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2001

Nines

The SAAB Club Magazine



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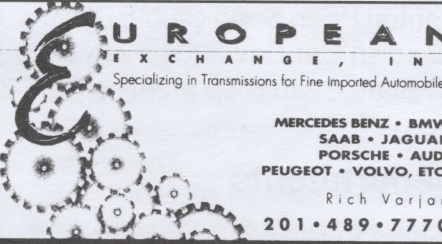
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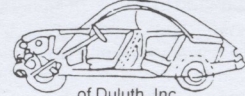
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Front Cover: Classic 900 Convertible

Photograph Courtesy of Saab Automobile AB

Cover Wrap: 2000 Saab Owners' Convention

Attend the next 2001 Saab Owners' Convention and you can be in the next "Cover Wrap" Convention Photo

Greetings from Down Under

I have heard about Nines for some time, and now that payments can be made by credit card (international cheques are too painful), I hope to become a longstanding, if distant member. Australia has not previously been a major stomping (or should I say 'yumping') ground for SAAB's. Since the 900, they have become more popular and are now seen as the thinking person's BMW. I have been here for 10 years (native of UK, in fact Northern Ireland) and have brought two of my favorite SAAB's with me (a rally prepared 96v4 and a 99 turbo (2dr limited edition) from the UK. Since then I have acquired an Aussie 96 2 stroke, which proves that some Saab fans were around in Sydney in 1965!!! I have other 99's for future hobby restoration. Parts are hard for 99 and 96, but I source a lot from UK dealers/suppliers I know from pre 1990. There are a small number of clubs (Victoria, NSW and Queensland), but activity is pretty low key. The best about Aussie Saabs is they lack of serious corrosion.

Personally, I aim to complete the restoration of my "group 1 spec" 96 and enter it in historic rallies - even the now world renowned Targa Tasmania calls. Work prevailing, I aim to be active at that level in 2 years. I look forward to my first "Nines", accompanied by a nice glass of Aussie red wine and some cheese. Warmest regards.

*Claire and Charles Essery
Sydney, Australia*

Rocky Mountain High

Most every day driving a Saab in the Rockies is great, but some days just beg to be talked about. Like today - Friday!

Just got back from a quick trip to ski a few hours at Winter Park/Mary Jane which in itself was extraordinary for this time of year - 15 inches of new snow on top of the already great conditions when we were there last week. And we're skiing on Season Passes that cost us \$100 each last spring! Imagine having paid for the total cost of your season pass by skiing enough days by Dec 1st; it only takes three!

But anyhow, Avis lets me drive her red '91 SPG when we go skiing, so you can imagine the fun passing all the SUVs in the

climb lane going over Berthoud Pass at 11,300 ft in snowpacked (with some ice) conditions. Hakka's (*Nokian Hakkapalliita Snow Tires*) on all four are definitely the way to go!

Then on the way back - herds of Big-horn Sheep at many locations along I-70 and US-40 in the thick of the rut. Too many big rams in the herd so lots of fighting going on. What a day for a retired Saab owner! Just had to tell you about it. And, of course, I'm wearing my RMSC Saab Aero cap all day while skiing.

*Tom Nelson
Denver, Co.*

Beware Broken Ball-Joints

I had an experience recently that should be of interest to most Saab owners. The ball joint broke while I was driving my 1987 900S dropping the wheel and brake assembly into the wheel well and stopping the car. In my case, this happened on a service drive at about 30 mph and the car stopped in 25 feet. Had it happened a minute earlier I would have been going 65 mph on the freeway and possibly had a problem keeping the car under control.

The joint on the passenger side broke at the threaded portion above the tapered part of the ball joint. How long it had been that way is anybody's guess, since it could move up and down with the suspension and steer as long as the A-arm did not drop away from the front upright. That is exactly what happened on the service drive. I hit a cleverly-disguised pothole that was deeper than it appeared, and the thing separated.

How could the part have broken? Maybe fatigue. Maybe over-tightening. The age of the car? We all know of cars with even more miles and years that have not broken their suspensions. I'm sure the pothole didn't do it any good.

What can you do to avoid a repeat performance (since I'm told this is not a rare occurrence)? I think a simple visual inspection every time you check your brake pad wear would be better than doing nothing. You can actually see the nut on the casting for the wheel bearing. If it's still there, chances are the ball joint has not snapped. The only other way to do this is remove the

ball joint bolt from the steering knuckle and inspect it visually or with magnaflux. Good luck!

*Carl Goodwin
Grosse lie, MI 48138*

A ball joint snapping off like Mr. Goodwin's did is an unusual failure, but unusual failures do occur. We recall our 1982 900 suffering a busted out upper ball joint. The upper joint almost never fails because it is identical to the lower one, but by comparison the load on the upper ball joint is negligible. The lower ball joint carries the spring and damper loads, while the upper ball joint simply keeps the wheel upright.

Experiences like these are a good lead into this issue's theme: Service. In our case, we saw the busted out ball joint during a routine inspection. We had removed the wheel to check the brake pads, and while we were at it, we looked at everything else. Good Saab technicians do this too. They have the advantage of seeing dozens of cars per week, so when something isn't right, it attracts their attention. -Ed.

A Diesel Fan Speaks Out

As an owner and thoroughly converted fanatic of directly injected turbo diesel automobiles, I was more than a bit bemused by Saab's "all-new" TiD (Nines #249). The Saab TiD engine has nothing that hasn't been used and proved in diesel passenger automobiles since the last (twentieth) century. Yes, it is current state of the art technology, but it is not innovative, it is not new. My 1996 VW Passats each have a directly injected, Garrett turbocharged, intercooled, swirled intake, two way catalyst equipped, liquid cooled EGR, drive-by-wire, micro-processor driven diesel engines that are emission certified even for California. So what is Saab's new technology? Cartridge oil filter? Variable inlet nozzle turbo? Had I chosen to wait until 1998 I could have had those too. High pressure common rail injectors? VW doesn't bring those to the North American market but has had several engines (from a 1.1 liter triple to a 4.0 liter V8) available in Europe with that technology for several years.

After several days of reconsideration, I now see that Saab engine in a different light.

Letters

Saab didn't go back to the basics of Bernoulli and DaVinci when they began building aircraft. They took the then current technology and continued from there. Saab didn't go back to Otto and Daimler (or Cugnot, the first front wheel drive) when they decided to go into automobile manufacturing. They used what was then available and continued from there. In that respect their decision to use the current state of diesel technology is not to be derided as not being "Saab" enough, but is to be considered only a starting point from which they may proceed. I wish them the best as they "Saabify" it.

The Nines editorial comment about the water cooling of the recirculated exhaust gas potentially increasing the life of the EGR valve has not been the case in other directly injected diesel engines (TiD and TDI are both registered acronyms, how else can we abbreviate this?) using this cooling arrangement. The relatively high sulfur content allowed at present in US diesel fuel leads to sulfur condensation and the formation of H_2SO_4 , sulfuric acid, which is not kind to

the valves and EGR manifolds. Once the allowable sulfur limit in fuel is further reduced (legislation recently passed Congress, but has not yet been implemented) to levels found in European and Japanese diesel fuel, then more exhaust can be recirculated while minimizing the acid formation, combustion temperatures will be reduced, NOX formation will be reduced, then maybe, just maybe Saab will bring its version of these engines here.

Demand for diesels? Call the local VW dealer to find out if he has any TDI on his lot. Even last winter when heating oil was \$2.00+ per gallon and diesel was about 20 cents higher yet, there were few if any TDI to be had. I flew to Gulfport, Mississippi last weekend to see one for sale. I drove it home to the Boston area from there in 26 hours (23.5 driving) and averaged 49 mpg doing the 1500 miles. Glow plug time is also no longer an issue with current technology. The longest I have had to wait for my glowplugs has been 15 seconds at an outside temperature of -20F, just long enough to check the idiot lights, put on the seat belt

and switch on the heated seats and mirrors. The VW also has a heated fuel filter so gelling is not a problem. I have yet to use any additives in either of my TDI.

If Saab "waits for the market to change" before deciding to bring its TiD in North America, those same changes will have already enticed Mercedes, Volvo, Audi and a host of other Saab competitors to return with their own equally advanced diesels for their equally loyal / rabid fans. Who'd be left for Saab? Perhaps the Isaabzu could pick up the Peugeot (and Oldsmobile?) diesel diehards in addition to a few sales shifted from Saab gassers. I don't see how a diesel would increase total sales numbers for Saab, particularly if they delay until "everyone else" is selling them. If I were to buy a Saab, it would have to be a diesel Saab, and I really hope their TiD makes it to these shores. In the meantime, I'll keep clattering on in my TDI.

Now, about this silliness of a 66 degree V-angle in a six cylinder engine....

*Jonathan Bartlett
Sterling, Mass.*

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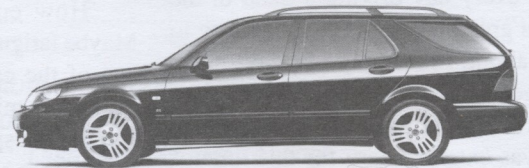
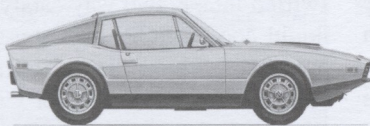
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Aero(s) Update

Well, it's been just over a year with both 2000 9-5 Aeros and it's time for an update.

The black one: suffered from odd humidity, as best as we could figure, problems with the CD player and ACC. During rain, everything would be fine. A few hours AFTER the rain had quit (or during high humidity periods in Florida or Maryland, depending on where I was), the in-dash CD player would error out (error 10 with an occasional error 11) and not play CDs. After about 45 minutes it'd cooperate. The ACC would get weird and reboot itself under the same circumstances. Normally shortly after engine start (about 10 minutes or so) it'd dump itself, show "0 22" and reboot. After that, all would be well. Being an analyst by trade, I monitored the situation and environment before taking it to the tech (so we could duplicate the problem) and it kept coming up the same: humidity. Swapped out the ACC and the radio unit and all's well. Had to have the manual transmission replaced at 25K due to a gradual stiffening of the shifter. It required a slightly harder "tug" to get it out of 5th. As it was such a gradual stiffening I didn't notice it until I drove the wife's car. Apparently this is a common problem with some of the manual transmissions. Swapped it out: all's well. Lastly, had the primary computer "brain" changed out at 30K due to a recall.

The new computer killed the "shift up" light (I use it when I'm in a tactical driving situation) and, for some odd reason, my car's not as quick when you nail the gas in 2nd. The wife's car also had a new brain installed at 25K and its performance is unchanged. Again, I didn't notice the change (ever so slight, but there) until I drove her car, nailed it in 2nd and had my head snapped back (as it should be). Don't know what the problem is (yet); the techs & I are still working the issue. We dumped the readout from both car's computers and the only difference we can find is the software number. Could be plugs (mine got new plugs), could be the software or could be a bad brain. We're still experimenting. Temperature gauge is reading a smidge higher than normal, too, but that happened back at 25K and doesn't appear to be a problem. Currently at 33K and still in love.

The silver one: had to have the radio replaced shortly after delivery; the power just died on it. Gotta new brain (previously noted), the "shift up" light doesn't work (like mine) but power is still there. Her temperature gauge is reading slightly higher, too; must be something with the thermostat at 25K. Doesn't appear to be critical. Nothing else to speak of on this car. It's at 28K and she's still in love with it (good for ME!).

Overall: maximum satisfaction with both cars. They're still head-turners and conversation-starters. Camaros, Mustangs, "hot" Volvos & Audis, etc. are quickly left

behind. Corvettes are scared when I hang with 'em through 3rd but, alas, the next thing I know I'm staring at disappearing taillights (but *hey* they've got 8 cylinders & a plastic body, so they SHOULD eat me up!). It's nice to have two of 'em at my disposal to note the subtle differences and initiate corrective measures. Can't have her beating me to 60mph! The folks at Hunt Valley Saab (north of Baltimore) are outstanding. The sales folks aren't snobbish, the owner (Bill) is a great guy, the service writers (Jeff & Bob) are tremendous and the techs are outstanding. Only complaint: dang, those fog lights are expensive! The wife's had two lenses broken/cracked due to rock hits. About 180 bones for a whole new assembly - can't just get a new lens! Ouch!

