



NINES

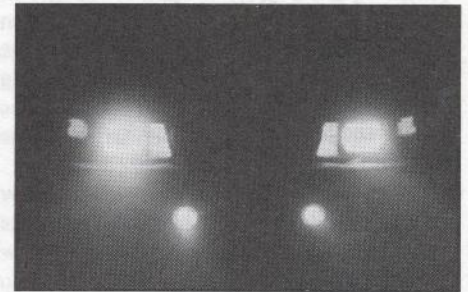
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no. 225

The SAAB Club Magazine



Milwaukee Saab Cult members Pat Greer (left) and Andy Saksa peer out of a 1958 SAAB 93B



Lighting
**Peering through the
mystery of Fog Lights**
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Championship winning
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Regional Club News

International Saab Clubs Meet.

June 16 - 19, 1995 - City of Bad Neuenahr/Ahrweiler, Germany.

National Saab Owners Convention

Aug 11-13 - Atlanta, GA (tentative)

Feb. 4 - Minnesota Winter Rallye. Duluth to Grand Marais, MN and back. 400 miles. Tim Winker, 218-724-1336.

Feb. 11-19 - Rallye of the Lost Patrol. Seattle to Inuvik, NWT and back. Satch Carlson, 503-285-2766.

May 13-14 - Automotion '95. Car show & Swap Meet. Wisc. Dells WI. Les Bremer, 608-254-4553.

June 17-18 - Motor Muster at Greenfield Village & Henry Ford Museum, Dearborn MI. Open to all models from 1933 to 1969. Registration by April 28, 1995. 313/271-1620 Ext. 527.

Green Mountain Saab Club

July 15 - Annual meeting at Saabfest '95, Walden, NY.
Cathleen Pembroke, 802/223-0025.

Milwaukee Saab Club

Jan 28 - Holiday party, Servite Woods.
Jan 29 - Ice Trial, Lk Sinissippi.
Feb 12 - CRSCCA Ice Trial, Twin Lakes WI.
Feb 13 - Board meeting.
Feb 19 - Ice Trial, Lk Sinissippi.
Mar 13 - Board meeting.

Minnesota Saab Club

Feb 2 - Membership meeting
Feb 11 - Winter Follies Rally.
Mar 2 - Membership meeting
Apr 6 - Membership meeting

New England Sonett Club

July 15 - Annual meeting at Saabfest '95, Walden, NY.
Bruce Turk, 914/778-2469.

Saab Club of Greater New York

July 15 - Annual meeting at Saabfest '95, Walden, NY.
Robert Wagner, 212/727-0793.

Saab Club of Northeast PA.

Ron Augelli
1723 Clearview St
Scranton PA 18508
717/969-9863.

SAAB Club of North America

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Editorial contributions are welcome. All material submitted is assumed to be for publication unless clearly labeled otherwise. Double-spaced typewritten articles are preferred, but most anything is acceptable. We cannot answer every inquiry and reserve the right to edit materials submitted.

Those wishing to submit articles or letters on 5¼" or 3½" IBM-formatted disks, please convert to ASCII text files (<filename>.TXT). Please include a printed hard copy, and a SASE if you want the disk returned.

Photos: Preferred format for photos is black-and-white, in 5"x7" or 8"x10". Good contrast color photos can usually be accommodated, no smaller than 3½"x5", please. Photos used on the cover will be rewarded with a one year subscription to NINES.

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RETURNED CHECKS: There will be a fee of \$10.00 charged for checks returned for any reason.

Back Issues of NINES

Prices include mailing to U.S. addresses.

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#196	October 1990	\$2.50
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#198	December 1990	\$2.50
#199	January 1991	\$3.00
#200/201	Feb/Mar 1991	\$5.00
#202	April 1991	\$3.00
#203	May 1991	\$3.00
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Collection of all remaining issues, total value over \$100.00.

\$65.00

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Saab Convention '95

Early in January, the Saab Clubs of Georgia in conjunction with Saab Cars USA, Inc., announced that the 1995 National Saab Owners Convention will be held near Atlanta. A location has not yet been chosen, but the tentative dates are August 11 - 13.

Co-chairs for the event will be Chris McPherson for the Saab Clubs of Georgia and Marie Prezioso for Saab Cars USA.

Letters to NINES

Rumors of my demise....

As you may or may not know, my company, Parrformance, the Saab Store has undergone some changes in staff. As a mechanic and a lover of Saabs, I established this firm in 1980, but as an entrepreneur, I am always checking the door of opportunity for new business endeavors. This past summer, one was presented to me that I could not turn down.

Knowing this would demand more of my time, I made it known to my faithful "right hand man" Tim Brown, that I was interested in selling some interest in my company to supplement management. I considered Tim initially because of his years with my company as it grew. Unfortunately, Tim and I did not see "eye to eye" and negotiations broke up. Tim and Kevin then decided they would be better off elsewhere and packed up and left my company without any warning.

Rumors began to spread about my closing the Saab Store. Nothing could be further from the truth. My negotiations with other Saab aficionados in the business will insure continuity with experienced personnell under my ultimate direction.

I can assure you my concept of fair prices, friendly staff and pure bred Saab enthusiasm will remain within my company. I thank you for your past patronage and I hope to see you at the Saab Store soon.

Rick Parr, President
Lititz, PA

Where's the savings?

I am writing in response to the letter from Bob Shaw in issue #224 of Nines. My experience is totally different from his. I have owned three Saabs in the last 10 years. One was a used Turbo that I sold at 135,000 miles still humming with the original turbocharger.

I don't know what kind of cars that Mr. Shaw has owned, but cars suffer little failures over time. Most of the items that he talked about are trivial items, such as heater valves. No car can last for a long period without some kind of failure.

As for the "market segment" that he refers to, Mr. Shaw must be living in the past. The average car nowadays costs

upwards of \$20,000. Saabs are not exclusively priced when you consider the longevity and performance.

In a way I am glad that Mr. Shaw has decided to buy a Volvo. I hope that he joins their club and whines about the inevitable little failures. That can only help more people buy Saabs.

Martin Mercorelli
Scotch Plains, NJ

Interview with James Crumlish

Say, does Mr. ex-Director of Finance and Business Planning for the Luxury Car Platform whatever of General Motors have any stats on how many ex-Saab owners are driving Subarus? It seems to me Saab has kissed that market goodbye so they can sell \$10,000 marked-up convertibles to shopping mall bimbos. Like the \$45,000 Chevy Suburban Saab/GM is boxing themselves into a small fickle market and saying goodbye to a loyal market segment Saab had built up since their introduction here. After a 96, 99 and 900 my next car will probably be a Legacy - solid, reliable all-weather transport. I'll miss the sporty-fun stuff but would rather keep the money myself than make that size contribution to Mr. Crumlish's annual bonus. Good Luck Saab/GM when the day of reckoning gets here. Didn't GM learn anything from the last recession?

James S. Grant
Seattle, WA

Have you priced a Legacy lately? Comparably equipped to a 900 they are well above \$20,000. There is no six-cylinder, no turbo, only the 135 hp flat-four. And with the extra mechanical stress from AWD, the likelihood of larger repair bills.

Subaru has long been considered the Japanese Saab, and for a many years, cost of manufacture kept them priced below Saab. Saab's alliance with GM Europe has made Saab more competitive, enough so that it has been named a Best Buy by several consumer groups (see Saab News, page 13).

More tech, less talk

In issue #224, on page 28, you made the statement about the possibility of reducing the number of Tech Sessions at the annual Saab Club Conventions. This is the WRONG way to go. One of my main reasons for attending the Conventions is the Tech Sessions. We need MORE not less of them. I think the vast majority of our members feel the same way. We are very interested in maintaining our Saabs and

understanding what makes them tick. The Tech Sessions are perfect for obtaining more of this information.

This leads me to another topic I had been thinking about writing to you about. It seems more and more of the newsletters/magazine is devoted to racing. I appreciate that some of the members are big into racing and I am pleased when our Saabs do well. However, I again think most of our members are not into racing nor care that much about it. Again, I think the value of the newsletter/magazine to most of us is the technical aspects of taking care of our cars. I only glance at the racing articles and start getting annoyed when there is more than one racing article per issue.

I think you are doing a great job, but I want to give you some food for thought and alert you to the fact that I believe most of us want technical information. I realize there needs to be a balance and that you can't please everyone. Please take my criticism constructively. I have been a member since the Dick Grossman era of the early 1970's and still look forward to each copy in the mail.

Richard Bohn
Hollis NH

P.S. I think Saab would be doing everyone and themselves a great favor by licensing independent repair places that meet some reasonable set of servicing criteria. I think Saab would sell more cars in the end.

I, too, would like to see more tech stuff in NINES. Unfortunately, I get to write much of what goes into each issue instead of merely editing what is submitted, and I am not good at writing about how to fix stuff. My interests, and therefore what I am most comfortable writing about, are Saab history and competitions. Sometimes, in an effort to fill the pages, I write an article on what I know best. Tech articles take me weeks (sometimes months) to research and write.

Any member is welcome - no, encouraged! - to write about what they have done to their Saab. That is what the Saab Club is all about, a sharing of things learned about our cars. Hit the word processor, typewriter, or scribble it with a crayon on any old piece of paper. I've received stories written on the back of restaurant placemats and telephone book pages.

Thanks for the help

My '80 99 and '86 9000T both appreciate all your work. Small note: I just put four Hakka 9's on the 99. Boy is ride ever better! I'm going to have to call Pat

Greer back & get some summer tires with a similar sidewall construction. I've tried different combinations of tires and shocks and haven't been happy for several years. Should I get rid of the aftermarket gas shocks and go back to OEM hydraulics? The small bumps & tar strips are getting horrible.

As a sidelight, I owned a '73 96 right-hand drive while living in England from '83 to '87. Noticed a bit of stiffness when shifting into 3rd and a fairly noisy gearbox (4-speed on the left side of column) but was too busy working. (F-111 pilot at RAF Upper Heyford in the US Air Force). After about a year of driving it that way, I bought a Haynes manual, looked up "Noisy/hard shifting gearbox." They suggested changing the fluid.

I bought a couple of pints, put a pan under the car and unscrewed what I thought was the gearbox drain. Nothing came out so I opened up the fill cap on top and looked down. I could see straight through to the ground! I'd driven this poor 96 dry for a year-75 mph, freewheel and all. And it didn't leak out either. Took a few seconds to regain my composure - plus I had to retract all the bad thoughts I'd had while forcing it into 3rd many times (my wife hated to drive it for that reason - 'her' car was the '80 99 bought new in Colo. Springs, CO - still drive it to work and O'Hare - a 73 mi. one way trip once per week - only about 155K miles though).

I'm now a pilot for American and you see plenty of Saabs in the employee lot there, but not as many as the typical Air Force fighter squadron - Saab is one of the favorites in the squadrons I was in.

Oh yes, the 96 was much quieter with transmission fluid in it. Quite a testimony to the quality of Swedish steel - can't think of many cars that wouldn't have melted the bearings or gear races in a few miles, dry.

John R. Fitzgerald
Waterford, WI

Fan mail

I would like to take this opportunity to tell you how much I enjoy NINES. I have been a member for a little over two years and this is my first real letter. I am the proud owner of 2 1/2 Saabs, and '84 900 turbo, a '71 Sonett III, and a '73 Sonett III parts car. I am slowly becoming a Saab-a-holic, collecting back issues of NINES and SAAB SOUNDINGS, subscribing to Jack's outstanding magazine THE SAAB JOURNAL, collecting T-shirts and hat pins. I must say that I think I am Saab's biggest fan. At least the guys at the local dealership (Stokes Saab-



OUR TWO SAABS

by Mike Szostkiewicz

My wife and I own two Saabs, you see, an '84 900T, and a '71 Sonett III.

Hers has lots more luxuries with a CD, sunroof and A/C.

Mine is a rare, cute classic and people have told me, they wished they had it! I've spent many an hour just fiddling and tinkering, from adjusting the valves and carb, to additional painting.

Most recently I've had to replace the V4 water pump to get my Little Mr. Saab out of his slump.

My first car was a '79 99 GL, 2 door with a 4 on the floor, what more could I ask for?

I was in high school then and a novice driver as such, and soon, all too soon, I would burn out the clutch.

I then vowed to one day own another Saab.

In the interim, a Spectrum, a truck, a Pulsar, but none could really do the job.

For us, only one car can there be!

My wife and I own two Saabs, you see.

Isuzu 1-800-476-9768) are getting to know me very well.

I am in the Navy, stationed in Charleston, South Carolina for only a few more months, then it's off to Corpus Christi, Texas. While I've been here in Charleston (three years now), I've had pretty good luck with my Saabs (except for South Carolina eating away at my suspension). Before I got my Sonett, I never used to much mechanical "tinkering". Hell, I used to take my cars to Jiffy Lube to get my oil changed. Being married and especially being in the Navy, I had to find some less expensive ways to keep up my car, so I started to do a little at a time. I began to enlist the aid of some of the guys in my unit and now I can say I'm a fairly good mechanic (on the V4 engine that is).

There is one thing for sure, that if there were something I couldn't do, I would take my car to Darryl Beech of Charleston Import Automotive, 7410 Cross County Rd, N. Charleston SC 29418, ph 803/552-6555. If anyone can fix anything wrong on a Saab (or any other import for that matter), Darryl can.

When I first purchased my Sonett III in

August of '92, I knew I needed to find a good, reliable mechanic. Not one of these backyard, back-stabbing swindlers that everyone has a horror story about. I went through the yellow pages and mapped out the area. Most of the mechanics had no clue as to what kind of car I had. When I pulled into Darryl's shop I had a good feeling. I saw a '55 Jag XKE in a partial state of restoration along with a Triumph TR3 and a few other elderly imports. Darryl was extremely knowledgeable about vintage Saabs. I then said to myself "Here endeth my search!" In fact, the only thing I'm going to miss about Charleston is my mechanic, Darryl.

Anyone who is contemplating purchasing a V4, and especially a 2 stroke should DEFINITELY take the extra time to seek out the vintage Saaber dream come true, a reliable mechanic!!!

Finally, a picture of myself - as my wife was taking the picture - with "Our Two Saabs".

Mike Szostkiewicz
North Charleston, SC

Doktor Nio's Saab Klinik

Submit your questions with as complete information on the problem as possible, also giving the year and model of SAAB. Problems of general interest will be answered here. No requests for personal replies please. Questions which would require modification of, or would defeat Federally required emissions systems will not be answered. For a proper diagnosis, it is recommended that you contact an authorized SAAB dealer or repair shop.

Send your questions to: SAAB KLINIK, 2416 London Road, Unit 900, Duluth, MN 55812-2221

I have a 1992 9000 2.3 Turbo CD which is experiencing a problem very similar to that described by Gordon Hamilton in NINES #221, page 5. As I am living in Belgium I need more information so I can find someone that can help. Can you tell me what "ISAT" stands for and is this tester normally available at Saab or does one have to call various garages to locate such a tester?

I have a friend that has a six month old 1994 9000 2.3 turbo and the problem experienced was this: On one occasion after driving the car for a short period it was parked for 5 minutes. After the errand was completed he tried to restart the car - the engine turned over but would not start! All appeared to be in order and several more attempts to restart the engine failed. Since the car was on a slight incline and close to a driveway entrance he released the hand brake and let the car roll a foot or two. In a final desperation attempt he tried to start the engine. Bingo, it started and he was off to the Saab garage to have then find out what was going on. Of course Saab was unable to repeat the problem and it has not happened again. Any ideas??

Alden B. Billitti
Belgium

ISAT is an abbreviation for Intelligent SAAB Tester. Created to "pull" fault codes from the various processor controlled systems in late model SAABs, it can even reprogram certain functions such as the climate control or the information display and gauges. Though I'm cannot vouch for the European SAAB dealers, I am certain the ISAT is a mandatory tool for U.S. franchised dealers.

If and when ISAT is used for fault tracing and it reports no stored codes, it's time to do a physical check of all electrical connections and grounds paying special attention to multi-plugs and relays. If a connection looks doubtful, clean it with a contact cleaner before plugging it back in. These systems demand a trained technician who can perform the tests without risking damage to the related processors.

There is a six hole receptacle on the fuse box of the '77 99 (and all other 99s that I have owned) with a cover labeled "TSI". I assume it is for some sort of diagnostic tool. What is it? Is the tool/meter available cheaply? Can I make my own?

I have noticed a similar receptacle on an '85 900, though it isn't labeled. Will the same tool work on the 900?

Toby Ornot
Minneapolis MN

The "TSI" socket enables you to tap into the tachometer signal, a voltage constant and even the starter motor. The 0275115 ignition/starter box, made for SAAB by Kent-Moore, is perhaps the handiest tool for use with the TSI. It allows you to turn on the ignition and start the engine, or leave the ignition off and "bump" the starter for checking valve clearance, etc. This box is compatible with all TSI equipped models.

My 1990 900T experiences an occasional **loss of electrical power**, affecting every electrical part of the car. The easiest way to tell this is happening is to turn the radio to an AM station. There will be a strong sound from the speakers, and the radio channel display goes out, and quickly comes back on. I can sometimes - not often - make this happen by pressing the brakes. The car can stumble, but it only stalled once. At night I notice that the headlights dim, and then come back. Sometimes the air bag and anti-lock lights come on, and then go out the same as when the car is first started. This can happen five or six times in a half hour, and then not happen for a couple of weeks (never while at the dealer). I and the dealer checked connections at the battery and other accessible parts under the hood.

This may either be an intermittent open, or an intermittent short, since I noticed that a white wire (leaving the + electrical connection under the hood, passenger side, near the power steering fluid container) is discolored like it was overheated. The dealer said this wire "goes all over the car."

Robert DeJonge
Cromwell CT

You're on the right track in checking all the connections. It sounds like a bad ground, maybe up at the crossmember near the radiator. Check the bulkhead connectors that plug into the fuse box above the hood release handle. Try another ignition lock relay that powers up most of the switched accessories, too.

Don't rule out a bad battery. It may have a loose plate that momentarily shorts out. This will cause strange things to happen electrically.

The trip computer and the fuel gauge in my '90 9000T are wildly inaccurate.

The computer reads "0 miles til empty" and the fuel gauge says empty when there are still four gallons remaining in the tank. Also, the trip computer says 32 mpg average, when the calculated average is 27 mpg. Can the computer and the fuel gauge be reprogrammed to read more accurately?

Also, the fuel pump is beginning to make some strange noises. Rumor has it that a special tool is required to R&R the pump. What, exactly is the procedure? How can I predict immanent failure? And yes, the fuel filter has been changed recently.

Jack Vines
Spokane WA

The EDU is programmable with ISAT. Explain the problem to an ISAT friendly technician and he or she can set things where they should be.

Saab has issued a Parts & Service Information sheet on the problem of lower than calculated fuel consumption in 1990 9000s. Ask a friendly Saab dealer for PSI 06/93-0349. The fault may be remedied by installing a diode between the speed signal and switched power.

The special tool for the fuel pump simply loosens the large rim that screws down and clamps the pump assembly into the tank. It can be done without the tool, however extreme care must be taken not to break the threaded rim. Although the pump can be tested for flow rate and current consumption, it still could fail without warning, say during any long drive on an

New Nio Needed

The Saab Club is looking for someone to answer the questions posed by Saab owners in the *Saab Klinik* column. Rick Parr, who under the pseudonym of Doktor Nio has handled the task so well for the past several years, is pursuing other interests.

Any knowledgeable Saab mechanic or repair shop that might be interested in volunteering for this duty, please contact the editor for details.

extremely hot day. Most times, letting things cool down for a while will give you a chance to drive again to reach a service garage.

The doors rattle on my 1991 9000 Turbo because the plastic (nylon?) coating on the striker plate posts are worn through. I was told by a local Saab garage that the only fix is to replace the entire plate on the body but removal of the existing plates results in the nuts falling into the body cavity where they cannot be removed without major work.

Mel Becker
Miami FL

The latch pins, p/n 6947824, thread through the sheet metal into a bolt plate. There may be a number of different methods to replacing these but I would suggest loosening the old pin and using a strong magnet to hold the plate in place until you can thread the new pin in. Aligning this pin for proper door closure may prove more difficult than holding the plate in place.

The radiator cooling fan on the driver side of my '86 900S does not operate, either with A/C on, or during high radiator temperature (when I short the connections to the nearby temperature sensor, or turn on the

A/C, the other fan goes on).

