



LOTUS TIMES

August 4, 2006

No. 5

Club News

Wow, what a summer! Things are a real tropical paradise if you like heat and humidity. As I sit here it's 10pm and it is 32°C outside but feels like 42°C with the relative humidity of 56%. Today was "uncomfortable" if you had to be outside. It hit a reported 48°C or 118.4°F with the humidex, Ottawa's warmest to date. Not a good day to drive an open Lotus.

It has been reported that a Seven captured the title of "King of the Hill" at the Mosport Vintage Weekend against any and all takers regardless of make or cubic inches. The event took place on the oval track and from a standing start the first one to the start/finish line was allowed to continue to the next session. VARAC's 27th Annual International Vintage Racing Festival at Mosport was a huge success once again, no doubt to the ministrations of ECLC members Ron and Sally Wanless. Look for Claude Gagné's description "One Lap of Mosport" in this issue.

With a 100% promise of rain on the very hot and humid Saturday the 15th July the Ottawa British Car day was a great event with over 150 cars. Except for the buckets of rain, it was a warm and sunny event with a great assortment of British cars, great BBQ and some significant door prizes. Plans are already underway for next year's edition.

There is a joint event in the form of a "British Invasion" of a Cruise night for an hour to 90 minutes, followed by a pleasant 40 minutes drive to a pub/restaurant for supper.

Hazeldean Cruise night has agreed to set aside a significant space (up to 20-30 cars worth) for the evening of August 8th to accommodate us. The show

Up & Coming ECLC Dates

- Aug. 8
Hazeldean Cruise night
5:30 pm, then cruise to
the Swan, Manotick ON
for dinner @ 8 pm.
- Aug. 16
ECLC Regular meeting,
Swan on the Rideau,
starting after 5:30 pm
- Aug. 20
Boot n' Bonnet 17th
Annual British Car Day,
Kingston City Park,
10:00-4:00pm
- Aug. 26
Lotus Bonfire, Navan
ON. 5:00pm Ted & Barb
613 835-9944
- Sept 8-10
MCO Inaugural Race
Weekend (Ted Powell
Race Weekend) at
Calabogie Motorsports
Park, www.mco.org
- Sept 9 -11
Watkin's Glen Vintage
Races.
www.grandprixfestival.com
- Sept.18
Toronto Triumph Club
British Car Day - Bronte
Provincial Park
www.britishcarday.com
- Sept. 20
ECLC Regular monthly
meeting @ Swan on the
Rideau, starting after
5:30 pm



starts at 5:30 pm and are asked to arrive between 5:30 and 6:30 pm. Vehicles will head out at about 7:15 pm - 7:20 pm, arriving at the pub/restaurant around 8 pm. This year we will drive to the Swan on Rideau, a distance of around 30 km.

This event has been held for the past two years, the first year being a joint Triumph/Jaguar event and the event last year being an "all cars" event from Alvis to Triumph through Jaguar, MG and Morgan, etc.

If you are interested please contact Allan Graves: afgraves@rogers.com

Mark your Calendar – the Lotus Bonfire; Saturday August 26, 5:00pm
The Dobbies will provide hamburg/sausage with buns. Please bring potluck salads or desserts, your own liquid refreshments and a lawn chair to sit upon. The Bonfire will start near dark with marshmallows if you need them.

Location: 3654 Trim Rd, Navan, ON, K4B 1M6. South of Colonial Rd by about 1 Km.
Map can be acquired through <http://www.mapquest.com>

See you Sat Aug 26 at around 5 pm. Rain date Sun Aug 27 same time. Bring Lotus if you can. Contact: Ted & Barb 613 835-9944

We have the regular monthly meeting on the 3rd Wednesday of each and every month to catch up with each other. We still meet at the Swan on the Rideau, 2730 River Rd., just outside Manotick Ontario on the 3rd Wednesday of each and every month. As always, owning or driving a LOTUS is purely optional. Come on out and join us.



One Lap of Mosport

By Claude Gagné

My personal notes on Mosport, given that I seem to start from scratch every time that I go back there:

My Seven being light and underpowered compared to many other cars, I seem not to use the brakes as much as some other

cars. This is the way that seems to work for me, but I welcome any discussion with readers that may disagree.

