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Recycled Jet-Setter

BY JAY LENO

They're still out there.

You just have to find 'em. I'm talking about guys who have found new uses for obsolete things, like old engines, for example. I just bought a motorcycle that takes recycling to new levels. I heard about a guy named Ted McIntyre at Marine Turbine Technologies LLC, in Franklin, La., about 2 hours southwest of New Orleans. It's so far into Louisiana they have to pipe in daylight. Ted installs used Bell Jet Ranger helicopter engines in motorcycles and trucks. He's also built turbine-powered boats and he even designed a turbine outboard for the U.S. Navy.

There are some things you just have to have. That's why Leno cruises the freeways on a jet-powered motorcycle. For those of fainter heart, there's the jet-powered, appropriately flamed pickup.

Why gas turbines? Well, after one of these Allison Rolls-Royce turbines hits the limited number of operational hours set by the FAA, it has to be completely rebuilt and recertified. And that can cost about 80 grand. But it's got thousands of hours of running time left. McIntyre got ahold of a bunch of these used chopper engines—they cost several hundred thousand dollars new—and came up with a great way to recycle them. McIntyre takes engines that have lots of operating time, so-called "fully life cycled" engines, and puts them in custom-built motorcycles and pickups. As he says, "It's cost-prohibitive to put brand-new turbines in vehicles. But properly rebuilt, used ones can last for years. And you don't need FAA certification to run them on the road."

JAY LENO'S GARAGE

The engines themselves weigh only about 130 pounds each. You can actually pick one up. Although they're designed to run on regular Jet A fuel, they'll run on diesel fuel on the road. I know you're wondering how much power they put out. That's the best part. McIntyre claims 320 to 350 hp and a hefty 450 ft.-lb. of torque. His motorcycles are priced at $150,000. The truck's a lot less. Of course, as a member in good standing of the "More Money Than Brains Club," I had to have one. McIntyre calls his jet bike the Y2K. Mine's No. 002, the first production model.

Unlike some of those modified Harleys you see with Chevy V8s stuffed in 'em, the Y2K was purpose-designed for the helicopter turbine. This motorcycle is beautifully built. The engine is mounted upside down. Instead of developing thrust, like an airplane, the bike has a gear arrangement and chain drive. It's got a custom aluminum frame, designed by a French engineer and motorcycle racer named Christian Travert. (After all, this operation is in Louisiana.) The bodywork consists of lightweight carbon-fiber panels, and there are two huge slash-cut exhausts that send out ripples of heat.

Development work is still going on as the design is refined. For me this is the fun part. I always thought the dream job would be to work as one of those R&D test guys. You know, the one whose job it is to put 500 miles on a new Ferrari before breakfast, just to make sure it's okay. Anyway, that's what we're doing with the jet bike. I probably have more miles on it than anybody else, over 2000. The first clutches didn't hold up, they were good only for about 100 miles. We tried Kevlar clutch plates, even ceramics. Now we finally have it right.

I love starting it up. Push a button on the handlebars and the turbine spools up with a ferocious *wooossshhh*! It sounds like a junior 747. Fuel comes in automatically. A little gauge tracks the pressure. At 15 percent of the compressor's rotational speed, indicated by a neat little bar graph on the dash, the mixture lights off. The idle is set for 50 percent. You Harley guys, can you imagine a Fat Boy idling at 2500 rpm—all the time?

Now think about it. This engine was designed to lift a 10,000-pound Bell Ranger helicopter. Now it's in a 460-pound bike. It only makes about 10 hp at idle and takeoff is no special thrill. The bike really pulls hard from about 50 or 60 mph, because turbines have to spool up. Then it's like the hand of God pushing you in the back. When you leave the line you've got maybe 40 hp. You go 10 more feet and you've got 70 hp. Then you've got 100, then 150, then as much as you dare. This thing will do a quarter-mile in 9 seconds.