I unplugged the fan from the harness. When I supply battery power to the fan direct, it operates. When I short the temperature sensor wires, I read about 8 volts from the harness where the fan plugs in. I get continuity from the fan plug to the solder connections on the fan, and continuity through the fan. I'm mystified as to why the fan doesn't work, when everything tests O.K. Are both radiator fans on the same circuit and fuse? Can I power them both from the passenger-side fan connections?

Robert DeJonge
Cromwell CT

This fan is controlled by a timer relay mounted with a clip on the inner LF fender edge close to the headlamp. Either the connectors are dirty or the relay (pt# 9358073) is defective.

NIO NOTE

9000 models: Drop the soft underdash panel to expose the steering column and tighten the universal joint coupling bolts. The cast joint splines develop a fair amount of play which, if allowed to continue, will rattle and shake over rough roads and could eventually be a safety hazard.

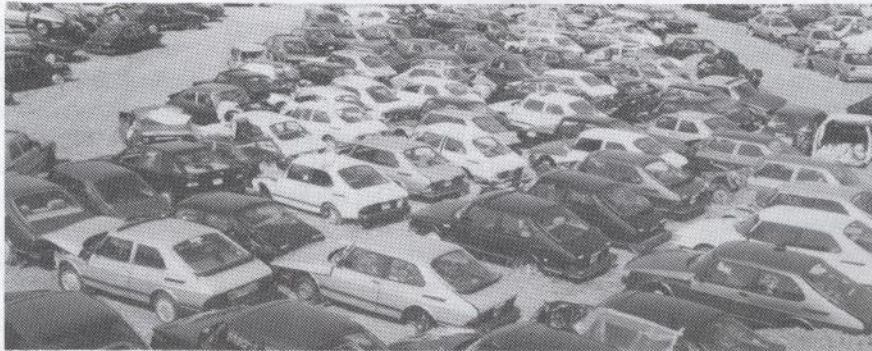


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Intelligence

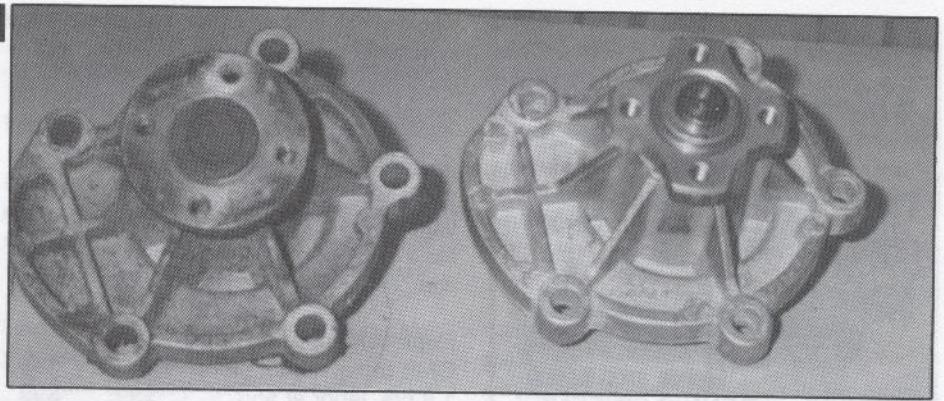
Saab, the Most Intelligent Car Ever Built. That is a fine statement, but one about which we all have some doubts. Have you ever tried to find the cause of an intermittent CHECK ENGINE light on a 1986 or '87 900S? These cars aren't capable of storing codes so unless the light is on at that moment, the testers will not give you any help. So much for intelligence! Beyond some small irritations, Saabs are well engineered and possibly have some intelligence built in.

I'd like to challenge you, the owner, about intelligence, or something akin to it. Al Walker, a big guy from South Carolina, defines people in a couple of ways. He says there are "ignorant" people (his spelling!). These are people with a curable malady. They are capable of growing and learning - in other words, they get better. Education, they believe, never stops! The other folks Al describes as stupid. No hope! You can't work with them and it doesn't do any good to try. Now we know if we drive intelligent cars we should be OK, or ignorant at worst. Stupid shouldn't apply! Now that I've established the terms, we'll talk about after-market parts and parts prices.

There are balljoints, CV boots, exhaust parts, brake parts, all sorts of engine pieces, which don't measure up to our cars. Are all after-market parts suspect? No! Typically the European parts are good, and Asian may not be. We are only talking about Saab after-market parts, not other brands of cars. Are all OEM Saab parts the best? No! Some of the after-market parts are better, some are as good, and the prices vary. The case we want to discuss is the after-market water pumps for H and 16 valve engines.

Of all the poor replacement parts we run across in our shop, the cheap water pumps are the worst. We wouldn't be so disgusted about them if the problem weren't so widespread. We change lots and lots of them! If we had known how big the problem was we would have been counting the discards.

There are three pumps that are available in our area. The first is the genuine Saab pump, at a true list price of \$80. The GMB



A failed GMB water pump on the left, a new Saab OE pump on the right.

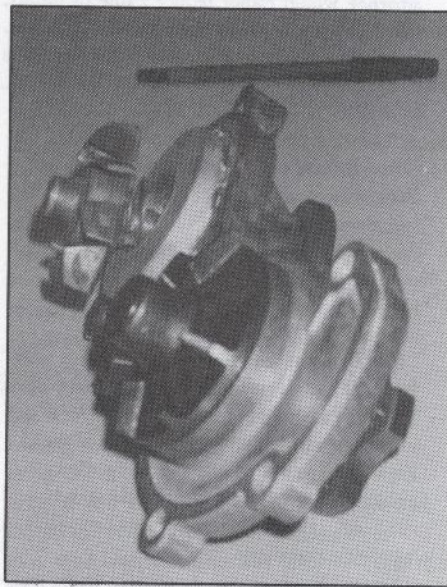
pump, pictured with the Saab pump, sells for about \$35. That is about double the price that the repair shop pays for it. The other pump is Laso and sells for around \$50. We have never seen one of these, so we can't report on how durable they are. They are a German company and may have a fine product.

There are two reasons one might have to change a water pump. One would be noise from bad bearings, and the other would be leakage from the seals. These two causes could certainly affect one another. If bearings fail or become loose, the shaft will not be running true in the seals (wobbly or off center), causing them to leak. Noisy water pump bearings are not common - in fact they are very rare. It is most common for the

seals to fail before the offending bearings are noisy enough to cause concern, at least that is definitely true of the Saab pump. Since leakage is the most common reason for change, how much is allowed? In Section 262 of the H engine Saab service manual, it states that 5 ML per eight hours running is permissible. That is about two thimbles full. So over time or on a long trip, you could notice some loss of coolant and still be in the acceptable loss range. The problem here is that once the seepage starts, it is only going to accelerate as the seals wear further. Most all technicians I know would recommend a pump change at a minimum of seepage. Most people (intelligent ones for sure) don't like to be stranded with an over heated engine which could happen as the leakage accelerates.

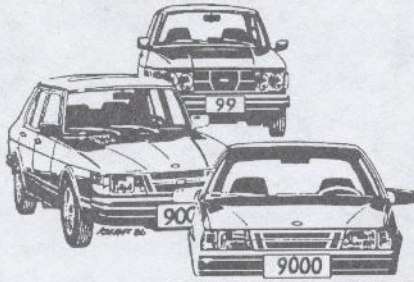
Our experience has shown that the original Saab Pump will go an average of 80K. The failure will be gradual (small amounts of coolant loss) until either the owner catches the low coolant or it's noticed at a major inspection. They very seldom fail suddenly, and we have never seen a total bearing failure like the GMB pump in the picture. A Saab owner stranded by a water pump is not common. They generally give lots of warning if we are doing proper preventative maintenance on the total car.

On the other hand, the GMB pump, in our experience, has major failures. Most of them go about 12 months or 15,000 miles. The common failure we see is bearings, resulting in sudden catastrophic leakage, over heated engines, etc. We have to deal with wrecker drivers and stranded owners. Also you'll notice in the picture the difference in impellers between the pumps. The Saab impeller is cast, as opposed to stamped steel and the Saab pump impeller is substantially larger in diameter. We, not being engineers,



Note the cast impeller on the OE water pump as opposed to the less effective stamped steel of the aftermarket pump.

412-238-0900, Parts line
412-238-0099, Fax line



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would conclude that neither the cooling system nor the heater, with the GMB pump, are going to be as efficient if the coolant is not pumped at the correct volume.

I hope your ignorance about water pumps is waning. But how about the warranty? Saab pumps have a one year and unlimited miles warranty. The GMB pump has a lifetime replacement warranty on the part. Hey! And lots cheaper! Let's see:

Replacement Saab pump	\$80	
GMB replacement pump		\$35
1.8 hrs. labor at \$55	\$99	\$99
Total cost	\$179	\$134

To get 80,000 miles of service, we may have to replace the GMB pump as many as five more times, at \$99 each. The pump, because it has a lifetime warranty, will be free, but the labor is not. So the true cost of equal service is \$134, *plus \$495 additional labor* to reach the 80,000 miles of service, a total of \$629. Besides, I'd bet your engine wouldn't survive five failures of a water pump! We have replaced many heads and one engine that we would attribute to failed water pumps. We are well aware that a failed head can pressurize the cooling system and cause the water pump to leak, but cause

bearing failure?! That would be stupid!

The GMB Co. make many fine products that are OEM on Volvo, which have no problems. These water pumps will do the job, but I don't believe it's an intelligent choice for your car.

A little discourse on parts prices is in order. Many of you feel like you can buy from an authorized Saab dealer and get the correct price. Saab Cars USA Inc., prints a suggested list price for dealers. You may or may not get this price. The dealers can and will set their own price at any level they desire. We recently found a dealer who is charging 60 to 80% over suggested Saab list price for parts. Now suppose he gives a Saab Club discount of 10 or even 20%—BIG DEAL! Think about what you're paying for those parts. Some dealers advertise in NINES that they are using true list price—check it out. There isn't anybody on this continent who should have to pay more than list price for any Saab part. You may have been ignorant, but hopefully you'll not be stupid and not be victim to these outrageous prices. As a local TV ad says, "Demand better!" It's your money.

Chuck Andrews
Andrews Inc.
Princeton MN

FIGHT THAT SPEEDING TICKET!

Most everyone has felt the frustration and anger that accompanies a speeding ticket. The ticket was probably issued on a clear day, with dry roads and light traffic. Your speed was reasonable for the conditions and within the safe capabilities of your car and the highway. The glitch was that you were exceeding the "posted limit". But, who wasn't?

So, why did you get the ticket, instead of someone else? Maybe it was the length of your hair, the color or make of your car, or you were unlucky enough to be the first car to enter Officer Quota's speed trap.

What's doubly maddening is if you weren't exceeding the speed limit, but an incompetent or unethical radar operator says you were, and issues a completely erroneous ticket.

It's decision time: To fight or not to fight your speeding ticket. You might believe that to fight is futile. After all, didn't the local district attorney just claim a 97% conviction rate on traffic tickets?

Here's what they don't tell you. Ninety-five percent of the traffic tickets are not contested! And, half of those that are contested are won by the defendant.

Here's something else our friends in traffic courts don't publicize: Almost any district attorney would rather reduce a fine or points, than spend time prosecuting a speeding ticket. If 10% of all traffic tickets were contested, the court system would come to a screeching halt. So would the practice of using traffic enforcement for revenue generation.

To fight the ticket is to automatically win. True, you may be found guilty, but you've still won. You had your day in court, your dignity is preserved, and the profit that the state or municipality expected from your ticket evaporated the minute you stood up and said "I plead not guilty".

Radar is not infallible, in fact, a long way from it. Vascar is easily misused. Many speed limits are illegally posted. There are legal justifications for exceeding the posted speed limit. Police officers often ignore proper procedures when clocking vehicle speeds, and confused, crowded court dockets can result in wholesale dismissals.

You can't win if you don't fight back, and you can't fight back if you're not prepared. Our organization, the National Motorists

Association, is dedicated to protecting motorists' rights, including your access to a fair trial for traffic law violations.

We offer our members books, videos, and personal information so they can ably represent themselves in traffic court. We also offer an attorney referral service for those who wish or need professional representation on traffic matters.

We're so confident in your ability to win in traffic court that after one year of continuous membership, should you receive a speeding ticket, plead not guilty, take your case to trial and subsequently are found guilty, we will pay the ticket!

That's right, we'll pay the ticket if you plead not guilty, go to trial, and lose.

We've paid very few tickets, because our members win their trials, have the charges dismissed on technicalities, or are offered a plea bargain that greatly diminishes the penalties.

Isn't it time to fight back?

Give us a call at 1-800-882-2785 for National Motorists Association membership information. Do it today!

Notes in the Margin

My New Age Philosopher wife says that the more concern you lavish on inanimate objects, the more surely catastrophe will befall it. She calls it "**Karma**". At the Akron, Ohio, 4th of July concert and fireworks show, my first attempt at parking left me adjacent to an old station wagon leaking gasoline. Fearing that an errant firework could land in the puddle, I moved to another spot. Well, the fire never happened, but a bottle of transmission fluid dropped out of the door of a ratty nearby van and exploded all over my car when he drove over it. I don't wash my car very often, but that night at midnight I was in my driveway with a hose, a brush, and a bucket of suds.

A plastic oil bottle with the bottom cut off makes a perfect **funnel for pouring oil**. Keep one capped empty bottle (intact) each time you change oil (or add a quart), and you can throw out the "used" funnel each time. You have the "raw materials" for a new funnel, and you eliminate one more potential mess-maker from the shelf. When using this on a 9000, run the dip stick down through the cut-off bottle to hold it in place better.

Brake caliper rebuilding instructions always have you disconnect the brake line, remove and drain the caliper, then blow out the piston with compressed air. You are warned to take care, lest the piston shoot across the room because of the compressed air. Then, after reassembly, you probably will flush the brake fluid because you are already dirty and under the car and had to buy some new brake fluid anyway. Why not begin by draining and refilling the reservoir, and then pump the piston out with the brake pedal before you disconnect the brake line? That puts you part way through your brake fluid flush before you even start. You don't have the risk of an air-propelled projectile, and if the "shade tree" doesn't have a compressor under it, no problem.

On level ground, the ramps I use for oil changes and other routine undercar care rub the air dam on my '91 9000. Instead, I back into the garage and put the ramps on the downward sloped driveway. The result: no rubbing. This works fine for three of the four seasons, and I plan my maintenance schedule so there is nothing to be done during that

fourth season.

This is what I would have said at the '94 Convention round table discussion if I had been able to stay:

GM Corporate has apparently dictated that new design Saabs will be built off existing GM platforms, and the 900 shows that the Swedes can make a "real Saab" that way. In fact, looking at the results, the new way might even make a better and "truer" SAAB than starting from scratch. It certainly produces one sooner.

Now that the project for the next generation 9000 has been under way for a year, the design should be well defined. That the 9000 will remain basically a large front drive sedan with a transverse drive train is axiomatic, but GM Europe does not have a front drive platform larger than the 900's. This leaves the choice of keeping the existing platform, heavily modifying a rear-drive Opel chassis, or using a U.S. design.

Existing rumors notwithstanding, I think that means that the existing platform will be the basis for the new model. On the other hand, there are things in the North American parts bin to interest a Saabophile. The Aurora-Riviera platform has been declared to be the foundation for the next generation of GM large cars, with the '96 Park Avenue next in line. The Aurora body is incredibly stiff and massive, suggesting that in Saab's hands a lightening project might be in order, versus the strengthening which went with the 900 project. Hopefully a hatchback adaptation would also be in the cards.

Another interesting technology is the variable damping used in the Cadillac Seville. This differs from other units in that the fluid bypass is built onto the outside of the shock, rather than inside as part of the piston assembly. Thus, the actuator need not drive through the length of the piston rod, allowing faster switching times between "soft" and "hard" damping. Finally, with room in the chassis for the Cadillac transmission, a fully powered Turbo automatic version is again possible.

Saab's new "customer first" policy has firmly butted its head against the immovable wall of my dealer's service department. When the EDU of my wife's antique '88 9000 went intermittent, the SM called the company which manages the extended warranty and was informed that the EDU was not a covered component. Had he bothered to read the contract, he might have used the term "information display unit," as it is named therein, and saved a bit of gastric

activity in my wife and myself. Had he bothered to count the number of Saabs we own, he might have given Tracy (our zone rep) the ID number of my '91 instead of my wife's antique when Tracy called to authorize reimbursement for the new battery I bought at the Convention, saving Tracy some gastric activity. I'm told that AT&T sent SAAB a bill for 800 miles of melted telephone wire.

A visit to the Chrysler stand at the Canadian National Exhibition prompted some thoughts. For one, every North American Chrysler product has its battery set into a polyethylene insulating well. Moderating the battery temperature should reduce evaporation from the cells in the summer, while maintaining warmth in the winter should allow a little better starting.

Disturbing was tendency to pack that forward cab solid with engine. Most of the products have belt driven ohc engines, and the required periodic belt changes must require either Houdini tricks or some major disassembly. In a tightly packed engine compartment, the life-cycle costs of the more costly, but maintenance-free chain drive is lower than the belt drive engine, even without factoring the occasional destruction wrought by a broken belt. Using a chain also shaves a bit of length off the engine, and it reduces the number of potentially leaking shaft penetrations.

It is always a stunning comparison between Chrysler's pushrod and ohc V-6. The OHC engine completely fills the Intrepid's engine bay, while the pushrod version leaves enough room to stand between the engine and the fender wells. SAAB's Buick cousins are extracting 200 hp from a V-6 which is smaller, lighter and more efficient than the DOHC engine from GM Europe which goes into the 9000. Of course, Saab's turbo 4 is smaller, lighter, and more efficient still, and more powerful.

Sports-car magazines accentuate the good about a new model at its introduction but hold back the bad until the model's replacement is introduced, especially for Mercedes and BMW. The August, 1993, *Car and Driver* article on the latest Mercedes C-Class, referring to the increased dimensions of the new over the old, suggests we "remind ourselves how dismally small that rear passenger compartment is in the 190..." I don't recall any derivation on the root word "dismal" ever being used in a review of any current Mercedes or BMW.

Stephen Goldberger

Service Subjects from Saab

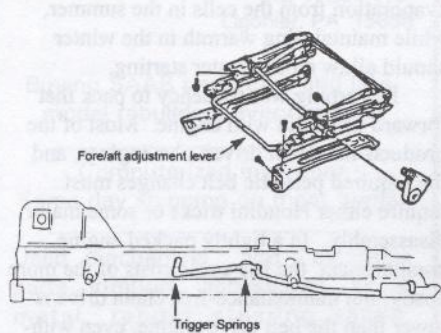
Recall 290

Manual Front Seat Rail Spring Rods

PSI 10/94-0506, Sec. 9, Pg. 11

Application: 1994 900 3-Door Models with Manual Front Seats

Saab Cars USA, Inc. has notified the National Highway Traffic Safety Administration (NHTSA) that a defect which relates to motor vehicle safety may exist in certain 1994 900 models.



On later 1994 900 3-door models with non-power front seats there is a risk that the springs rods that force the seat rail engagement mechanism into place after you adjust the fore/aft position of the seat or use the "Easy-Entry" function may not be strong enough. If not properly engaged, the seat could suddenly move while the car is being driven. The spring rods in both front seats are to be replaced.

Vehicles Affected:

1994 900 3-door models with non-power front seats within the following VIN Serial No. range:
R2030004-R2043093

Parts:

Spring Kit 45 54 158
(Kit contains four springs, two for each seat.)

Saab Parts and Service Information updates are provided to NINES as a courtesy to Saab owners by Abe Buchbinder, Director, Service & Customer Retention, Saab Cars USA, Inc.

Recall 289

Fitting of Protective Oil Cooler Cover

PSI 10/94-0512, Sec. 9, Pg. 12

Application: 1992-94 9000 Models Equipped with Engine Oil Cooler

Saab Cars USA, Inc. has notified the National Highway Traffic Safety Administration (NHTSA) that a defect which relates to motor vehicle safety may exist in certain 1992-94 9000 models equipped with engine oil coolers.