I approach turn 1 in 4th gear, on the left side of the track, maybe 1 car width from the left side of the track, lift off the throttle pedal just before the little bump, turn in at the bump, accelerating to the late apex which is at the end of the rumble strip on the right. Make sure not to hit the left rumble strip at exit on the left, as it is quite bumpy and may be big trouble, i.e. the tire wall not far behind.

Ease up to the right side of the track, as if over the imaginary extension of the yellow line from pit exit. Lift off at the top of the hill, about vis-à-vis the white restaurant on the



right. Half throttle and turn left to the first apex of turn 2, aiming at the white sign on the wall far away down the hill. Apex is easy to spot with the black tire marks, not so easy to cut properly. Let slide towards the middle of the track (negative camber), then turn in to the second apex, foot to the floor. Just follow the tire marks on the pavement. Left front wheel can go over little pothole at second apex without feeling it, with all the weight transferred to the right tires. Keep foot to the floor exiting turn 2 to the right rumble strip and aim at the left side of the track to prepare for turn 3.



Approach turn 3 on the left side of the track, not too much to the left, especially if somebody is behind you and may dive inside for the pass. Again a late apex, at the end of the rumble strip to the right. Just follow the new pavement patch, this is the right line. If you turn in too early, the turn will feel never ending. Too late, and you will run out of pavement at exit. So brake before turning in, stay in fourth, half throttle to middle of turn, accelerate to apex, and end up in middle of track, no need to go all the way to the left side of the track. Aim at right side of track for turn 4.

Turn 4 is scary, even more so than turn 1. All you see

entering is trees, no track. Under the bridge, lift off, turn left and accelerate towards turn 5A, so that to be in line with the left side of the track for braking for turn 5.



Brake hard for 5A, going uphill, downshift to 3rd, and sharp right to the apex. Briefly accelerate to left side of track, brake again and dive right towards apex of 5B, foot to the floor. Car is sliding like crazy but it seems to be faster than going down to second gear. Another way that seems to work well is to take 5A wide of the apex so that to have a better approach to 5B, but definitely not if there is a car on your tail. In any event, full acceleration out of 5B, stay to the left of the track until 5C, slightly turning left, let car go to middle of track, shift to 4th at about 6000 RPM.

Keep foot to floor through turns 6 and 7, staying on right of track. May stay left to let faster cars go by on the right. Aim for left side of track before turn 8.





Keep foot to the floor at the top of the hill. Lift off at the little bump, brake gently and turn in for turn 8. Again a late apex, but follow the rumble strip all the way in. Some day I will have to try without braking...



At end of rumble strip of turn 8, brake in straight line and turn left towards turn 9, again a late apex in order to set up for turn 10. Don't stay too much right or take too late apex at turn 9, which is where the Lotus 9 passed me! Cut apex at turn 9 and stay left as much as possible for turn 10.

Accelerate briefly for turn 10, brake gently and accelerate hard to the apex of turn 10, onto the front straight. Very good grip on turn 10, easy to control exit towards left side of track on straight.



I stay in 4th gear throughout turns 9 and 10. Many downshift to third entering turn 9 and

shift to fourth on the straight. I seem to carry more speed staying in 4th, at least with my gear ratios.

Similarly for turn 3, where many take it in 3rd gear, and shift exiting the turn. My engine seems to rev too much if I do that, but I must try again.

So that's it in my Seven. Seven clicks in my rear Spax shocks. Cold air pressure in my tires at 13 PSI rear, and 14 PSI front, sunny and warm weather. I can probably go lower pressure in my Toyo RAls. Can't wait to try Mosport in my 61 next time...



Duke Hale Resurfaces

(former President of Lotus Cars USA)

DETROIT, July 11 - Can the mystique of a British sports car be recreated by a Chinese company in America's heartland? That's the bet by Nanjing Automobile Group, which plans to resurrect the fabled MG marque in a tricontinental demonstration of how truly global the automotive industry has become.

Nanjing, which purchased the assets of the bankrupt MG Rover Group last year, aims to be the first Chinese carmaker to open a factory in the United States. The company has scheduled a news conference for Wednesday in Oklahoma to announce plans to build a newly designed MG TF



Coupe there, starting in 2008. It said the coupe would compete with cars like the Mazda Miata, which sells for \$20,000 to \$25,000.

It also will assemble a convertible TF Roadster version at MG's now-shuttered factory in Longbridge, England, and three sedan models in China. American and European operations for MG Motors will be based in Oklahoma City, 90 miles north of the new factory in Ardmore, Okla.

