

ENGINEER BUILDS 'DREAM CAR' JIM TERVORT SEES BIG MARKET FOR 3-WHEEL ELECTRIC VEHICLE

By **Harry Straight of The Sentinel Staff**
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When you ask engineer Jim Tervort how he came up with the idea of an electric car designed specifically to be towed behind recreational vehicles, he said it was easy.

"It came to me in a dream," he said over a hamburger at the Lunch Box restaurant in downtown Sebring.

"It was really inspirational. I don't know what the catalyst was - I'm not a motor home enthusiast myself, but once I started thinking about it, it seemed like a good idea," said the 38-year-old Tampa native.

To understand the vehicle's real market potential, Tervort suggested a short trip out to U.S. Highway 27, a major tourist artery that cuts through the citrus groves of Sebring on its way to South Florida.

Nearly 80 percent of the recreational vehicles that pass by, he noted, are towing something - usually a small car.

"The problem with most of those cars is they are extremely hard to tow. You can wreck the transmissions, put wear and tear on the drive train. Towing rigs are expensive - and even if everything goes right you're still putting thousands of miles on the car without driving it an inch," Tervort said.

Enter the Triton, Tervort's dream child. Part car, part motorcycle, all electric and street legal, the plastic-bodied three-wheeler is a no-fuss tow job that can carry two people and a good-sized dog nearly 100 miles on \$1.23 worth of electricity. With the cheapest gasoline these days at about \$1 a gallon, the average internal combustion car would probably eat up \$4 to \$5 in the same distance.

So far, Tervort's only public exposure for his hand-crafted prototype was at a recreational vehicle show in Tampa in February.

He ended up with coverage on two Tampa-area television stations, "hundreds of nibbles" and orders for five cars, which cost from \$5,800 to \$6,800 apiece.

Tervort hopes to begin building three cars a month by the end of the year with a production goal of 20 cars a month by 1991.

But right now, the first production car is spread along several benches and metal jigs in a 9,000-square-foot warehouse at the Sebring Airport.

Electric cars are not new, and Tervort is an old hand at turning sewing machine motors and nine 75-pound batteries into a road machine.

He cut his teeth in the business in this very building nearly 10 years ago, when the original owner of the company had a contract to supply electric vans to the [U.S. Postal Service](#).

In fact, the shop is a virtual museum of electric cars. In front of the loading docks sits a bright orange City Car, a tiny wedge-shaped four-wheeler developed in the early 1970s at the height of the oil crisis.

Developed by Frank Flowers of Commuter Cars Inc., nearly 3,000 City Cars were sold between 1973 and 1978 along with about 375 electric vans purchased by the postal service. A dozen of the white boxy post-office trucks litter the yard around the warehouse, their red-white-and-blue striping fading in the sun.

Tervort went to work for Flowers in 1981 as an engineer after a stint at a Tampa electric car company he helped start called Utopia Cars. It went out of business after financing dried up.

Eighteen months ago, when Flowers decided to retire, Tervort got together a group of investors, bought the company and renamed it Sebring Auto Cycle Inc.

With just three wheels, the car is classified by the U.S. Department of Transportation as a motorcycle, hence the name.

Only a few cars had come off the assembly line since 1981 and production was

essentially shut down, but the company stayed in business by selling parts.

The inventory was a real bargain, he said.

"Last year we sold \$175,000 worth of parts. And the inventory we got when we bought it cost \$313,000 in 1973. Now I'm not at liberty to say what we paid for the company, but it was a lot less than the price of the inventory," Tervort said.

Although Tervort is the president and CEO of the company, he spends most of his time in a set of blue coveralls with the name "Jim" stitched across the front. Sebring Auto Cycle Inc. has two full-time employees, one part time and several investors who come to tinker on the weekends, Tervort said.

Back in the shop after lunch, he reached under a dusty workbench and picking up something that looked like a bean can on steroids.

"Here's the engine," he said, dropping it on the bench.

Kicking aside an piece of cardboard, he pointed to a small square hunk of cast iron about the size of a lunch box.

"That's the transmission. We take out first gear so you only have low, high and reverse," he said.

Is that something new, he is asked? "No, actually it's the same model Borg-Warner designed for the 1934 Studebaker," he said.

The really modern stuff is over in the garage's electronics section, where another workbench is covered end-to-end with something that looks like a dozen transistor radios turned inside out.

"I don't really understand this stuff," Trevort said, picking up a part the size of a matchbox.

The part, it turns out, takes the place of a pair of transformers 10 times bigger that were used in the old car.