That's it. Consider us happily motoring along in the DC area! For those who are interested, I've meticulously listed all of the police/HP/fire/EMS frequencies for Maryland (Baltimore city, Baltimore/Montgomery/Anne Arundel counties, Fort Meade and Andrews Air Force Base) DC; and Virginia (Fairfax/Arlington/Alexandria counties) to include 800mhz trunked frequencies for scanner use. It pays to know what's going on where in this area! I've got 'em all in a(n) MS Excel document and will email it to those interested. Contact me at tbcarw3@mindspring.com.

*Ted & Barbara Carwile
Crofton, MD*



Hers and His (L-R) 9⁵ Aero Sedans

What I've Carried in my Saab

I spent the day cleaning out the back yard, cleaning up toys, and taking them to the local "gently used" kids store for a little extra Christmas money. The 2 gray shipper tubs contained clothes now too small for my kids (Devinne & Kyle).

*Mike "saabdude" Szostkiewicz
Panama City, FL)*



Slides, high chair, turtle pool, and boxes of outgrown clothing, all fit in Mike's 900 hatchback.

My friend Troy and I both 900 Convertible owners rode together to the 2000 convention from Allentown Pa. We had way too much fun in the parts tent, and took as much as we could back to Allentown, (we drove past the SAAB Depot on our way back). We also stopped at Aunt Lois's and filled up the remaining few cubic inches with shoes for a photo project. Everything in the picture was in the car with the top down and under the wind deflector; all our luggage, 2 900 trailer hitches, a Tule bike rack and bracket, a wind deflector still in the box and too much stuff to count from the parts tent.

*Tom Kinnaman
Cincinnati, Ohio*



Tom and Troy (Left) along with everything on the right came back from the 2000 Saab Owners' Convention in Tom's 900 Convertible

Wild and Crazy

A few comments about ice racing. I vividly recall ice racing 93Bs on Lake Naomi in the Poconos and elsewhere back in the late '50s. Before hiring on with the old Saab Motors, Inc. as a sales rep in March of '58, I drove quite a few events in the Pennsylvania ice racing series. I didn't actually own a 93B, but always managed to sneak one off the used car lot of the dealership where I worked as a retail salesman. The place was Warrington Imports on route 30 in Bryn Mawr, which in those days was a multi-line "foreign car dealership," as they were called in the days before going upscale and assuming the designation "imported car dealerships."

One memorable Sunday my wife, the lovely Anne, got us off to a slow start, making us arrive at lakeside just as the final warmup heats began. I was waved onto the ice by the organizers, without even time to let a bit of air out of the tires, let Anne out of the car, nor even fasten our seat belts (add-on lap belts only, as this was before Saab made transverse belts standard equipment). I accelerated hard, caught the pack going down the straight, and we didn't get much farther.

As we approached what eventually became known as "Saab Island" because so many racing Saabs crashed into it, I was increasingly aware there was No Way I could make it around the island. "Duck," I shouted at Ann, "We're going into the trees. Duck." We'll, she moved a bit too slowly, and as we went onto the island and progressed from going through brush, through a couple of small saplings, and finally into a rather large immovable tree, Anne would up smashing the passenger side of the split windshield with her head. She was not pleased.

While that was the end of my racing for the day, amazingly the Saab could still be driven, and made it all the way back to Bryn Mawr and the dealership. My boss the dealer was not amused the next morning when I was obliged to tell him what I had done to one of his used car stock. Apparently I was a pretty good salesman, though, because the dealership absorbed the cost of fixing the car.

*Robert J. Sinclair
Santa Barbara, CA*

*This story was originally published in
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Ramblings and Demands

by Phil Lacefield Jr.

Phil's Excellent Adventure

I'd like to go on record with two items: first, Utah State Troopers are the nicest, friendliest law officers I think I have ever met. And secondly, the Oldsmobile Intrigue is a very quiet car while cruising at a stately 115mph. Why would I bother to mention such arcane facts here? Allow me to explain:

Last fall, a fine fellow named Carl Nation made a seemingly innocuous post to the Turbo! email newsgroup, announcing that he was offering up his two Saabs free to the first takers. Turns out that his job was taking him away from his home in Orem, Utah more than he liked, and the time had come to send his two babies on to better pastures. One was a tired SPG badly in need of a total makeover, and the other was a 1980 5-door 900 with a leaky turbo H motor. The latter had been featured in these pages a few months back, displaying its awesome cargo carrying capability, and had come to be known as "The Power-Washer Saab" thanks to the pictures published in these hallowed pages. Within minutes of the posting phone lines across the country were aflame, but I had an ace in the hole: my brother-in-law lives right there in Orem, and swiftly took possession of them both for me, thereby sealing their fate. Much gnashing of teeth and rending of clothing was to be had shortly thereafter, as the Turbo! list rang with cries of "Snitch!" and "Car Nabber!," since I had apparently stepped on about a dozen toes to grab these two cars. The death threats did eventually decline in number and harshness, although a few restraining orders are still in effect.

After much negotiating, it all seemed to work out well: John Wirt came down from Idaho and took the lowly SPG even farther into the northern backwoods, there to be turned into a rally car or a shoe rack or something. The 5-door sat in front of my mother-in-law's house, awaiting my Christ-

mas visit and it's eventual return to Ohio. See, I had this brilliant plan: fly out there with the lovely Sasha and Rhiannon in tow, then drive this thing home solo, where it would be refurbished and sold to further the cause of my 96 restoration.

Yeah. And monkeys may well one day fly out of my butt.

Although the car had sat for many months with little use, it was in amazingly good shape. It did leak oil from every possible engine and tranny seal; the power steering rack was doing a fine impression of a lawn sprinkler; and the exhaust manifold was cracked and poorly repaired, causing the engine to tick and boost pressure to be lost. But once cleaned up, scraped off and tuned up, the H turbo transplant (complete with 5-speed gearbox) ran like a top and pulled quite strong through the thin mountain air. I drove it almost every day for a solid week, getting a seat-of-the-pants feel for its vibes and assaying if it was up to the 1600-mile trip back to the Buckeye State. I determined it was indeed, and at 6AM MST on December 29th set out from Orem, bearing east.

The trip across southeastern Utah was uneventful (y'know those pictures of a desert road arcing away over the butte-encrusted sunset? That's Route 6 in Utah); within a few hours I had picked up I-70 and was cruising at a fine clip. Many hours and about a gallon of gear lube later I reached Vail Pass, where the first sign of trouble reared its ugly head. The H motor wheezed and sputtered like a pack-a-day smoker, barely squeaking over the pass in second gear at about three miles per hour. Nothing overheated, so I played it off as thin air and a leaky turbo and continued back down the other side. Shortly thereafter loomed the Eisenhower Tunnel, just east of Keystone, Colorado, and the bane of many an East Coast vintage driver during the 1999 SOC. Again, the lightly laden 900 struggled mightily against the 9% grade, but made it over with nary a problem, although by now the faint whiff of burning engine oil smoke began to invade the cockpit from beneath the center console. Had I simply blown out a lot of oil, which had found its way to the red-hot exhaust pipe? A quick roadside check proved that all fluids were in order. Strange.

Only when I had reached the very eastern edge of Colorado did disaster strike. Approaching the teeming metropolis of Siebert, I noticed a billowing cloud of oil smoke trailing behind me. Curses! Upon pulling into the J&B Truck Stop and popping the hood, I was greeted to an engine so covered in flaming 10W40 as to make a crème brulee jealous and a puddle of steaming black oil that was quickly growing to Exxon Valdez proportions. It was the end of the road for my trusty steed.

What had happened, indeed? Had one of the already weak oil seals blown out, soaking the engine with its precious load? There was no chocolate-milkshake goo in the sump, so the head gasket hadn't given up the ghost. In the fading light I checked everything I could, depleting my mind of my already limited H motor knowledge, but to no avail. This car wasn't driving another mile, and I was firmly stuck in quite literally the middle of nowhere.

But instead of shooting it in the head like any good cowboy would have done, I whipped out my trusty AAA Gold card; within the hour, I was riding back towards Denver in the cab of a flatbed tow truck from the equally appealing burg of Flatler, Colorado, with a guy named Bob. The 900 peered at me forlornly through the rear window - what had it done to deserve this? How was I going to get it home to Dayton, still 1100 miles distant? And how in the hell was I going to explain this all to the lovely Mrs. Lacefield in the morning? And how does a rental Olds and a Utah Statie play into this tale of woe and misery? Tune in next issue, campers, for the gripping conclusion to this woeful tale.

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The All-Too-Common Gripes

Some months ago, after a year or two of phone conversations, I enlisted the services of a master 2-stroke SAAB crankshaft builder here on the east coast. Twenty years ago, he found himself without the desire to continue his art due to the cheapness of the vintage SAAB owner of the day. His disbelief that this was still the case today to the same extent it had been twenty years ago has since been quelled and David Baugher is back in business.

While it is no longer true that in this day and age people still see a 1965 96 as a cheap means of transportation more so than as a delightfully quirky, not to mention, odd little car amidst the throng of American muscle and "recognized" European classics, it still to some extent remains the case that the vintage SAAB buyer in the year 2000 acquires his or her car in a state of neglect and disrepair, has less than optimal knowledge about old SAABs and/or old cars in general, realizes little about the reality of spare parts availability due to the

penny-wise-and-pound-foolish attitude of the former owner(s) and finally in many cases is unwilling to spend much to restore the car back to a safe and usable state.

As an enthusiast in the field of vintage cars in general, it always breaks my heart to see another potentially excellent car fall into the hands of someone without experience who has little to no interest in obtaining the realistic necessary techniques to turn their rattling, rolling jalopy into a proud car which can pass a state safety inspection without the aid of a case of Coors on the driver's seat. In their day, and even to this day, a properly restored thirty year old SAAB is safer without airbags and side impact absorption than certainly any sport-ute on the roads not to mention the plastic-bodied cost-saving economy models rolling off showroom floors today. By properly restored, I am referring to complete or at least educated partial restoration of the brake hydraulic and emergency cable system, steering, suspension, safety equipment, tires and serious structural rust or other decay. Furthermore it is imperative that the car be in sound enough running condition so that elements of engine and transmission control are not hampered by technical trouble; for example those lovely ball-and-socket throttle linkages which come apart on a cold rainy night and open the throttle wide, forcing a quick shutdown and bring about the risk of collision in a panic or close traffic situation.

Knowledge is power, and ignorance is not bliss. When a vintage car, boat, home, motorcycle, etc. hobbyist is willing to broaden his or her experiences, get his or her hands dirty, and make the mistakes of the beginner in order to succeed in the end, that individual is making a commitment to his or her hobby. Such a commitment is not really necessary, so long as the requisite funds exist to pay a trained professional or bribe an interested friend to help from time to time in upkeep and restoration details. One or the other must however present itself, or the project is naturally doomed from its outset. Ignorance on the behalf of the individual who chooses to take on such a project, whether out of thrift or stubbornness can lead to disaster and usually a loss of an entire monetary and time investment in such an endeavor.

I speak not only as an enthusiast interested in seeing as many new followers

come to the cause of saving an older SAAB but also as a professional whose best interest it is to promote safety and reliability to those of you and others who call me for parts and advice. We reproduce vintage factory service manuals to best assist you in your restoration projects to follow the right courses of action. We endeavor to provide you with the necessary mechanical parts necessary to be able to safely continue driving your vintage beauty before we try and entice you with attractive cosmetic details. Negligence, in my mind, to clarify the priorities of vintage SAAB restoration to someone not well acquainted with the potential ills of a half-baked project car, is an unnecessary liability in my mind, and sometimes the best advice I can give the occasional caller is to abandon their project at once. Take the individual who has owned his 1971 95V4 since 1978 and has derived many years of use from the car but is then unwilling to deal with a potentially destroyed brake master cylinder? Or a similar situation, much like those in days of yore, when one is given or is able to purchase very cheaply an old 96, and then does not want to put more than the purchase price of the car (usually \$200-\$300) into putting said car back on the road? Such motives are usually from under-dedicated individuals who not only endanger themselves with such a corner-cutting mission but those they might later endanger in their initial outings.

I sit here at my desk or am out in my workshop almost every day of the week, taking calls from many vintage SAAB owners from around the globe. Our business is good; after two years we are finally attracting a dedicated base of individuals who desire service and quality of goods on our end. Yet there will always be those who endanger not me but potentially more than one innocent individual by their short-term thrift, short-sightedness, and overall lack of interest in understanding how their car works and what the necessary means must be to provide a safe and fun environment for their hobby's sake. In doing so, perhaps the number of vintage SAABs back on the road will increase and add to the nearly 100-percent positive camaraderie which is so pivotal in the makeup of this particular community.