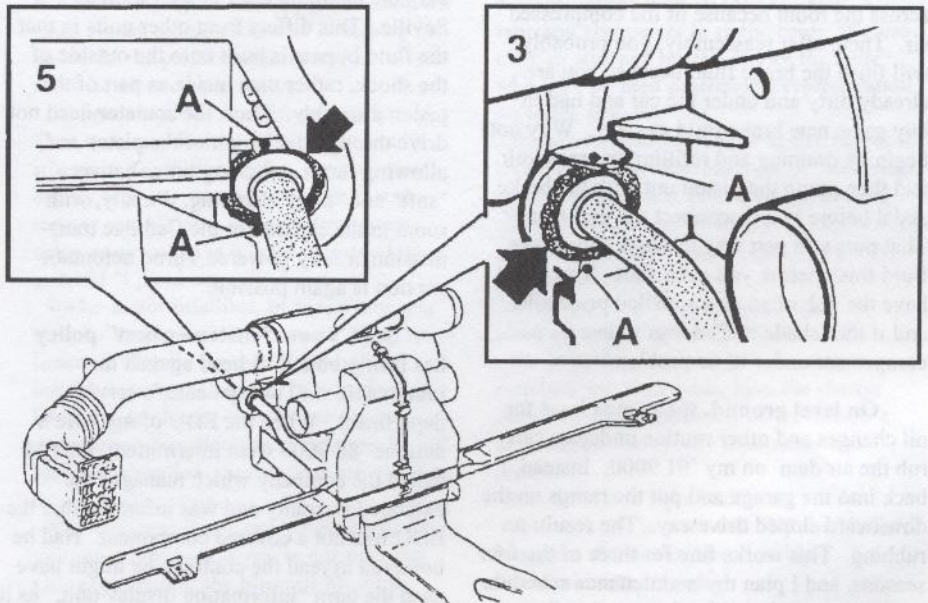
It is possible that in relatively minor collisions (such as with deer), where the car is hit above the bumper at the right front, the oil cooler and/or the hoses attached to the cooler can be damaged. This may result in post-collision oil leakage onto the exhaust manifold and risk of a fire. A special protective cover has been designed and should be fitted.

Vehicles Affected:

1992-94 9000 models equipped with engine oil coolers within the following VIN Serial No. ranges:
N1000001-R1027659

Parts Required:

Protective cover kit 43 96 347
(Kit has parts for both types of oil coolers)



Noise From Climate Control Unit

PSI 10/94-0513, Sec. 8, Pg. 97

Application: 900 M92-94

When recirculation is selected, some air leakage may occur at the cable lead-through beside the heating and ventilation box. This is due to excess pressure building up at the fresh air intake when the recirculation damper is closed. This may result in a high frequency noise developing at highway speeds.

This air leakage can be stopped by sealing the cable lead-through with suitable sealant. To ensure that this measure will be fully effective, the cable lead-through should be sealed on both sides (i.e. from the passenger compartment and engine bay).

Cars Affected:

9000 models M92-94 up to VIN Serial No. R1017979

Parts:

Sealant 30 20 716

Action:

- First, test drive the car to verify that the noise is occurring as described above.
1. Remove the upper part of the dashboard.
 2. Remove the defroster duct and air duct to the side vents.

3. Apply sealant around the cable lead-through seal beside the heating and ventilation box. Also seal the air apertures (A) and below the cable lead-through. See Figure on previous page.
4. Open the hood and remove the cover over the bulkhead space.
5. Apply sealant around the cable lead-through seal beside the heating and ventilation box. Also seal the air apertures (A) above and below the cable lead through. See Figure on previous page.
6. Road test the car again to make certain the noise complaint has been rectified.
7. Refit the cover over the bulkhead space.
8. Refit the air duct and upper dashboard section.

Replacement of Poly-V Belt

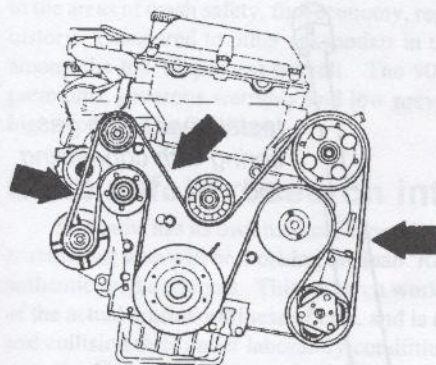
PSI 10/94-0515, Sec. 2, Pg. 45
Service Campaign 405

Application: Certain 1994 900 Models and Certain early 1995 Convertible Models with 4 cylinder engine, manual transmission

Under certain driving conditions (e.g. letting the clutch out and accelerating from a stop), the Poly-V belt can come off of the A/C compressor pulley. This is due to the fact that the low profile drive belt may not be held in its groove when the sudden torque of the A/C compressor is applied.

Replace the Poly-V belt on affected cars using the part number listed below.

Saab will soon send notices to owners of affected vehicles directing them to make a service appointment to have the belt replaced.



Car Affected:

1994 900s with 4 cylinder engine, manual transmission within the following VIN Serial No. Range: R2019839-R2045780
Early 1995 900 convertible models with 4

cylinder engine, manual transmission within the following VIN Serial No. Range: S7000216-S7002160

NOTE: Cars already repaired under warranty are excluded from this campaign.

Parts:

Poly-V belt 43 59 063

Approved Brake Pads

PSI 11/94-0519, Sec. 5, Pg. 10
Supersedes 03/92-0197

Application: 900 and 9000 Models

In certain cases the following brake pads supersede the ones fitted as original equipment. When installing new brake pads, refer to the chart below.

In the event of complaints concerning brake vibration, first check brake disc run-out and variation in thickness, as well as wheel hub run-out.

Cars Affected:

900 and 9000 models

Parts:

900 models		P/N-Front	P/N-Rear
Model year			
900	1979-83	89 93 834	89 93 230
900	1984-87	89 93 776	89 93 230
900	1988-93	41 07 116	89 68 026
900	1994 Conv.	41 07 116	89 68 026
900	1994-(incl. 1995 conv.)	44 83 723	44 67 072

9000 Models		P/N-Front	P/N-Rear
Model year			
9000	1986-89	41 07 116	41 96 317
9000i	1990-	89 93 768	41 96 317
9000T	1988-	89 93 768	41 96 317

Deleting Daytime Running Lights

PSI 11/94-0520, Sec. 3, Pg. 78

Application: 1995 900, 9000 Models

Daytime Running Lights (DRL) were introduced on 1995 models to make the car more visible to other cars and pedestrians. With daytime running lights, the headlights remain on with the ignition key, regardless of the position of the headlight switch.

This feature may be deleted if daytime running lights prove to be an annoyance to the customer.

Daytime running lights have been proven to reduce the likelihood of accidents and disconnection of DRL's may reduce the vehicles' visibility. DRL's are permitted by

law but they are not required in the United States. (Note: DRL's are required in Canada, so this PSI is not valid there.)

Action:

1995 9000 Models:

1. Remove fuse 31 (10A) and store in fuse holder.

1995 900 Models:

1. Remove fuse 15 (20A) and store in fuse holder.
2. Connect ISAT.
3. Follow the flow chart and select ALT 1. ALT 3 is the programmed selection for US Daytime Running Lights. By selecting ALT 1, you are making sure the headlights function as they would on 1994 900 models without DRL's.

Improper or Poor Window Operation

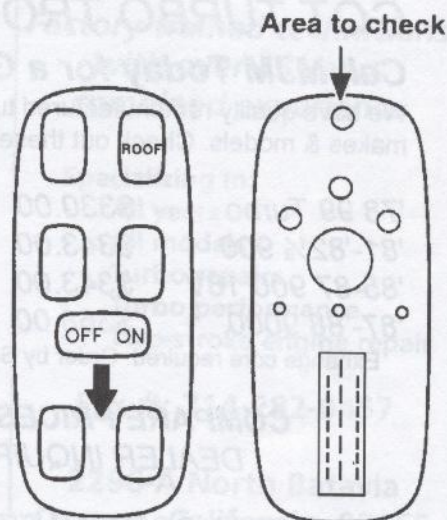
PSI 11/94-0522, Sec. 3, Pg. 80

Application: All Models with Electric Windows

Customer complaints concerning improper or poor window operation may sometimes be caused by fluids (coffee, etc.) being accidentally spilled onto the window switch pack.

Effective November 15, 1994, Saab will, for this condition only, accept a Goodwill Claim on a one-time basis during the bumper-to-bumper coverage period of the new car warranty.

Customers must be made aware that the cause of the condition was not due to a manufacturing defect and therefore coverage



is a goodwill gesture and not a warrantable repair.

Ingress of fluids may be checked as follows:

1. Remove the switch pack and turn it over.
2. Take the bottom half of the switch pack apart and check for fluid residue at the area of the front center hole (closest to dashboard). See Figure.
3. If residue is present, replace the switch. See Spare Parts Microfiche for correct part number applications.

Alarm Remote Transmitter

PSI 11/94-0526, Sec. 19, Pg. 57

Application: All 1995 Models (except early Convertibles)

Additional alarm remote transmitters are available for ordering should you wish more than the two transmitters provided with each 1995 model.

These transmitters are programmed by the Saab dealer with ISAT following the instructions given in Service Manual section 3:5 Remote control theft alarm M95- or by following details in M95 New Model training handouts.

Cars Affected:

All 1995 Models except early Convertibles (up to VIN Serial No. S7010000)

NOTE:

It is not possible to retrofit the 1995 Alarm System to these early Convertible models nor any 1994 model.

Parts:

Alarm remote transmitter 45 50 075

New Turbo By-Pass Valve

PSI 11/93-0401, Sec. 2, Pg. 36

Application: 900 and 9000 Models with 16-valve Turbocharged Engines

On some 900 or 9000 models it is possible for a complaint of a "hooting" noise at partly open throttle. This is caused by the diaphragm in the by-pass valve oscillating. A new valve has been developed as a service solution that has a weight mounted on the diaphragm to eliminate this complaint. Material improvements have also been made for greater durability. This new valve is retrofittable to all models for "hooting" complaints.

Parts:

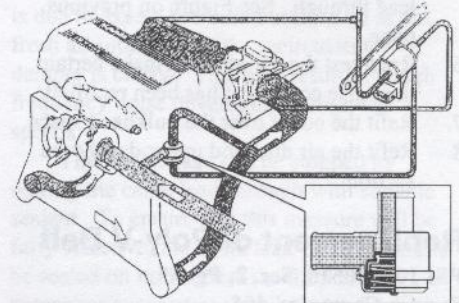
By-Pass Valves:

Service solution part for "hooting" complaint 44 41 895

Part to be used when replacing for reasons other than "hooting":

900 and 9000* with 16-valve turbocharged engine: 43 91 157

*Except 1989 9000 model: 89 81 904



Rear Hatch Gas Spring

PSI 03/93-0309, Sec. 8, Pg. 59

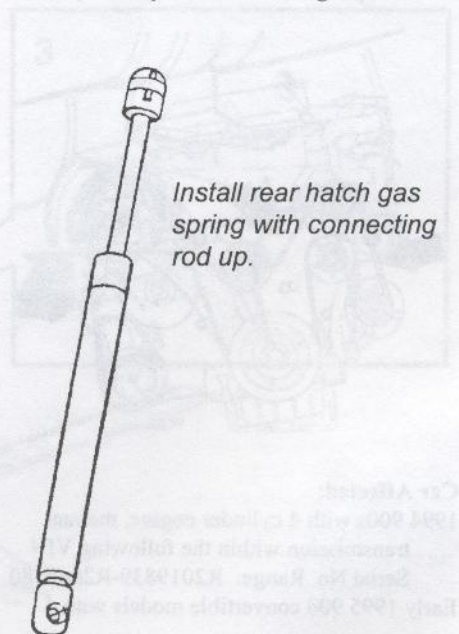
Application: 9000 CS

In the event that replacement of the rear hatch gas springs becomes necessary, it is suggested that they be mounted with the plunger pointed down and the connecting rod pointing up. This has shown to extend the life of the gas springs.

This became a running change in new car production in mid-1993.

Cars Affected:

All 9000 CS up to and including M93-1/2



Install rear hatch gas spring with connecting rod up.



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SAAB NEWS

1994 U.S. Saab sales up by 15.4%

Sales of new Saab cars in the U.S. market during calendar year 1994 totaled 21,679, an increase of 15.4 percent over 1993's total of 18,783 units.

It was also an 11 percent increase in competitive segment market share for Saab, figuring both 900 and 9000 models. The first full year of sales for the completely revamped 900 showed a 76.9% increase over the 1993 sales figure for that model.

Saab is projecting U.S. sales of 35,000 cars during 1995. According to Saab Cars USA CEO Jim Crumlish, volume could have been higher if the factory had been able to supply more cars. Slow startup times on the new 900 models, particularly the coupe and convertible versions, kept demand higher than supply during 1994.

Preliminary figures indicate that Saab sold 89,000 cars worldwide during 1994, approximately 20 percent more than during 1993. Saab registered the highest increase of any manufacturer in the European market, with a 23 percent improvement over 1993 sales.

Recent Awards for Saab

900 and 9000 among AAA's 10 Best

Both the Saab 900 and Saab 9000 are among the American Automobile Association's Top Ten cars for '95. The Saab 900 SE was rated highest in the \$25,000 - \$30,000 category, while the Saab 9000 CDE was highest in the \$35,000 to \$40,000 category. Results are published in regional AAA magazines and in the *AAA AutoTest*. The 1995 *AAA AutoTest* reviews 128 vehicles, representing all price ranges and most popular models of cars, trucks, minivans and sport utility vehicles.

AAA is a not-for-profit federation of 125 motor clubs providing more than 36 million members in the U.S. and Canada with travel, insurance, financial and auto-related services.

Consumers Digest - Saab 900 a Best Buy

For the second consecutive year, the Saab 900 has received a *Consumers Digest* Best Buy award in the "sports sedan" category. The 1,250,000-circulation magazine defines a Best Buy as a "product that offers outstanding value for its price."

The magazine calls the Saab 900 "a sporty, fun and practical car at a price that rarely buys much fun today, much less the luxury level included here." Also mentioned are the 900's "handsome and very distinctive styling." The 900 sedan's hatchback design has "station-wagon-like utility, yet its European-type handling makes it plenty sporty." The report concludes by calling the Saab 900 a car with "genuine character at the price of a 'plain vanilla' sedan."

'95 9000 Named "Best Bet" in *The Car Book*

The Saab 9000 series has been named a "Best Bet" in the 1995 edition of *The Car Book*, authored by consumer advocate Jack Gillis. For this year's edition of the book, new cars are rated in the areas of crash safety, fuel economy, repair costs, warranties, insurance costs and complaint history. Compared to other car models in these six categories, the Saab 9000 series was rated among the top 10 percent overall. The 9000's strong crash test performance, low insurance premiums, generous warranty and low preventive maintenance expense contributed toward its high score in *The Car Book*.

Saab safety research intensified

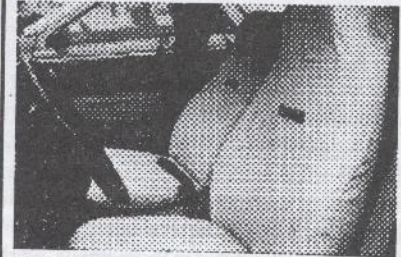
Saab now has its own medical expert in car safety - Dr. Hugo Ugander, an industrial medical practitioner who will be working on Saab 'Real-life Safety' research which involves the study of authentic road accidents. This research work provides Saab engineers with valuable knowledge of the actual crashworthiness of cars, and is a vital supplement to theoretical calculation models and collision tests under laboratory conditions.

Dr. Ugander will be succeeding Dr. Claes-Göran Bäckström who has served as Saab's consultant in accident investigations for more than 20 years.

The crashworthiness approach permeates the whole of the design work at Saab. Cars are built to a high general standard of safety, instead of being optimized for certain clearly defined accident types that are easily measurable in collision test. The fact that the Folksam insurance company has awarded the Saab 9000 the title of 'Sweden's Safest Car' three times in succession offers ample proof that the 'Real-life Safety' work is valuable and produces results.

CUSTOM-MADE SEAT COVERS

Front and rear seat covers are available for all SAAB 900 and 9000 series. The covers are manufactured from heavy duty polyester/cotton material and are easy to install. Available in twelve popular colors. Prices start at \$79.95 plus \$6.00 freight. All VISA, Master Card, and American Express orders are shipped in 48 hours.



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 Orange, California 92665

Saab showcases new traffic management technologies at Prometheus conference

Imagine a car that communicates with traffic lights, electronically generating a "green wave" for stop free travel. Consider the potential benefits of an intelligent cruise control system that adapts a vehicles' speed and distance to the car in front of it. These advanced traffic technologies are just two of the four innovative concepts Saab showed at the October Prometheus conference in Paris, France.

Prometheus, the acronym for "PROgram for European Traffic with Highest Efficiency and Unprecedented Safety," was launched in 1986 as an initiative to address Europe's traffic management needs. After eight years of research and development, Prometheus recently concluded with an exhibit of 90 project cars, each featuring an innovative angle on traffic-related technology. Thirteen companies, including Saab, participated in Prometheus, working toward the common goal of making traffic safer, less harmful to the environment, more economical, efficient and more user-friendly.

Saab exhibited the following project cars:

Autonomous Intelligent Cruise Control(AICC)

A Saab featuring a laser-based sensor that measures the distance to the vehicle immediately in front of it offers interesting application potential. Calculation algorithms can be used to lock the sensor to a moving target traveling in the same direction as the Saab. In effect, the system can then also adapt the car's speed for a constant, safe following distance. Both throttle and brake are electronically controlled. Combined with an automatic transmission, the system could be used both for stopping and starting the car without driver participation. A form of Intelligent Cruise Control is expected to be in regular production on Saab cars before the turn of the century.

Electronic Navigation

An integrated electronic map system that doesn't distract the driver is presented both as a "heads up" display—via a Saab's windshield—and through the traditional instrument panel, in conjunction with a side display.

Short Range Communication (SRC)

A Saab has been equipped with a link for short-range communication with roadside-installed equipment. This link allows generation of an automatic "green wave" through a series of traffic lights, during which time the car adjusts its speed automatically to an ideal value—always paying heed to such special speed limits as school zones. Through SRC, a smooth, unimpeded flow of traffic is possible.

Ultraviolet Lighting

Ultraviolet (UV) light extends a driver's range of vision and thereby improves safety, both at night and during inclement weather. UV technology, presented by Saab in conjunction with Ultralux, is now ready for production—pending the required availability of infrastructure. A 100 kilometer stretch of road near Saab's hometown of Trollhattan, Sweden has been outfitted with fluorescent paints and sign posts, and the technology is currently being evaluated.

Free Brake Pads! (of course there's a catch)

Our cross-drilled brake rotors are the latest thing for making your SAAB stop quicker. Cross-drilling makes brakes run cooler, so they last longer, stop better and are less prone to warping. We start with brand new European-made rotors, then drill up to 130 holes in each. Every hole is then chamfered with specially ground cutters to prevent stress cracking, and the rotor is plated for corrosion protection. Unsprung weight is reduced by as much as 2 pounds per rotor, which also improves handling. Others charge as much as \$900 a pair for drilled rotors, but our prices are **just \$135 to \$185** each, depending on the car.

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for more accurate stopping under any conditions. If you order brake lines with a full set of rotors, we'll give you **free pads and free freight!** We have these rotors and brake lines for ALL SAABs. Order now!

Our Bosch voltage regulator conversion kit is making friends of everyone who has tried it. It will increase the output of your alternator and insure that your battery is kept fully charged under almost any conditions. Complete with everything you need. You don't even have to cut any wires, so installation is a snap. We've sold hundreds of these at \$150, but if you order during January, you can get one for **just \$119.95**. Order one now and put your battery troubles behind you.

Group 6 Performance

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Pelle Rudh, curator of the Saab Car Museum

Per-Olof "Pelle" Rudh, the man who developed and ran the Saab Car Museum in Trollhattan, Sweden, passed away on December 6, 1994 after a short illness. He was 56.

Pelle was universally recognised for his dedicated work in the Saab Museum which has been a "must" to visit by thousands of people in the Saab world: importers, dealers, Saab-owners, car enthusiasts and of course Saab employees from far and near.

Pelle joined the Saab Competition Department in the early 1960s and became Erik Carlsson's "personal mechanic" as well as a member of the team that supported the other Saab drivers such as Simo Lampinen, Per Eklund, and Stig Blomqvist. After Saab discontinued its motor sports activities in the early 1980s, Pelle worked in the Engineering Department until 1987, when the current Saab Museum was established. Since then he has been responsible for running this important part of Saab's heritage and also been a member of the Public Relations team.