MG's rebirth under Nanjing, which said it had \$2 billion in financing for the endeavor, comes as several Chinese companies are setting their sights on the United States, the world's largest car market. Several Chinese carmakers have said they are two to three years away from exporting vehicles to the United States. One, Geely Automobile, displayed a \$10,000 sedan at this year's Detroit auto show, although the car fell short of American safety and emissions standards.

Geely and Chery Automobile, a state-owned company that has sparred with General Motors over the similarity of its name to the Chevy nickname for the Chevrolet brand, plan to sell cars in the United States in 2008. Only Nanjing, however, has said it intends to build vehicles outside China, where it will face higher labor costs than in its home country.

"We want to be a global company," said Duke T. Hale, a former executive at Mazda, Isuzu and Lotus who will be chief executive of MG Motors. "We don't want to be a company that simply exports out of China. We don't want to be seen as just another Chinese car company." Nanjing also is unique among the

Chinese car companies in its plan to revive an established brand with a Western following. Mr. Hale called that a critical advantage the company held over its Chinese rivals. "I've got a brand name that still resonates," he said. The company says its lineup will be true to MG's heritage, to the delight of enthusiasts such as Roger Parker, a technical consultant with the MG Owners' Club. The club, run out of a large MG parts shop near Cambridge, England, has about 40,000 members worldwide. Many live in the United States, despite the brand's 26-year absence here.

"If they don't get the product right, they will certainly do damage that will be difficult to recover from," said Mr. Parker, whom Nanjing officials consulted about their plans. "It's clear that they are very committed and very conscious of the rich history that they have bought."

MG's limited appeal will ensure that Nanjing remains merely a niche player here. But construction of the first Chinese auto plant in the United States, which will create more than 500 jobs, carries a great deal of symbolism about the industry's future.

"It wasn't very long ago that nobody believed the Japanese would build plants in the United States," said David E. Davis Jr., who co-founded Automobile magazine and now runs an online publication for car lovers called Winding Road. After Lee A. Iacocca, the brash chairman of Chrysler, challenged them to do so, Mr. Davis added, "they did, and they blew everyone's pants off."

MG, originally called Morris Garages, began selling cars in the 1920's. Its iconic TC



convertible was a big hit in the United States after servicemen grew attached to earlier MG models in Europe during World War II.

"MG was really an integral part of the foreign car revolution that started in the late 40's and early 50's," Mr. Davis said. "They weren't terribly good cars, but they were so different and they were so much fun to drive that we all forgave them for their lack of reliability and fragility."

The brand withdrew from the American market in 1980, leaving a generation of enthusiasts longing for its return. Sales continued in other countries as ownership passed through several hands, including Honda and BMW, until production ceased in April 2005 and all 6,000 workers at the factory in England were let go.

"It's the first sports car that I remember as a child," said Paul Fucito, who grew up around the corner from an MG dealership in New Jersey and remembers its closing.

Mr. Fucito, 34, a spokesman for George Washington University, has never lost hope that he will one day own an MG, although the company's bankruptcy last year raised doubts for him about the chances of that happening. He participates in several online forums devoted to the brand and fantasizes about a new MG, painted British racing green, with wire wheels and chrome accents.

"It's been that dream car that I've always wanted," he said.

Several automakers have capitalized on demand for nostalgic nameplates in recent years, including BMW with its modernized Mini Cooper.

Chevrolet has been deluged with requests to bring back the Camaro after it unveiled a concept version in January.

Jeremy Anwyl, president of Edmunds.com, a Web site that gives consumers advice about buying cars, said MG had the potential to join the list of successfully resurrected marques, as long as Nanjing kept quality high and prices low. "It's not just a question of slapping an MG brand on something and expecting it to be an automatic success," he said.

Mr. Anwyl expects to see the new MG models sporting the brand's distinct vertical grille and octagonal logo but without the flaws of earlier models.

"Hopefully some of the electrical problems you wouldn't bring back," he said. "If you really want to go for nostalgia, you put on a leaky roof."



Lotus Type 119c clinches victory and second record in Brooklands Soapbox Derby

July 17, 2006

The Lotus Type 119c soapbox, which topped the timesheets in the 2004 Goodwood Soapbox Challenge, claimed its second consecutive title and record in the Brooklands Soapbox Derby, at the Brooklands circuit in Surrey, on 16 July 2006. This earns Lotus a place in the history books as being the most successful soapbox racing team



ever in UK downhill gravity racing competition.

