The Chapman Report

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sQuba *press release*

The following is from Rinspeed, a company usually involved in Hot Rod mods for Porsches. Check their website for more info on this car, and others that they have made over the years. P.S.: None of these cars have gotten past the show 'prototype" stage.

"Rinspeed's Zero-Emission World Debut at the Geneva Motor Show - a Green "Fish" with Q-Factor

Thirty years after the movie thriller 'The Spy Who Loved Me' hit the silver screen "sQuba" is the first car that can actually 'fly' under water. "Dive it again, James!" If the situation gets too hot for the secret agent he'll go underground - or under water. So demonstrated impressively by Roger Moore in 'The Spy Who Loved Me" in 1977 when he dove below the waves in a sleek vehicle that moments before seemed to be an ordinary car.

With the "sQuba," the world's first real submersible car, the movie fake now becomes reality for visitors of the Geneva Motor Show (March 6th - 16th, 2008). Rinspeed boss Frank M. Rinderknecht (52) is known for his extraordinary automotive creations. The acknowledged James Bond enthusiast and Swiss automobile visionary kept revisiting this scene in his mind over and over: "For three decades I have tried to imagine how it might be possible to build a car that can fly under water. Now we have made this dream come true."

Modified Elise by Rinspeed. Gimmick or a real option?

And it is this submerged stabile flight at a depth of 10 meters that sets the "sQuba" apart from military vehicles. While the latter can go under water, they are limited to driving slowly over the submerged ground. Rinderknecht: "It is undoubtedly not an easy task to make a car watertight and pressure resistant enough to be maneuverable under water. It also had to be a sports car that was converted into a diving dream in the facilities of Swiss engineering specialist Esoro. ....."

March Meeting

New Venue & Date

Saturday, March 22nd, 8:30 am till ??

Venue: Santana Row parking lot,
378 Santana Row
San Jose, CA 95106

There will be a "drive" from here, though the time and direction are not known by me at this time. Check our website for more current information.

Members' Cars

thought these two look pretty good together,
lotus 61 /lotus cortina
Mike Drouin

HERE IS A PICTURE OF MY BARN IN SEBASTOPOL.
1966 ELAN, 1972 EUROPA AND A 1972 ELAN PLUS 2.
JOHN KENNER

Calendar

March 22nd meeting. Santana Row
March 21st, Track Day, Thunder Hill
March 29-30th, Goodguys, Pleasanton
April 18th Meeting, The Richens, San Francisco
April 20th, Autocross Clinic, Marina Airport
April 27th, Dream Machines, Half Moon Bay
May 4th, Hillsborough Concours
May 17th meeting: Mel/Darlene Boss, Danville
June 20th meeting: The Andersons, Hillsborough

For more and up to date information on these GGLC and other events check the GGLC website at www.gglotus.org

Date Changes !!

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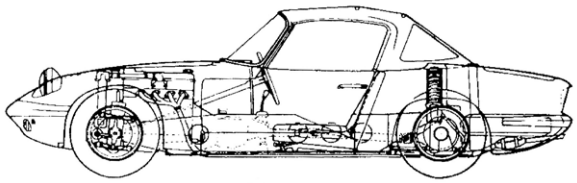


Optical Access:

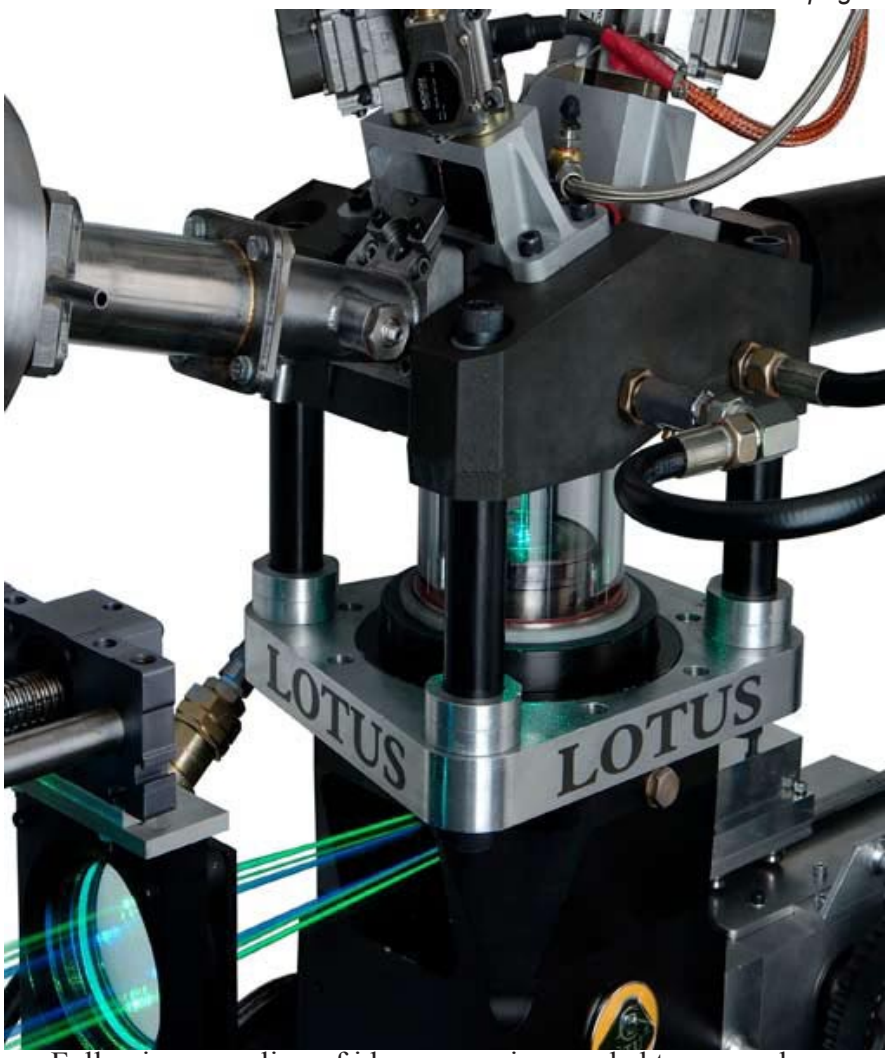
A closer look at Lotus advanced combustion research

from the Lotus Engineering Newsletter. Check grouplotus.com.

The recent announcement of the continuing research relationship between Lotus Engineering and Loughborough University is excellent news for keeping us at the cutting edge of combustion understanding. The highly adanced optical access engine central to this activity warrants a closer look, as does the research success so far.

Lotus Engineering and Loughborough University originally started working with each other in 1997. Lotus Engineering wanted to build a portfolio of combustion system knowledge from the research rather than the development perspective. Loughborough emerged as the ideal candidate to assist our research activities and an informal association developed. This led to the first work being jointly performed by Lotus Engi eering and Loughborough University looking into the fundamental characteristics of gasoline direct injection spray systems.

The early work was performed on an atmospheric spray bench where the injection was into still air conditions, but it was always recognised that to look at the system properly, the correct engine environment would be needed. And to understand exactly what was going on in the engine meant being able to actually look inside it.



Following a pooling of ideas it quickly became apparent that there were no designs of optical engines on the market that met the needs of Lotus and Loughborough and their research aspirations. The question was asked: if we wanted the ideal optical engine what would it look like? Lotus then set about designing and developing such an optical access engine.