His passing is a great loss to this department as well as to Saab, but even a greater loss to his family with whom we all share in their grief at his untimely death.

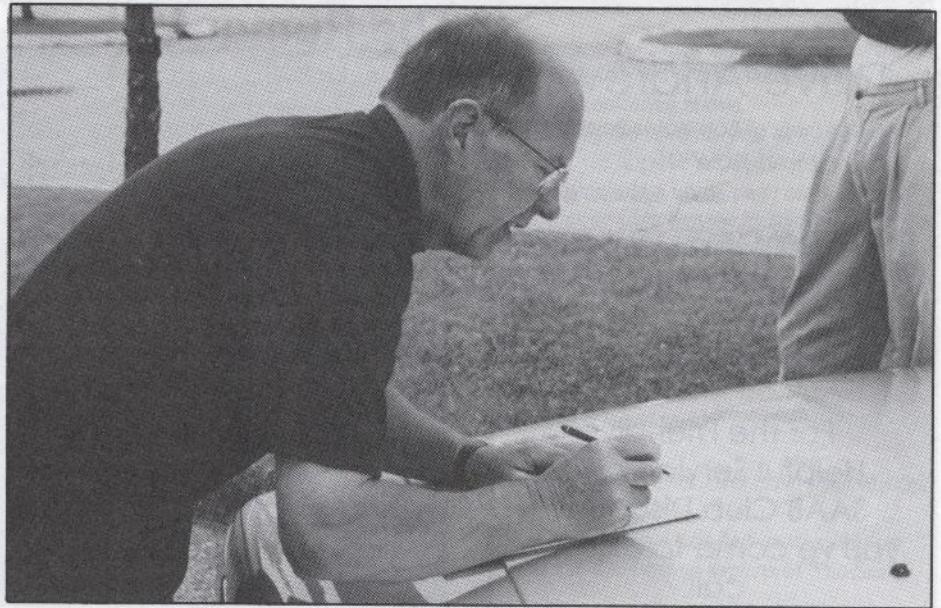
Peter Salzer, VP Public Affairs
Saab Automobile AB
Trollhattan Sweden

I first met Pelle Rudh in 1987 at the Saab Clubs Jubilee in Trollhattan and had the opportunity to visit with him several times since. He was a font of memories of Saabs rally heyday and quite helpful with information to those with older Saabs. As mechanic for Saab's rally team in the early 1960s, he was one of the unsung heroes of Erik Carlsson's victories for Saab in the RAC and Monte Carlo, as well as the later wins by Saab factory drivers.

He made his first visit to a U.S. Saab Owners National Convention this past August and was well received. Accompanied by Erik Carlsson, Pelle participated in a panel on Saab's Rally History, and was quite willing to visit with any Saab owner who requested a few minutes of his time.

A small and slightly shy man, Pelle Rudh was a giant to Saab owners who had the opportunity to meet him.

Tim Winker



Pelle Rudh autographs his picture in the book *The First 40 Years of Saab Cars*.

Memories of Pelle Rudh

Arriving early Friday morning at the Oconomowoc convention site I spotted Erik Carlsson and another fellow inspecting a new 900 convertible in the parking lot. Knowing that both Erik and Pelle Rudh, his former rally mechanic, were to be at the convention I hoped to set up a time when the three of us could look at some pictures and talk about the early 96 that I am rebuilding.

Introducing myself as the owner of what may be an early factory rally car, I asked when I might meet Pelle and talk with the two of them. "This is Pelle. Let's look at your pictures right now," was Erik's reply. For the next 45 minutes I listened intently as Pelle and Erik blended Swedish and English while poring over my photo album.

They took turns noting details, arguing about when certain features were introduced and explaining which of the extra switches pictured on the dash operated specific rally lights. When I showed them the extended length seat track allowing a very tall person to find a comfortable driving position, they agreed my car has all the trappings of one of their 1960 rally cars.

Although no written records exist as proof, the car's equipment matches that of a car driven in the 1960 RAC Rally. In that event, car #178 won not only its class, but won overall as well. This started a string of three years when Saab dominated the RAC and kicked off the entire British sales drive.

Buoyed with this evidence of my car's interesting history I asked Erik and Pelle for one more favor. Might I put together and then ask some questions by the end of the weekend regarding my goal of making my car as much like car #178 as possible? We agreed to meet Sunday for breakfast.

Arriving at the 7am breakfast I found Erik and Pelle already seated having saved a place for me between them. The next hour was a delightful series of rally stories, technical information tips and explanations of how rally lights were chosen for specific rallies. I even managed to slip in a few stories about my two-stroke trip to the Vermont Vintage Convention with Larry Williams [in Larry's two-stroke 96, "Sadie"].

At the end of the meal Pelle graciously provided everyone at the table with commemorative decals from the '94 European Saab Convention.

With these wonderful memories in mind, I was saddened to hear of Pelle Rudh's recent death. How fortunate we are to have had a chance to meet and talk with Pelle Rudh at the convention in Oconomowoc.

Eric Johnson
Northfield, MN

reprinted from *The Saab Sport*
Newsletter of the North Central Saab Club

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The Rumor Mill

A smaller Saab? A larger Saab? A 900 station wagon? A Saab four-wheel-drive sport-utility/minivan? These are just a few of the possible future models rumored in recent months.

Automobile's January 1995 issue indicates the sport Ute is the favored future Saab, ahead of two other long time rumors: a new generation 96 and a more luxurious model positioned above the 9000. The four-wheel-drive system would have to come from another company, possibly Steyr-Daimler-Puch, GM-partner Isuzu or even (gasp!) Chevrolet.

Closer to reality is a station wagon version of the 900. According to the January 10th edition of *Aftonbladet*, the Swedish evening newspaper, the 900 station wagon, to be called the 950, will be shown later in 1995 and will be available as a 1996 model. Saab's only other station wagon model, the 95, was introduced in 1959 and was manufactured until 1978. This information was supplied by Hampus Spangwall, a member of the Saab Network who lives in Sweden. Spangwall writes: "Saab has made the rear roofpost very strong. This is so the design can withstand a large impact. The rear window has been made big enough to give good rear visibility."

Saab has also been playing with optical illusions to remove the effect of the large rear roofpost. 'The rear roofposts doesn't look as big from the inside as they are from the outside', say people who have seen the design."

Strategic employee development a key to Saab's future success

Several organizational and staff changes have taken place in recent months at Saab Cars USA, Inc. distributor of Saab automobiles for the U.S. market. CEO Jim Crumlish stated that this is the first phase of an ongoing program of career path strategy and continuous development for Saab Cars USA staff. "As one of the smallest players in the automotive business, we must be the smartest," Crumlish said. "Being smart starts with a team of adaptive, diverse employees well prepared to identify and capitalize on tomorrow's business opportunities."

New appointments include Daniel David as Director, Strategies. David most recently served as General Manager of Service and Parts, and has been at Saab for 21 years.

Abe Buchbinder moves to the position of Director, Service and Customer Retention. Buchbinder was Manager, Warranty.

Thomas Stelley steps into the position of Director, Parts & Accessories from his previous job as Manager, Sales Operations. In his new role, he guides Saab parts and accessory sales and operations.

Richard Cutler replaces Thomas Stelley as Manager, Sales Operations.

Filling the newly created position of Partnership Coordinator is Celeste Boisclair, formerly Manager, Credit, Collections and Disbursements.

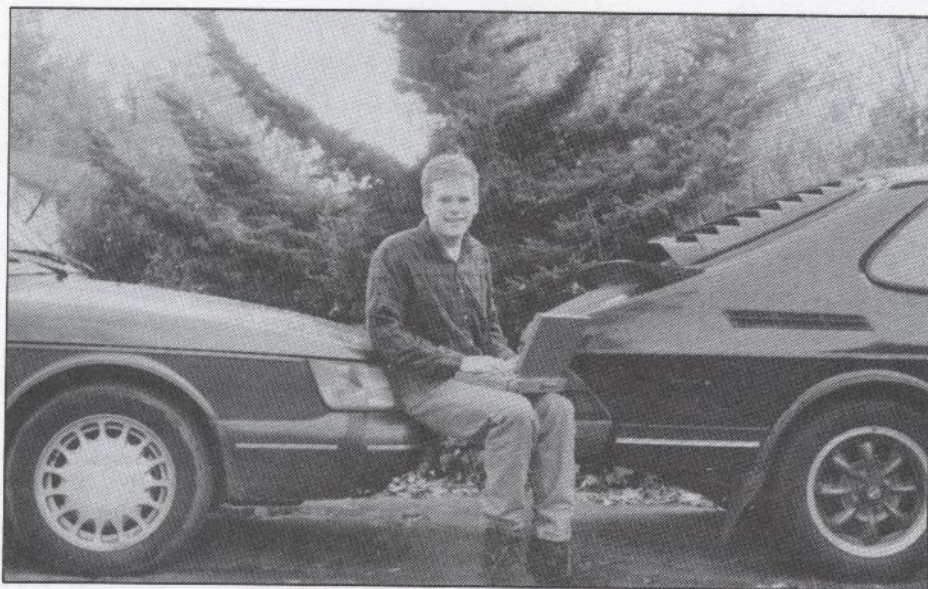
Barber switches to Dodge for Pro Series

The professional racing series that uses Saab engines in like-prepared formula cars, the Barber Saab Pro Series, will switch to Dodge power beginning in 1995. The change came as part of an arrangement by Dodge to supply the official pace car and track service vehicles to Lime Rock Park race track in Connecticut. Lime Rock is the home base for the Skip Barber Group.

Over the past 9 years, the Barber Saab Pro Series has given up-and-coming race drivers an opportunity to showcase their talents. The races have run in conjunction with IMSA and IndyCar races in North America. The series is administered by the Skip Barber Racing organization and sanctioned by IMSA.

Through the 1994 season, power for the similarly prepared formula cars has come from 2.0-liter Saab 16-valve turbocharged engines, the same basic engine as was used in street versions of the Saab 900 and 9000.

"Never in the 9 years of the Barber Saab series has an engine failed during a race or qualifying session," said Rick Roso, public relations manager for the Skip Barber organization. "The relationship with Saab has been excellent and we're sorry to see that end. On the other hand Chrysler's Dodge Division, as one of the largest car and truck manufacturers, can offer more exposure for the series."



Scott Paterson, moderator of The Saab Network, with his '90 900S and '83 900 Turbo.

Saabs Getting Good Mileage on the Information Autobahn

by R. Scott V. Paterson

What's 6 years old, has over 3000 pieces, and is related to more than 500 living people? The answer is The Saab Network, a world-wide electronic forum for Saab enthusiasts.

The Saab Network was created in the fall of 1988 by R. Scott V. Paterson at Dartmouth College. Born out of frustration from sifting through high volumes of car banter on Usenet's rec.autos newsgroup that contained sparse Saab-related information coupled with the problem of receiving pro-Volvo, pro-BMW, pro-etc information in response to Saab questions, The Saab Network takes the form of a moderated mailing list. Submissions, also called postings, may be made by any of the more than 540 members by email and, in some cases, are edited to maintain a high content level. Also, postings on the same topic are grouped together under a single heading. Members can choose to receive postings as separate email messages or as a digest in which a day's postings are grouped together into a single piece of email.

There have been over 3000 postings to The Saab Network and all of this information is online and accessible. Members can request a list of posting subjects and their associated number and then request, by email, any specific posting or group of

twenty postings. If you have access to the Internet, you can FTP to The Saab Network's newly created Internet site thanks to member, Bill Romanowski. The address is given below. The entire archive of past postings can be searched by keyword by email as well. For example, a member could find out which postings have the word "ignition" in them. A single line from the posting is also included in the return message so that the context can be determined. Some topics are popular, such as how to keep the headliner from sagging or what are the best snow tires to use. Responses to these Frequently Asked

Questions, commonly called FAQs, have been compiled and are also available by the methods mentioned above.

During the seventh year of The Saab Network, we hope to expand our Internet access to include a home page on the World Wide Web to give a more interactive and immediate access to The Saab Network archives. We will also continue to expand the number of FAQ topics. Comments, suggestions, and new ideas are always welcome.

To subscribe to The Saab Network, just send your request to:

SAAB@NETWORK.MHS.COMPUSERVE.COM

You'll receive detailed instructions on how to use the various aspects of The Saab Network.

The FTP site mentioned above can be reached at:

FTP.NETCOM.COM

or

192.100.81.1/PUB/PR/PRAIRIE/SAABNET

Moderator R. Scott V. Paterson can be reached by email at:

RSVP@NOVELL.COM

or by US Mail at:

936 Covington Court
Los Altos, CA 94024
Phone: 408-962-0908

As mentioned in the new subscriber information note, The Saab Network is brought to you by pictureware, which means, if you find the mailing list and associated services useful, send the moderator a photograph of your Saab.

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Speeding in the 9000 Aero

In November 1993, I took possession of my dream car, a 1994 Saab 9000 Aero. Somewhere along the line, the major U.S. auto magazines have failed to recognize what a fabulous all around vehicle Saab created, when it performance tuned the 9000 Turbo into the 5 speed Aero. Most of their reviews utilized the 1993 model which included traction control as standard equipment and unfortunately the traction control system limited the car's power, even under dry conditions. In 1994 T.C. became an option.

This car is a virtual tiger in a tuxedo. It's power seems limitless as it pulls to redline so swiftly in virtually every gear. (No I haven't and probably never will approach redline in 5th gear). It makes 225 HP at redline and over 250 lb-ft. of torque at under 2000 RPM's. Shifting is virtually effortless, smooth and precise. Its manners are impeccable, the only drawback being a little too much body roll, and perhaps the need for better gripping tires than the Michelin MXM Pilots. It's safe, sturdy, spacious and luxurious, although the rear visibility is somewhat limited because of the high seat backs. I think it's appropriate to say, "I love this car."

Driving into and out of New York City on a daily basis does not allow anyone the opportunity to experience the exhilaration of owning a 1994 Aero, and driving during the winter of 1993-94 was absolutely no fun at all. Being especially mindful of the recommended break-in period and the hazardous road conditions throughout last winter (snow & ice) and into early spring (huge potholes), prevented me from experiencing what the Aero was really capable of until a month or two ago.

Being attentive to highway speed limits and acknowledging that many of the roads I frequently travel are especially well monitored, my fun was limited to brief, six second sprints from 0-60 MPH in the Aero during May and June. However, on one Friday afternoon early this summer, I found myself on an open stretch of road, which is about as rare around these parts as seeing Haley's comet. Taking advantage of situation, I decided to see what the Aero could do. I promptly dropped down into third gear and gave the Aero a good dose of throttle, shifting up to fourth somewhere between 70



and 75 mph. At approximately 85 mph, I suddenly heard this high pitched whining noise, which for the moment, I mistakenly thought was the speed alarm. Backing off the throttle and at the same time trying to re-acquaint myself with what just happened, I decided to repeat the test and sure enough at approximately 85 mph the same high pitched noise emanated from either the dashboard or engine compartment; a virtual daytime nightmare. I envisioned having to pull the engine from this magnificent machine. This was worse than a speeding ticket.

I quickly contacted the service manager at my local Saab dealership (Spreen Saab-Hackensack, NJ) and we speculated that the noise could be anything from the air-conditioning clutch to possibly wind noise from the top of the windshield. The service manager, who is about as knowledgeable about his products as anyone I ever met, was about to take his annual two week vacation and suggested I test the car under different conditions to try and isolate the noise. And so, there I was, during the next few days, driving either very late at night or just about at sunrise, doing my best to figure out what's going on without going directly to jail, a hospital or worse.

After a number of test runs, I was convinced the noise was coming from the center of the dashboard and since the service manager had only been on vacation a couple of days, I picked up the phone and dialed Saab, Sweden. My logic in calling overseas was that the technicians abroad could probably identify the problem quicker than anyone in the U.S., since Europeans are not subject to the same speed constraints as we are in North America and this noise rarely exhibited itself under 80 mph.

The folks in Trollhattan were fabulous, but they were convinced the noise was

coming from my windshield, similar to what my local service manager suggested. I was adamant, "No, it's coming from the center of the dash." Finally, it was politely suggested that I tape the entire moulding around the windshield and take it out for another dry run. Sure enough, no noise. I very happily consumed a large piece of "humble pie", and was advised by Trollhattan and my service manager, who had just returned from vacation, that a technical bulletin had been issued, covering 9000 models, where a high pitched whistling noise would suddenly appear from the center upper part of the windshield at high speed and only in warm weather. The bulletin went on to point out that the noise can be mis-judged as a noise coming from the facia center air outlet. It said that the molding softens in warm weather and may start to vibrate at high speeds, thus creating the noise, or there might be a small pinhole in the adhesive around the windshield.

The remedy was simple. Remove the moulding, fill up the gutter under the molding with a glass sealant (not silicone) and replace the molding. End of problem or perhaps just the beginning.

There's no doubt this irritating sound can be an additional deterrent to driving at high speeds, beyond the risk of accidents and speeding tickets. So think twice if you have a 9000 that exhibits this trait. You might want to have it fixed and then again consider that Saab installed in you car, at no cost, a speed alarm set at about 80 to 85 mph, functioning only during warm weather. The choice is yours. Leave it alone and at least for a few months each year you'll be reminded of pending hazards.

Rick Freedman
Park Ridge, NJ

Index: Issues #218 - 224

This index covers articles published in NINES, issues #218-#224 (roughly 1993 and 1994). It does not include news or editorial items.

Since 99 and 900 models used many of the same systems and components, articles that pertain to the 99 model are found under 99 and 900. Those that relate only to the 900 are listed under 900 Only.

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(Klinik) = Doktor Nio's Saab Klinik

(PSI) = Service Subjects from Saab

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Technical Talk

Intermittent Direct Ignition and some tire observations

I wanted to share some of my recent "Lessons Learned," when my '90 9000 Turbo (at 78K mi) developed a random no-start problem. Unpredictably, but more often when the engine was warm than cold or hot, it simply would not start. There was no ignition spark at all. Every time, in the midst of testing, sometimes immediately, always within an hour, it would start and run fine. Naturally, it would never stay dead for long enough for me, or John Lipis at Saab Specialists, or the dealer, Camp Chevrolet, Subaru, BMW, Volvo, Saab (definitely not Saab specialists) to find the problem.

Finally, after numerous pleas to Saab Headquarters Customer Service Center, they made an appointment for me with their Regional Representative and his Technical Training Specialist. They kept the car for three days and it started every time. They guessed that the problem might be the Direct Ignition Cartridge (the red aluminum casting covering the sparkplugs, contains four ignition coils and numerous electronic gizzies encapsulated in epoxy). The service manual says "Replace with a known good component. If the problem goes away, fit a new one." Saab and Camp declined to do this saying, "We don't stock such an expensive component (\$700 list), don't have a good used one, won't take one off a new car and don't want to have it in inventory if we are wrong. If you want to risk your money, the best we will do is sell it to you at jobber, 25% below retail."

As there are several other \$300 to \$700 parts in this "state of the art Direct Ignition system" (at this point, I would gladly have gone back to distributors, points, etc. where \$100 would replace the entire ignition system), I borrowed the Factory manuals

from John and did my own testing. Frank at Group 6 offered to sell me a new APC/DI module at cost if that turned out to be the problem. (Buy stuff from Frank! He is a Real Friend to Saab owners.) After much inconvenience, I determined that it was in fact probably the DI cartridge. Camp ordered and installed the new, improved unit, so after three months of inconvenience and \$450, the 9000 will now start and my wife is speaking to me again.

About Tires: Owning six sets of new tires is my explanation for the recent growth in the world economy. The 99 has Hakka NR09's, the 900 had NR10's and the 9000 NSW's for winter use and they do make a big difference. After years of getting by without them, or trying "all-season" compromises, I finally realized that for me owning Saabs means doing it right - the best winter tires and the best summer tires that I can find, all mounted and balanced on Saab rims.

When spring came, I remounted the optional Saab Cross-Spoke/Pirelli P700 205/50-16's on the 9000 and found that at only 18K mi, the tread was just about gone, but on dry roads, a bare minimum of tread sticks best. This combination is an outstanding ride/handling compromise, much better than any 15" tire/wheel setup I have tried.

