



Curtis Named Lotus Chairman

At a news conference on May 23rd, Group Lotus announced the appointment of Alan G. Curtis to succeed David Wickins as the chairman of the company in conjunction with the General Motors takeover. Curtis, 59, first joined Group Lotus as a non-executive member of the expanded board of directors that was announced on the day company founder Colin Chapman died suddenly in December 1982. He has been the deputy chairman of Lotus since 1983.

Curtis' career has included involvement with a variety of business interests, with marked emphasis on real estate development, aviation and automotive pursuits. To American auto enthusiasts, his most recognizable affiliation prior to Lotus was his role as a partner in the consortium that bought Aston Martin Lagonda from receivership in 1975. He became the chairman of Aston Martin in 1978.

Curtis was rumored to be the likely choice to assume the Lotus chairmanship when the GM buyout was announced last January. But, in an interview with *LOTUS reMARQUE* in February, he denied any such agreement, while expressing his willingness to help with the transfer in any way possible. Curtis was instrumental in lining up GM as a buyer once David Wickins had decided to sell his interest in the company. By the same token, he said he also was the one who asked Wickins to become involved when Lotus was being refinanced in 1983.

At the time of the Lotus buyout, a company spokesman underscored the company's future autonomy by pointing out that GM would not be taking a seat on the Lotus board. That changed when, along with Curtis' appointment, two GM officials were named to the board. Robert Eaton, 46, who recently became GM's vice president and group executive in charge of the Technical Staffs Group, was named as the non-executive deputy chairman of Lotus; as the head of GM's Advanced Engineering Staff, he was instrumental in the buyout and is Lotus's Detroit contact. Jack Smith, the vice president of General Motors Europe, was also named to the board.

Along with the board appointments, Lotus also announced the major elements of its new 10-year plan—the result of a complete review that began immediately following the takeover announcement last winter. For Lotus car enthusiasts, the latest announced plans include four significant elements:

- Lotus confirmed its commitment to build an Etna-type high-tech car as its flagship model—but pushed back its planned debut from late 1988 to 1991. The 180-mph supercar will cost an estimated £70,000 and will make extensive use of computer technology.

- Also pushed back—again—to early 1989 is the X100 small car. After an already painfully long gestation period, by Lotus standards, the car is going back for another major overhaul. The model, now heading into its fourth generation, is apparently going to get a substantial face-lift, amid concerns that it has kicked around the studio so long the styling has become dated. And, with the GM takeover, the company reportedly may be backing off its previous commitment to a Toyota engine and drivetrain. Lotus still hopes to bring the X100 to market (in the U.K., at least) for £12,000, and the projected volumes are slightly lower—3,000 a year by 1991.

- With the delays in the debuts of both new-generation Lotus models (and also, in all likelihood, because of the anticipated large price differential between them), the current Lotus model range will be given



more legs through further development and refinement. This may increase the chances of the Excel and the latest normally aspirated Esprit coming to the U.S. market; in the June issue of *Automobile Magazine*, Lotus Performance Cars president John Spiech says he would like to be able to offer the Excel at \$22,000-24,000—a price that has been heretofore entirely unattainable.

- Lotus also indicated it would contract to design and produce special edition cars for other manufacturers—presumably along the lines of the Lotus-Cortina and the Talbot Sunbeam Lotus.

As a business, the Lotus plan calls for considerable growth in the next few years—from £17 million in revenue last year to £80 million in 1990, with contract engineering accounting for about half. Mike Kimberley, who continues as the managing director, said the company now has £25 million of engineering work on its order books, and has been turning away new business!

Lotus' car business is currently essentially breaking even, and contract engineering work is turning a healthy profit.

Microlight Project Stalls—Crash to Follow?

Sleeker, even, than a Lotus Esprit, the British Airways Concorde rolled up to the terminal at Baltimore-Washington International Airport. A few minutes to clear customs, and Malcolm Lawrence's flight was behind him—a flight that had set a speed record of three hours, forty minutes for the run, in the process breaking Mach 2 at 58,000 feet over the Atlantic.

The aircraft nearest Lawrence's heart is not designed to fly anywhere near that high. And these days, unfortunately, the plane of his dreams is not getting off the ground at all.

Lawrence is the managing director of Aviation Composites, Lotus's joint venture partner in the microlight aircraft and engine project that was conceived by Colin Chapman and set in motion in the months before his death in December 1982. More than three years later, however,

Lotus has yet to work all the bugs out of its microlight engine. So Lawrence finds himself still waiting—sitting on over 3,000 orders and inquiries for an engine he does not have, getting ready to unveil the production version of the Chapman-inspired aircraft with no powerplant to put in it, and watching his company's bank account slide toward empty.

According to Lawrence, the original development schedule called for the microlight engine to be ready for production in September 1983. At least three major delays later, Lotus is still working on what Lawrence described as "horrendous problems" with the crankshaft, compression and overheating.

"We're on the edge of a lawsuit," said Lawrence. He is exasperated (See *ENGINE*, page 6)

STARTING LINE

Some time ago, the directors of Lotus, Ltd. decided that the long-term interests of the club would best be served by mobilizing broader grassroots support. The local chapter development program which we've started working on is an important part of this mobilization effort. In concert with the tech program, our objective is to improve information dissemination and opportunities for participation among our members.

We have not yet precisely defined all the elements of the chapter development program—or even decided to what degree such a program *should* be formally defined. Rather than attempting at this stage to impose and promote a rigid chapter structure, we are looking for feedback from members and hope a minimal consensus will evolve down the road.

But we're not waiting around in the meantime. Already there are a number of locally oriented groups of Lotus, Ltd. members who get together on a more or less regular basis around the country. For now, our main emphasis will be to do what we can to encourage this trend. For starters, we are going to make "Localotus" a regular feature of *LOTUS reMARQUE*, beginning with this issue. "Localotus" will include reports and pictures of our local groups' meetings and activities held around the country. It will also include a list of local group contacts, so that members will have someone to call to find out what Lotus activities are brewing nearby. (You might be surprised at what's going on in your own back yard!)

As this is a new thrust for us, our list of local contacts is not yet particularly long. However, under the direction of Jacques Smith, who has already been actively working the phones to enlist volunteers to the cause, we anticipate the contacts list—and the number of local Lotus hotspots—will grow rapidly. If you are part of a local group not listed—or want to get something going in an area not served by another organized Lotus club—please contact Jacques at (301) 972-0499 or drop a note to Box L.