The design comprised a full-length fused silica liner to allow us to see inside the entirety of the cylinder and provide a side view into the pent roof. A sapphire piston window makes it possible to look upwards directly into the pent roof area. The engine needed to run under as realistic conditions as possible, and to this end both primary and secondary balance shafts were used to allow the engine a top speed of 5000rpm. Work was also performed to find an ideal material for the piston compression ring which had to slide against the glass liner walls without scratching, and maintain an appropriate seal to obtain the correct compressi n pressures. “

OK, that’s all of the article I can squeeze in here. I hope to have the full text in the next issue, but you can also go online and read it. It’s always been fascinating what Lotus Engineering is up to. ed

Lotus News *Press Release*

Malcolm Powell is VP Vehicle Integration at Tesla Motors, the California-based technology firm developing an electric sports car that will be contract manufactured by Lotus in Hethel. He is responsible for the engineering of the car and ensuring that it meets all the necessary standards prior to entering production. justauto's Dave Leggett interviewed him on behalf of proActive

DL: When will those Tesla customers who have already put money down receive their cars?

MP: We're still on plan for the first customer to get his car in the first quarter of this year.

DL: So when does series production start then?

MP: It depends what you call production. We're doing a very controlled ramp rate, a prudent and sensible thing to do. We want to make absolutely sure that the production cars are working as anticipated and that the whole process and supply chain is working before we ramp up production further. There is a danger when you ramp that you keep an eye on the big balls, but it needs all the balls to build the car; it's no good having just 99% of the parts because you can't build it. So we will control our ramp rate carefully. We will start producing the cars this quarter and we will monitor and ramp as quickly as we can, but under control.

DL: And what sort of volume are we looking at for the first year of production?

MP: It will be some hundreds of cars this calendar year – we should be running at around 600 for the model year.

DL: And building up to what level?

MP: We have always targeted the capacity to be able to build 2,000 cars a year. That's because we have to have targets to choose appropriate tooling investment for the components. If the demand is absolutely extraordinary then we could choose to make more. It's very difficult to predict exactly where demand will be on a new product such as this. We had to set a level that was achievable to fix our investment – and that was 2,000 a year.

DL: I understand the Tesla Roadster's transmission has been a major source of delays to the programme schedule. What has been behind the problems in that area and how are the problems being overcome?

MP: You might think that a transmission is a known technology, particularly when viewed against all the new technology being incorporated into the car, but it's not that simple. As a new company it was difficult, initially, to get major manufacturers to even talk to us, never mind commit any resource to actually help design, engineer and build systems. We started off going down a particular route with a transmissions supplier and we got to the point where we realised that the way that particular programme was headed, it wasn't really going to meet our performance targets for the car.

We chose, pretty late in the programme, to change course and go with an alternative supplier with a different approach.

The transmission sounds simple: two-speed transmission and therefore you depopulate a regular transmission, but if you think about it, our gear shift between first and second is a factor of two and the motor spins up to 13,000rpm, so first gear takes you to over 60mph and second takes you to over 125mph so that is a huge ratio step against which we don't have a conventional clutch. There's a rotor with a very high inertia and we have to change the speed of that rotor very, very quickly to give us a performance shift.

There are also issues about electrical isolation because of the way we use the charging system and the motor. So, it isn't straightforward. It isn't 'just another transmission' and some issues have been thrown up that weren't anticipated and have taken longer than we had hoped to resolve. With change of supplier, change of design concept and with some of these unforeseen Tesla aims to deliver supercar acceleration and technical issues to overcome, delays have been the result.

DL: Just following on from that, the first Tesla Roadsters are being fitted with an 'interim transmission' that can be upgraded later on. What are the performance implications of that? Will the first cars off the line be

capable of doing 0-60mph in under four seconds?

MP: The point about the interim transmissions is that they will effectively be locked in second gear. A lot of the prototypes have been running like that for some time and the vast majority of customer drives have been done like that and the feedback has actually been that the car hits performance expectations in that state – it still does 0-60 in something like six seconds. So you've now got a rather interesting car that you can drive very rapidly from zero up to its top speed in one gear. I don't think customers will be too disappointed.