Everything was fine until the issue of NINES that arrived in March. The Saab Shop in Tampa offered a set of three-spoke SPG-style wheels with Michelin MXM Pilot 205/55-16 take-offs from a 1994 Aero. They weren't cheap, but they were exactly what I wanted. The look is perfect for my silver 9000 and the Michelin MXM's are supposed to last lots longer than the Pirelli's. These wheels should be standard on all Saabs.

About the '85 900T (85K mi) - The BFG 205/60-15 Comp TA's continue to work well and are probably the best value in a widely available tire. (NOTE: The tan leather front seat covers are about gone and none of the Nines advertisers have any good used ones. Has anyone found satisfactory replacements, either leather or vinyl?)

The '78 99 EMS (est. 165K mi) summer tires are now Nokia Rollster 165R15's and they are perfect for the car. Get them while they are still available. It started and ran all winter (after I replaced the European fuses with US-style stainless steel AGC Buss

fuses), but it remains a bottomless pit for parts and repairs. Actually, as a less than \$2,000 investment, it is really pretty decent transportation. The problem stems from alternately driving the newer cars. Moving from the 9000 emphasizes that the 99 needs a front suspension rebuild, and that Saab was right to go to turbos and the heater temperature control apparently sheared off inside the dash this morning. It also could use a new left front fender and my local wrecking yard just crunched their last 99 - no one wanted parts off it. However, a friend who has been driving only 99's for years thinks mine is great and wants to buy it.

In conclusion, I may stay with Saabs as long as they build them. This loyalty despite the factory and dealer attitude that anyone so impecunious as to continue to drive a \$35,000 car after the warranty expires should be embarrassed to expect them to be able to make it start and run. I travel quite a bit, stay in deluxe hotels and drive brand new rental cars, T-bird and Taurus mostly, but occasionally Grand Prix, Continental, Cadillac, Buick, Maxima, and Volvo, and it is always a relief and a pleasure to get back to my own house and my own Saabs. Nothing made for the mass market will ever feel like home.

Jack Vines
Spokane, WA

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McPherson Struts & Shock Absorbers

The continuing saga

Those Koni Sport (yellow) struts (actually inserts for the front struts) and rear shock absorbers are doing fine at 7,000 miles in my 1990 Saab 9000S. Roaring sounds driving over pebbly concrete are not-existent, and the very firm ride is not kinky. The control provided over bumpy turns must set some kind of record. I will report again at 20,000 miles.

Euro-Tire, Fairlawn, NJ, is not answering their phones. Automotive Performance Systems, Inc., 1464 N. Hundley St., Anaheim, CA 92806; 714/630-1144 is still going strong as a supplier of Konis.

Self-Destruction of Engines when the Cam Drive Fails

Kevin Booth, [formerly] of Parrformance, Lititz, PA, told me that the GM 2.5L V-6 in the new 900 suffers valve failure when the cam-drive belt breaks, because the valves hit the tops of the pistons. He also said that *real* Saab engines (i.e. the 4-cylinders) are not subject to this type of failure. I remember that the in-line 6 of Jaguar was potentially prone to catastrophic failure if the chain-drive failed, which it seldom did. Can anyone confirm this type of information?

The Mitsubishi 3 L V6 in many cars will suffer considerable damage if the cam-drive belt breaks. It seems to me that this type of cam-drive failure, which is almost a certainty in engines used long enough, should never be allowed to do all the extra damage, and that manufacturers who allow it should be exposed.

Joel M. Kauffman
PA

2.5L V6 vs. 2.3L Four

After reading the commentary on the new 900 model comparing the 2.3L version to the V6 (issue no. 233, p8), I would like to offer my perspective from a buyer's standpoint. I fall into the category of "the unwashed" as characterized by Mr. Goldberger.

My original plan was to purchase a 900 with the 2.3L engine because the V6 offers only slightly more HP and torque at considerably more cost, as Mr. Goldberger points out. Additionally, the 2.3L would provide easier access for service, plus potentially higher

reliability and lower maintenance with its Direct Ignition System and chain driven camshafts vis-a-vis conventional ignition system and cog-toothed rubber timing belts used on the V6 engine.

So, why did Saab opt to use different final ratios for these engines? I have two theories:

1. Saab wants to appeal to both performance oriented customers as well as value oriented customers who likely would put a higher priority on economy.

2. Saab needed to justify the higher price of the V6 with higher performance.

To date, with just over 4,000 miles my V6 with automatic transmission (I drive 30 miles each way to work in heavy traffic) is averaging 25.7 MPG using 89 octane fuel. I am satisfied with both the performance and economy it delivers.

Ralph L. Beck
Rochester Hills, MI

Electric antenna maintenance

A few years back, there was an article that covered antenna replacement on earlier model 9000s. I followed up with an article clarifying several points in the first article.

What has happened since then is the antenna mast on my 1986 9000 stopped going up and down completely. Cleaning and lubricating the mast didn't bring about a noticeable improvement.

It appears there is another way for the mast to stop working. The mast was slightly bent, most likely from one of the accidents my car has lived through.

Here is my diagnostic procedure. With the mast fully extended, rotate the bottom section. The mast should not wobble as it is turned. Also visually inspect the mast for worn spots in the coating. If it does wobble, look at each section, starting from the bottom one, to see where the bend in the mast is. Start with the lowest section that is bent and with both hands, bend the section towards central axis of the assembly. On 9000s, the mast is perpendicular to the ground, unlike Maximas and late model Mercedes.. Remember the mast sections are made from thin walled aluminum and doesn't need a lot of force to move.

Now try turning the radio on and off to see if the sections collapse into and extend smoothly from one another. If there are still problems, try one more step. Remove the nut, molding, and gasket at the bottom of the

mast. Use a solvent that will evaporate to clean all the dirt from the bottom section. Run a rag with solvent on it through the nut. Extend and collapse the mast a few times to see if there is an improvement. If smooth operation is restored, the parts may be reassembled.

Before installing the gasket, I suggest running a bead of silicone around threaded shaft of the mast where it goes through the body to promote a more weather tight seal. One final note; if you tighten the nut too much, the mast will have trouble operating.

In summary, I believe dirt at the base of the mast and the mast being bent are the primary reasons that the antennas in older 9000s operate poorly.

David Gabbe
Brookline, MA

Alternator removal, v.3

Steve Parsons' letter on 900 alternator removal and repair (NINES #222) has saved me several times the cost of a NINES subscription. I recently performed the alternator brush/regulator replacement on my 120K mile '88 900S. Both old brushes were worn down to 5mm! The new brush/regulator assembly which I installed cost \$69, which is a lot less than a remanufactured alternator and 3 hours labor.

I did not remove the air conditioner to get the alternator out. Instead, the bolt-on oil filter and housing was taken off to allow more room to take out the three alternator mounting bolts. When reassembling, I turned the big alternator mounting bolt around so that it can be withdrawn without hitting the firewall to remove the alternator next time.

I would appreciate any suggestions you might have on what might cause thumping from the front suspension when going over low speed bumps at constant speed. All four ball joints have been replaced and sway bar end bushings have been greased. The OE Sachs shocks still have pressure, and the shock mounts appear okay, although the top mount compresses when the front end is jacked up allowing 1/4 inch clearance between the lower bushing and the fender wall. Steering rack and tie rod ends appear tight.

Thanks for the great tips on how to keep old 900's running.

Walter H. Mengel
Cincinnati, OH



"Forward, into the fog..."

by David Hueppchen,
OJ Rallye Automotive

Fog lights are yellow and driving lights are white! Wrong. There's more to it than that.

When someone is thinking about installing fog lights, I start with questions: First of all, do you know what fog lights are? Secondly, what do you drive? Where do you drive, what kinds of roads do you drive on? What kind of weather do you drive in? What do you want the fog lights for — do you live in a real foggy area? Are they for pea soup fog or light fog? For snow, rain? Just to look cool when you're cruising?

Fog lights aren't necessarily amber lights, nor are amber lights always fog lights. There are amber driving lights, amber spot lights, and in France there are amber headlights. What makes a fog light is the light pattern, regardless of the type of the lamp or color of the light. A real fog light — one that will do you good when you're trying to see in the fog — has a wide beam pattern (70 to 120 degrees) with a sharp, flat cut-off on top.

But beyond that, not all "fog lights" are created equal. There are a lot of lights being marketed as fog lamps — some very low priced, some hundreds of dollars a pair —

that if I were driving in extreme weather conditions, I would not turn on. It would make it harder to see.

Fog lights, of course, are just one kind of auxiliary light. There are also driving lights, mid beams (passing lights) and spot lights for other purposes (more about these in future stories). And fog lights have many other functions besides fog, such as other types of bad weather, and increasing side light for cornering. While fog lights are beneficial in fog or any other glare-producing conditions, they can also help you see better when you drive on a clear night.

But mainly when you think of fog lights, you think of fog.

Seeing in fog

You can't see through fog. You see in foggy weather by lighting up the road under the fog, illuminating as little of the fog as possible to avoid producing glare.

Fog is defined as a thick cloud of water droplets, 0.00039 to 0.00156 inches in diameter, suspended in the atmosphere at or near the earth's surface and reducing visibility to below half a mile.

Your high beam headlights produce a wall of glare — a white-out — from the light bouncing off these droplets of water. You're

being blinded by the glare of your own lights reflected off the water vapor in front of you. Similar experiences occur in rain, snow, dust, etc. To see safely under these adverse conditions, you have to make lighting adjustments.

One solution would be to have heated blowers like giant hair dryers to dry the air in front of your car — works great, costs a lot and uses tons of energy. (We may never deliver any of these blowers, but you can start sending deposits in now — big ones.)

The amount of glare from airborne moisture is affected by a relationship of angles between your line of sight and the angle of your car's lights. That's why you want a wide, flat beam from your fog light. The fog lamps should light up the road without reflecting off the fog that's higher up. You don't see through fog so much as you are trying to see the road lit up underneath the fog.

Lenses and reflectors

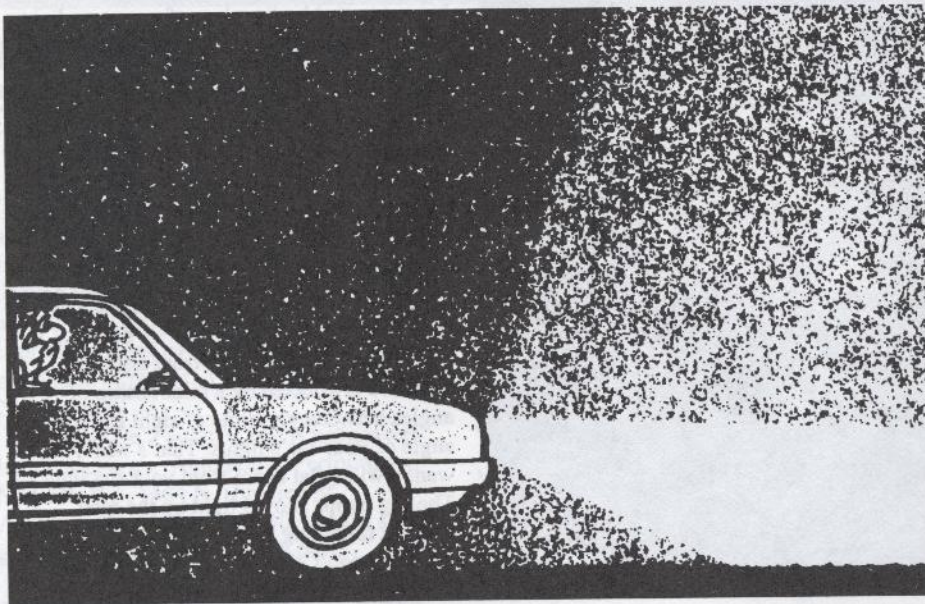
It helps to know something about the construction of the lamp — specifically its lens and its reflector. The cuts in the lens, called *fluting*, shape the pattern by how they deflect the light. Ever knocked the lens out of your fog light? And notice how it turned into a spot light? That's what it would be if it had a totally clear lens with no fluting.

Since the light passes through the lens, obviously the material of the lens would have an effect on how much light passes through. Lead crystal, being the clearest, allows the most light to pass through. Ordinary glass or hardened glass is full of dirt and impurities that affect the passage of light. Plastic lenses also block a portion of the light.

Most of the better lights are made with lead crystal lenses. Hardened glass doesn't break as easily, but has the imperfections of ordinary glass. And plastic is basically useless for lenses, because of its impurities and because it gets scratched up.

Breakage is, of course, an occasion for replacing lenses, and if fog lights are mounted in the air dam, and you drive across the desert a lot, they get essentially sand blasted, and all the little pits affect the flow of light and the light pattern. Even if you don't drive across the desert, your lenses will still be scuffed up by grit, and you likely will want to replace them sooner or later, especially if you're using good quality lights.

You will also care about the quality of the reflector, the shiny part that gathers the light from the bulb and reflects it out at precise angles through the lens. Good



Glare caused by reflection of high or low beam lights in fog - or white out - can be minimized by the use of fog lamps.

reflectors aren't chrome — chrome appears to be shiny and reflective to the eye, but for reflecting light it's not efficient.

Silver plated reflectors are a throwback to olden days. Prior to the invention of sealed beam headlights, American cars had separate bulbs, reflectors and lenses, and the reflectors were silver. Silver is not optimally reflective when it's first applied. And through tarnishing, it loses 40 to 50 percent of its reflectiveness after 48 hours. Reflectors were supposed to be polished monthly in these cars.

The preferred and most reflective material used today is an aluminized vapor coating. This is the neat stuff they use in microscopes and in mirrors for aiming lasers. Most of the higher quality lamps use this type of reflector.

Some lights use a bulb shield, like a cup in front of the bulb. The shield blocks direct light from the bulb to the lens so that only light from the designed shape of the reflector passes through the lens. This reduces stray light above the cut-off.

A word about bulbs. Halogen bulbs have been around for about thirty years now. Most of the replaceable bulb type lamps utilize a halogen bulb. Some use a tungsten bulb - this does not produce as much light per watt.

Three common types of single filament halogen type bulbs are H1, H2 and H3. The H1 puts out 29 lumens per watt (lm/w), the H2 is 33 lm/w, and the H3 is 26 lm/w — versus the 13 lm/w of a tungsten bulb. Any

of these three could be found in a fog light. The bulbs won't interchange; a lamp is built to take a certain type of bulb.

The most common bulb wattage is 55 watts. An option is a 100 watt bulb, which produces nearly twice as much light at the bulb filament. This would be a benefit in a larger lamp, but in many of the smaller lamps the reflector area is too small to efficiently gather the light, and very little increase in light output occurs.

Of course, the question of *yellow*, or *amber*, versus *white* needs to be addressed. I prefer *white* light. Regardless of the various types of construction, generally speaking, *yellow* fog lights become *yellow* from coloring the lens or the reflector. This may reduce the light distance by 15 to - in extreme cases - 50 percent.

I once equipped a car with *amber* headlights, driving lights, spot lights and fog lights. I could light up reflective signs two miles away, but from not having the full spectrum of light, a lot of darker objects simply were not as visible. Consequently, I use *white* lights for their benefits for the majority of the time. Some people prefer *amber* lights for more severe weather, and, obviously, much less glare off of snow. But to me the disadvantages of *amber* outweigh that benefit.

Bigger lights are, all other things being equal, better. More reflector area reflects more light. Bigger, better lights do, however, cost more.

Round lights are generally better than square ones with an equal area because the corners in a square lamp are sacrificing area. It isn't for the aerodynamics that rally cars have rows of big round lights across the front.

And then there are the various designs, ranging from the sealed beams, of which there are still some on the market, to the projector lamps. Projectors have the bulb sitting way in the back with an ellipsoid reflector behind it. A shield is used to perform the cut-off. The convex lens projects the light, hence the term projector — sort of like a slide projector light. It's a sophisticated design whose advantages are that you get the same amount of light with half the size of lamp, the beam is very wide and even, and stray light above the cut-off is practically nil.

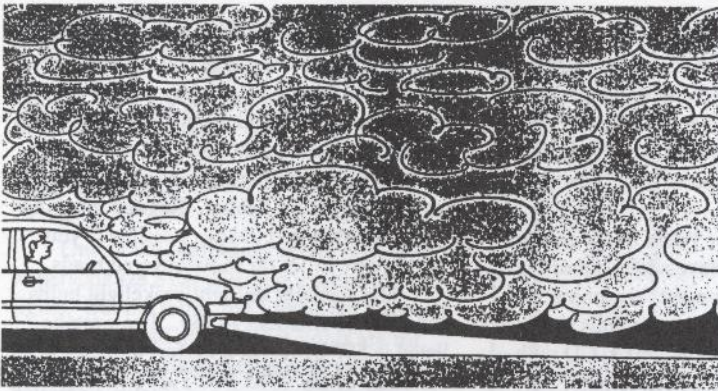
Another kind is called *bi-focus* or *free-form*. Instead of a parabolic reflector, it has a multi-planed reflector — the lower part of the reflector has a different focal point than the upper part, focusing more light where you want it on the road.

Obviously, this begins to get fairly complex, and much is done by lighting manufacturers to research and develop materials and construction to make a light that does what it's supposed to.

Mounting

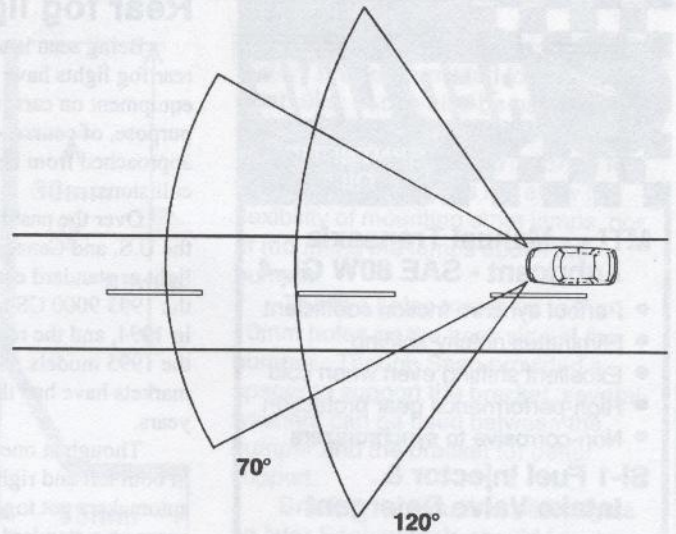
After you have the right kind of fog light with the right pattern, next is how to mount it to get maximum benefit, and this depends on what your goals are for your fog lights. For really severe weather, mounting the lights lower is better. But, the lower the lights are mounted, the more vulnerable they are to impacts from stones, parking lot dividers and various other objects. The lower mountings also decrease the distance forward the light will go (thanks to hills and the like). And the lower they're mounted, the more the shadowy effect from rises and depressions in the road increases, which I find irritating.

Mounting the lights low on the vehicle is useful only for pea-soup fog, snow squalls, etc., 5 to 20 mph driving conditions, which most of us encounter very infrequently. For a majority of the time, I feel I am better off with fog light mounted on top of the bumper, for greater distance and more visibility overall in less severe conditions. I'm still retaining the option of aiming them lower for extreme conditions (I can get out with a wrench and point them down at the ground 10 feet in front of the bumper when the weather is really bad).



Above: Since a fog cloud hovers above the ground, fog lights illuminate the road beneath the cloud.

Right: A wide beam pattern will fill the sides of the road better, but will have shorter distance range than a narrow beam pattern.



I also drive with my fog lights on in clear weather as cornering lights and for seeing animals and other things off on the side of the road waiting to attack my vehicle.

Another important consideration when mounting fog lights is that they be mounted rigidly, so the beam stays pointed the way it's aimed, as opposed to dancing over tar strips on the road and the like. Dancing light beams will prove to be very irritating, and if they're bouncing up and hitting the droplets of water, you're still going to have glare.

Aiming

Fog lights should be aimed straight ahead and level, or down a few degrees. For really severe weather conditions, aim them down lower and give up the longer distance. In that situation you don't need them to shine 600 feet down the road, since you can only see 50 feet.

A wide fog light pattern with the light aimed straight ahead will give you some light off to the sides for cornering. Some people whose prime concern is cornering light will aim them so they spread apart, off to the sides, pointed away from each other, to increase the off-the-road light. This will increase the amount of side light from the outside part of each light, but it will decrease the light in front of the car, and thus the distance they go straight down the road in front of you.