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Vality

Our culture has, at least through my sampling, confused value with cheap/poor quality and quality with being high-priced, maybe even priced beyond it's real worth. Maybe we need a new term? How about "vality". We need quality products and services at reasonable prices.

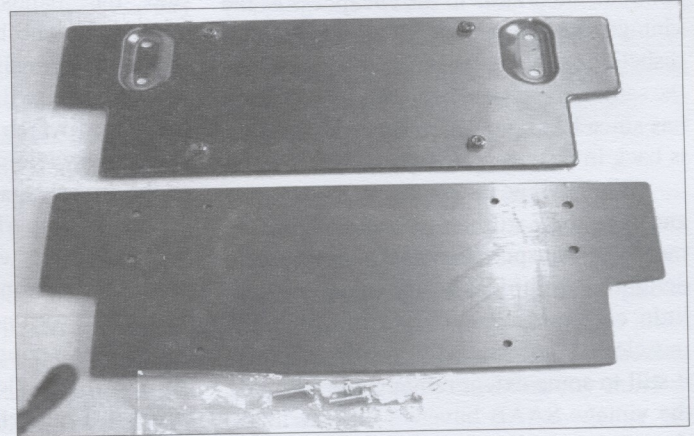
The definition of quality is "the degree of excellence which a thing possesses." Value is "a fair price or return." If we went shopping what would a quality store be? It should be good, actually it should be better than good. It should be excellent! Isn't that what we all expect? If we expect to get quality, we must pay for it. An example of a quality store might be Macys, Daytons, Saab, BMW, an Embers Restaurant or an Olive Garden Restaurant. A value store might be one with lower quality or products. Maybe a value store would cater more to the necessities of life and less luxuries. An example of a Value Store would be

Wal-Mart, K-Mart, McDonalds or Kia. Would that be fair? We would really like to shop at the value store to get quality products. So, you can see we need a new term and I've coined "vality" as quality products and services at reasonable prices.

The next question is, "Do we really get poor quality at value prices or do we really get good quality at peak prices?" If I relate that to auto service, you would say, "Yes. You get what you pay for!" That may be your response but let me give you some examples. I don't think that all dealerships and all independents are in the same pricing category.

We'll first talk about hourly rates or prices for labor performed. In most cases, the

dealerships and a very few independents charge the highest rates. They are usually well equipped and trained for the job. Outlying or out-state smaller dealerships and independents usually charge much less than their big city counterparts but perform the very same services. Many of



Top is OE steel painted license plate frame: Saab list \$42.52. Bottom is aftermarket plastic with all mounting bolts. It fits, doesn't crack or rust, and license plates can be changed without a hassle after several years in the rust belt. \$36 made in USA.

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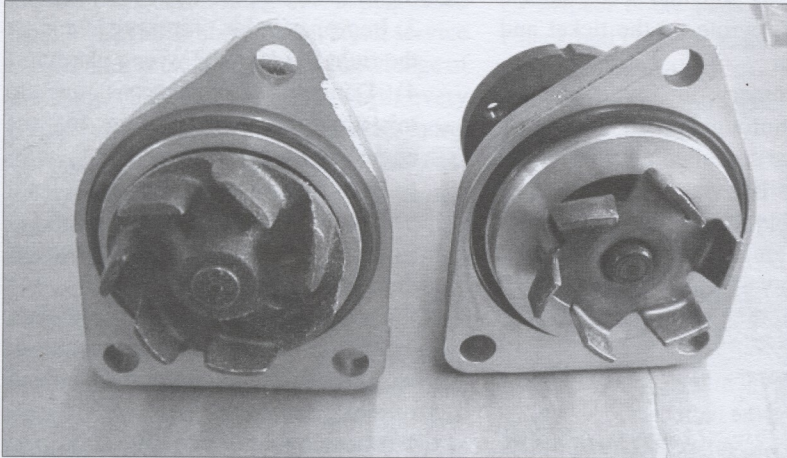
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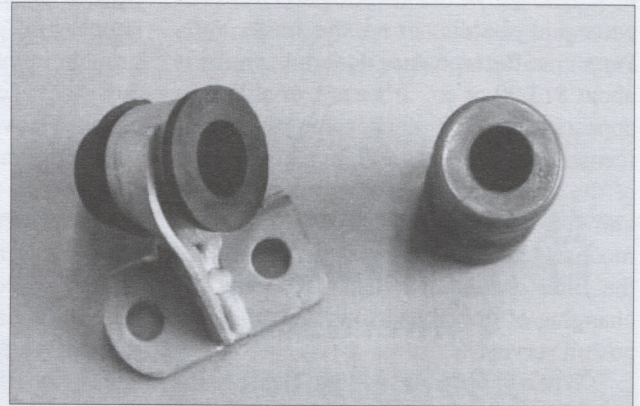
these outlying shops are just as well trained and are adequately supported. They are just in a smaller setting. How much more is the service worth at the city rates? Is the quality any better? In our region there is about a \$20 per hour spread between urban and city rates. City dwellers pay dearly for the convenience of a close dealer. Are the out-state folks

parts at lower prices. There are plenty of poorer quality parts at lower prices and there are some at higher than Saab prices. Go down to your local Auto Parts Store and you can usually find examples fairly quickly. Brake calipers are usually one of the examples of this. If you handled a large number of Saab parts you would find that they change contractors. Is this

must then shop carefully to maintain their own ROI to survive. Saab is currently working hard to make us all believe that their parts selection is the best and the only one that should be used! It's your choice and responsibility to decide. Look over your options (don't be fooled!) Choose the best "vality."



Right is a Saab OE V6 water pump (made in UK by GM.) Note the quality stamped steel impeller. It is similar to the impellers we had trouble with on C900 after market pumps a few years ago. \$167.
Left is a "Hepu" German made V6 water pump. Everything about it looks as good or better than the OE pump including the cast iron impeller: \$143.77.



Left is a Saab OE C900 sway bar bushing. Saab only sells this part with the bracket attached. Handy, but \$49.78 ea. side. Right is after market bushing that will press into the bracket. \$15.78 ea.

cheap? Are they poorly trained? Hopefully not! But, their overhead and the cost of living in the suburbs or out-state may allow them to provide an equally good job. Do lower prices equal poor quality? I don't think so.

How about parts? There is this perception that the only quality parts are OE Saab. If we examine that for a moment we will recall that up to 80% of a Saab car's components are made by someone other than Saab. They contract with a supplier to build each part. Do they pick the supplier because he is the highest priced? (Don't kid yourself!) Does Saab pick the lowest bid? The best quality? The best value? Since we don't know what parameters they use, we just have to say Saab picks a supplier. Are we to assume then that there isn't anyone else making that specific part of better quality, better price, or better value?

In the pictures are examples of better

to get a better price, better quality or better value? Doesn't it seem that we must examine not only the price of goods and services but also the "vality?"

The price charged or paid is not a guarantee of a superior job or part. Independents have the option to use the parts that best fit their shop's philosophy. Dealerships generally use only OE Saab parts. Saab parts have a one-year warranty, and after-market warranties run from none to life of the car that the part was installed on. Dealers generally stick with whatever Saab has purchased no matter how good or bad. Independents on the other hand can shop for whatever they want: price, quality or value. Saab has stated that their dealers should have over 20% ROI (return on investment). Since Saab doesn't sell directly to independents but independents must buy through a dealer, they don't receive the same parts discount as the dealer. The independents

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Oil changes are among the least profitable jobs a shop does. Shops may do them at a loss as a tool to up-sell other work. Often the pressure to do so is high and the cheapest laborer is put on the job.

Parts stores keep the prices of oil and oil filters low because they know it will attract customers to their store. Those customers will often "impulse buy" while there, and will be disposed to purchase other parts and supplies from the same store. Parts cost for an owner done oil service is about \$13.00 or so. It's easy, or at least it appears to be. A wrench, some jack stands (cement blocks?) and a drain pan take care of the tool requirements. It appears that knowing where to drain, where to fill, how much to add and how to remove and replace the filter are enough, but that's only the changing of the oil and filter. That's NOT an "oil service".

When the owner simply changes the oil, he saves some short-term money. The car's engine gets rid of contaminants and refreshes its ability to reduce damaging friction and heat. However, it is my experience that Saabs in which the owners do the oil services and have shops do the rest suffer a higher rate of failures, and thus costs to the owners. These failures are

rarely due to mistakes made by the owner during the oil change, but rather mechanical failures which, if caught early, can either be prevented or repaired much less expensively.

I had a new customer in my shop the other day. When I asked "who's been changing the oil?" He exclaimed, "I do! It's easy to do and I save a lotta money doing it myself. \$40.00 is too much for such a simple job!" We wrote up the ticket and brought in the car.

As is customary in my shop, we checked it over thoroughly before any work was done, and we compiled a list of needs. Included in that list was a sad group of totally preventable items. Two CV boots had been torn a long time allowing the CV joints they cover to be exposed and throw out all their lubricant, thus ruining the joints. Two of the four brake rotors had been ruined by not replacing the brake pads in time. And finally, the battery was so low on water that the exposed cells had sulfated, ruining an only 2-year-old battery. Had these items been caught in time they would have totaled only \$455.00. (The battery, not at all) Now the bill was going to be \$1,587.00. The owner cost himself \$1,142.00 in totally preventable repairs by

doing his own oil changes, all for the lack of knowledge.

Here is a list of the most common mistakes made by the do-it-yourselfer, or low quality shops, during an oil change:

- 1) Leaking oil from improper or reused oil drain plug washers.
- 2) On the older Saabs, a cracked transmission case due to over-tightening or installing too large a drain plug.
- 3) Improper fluids, improper levels, or the right fluids in the wrong place.
- 4) Damaged transmissions due to mistaking their drain plug for the engine's.
- 5) Rounded drain plug heads.
- 6) Improper amounts of oil.
- 7) Accidental vacuum or electrical disconnections.
- 8) Stripped out drain-plug hole threads.
- 9) In the older Saabs, crankcase vacuum leaks leading to misdiagnosis of idling problems.
- 10) Leaving drain plugs loose.

Here is a list of the most common oversights that lead to more expensive repairs:

- 1) Torn CV boots damaging the joints.
- 2) Low fluid levels causing damage or short life to the component. Low battery water is VERY common.
- 3) Brake pads worn out damaging the rotors.
- 4) Worn parts, like belts, that end up breaking.
- 5) Loose components that are then damaged or fall off.
- 6) Improper tire inflation or alignment indications.

Here is a list of what's done in a quality oil service:

- 1) The oil and oil filter are changed (warmed engine) with high quality components. I like OE filters and Valvoline Turbo formula oil. I believe synthetics are great but unneeded overkill on a Saab.
- 2) The drain plug is removed and reinstalled with a proper fitting 6-sided socket.
- 3) The drain plug washer is replaced with OE configuration parts.
- 4) All fluids are topped especially the battery.
- 5) Tire inflation and wear checked.
- 6) The car is test-driven.
- 7) The car is completely inspected for needs and a list compiled. The costs

I helped another Saab owner by providing an emergency repair once and sent him on his way. At the time, we had looked over his '88 9000 and given him a list. He had us fix an electrical problem and skipped the rest. So about six months later in he came in with another difficult problem. (He must of forgotten my speech. They love our work and advice, but man our price!) He says the engine was missing that morning, but it didn't need a "tune-up" as he had just put plugs, wires, a cap and rotor on. We need not look that direction. I hesitated and he said, "Hey, it doesn't take a rocket scientist to change plugs!"

Normally you know my drill here, but I felt a bit sporting that day. We checked the car and found the list we had last given him had been done, but done by butchers. The front exhaust pipe had a flex joint of the wrong size welded in, making it now too long and it was banging on the front subframe. The plugs he had installed were

the wrong ones and incorrectly gapped. The wires were VERY cheap and no dielectric compound had been used. The tires were too wide and rubbing the wheel wells on turns. The ignition rotor was barely on and would have soon broken and/or worn through the cap. Someone had removed the subframe and it was missing bolts. Some bolts were stripped, others loose. Metal master pads were grinding into the rotors. Someone couldn't figure out the rear calipers so they just disconnected the E cables. The half full battery was being smiled on by the latest "Greasy R Us" oil sticker. Six months before, someone had converted the AC from "Freon" to R134A and replaced only the AC compressor clutch. Either the clutch or the compressor was now frozen and was burning the belt to a string.

But eh.... any one can fix cars. Maybe even rocket scientists?

Mark Kline

and urgency of each are brought to the customer's attention. A quality shop knows the complete history of their regular customers and always does the complete services when due.