With the help of modern electronics, sophisticated new batteries and a toolbox full of technical and mechanical innovations, the car that came to Tervort in a dream is a vast

improvement over the old electric vehicles.

The City Car had four wheels, weighed 2,300 pounds, had a six horsepower engine and a top speed of 40 mph, with a range of about 60 miles before a recharge was needed. It had an mechanical and electrical operating efficiency of about 56 percent, Tervort said, with nearly half the power getting lost in the drive train before it ever reached the real wheels.

The Titon weighs 1,400 pounds, has a 12 horsepower motor and has an operating efficiency of about 82 percent.

With nine regular 12-volt batteries, the same kind you find in golf carts, the car can be recharged in four to six hours and has a range of about 75 miles per charge.

A bigger battery pack that adds about 400 pounds and another \$1,000 to the vehicle price extends the range to 100 miles with a top speed to about 65 mph.

Tervort doesn't have any delusions of sending the Detroit gas guzzler to the graveyard. Nor does he see commuters suddenly rushing out to buy his car.

Although the car's biggest market potential seems to be the RV owner, Tervort said he is also trying to market the vehicle as an inexpensive fleet car for meter readers and meter maids.

But the RV market is probably his best bet, said Christopher Sawyer, an associate editor with Autoweek magazine.

"The main problem with electric cars has been, is and will probably always be, the storage capacity of the batteries needed to give it an adequate cruising range," he said.

The idea of an electric runabout for RV owners "makes a lot of sense," Sawyer added, because "a lot of RV's are towing cars and that causes a lot of problems."

Tervort said the Recreation Vehicle Association predicts that nearly 8.5 million RV's will hit the road this summer. By next summer, he expects to see his Titon behind quite a few of them.

SPECIFICATIONS.	ZIPPER MODEL ZZ	GM G-VAN	PEUGEOT 205 Elec	PLYMOUTH COLT	GM GEO	HONDA CRX	HYUNDAI EXCEL	NISSAN SENTRA	SUBARU JUSTY	SUZUKI SAMURI	SUZUKI SWIFT	TOYOTA TERCEL
Wheel Base	94"			93.9"	89.2"	90.6"	93.7"	95.7"	90"	86.6"	89.2"	93.7"
Length	131"			158.7"	146.1"	147.8"	160.9"	168.7"	145.5"	142.5"	146.1"	166.7"
Height	50.5"			52"	52.4"		54.1"	54.3"	59.9"	64.8"	53.1"	51.8"
Width	52"			65.7"	62"		63.1"	64.6"	60.4"	64.2"	62.4"	64"
Track	44.5"			56.3"	53.7"		54.1"	56.3"	52.4"	54.9"	53.7"	54"
Turning Diameter	36.5"			30.6"			33.8"	31.5"	32.2"	32.2"	30.2"	37.8"
Weight	1495 lb			2194 lb		2195 lb		2156 lb	1855 lb	2134 lb	1766 lb	2030 lb
Head Room	35.5"			38.3"	37.8"		37.5"	38.2"				
Leg Room	41"			41.9"	42.5"		40.9"	41.8"				40.2"
Hip Room	46"			52.8"	51.1"		52"	54"				
Ground Clearance	6.5"						6.5"		6.1"			6.5"
Wheel Size												
2 Front	8x5" F			13"	12x4"	14"	13x4.5"	13x5"	13x5"		14x5"	13x4"
1 Rear	10x8" R											
Center of Gravity	16"											
Acceleration												
10 seconds	25 mph											
20 seconds	44 mph											
30 seconds	51 mph											
Top Speed	55 mph											
Passengers	2											
Range	six 12 vlt 50 mi.											

Florida firm's 3-wheeler rides behind motor home

By Pat Foster
SPECIAL CORRESPONDENT

SEBRING, Fla. — Commuter Vehicles, which previously built the electric Comuta-Car, has begun production of a new model that can be towed behind a motor home.

Called the Triton, it is an electric-powered, three-wheeler. About 35 to 40 units are scheduled to be built this year, and the eventual goal is 240 annually, said Jim Tervort, company president. Production began April 10.