On some of the rally cars I've prepared, we aimed the fog lights so the light patterns would cross each other. Thus, the left light would light up the right side and the right light the left side. This gives the same amount of light off to each side, but in front of the vehicle it's brighter where the beams overlap.

Keep 'em clean

No matter what the color or design of your fog lights, keep them clean. Just a few days' worth of road dirt can cut the amount of light by up to 50 percent. In winter, mud and snow buildup can reduce the light up to 90 percent!

Now you know the basics — what fog is, the choices of types available, the choice of lens color, and how to mount and aim fog lights for your intended purpose.

So — how do you choose a fog light? Buy them all and compare them? Or consult an expert. You could read everything there is about a particular light, but that won't tell you everything. For example, you can't compare reflective ranges from different manufacturers, because they may not all use the same reflector. Ultimately, you can't know how a light works until you put it in a vehicle and drive down the road — or talk to someone who has.

David Hueppchen is the proprietor of OJ Rallye Automotive, which specializes in lighting. It is located on County Highway OJ in Plymouth, Wisconsin, close to the Road America race track. Years of research and experience have made him a Lighting Guru.

Hueppchen started racing go-karts in 1960, participated in several forms of motorsport including PRO Rally in the '70s and '80s, now is semi-retired and drives a Volvo 1800 in historic races.

Hueppchen is working on a series of articles on automotive lighting for NINES.

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Rear fog lights on a 900

Being seen is as important as seeing, so rear fog lights have become standard equipment on cars in many countries. The purpose, of course, is to be seen when approached from behind to avoid rear end collisions.

Over the past few years, Saabs sold in the U.S. and Canada have added a rear fog light as standard equipment, beginning with the 1993 9000 CS models, the 900s starting in 1994, and the redesigned 9000 CD with the 1995 models. Saabs sold in other markets have had this feature for over ten years.

Though at one time there were rear fogs in both left and right side taillight clusters, automakers got together a few years ago to agree on a standard, so that now only one side is lit to keep approaching drivers from confusing the fog light with brake lights. On older style (pre-94) 900 hatchbacks, the top inner location is used for fog, while on 900 sedans it is the bottom inner lamp. In most European markets including Sweden, only the left-hand rear fog light is connected. In Great Britain, where traffic drives on the left side of the road, only the right-hand rear fog light is connected. On cars manufactured for the U.S. and Canadian markets, the fog light locations in the taillight clusters are used for additional brake lights.

While there are aftermarket red fogs for use on the rear of a vehicle, it, obviously, is possible to activate the rear fogs in their stock location, albeit at the expense of a brake light. According to a source at Saab Cars USA, the wiring harness is specific for those markets where the additional brake lights are connected, so it would be necessary to run a separate wire to replace them for rear fog use.

Fuse #21 is the standard location for the rear fog light circuit beginning in 1984. Though rear fog lights were available in prior years, they were not listed on any of the wiring diagrams researched for this article.

From 1986-on there is a REAR FOG warning lamp in the instrument panel to remind the driver that the brighter rear lights are on. As with other fog lights, the rear fog lights are wired to operate only when the headlights are on.

Newer Volvos sold in the U.S. have a pair of fogs in the rear, but must not have a warning light as many Volvo drivers seem to drive with the brighter rear lights on all the time.

Tim Winker

Brighter taillight bulbs?

With winter weather comes the problem of snow buildup on taillights. A low pressure area behind the car causes snow and dust to accumulate on all rear surfaces, completely obliterating the taillights and rendering the car invisible from behind. Regular cleaning helps, but this isn't always possible if you drive many miles on snow covered roads.

The standard taillight/brakelight bulbs are the dual-filament #1157. The wattage listed is 5W/21W. In an effort to increase the visibility of my 1985 900 Turbo to following traffic, I ordered a set of halogen dual-filament bulbs that replace the 1157, designated H1157. I assumed the halogen bulbs, being more efficient than tungsten bulbs, would put out more light from the same wattage draw.

The H1157, however, consumes more power at 15W/50W. The light output is considerably brighter, but the heat generated is also much higher. In a few short weeks, the bulb had melted the plastic socket in the taillight assembly and there was *no light* from the taillights.

It was an expensive lesson as the bulbs run about \$13.00 apiece, and one replacement outer taillight assembly, including a new lens, is \$147.50. One possibility that I haven't tried is to cut the plastic socket out of the taillight housing and replace it with an insulated universal dual wire socket from a parts store.

In addition to rewiring the sockets, heavier wire (14 gauge or 12 gauge) should be used for the entire circuit since the power draw at the taillight circuit alone is being increased from 20 watts (4 bulbs x 5W) to 60 watts (4 bulbs x 15W).

Another possibility for increased visibility from behind is to add lights near the top of the rear window. Many competitors on the Alcan Winter Rally and other winter rallies have added lights on a ski rack in an effort to be seen through a cloud of blowing snow.

Tim Winker

Adding auxiliary lights

One of the first things many people do to personalize a car is to add a set of fog lights. But the term "fog lights" isn't always correct as not all aftermarket lights are for fog. There are many different auxiliary beam patterns available to cover a variety of purposes. A beam that spreads light in a short, wide pattern is the proper description of a *fog* light, while a long distance beam in a narrow band is referred to as a *driving* light. Some companies also offer an intermediate light, something to supplement the high beams in a wider, long distance pattern.

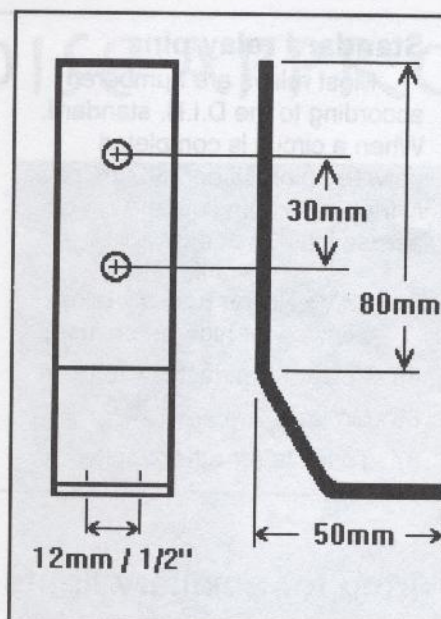
Another myth is the use of "candle-power" to describe the light output. Virtually all auxiliary lights come with 55-watt bulbs, meaning they all put out the same candle-power at the bulb. But how much of that light is being spread in a useable pattern beyond the lens? A better measure of the effectiveness of any lamp is *reflective range*. A more expensive lamp will have a better quality reflector and better engineered lens. The result is a more effective lighting pattern in front of the car.

Fog lights come in two colors - white (or more correctly, clear) and amber (or yellow). For most uses, the clear lens is the most effective. If you live in an area where there is snow on the roads much of the winter, yellow lenses may be of more use as they cut down the glare reflected from the snow.

If seeing greater distances is your goal, look to driving lights. The problem with driving lights is that they often have a *pencil* beam, which is fine for seeing long distances such as on the prairies or in the desert, but isn't much help on curving roads. In that case an intermediate beam lamp is preferable.

The difference between fog and driving lights can usually be distinguished by looking at the lens. If there are many prism-like cuts in the lens to spread the light beam out, it's a fog light. If the lens is as clear as a drinking glass, it's more likely a driving light, though some parabolic fog lights use a clear glass lens in conjunction with a specialized reflector. An intermediate light will have some cuts in the lens to spread the light pattern like a high beam.

Preparations for installing auxiliary



The bracket pictured is the Saab factory bracket provided for use on Saab 99s. It can also be used on 900s through 1986 models. The "L" shaped bracket provided by Saab for 900s through '86 does not allow the flexibility of mounting other lamps, nor of mounting the lamps above the bumper.

The two holes match up to the 10mm holes on the back side of the bumper. Though Saab provided a spacer to support the bracket, several washers can be used between the bumper and the bracket for better support.

Brackets to mount auxiliary lights on later Saab models should be purchased from a Saab dealer.

lamps include figuring out what your power requirements are. If you're installing two 55-watt lamps, you will need a relay of at least 10 amps. The formula for figuring out what your system needs is:

$$(W \times N)/12 = \text{minimum amperage}$$

where W = wattage of bulbs, N = number of lamps, and 12 because the electrical system is 12 volts. For a standard two lamp system using 55-watt bulbs:

$$(55w \times 2)/12v = 9.167 \text{ amps.}$$

A 10 amp relay is cutting it close, but a 15 amp relay should be sufficient. But if you switch to 100-watt bulbs, that 15 amp relay isn't enough.

$$(100w \times 2)/12v = 16.67 \text{ amps.}$$

Most packaged lighting kits come with 30 amp relays so this isn't usually a problem, but it's worth checking before you install the wiring and relay.

Why is it necessary to use a relay? 10 to 20 amps is a lot of electricity to run through a single circuit, and there can be some power loss over the length of the wire. The relay cuts the distance that the electricity has to travel between the power source and the lamps. The switch on the dashboard applies a lower amperage to activate the relay which switches on power to the lights.

Because of the amperage requirements, 12 gauge wire should be used for the main

power from the fuse box and to the lights, and for the ground if you use a separate wire. 16 gauge wire is sufficient for the lower amp circuit to the switch.

Power to any auxiliary lights should come from the headlight circuit - power to fog lights from the low beams, power to driving lights from the high beams. This is the legal requirement in many states and in the rulebooks of many rally and race sanctioning bodies. If you insist on having the auxiliary lights switched separately, use an On-Off-On switch so that your car meets the legal requirements as well.

Aiming is also important. You have likely been temporarily blinded by improperly aimed fog lights, and poor aiming can also defeat the purpose of the lights. Fog lights should be aimed low and to the sides, to light up the road below the fog cloud and with a minimum of light reflected back by fog, rain or snow. Part of the reason for aiming them a little bit to the sides to fill the ditches is as an aid to spotting deer and other creatures of the night.

Driving lights should be aimed like high beams, high enough to light some distance ahead, but not so high as to be lighting up the treetops. In either case some experimentation is required. Drive the car with the lights on, then adjust them in small increments until you are happy with the beam pattern.

If you are going to be traveling long distances with the car loaded differently than usual, re-aim the lights. When the trunk is full, the front of the car sits higher and the lights will be aimed higher.

Tim Winker

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Standard relay pins

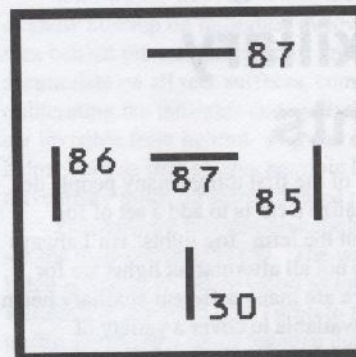
Most relays are numbered according to the D.I.N. standard. When a circuit is completed between pins 85 and 86, the relay is tripped to complete the circuit across pins 30 and 87.

30 - 12 V+ Power (usually taken from low or high beam fuse)

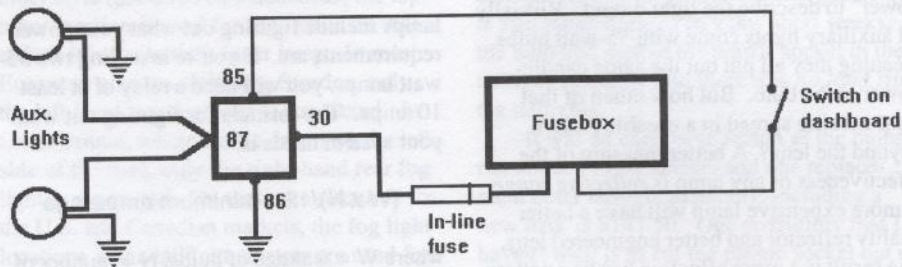
85 - Power from dash switch

86 - Ground

87 - To lights (or other appliance).



Wiring for auxiliary lights



Typical simple auxiliary light circuit. Power to pin 30 on the relay should come from the same fuse as the headlights (low beams for fog lights, high beams for driving lights). An in-line fuse of sufficient capacity should be used to protect all auxiliary lights on the circuit.

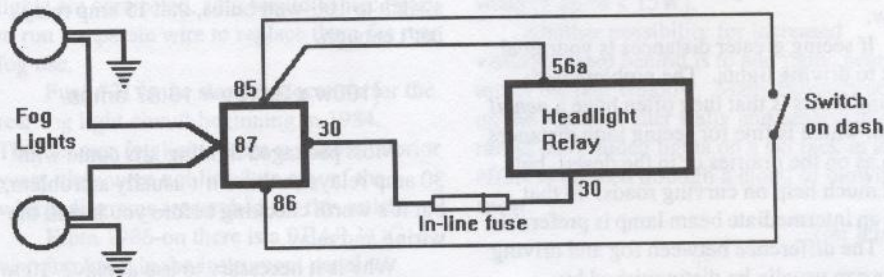


Diagram of the factory fog light circuit on a Saab 99. Power for the fog light relay is taken from pins 30 (12V+) and 56a (low beam) of the headlight relay. For driving lights, power to pin 85 would come from pin F (high beam) on the headlight relay.

More information on Saab electrical systems can be found in **Saab Electrics for Everyone** by Jack Ashcraft. The price is \$40 plus shipping from Ashtech, Inc., 4305 Dark Hollow Rd., Medford, Oregon 97501. Phone: 503-779-0731.

THE TORTOISE APPROACH

What does it take to build a championship winning Saab? Take it slow. Years of testing, competing, learning and regular maintenance to make it reliable as well as quick.

The Saab 99 that Goran Ostlund and Steve Baker took to the 1994 Sports Car Club of America Group 2 title has been in development for several years. Other cars in the class were faster, but the 99 kept up a steady pace while the competition beat themselves. Like the eventual winner in the fable of the Tortoise and the Hare, "slow but sure" paid off in the long run.

With Ostlund behind the wheel, Baker keeping the team on time and on course, and Sean Tennis maintaining the car, the team took five Group 2 wins in six starts, often running in the top five overall against fields of four-wheel drive, turbocharged, factory-backed rally specials. The only non-finish came when dust obscured vision at Susquehannock Trails in Pennsylvania. The Saab left the road, became high-centered, and was unable to continue without assistance from a tow truck. The only damage was bruised egos. The championship winning car was so reliable that, while other teams were lashing their cars together in hopes of struggling to the finish at the Lake Superior



Randy Jokela photo

On the way to the Under 2.0-liter Divisional Championship and another class win at the Lake Superior PRO Rally in Upper Michigan.

PRO Rally in Upper Michigan, the Saab crew had time to wash the 99 before sending it off for the final stages.

The basic chassis for the rally 99 is a 1978 2-door, purchased from a used car dealer in Everett, Washington, in 1985. The sedan bodystyle was chosen because it is 77 pounds lighter than the 3-door hatchback. The original intent was to run the 1986 Olympus Rally in Washington when it was on the international rally calendar. A few years later, Ostlund sold the car to Tennis

when a job transfer moved him out of the U.S. Over the years the car has undergone quite a few alterations, including some updating and backdating, so the car is now listed as an earlier model 99 on entry forms.

Body and Reinforcement

To begin the process of turning it into a competition car, the 99 was completely stripped, then the bare body was dipped to remove undercoating and paint. While the car was in bare metal, more weight was removed by cutting out some excess bracing, particularly in the trunk area.

Much of the reinforcement work was based on Ostlund and Tennis's experience with previous Saab 99s that had been used for rallying. They feel the extra work has paid off in reliability.

The Safety Devices bolt-in rollcage is tied to the windshield and door pillars of the car to make the entire chassis stronger. "I had a cage collapse on me one time and I didn't want it to happen again." The chassis is so stiff that when it is on jackstands on level ground, all the stands must be exactly the same height or the car will rock. "A car that is flexing on the stages is losing performance" said Ostlund. "Even with a stiff suspension, the platform must be tight for the car to operate properly."

The forward transmission mount has been replaced with a nylon block machined



Goran Ostlund and Steve Baker, 1994 SCCA Group 2 PRO Rally champions.

to duplicate the size of the stock mount. "It's pretty solid, but there's just enough flex there for a little bit of give," said Ostlund. The two engine mounts on the side are competition motor mounts from Saab, very solid. "The engine does not move, which keeps the transmission from popping out of gear and doing internal gearbox damage."

The steering column is boxed and reinforced top and bottom. When the driver holds the steering wheel, the driver's weight twists the whole column assembly and the strength of his arms puts stress against the mounts. The steering rack is the quick-ratio rack from a 99 EMS (3.4 turns lock-to-lock as opposed to 4.1 turns for the stock rack).

All of the windows, with the exception of the windshield which is stock, are made of Lexan. The door windows do not roll down so there are small air vents at the front. The vent controls are from the aircraft aftermarket. The scoops are clear canopies from model airplanes. The Lexan scratches pretty easily but regular use of plexiglass cleaner keeps them in good shape.

Racing seats are important for keeping the driver and co-driver from sliding around.

The co-driver's seat is a Pegasus RRS, chosen because it has plenty of hip room in case a substitute co-driver may need to use it. Ostlund uses a Cobra seat; he tried it out and liked it. It was a little expensive, but the seat is very important as the driver needs the support. A good steering wheel is also important. "Even with the racing gloves, I get blisters on my hands. Part of that is the lack of power steering."

Originally the 99 was fitted with the factory aluminum skid plate with spring steel bands for strength and flexibility. When the aluminum plate began to wear thin, a replacement plate was fabricated, but was widened about 3" to help keep dirt out of engine compartment. In addition, it was made double thickness at the rear to better absorb blows from rocks.

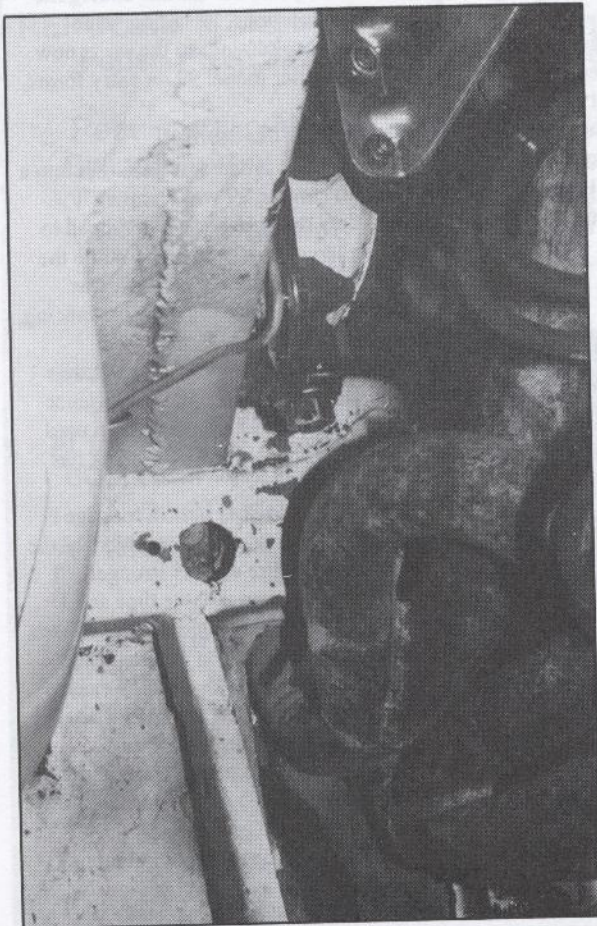
The stock gas tank has a 3/16 inch plastic cover wrapped around the front and bottom to protect against rock damage. Some other Saab rally cars have a fuel cell mounted inside the trunk, above the stock tank location.