For an additional list of what is done by a good and talented shop, look in your Saab owner's manual. My shop, as well as others I suspect, go even further than that list. But, the most important thing that is purchased from a SKILLED shop during an oil service is NOT the oil change; it's the knowledge of the shop. That knowledge is worth every penny and most often MANY dollars more. Prevention is the key. The reason many car owners have so much trouble comprehending that value is because it's invisible. It's money that is SAVED and NOT spent.

This tale also points out the importance of knowing local conditions. Being located in the Denver area, Mark Kline sees a lot of "low electrolyte battery failures." The altitude has to contribute to more rapid evaporation than may be experienced in most locations. A shop in North Carolina uses special brake pads because of excessive brake disk wear with the standard pads. We investigated several other shops in different parts of the country, and found that they were not experiencing such wear with standard pads. These are cases where local experience is an important addition to extensive education and training.

Following is the check list from the 1997 Saab 9000 "Warranty and Service booklet" 25,000 mile oil change/inspection service. -Ed.

- Change oil and Filter
- Check Exterior Lights
- Check battery terminal connections and electrolyte level
- Washer system, top up
- Check brake fluid level
- Check and top up gearbox oil level
- Check drive belt tensioner and belt condition
- Check power steering fluid level
- Check coolant level and freezing point
- Check engine cooling system, hoses, and cap
- Inspect brake hoses and brake lines
- Inspect exhaust system

- Check fuel system including tank for leaks and damage
- Inspect rubber boots for inner and outer drive shaft joints
- Check ball joints, steering joints, and rubber boots
- Rotate tires, Inspect tires for uneven wear
- Check tire pressure, tread depth
- Inspect brake pads while tires are off. Check and clean pads and calipers in areas with heavy road salt use. Replace pads if worn to minimum specification. (Additional procedure)

- Check door hinges, stops, and locks
- Check headlight, fog light aim
- Check wiper blades, clean glass
- Check SRS warning lamp, visual inspection
- Road test. Check performance of drive train, steering and brakes, and verify tire balance. Check function of instruments and controls, including horn, windshield wipers, cruise control, and climate system. Note any noises or problems for correction.



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There's some reasons for the high hourly rate, not that shops are necessarily greedy. Anyone have any idea of overhead costs in a shop? Just a few things to consider that you maybe don't think about. What becomes of all that old oil? We pay to have it removed. Same with antifreeze. Both must be kept in approved containers. Price an EPA approved 500 gallon oil tank and a 250 gallon antifreeze tank. No one's giving them away. Shirk on buying them, and you are taking your chances that the inspectors don't come out. If you get caught, the price of the right stuff would be a drop in the ocean compared to the fines that, at least here, will take a successful business right into bankruptcy.

Two companies here will remove used oil and coolant. One requires a yearly fee of several hundred dollars, the other charges \$.22 per gallon with no yearly fee. The antifreeze removal is \$.32 per gallon with no yearly fee. Recycle you say? Price a machine. Then price the materials to keep it up and the time to run it. And then, do you really want to use the recycled fluids? And guess what, mix a little antifreeze in with the oil tank, or accidentally leave the top open and it rains in it, and the charge doubles for removal because it is now contaminated. Heaven forbid oil or antifreeze actually do get spilled. Maybe Exxon can lobby their way out of paying for it, but small shops pay for the clean up and the resultant fines. Or go under. Or both.

Taxes: did I just mention that? Ok, I buy parts, I have a tax number and do not pay sales tax when I buy the part. I do pay them when I sell it. I also pay taxes on the profit I made on the sales. I want to keep popular stuff on hand, so I don't have to wait on a shipment to arrive for every repair

I do, so now I have a parts inventory. Guess what? April 15th rolls around, and I now have to count my inventory, appraise its value, and pay an inventory tax on what I have on hand that I have paid for, but not yet sold. I count at least triple taxation here. Again, its real risky to fudge on it, getting caught will cost a great deal more than just being legitimate and paying what they say you owe.

Shop rags and towels: Dirty ones are now classified here as hazardous waste. They charge as such for taking those away and bringing clean ones, averaging about \$75/week for us, 2 men. A/C refrigerant collection, recycling etc.: With R12 and R134a, you must have two dedicated \$5000 machines. Filters for them aren't cheap. And now, with people using other chemicals as a "drop in replacements" for R12, you have to have a \$3000 detector to make sure a strange car doesn't have one of them in it. If it does, you have to recover it in a separate tank and then you have another tank of hazardous waste to pay to have disposed. If you get caught mixing refrigerants, or releasing to atmosphere, you're once again looking bankruptcy in the face, now along with a possible jail term. Price a lawyer lately?

I haven't covered liability insurance, workman's compensation insurance charges, health insurance, accountants, fire insurance, tools, uniforms, lifts, other equipment, employer's employee taxes, business licenses, manuals, office supplies, training, utilities (I kinda like having heat in the winter); the lists just keep going.

Rent (or mortgage and taxes) for a commercial building with proper zoning is the big subtraction from the profit. I can remember when the only person winning was the landlord. Then you have what I call the Social Jackals. This group is made up of all the insurance's, trade association fees, donations to the police officer association and so on. Then there's equipment and tools as well as manuals and software updates. Health insurance alone for my wife, child and me is \$670.00 per month with a \$1000 deductible. Just how many Saabs do I have to fix to survive? I developed my own shop management software in 1992 to help me keep a understanding of our business condition at any time. One click of the button and I can tell where I stand in dollars and cents.

So why do we open our own shops? At some dealerships, the high end techs MIGHT get 1/3 of the labor rate, and there are few of those in the shop. There might be lower skilled, less experienced guys who get \$6-8/hour, and those are the employees dealers seek and treasure. In general, this is the state of the industry, and the reason for so much dissatisfaction and the typical stereotype of a mechanic. The easy way to make a profit is to cut costs, and the way too many places are doing it is to hire cheap labor, a lot of it, and turn out volume. If the volume is high enough, the quality of work may seem less important.

As in most things, most of the time you get what you pay for. When dealers and shop owners don't pay the techs, the car owners don't get the quality service they deserve. It is a very unique industry in that sense because of the skills and experience necessary to be competent and the costs of overhead to actually run the business. The ones that are actually required to be knowledgeable and competent are NOT the ones getting the money. And the knowledgeable and competent ones are leaving the industry in droves.

Our minor service averages \$60-75, depending on which oil the customer wants. And the customers we have had for years, with folders of invoices 1-2 inches thick, pay that gladly because we don't do a \$20 oil change and charge for a \$65 minor service. They rightly expect that for that \$65, they won't break down before that next \$65 service rolls due. If we were doing just the \$20 oil change, their folders wouldn't be 1 inch thick, and their cars wouldn't be pushing 300,000 miles. They are paying less than if they were making new car payments and insurance premiums and getting \$20 oil changes. And they might not be driving as nice of a car that they can still depend on to get them where they need to go, when they need to get there.

A lot of you service your own cars because you want the \$20 oil change, but honestly, do you just do the \$20 oil change? No you don't. You spend \$20 for it in materials maybe, but have enough knowledge, or can network well enough, or can suffer through your mistakes long enough that you do a lot more than Jiffy Lube would. If you paid yourself your hourly rate along with what you spend for the materials, you might be in the hole. But you enjoy it, or

maybe you simply don't trust someone else to do it. Most of our customers are professional people who don't have the time or the inclination to fool with the car. It suits their niche a lot more to pay to have it done, and have it done right.

More of our customers approach us to raise rates than to cut them so hopefully they can just drop by when they want. A lot do, and that's a big reason we are so covered up. We have too many GOOD customers. They don't want a hassle. Neither do we. They drop the car, tell us the problem, or we tell them what's due, we fix it, they pay the bill and leave. They know they can't trust a Jiffy Lube to look after the car. They know that if they did take it to a Jiffy Lube they couldn't hold Jiffy Lube responsible for anything but an oil change, and that with the cheapest filters and oils they can find. They know that if they bring it to us, it will be right, and that they CAN hold us responsible and trust our guidance. That, more than anything, is what they are glad to pay for: in once, back no more until it's time, and reliable transportation in between scheduled visits.

The problem with the newer cars, I think, is two fold. One, they are attracting more of an AVERAGE customer from lesser cars that never had real reliability, never paid for reliability, and don't expect reliability. They don't understand that reliability costs, either in paying someone to do the services, or taking the time to do them correctly themselves. They want, on the average, \$20 oil changes and expect that is all it takes. With the exception of a very few,

I don't think anyone reading this fits that customer description, but you don't see the number of these cars we do, and the people that own them. Two, the cars truly are harder to diagnose, repair, and maintain in a way that gives the customers who do know reliability the same reliability they have grown accustomed to from their older cars. It's not that the initial quality is lower, but that poorer initial maintenance has a greater effect because of the more complicated systems.

If a car isn't started early enough on a proper service schedule and watched over for developing problems by a dedicated and skilled tech, it's impossible to head off unreliability. Then either the shop or the car gets the blame when neither are really at fault. The cars, leased to the new type of customer, can become money pits by the time someone actually buys them to keep. In 1985, when the 16V was introduced, leasing wasn't all that common. People owned the cars, made payments, got a title, and made sure they protected their investment, instead of keeping an eye on mileage to avoid over mileage fees at lease turn in. You surely take a lot more care in your first home purchase than you do on the upkeep of an apartment. No matter how lax the service is, a Saab is going to make it through a 3 year lease most of the time. After that, it becomes questionable if the car wasn't serviced properly during those initial 3 years.

The big problem I see in the industry is the lack of dedication. Like a doctor, you have to be able to identify problem areas and problems before they happen. A example is

when you change the serpentine belt, do you change the idler pulleys? When were the idlers changed on this unknown Saab? When was the last time the thermostat was replaced? You can't always tell the condition by feel or sound. I have seen perfect sounding or feeling units come apart several months later.

An example of dedication is the Major Service. During the course of the major service, the antifreeze gets drained and replaced. The question is just how does it get drained and how much of the old coolant is left in the block? Often the radiator drain plug gets pulled or the bottom radiator hose is removed, and what comes out, comes out. The plug or hose gets replaced and the gallon of green stuff gets poured in. In many cases it's the cheapest stuff they can buy. The proper way is to put the hose to it in a reverse flow, then use the best coolant you can buy.

Another example is boosting a battery. In a Modern day car, like Saab, don't do it unless it's a life or death situation, like "stuck in a busy intersection." The quickest way to kill a computer short of a hammer is to mess with its power supply. Saab and modern day cars have plenty of computers.

Those shops that work on anything they can get in the door can get you going, but it takes a specialist to catch the problem before it happens and to maximize the life of the said component, without endangering the quality product. It's a science. I have to measure the variables around me and keep a eye on what's coming at me based on the numbers and experience. To top matters off, the business has to be run.

Getting to the dedication part: It burns me up to know that the shop manager smiles and waves "bye" after an incomplete "Major Service", because I know that customer will be back there with a stuck thermostat before the next major service. It's usually within 15,000 more miles, and if it sticks "closed" you're looking at a head job and in some cases a engine. Dedicated Pros know this and its not typical to Saab either. I provide every customer I have with that dedication because I manage the shop. It requires dedication, a God Given Talent and years of learning and conditioning to hit with damn near 100 percent accuracy day after day, year after year. I get up every morning looking forward to going to work as I have for the last 30 years. I find peace among the machines I master.

Franchised Dealer Service Facilities

So what's wrong with non-independent repair facilities? Nothing! I have seen several dozen cars over the past two years that supposedly were cared for by supposedly SAAB trained technicians with service problems. I know there are many wonderful independents out there (Sports Car Service, J&B Imports, etc.), but don't discount the prices, experience and loyalty of many SAAB dealerships. All of the Techs in our shop own SAABs. I own three: 65 Monte Carlo, 87 900S and a 96 900S. We quite frequently offer discounts to owners of classic SAABs in an effort to help keep them on the road. My father's first SAAB was a 1957 93 that he bought in 63 and I've been around SAABs ever since. So before comments are made regarding the motives of SAAB dealers, remember even the independents are in it to make money.

*Bob Miller
Hunt Valley Saab*

Bob's letter was originally posted to VSAAB, the Vintage Saab Mailing List in response to Franchised Dealer support of older cars, but it applies to this context as well. There are many dealers who provide excellent service at competitive prices. - Ed.