Paul Adams, who was once again at the wheel of the Type 119c closed-cockpit "streamliner," dominated the practice run on the historic course from the very start, finishing ahead of closest rivals and last year's competition winners, Lola Cars, by posting a fastest time of 72.4 seconds, just 0.6 seconds shy of last year's record.

The pace-setting performance continued, breaking the 2005 record in the very first of six competitive runs with a time of 68.5 seconds, leaving second placed Lola 1.8 seconds adrift in the opening round. It then proved difficult for both Lola and the remaining entrants to match the blistering pace of the Lotus. Adams, having mastered the sweeping curves and the historic banked section, went on to smash the record further in the second official timed run with an even faster time. He set a new course record of 67.7 seconds, 4.1 seconds quicker than last year's top time, reminiscent of the stunning performance at Goodwood in 2004.

Not taking any chances until the chequered flag, the Lotus continued to battle, and posted a time on the final run which was within just 0.10 seconds of the new record. In only the second race on the Brooklands circuit since 1936, the Lotus team mounted the top step of the podium to aptly receive the winner's trophy from Sir Richard Noble, who successfully piloted Thrust 2 to the Land Speed record in 1983, before becoming Project Director for the Thrust SCC Land Speed Record in 1997.

Commenting on the day's racing in the Brooklands Soapbox Derby, Paul Adams explains "Taking a second win in the Type 119c is very special, and I am extremely proud to be bringing another trophy back to Hethel. It is a testament to all the hard work and dedication of all those involved at Lotus. The racing was both fun and very close, which I

thoroughly enjoyed. It is a great event."

The Lotus Type 119c will continue to be used for marketing activities as a demonstration of capability of Group Lotus.

Lotus to Revive Deals to Produce Cars for Rivals

Financial Times BY John Griffiths, July 20, 2006

Group Lotus, the U.K. sports car manufacturer and engineering consultancy group owned by Proton, Malaysia's national carmaker, has begun talks with several big manufacturers on partnerships to produce Lotus-branded versions of their cars.

The initiative, part of a five-year strategy to revive the loss-making group after a management shake-up, would result in the launch of modern-day equivalents to some historic motoring icons such as the Lotus Cortina (Ford), Lotus Sunbeam (Chrysler) and Lotus Carlton (Vauxhall).

Lotus is capable of building up to 8,000 units a year of such products, lifting planned output at its Norfolk site in the UK to about 16,000 units a year - almost four times the current level, Michael Kimberley, Lotus' chief executive, told the Financial Times yesterday.

Under the five-year plan, which is yet to receive final approval from the Proton board, new model program are also being speeded up and extended, with the aim of doubling Lotus' output of specialist sports cars.

Mr. Kimberley has returned to Lotus as chief executive after the abrupt departure in May of former incumbent Kim Ogaard-Nielsen. Mr. Nielsen, a former shipping and IT industry executive who had no experience



of the automotive industry before coming to Lotus, had run the company for little more than a year and was one of several chief executives to hold the post only briefly.

Mr. Kimberley ran Lotus for more than 20 years until departing to become president of Lamborghini in 1991, and then subsequently a General Motors executive in the Asia-Pacific region, during which time he also built a relationship with Proton. Last year Proton appointed him to the supervisory board of Lotus Group International, Proton's holding company for the UK concern.

It is understood to have no objection to Lotus building a manufacturing relationship with other big carmakers and is expected to integrate Lotus's engineering expertise more closely into its own products under the new Lotus management regime. People close to Lotus told the FT that Mr. Kimberley privately has also said he was "appalled" that the consultancy engineering business, which used to make significant profits and account for at least half of Lotus's turnover, had dwindled to the point where it accounted for only 56 million Pounds (\$103 million) of Lotus's 175 million Pound turned over last year.

A priority within the strategy is a swift re-expansion program, under which it emerged this week that Lotus has already signed contracts with four Chinese carmakers.

These include a long-term agreement with Nanjing Automobile Corporation, the buyer of MG Rover's assets, to develop engines and provide chassis engineering for the MG cars it intends to start making from the middle of next year.

Mr. Kimberley said Proton believed Lotus had a "critical" role to play within Proton to help it achieve its own ambitions of becoming a global automotive brand.

