

Speed or Fuel Economy?

Economy cruise will soon become a way of life for those of us who prefer to fly rather than inch along on the freeway.
by Bill Cox

European pilots laugh when they hear that American aviators are complaining about \$6/gallon avgas. In Europe, even car gas has cost that much for at least a decade, and 100 octane aviation fuel typically goes for as much as \$2.35/litre (\$9/gal).

Fact is, unless the U.S. opens the Bakken Field in the northern Midwest or the ANWR fields in Alaska to reduce dependence on foreign oil, Americans can expect to be paying European energy prices in the very near future. Recent events in the Middle East are already causing dramatic price increases.

For that reason, if no other, economy cruise will soon become a way of life for those of us who prefer to fly rather than inch along on the freeway.

With that lesson in mind, Victor Sloan of Victor Aviation in Palo Alto, California, has a partial solution. Victor Aviation builds the balanced and blueprinted Power By Victor Black Edition II and Limited Edition II engines for all varieties of general aviation piston aircraft. It's been the engine of choice for such aviation luminaries as Bob



**Cirrus SR22 owned by
Tom Reid of San Diego, CA**

Hoover and the late Scott Crossfield.

Recently, Victor began incorporating Cryogenic Non-Destructive Testing (NDT) technology into his engine overhauls. Long an important reliability consideration in NAS-CAR and NHRA racing, NASA spacecraft and other high tech applications, cryogenics improves metal resiliency and enhances parts durability, effectively reducing the stress of continuous power applications in reciprocating engines.

In the case of piston aircraft, another effect of the cryogenic process is an effective reduction in an engine's specific fuel consumption (sfc).



“Power by Victor”
**High-Performance
Fuel Efficient
Limited Edition II**

A recent case in point is a Cirrus SR22 owned by Tom Reid of Univest Mortgage Company in San Diego, California. Reid owns a 2003 SR22 and recently contracted to have Victor perform a Limited Edition overhaul. The high time Continental IO-550 in Reid’s Cirrus was running perfectly when it was consigned for overhaul, and Reid took careful note of the airplane’s performance both before and after the overhaul.

The improvement in fuel burn was remarkable, according to Reid. “Before the Victor Limited Edition overhaul,” says Reid, “high cruise produced a satisfying 180 knots but at a cost of about 21 gph. That encouraged me to use lower, more efficient power settings, roughly 65 percent, and that resulted in 175 knots in exchange for 18.0 gph, almost 10 nmpg, a far better trade.”

After the Limited Edition overhaul, the real estate broker reported a dramatic improvement in fuel economy for the same power settings. “Using roughly the same

power settings and lean mixture at the same altitude, max cruise was about the same or perhaps a knot or two more, but the big change was in fuel burn,” Reid suggested. “At

max cruise, I still saw roughly 180 knots, but fuel flow dropped all the way to 18 gph, almost a 3.0 gph improvement. At 65 percent power, again at around 50 degrees rich of



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peak, fuel flow dropped to 16.9 gph, a full gallon less burn.”

Even lower power settings produced similar results. “Pulled back to 55 percent for long range cruise also resulted in a significant savings,” Reid suggested. “Speed was still about 160 knots, but fuel burn dropped from 14.5 to 12.6 gph. With a full 81 gallons in the tanks, this works out to a major improvement of endurance and range.

If I need to fly a long distance, I can realize five hours endurance for an 800 nm range, almost an hour or 160 nm more than before.”

Reid also calculated that even at today’s fuel prices, a pilot flying high cruise settings with a Power By Victor Limited Edition engine would save nearly \$30,000 over 2000 hours of operation.

“For my money,” says Reid, “Victor’s balanced, blue-

printed, cryogenic, Limited Edition engine delivers more power on less fuel with improved smoothness and greater reliability. That’s a combination that’s hard to beat.”

To learn more about Victor’s advanced overhaul techniques for piston engines:

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