The reason for the two-speed set-up was because the torque capacity of the motor and the power system was 'X' and to be able to say to the world 'electric cars aren't just golf buggies' we needed the ratio to give us the four seconds and the top speed. In a single gear to begin with it would have done 0-60 in say 5.5 seconds with a top speed of 100mph. That would have been fine, but we wanted to make it clear that we could deliver this sort of supercar acceleration and an acceptable top speed. That means two-speed shift – which is doable but it's just a question of time and money. It's important to stress that we have had very positive feedback from customers about the second gear and that's the only reason we're doing this: many customers have said they would rather have the car now with the single gear and current level of performance than wait any longer. This is about satisfying customer demands to deliver before we get the full performance of the vehicle.

DL: Can Tesla's lithium-ion battery fully meet acceptable performance parameters and will the battery last 100,000 miles – does it degrade over the lifecycle?

MP: Sure, they do degrade and it's all about charge cycles. The battery manufacturers do the testing to determine what the battery capacity is. They fully charge, then fully discharge and keep doing that – it's actually pretty abusive to a lithium-ion battery. In the case of lithium-ion, keeping it charged up is actually a good thing to do – you don't need to fully discharge them the way you need to with some other batteries.

Many customers have said they would rather have the car now with the single gear and current level of performance than wait any longer.

The other thing is temperature control. That charge-discharge cycle that the battery manufacturers have to do is pretty abusive to the battery because of the temperature the battery gets to. We are aware of all these things and we pay very detailed attention to the management of the batteries because that is so critical to what we're trying to achieve. How we charge them and what capacity we charge them to, and how we maintain temperature – because they are actively cooled within the car – is all about preserving battery life. Most people don't drive many miles on average each day – and we know this is not a road trip car – meaning they won't be using a huge percentage of the battery pack each day. So, we say, when you get home just put the battery on charge and that will keep it in good condition. If we take the standard fairly abusive battery charge cycles the battery manufacturers carry out, that implies driving say 200 miles in one stretch before recharging each time and that works out at 100,000 miles of life. And that's with that rather unrealistic implied usage pattern. In reality, the battery should be good for more than 100,000 miles.

To the best of my knowledge, no long term tests have been done on the car or the battery configuration in realistic, on-the-road conditons. This would need to include possible heat levels of the battery system during a long summer drive. Tesla has just not discussed the batteries' internal resistance and heat generated, except in vague terms. My understanding is that they were using the car's airconditioning system to cool them on the first prototypes, but that plan has now been dropped.

Also, as they are still a privately held company, at this time, they do not have to disclose any of their financials, and they don't. ed

Upright For An Old Lotus

Dave Anderson

We don't often write about commercial products though all us Classic Lotus owners rely on our wonderful US local parts suppliers (they advertise in this newsletter and on our GGLC web site. Call them!).

One of the oddest things in our older suspensions is the Triumph Herald/Spitfire front upright and its brass trunnion. And the trunnion tendency to go bad if not oiled regularly. Who would have thought that suspension parts would turn on a thread (changing length when we turn the steering wheel!), be made substantially of brass, and be totally unforgiving of front-caster-change.

It was a brilliant design for its time, but...Enter www.canleyclassics.com and it's new product, CATKIT2, a Caterham-style upright that exactly matches the Herald/Spitfire unit except it has no trunion and is much stronger. And can tolerate some caster change! A simple bolt-in replacement for your Elan, Europa, or other Lotus using the Herald/Spitfire upright.

I must admit that I've never seen any Elan or Europa have any problem with trunnions breaking. Even very very fast Europas such as John Zender's Flamer or Evil Twins Racing's Europa race cars. Keep your trunnions oiled/greased and you won't have a problem either (it seems safe to predict). I'm not planning on changing out the uprights (at least not right now) in either my Elan or Europa, both of which I drive on track days and on the street. But if I had a car with perished trunions I'd consider the Canley Classics item...

[Thanks to 'Dutch' on the Lotus Europa mailing list for finding this product.]