2001 North American International Auto Show

Despite a sore throat and scratchy voice I eagerly accepted husband's invitation to visit the 2001 North American International Auto Show "Press Days" in Detroit. The radio show talking about it as we drove into Detroit focused on the probability of an economic recession and discussions of the effect of that on the auto industry. From the Toledo stations, the talk concerned the new Jeep Liberty (made in Toledo, across the street from an ancient Jeep Cherokee plant). The Detroit stations discussed the auto industry in general. Cars were Big News. Because we have the name Club in our title we were declassified as media, but the kind folks of SAAB issued us Corporate credentials so we could enter.

We arrived on the first day so not everything was perfect. At the Saab display, cars had been driven in on the glass floors with lights from beneath as well as lights from the ceiling. Men with Fabulous and another bottle of cleaner were hand rubbing tire marks off the glass floor. One car, the Buick Rendezvous, showed its internal features with an electric "pop-open top" until Steve went to take a picture of it. Then the electric mechanism which automatically collapsed the third row of seats didn't work for the rest of the day.

The refreshments were marvelous. Accura and GM had coffee booths with latte machines. Lexus had masseuses who gave the most wonderful 10 minute upper body massage. Volvo had Swedish delicacies that maybe only a Swede could love: cold potato pancakes covered in a strip of cold bacon with a dollop of red currant sauce, a red fish patty with a raw greasy texture, and a delicious rhubarb sauce for dessert. SAAB served huge shrimp with cocktail sauce and red caviar on cream cheese topped toast triangles. GM featured Asian stir fry, Mexican choices, and Coney Island all beef hot dogs next to a display of classic old cars. Toyota featured a photo shoot with actors dressed up as John Wayne, Clint Eastwood, and some cowboy in a long white coat from a movie we haven't seen.

Jaguar with huge vases of white tiger lilies throughout their display served hard booze while SAAB and Volvo offered choices of wine. Each auto company offered bottled water and pop. Jaguar had a beet, blue cheese, and walnut salad, and plates of smoked salmon as well as chicken and tuna fish salads.

On the second floor of the Ford pavilion, men in white lab coats demonstrated future technology, like inflatable seat belts so one shouldn't get a bruise from them. One exhibit was a 3-D body scanner. One enters a booth like a Star Trek



The "real life" Norma standing next to her scanned image and a display of how a car of the future might automatically adjust the seat, pedals, and steering wheel after reading her data card.

transporter, and a ring of light passes over from head to toe. The data is then encoded onto the magnetic strip of a plastic card. The idea is that a person can slip this card into any car as he/she enters it, and the car then adjusts itself to the specific body measurements automatically: steering wheel, seat, pedals, and mirrors, as well as programming one's favorite stations in the radio. The demonstration had a neat computer display on the wall that showed this happening, but when I sat down in a "real" car seat and swiped the card, it did nothing. The attendant said that it hadn't been working all morning. They also had me take a survey on which kind of seat belts I found most appealing after having me test 3 different ones. My favorite were considered to be the safest, "four point" restraints, going over both shoulders which

also proved statistically to be the least favorite of most people.

Peter Augustsson, President of Saab Automobile AB and Dan Chasins, President of Saab Cars USA, Inc., were kind enough to make themselves available to us for interviews. Augustsson's interview, which Steve will cover in greater detail, discussed that SAAB was trying to create new concepts and as such will not reproduce a car from the past. He said they would create 5-7 new car models in the near future and were working on strengthening the distribution-dealer network in order to improve service support. He felt this was a 3-4 year process. He also said that developing a car was a compromise in prioritizing a list of values that included quality, safety, environmental concerns and individualistic characteristics. Since SAAB has only .3 of the American market and 10% of the Swedish market, he felt that the SAAB cars of the future would have to be highly versatile for the American premium market but yet still represent good value for the home market: European handling, be fun to drive, be sporty, dynamic and yet safe.

Dan Chasins granted us the next interview. He is working on improving the color choices, trying to include colors that reflect rather than absorb light rays, which he believes is especially important in the American South. He mentioned the new laser red and the steel grey which the market seems to like. Dan also mentioned maintaining the positives of SAAB which are performance, reliability and durability. He also discussed the goals of maintaining the niche in the market and having good value as in offering attractive lease and financing features. He felt SAAB needed to improve their advertising in that for example, people who like the OnStar system needed to know that every new SAAB is equipped with it. Direct mail and test drives were going to be used more frequently. When I asked if SAAB would entice people out for the test drives the way BMW does in contributing money per test driver to the Breast Cancer Society, he responded that because of the pet carrying features, Saab has a special affiliation with the Humane Society. In fact a percentage of the pet gear sales is contributed to the HS annually.

Kjell ac Bergström to Head Technical Development at New Fiat-GM Powertrain Joint Venture Company

Kjell ac Bergström, who is currently Vice President Powertrain at Saab Automobile, has been appointed Vice President Product Engineering at the new Fiat-GM Powertrain Joint Venture Company. He will be responsible for the development of engines and gearboxes for Saab, Opel/Vauxhall, Fiat, Lancia and Alfa Romeo cars. Bergström joined Saab in mid 1999 from Volvo Car Corporation, where he served in various capacities from Chief Engineer and Head of Engine Design and Development to Vice President and Quality Director. Prior to working at Volvo, Bergström was a researcher and Assistant Professor at Chalmers University of Technology in Göteborg, Sweden.

The new company, which will count roughly 27,000 employees, covers GM powertrain operations in Europe and Latin America and all Fiat powertrain operations. It comprises a total of five development centers and 19 production plants in eleven countries, and has an annual production capacity of 7 million engines and 6.6 million gearboxes. Head office for the new company is in Turin, Italy.

the traditional turbocharging and mechanically driven superchargers) and brakes.

2. The driver has to be in control, meaning the car must be responsive and safe to drive, with simple to use yet comprehensive instrumentation.

3. Safety, including both safety features, such as ABS, supplemental restraints, and active headrests, and the inherent safety of the chassis.

4. Saab products have to be unique.

Regarding Saab's product design, we asked about position of chief of design at Saab. For its first half century, Saab had just two designers: Sixten Sason, who designed the 92 and the 99, and Björn Envall. Einar Hareide was with Saab just long enough to design the 95 and then left. Augustsson said that Hareide wished to return to running his own design studio in Norway, and to work on a wide range of products. Michael Mauer joined Saab in March, 2000 from MCC Smart GmbH in Germany, where he was the head of the design department. His earlier positions include General Manager of the design department at Mercedes-Benz in Stuttgart, where he worked on the styling of the Mercedes SLK, SL and A-class, and General Manager at the Mercedes-Benz Advanced Design Studio in Japan. Augustsson said Mauer is very much in tune with Saab's goals, and is expected to remain with Saab for some time.

Augustsson pointed out that the first Saab's were very advanced by the standards of their day, both in design and engineering. More recently, Saab's have become less advanced over their contemporaries, and it

is his intention to guide the company back toward its heritage of being an industry innovator. Toward that end, and referring to the "retro" trend in the industry (the VW New Beetle, the Ford Thunderbird, and the Mini are examples) he assured us that there would not be a "retro Saab."

The new production line in Trollhatten, we were told, is being built to accommodate not only the new design 9³ but also the next generation 9⁵. Coming within about 4 years, it will be built off the same "Epsilon" platform as the new 9³ and use the same assembly technology. Having a single production line capable building both of Saab's mainstay models will lower the cost of production and add the flexibility to shift production from one model to the other, depending on demand.

When asked about a smaller Saab model, a 9² as it were, it is "...on the wish list of things we want to do". But there are higher priority items to be attended to, namely the renewal of the product line with the new generation 9³ and the next generation 9⁵. To that he added how important it is to have a contemporary diesel engine available in the 9⁵ in Europe. Fully half of the 9⁵'s market in Europe is comprised of diesels, and Saab's absence from this part of the market has been analogous to a major manufacturer attempting to thrive in the US market without a light truck. Similarly, Saab's forthcoming "SUV" in the United States represents a large and still growing market segment among the buyers in the demographic group making up most of Saab's new car sales.

Stephen Goldberger

We talked a little about the American market. Dan said that unlike in Europe, their studies showed that women are typically 50-50 in having decision power over the choice of a car. There is also a strong gay following. Despite this SAAB will not change it's advertising to focus on any one group. ("Why bother to identify the groups if one isn't going to make use of that information?" is my unasked question.)

I'm glad I had the opportunity to attend my first auto show from a press presentation. I found many of the formal presentations which were broadcasted from speakers mounted high next to a big screen to be almost acoustically inaudible except for specific classic words repeated by each CEO, e.g. market share, performance, quality etc. The only thing that differed between some of the speeches were the accents, German and Japanese being the predominant ones. Most of the other press stayed talking only to their travel mates. We did meet one photographer who freely conversed with us as he expressed dismay at how few of the cars were 100% American and he was pre assigned to photograph only American cars with no European or Asian co owners. The people employed by each of the car manufacturers were, however, always smiling, friendly and only to willing to talk about their product. At 6:00PM the Detroit AutoDealers' Association booked the hall for a private party and we were all asked to vacate.

Norma Goldberger

Conversing with Peter Augustsson, President of Saab Automobile AB

Peter Augustsson has been President and CEO of Saab Automobile AB since February, 2000. We were fortunate to be able to interview him at the NAIAS. Augustsson responded to my introductory comments regarding the apparent inclusion of a hatchback in the new 9-3 product line by reminding me that for the first half of Saab's existence the model mix consisted of sedans and wagons; no hatchbacks. He then spoke in general about the things he considered most important to Saab's identity and Saab's product line.

Saab's hallmark is, in Augustsson's opinion, consists of four main points:

1. Performance, with special emphasis on forced induction technology (both

Sales Data

	DEC '00	JAN '01	period
coupe 93	54	43	97
viggen coupe	8	8	16
sedan 93	744	460	1204
sedan 93 se	493	274	767
viggen sedan	19	17	36
convertible 93	26	13	39
convertible 93 se	444	304	748
viggen convertible	22	28	50
campaign convertible	0	2	2
total 93	1810	1149	2959
sedan 95	546	341	887
sedan 95se	715	357	1072
Aero 95	165	123	288
wagon 95	280	160	440
Gary Fisher edition	27	19	46
wagon 95se	146	125	271
Aero Wagon	64	40	104
total 95	1943	1165	3108
IDS	4	6	10
total 1999	3753	2314	6067
last year (1998)	2920	1979	4899
percent increase	28.53%	16.93%	23.84%
total year to date	39479	2314	
previous year	39541	1979	

Sales are holding pretty much to the trend of the past several months, with incremental gains over the previous year. In December 2000, sales of 9³ models were 339 above the previous year, or an increase of 23%. The 9⁵ sales increase of over 500 was helped by the final deliveries of 2001 cars to Enterprise Rental Car. For the full year sales were within a few dozen of 1999's year's total, as generally firm and reasonably consistent sales over the last three quarters didn't quite make up for a very weak first quarter and the truly exceptional results in August and September of 1999.

In January, traditionally a weak month for Saab, sales exceeded the previous year by 335, or 17%, the increase being entirely due to increased 9⁵ sales. There were neither fleet sales nor incentives in January of either year, so January's sales results are as healthy as they appear on the surface. Convertible sales were notably weaker than in the previous year, dropping from 37% of 9³ sales to 28%. Coupe sales were anemic as usual, and Viggen sales were weak. By contrast, sales of the mainstay 5-door 9³ base and SE models increased 42% over the previous period. Saab's increase comes at a time of widely publicized weakness in overall vehicle sales in the US, weakness which reflected lower car sales among all of Saab's European competitors. BMW showed a large overall gain for the period, but that increase was due to substantial sales of its "X5" utility vehicle; their car sales were down. Mercedes, Volvo, and Audi were also down in January over the previous year.

2001 Saab Owners' Convention

The 2001 Saab Owners Convention has been finally and officially scheduled for July 12 - 15 at Vero Beach, on the East Coast of Florida. The dates have changed from the original target of late June due to hotel availability, and it will also coincide with the regular monthly scheduled outdoor jazz concert on the beachfront that Saturday night. There will be a less structured program this year, providing options for activities without planning every hour of the attendees' days, including meals. Unlike some years, there will not be a "focus" hotel where attendees are encouraged to stay, and activities will be held at various venues in Vero Beach throughout the weekend. The community is small and very easy to get around and will allow people to get out and enjoy the beach as well. Meals will be on your own with the exception of at least one evening festive dinner. The Convention Committee will be working with the restaurant association to provide lists of places to dine as well as coordinate discounts for attendees with their name badges.