The Malaysian parent is to set up a "special unit" to improve contacts between the two companies, Mr. Kimberley added.

UPDATED

Lotus continues to dominate GT3 Class in British GT Championship. Lotus Sport Cadena made the 'long trek' from Hethel to Snetterton ready to make battle with the Barwell Motorsport Aston Martin DBRS9s and, for the first time, the Ascari KZ1s of Damax. As well as the third Exige.

Rumours continue to point to Lotus introducing a new Lotus Esprit replacement. Some have said that the stillborn M250 may be brought back into the picture as a significant amount of development dollars have already been spent to ready this car for production. Some say it's aimed right at the Lamborghini Gallardo and the Ferrari F430 but will be in a smaller mid-engined package.

According to the reports, it'll be powered by a twin-turbocharged V8 -- possibly a BMW -- via a six-speed sequential transmission. Bodywork is likely to be either composite or aluminium.

Lotus is undergoing a small re-organization within the manufacturing facility to further improve the efficiencies and flexibility at Hethel. This will lead to further improvements and gains leading up to the start of production.



Mike Kimberley, Chief Executive for Group Lotus plc says: "We are very pleased that Hethel has been confirmed by the Board of Directors as the manufacturing location for this vital new car. However the decision to choose Hethel has not been taken lightly and was influenced not only by our past achievements, but also by firm future commitments to improve the efficiencies and flexibilities within our manufacturing facility. We have a lot of work to do between now and the start of production and this will demand much commitment and hard work from us all at Lotus."

The new mid-engined sports car from Lotus will be manufactured at the Group Lotus headquarters at Hethel in Norfolk U.K. This car, which is expected to enter production in spring 2008 will be positioned at the higher end of the Lotus range and will occupy the sector vacated by the Lotus Esprit that finished production in 2004.

The decision to assemble the new car at Hethel follows an extensive evaluation of a number of manufacturing locations around the world by Group Lotus and its shareholder Proton Holdings Bhd.

Lotus has worked at improving the efficiencies and flexibilities within the manufacturing facility over the last 18 months to maintain its position as a leading niche manufacturer within the UK and Europe.



Battery-Fueled Car Will Smoke

You By Joshua Davis, from Wired magazine 12:00 PM Jul, 19, 2006

Martin Eberhard holds the brake down with his left foot and presses on the accelerator with his right. The motor revs, the car strains against the brake. I hear ... almost nothing. Just a quiet whine like the sound of a jet preparing for takeoff 5 miles away. We're belted into a shimmering black sports car on a quiet, tree-lined street in San Carlos, California, 23 miles south of San Francisco. It has taken Eberhard three years to get this prototype ready for mass production, but with the backing of PayPal cofounder Elon Musk, Google's Larry Page and Sergey Brin, and ex-eBay chief Jeff Skoll, he has created Silicon Valley's first real auto company.

"You see any cops?" Eberhard asks, shooting me a mischievous look. The car is vibrating, ready to launch. I'm the first journalist to get a ride.

He releases the brake and my head snaps back. One-one-thousand: I get a floating feeling, like going over the falls in a roller coaster. Two-one-thousand: The world tunnels, the trees blur. Three-one-thousand: We hit 60 miles per hour. Eberhard brakes. We're at a standstill again -- elapsed