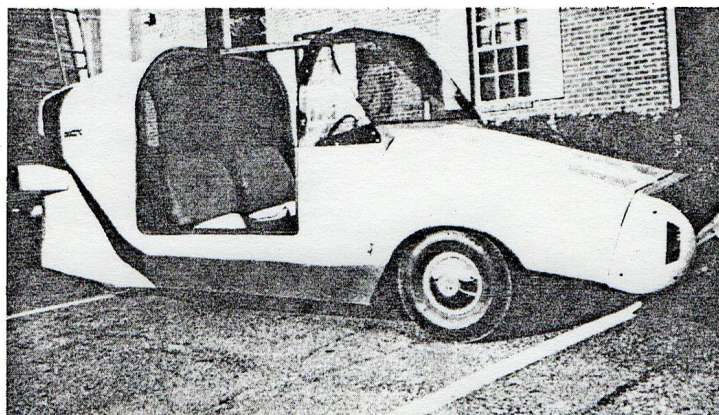
Commuter Vehicles is a subsidiary of Sebring Auto Cycle, which Tervort also operates. Sebring Auto Cycle manufactures electric scooters.

The Triton is designed to appeal to motor home owners. It offers a towing package that includes a trailer hitch, towing lights and harness, safety chains and other equipment. The vehicle is available in color schemes to match an owner's motor home.

Tervort said he believes there is a significant market for the vehicle. He said there are 8.5 million Class A and C motor homes in the United States.

"Down here in Florida, it seems like 70 percent of them are towing some kind of car behind them," he said. "Our car will appeal to these people because it is designed just for their use."

He expects a secondary market



Triton is an electrically powered three wheeler, targeted at RV owners.

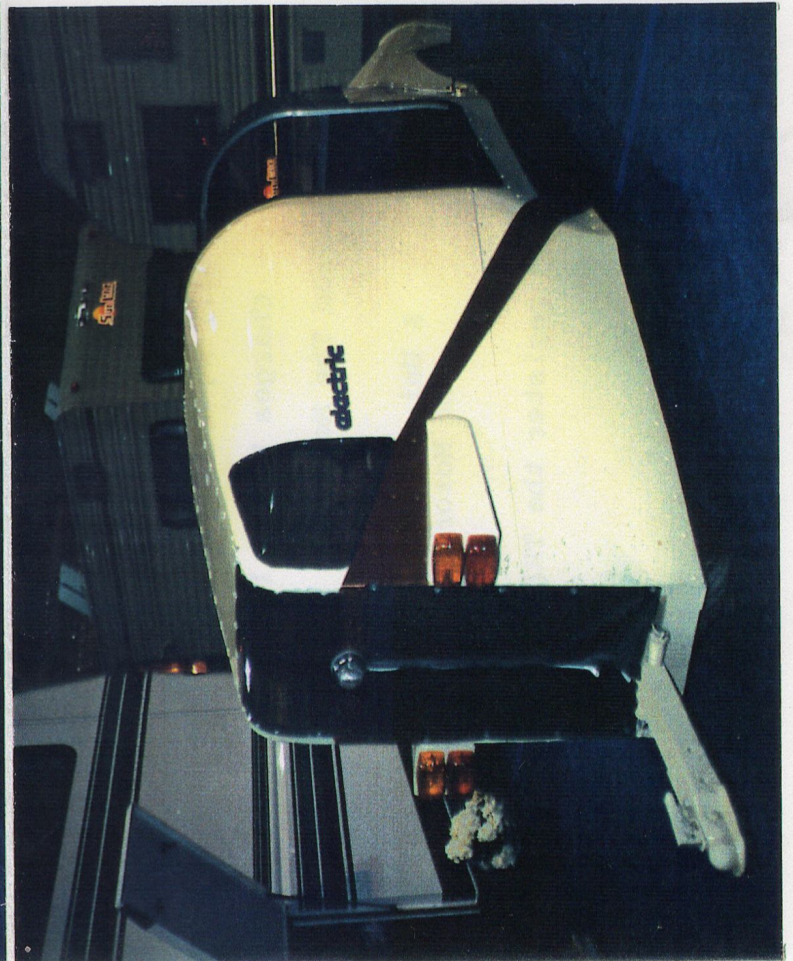
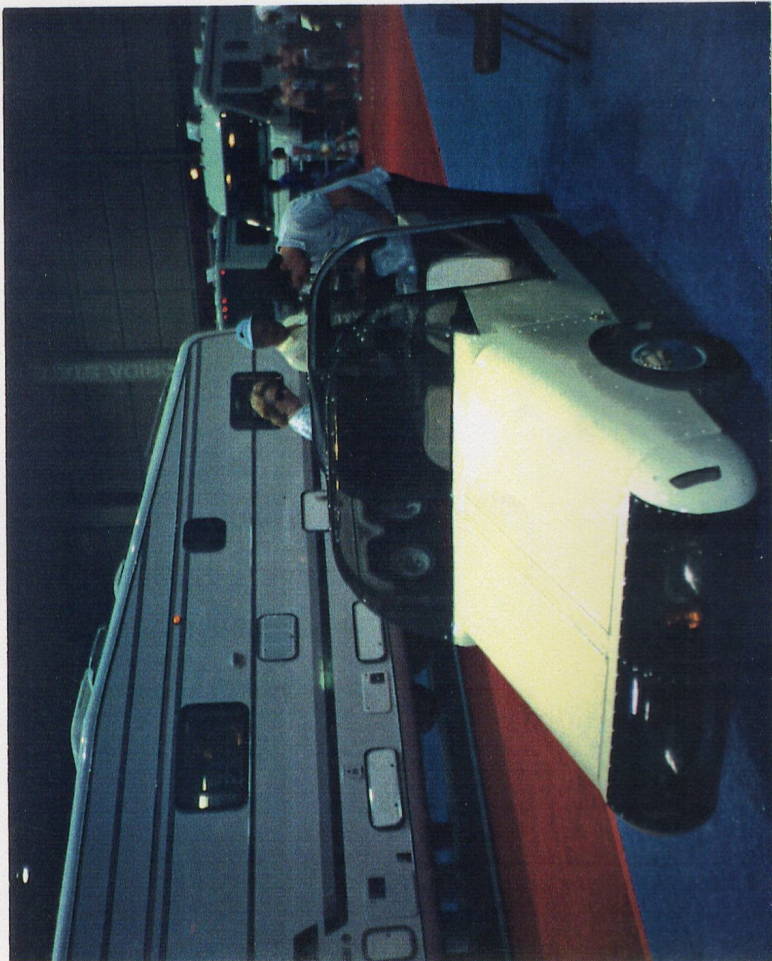
to be municipal users, such as meter readers and security services, and college students.