The theme for this year will be "Celebrating the 15th Anniversary of the Saab Convertible." Florida is a great destination to encourage all convertible owners to put the top down and enjoy the sunshine. Robert J. Sinclair, who was the President and CEO of Saab Cars USA, Inc. during the time of the first Saab convertible's development, will be on hand to give his account of the project.

The weekend will start with a scenic drive from Cape Canaveral down to Vero Beach to kick off the event on Friday, July 13. This will allow people would to stop at the Cape on their way south rather than going to Vero and then stopping on the way back up. The drive along the coast is beautiful, and will be more so with the "parade of Saabs."

Registration booklets will be mailed to all NINES subscribers and others who have either attended a recent convention or requested registration booklets. That mailing is expected to occur in late March. There will not be a track event this year.

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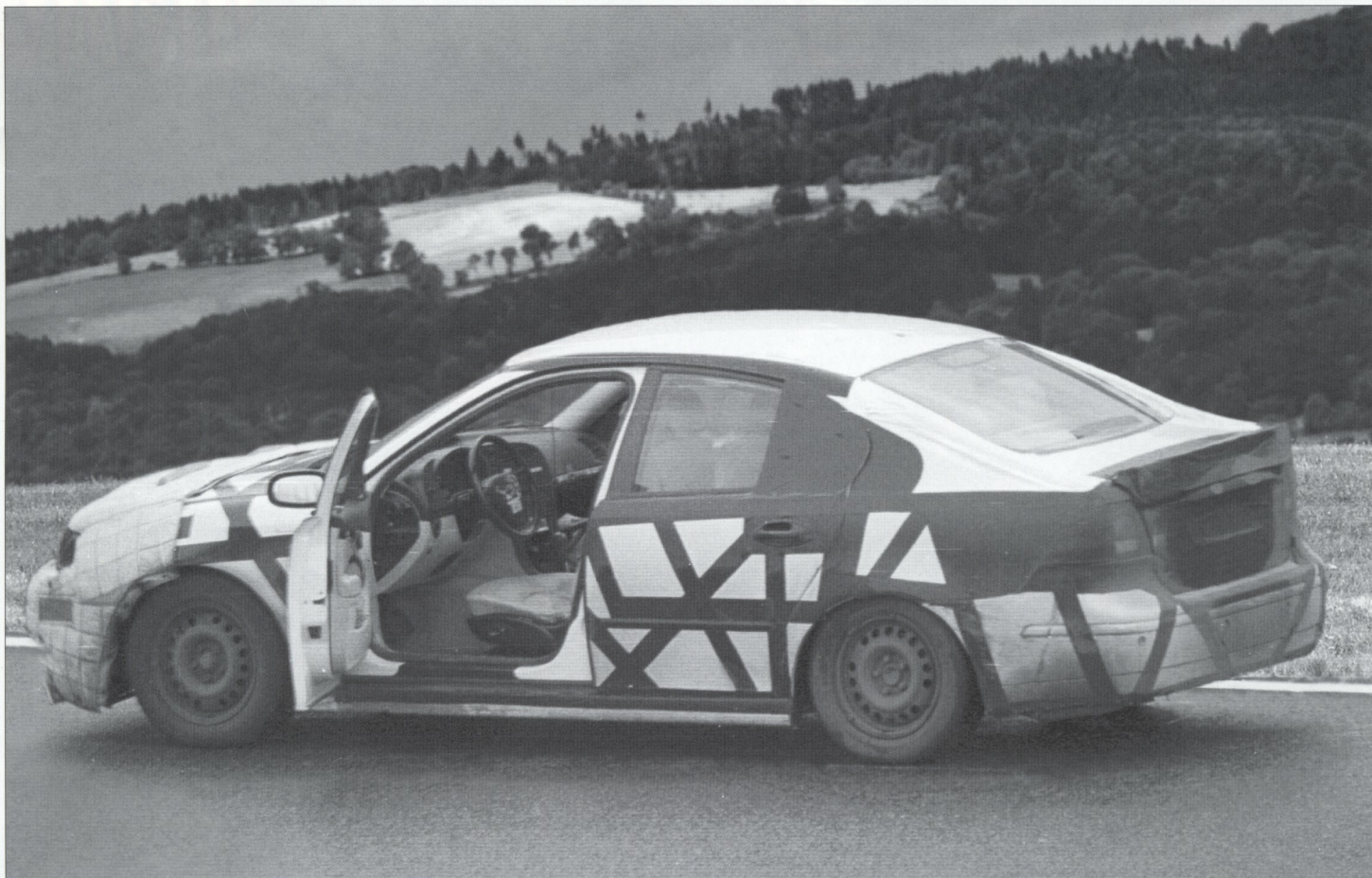
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9³ prototype undergoing road testing. Photo by Hans G. Lehmann/ Hidden Image

Spy photos showing the next generation 9³ undergoing road tests have been making the rounds of publications and web sites. The photo shown here is one of a family of 4 shots of 3 different test vehicles by Hans G. Lehmann/ Hidden Image. Another shot was shown in a late December issue of Autoweek.

One is cautioned to remember that the vehicles are test prototypes, and some details are subject to change prior to production. For example, the vehicle shown here very clearly is made with the doors "set into" the door frames, like on the Classic 900, rather than overlapping, like on the current 9³. We've seen this on other GM products which have extremely large cross section roof beams, for greater rigidity. The car shown in the Autoweek photo, on the other hand, seems to have the current design door configuration, as indicated by the way the roof racks on that are mounted on that car. Unfortunately that

particular photo lacks sharpness, so that detail is hard to discern.

One detail that is not hard to discern is that this vehicle is a 5-door hatchback. The Autoweek photo also appears to show a hatchback, and the third prototype in the group is a 4-door sedan, with lines very similar to the hatchback, and on which the trunk and rear window were masked to make the car appear to be a hatchback. In NINES 244, our March 2000 issue, we predicted that a hatchback would not be part of the next 9³ range, but it certainly appears as if Saab is at least investigating a hatchback. We will be very pleased if we were wrong on that prediction.

The rear door masking shows a BMW style kickback of the rear window, but we believe that is camouflage. We predict that the rear window line will be classic Saab, like that on the current 9⁵. The photos all show that Saab's signature "door overlapping the rocker panel" is being replaced by

the more common arrangement of having the door bottom flush with the rocker panel. In general, structures are more efficient if they make full use of the space available, and having the rockers set further outward may be a case of sacrificing style for engineering efficiency.

According to Daniel Ritter, who maintains the web site <http://www.saabcarsonline.com>, a 4 door sedan, a convertible, and a 5 door hatchback will be available during the first year of the new 9³'s production, with a wagon following after the first year. Many are predicting that the Saab Variable Compression engine will be in production, but our discussions with Saab executives indicates that a decision on producing the SVC engine has not yet been made. Saab Combustion Control (direct fuel injection), however, will be implemented on the new 9³, and we see no inherent incompatibility between SVC and SCC.

S3 • Summer
• Safety
• System

High Performance

nokian NRH2



Feature

Safety Benefit

Water Wipe System

Allows tread to press cleanly against road to help prevent aquaplaning

Symmetrical Tread Design (directional)

In combination with fan-shaped tread design, the symmetrical tread pattern effectively expels water

Driving Safety Indicator (DSi)

Provides visual awareness of tire wear in millimeters

Jointless Nylon Belt

Helps prevent tread separations

H-Rated for speeds up to 130mph/210kph

nokian NRV



Feature

Safety Benefit

Termo Silica Compound

Performs equally on dry pavement in winter/cold weather and provides increased grip on dry pavement in summer/hot weather

Asymmetrical Tread Design (directional)

Inside tread expels water and resists aquaplaning and outside tread enhances handling

Single Wire Bead

Better adhesion to rim

Jointless Nylon Belt

Helps prevent tread separations

V-Rated for speeds up to 150mph/240kph

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New
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Feature

Safety Benefit

Termo Silica 2 Compound

New and improved T2 performs equally on dry pavement in winter/cold weather and increases grip on dry pavement in summer/hot weather

Info Pin

Can inform driver of road conditions based on outside temperatures

Driving Safety Indicator (DSI)

Provides visual awareness of tire wear in millimeters

XL Carrying Capacity

Improved stability in sidewall allowing for safer cornering and handling at higher speeds

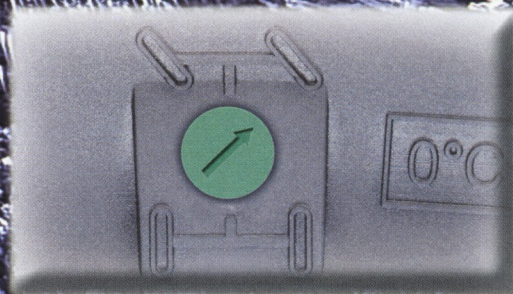
Jointless Nylon Belt

Helps prevent tread separations

W-Rated for speeds up to 169mph/270kph

When outside temperature is above 56°F the Info Pin is green. The Info Pin turns greenish-black between 34°F and 56°F. When temperatures are below 34°F the Info Pin is black, indicating below freezing temperatures.

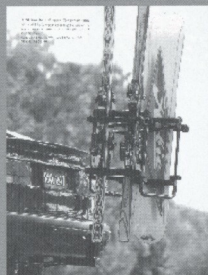
In addition, the driver can turn the arrow on the Info Button to mark the mounting position of the tires. This is especially helpful during storage and tire changeovers.



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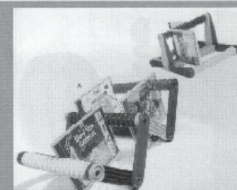
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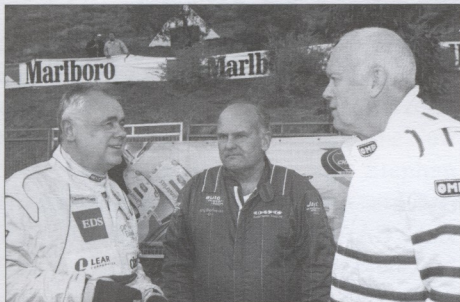
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Saab cars competed in one of the world's most spectacular races with two 9³ rallycross cars. The cars, supplied by Swedish rallycross racer Per Eklund, were used for the head-to-head competition at the year 2000 Michelin Race of Champions on the island of Gran Canaria, Spain.

The Champions race on a short, figure 8 closed course which is partly paved, partly dirt. Individual heats are run in identical cars, with each driver's "road" separated from the other driver's by a steel guardrail. The year 2000 race cars included the Saab 9³ rallycross car, Peugeot, Mazda, and Ford



Saab Rallycross driver Per Eklund, former Saab Factory Rally driver Stig Blomqvist, and fellow Swedish driver Björn Waldegård (L-R), were invited to compete in the Race of Champions "Legends" preliminary. Stig Blomqvist won the "Legends" race for the second consecutive year. *Photo courtesy of Race of Champions.*

world cup rally cars, and a rather strange looking sprint car that features a Honda motorcycle engine, among others. The Saab was one of the two cars used in the final championship round.

Saab's factory rally team alumni Per Eklund, Stig Blomqvist, and Simo Lapinen were joined by fellow Swede Björn Waldegård in the "Legends" preliminary races, and Finnish drivers Tommi Mäkinen and Marcus Grönholm. In the Michelin ROC-Legends, Stig Blomqvist won all his heats to beat fellow countryman Björn



One of two Saab 9³ Rallycross cars used in the 2001 Race of Champions.

Photo courtesy of Race of Champions

Waldegård in the final. This was the second consecutive year in which the former Saab Factory Rally Driver won the "Legends" series and earned a place in the Michelin Race of Champions itself.

It had been nine years since a Finnish driver last won the Michelin Race of Champions (Juha Kankkunen, 1991), but a Finnish victor was assured when Mäkinen and Grönholm faced off in the finale. No fewer than five world titles were represented in the out-and-out combat for national supremacy and prestige back home. But after being deprived of a fifth successive world Drivers' crown by Grönholm this year, Tommi Mäkinen took sweet revenge by beating his fellow Finn Marcus Grönholm, two heats to zero. Grönholm said, "No, I am not disappointed. Tommi was in unbeatable form today, and I made a few driving mistakes with the Toyota and then went a bit wide on one corner with the Saab; mistakes here are always costly in terms of time! Now it's time for me to start looking ahead to next January's Monte Carlo Rally..."

The Saab 9³ rallycross cars are turbocharged by Garrett, a leading global manufacturer of turbochargers for passenger cars, light trucks, and commercial vehicles, with worldwide headquarters in Torrance, California, and European Headquarters in Brussels, Belgium. Known for its active involvement in auto racing worldwide, Garrett was proud to co-sponsor Saab and Per Eklund in this high powered racing event.