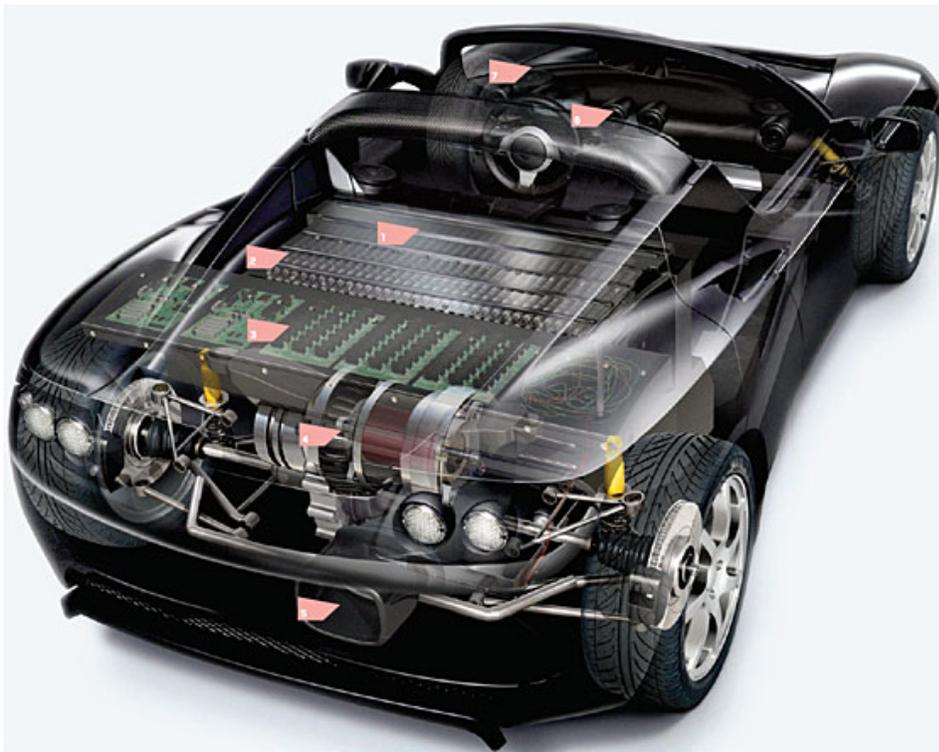


time, nine seconds. When potential buyers get a look at the vehicle this summer, it will be among the quickest production cars in the world. And, compared to other supercars like the Bugatti Veyron, Ferrari Enzo, and Lamborghini Diablo, it's a bargain. More intriguing: It has no combustion engine.

The trick? The Tesla Roadster is powered by 6,831 rechargeable lithium-ion batteries -- the same cells that run a laptop computer. Range: 250 miles. Fuel efficiency: 1 to 2 cents per mile. Top speed: more than 130 mph. The first cars will be built at a factory in England and are slated to hit the market next summer. And Tesla Motors, Eberhard's company, is already gearing up for a four-door battery-powered sedan.

In an age when a car's electronics are worth more than its steel, it seems only natural that the tech sector would have its own car company. The question is, can Eberhard turn the digital era into horsepower, torque, and rpm?

Eberhard has never designed a car and has no experience building one. He created the Rocket eBook, a handheld digital book reader that came to market in the late '90s. But he insists his eBook background is relevant to starting a car company. The device used a rechargeable battery, and Eberhard -- an electrical engineer -- devoted himself to maximizing run time and minimizing weight. In 2000,



1 BATTERY PACK
THE POWER SUPPLY IS SPLIT INTO 11 SECTORS OF 621 LITHIUM-ION CELLS. EACH SECTOR IS CONTROLLED BY ITS OWN PROCESSOR, WHICH MONITORS THE CHARGE AND DISCHARGE RATE OF EVERY CELL.

2 SAFETY MONITORS
AN ACCELEROMETER, SMOKE DETECTOR, VOLTAGE METER, TEMPERATURE GAUGE, AND WATER SENSOR CAN DETECT A CRASH OR OTHER FAILURES AND SHUT THE BATTERIES DOWN TO PREVENT FIRE OR EXPLOSION.

3 INVERTER
THE INVERTER USES 72 INSULATED TRANSISTORS TO TRANSFORM THE BATTERY'S DC ENERGY INTO AC POWER. IT DELIVERS ALMOST 80 PERCENT MORE POWER THAN GM'S NOW-DISCONTINUED EV1.

ELECTRIC RIDE

THE TESLA ROADSTER PUTS THE CHARGE BACK INTO SUPERCHARGED. THE ALL-ELECTRIC, HIGH-PERFORMANCE SPORTS CAR IS POWERED BY THE SAME BATTERIES THAT RUN YOUR LAPTOP. WIRED GOT THE FIRST GUIDED TOUR. - J.D.

4 MOTOR
AT THE HEART OF THE AC ELECTRIC MOTOR IS A HIGH-EFFICIENCY ROTOR. THE BREAKTHROUGH: IT'S MADE OF BRAZED COPPER, WHICH IS MORE CONDUCTIVE THAN CONVENTIONAL ALUMINUM ROTORS.

5 COOLING
THE INVERTER'S TRANSISTORS PRODUCE VERY LITTLE HEAT, ALLOWING THE CAR TO USE LIGHTWEIGHT, ENERGY-EFFICIENT AIR COOLING, WHICH VENTS THROUGH A TAILPIPE.