"I can visualize a guy moving his kid to college, using his motor home to transport all the baggage and towing a Triton behind," Ter-

vort said.

"When they reach the school they unload the motor home, unhitch the Triton and the student has a car to use at school. At the end of the term, they hitch the Triton back on and tow it home."

Triton



Remember when planning a vacation seemed like the most important priority in your year? Gas up the motorhome, pack your clothes, and it's "on the road again". Sounds great, but what about transportation when you arrive? Will you be loading the motorhome when you go to the store, calling a cab, or did you bring the family car? If you're like the majority of motorhome owners, you towed your car with you.

Remember the ordeal hooking up the tow bars, chains, trailers or dropping the driveshaft just so you'd have transportation when you arrived?

Okay America, read the most exciting and liberating news in transportation: SEBRING AUTO-CYCLE, INC. announces the all new TRITON ELECTRIC CAR! With the flick of a switch and about 60 seconds of your valuable time, you can be hooked up and ready to go! The built-in trailer hitch drops in place, the motor raises the car to meet the hitch, and IT'S READY! The TRITON was designed for all your needs. It doesn't add up miles on the odometer when it's being towed, only when it is being driven; eliminating unnecessary depreciation for excess mileage as in the past. It charges itself up from your generator when being towed in case of remote destinations. It's roomy enough for two adults and an afternoon of shopping. It's fast enough to drive on the highway and it gets into traffic like it needs to. Just wave when you pass the gas stations. Simply plug it in when you get back to the campsite and recharge the batteries.

The TRITON has a top speed of 55 MPH and has a range of 40 miles on flat terrain, less on hilly terrain. It has an electronic alternator so the lights stay bright at night even when the charge runs low.

The TRITON is being introduced to the public now. It's available through your franchised SEBRING AUTO-CYCLE DEALER, and sells for less than \$6,000. Write to SEBRING AUTO-CYCLE, P.O. Box 1479, Sebring Airport, Sebring, Fl. 33871, or phone 1-800-HOT WATT to reserve your TRITON, the car of tomorrow, today!