Garrett supplies the turbocharger used

in Saab's 2.0 LPT, full turbo, and HOT models and Saab's 2.3 LPT models, and they supply the unified turbocharger/exhaust manifold for Saab's asymmetric LPT 3.0 V-6 model. To view other scenes of the Race of Champions, see their website, <http://www.raceofchampions.com>.

CARLISLE Import Kit/Replicar Nationals Invitational

The Carlisle Import-Kit/Replicar Nationals will feature an Invitational indoor vehicle display of high-quality restorations or low mileage maintained originals. Owners of vehicles selected for the display will receive a recognition plaque, free admission, on-grounds parking, and a photo in the event magazine. The vehicle will be indoors on display to the general public for the full three days of the event. Vehicles must arrive on Thursday, May 17 and remain in the building until Sunday afternoon, May 20.

Time is short. If you are interested in putting your Saab on display, please call John Scaglione at (717) 243-7855 ext. 160 for application information. And please consider joining fellow Saab owners at the event. See Marc Fails' story about the Central Penn Saab Club on page 27.

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CARLISLE Import Kit/Replicar Nationals

What's next from the Central Penn SAAB Club?

The Carlisle Import, Kit and Replicar Nationals will be held on May 18-20, 2001. Please join the Central Penn SAAB Club as we again host SAABs at Carlisle. On May 19th, we will again have a "SAAB Only" buffet lunch and will depart the show mid-afternoon for another scenic tour of Central Pennsylvania, with a dinner stop at the end of the tour. Because of the small turnout in 2000, we will need at least 25 pre-registered cars to have a courtesy tent at this year's show, so please pre-register. Registration is just \$15 in advance, or \$30 dollars at the gate. Please send your preregistration to George Bashore of the Central Penn Saab Club.

Prior to last year's Carlisle show, I mailed a letter of invitation to 15 regional SAAB clubs, asking if they would like to co-host the event with us. Regrettably, I only received the courtesy of three replies; Larry West with the New Jersey SAAB Owners' Group, Stephen Goldberger with SAAB Club NA and Ron Augelli with the Northeast PA SAAB Club. This year, CPSC will again host the event, and we urge local clubs in the New England and Middle Atlantic States to participate. The Carlisle Import Show attracts a wide and varied group of participants, including a strong showing by Citroen devotees and other marques which are not commonly seen.

Our club is starting to add members from well outside our immediate area, namely to the east near Philadelphia and its surrounding suburbs, and south into Maryland and Delaware. Talking with participants at the Covered Bridge Tour, we discussed the possibility of holding other events to attract more participants from these areas. Two projects were discussed with much enthusiasm; a tour of the Valley Forge, PA area including the battlefield and monuments, and a covered bridge tour of scenic Bucks County, PA. No specific dates have been discussed, and ultimately will depend on other SAAB related dates and activities, as to where they best fit. Continue to watch for more information in Nines, or get in touch with us if either event interests you.

Marc A. Fails

Swedish Car Day 2000

On Sunday, October 15th, the sun shone brightly on a surprisingly large gathering of Saabs (and a few Volvos as well) at the 1st Annual Swedish Car Day. The event was held at the Museum of Transportation in Brookline, Massachusetts. The Museum is located in the castle-like 1888 Carriage House, a National Historic Site, once owned by Larz and Isabel Anderson. The Andersons began collecting in 1899, and today the Museum displays America's oldest collection of automobiles. Lawn events occur throughout the summer, showcasing a particular automobile or country.

Charles River Saab (<http://www.crsaab.com/>) of Watertown, the oldest Saab dealership in the US, was co-sponsor for the gathering and provided items for a raffle. Saab owners from New England and beyond converged on the lawn of the Museum for a day of fellowship, good food, great fun, and fantastic automobiles. According to Tim Martino, service manager for CRS, the event drew a much larger crowd and more Saabs than expected. There were far more attendees at the Swedish Car Day, in fact, than any previous inaugural event at the MOT. Admission to the Museum was free for all who attended,

and a more appropriate setting would be hard to find for a celebration such as this. The cars present included a number of vintage Saabs, ranging from Bruce Billings' 1966 2-stroke 95, to a trio of Sonett V4s, two 96s, a number of Sonett IIIs, and two 99s. The "classic" 900 was amply represented, as was the 9000, the "new generation" 900, the 9-3 and 9-5. Quite a few additional Saabs made it to the event but, with lawn space quickly vanishing, were redirected up the hill to overflow parking. To be fair, a decent number of vintage and current Volvos were on hand as well, but were certainly outnumbered.

Those who made it in time to register were judged for a variety of awards, and trophies were presented after a raffling off of Saab goodies and service vouchers. Jeff Propowski's Lightning Blue 1988 SPG was again granted the People's Choice Award, just months after capturing the same title at the 2000 Saab Owners' Convention in New York (watch for Jeff's stunning Saab in European Auto). The weather was perfect for socializing, comparing notes, and taking photos. The afternoon's entertainment highlight was a mountain biking demonstration beyond description by Lance of the Cannondale Mountain Bike Team (no Gary Fisher?). Corporate Saab Reps were present with some beautiful new Swedish models



Saabs on the grounds of the Museum of Transportation in Brookline, Massachusetts, at the first annual Swedish Car Day.

(of the automotive type, of course). One topless model in particular was blaring ABBA songs from its six Harman/Kardon stereo speakers for most of the afternoon.

The event was also a first for the newly-revitalized New England Saab Association (NESA), which is planning another event for this coming spring. Stay tuned for further developments or see <http://www.nesaab.org>. A photo archive of the event can also be viewed here. Plans are already in the works to make the 2nd Annual Swedish Car Day an even bigger and better event in the fall of 2001. For further information, check out <http://www.mot.org/>. Hope to see you there next October for Swedish Car Day 2001!

*Ryan O. Emge and Chris Mills
Keene, New Hampshire*

TRI STATE SAAB CLUB TO MEET APRIL 29th

The Tri State Saab Club will begin meeting once again this year! If you live in Ohio, Kentucky or Indiana, or just happen to be passing through, join us at our first gathering of the new millennium! Tentatively scheduled for April 29 starting at 1PM at the US Air Force Museum in Dayton, Ohio, come join the fun as dozens of Saab faithful gather to talk shop, swap parts, grill dead meat, lie about track times and visit the world's largest military museum. Admission to the museum is free, and is a very educational experience for young and old alike, so bring the whole family! They also have an IMAX theatre with regular showings (that run about \$5 each), a nice restaurant if you'd care to eat indoors, an awesome gift shop, and tours of former Air Force Ones in the annex Oh, and loads of Saabs in the mile-long parking lot!

If you'd like to join us, please contact Phil Lacefield Jr. at (513) 423-9929 or phil@lacefield.com as soon as possible. This way we can get a better handle on just how many cars we'll have appearing and also give you advance driving directions. Hope to see you there!

Special Performance Group 9 by Clifford Quan

Who is Special Performance Group 9 (SPG9)? Wasn't it Swedish Performance Group 9? What happened to Group 6 Performance? Many SAABers on The SAAB Network (<http://www.saabnet.com>) know the related history of these Performance Groups and NINES readers may have seen the SPG9 advertisements on the back page of this publication. I was fortunate enough to have purchased some Group 6 products in the past, which are installed on my '86 900T SPG, but after Group 6 went out of business I wanted more! Shortly thereafter, I heard about a company that began to manufacture some of the Group 6 product lines. The new company called themselves Swedish Performance Group 9 (SPG9), located in Atascadero, CA, halfway between San Francisco and Los Angeles.



Dave (front) and Mike (behind) installing an SPG9 Stainless Steel Performance Exhaust on Clifford Quan's SPG.

Group 6 Performance was a company owned by Frank Freeman which specialized in SAAB performance parts. For a brief period of time they even published a monthly newsletter, called Wizard's Words. Starting in Tucson, Arizona, they flourished from the 80's through the mid '90s, offering a variety of bolt-on high performance parts and accessories for the classic 900 and 9000 series. Many of these parts were designed, tested and fabricated by Group 6. Shortly after their move to Payson, Arizona in the mid '90s, the company went out of business.

In 1998 a new company was formed

and purchased the rights from Group 6 to manufacture and distribute the Group 6 product line under their name: "Swedish Performance Group 9". Products of particular note that carried over are the renowned modified APC box, rising rate fuel pressure regulator, and intercooler air ducts. The new company set up shop later that year in Atascadero, and day-to-day operations are managed by Dave, whose machinist background and custom engine building experience transferred well to SPG9. The shop has full metal fabrication capabilities as well as the ability to do any custom work. Many of the products are manufactured on site. Mike Schadan is the head technician with over 25 years of experience as a factory trained SAAB mechanic. He has been employed by SAAB dealerships and currently works for an independent shop in the San Luis Obispo area, as well as SPG9. The newest member to the staff is Marty U'ren, who specializes

in fabrication, new R&D products and brings relevant computer experience.

After several purchases and numerous conversations with Dave, SPG9 offered to install their 2.5 inch catalytic converter back stainless steel exhaust system providing I made the trip to their shop. Atascadero is mainly an agricultural area, about 3 hours south of my

home city, San Francisco. Upon arrival my car was pulled onto the lift and we proceeded to remove the stock exhaust system, along with replacing the catalytic converter and front and rear heat shields. We installed their 2.5 inch stainless steel catalytic converter back exhaust system. This exhaust system is mandrel bent and has welded flanges that bolt the system together with a nice chrome exhaust tip. The installation went smoothly, and the throaty exhaust note on the new exhaust system is not much louder than the stock one, but with

noticeably reduced back pressure. Other SPG9 components I have installed include a Stage 2 red APC box, rising rate fuel pressure regulator, 24 lb. fuel injectors, big bore throttle body, and their Bosch regulator conversion kit.

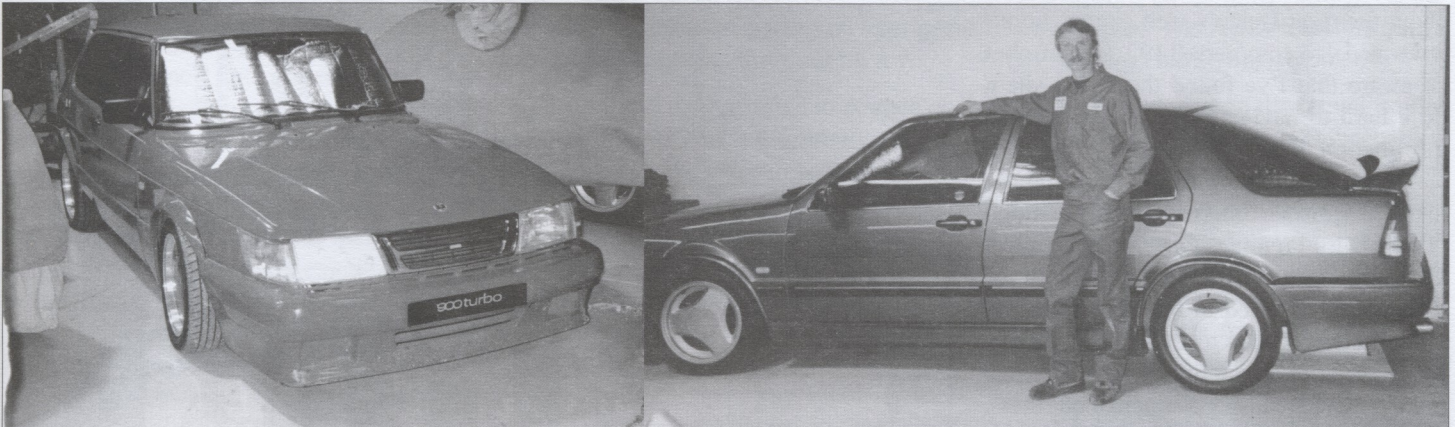
The SPG9 shop is a place of true SAAB enthusiasts, where I spent the better part of a day turning my car into a monster! Some of SPG9s' vehicles include a beautiful red 1990 900 aero with complete airflow kit, and an immaculate Sandstone colored 1988

9000 Carlsson prototype. I got to drive Mike Schadan's 1987 900T, which is outfitted with a 2.1 liter head and intake manifold, SPG9 parts and Aquamist water injection. The acceleration to 20 psi of boost is so smooth. I have returned several times for additional modifications, which I will report on in a later article. Thank you SPG9!