In addition to publishing a contacts list and publicizing the activities of local groups, we are instituting a referral system to put new Lotus, Ltd. members in touch with their respective local groups. In turn, hopefully, our local groups will attract the attention of Lotus-owning non-members who will be encouraged to join Lotus, Ltd. As for future possibilities, the board has been discussing the idea of having interested local groups take turns hosting the annual meet—or perhaps hosting regional annual meets around the country.

The end result of all this, we hope, will be a maximum of activity with a minimum of bureaucracy. But we need your help. "Lotusing" is not a spectator sport. Take the time to participate. Support—or start—your local Lotus group.

—Dan Miller

COVER: Alan G. Curtis is the fourth man to hold the Group Lotus chairmanship. (Photo by Lotus.)

PIT STOPS

July 10-12 (Fri.-Sun.)—Lotus Car Club of British Columbia's Pacific Rim Lotus Meet, Vancouver, BC, Canada. The meet is being held in conjunction with the Expo 86 World Exposition, and will include a concours, rally, slalom and banquet. Lotus engineering director Tony Rudd is scheduled to speak. Information: Hugh McLellan, (604) 986-1757.

Aug. 10 (Sun.)—New Hope (PA) Auto Show, New Hope, PA. Lotus, Ltd.'s NY/NJ/PA group has scheduled a gathering in conjunction with the show. There will be a Lotus class, with trophies. Information: Pat

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READERS NOTE: LOTUS reMARQUE cover dates may be "old", but contents (including classifieds) are current unless otherwise noted. Renewals are based on issue dates, not calendar dates.—Ed.

Dennis, (201) 334-6649.

Aug. 10 (Sun.)—Annual outing of Central Ohio Lotus group. Road trip to the Piatt Castles and Ohio Caverns. Information: Roger Sieling, (614) 262-8279.

Aug. 16-17 (Sat.-Sun.)—First Annual Seven Owners Gathering, sponsored and hosted by Sevens & Elans, Cambridge, MA. Tech seminar, dinner, country tour, concours. Special guest will be Caterham development engineer Jez Coates. Information: Chris Tchorznicki (Sevens & Elans), 248 Hampshire St., Cambridge, MA 02139, (617) 497-7777.

Aug. 17 (Sun.)—D.C. area Lotus, Ltd. group. High performance driving school/track day, Summit Point Raceway, Summit Pt., WV. Will be held in conjunction with the D.C. area RX-7 club. Cost: about \$55 for the entire day. Instructors will be available for novices. Street cars only, must have working seat belts and be in good mechanical condition, convertibles must have rollover bars, and drivers must wear helmets (loaners available). Information: Phil Mitchell, (301) 942-6059 eves. **INSTRUCTORS NEEDED:** For Lotus, Ltd./RX-7 club track day at Summit Point Raceway on Aug. 17th. Free track time (including formula cars) for qualified people willing to instruct. Autocross or road racing experience required. Information: Phil Mitchell, (301) 942-6059 eves.

Sep. 19-21 (Fri.-Sun.)—Sixth Annual Lotus, Ltd. Owners Gathering, Hawk at Salt Ash, Plymouth, VT. Reception, casual concours, autocross, awards banquet, tech seminars, more. Details to come. Information: Scott Stickle, (802) 325-3325.

LOG VI PLANNING CONTINUES

Plans for the Sixth Annual Lotus, Ltd. Owners Gathering are "advancing apace". Here's a quick update:

Event chairman Scott Stickle has arranged for the use of an autocross site in Rutland, Vermont, so—like last year—all meet participants will have the opportunity to exercise their Lotuses and take a shot at some silver in a brisk (yet totally safe), no-cost test of driving skill. The course will be fun for experts and novices alike. Entrants will compete against similar Lotus types, and there will be instruction (and trophies) available for the tyros. So everyone will be able to "strut their stuff" or "take the plunge"—no experience necessary.

Following the popular addition of a technical seminar to last year's slate of activities, we're looking to expand the technical content of this year's schedule as it continues to come together. We'll have more details soon.

On the all-important food front: Have you ever had a "mass-produced" banquet dinner? You know—one with rubber chicken swimming in green gravy, or cardboard-coated filet-of-whatever fish? At LOG VI our traditional Saturday night awards banquet will feature a meal prepared by one of only 17 master chefs in the entire U.S. With *hors d'oeuvres* and an open-bar cocktail hour for a warmup, we're talking true gustatorial greatness!

We'll continue to update you on the meet in each issue of *reMARQUE*. In the meantime, look for registration materials to be mailed in the next few weeks—and reserve now the weekend of September 19-21 for LOG VI in Vermont!

—Dan Miller

LEFTOVER PARTS

There's a nice spread on Lotus in the June issue of *Automobile Magazine*...Mike Kimberley says Lotus **hopes to produce about 930 cars in '86**...Lotus **engineering revenues have quintupled** over the past three years...Someone ought to tell whoever wrote the ad copy for Lotus' latest U.K. Esprit ad that Team Lotus has won 7 world championships—not six!...The Esprit **gets good marks** on a road test in the June '86 *Road & Track*...**Rumor mill:** Team Lotus **may be talking** with Honda about using their engines next year...Ferrari **flatly denied** offering Senna and Lotus chief engineer Gerard Ducarouge a \$7.5 million package deal for '87...The Lotus V-8 **may debut** in the Corvette...And finally, the death of Francis Ford Coppolla's son in a Maryland boating accident capped off a bad weekend for actor Griffin O'Neal (son of movie star Ryan), who was with him after being arrested two days earlier for reckless driving and driving without a license in his **Turbo Esprit**.

LOCALOTUS

The Third Annual Spring "Show & Tell" for Lotus owners—particularly those in the NY-NJ-PA area (actually centered around New York City)—was held on Sunday, May 4th. The event, held in Northern New Jersey, drew a continuous stream of cars—an estimated 30 Lotuses—and over 60 people. It was by far our group's best-attended event to date.

The weather was perfect, and the attendees were exposed to a great variety of Lotus cars—ranging from a Mark VI to several Turbo Esprits. Among the light fun and information exchange we were especially pleased to see two Spyder chassis (one in a Europa, one on display), an Eleven LeMans, an 18/21 Formula One, and a Type 27 Formula Junior. Of course, I showed off my new acquisition: the Mark VI "POP 444".