6 HEATING
SINCE THERE IS NO CONVENTIONAL ENGINE TO PROVIDE CABIN HEATING, THE ROADSTER HAS AN ELECTRIC HEATER. ONE BONUS: IT DELIVERS HEAT IMMEDIATELY - NO WAITING FOR AN ENGINE TO WARM UP.

7 PARTS
TESLA HAS DEALS WITH VARIOUS MANUFACTURERS TO SUPPLY THE WINDSHIELD WIPERS, BRAKES, SUSPENSION, AND OTHER COMPONENTS - THERE'S NO NEED TO REINVENT THE HIGH-PERFORMANCE WINDSHIELD WIPER.



his venture, NuvoMedia, was bought by TV Guide's parent company, which quickly abandoned the product.

But Eberhard was flush with cash and decided to buy himself a new sports car. He wanted something that was fast but still got good mileage. He quickly learned that high performance and fuel efficiency are mutually exclusive, at least when it comes to internal combustion engines. So he started researching alternative technologies and soon realized it was actually possible for an electric car to combine zip and efficiency. The problem: Nobody was making one. The EV1, General Motors' electric car, had failed, in part because it was expensive and poorly marketed. Most crippling, though, was the underperformance of the original lead-acid batteries and even the second-gen nickel metal hydride cells. Consumers wanted a vehicle that had a range greater than the EV1's (at best) 130 miles. The common wisdom was that batteries just weren't there yet.



But what did Detroit know about batteries? Eberhard had squeezed 20 hours of run time out of the little power pack on his eBook. Battery efficiency was an obsession among computer engineers, who were extracting

more power from ever-smaller cells with each generation of laptops. GM seemed oblivious to the lessons emerging from the electronics industry. Eberhard began to think that if anybody was going to build a viable electric car, it would be a Silicon Valley engineer. Then, after reading biographies of John DeLorean and Preston Tucker, and reminding himself that launching a car company was a crazy idea, he did just that.

The central concept of Tesla Motors, founded in July 2003, is that there is no need to reinvent the battery, particularly for a product with a small initial market. Eberhard simply adopted the lithium-ion technology used in laptops and harnessed the momentum of the computer industry. Let Dell, HP, and the rest of the sprawling PC business, with their billions of R&D dollars, do the hard work of extending battery life and driving down prices. He'd piggyback on their innovations.

Meanwhile, automakers had been dismantling some of the biggest barriers to entering the business. To lower production costs, the Big Three had outsourced much of their parts manufacturing over the past 25 years. An upstart could buy just about everything it needed to mass-produce a car from independent suppliers. A fledgling electric car company had other advantages, too: Tighter emissions standards have raised the cost of developing gas-powered cars, and buyers of low-emission vehicles are lured by big tax breaks.

In the spring of 2004, Eberhard embarked on a series of meetings with venture capital firms along Sand Hill Road in Menlo Park. He argued that a combustion engine is an antiquated technology and that electric vehicles are



dramatically more energy-efficient than their gas-guzzling counterparts. "If you took the energy in a gallon of gas and used it to spin a turbine, you'd get enough electricity to drive an electric car 110 miles," he says in a characteristically enthusiastic rush, trying to squeeze in too many words between breaths.

More important, Eberhard says, the electric cars of the past -- slow, cramped, spartan -- looked like they were designed by people who thought you shouldn't be driving to begin with. Eberhard calls them "punishment cars." What he wanted to build, he told his potential investors, was a classic sports car. He wanted to have his ecofriendly ride and race it, too. Initially, the Sand Hill VCs weren't interested. Eberhard got his first bite from Elon Musk, cofounder of PayPal, who -- over the course of two years -- put in nearly \$30 million of his own money and also corralled some of his wealthy entrepreneur friends to chip in. By May 2006, Tesla Motors had raised \$60 million. Now Eberhard had to get the car into production.

Just before Christmas 2004, 30 employees and board members from Tesla came to Eberhard's Woodside, California, house to decide what the car would look like. He had commissioned four top automotive designers to draw sketches, which he taped to his living room wall. He gave everyone three red stickers and three green and told them to flag what they liked and didn't like. By the time the eggnog was gone, the green dots had coalesced around a drawing by Barney Hatt of Lotus Design in England. This is how a Silicon Valley startup does car design.