Brakes and suspension

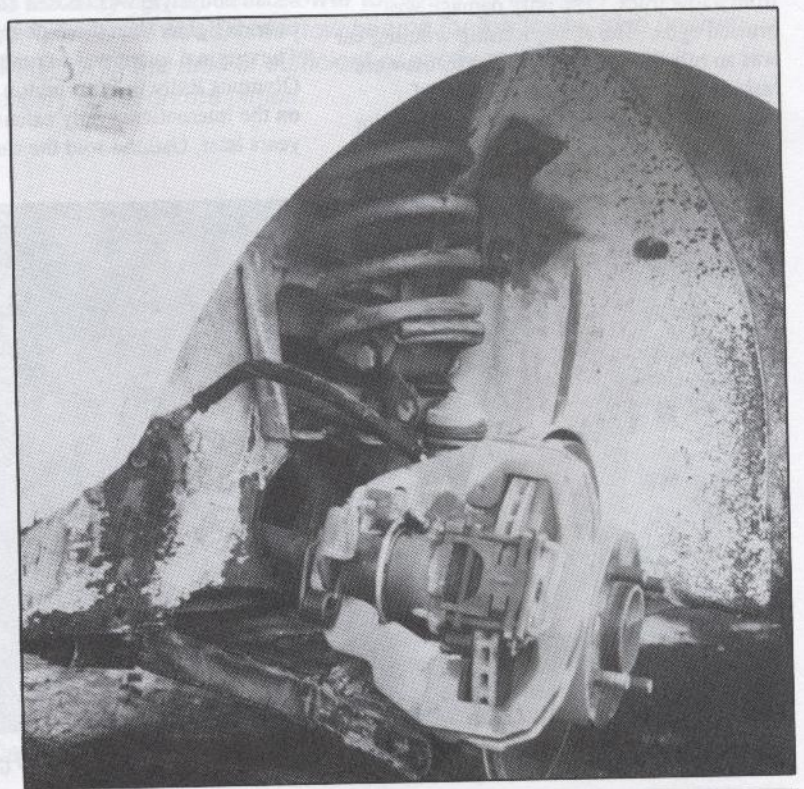
The front brake calipers, ventilated brake disks, and axles are from a 1986 900 Turbo. The parking brake cables and circuit have been removed for easier replacement of the brake pads. The backing plates have been modified by cutting away some of the metal and replacing it with heavy screen for better brake cooling. Ferodo DS-11 pads are used along with AP 550 Racing Brake Fluid for fade free braking.

The lower A-arms have been boxed in with plates on both upper and lower sides of the arms. The upper control arms are also boxed for strength. The bottom shock mount on the lower control arm has been reinforced and a brace has also been added for the upper shock mount to spread the forces through the inner fender. The Saab factory once offered a reinforcing kit for owners building rally Saabs and those pieces have been used extensively, at the upper shock mount and to reinforce the suspension mounts inside the engine compartment.

Since the handbrake mechanism has been disconnected, a hydraulic parking brake has been added. Using the brake system's



Left: Reinforcement panels welded to the inner front suspension and the Saab Sport & Rally header.



Below: The A-arms and shock mounts have been reinforced.

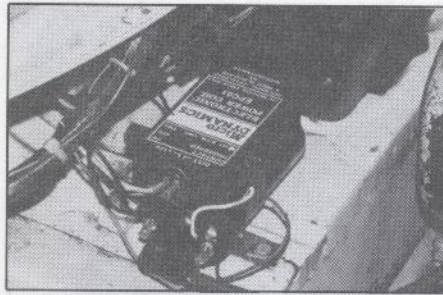
hydraulics, it is a one-way locking valve that doesn't allow brake fluid to return, keeping pressure to the rear brakes. There is also a "fly off" handbrake plumbed into the hydraulic system. A proportioning valve allows the driver to adjust the amount of front-rear brake bias. Initial braking is greater to the rear which helps set the car for a corner, then the driver can adjust the amount of pressure as needed. The rear axle has been modified to accept brake calipers from a Volvo 240 which use pads that are the same size as a '74 and earlier 99. As on the front, the Ferodo DS-11 racing brake pads are used.

The rear axle is from an '82 900, which is a little wider and gives the 99 a better stance. The lower shock mount on the 900 axle uses a bolt instead of the post-type mounting of the earlier 99s. According to Tennis, post-type shocks last about a stage before the rod gets bent and the bushings destroyed. The upper shock mount also needs to be reinforced as it is one of the areas that takes a considerable pounding over rough rally stages. This is done with another factory part, a stock piece on later 900s (Saab p/n's 92-86-253 [left side] and 92-86-261 [right side]). The rear control arms have been boxed and plated, and all mounting points have been reinforced.

Engine

The engine has been fully balanced. Some modification was needed to fit the Tilton aluminum flywheel, as it was designed for the H-engine and the team runs the earlier B-engine. The pressure plate and clutch disk are stock Saab Turbo parts and there have been no problems. "I check that quite often and usually the clutch plate hasn't even finished seating before I replace the clutch parts," said Tennis.

It has a steel crankshaft pulley and a larger diameter pulley on the Bosch alternator (from a late model 900), as the higher engine revs in competition would cause the alternator to run too fast and not charge. The 8-tooth jackshaft is used instead of the 12-tooth shaft as higher horsepower can shear off the smaller teeth of the 12-cog shaft in about 30 stage miles and cause an engine failure. It has been ground down to remove the weights for the mechanical fuel pump resulting in reduced rotating mass, balanced, and extra oil grooves have been added. "You still have to inspect them regularly as they tend to wear on the distributor end since that gear also drives the oil pump." The water pump impeller is of aluminum.



The Micro Dynamics Power Coil mounted next to the heater box.

Car owner and chief mechanic, Sean Tennis.

Pistons are 90.5mm flat-top pistons from an air-cooled Volkswagen, installed backwards. The connecting rods are modified slightly so the pistons will flush with the block. Compression is 10.43 to 1. The head has been ported on a flow bench, with bigger intake valves installed, and double valve springs. The cam is an old-style Group A cam; stock lift but longer duration. "Higher lift cams tend to break cam followers, but this one has been very reliable," said Tennis. The cam sprocket has been notched so the cam timing can be changed - advanced or retarded - for optimum power.

The fuel distributor is from a European spec 1980 Saab Turbo to allow for lower fuel pressures. Lower fuel control pressure translates to no leanness. However, it makes for harder starting and the engine has to be fully warmed up to operate properly. "You've got to start the car early enough to get it up to operating temperature or it won't even get to the start line," said Ostlund.

The throttle body is stock, as is the intake manifold, though the latter has had the ports matched to the head for better airflow. Even so, the stock manifold doesn't flow air quite well enough and the engine runs out of power at 6,400-6,500 rpm. A new manifold has been built but there wasn't time to install and test it before the end of the 1994 season.

The stock distributor has been recurved. It uses points instead of a more sophisticated electronic ignition, though the points have double springs to eliminate float. "We've been running the same set of points for a long time", said Tennis. The primary ignition comes from a Micro Dynamics system mounted above the firewall. It has a built in rev-limiter. In an emergency the amplifier can be eliminated from the system and the car goes back to stock coil and points. An



electronic ignition is in the plans.

A 900 radiator is used for better flow and greater coolant capacity. The lower mounts were bent out and reinforced by welding, and brackets fabricated to mount the radiator to the front cross member. The twin cooling fans are from a 99 Turbo. There is an engine oil cooler, but no transmission oil cooler at the moment. A transmission cooler is planned though. "The limited slip really heats up the gear oil. The pinion gets so hot that it can seize the bearing," says Tennis.

The exhaust flows through a Saab Sport & Rally header, into a 2.5 inch exhaust pipe with a three-chamber Flowmaster muffler and a SuperTrapp on the end for exhaust tuning.

Transmission

The transmission is a close-ratio, 4-speed, gear-drive box with a limited slip differential. The ring and pinion is 5.17-to-1. The primary gears provide a 5% underdrive. "We lose about 4mph at 7000 rpm in 4th gear, but we get a little better gear overlap this way. We do have to constantly change the input shaft as it has a tendency to break at the keeper," said Tennis. "The best way to tell how the input shaft is holding up is to check the tires. If the roads are rough enough to chew up the tires, then those same forces are being transmitted through the drivetrain. If the roads are sandy and the tires don't wear much, the drivetrain is also taking less stress."

The gearbox makes a bigger difference in stage times than the engine. According to Ostlund, "With the stock engine and the close-ratio box, even without the limited slip, the car was much quicker. Everyone asked what we did to the engine to go so fast. It was all in the different gearbox ratios. The



The circuit breaker panel allows the co-driver easy access to identify and correct any on-board electrical problems.

gearbox was well worth the money. You can spend a lot more in trying to build a high horsepower engine. And with that you may have to build several regular transmissions. The rally boxes are pretty indestructible as they were designed to take the abuse."

Lighting and electrical

Most PRO Rallies are run at night, so lighting is of vital importance. The sealed beam headlamps have been replaced with Cibie 5 1/4" hi/low (H4, 55/60w bulbs) and high beams (H1, 55w bulbs) in the stock location. Two pair of Hella Rallye 2000s - one pair of driving beams, one pair of pencil

beams - are mounted on the front bumper. The Rally 2000s are individually wired, each with a 10 amp circuit breaker.

All of the electrical circuits have been moved to the interior for better protection from the elements. That also makes them easy to reach as they are in the glove box location, right in front of the co-driver. Circuit breakers are used instead of fuses as the breakers are easier to identify and can be pushed back in if something trips them. The breakers are aircraft surplus from a DC-6.

"We ran Olympus in 1986 with this car," said Tennis, "and the factory Peugeot team came over and looked at our circuit

breaker board. The following year they had a similar setup in their Group A cars. Now it has become a standard practice for World Rally Cup cars. We like to think of that as Goran's contribution to the world of rallying."

The battery has been relocated into the trunk for better weight distribution and easier access. 4-gauge cable is used to keep power loss to a minimum.

Tires

Tires are another important consideration. Ostlund offered his theory on tires: "You want the car to be as stable a possible. You need the rear to grip. You also need effective acceleration and braking.

"On the rear I use the Michelin F41 rally tire which has a sort of wishbone pattern. It was developed primarily for four-wheel drive cars. They have a lot of grip sideways but not so much for braking or acceleration. That helps keep the rears from sliding out so much.

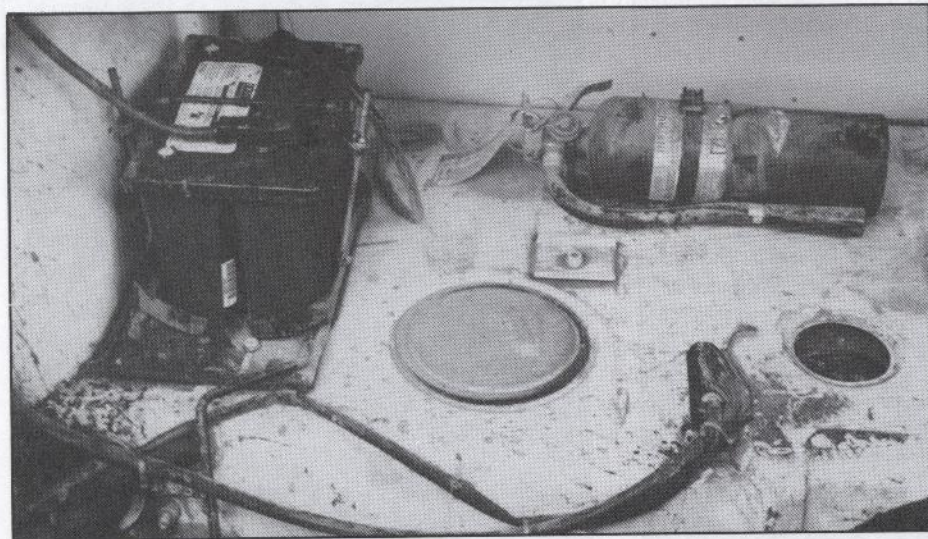
"Since you need lots of straight line acceleration and braking on the front, I use the L40 Rally Michelins which is a straighter cut pattern. That's good for the majority of stuff we run on. They're not good on snow and ice or really soft sand. For that you need a wider open tread pattern like a mud and snow tire. But most of the events we run are hard packed forest roads and these work great.

"We also run relatively low tire pressure - the fronts at 27 PSI and the rears at 23. More than that and we pound the centers out of the tread. And if the tires are crowning, you aren't getting the full tread on the ground. You want the outside edges of the tire to bite. We used to run older style Pirelli rally tires and they worked well, but these Michelins are better."

Minilite wheels are used as they allow lots of airflow to the brakes and they're plenty strong for the money.

Maintenance equals Reliability

Much of the rally budget is spent on maintenance and it has paid off in reliability. "We only had so much money we could spend so we did lots of preparation," said Tennis. "It's also very important to do the maintenance. We spend a lot of time after every event going over the car, several evenings and every weekend. Every three events I replace suspension bushings and rebuild the steering rack, and I always check ball joints and tie rod ends and replace them as needed. It keeps the car tight, everything



The deep-discharge gelcell battery and fire extinguisher are located in the trunk.

gets cleaned and we can check for cracks in the body or the suspension."

"I'm real paranoid about the suspension because I saw the result of broken control arms on Alan Carter's and Ola Stromberg's 99s," said Ostlund. Both of those incidents happened at high speed on straightaways and the cars were both destroyed.

"Even when we're not working directly on the car, there's paperwork to do, ordering parts, thinking about ways to improve the performance," said Tennis. "The whole last year I've had very little time off, only then because the car stayed in Minnesota between a couple of events out East. I didn't know what to do with myself!"

"It's important for anyone starting out to do things slowly," said Ostlund. "Reinforce the car for reliability. Make changes in small increments; don't do a lot of changes at once. If you change a lot of things at once, the reliability goes down and it's harder to determine which of the changes may be causing a problem. We started out with a strong car with stock engine, stock transmission, stock everything. Then we added the close-ratio transmission and kept building from there. We ran it several years with the stock engine and did quite well.

"Plus, you learn how to drive with low horsepower. You can't learn how to drive

properly in a car with loads of power. As you add horsepower, the driver can also learn in increments. By the time you get up to something really fast, you can be comfortable at the higher speeds."

Though Tennis and Ostlund say they don't plan to attack the Group 2 championship as hard in 1995, there are plans to keep upgrading the car. "There's a new intake manifold ready to install," said Tennis. "It's really pretty."

"And we've talked about fitting power steering. We have a quick ratio power steering rack that would be fun to put in. It's only two and a half turns lock-to-lock!"

The Saab did quite well at this year's Rim of the World PRO Rally in California. Both Ostlund and Tennis believe that set up properly, the Saab could win at Rim. A couple of Saabs have done quite well in California mountain rallies in the past. Jon Davis took his Production Class (stock) Saab 99 2-door to second place overall at the Mendocino Forest Rally in 1981, just behind Rod Millen's factory backed 4WD Mazda RX-7. Stig Blomqvist won the 1976 La Jornada Trabajosa PRO Rally in a factory prepared 99 that featured a specially built 16-valve head. Could a Saab win at Rim of the World? Be in Palmdale, California, on the weekend of May 5-6 to find out.

Tim Winker

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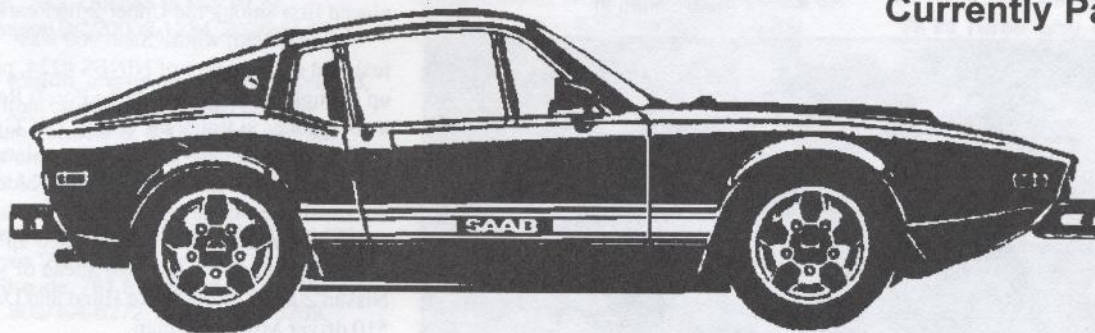
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2 Guys Named Carlsson

It's been a heckuva summer for this rallyist. Just a few weeks apart, I beat two guys named Carlson (one was actually Carlsson) in TSD rallies.

In August at the National Saab Owners Convention in Oconomowoc, Wisconsin, I navigated for David Snider of Boulder, Colorado, in his 1973 Saab 99 4-door, as we took first place in the convention's rally. Finishing second were Erik Carlsson - legendary Saab factory rally driver from the 1960s now working with the Saab public relations dept - and Stephen Goldberger, columnist for NINES (with Pelle Rudh and Tad Gilliam along as observers).

In mid September, I drove my '79 99 2-door - a.k.a. the NINE-T9 - with the lovely Diane Sargent as navigator, to a victory in the Port-To-Port Grand Auto Tour in eastern Wisconsin. Our only real competition was the team of Brian Davitt from Algoma, Wisc, and Satch Carlson, sometime automotive journalist, humorist, and flirt. I have competed on the same team as Satch on several occasions in One Lap of America and on the Alcan Rally, and competed against him on One Lap, the Downeast Rally and on the Alcan Winter Rally earlier this year. His team finished ahead of mine on those three occasions.

Using only the stock odometer - with a 14 percent error due to 50-series tires - and a pocket calculator, our total score for the five legs scored was 5, 1 point per leg (just couldn't seem to hit that 0). Since scoring was to 1/100th of a minute, that meant our total error was the equivalent of 3 seconds. Davitt and Carlson collected 26, the equivalent of 16 seconds error. Next closest was the rookie team of Rich and Kris

Hilgendorf with 114 points.

May I recommend the Port-To-Port Tour which ran from Port Washington to Manitowoc to Algoma and was sponsored by the Chambers of Commerce of those communities. The course was written by Dave Parps of the North Central Saab Club. Friday festivities included fish dinner in Port Washington. Saturday lunch was in Manitowoc on the carferry S.S. Badger (lunch only, we didn't take the ferry trip to Michigan) followed by a tour of the Maritime Museum and the submarine U.S.S. Cobia. The Saturday awards banquet featured a fish boil of fresh Lake Michigan trout and Satch Carlson as the speaker.

The 1995 Port To Port Tour will be Sept 15-16 and will run from Algoma to Port Washington.

Tim Winker

Port-To-Port Grand Auto Tour Results

	Driver / Navigator / car	Score
<i>Expert Class</i>		
1	Tim Winker / Diane Sargent '79 Saab 99 2-dr	5
2	Brian Davitt / Satch Carlson Alfa Romeo Spyder	26
<i>Open Class</i>		
1	Rich & Kris Hilgendorf '93 Saab 9000	114
2	Phil & Martha Duckert '92 Saab 900 Convertible	169
3	Marion Hart / Lynn Bauer '67 Chrysler 300 convertible	314
4	Ed & Joannie Schmidt '59 Thunderbird convertible	331
5	Chuck & Alice Jacobson '94 Olds Cutlass convertible	332
6	Don & Nate Andrews '70 Saab 96-V4	382
7	Chuck & Deanna Andrews '74 Saab Sonett III	385

9000 Turbo driven to Nat'l SCCA Rally Championship

A 1986 Saab 9000 Turbo has taken Scott Forehand and David Fuss of Minnesota to the 1994 Sports Car Club of America National Course Rally Championship.

This is Forehand's first national rally championship after 25 years of participation in the sport. Fuss was the National Champion in 1992 by virtue of running one event with a different driver and taking the title by a few points over Forehand.

Of the 9000, Forehand writes: "The Saab has been a real workhorse and now has about 135,000 miles. The car never failed to get us through an event. Fast, comfortable and about 30 mpg getting to and from events. Can't ask for much more."

Course rallies are also known as trap rallies. In addition to staying on time, the teams must stay on course, avoiding cleverly worded traps in the instructions. SCCA dropped the National Manufacturers Championship a few years ago, otherwise Saab would have been awarded the winning marque as well.

SCCA Divisional PRO Rally Champs in Under 2-liter

Though Goran Ostlund and Steve Baker wrapped up the SCCA PRO Rally Group 2 National title with a couple of events left on the schedule, they made the trek to Michigan's Upper Peninsula in late October for the Lake Superior PRO Rally to contest the National Divisional Championship Runoffs. Champions from all SCCA Divisions were invited to compete against one another to determine a National champion. Ostlund and Baker, the Northwest Division champs, placed first among the Under 2-liter cars.

Sam Bryan, whose Saab 900 was featured on the cover of NINES #224, picked up enough points at the Maine Forest Rally in December to finish the Group 2 SCCA PRO Rally National race in second place. Though Bryan and co-driver Rob Walden did not finish the Maine rally after sliding off the road early in the event, Bryan ended up with enough points to put him just ahead of Nissan 200SX driver Mike Hurst and Datsun 510 driver Mike Whitman.