It was interesting to note that Mark Sevens outnumbered all other types!

Our group's next scheduled gathering will be at the New Hope (PA) Auto Show on August 10th. Again this year there will be a special Lotus class, with trophies awarded—but we "experts" will have to supply the judges. Last year's entrants will automatically be mailed entry blanks, and I will also send them to all the "Show & Tell" attendees who left me their names. We will be looking for a good turnout and to continue the conversations of May 4th!

—Pat Dennis

Local Group Contacts

Atlanta, GA—Barry Milberg, (404) 998-5191

Cleveland, OH—Dan Miller, (216) 871-6306

Columbus, OH—Roger Sieling, (614) 262-8279

Detroit, MI—Norm Maasshoff, (313) 268-5076

Houston, TX—Kurt Guerdum, (713) 443-6306

Minneapolis, MN—Tom Schramm, (612) 937-2337

New York City/NJ/Philadelphia, PA—Pat Dennis, (201) 334-6649

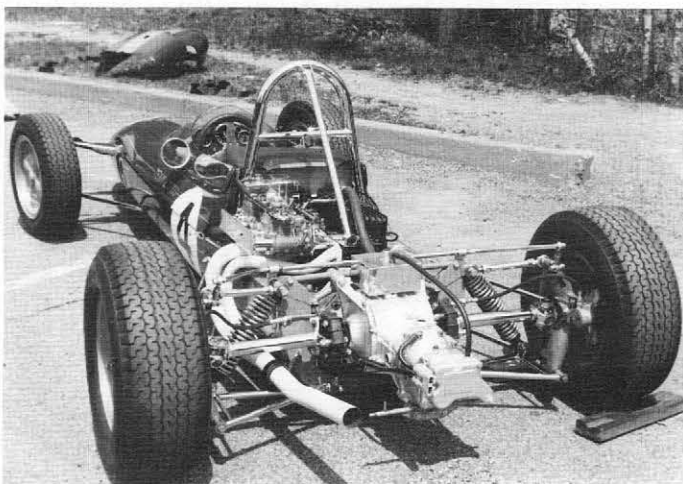
Orlando, FL—Tom Gerry, (305) 862-0318

Tucson, AZ—Jeff LaVigne, (602) 795-1807

Washington, DC—Phil Mitchell, (301) 942-6059



Lotus 18/21 Formula One



Lotus 27 Formula Junior



Pat Dennis

THE LOTUS DOCTOR

Q: I recently purchased a 1978 Esprit S1, which seems to be in good shape. The motor starts right up every time and runs cool, even in stop-and-go summer traffic. The body and chassis look good, with no visible rust. The car has 30,000 miles on it, with not much worn out.

I want to drive the Esprit 2,200 miles round trip between L.A. and Seattle, and wonder if the car will tolerate this kind of (ab)use. If so, what sort of spare parts should I carry? (From my MGB experience, for example, I found it a good idea to carry a spare water pump.) Having heard that the S1 and S2 Esprit wheel bearings tend to deteriorate due to the design of the rear suspension, is there a rule-of-thumb on when and how often they should be replaced? Also, my heater/defroster doesn't work, although the linkages look fine, and I want to know if the heater core might be prone to plugging, if it's easy to fix, or if the problem with the unit is likely to be something else. Finally, do you have any advice on how to best keep my Esprit trouble-free?

A: This one was routed to Charlie Seabrook. His response:

"There is no reason to fear long trips. I've driven my Esprit S2 all over the U.S. and Canada without too much trouble. But there are a few problem areas. One is that long trips at high speed cause the oil pressure to drop; I consider the oil cooler to be too small, and wrote an article in the May 1985 reMARQUE on fitting a 40% larger one. If you drive a lot of miles per year, change the cam timing belt every 30,000 miles, and change it more frequently if you don't drive your car much. (Don't worry about the water pump, however; I haven't had a water pump failure in 213,000 miles of driving in three late-model Lotuses, and it can't be changed easily by the side of the road in any event.)

"I would recommend a Lotus emergency travel kit consisting of a 12-volt test light, an assortment of test wires with alligator clips on each end, a roll of two-inch duct tape, a roll of two-inch masking tape, a tube of GE silicone sealant, an assortment of metric tools and some spare fuses; I also carry a flashlight, a fire extinguisher and an emergency ignition system.

"The rear axle stub thrust bearings are a weak point, as the weight of the car is pressing on them at all times—and especially on rough surfaces, such as expansion strips on concrete highways; if driven mostly on smooth roads, however, some Esprits have covered well over 100,000 miles without trouble. The driver's-side bearing controls the pre-load on the ring gear bearings, and it needs to be set within a tolerance of one- or two-thousandths; the passenger's-side bearing is somewhat easier to change. It's easier to replace the complete stub axle assembly, rather than just the bearing, so it's not cheap—it depends on how much work you can do yourself. With 30,000 miles on your car, I would not change them yet.

"I have heard of several S1 and S2 Esprits that have developed leaks in their heater cores. Yours is not leaking, so perhaps it just needs a cable adjusted, or perhaps the heater hoses have collapsed.

"In general, Lotuses require much tender, loving care. To keep your Esprit relatively trouble-free, I would recommend: 1) Change the distributor points to an electronic system. 2) Use a fuel additive to prevent the buildup of deposits on the intake valves. 3) Allot one day per week to work on the car. On this schedule you can adjust the front wheel bearings, check front and rear toe-in, balance the wheels, balance curb adjustment and top up dash pots, change the spark plugs, check the condition of the motor mounts (especially on the left side), change the V-belts or adjust their tension, add Barrs Leak to the cooling system every six months, adjust the free travel of the clutch, adjust various body parts (such as the doors, headlight pods and rear hatch), and wash, polish and wax the car. If you get through your checklist in less than eight hours, you're not doing enough!

"Have fun on your Seattle trip."