Lotus had manufactured cars for GM, in addition to its own

lightweight aluminum sports car, the Elise. So Eberhard contracted the company to assemble his new vehicle, codenamed Dark Star (after a classic low-budget sci-fi movie). The electric motor would be built in Taiwan, and engineering and R&D would be conducted in a San Carlos warehouse. The space had offices in the front, and Eberhard began to fill the cubicles with dotcom veterans. Mike Harrigan, the man in charge of setting up a nationwide network of auto maintenance centers, had previously founded two communications equipment makers. Gretchen Joyce, vice president in charge of sales, had spent the previous four years at eBay. There was no doubt that this was going to be a different kind of Car Company.



What Eberhard didn't know about car manufacturing -- which was just about everything -- he got by hiring engineers and executives away from Lotus.



Eventually, he lured so many Lotus employees that the British company insisted he sign a no-poaching agreement or it wouldn't build the car.

For three years, Tesla Motors ran in stealth mode. Because electric cars had failed so visibly in the late '90s, the company knew it faced a tough marketing challenge, and Eberhard didn't want to show the world something half-baked. If Tesla was to succeed, it would need to present a fully realized, radically different approach. Luckily, there was little threat of car spies ruining the surprise. "Silicon Valley is a great place to run a secret car company," Eberhard says. "Nobody expected something to sprout up in Northern California, so no one came looking."



Eberhard owes his radically different approach to Nikola Tesla, the iconic Serbian engineer who built the first AC induction motor in the 1880s. Eberhard's supercharged update of that motor is powered by a copper and steel rotor that is spun by a magnetic field. There are no moving parts besides the rotor. Step on the accelerator and the motor delivers instantaneously. An onboard computer provides traction control, keeping the car from burning rubber. The result: 0 to 60 in about four seconds. And, since the motor is not limited

by the complexity of pistons moving up and down, it can spin much faster. Porsche's top-of-the-line model -- the \$440,000 Carrera GT -- maxes out at 8,400 rpm; the Tesla Roadster has a ceiling of 13,500, enabling it to go 70 mph in first gear. (It has two gears, plus reverse.)

The Roadster's sporty styling allowed Eberhard to maximize the car's range and still win a drag race. With its two-person capacity and aerodynamic contours, the lightweight machine can go 250 miles on a single charge. (When connected to a special 220-volt, 70-amp outlet, recharging takes about three and a half hours.) Plus, the sports car class lets Eberhard price it on the high end -- in the range of a Porsche 911 Carrera S, roughly \$80,000.

Of course, an expensive two-seater isn't going to have much effect on an industry that sells 17 million automobiles in the US each year. Sure, every VC will have to get one, and George Clooney will probably be seen piloting one down Sunset Boulevard. But selling a few thousand cars won't help Eberhard build a dominant 21st-century car company.

That's why he's already preparing a sedan, codenamed White Star, which could hit streets as early as 2008. Of course, the sedan won't be as lightweight or aerodynamic as the Roadster, so its range is likely to drop significantly. Eberhard's response: maybe with today's tech. But battery power is improving steadily, and several companies say they may soon double battery life. By the time the sedan comes out, he says, batteries will be ready to deliver: "We're going to ride that technology curve all the way home."



A cop drives by, and Eberhard smiles benignly as the Roadster edges forward silently from a stop sign. It's an eerie, disconcerting feeling. There's no engine hum -- nothing to make you think that this car should be sold with a neck brace. Most high-performance cars telegraph their power. That's part of the allure of a seriously fast car -- you can hear it coming. The Roadster seems like a sneak attack. As with everything about this car, Eberhard has a fast answer. "Some people are going to miss the sound of a roaring engine," he says, "just like people used to miss the sound of horse hooves clippity-clopping down the street."

Eberhard suggests it would be easy enough to pump MP3s of prerecorded engine roar into the car's Blaupunkt stereo. And for those with even older tastes, the sound of horse hooves could be substituted. But damn if that horse isn't going to sound strange at 13,500 rpm.

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Crystal Palace 1964 - Jim Clark
- Lotus Cortina

<http://www.youtube.com/watch?v=bWp-0TuY4Sk>



Geoff says he only needs ¼ doors for his garage

Lotus Times is the unofficial newsletter of the Eastern Canada Lotus Club (ECLC) and may be published anytime between January and December. The opinions within may not necessarily represent the views of its members, directors or anyone else living or deceased and knowing that the telephone pole was approaching fast. He was attempting to swerve out of its path when it struck his front end.

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