cc and 350cc engine overhaul manual for Cemoto East, the Bultaco motorcycle distributor, and manuals on repair for Farmers Insurance Company.

Fly-Writing

I soloed a Cessna in 1980 but did not get into kit-building until 1990 when I built an Avid Heavy Hauler and did a how-to-build-it series for this magazine in 1991. I went to work for Avid Aircraft in Customer Service and later did the same job-related activity for Sky-Star. I continued contributing articles to KITPLANES® while we flew 300 happy hours on my Avid, and the two-stroke Rotax never failed us. Well, almost never.

Sound of Silence

The-worst sounding airplane engine you will ever hear is the one that makes no sound at all. My wife and I had just

executed an uneventful takeoff from Nampa Airport here in Idaho with a plane full of 100LL, groceries and gear for a weekend of fly-in fun...when our newly rebuilt Rotax 582 seized at about 300 feet AGL. The gauges all looked OK—no visible answers.

I backed the throttle off and richened the mixture. It restarted and seized again; I'd better find a parking place. By now we had about 200 feet with one fairly clear field ahead, which unfortunately turned out to be a logged-off old orchard with stumps.

When the plane skidded to a halt, it had what the FAA would refer to as "substantial damage." We were fortunate, as I walked away from the wreck and my wife was treated and released from the hospital. A word for the husband: If you think your wife seems critical of your highway driving, by all means don't wreck your plane.

The FAA found no reason for the power outage, and it was totally useless to talk to the local Rotax service technician, as I *was* the local Rotax technician for, at that time, LiteBird Aero in Nampa.



John Larsen's Avid Heavy Hauler sustained substantial damage after a power failure.



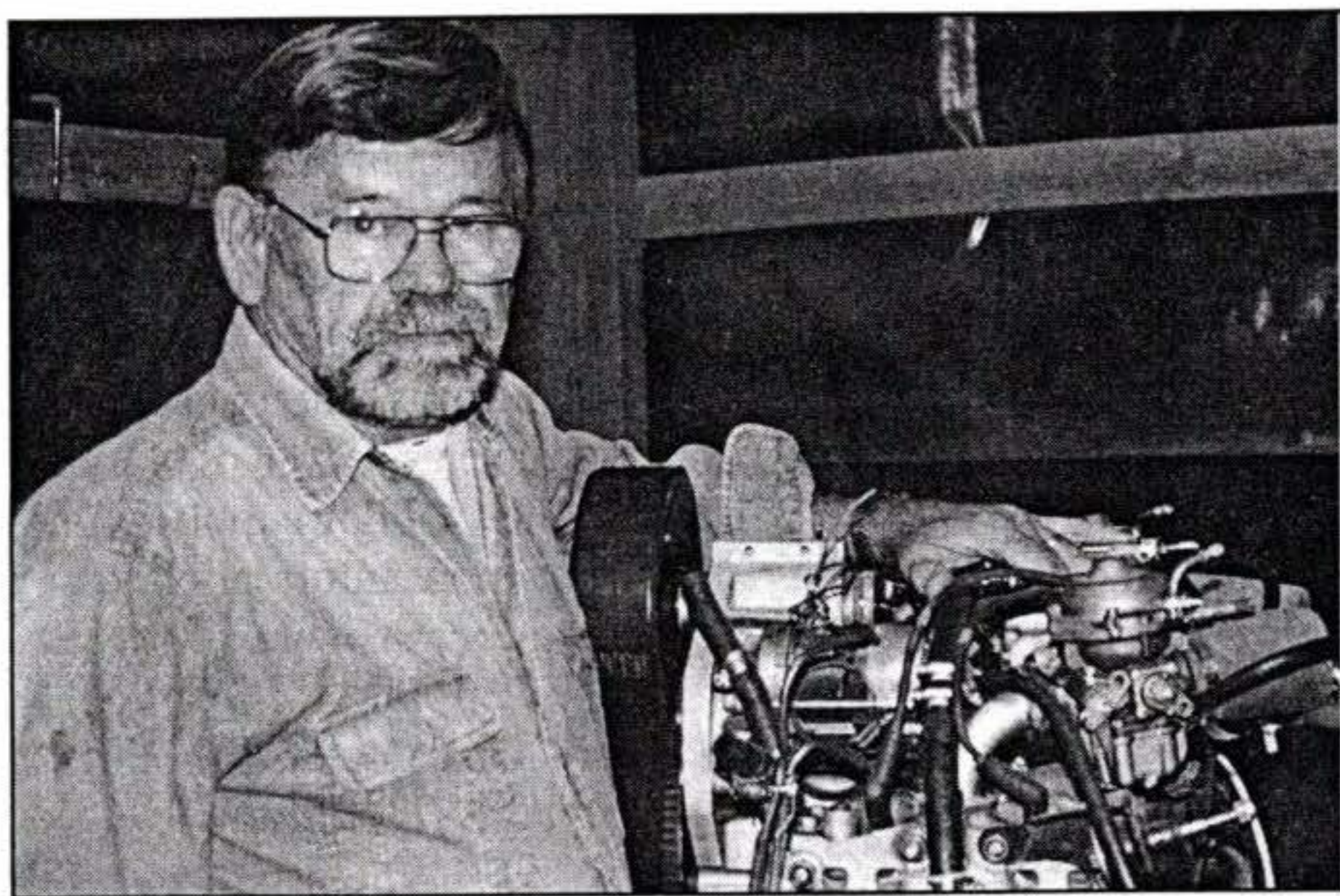
Larsen works on his two-stroke engine.

Repair Work

I had just rebuilt this Rotax 582, and a later tear-down inspection revealed a blockage in one oil line feeding lubrication to the rear cylinder, causing the new piston to stick. I wish I could blame it on the manufacturer, but the fault was my own. I was in a hurry to get in the air and did not check to see that both lines were feeding oil. Never again!

So, think about it! Why do pilots pay \$22,000 for a remanufactured O-360 Lycoming when there are auto conversions that are lighter and more powerful?

John hugs his new Stratus Subaru.



There are three reasons: reliability, reliability and reliability. When man's inventions fail him, he can still live years on land, hours at sea, but only minutes in the air. At 300 feet AGL and 60 mph, I had 34 seconds to solve my problems before I hit the ground.

If certified engines were lower priced, we might not be doing this article; we would all grab one and not look back. The problem is that you can buy a new Mercedes for less money than a 250-hp IO-540 Lycoming, and you can get a brand-new gas-powered lawn mower for less money than for a single valve for this engine. Not to mention that basic certified aircraft engine technology is decades old.

We all want a bargain, even if we have lots of money, which most of us do not. This brings us to where we are and where we are going: to find reasonably priced alternative engines that still have

that all-important reliability factor. Let's wait to be impressed by its performance, weight and fuel consumption until a record of reliability is established. A new unproved trick turbo model might just add a bunch of zeros to the price of your \$100 hamburger. **KP**