CV JOINTS FOR THE ELAN

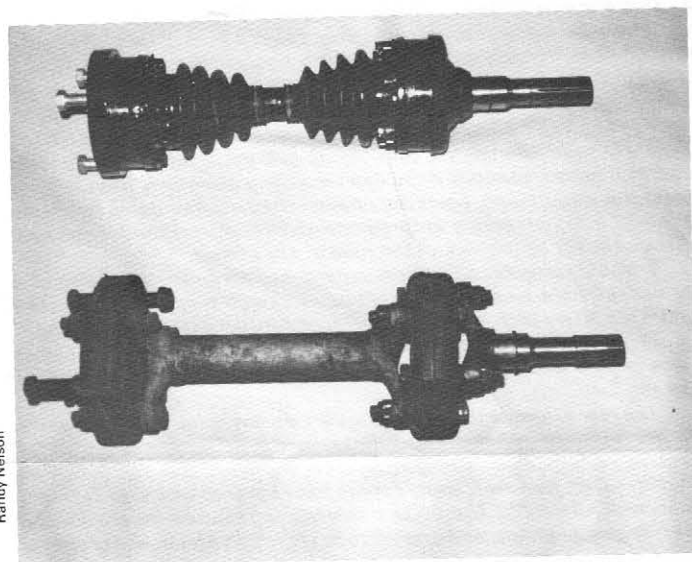
Having tired of fighting with donuts while working on the rear drive and also tired of donut wind-up driving, a while back I converted a set of Volkswagen constant velocity joints for use on my Elan. After researching the cv-joint sizes available, I found that the joints used on the Bus met the power requirements (as did BMW joints at double the cost), so I bought two sides from a junkyard for \$35 each to use for the conversion.

Each side consists of two cv joints, the intermediate shaft, the wheel axle, rubber boots, washers, clips and bolts. The most important point initially is to dismantle the joints to check for pitting. I made several return trips to exchange bad joints for good joints and finally got enough acceptable VW parts.

The intermediate shaft, as used on the VW, is too long, so it needs annealing, cutting and welding, then normalizing and rehardening as shown in the drawing. I machined the VW wheel axle to replace the Elan differential output shaft in order to eliminate an adapter plate and to have a stronger shaft. Again, this required annealing, machining, rehardening, and then grinding the oil seal and bearing surface. On the Elan wheel axle side, however, an adapter plate was needed; for that I used 2024-T351 aluminum.

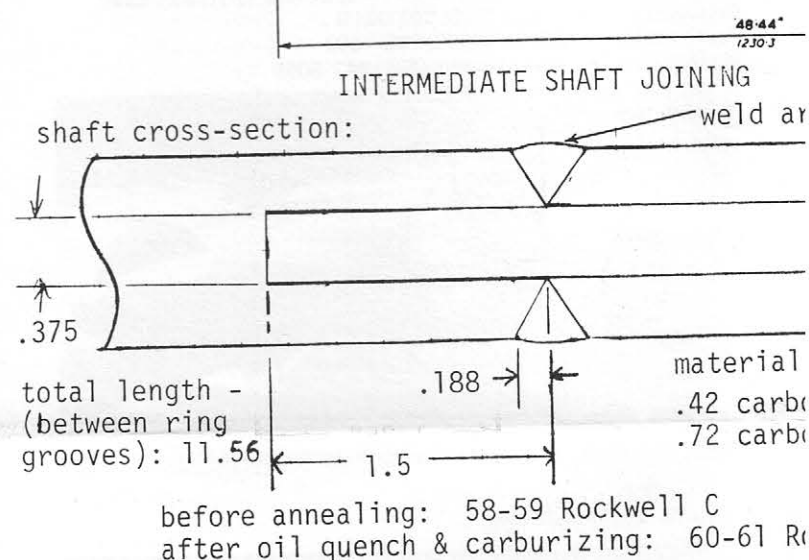
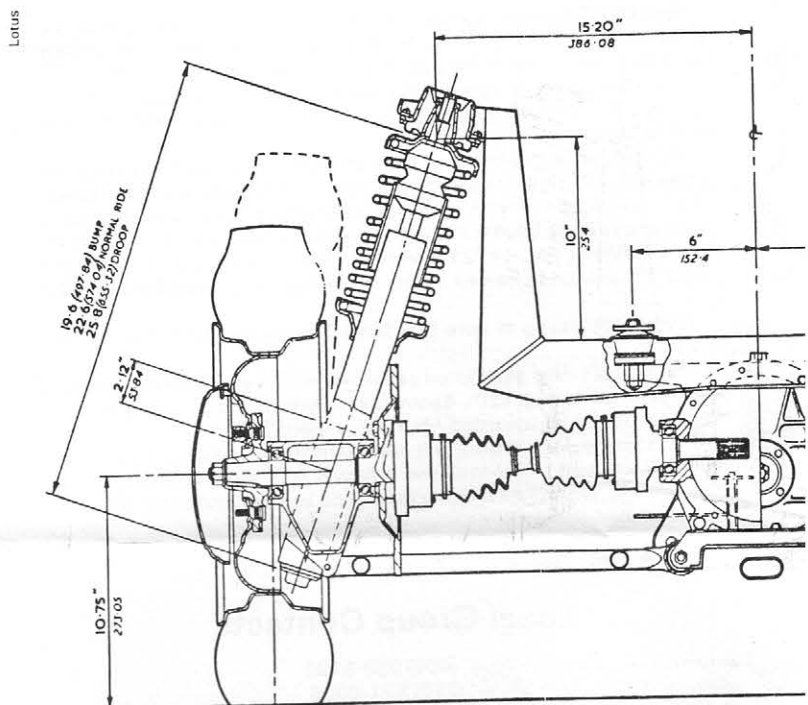
I have had this assembly on my Elan since October 1979 and have had absolutely no problem with it. It is much easier to perform any work requiring removal of the intermediate shaft assembly and it has a much nicer throttle response in comparison to the donut wind-up. I'm sure that if I had put in new donuts in 1979 I would be replacing them again by now, so some cost and time savings have also been realized. In comparison to u-joint assemblies, the cv-joint assembly provides a purer (constant velocity) transference of power and needs no sliding-spline mechanism. The only drawback to this assembly is a weight increase of approximately 40%, or about four pounds, over the original.