Ecurie Shirlee *editor*

One of the ads that shaped mine and others' image of what a sportscar should be, and that the Lotus met that ideal. And this was how Bob Challman would sell the cars, and also race them. In the last issue I had mentioned Bob and his Lotus dealership in Manhattan Beach. To Bob, selling Lotus cars was close to a religious cause. If you weren't interested in having this level of driving 'system', he'd tell you to go find some other car. Maybe one of the new Mustangs that Ford actually called a sportscar. Any of you out there that has driven on of those first Mustangs knows they actually handled worse than the Ford Falcon that they were based on, front-heavy pigs. This style of salesmanship sold the cars to those who should drive them, not the number of cars that Colin Chapman would possibly have liked sold. "Proper" sales techniques include telling the customer what he wants to hear, and....."always be closing, always be closing, always be closing", as pushed in "Glengarry Glen Ross" a play by David Mamet.

OLD FASHIONED

☐ A very few years ago, the individual purpose car became big business. With bigness came competition from the mass-merchandising of stylist big boxes. When markets get big the larger manufacturers find it profitable to build exciting bodies on their boxes. After a bit, and with all the noise, you can't really tell except in the driving. We're old fashioned, our cars DRIVE better—that's the only reason they exist. ☐ We do not sell "cars"—they are the most advanced transportation "systems." They neither compete nor compare to any other vehicle concept—only with the "driving" ultimate. ☐ Never expect the Lotus Elan to be sold in the local automotive supermarket. It might be a bit of a chore to travel to find the area dealership, but he will have clean and enthusiastic facilities to service you—don't expect bigness. Ask questions, have a coffee, take a ride—ENJOY YOURSELF. You will find the pricing FAIR and FIRM—the dealer deserves his profit, his customers deserve good service. It's a new concept—about as new as that out-of-favor concept of individual effort and responsibility. The Lotus Elan is made by a proud group of young and dedicated Englishmen—and sold on the West Coast by a young (except Ed Leslie and Fritz Warren) and dedicated group of Western Americans. ☐ If you work hard so that you can enjoy "The Good Life", the Lotus Elan may add enough pleasure, enjoyment and excitement to be worth the 4400 dollar expenditure . . . besides that it can be used every day and not just on the weekends. May we show you the Lotus Elan and demonstrate its abilities? You might find it well worth stretching for. ☐ There will be 280 Lotus Elans available to the eight Western states in calendar 1965. The Lotus Elan will do 0-60 in 7.5 seconds, 0-100 in 20.5 seconds, tops at 117 MPH. And it will do it for a LONG, LONG time. It will stop, turn and drive better and smoother than anything you can conceive. There is no better, smoother or trouble-free performance unit of engine or gearbox made in the world. We believe it is the most exciting transportation "system" yet devised. We would like to show you the Lotus Elan. Thank you.

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Car Show & LaCrosse? *editor*

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Show your car for $35, $10 on that going to charity.

Check SJFoS.com for more information.

More Ads:

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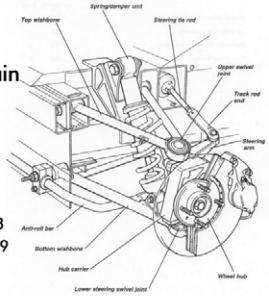

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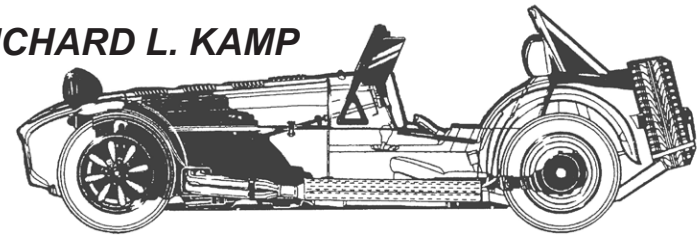

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First Class Mail

THE CHAPMAN REPORT

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