TRITON SPECIFICATIONS

Length	13 Ft. 6 In.
Width	4 Ft. 5 In.
Height	4 Ft. 3 In.
Weight	1490 Lbs.
Power	12 HP
Top Speed	55 MPH
Battery Life	18 Mo.
Voltage:	
Sprint Pack	72V
DX Pack	54V

High Impact ABS Plastic Body

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Fully Street Legal As A Car *

And

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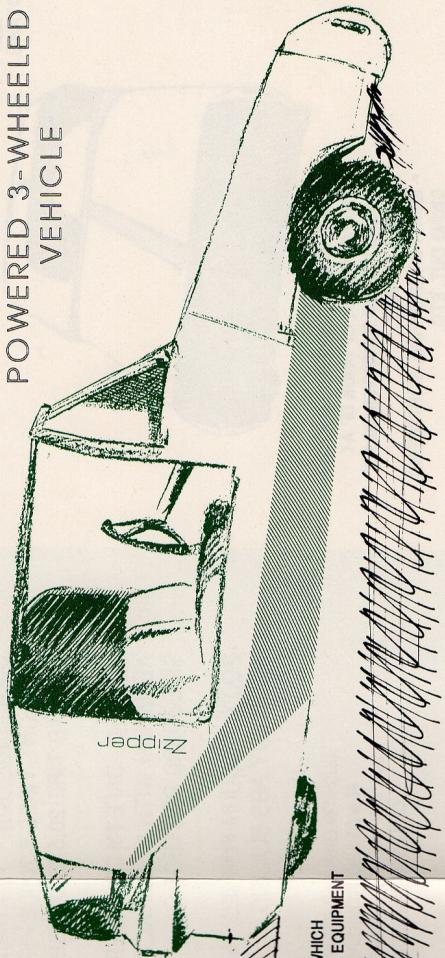
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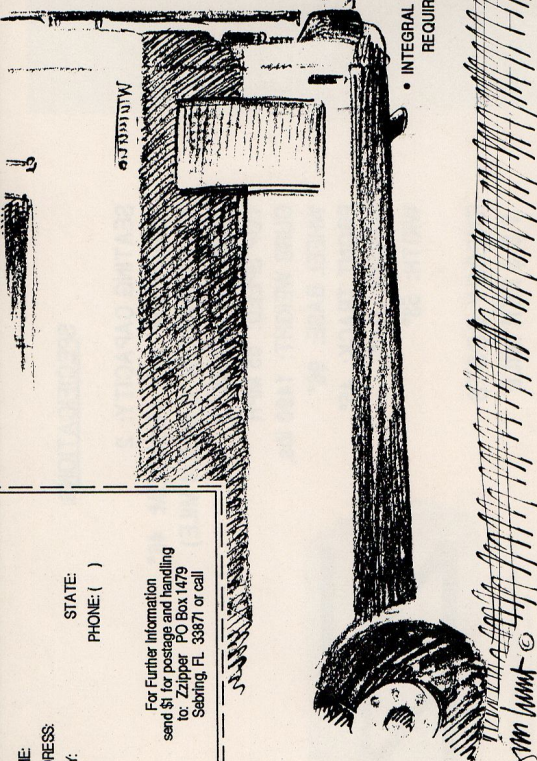
*Most states register the TRITON as a motorcycle.

Zipper

AN ELECTRIC
POWERED 3-WHEELED
VEHICLE



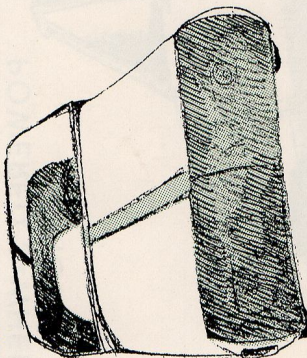
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- COMPLETE FREEDOM OF BACKING,
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CAMPSITES AND MANEUVERABILITY
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- IDEAL FOR SHOPPING, SIGHTSEEING,
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CONFIGURATION: "T" TYPE 3 WHEELER

- (2) FRONT TIRES 5.70 X 8 HIGH SPEED
- (1) REAR TIRE 20.5 X 10 HIGH SPEED

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ALUMINUM WITH INTEGRAL ROLLAGE &
SIDE GUARD PROTECTION

BODY: VACUUM FORMED, HIGH IMPACT
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CUSHION GRIP TILT STEERING WHEEL
REMOVABLE TONNEAU T-TOP
BUILT-IN 120 VOLT CHARGER CAN BE
CHARGED WHILE TOWING

SPECIFICATIONS:

SEATING CAPACITY: 2
HEADROOM: 34" LEGROOM: 46"
ACCELERATION: 0-50 (1/4 MILE)
RANGE: 50-60 MILES
TOP SPEED: 55 MPH
CURB WEIGHT: 1490 lbs.
WHEEL BASE: 96"
FRONT TRACK: 45"
LENGTH: 162"
WIDTH: 53"

ENERGY COSTS
1.5 ¢ PER MILE

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