—Randy Nelson



Randy Nelson

GENERAL ARRANGEMENT OF F

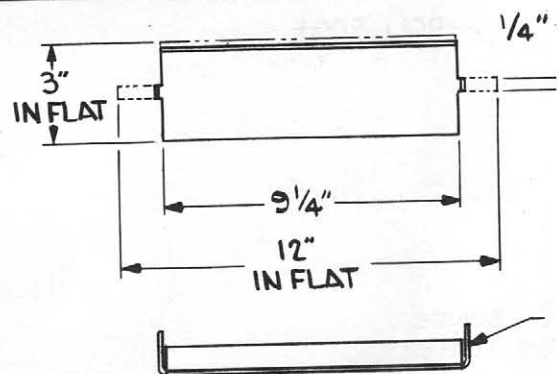


AIR DEFLECTORS FOR THE EUROPA

Several years ago I invested about an hour or so of time into a little idea of mine for adding some ventilation to my Europa. Two air deflectors—one for each side—were simple to build as indicated in the accompanying diagrams; I used .040-inch aluminum and polished it to match my window trim.

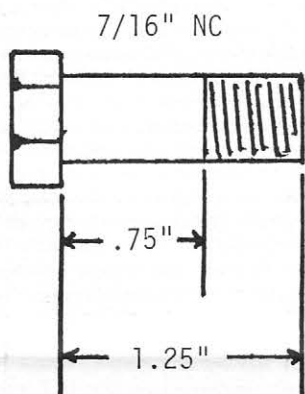
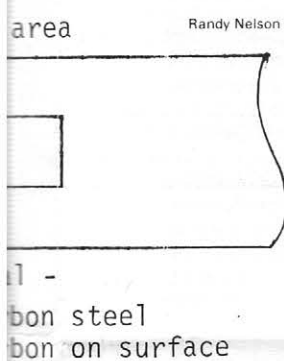
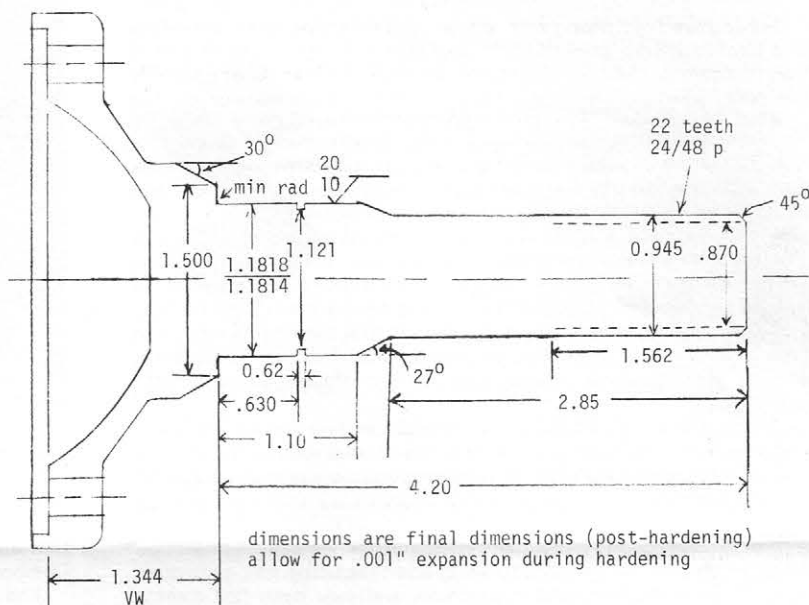
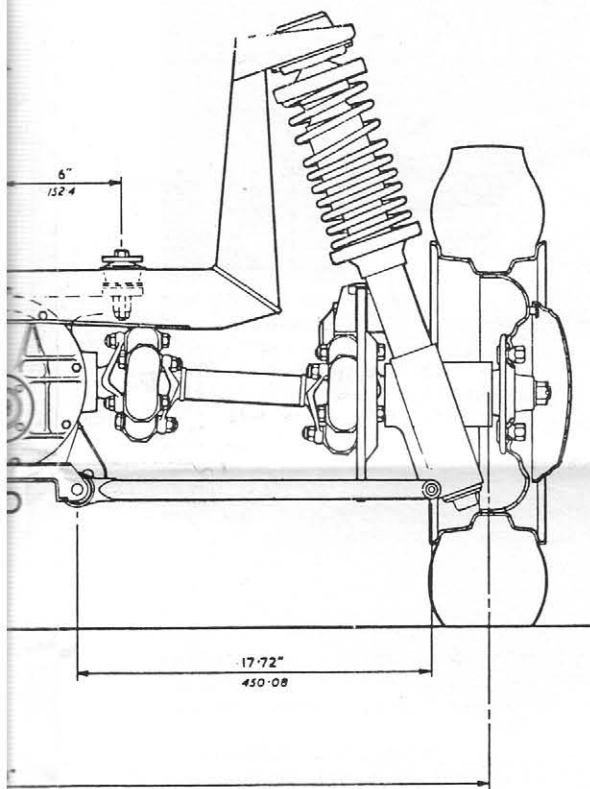
Installed, the curved part extends out the window and directs cool air into the passenger area. I glued a small piece of inner tube on the bottom, where it rests on the side glass, to cushion the force applied when the side window is run up tight against the deflector to hold it in place. The top fits up into the window channel and a very small notch holds it in place.

—Stan Swartz

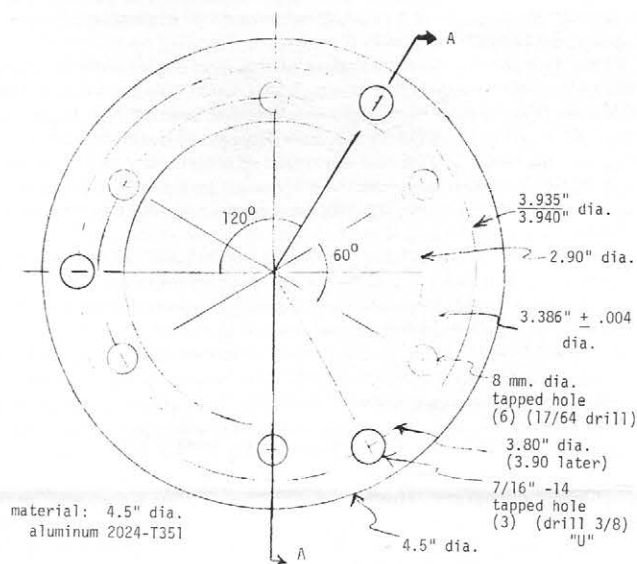
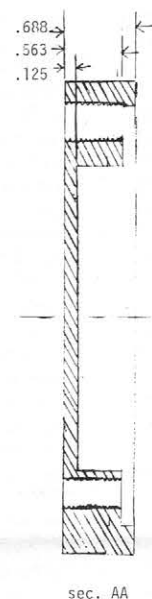