I've ridden a lot of fast bikes but nothing pulls like this. It's shaft driven, not thrust driven, with a homemade two-speed transmission. You don't need more than two

PHOTOS BY JOHN LAMM

Catch him if you can. Leno waves "bye" before cracking his 300-plus-hp jet-powered throttle.

speeds because you've got those 450 ft.-lb. of torque. The shaft redlines at 6600 rpm. Don't even try to compute the power-to-weight ratio. It's better than a Formula One car's. The wheelbase is 71 in.—pretty long by motorcycle standards. And the steering is slow, but it handles okay. It's kinda like square-dancing with a fat lady: The fact that she does it at all is pretty amazing.

You ride it differently than normal bikes. When you get into a corner, you don't nail it. It's a bit like sitting on a Roman candle. You fire. You accelerate. Then, you want to slow for a corner. But you always have a second-and-a-half or 2 seconds of pull, even after you shut off. You go *aaahhh*! then you stop. Well, you're still going. So when I want to stop, I start about a half-second earlier, hitting the Neutral switch first to disengage the turbo, then getting on the brakes. You learn to ride this thing by turning the switch on and off. Thankfully, the brakes are these huge six-piston Brembos.

In a sweeper, you can open the throttle, but it's like the ultimate turbo lag. It goes *wooohhh*! You think for a split second nothing's happening, then it *reallyyy* pulls! When you accelerate past someone, it makes all the right jet noises. It's a lot of fun.

You get used to the turbine's tremendous noise with your helmet on, but it's hysterical on the street. It really turns heads when you blast past. I mean, if you pull up to a light in any vehicle at half throttle, the engine's going *aaahhh*! People go, "What the hell's going on?"

And of course, those big pipes are trying to melt everything in the rearview mirror. Except you don't have a conventional rearview mirror. You have a video camera that's mounted in the tail section, facing backward, of course. It transfers the rear image to a monitor in the dash. Squinting through heat waves, you can see everything behind you. If curious guys get too close, their bumper can shrivel up like a roasted marshmallow. Jeez, what a kick. There's an 8.5-gal. tank. That's enormous for a motorcycle, but the mileage is only 4 to 6 mpg, so your range is maybe 50 miles, worse than a Harley with a peanut tank.

You have the same problem with the jet bike that you do with a Stanley Steamer. The guys who can afford it don't want it. And the guys who want it can't afford it. McIntyre figures on building about five a year. Really, the bike is just to show the practical application of the recycled turbines. One of these small jets can also power a generator and produce about a gazillion kilowatts. Remember, this engine weighs only 130 pounds and makes 350 hp. And it runs on diesel. There must be some use for that.

McIntyre loaned me one of the jet trucks. It has the same engine as the bike, only it weighs a lot more. The pickup's a little easier to drive fast and it's not as noisy inside. There's a 110-gal. fuel tank so it's more practical. Even at 4 mpg, you can go about 400 miles. The turbine's designed to run at 6000 rpm all day. McIntyre likes to say that if you turned a big V8 that fast, 24-7, "the con rods would start looking for an exit strategy." There are two huge 8-in. chromed stacks behind the cab, so you have to be careful not to park under any overhanging trees or you could start a fire. Marine Turbine will also sell you a turbine-powered boat, but I'm not a boat guy.

Naturally, McIntyre's a little particular about his customers. There's a certain amount of liability involved when you've got a motorcycle that'll do over 200 mph. He'll warranty his engines for life, but to do that, he looks for people he calls "turbine-worthy people who appreciate that this is both a great piece of art as well as engineering." And he has a sense of humor about it. "You've got to respect the power," he insists. "Pick the wrong customer and you have a ticked-off widow or a happy widow, depending on the circumstances."

McIntyre says he's just trying to bring the turbine's potential to the public's attention. Everybody should do what they can to support recycling. And as someone who always wanted to be an R&D guy, I'm happy to help. **PM**