

At high speed cruise, I noticed the propeller revolutions were about 75 over redline and asked Mr. Tilman about it.

"It's fairly common," he replied. "What we suggest our customers do is have their propeller re-pitched one or two inches. They might lose 30 or 40 feet per minute in climb, but they usually pick up 3-6 mph in cruise as the prop takes a bigger bite out of the air."

Does your plane qualify?

Currently, the modifications are approved for all PA28s (Cherokees and Arrows) as well as all PA32s (Saratogas, Lances and Cherokee 6s).

Retractable and certain other aircraft can benefit from some of the elements, but not all. LFS does, however, offer wheel well fairings for retractable aircraft.

Mr. Tilman reports that about 50% of owners install the kits themselves, though all the speed kits (including the tuned exhaust system) can be purchased from LFS and installed for \$6,870 plus the cost of 34.5 hours of labor (two days turnaround).

As for warranty, all speed kit items are guaranteed for the life of the airplane, ex-

cept for the tuned exhaust system which carries its own warranty of one year or 500 tachometer hours, whichever comes first. If not satisfied, the customer may receive a full refund within 60 days, regardless of who made the installation.

Adding together all the separate speed increases claimed for each speed kit element (including the tuned exhaust), the modified PA28-140 should cruise at 156 miles per hour at optimum altitude and power settings.

I asked Mr. Thomas about the shortfall experienced on my flight.

"Well, I guess it's the difference between the slide rule and the real world," he says. "We've seen 150 to 153 true airspeed in tests, but never 156. Any turbulence will upset the apple cart, or a lazy cylinder not doing its part. But we're happy with what we've achieved, as are our customers."

"You know, there's a rule of thumb in the modification industry that every one knot gain in airspeed costs \$1,000. When you price our kits versus the gain, I think you'll find we come in at twice the gain for half the money."

Can a Mach 1 Learjet be far behind?

Some will benefit greatly, others not so much. Mr. Tillman says that with all the products in place, the increase in speed can vary from 15-30 mph.

The patented Power Flow tuned exhaust system brings exhaust tubes of the same length into a common collector, eliminating back pressure while increasing engine efficiency.

"It's like adding 15 to 25 horsepower," said Mr. Tilman.

"The key here, is that for a hair over \$7,000, you can upgrade a Cherokee 140 to rival or exceed a Cherokee 180 in performance, but with a much better fuel burn. That's a pretty sound investment," said Mr. Tilman.

Laminar Flow, a sister company to Power Flow, has prepared a kit that consists of flap gap seals, aileron gap seals, flap hinge fairings, wing smoothing/fuel tank fairings, and a new set of wheel pants. It takes about a week to install the exhaust and Laminar Flow products. The materials packages are priced at \$3,675 for the tuned exhaust system and \$3,410 for the Laminar Flow. Individual Laminar Flow products can be purchased separately. Both company's products come with a 60-day money back guarantee.

Power Flow Systems: 877-693-7356

KIT PRICES AND INSTALL TIMES

	Price	Hours
Flap and aileron gap seals	\$380	4
Flap hinge fairings	\$240	3.5
Leading edge treatment	\$680	14*
Speedpants	\$2,000	3
Power Flow Exhaust	\$3,600	10

*wing smoothing

Note: Go to the website for more detail on kits by aircraft type.

Power Flow Systems Inc.
877-693-7356
LaminarFlowSystems.com

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Beat this:

A 150 mph Cherokee 140 from Power Flow/Laminar Flow Systems

Most Cherokee 140 owners have a hard time believing the claim that with an STC'd Power Flow tuned exhaust and a set of STC'd Laminar Flow speed mods, a Cherokee 140 will cruise at 150 mph. That represents a 21 mph gain in speed over a stock aircraft. The rate of climb also improves. In stock configuration, the 140 goes from 1,000 feet to 8,500 feet in 18:46, averaging 400 fpm; when modified, it reaches the same altitude in 14:30, with an average rate of climb of 517 fpm, a 30% increase.

"To achieve and maintain the cruise speed of 150 mph at 7,500 feet, it may be necessary to repitch the propeller," said Power Flow General Manager Darren Tilman. "You can still hit 150 mph without repitching, but it takes some hunting. Without the prop change, the 140 we tested easily held 146 mph at 8,500 feet and we did, on a couple flights achieve an MTAS of 150 mph at 7,500 feet."

Mr. Tilman is quick to point out that not all Cherokee 140s were created equal:

Goodies 7/7/2006

New Laminar Flow Speed Pants make a difference

FAA-approved Laminar Flow Speed Pants will add up to 10.5 mph over bare wheels and up to 8 mph over stock wheel pants for all Piper PA-28 and PA-32 aircraft models, say officials at Laminar Flow Systems.

At 10 pounds, these second generation Speed Pants are lighter and up to five times stronger than conventional Piper wheel pants, officials add. They are made of three layers of hand-laid, 10-ounce fiberglass, which is oven cured with a high strength resin. Additional layers of cloth are applied to stress areas. A removable panel allows easy access to brakes.

For pre-1978 Piper models the Speed Pants, strut fairings and applicable hardware is priced at \$2,470. Later models can be retrofitted for \$1,995 for Speed Pants only, with optional strut fairings available for \$475.

For more information: 386-253-8833.