Phil Cannon

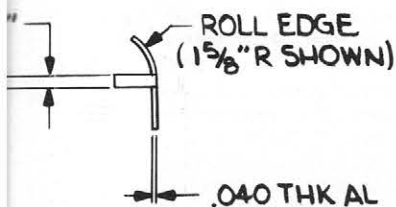
DRIVER'S SIDE
(PASSENGER'S OPPOSITE)



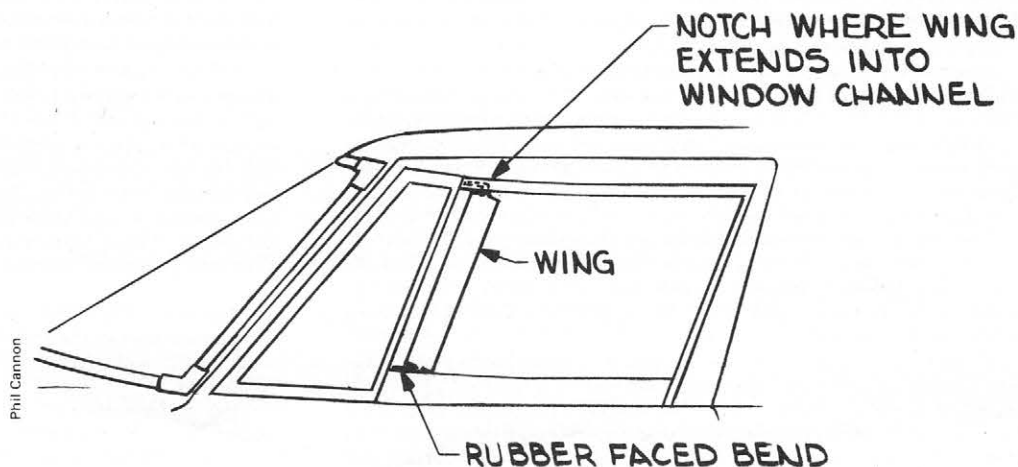
LOTUS STUB AXLE-ADAPTER PLATE
CONNECTING BOLTS



CV OUTPUT SHAFT ADAPTER



RUBBER BONDED
(INNER TUBE)



(ENGINE, from page 1)

and embittered by the repeated delays, which he blames on a lack of sufficient diligence on Lotus' part. "If Colin Chapman had been around," he said, "the engine would have been finished—or canned—long before now. Due to their lack of commitment, the project has fallen to pieces."

Lotus owns 20 percent of Aviation Composites. It has been doing the microlight engine development work under an agreement that contains no performance clauses, according to Lawrence. This means that Lotus is not obligated to develop a production engine by a given date and incurs no financial penalties as a result of all the delays.

While Lawrence is forced to wait and count his mounting losses, the difficulty of his situation is compounded by Lotus' continuing refusal to give him a firm delivery date in writing. Without such a commitment, he said, he cannot obtain additional financing for his company. The last, unofficial word he received from Lotus was that the engine would be ready by September; privately he's heard that, while some people are working on it, progress is miniscule and it might not be ready until January.

"We've lost over £750,000 on it," he said, "and we cannot take these losses forever." He noted that Lotus claims to have spent a comparable sum on engine development, but thinks the actual amount might be substantially less.

Lawrence strongly believes that Lotus may be deliberately dragging its corporate feet on the project. He noted that it is not in the mainstream of Lotus' current business interests, and that Lotus has expressed concern about product liability exposure and may have had second thoughts about its involvement. He suspects that Lotus may feel, by delaying long enough, that Aviation Composites will go under and Lotus will not have to fulfill its commitment.

"Let's be honest about it. Anyone of their caliber who can't put out an engine that simple is either incompetent or not being diligent. And they are not incompetent," he said. According to Lawrence, for two years he's had underwriters lined up and ready to provide product liability insurance, once there is a production version of the engine for them to evaluate so they can quantify the risk.

Asked about the current status of the microlight engine program, Lotus's commercial director, Martin Long, said, "We are in the throes of durability testing [the microlight engine] and proceeding according to plan." As to why it has taken Lotus three years to get to this point in the program, he said, "We've had a number of priorities in the engineering area, so the project hasn't had the enormous priority of other programs. But we have continuously developed it on an ongoing basis for the last 18 months."

Long added, "A typical development program with an all-new engine takes four to five years." But he would not comment on the inconsistency of such a time frame with the originally projected 1983 completion date for the engine and the subsequent delays.

Long affirmed that Lotus does have concerns about product liability exposure, but he denied that this had in any way influenced Lotus' level of effort on the project, and he strongly reaffirmed the company's commitment to the engine. "When you consider we've spent over £750,000 on the program so far, we feel our commitment has been extraordinary," he said. "We are committed on an ongoing basis to completing the development program." But he refused to speculate on when that completion date might be.

To Malcolm Lawrence, the situation looked a lot rosier last fall. In an interview with *LOTUS reMARQUE* in Oshkosh, Wisconsin, Lawrence said that the engine, in two- and four-cylinder versions, would be in production in January 1986, and he was printing sales literature and taking orders on that basis. He also anticipated then that the production version of the plane would be on sale in England by late last spring and available in the U.S. this summer.

Asked at the time to trace the development of the venture from the beginning, Lawrence said, "My partner, Sandy Gilmore, who is now the chairman of Aviation Composites, was the stockbroker who underwrote the Group Lotus stock issue in 1968; he's been a financial advisor to Lotus and is a great friend of [former Lotus director] Peter Kirwan-Taylor. He and I were working on another project when I was looking at manufacturing an aircraft with a view to going into the military market for observation vehicles—because my particular background was military. Its design was similar to the one Colin was working on when he died. Sandy Gilmore, being a stockbroker rather than an engineer, looked to the designs I had and mistook them for Colin's, but then discovered they weren't the same."