Jerry Sweet and Stuart Spark were on their way to a good finish at the Lake Superior PRO Rally when the transmission on their Saab 99 broke on the final stage. Sweet's final standing in Group 2 points for '94 was 6th.



Rallymaster Dave Parps gives last minute instructions for the Port-to-Port Tour.

SAAB SWAP

Sonetts For Sale

'74 Sonett III, midnight blue, 58K mi, 5K mi on professionally rebuilt 100hp B7B engine & trans. New interior. \$3,200. Brian Brucker, 410 Superior Ave, Erie PA 16505. 814/455-9556 or 814/456-8511 Ext 2553.

'73 Sonett III, yellow, 88K mi, with air. Extensive under-carriage repair and complete engine rebuild, including new pistons, camshaft, Weber carb, balancing etc, 5K miles ago. \$3,500. John Saunby, 29 Light House Way, Salem, SC 29676. 803/944-0060.

'69 Sonett V4, exc cond, fresh paint, 50K orig miles. \$6,500. Richard Allabaugh, PO Box 890513, Houston TX 77289. 713/480-7050.

93s, 95s, & 96s For Sale

'72 96 V4, original interior, new clutch, great paint job. Engine runs, needs trans work. All service records since 1972 included. A must for any collector. \$3,000. Robert Britt, 312 E First St, Avon Park FL 33825. 813/453-8547.

'68 96 V4 Deluxe, 1700cc eng. runs but needs rebuilding, Weber carb, steel counter balance gear, AC, strong trans, body straight & ND or rust, MSS type exhaust, 8 tires & rims, newer clutch & master & slave, daily driver for 14 years. \$500. Myrl Fisk, 4602 E Vernon, Phoenix AZ 85008. 602/840-6966.

'67 96 V4 Deluxe, white, body in great cond, needs gear box. Recent battery, alternator, exhaust system, upholstery. \$1,300 OBO. Heidi E Marin, 2800 Quebec St NW #739, Washington DC 20008-1234. 202/244-6528.

'67 95 wagon, engine rebuilt '82, parked '83, saved from crusher '92. Cheap base for Quantum Formula S. \$300 or will part out. Robin Pomeroy, 349 Evangeline Dr, Elm Grove LA 71051. 318/987-2672

2 clean but not running '67 95 V4's, \$400. 1975, yes '75 w/comp Euro trim, \$1,000 OBO. Mark Rheude, 781 E Swanee La, Covina CA 91723. 909/394-6272, fax 909/394-6209.

1960 93F Vintage Racer. Excellent condition, 900cc eng. w/Solex 44P11 carb, Venolia 71.5mm pistons. Complete racing history. Ran at Road Atlanta and Sebring. \$10,000. Wendell Francis, 512 Cline Rd, Dandridge TN 37725. 615/397-2172

CLASSIFIED AD RATES

Ads offering parts or SAABs for sale or wanted are available to members and non-members. Ads are limited to 25 words, plus name address and phone number. Ad copy will be abbreviated and excess words deleted where possible. Enclose sufficient funds with your ad, we **do not** bill. No ads will be taken by phone. The Classified Ad rate is as follows:

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PARTS FOR SALE	\$5.00	\$7.50
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COMMERCIAL DISPLAY ADS: Contact the editor for rates and info. Deadline, the 10th of each month for the following month's issue.

2-Stoke & V4 Parts For Sale

V4 parts - '73 95 white body, 3 engines, 3 gearboxes. Spare: doors, engine, interior parts. Make offer. Ted Thomas, Rt 1, Box 596-P, North Garden VA 22959. 804/295-2081.

Ronal spoked rims, fits 95/96/97. Have 4 rims, all lug nuts (20) & 3 centers w/Saab logo. \$600 +shpg OBO. 2 transmissions, 1 good & 1 needs rebuilding, from '73 96 & '68 96. Both for \$200 +shpg. Myrl Fisk, 4602 E Vernon, Phoenix AZ 85008. 602/840-6966.

4 Monte Carlo 4-bolt wheels, \$25ea + shpg. 3 Monte Carlo seats, \$20ea + shpg. Triple carb, plus manifold, \$40 + shpg. Steve, 602/968-7975.

Rebuilt, never run, MC850 engine, \$1,000. Sonett III transmissions, \$400 ea. New 95/96 V4 competition exhaust systems, complete, \$175. New 95/96 factory front spoilers, \$100. Much more! Call, fax or write for parts list. Mark Rheude, 781 E Swanee La, Covina CA 91723. 909/394-6272, fax 909/394-6209.

2-stroke pistons (850cc) oversize + 0.5, 1.0, 1.5 and 2.0 mm, \$295/set. V4 1500 and 1700 pistons, std and oversize, \$275/set. Headgasket 95/96 '60-'64, \$20. Headgasket 95/96 '65-'68 + Sonett II, \$40. Upholstery black vinyl (original) over gastank etc, Sonett V4 '68-'69, \$100/set. Upholstery grey carpet (original) over gastank etc, Sonett II '66-'67, \$190/set. Doorwindow rubberstrips, fits all Sonetts, \$30/set. Front bumper moulding Sonett II/V4 ref 7403835, \$50. Also: Lightening parts for all Sonetts. Auxiliary lights for Sonett III etc. Gearbox parts for 95/96/97. Can also deliver parts for 99/900/9000. Send \$2 or fax for partlist or information. Motorsport Sweden, Hacketorp, S-641 46 Katrineholm, Sweden. Phone/fax +46 150 12904.

Pair bullnose fenders, like new, \$200 + shpg. Ben Eueritt, 3054 E Delsa Dr, Salt Lake City UT 84124. 801/272-7764.

99s & 900s For Sale

'91 900 Turbo SPG, red, low mileage-74K, ABS, SRS, all power/leather, tinted windows, wind deflector, no dings, excellent condition! Taking best offers. Steve Walker, 10104 Mt Auburn Dr, Clinton MD 20735. 301/856-0688.

'91 900 Turbo, Limited Edition convertible, yellow, 34K mi, leather, custom wheels, automatic, power, air cruise, ABS, SRS, anti theft, extended warranty, new tires & brakes, show room quality. \$24,500. Alan D. Johnson, 1018 'B' Royal Oaks Dr, Monrovia CA 91016. 818/358-8674.

'89 900 SPG 5 speed, black w/tan leather, 85K mi, very sharp, Euro lights, rear window louvers, new tires, SR. \$12,500. Lee Smith, 2112 Lycoming Creek Rd, Williamsport PA 17701. 717/322-6077 day, 717/322-0268 eve.

'78 99 Turbo, gray, one owner, very original, no rust, never wrecked, well maintained, spare CIS/suspension/etc. A babied family member. \$1,800/OBO. Lee Grimes, 229 Norway St, Lexington KY 40503. 606/277-0617.

9000s For Sale

'91 9000, black/(Zymol)/tan(Scotchguard) int, 33K mi, 2.31/auto, 30K serv done, rubber mats, carpet mats, cruise, 4 mud flaps, serv manuals, etc. Available 1/15/95. \$13,995. Gary Stottler, 1070 W Dawson, Milford MI 48381. 810/684-2381.

'88 9000 Turbo Automatic, blue w/dk grey leather, some shop manual sections. 55K mi, Will sell at book value. All maintenance records available. Steve Goldberger, 2389 Chestnut Hill St NW, N Canton OH 44720. 216/497-0346.

published in January 1995

99, 900, & 9000

Parts & Accessories

99T/900T Parts: Inca wheels, \$75. Rebuilt B-head, \$225. 99 3dr car cover, \$30. 99T Rad, \$40. Steering wheel, \$25. Lens frt, \$15, rear, \$20. 99 hood, \$50. More. Michael D'Aleo, 23 Hutchins St, Saratoga Springs NY 12866. 518/587-0457.

Parting: fifty-three 99's ('72-'80) and sixty 900's ('79-'88). Also one '86 9000T (no front pieces) and one '93 CSE (front damage). 9000 sun roof deflectors, \$38. VISA/MC. Rod Beckner, 484 E Cemetery Rd, Jefferson OR 97352. 503/327-1133 Pacific time. Mess/Fax 503/928-6351.

900 Parts: Glass, 8 & 16 valve heads, doors, hoods, trunk lids, radiator supports, distributors, turn signals. '82 Turbo engine, \$500. Much miscellaneous. Clearance priced. Alex P. Galyon, 3023 Woodland, Ames IA 50014. 515/292-0852.

Parting out 900's: '81 Turbo 5 speed, '85 Turbo 3 door, '87 5 speed, '77-'99 new trans and distributor, runs great. Speed Research Inc, 5620 Casey Dr, Knoxville TN 37909. 615/588-6165.

Parting out '80 900 EMS, also have parts for '81 & '86 900's. Call with request. Scott Heinze, 149-11 84th St, Queens NY 11414. 718/845-6450.

Wheels: 3 factory alloy TRX for 900, \$25 ea +\$5 shpg. E. Van Rossen, 6745 Westaway, Troy MI 48098. 810/879-6659 days.

'94 9000 15" alloy wheels, 15-spoke, new. \$600 all 4 incl shpg. OBO. Doug, 9 Lidgerwood Pl, Convent Station NJ 07961. 201/984-6543.

Fixed trailer hitch for 900. All hardware & instructions. Bolts to provisions already on car. New \$130 - Like new \$80. Bill Baker, 1123 S Belvedere Ave, Gastonia NC 28054. 704/867-2455.

Lambswool rear seat covers, German made for 900 rear seat. Incl covers for arm rest and 2 head rests. Blue-gray color. Like new. \$60. Michael Podlusk, 9275 123rd Ave N, Largo FL 34643. 813/584-2660, 813/393-7735 fax.

Four SPG Wheels w/center caps for '88 and up 900, good condition, \$150ea/all for \$500. SPG springs and shocks, \$275. Dan Orzano, 2434 Dover Rd, Columbus OH 43209. 614/231-3892 leave mess.

From '85 900T: rear axle L&R hubs, complete with calipers, disks, \$30/lot (w/free axle trailing links). Water pump, \$10. All +UPS. T. Chuhay, 3743 Greentree Pl, Panama City FL 32405. 904/769-0842.

18 New alloy wheels, fit 900 & 9000 '86-'94 models, some chrome, part # 8970980 & 9103227. 3 new Soccer ball style alloys, part # 0205013. All priced cheap, cheap! Armand Verdone, 2561 E Georgia Ave, Phoenix AZ 85016. 415/789-9743

Wheel for sale, 1 super Inca, like new, 5 1/2", fits '88-'93 900. \$65 + shpg. Bob McNary, 672 Sunvale Ave, Ventura CA 93003. 805/694-1646, 805/988-1129 fax.

Wanted - All Models

Service manual, Saab V4. Pat Stocks, 422 Reindollar Ave, Marina CA 93933. 408/384-6288.

Wheel trim ring for GT750 or early GT850, need 1 to complete set. Curta calculator Mark II, used for auto rallies, will pay cash or trade for Halda SpeedPilot. Locking gas cap for model 93, round chrome style w/ red lettering. Bob McNary, 672 Sunvale Ave, Ventura CA 93003. 805/694-1646, 805/988-1129 fax.

Rear decor panel, part # 02-71-148 for 3 dr 900. Zach Grant, 4794 Melbourne Rd, Baltimore MD 21229. 410/644-0361.

One good Michelin 185-65-15. MXV & 1 good MXL. Bill Seely, 3874 Union St, N. Chili NY 14514. 716/889-9731.

'82 900T exhaust manifold. Kevin Richard, 6625 Pike View Dr, Indianapolis IN 46268. 317/297-4995 or DocRichard@AOL.COM.

"T-xxxxx" Serial number 4 spd. trans for 99 Turbo. Must be rebuildable - no bad gears or bad housings. Gary Stottler, 1070 W Dawson, Milford MI 48381. 810/684-2381.

9000 3-spoke wheels, 16 x 6.5 with painted spokes and polished rim, p/n 8967036. Any condition. Bob Cann, 189 Mill Ln, Amherst MA 01002. 413/253-9423.

Misc. For Sale

1964 Quantum Formula S. Chassis & fiberglass in v'y gd cond. '67 MC eng w/3 Mikuni carbs. Very little racing history. Restore or run as is. \$6,000. Wendell Francis, 512 Cline Rd, Dandridge TN 37725. 615/397-2172.

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Early Saab promotional Models by Stahlberg of Finland, 1:20 scale. Lots of 99's & 900 Turbo's. \$20 ea incl UPS. SASE for impressive list. Bruce Turk, 333 St Andrews Rd, Walden NY 12586. 914/778-2469.

Back Issues of NINES. May '86 through November '94. 70 issues total, complete set. \$50 + shpg. 708/835-5265 after 6pm.

Original Saab Sonett Sales Brochures. Set of '67 to '72, \$100. Lots of '69, inq. other years, all mint, \$20ea. Bob McNary, 672 Sunvale Ave, Ventura CA 93003. 805/694-1646, fax 809/988-1129.

Saab Rally Video, story of Erik Carlsson and Pat Moss and their rally career with Saab. Professionally produced, lots of 2-stroke action. 70 min long, \$26 incl shpg. VHS only. Bob McNary, 672 Sunvale Ave, Ventura CA 93003. 805/694-1646, 809/988-1129 fax.

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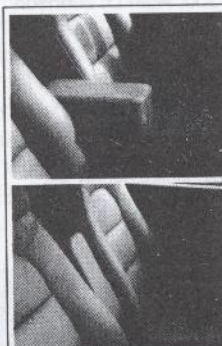
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Tom Remedios, 233 Dorn Ave #3, Everett WA 98208. 206/353-5358 evening.



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MAKE CHECKS PAYABLE TO "THE SAAB CLUB"

Mail to: The Saab Club of North America
2416 London Road, Unit 900
Duluth, Minnesota 55812

Rear View

A survey by Ward's Communications in Detroit received coverage in the national media recently because it discussed aging autos. Ward's estimated the number of cars and trucks on Earth at 622.65 million, or one for every nine people. The average age of these vehicles is 6.55 years. In the U.S., the average vehicle age is 7.10, while in Japan the average vehicle is 4.55 years old. Mexico and Greece have the oldest fleet averages at 12.08 and 12.01 years respectively.

Which brought the question, where do I fit in this grand scheme? My fleet is at eight vehicles, (would that mean that I am holding the reins to transportation for 72 people?). If you only take licensed and insured vehicles into effect, I'll drop three - a '78 99 Turbo parts car, a '79 99 ITB race car, and a '60 93F ex-ice racer. Three of the other five are Saabs - a 1967 Sonett II, a 1979 99GL (the NINE-T9), and a 1985 900 Turbo. The remaining two are an '83 Ford E-350 van and a '79 Chevy C-30.

The average age for all of these is vehicles is 18.7 years. The average for those in regular use, including the Sonett, is 16.3. It would be slightly older if the '77 99 5-door written up in NINES #223 had not been recently sold. The '85 Turbo, the newest of the bunch, is nearly 10 years old, so it can truly qualify for Winter Beater status.

Saab owners, and especially Saab Club members, tend to pride themselves on the age of their vehicles. High mileage seems to be the more important criteria. "100,000 miles is barely broken in!" they say. The above mentioned 900 recently turned over 140,000 miles, the '79 "NINE-T9" broke 160,000 before it was stored this autumn. In one

week this past spring, the 99 racer, which was at the time still licensed and on the road, the 900 Turbo and the '77 99 5-door, all passed 132,800 on the odo.

But how long do Saabs really last? I know of a few that have made it past 300,000 miles. Are there many? Will they go 500,000? 1 million miles?

If you have a high mileage Saab, drop me a note. Some details would be nice, but I'll be satisfied with year, model and mileage. I - and I'm sure plenty of other Saab owners - would like to know.

About the two domestic vehicles in the fleet... A truck or van of some sort became desirable a few years ago when NINES switched to a larger magazine format and the number of boxes to pick up at the printing company and haul to the Post Office would no longer fit in the 900. In addition, there was a growing need for a tow vehicle to haul vintage Saabs and race cars.

This was solved by the purchase of a very used but decent running 1983 Ford van. It's the largest of standard vans, a one-ton with extended chassis and extended body. It will hold scads of spare parts and still has room for a queen size mattress for those weekends at the race track. A pair of Saab 900 seats has made it quite comfortable to drive, though the traditional Ford truck steering - or lack of it - has made for some uncertain moments while behind the wheel. But Minnesota's climate has been getting to the body rather severely in the past year and the white paint is pock marked with growing lesions of rust. A replacement was in order.

Since I am not one to seek the ordinary (after all, I choose to drive a Saab), I began to look for the extraordinary. A motorhome was probably beyond the budget, but I looked at a few. (I'm still hoping to someday

find a Winnebago LeSharro - the front-wheel drive model powered by a Renault Turbo diesel - with a blown engine. Imagine one with a 900 Turbo drivetrain!) Maybe a retired Post Office van, a milk truck, or how about a hearse ("My kingdom for a hearse.")? It would have to have sufficient power to handle towing, and enough space to carry spares and still fill the role of solidified tent for camping at the races.

While returning from a road rally in southern Minnesota a couple of months ago, I chose the less traveled Wisconsin Highway 35 for the journey home. Could it have been fate that led me through the tiny crossroads community of Dairyland? There, parked in front of the Volunteer Fire Department was a fire engine red Chevy ambulance with a For Sale sign on the windshield.

A few phone calls, a sealed bid, and the new tow vehicle was titled in my name. It is a 1979 one ton, pickup-style cab with a 12-foot box mounted on the chassis. Power comes from a thirsty 454 V-8. All the flashing lights, sirens and other emergency vehicle goodies were removed or disconnected, and DAIRYLAND had been painted over. It will need some attention, but I believe it will do the job nicely.

The Ford van is for sale, but another dilemma has arisen. With the extended 18-foot body, the Ford barely fits the parking area behind the garage. Where will I park a 22-foot ambulance? That extra four feet pushes it into the alley.

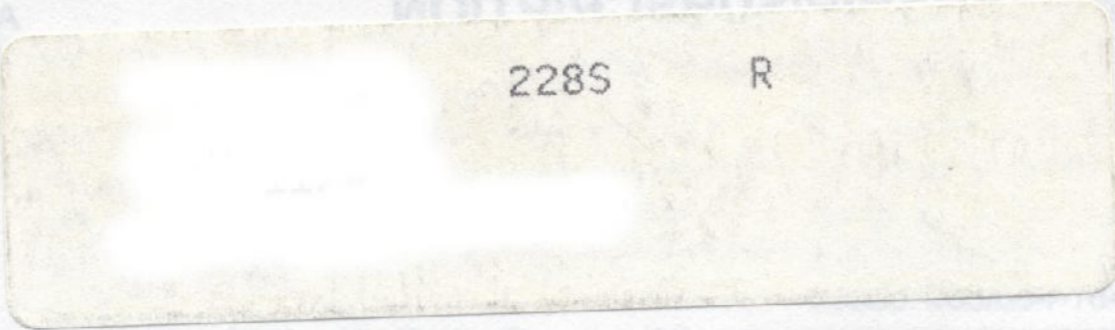
Just one more reason to locate another residence. Like my choice in cars and tow vehicles, I won't accept the ordinary. I've been looking for several years, but haven't found the ideal location yet. I believe that fate will still come through.

Tim Winker
Editor/Publisher

NINES

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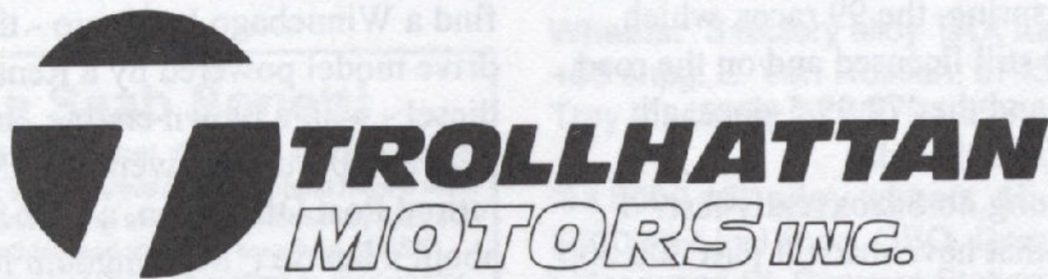


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