When Lotus' financial problems came to a head shortly after Chapman's death, according to Lawrence, "We were approached by Lotus to see whether we would like to do something with the project, because it was felt that we were capable of producing the money that was required to invest. Lotus at that time just looked at it, put it on the back burner, and



Malcolm Lawrence with the INAV Moni, the plane that at one point was slated to become the first to use the Lotus microlight engine.

said, 'There's no way that we can put any finance into this type of project; it's away from our mainstream of operation.' The people who came in to refinance Lotus agreed that they did not wish to diversify away from the car industry, that the company needed to be built up in that area. So we pulled together an arrangement by which Aviation Composites would manufacture the aircraft."

Lotus did the development work on the aircraft engine, but there were "quite a number of setbacks," Lawrence said. "Most of these things were not mechanical or engineering problems; they were administrative details, rather than anything else. The company hadn't been refinanced at that time, and we couldn't sign an agreement until the company had been. Then the new board came in, and they didn't know what they wanted to do." He added, "Colin's original engine designs were up to his normal standard—excellent! They needed to be detailed out more—his were conceptual thought processes, rather than anything else."

Other factors slowed the engine's development, according to Lawrence. "It was only at a fairly late stage that we found there was such a high demand for this engine that we couldn't manufacture it using sand castings, as we had previously thought, simply because you can't get the volume and it becomes a very expensive proposition; 2,500 engines a year is basically the breakeven point between sand castings and die castings. When we went over to die casting, we found the castings more difficult to produce, so we had to make other modifications, and these are long and drawn out things."

While Lotus was proceeding with the engine development, Aviation Composites, according to Lawrence, worked on productionizing the prototype aircraft design that had been done by Burt Rutan at the instigation of Colin Chapman. The development, production and marketing of the aircraft were originally to have been done in conjunction with California-based Eipper Aircraft, the largest ultralight manufacturer, but the U.S. recession put that firm into bankruptcy. Once in Chapter 11, Eipper was no longer in a position to fulfill its part of the deal. So Aviation Composites stepped in.

Aviation Composites, notwithstanding its name, had not yet manufactured aircraft as such; its expertise was in composites (one of its partners was once a manufacturer of Formula One car tubs), and its initial work had involved using its composites technology to produce such miscellaneous products as building materials, sewerage tank covers and car bodies. So last July, Lawrence purchased the assets of another U.S. experimental aircraft maker, Monet, and set up in Oshkosh a new entity called Innovative Aviation (INAV) to provide a U.S. base for engine manufacturing and aircraft sales.

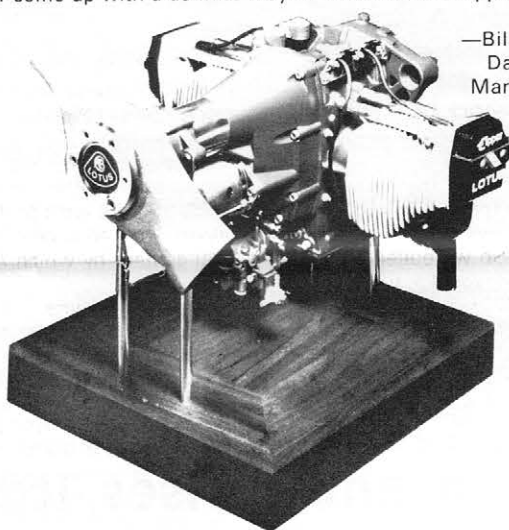
A Monet aircraft, the Moni, was initially slated to be the first plane to use the four-cylinder Lotus engine. But with the additional engine delays, the production version of the Chapman microlight (dubbed the Mercury) has been essentially completed. The Mercury has a canard-type (small-front-wing), two-place (side-by-side) configuration that looks quite similar to the prototype, except for a slightly revised canopy line. Lawrence maintains that it no longer can be strictly termed a microlight. "We've taken it past the microlight stage, because we consider it to be a better aircraft than what people who look at ultralights think of those, you see." Most significantly, modifications were done so that the Mercury qualifies for insurance purposes as a motorized glider and can be sold in the U.S. He estimated it would retail for \$15,000, ready to fly, with performance comparable to a Cessna 150 or Piper Tomahawk.

Last fall Lawrence anticipated initially selling 2,500 engines a year, and he hoped that aircraft sales would reach 200 a year by the end of 1987. Now, he has shipped the first production plane to Oshkosh, ready

to be unveiled at the big, annual experimental aircraft "fly-in" later this summer—without an engine.

At this point, Lawrence would just as soon Lotus handed over the engine development project as it sits, and let Aviation Composites arrange to do what he feels needs to be done to get the unit production-ready. He said, if it were up to him, he would derate the horsepower somewhat and rethink the idea of driving the propeller off the camshaft.

But Malcolm Lawrence does not, as of now, have that option. And he can take little solace in the words of Lotus spokesman Don McLauchlan, quoted in the June issue of *Automobile Magazine*: "Speed and flexibility is another part of the legacy that attracts clients [to Lotus]. We've a reputation for solving problems, not just talking about them. Big corporations have big committees which eventually decide not to make decisions, or come up with a definite maybe. That doesn't happen here."



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FOR SALE: 1967 Lotus Cortina, 42,570 mi., 4-speed, Webers, new brakes and front Konis. Car in storage 10 years, has small amount of rust, floor is solid. Black interior in excellent condition, \$3,500. Philip Downs, 2012 Gayhart St., Xenia, OH 45385, (513) 372-5938.

FOR SALE: 1970 Europa S2, excellent condition, alloy wheels, engine totally rebuilt. New paint, battery and Konis. Have manual, receipts. \$4,950 or will consider trade. Jacques Smith, (301) 972-0499.

FOR SALE: Parting out 1971 Elan—doors, with motors and glass, excellent condition, \$200 ea.; door liners, \$30; front seats, \$100 ea.; rear suspension, with brakes and half shaft, \$200; radiator, with electric fan, \$50; independent rear suspension, rear end center with mounts and donuts, \$175; more. Jean Goheen, (914) 246-8779.

FOR SALE: 1974 Europa TC Special, 3,000 mi. on balanced engine, 4-speed, new paint, AM/FM/cassette, TC wheels, Yokohamas. \$6,400. Jeff Kirkendall, (301) 686-4089 or (301) 765-6166.

FOR SALE: 1965 Lotus Super Seven America, LHD. New lower frame rails, .050 skin, red fiberglass, factory top and interior. Webers, two sets of wheels and tires. \$12,500. Chris Custer, 7315 Parkview Dr., Frederick, MD 21701, (301) 293-1777.

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FOR SALE: 1963 Elan S2 convertible, RHD, 1650cc twin cam with "tall block" conversion, twin Weber 40DCOE, aluminum flywheel. New seats, dash, door panels, gauges, tonneau, shift knob. Momo Veloce steering wheel, Blaupunkt Richmond, Spyder solid half shafts, Aeroquip brake lines, Panasports and P6s, flares. \$7,200. Will consider older Formula Ford or Europa project car as part trade. Scott Berryman, P.O. Box 540, Big Fork, MT 59901, (406) 837-4243.

FOR SALE: Esprit workshop manual and service/parts manual, \$25 ea.; Esprit S2 air duct bezel (hatch compartment), new, \$10; four Europa hubcaps, excellent, \$10; four Elan S2 steel wheels, \$40; Goodyear Racing Eagles, two 20 x 6.5 x 13, two 21.5 x 8.5 x 13, unused, \$200. Scott Berryman, P.O. Box 540, Big Fork, MT 59901, (406) 837-4243.

FOR SALE: 1970 Elan Plus 2, meticulously restored. Bill Bailey, 13226 Wenham Ave., Baton Rouge, LA 70815, (504) 272-4014.

FOR SALE: 1978 Esprit, white, tan interior, polished wheels. New tires, belts, water pump. Immaculate. 18,000 mi., all service records, Al Scrivner Lotus. Immediate forced sale due to wife's major surgery. Duren Jones, (213) 457-3808 6-9 P.M.

FOR SALE: 1973 Europa TC, John Player Special, black/black, 39,000 mi., alloy wheels. Original, excellent condition. \$7,500. Gary, (412) 593-7050.

FOR SALE: 1974 Europa JPS, full restoration, concours condition, much chrome work, Webers, always garaged. Original owner, have all manuals and some spares. Angela, (804) 595-6593 before 2 P.M. or anytime weekends.

FOR SALE: 1962 Lotus Super 7, excellent condition, full weather gear, garaged, many spares and trailer available. Angela, (804) 595-6593 before 2 P.M. or anytime weekends.

FOR SALE: 1970 Europa, #65/2675, mfg. 11/69, yellow, black interior. Original owner, 16,411 mi., garaged in heated garage, never raced or wrecked, all maintenance records. \$10,000. Richard Anderson, 927 Franklin Ave., River Forest, IL 60305, (312) 366-5661.

FOR SALE: 1985 Westfield Seven S1, 1275cc MG engine, 4-speed, Michelins, BRG and aluminum, twin SU carbs, new valve job, adjustable shims, dealer-built at Valley Motor Sport in Roanoke. \$7,875. Chris Custer, 7315 Parkview Dr., Frederick, MD 21701, (301) 293-1777.

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FOR SALE: 1974 Elite, 21,000 mi., professionally restored '85, 12 coats of red paint. New wool carpets, seats and roof-lining. Pirelli P6s. AM/FM/cassette, A/C. \$13,500/negotiable. Clive Stuart-Findlay, (713) 583-2377 days, (713) 850-7456 eves.

FOR SALE: 1970 Europa S2, Weber, electric fuel pump. New dash, tires, rear bearing, exhaust, water pump, coil. \$5,300. Gary Groom, 2609 East Crestline Dr., Bellingham, WA 98226, (206) 734-9504.

FOR SALE: 1974 Europa TC Special, 17,500 mi., showroom condition, jade green, many upgrades/improvements, extra set of Minilite wheels. \$11,900. Lloyd Cayes, (703) 560-4169 home, (703) 285-2447 work.

FOR SALE: Four Lotus alloy wheels for Europa Special, excellent, \$200 O.B.O.; Stromberg head for twin cam, excellent, \$250 O.B.O. Len Senerote, 2425 Nottingham Place, Grand Prairie, TX 75050, (214) 767-8063, (214) 641-3861 eves.

WANTED: S3 Elan roof section from FHC to DHC conversion. If you have one or know of someone who does, call Tom at (203) 758-2585.

FOR SALE: 1967 Lotus-Ford Cortina Mk. I, excellent condition, with spare engine, transmission, drive train, rear axle, mag wheels, limited slip diff, suspension, more. James Dick, (206) 838-8960.

WANTED: 1973-4 Europa TC, preferably John Player Special, 5-speed only. Looking for well-maintained car with rebuilt engine and trans, rebuilt suspension a plus. Price range \$5,500-8,000. Kaz Ota, 8124 Shelter Creek Lane, San Bruno, CA 94066, (415) 872-1874.

FOR SALE: Europa S2 parts—frame (with less than 5,000 mi.) and suspension parts; 4-speed transmission. Frame delivery possible with reasonable offer. Briggs Pletcher, (302) 792-0514 after 7 P.M.

FOR SALE: 1966 Elan Coupe, good condition. New header, starter motor, battery. Knockoffs, electric fan. Asking \$6,000. Nick, (516) 921-6704 x287 days, (516) 225-0452 eves.

FOR SALE: 1971-Europa, #1190R, 18,000 mi., stored 12 years. Restored 90-95%, needs a few minor parts, detailing and paint. Car is licensed, starts easily, runs cool and is driven regularly. \$3,500, interesting trades considered. John Thompson, (601) 632-4210.

FOR SALE: 1971 Renault-Europa parts—three original steel wheels, \$35 ea.; three Lotus logo hubcaps, fair, \$5 ea. All for \$100. John Thompson, (601) 632-4210.

FOR SALE: Renault-Europa S2 shop and parts manuals, both complete and in excellent condition, \$65. John Thompson, (601) 632-4210.

FOR SALE: Parts for Elan S3 or S4—repairable gas tank, \$30; driver's side fiberglass wheel arch, new, as from Bean, \$50; electric motor-driven radiator fan, \$50; negative-ground tachometer, excellent condition, \$80. Also 1971 Stromberg head, with S2 cams, valves, springs, excellent condition, \$200; 1972 Stromberg head, done by Lotus Racing West, polished, ported, blueprinted, cams, valves, springs, ready to bolt on and specified for Elan Big Valve Spring car, 300 mi., \$500. Tim Oei, 241 Rowayton Ave., Rowayton, CT 06853, (203) 866-2470.

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