And who is Special Performance Group 9? At the beginning of the 2001, SPG9 was reorganized into a corporation. It was necessary to have a new name, to

prevent confusion in the world of taxation and accounting, but of course they didn't want to loose the reputation and name recognition that SPG9 had built over the years. So they picked Special Performance Group 9, or SPG9, for the new name. It has the same location and the same fine product line. Mike and Dave, are still in the shop, and Kitty is up front in the office.

Photographs by the author



Dave's 1990 900 Aero (left) and Mike Schadan with his 1988 9000 Carlsson prototype. *Photos by the author.*

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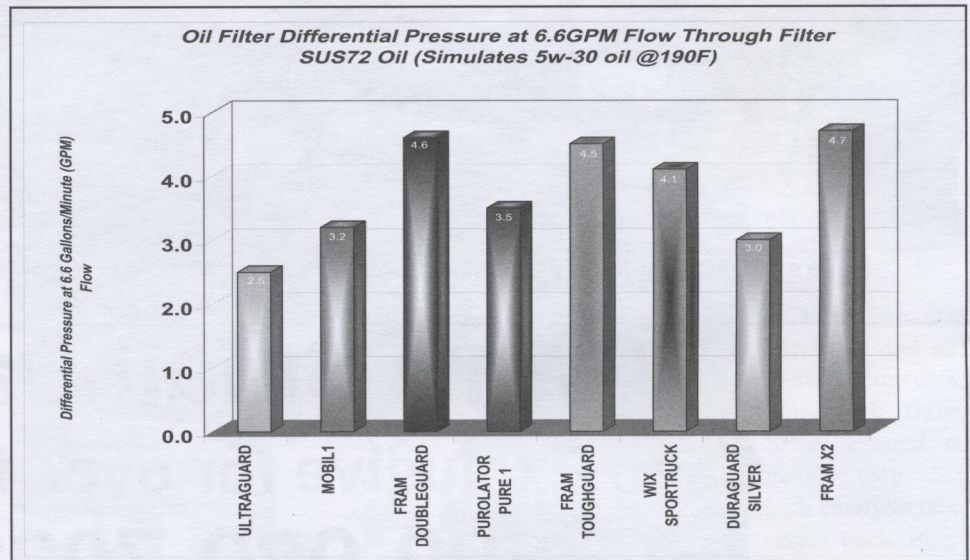
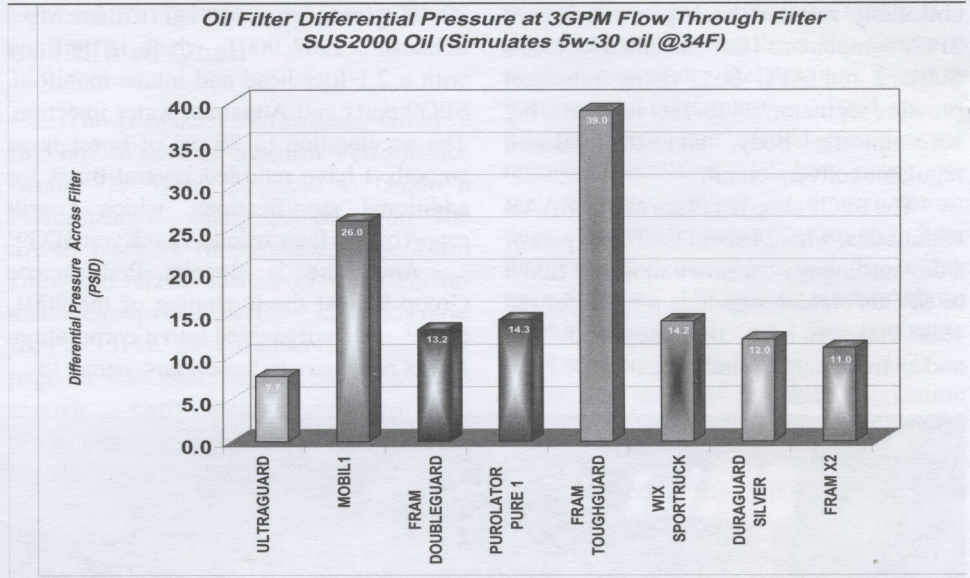
In NINES #237 we published a “cut-em-up” review of popularly priced oil filters. In that article we said that we “... (did) not pretend to cover all the filter brands which are available, nor is there any attempt to evaluate the single most important component of the filter: the filtering medium.” Neither did we examine any premium priced filters.

Since that time, ACDelco has introduced their own line of premium oil filters, labeled “Delco Ultraguard Gold” and “Delco Duraguard Silver”. You can read about them on Delco’s web site at http://www.acdelco.com/parts/1192_set.htm but be aware that I’ve found the Delco site a little hard to navigate, so persevere. The information is there.

The data on the web site is essentially distilled from an internal document titled “Light Duty Premium Oil Filter Technical Competitive Analysis” (TCA), a copy of which was provided to NINES to support this article. Thanks to the article, we can make a report without the expense and time involved in purchasing a bunch of oil filters, chopping them up, and taking photos. We don’t have the graphic images we did last time, nor do we have our expert opinion based on the looks of the internals, but this time we do have laboratory test data - a much more useful result.

The side bar describes SAE J1858, the standard test procedure for automotive oil filters and the starting point for the tests used in the Delco document. It also describes the deviations from SAE J1858 in the tests used to rate the oil filters, and the rationale for making those deviations. We point out that the SAE J1858 was approved by the Engine Committee in 1988, and was intended to provide a standard for “acceptable” oil filters. The premium priced oil filters in this group were all designed to provide outstanding results on J1858, and therefore the difference in filter efficiency as measured by J1858 between the best filter in the group and the worst filter in the group would be very small, even though a substantial difference in filtering efficiency and flow management exists between the two.

In addition to filtering efficiency, the TCA report measured the flow resistance of each filter and the performance of the anti-drain valve. For the purpose of rating the filters, the pressure drop through each filter



Bar graphs showing the flow resistance of different premium oil filters to cold oil (above) and hot oil (below). Data courtesy of ACDelco.

at 6.6 gallons per minute (gpm) of “SUS 72” (the average viscosity of SAE 30 oil at 190° F) and 3 gpm of “SUS 2000” (the average viscosity of SAE 5W oil at 34° F) was used, but the TCA report also shows a flow-versus-pressure chart for each filter. Note that all tests were performed using a relatively large (3.7" diameter X 5.2" tall) filter. The larger oil filter for Saab 4-cylinder engines measures approximately 3.7" diameter X 3.5" tall, and the smaller size is 3" diameter X 3.5" tall.

The TCA report data began with detailed measurements and a description of the construction of the tested filters. The only meaningful observation I found in the listing was that two of the three “Fram” premium priced filters had the cardboard

filter end plates that we observed several years ago, and the Delco “Gold” filter was unique in being described as using a wire-backed glass filtering medium, while all the other filters were described as using a blended cellulose (paper) synthetic filtering medium.

In the evaluation, the Delco Gold filter achieved a 98% single pass absorption efficiency for particles as small as the 8-10 micron range. The best that any other filter could achieve was a 98% efficiency for 15-20 micron filters, with about half the other premium priced filters falling in the 20-25 micron size range. The single pass test is a very stringent one, and it can be argued that it is not entirely representative of the actual conditions in an engine. But for rating

purposes, it highlights the differences in filtering efficiency for small particles, and gives some indication of a filter's ability to absorb particles smaller than the 5 micron minimum size particles in the SAE test dust.

Along with filtering efficiency goes filter capacity. Filters were run until their internal pressure drop reached a set level and rated according to the weight of contaminant removed from the oil. Every filter in this group except two of the Fram filters met the top rating in this category, and those Fram filters scored in the second highest category.

When all else is equal, one expects that filtering efficiency and pressure drop go hand in hand. Pressure drop is an important parameter for rating an oil filter, because the engine manufacturers always specify a pressure drop beyond which oil will bypass the filter element. This means that oil goes straight from the sump to the engine without being filtered. Bypassing usually occurs when the oil is cold or when the engine is operating at maximum rpm. Among the filters tested, however, the Delco Gold filter was both the most efficient and presented the least flow resistance at both low and high temperatures.



Based on the data presented, the ACDelco Duraguard silver (left) is as good as any other brand of premium oil filter generally available. The ACDelco Ultraguard Gold (right) is the best by a wide margin. *Photos courtesy of ACDelco.*

Saab filters are specified to contain an anti-drain valve. This is essentially a check valve built into the filter to prevent the oil from draining out of the engine's internal passages, so that oil pressure is present as quickly as possible during startup. Every filter in this group except the Mobil 1 filter achieved the highest possible score in this category, and the Mobil 1 filter achieved the lowest possible score. The Mobil 1 filter also scored second-worst in the flow resistance to cold oil, although its resistance to warm oil was second best to the Delco

Gold filter and essentially equal to the Delco Silver. Finally, in tests of mechanical integrity, burst strength of the outer can and collapse strength of the inner workings, every filter in the test was fine.

One notion that we are quick to dispel is that any of these premium oil filters provides a rationale for extending the oil drain interval. The argument would be that because premium filters "clean the oil better", it will "last longer." That argument is wrong. Because the filter traps more of the particles in the oil stream, the added dirt

SAE J1858

A procedure for testing light-duty engine oil filters.

Behind the scenes of just about every part in and everything used to produce your Saab, are the standards and procedures of the Society of Automotive Engineers. One SAE standard you use almost without thinking about it is the one which specifies oil viscosity. Another is the SAE procedure for testing oil filters SAE J1858. This procedure differs from an earlier SAE oil filter test procedure by being based on a count of the percentage of the particles from a standardized micrometer test dust captured by the filter, rather than the weight of the particles captured in the filter. With its specified distribution of particle sizes, and using a reasonable assumption about filter behavior, one can estimate not only the percentage of particles captured in the oil filter, but also the distribution of particle sizes captured by the filter.

J1858 was developed to establish a concise criterion for an acceptable oil filter,

and likewise to allow filter manufacturers to confidently state on the package that their filter "meets or exceeds" the auto manufacturer's specifications. The two most important features of the specification are the methodology of using a particle counter to determine the percentage of contaminate removed from the oil stream and the precisely calibrated "micrometer test dust". If an engine manufacturer specifies, for example, a 90% efficiency rating on the J1858 test, he knows with good certainty that most of the particles trapped are the larger ones, and most of the particles passed are the smaller ones. Filters do that. Then based on the thickness of the oil film between the moving parts (something which the manufacturer also controls using another SAE specification: the oil viscosity), any 90% (or more) efficient filter adequately removes harmful abrasive particles from the oil.

In preparing the TCA report, ACDelco has deviated from the test specifications for the purpose of accentuating the differences in filter efficiencies. They appear to use the

apparatus and test parameters from the specification, but while SAE J1858 calls for circulating oil through the filter for a period of at least one hour, data are presented in the TCA report for a "single pass" filtering test. In another deviation, it seems that particles of only a specific size are introduced into the test stream, while the SAE J1858 uses a standardized micrometer test dust with particle sizes ranging from 5 to 80 microns, and with the majority of the dust particles in the 25 to 50 micrometer range. Finally the filter efficiency rating is turned on its head. Where SAE J1858 calls for a filtration efficiency based on the percentage of the particles in the standard test dust which are absorbed over an hour's time, ACDelco rates the filters according to a uniform particle size for which the filter captures 98% of the particles during a single pass through the filter.

It's a bit of a stretch to refer to the testing as a "Modified SAE J1858," when what is really meant is "the apparatus and operating parameters as defined in SAE J1858 were used, but a different test

trapping capacity of a premium filter is already used up in trapping all those extra particles. Oil breakdown due to oxidation and moisture contamination is the more important reason for changing oil, not the accumulation of particulate matter, and no filter in the world can change that.

What does all this mean to the owner? First of all, we approach the concept of "premium oil filters" with a bit of skepticism. Saab engines, and indeed engines in many makes of cars, are known to last a couple hundred thousand miles when given regular maintenance with standard quality oil filters. One of the properties of lubricating oil is that it develops a film between moving parts which is larger than the 20-30 micron particles that even standard quality filters remove quite effectively. Yet, there is the issue that much of the wear occurs during startup, as the engine begins running before an oil film can be established between the working parts. It seems logical that abrasive particles in the oil will contribute to that wear, and using a filter which only allows smaller particles to circulate should result in less wear during the critical engine startup period.

procedure was followed," with an explanation of the J1858 test procedure and the procedure used. It's a little difficult to squeeze all that onto an oil filter carton, so we'll accept the "Modified...". We believe that ACDelco is justified in using their own test procedures to rate filters for the following reasons.

One could use J1858 directly to evaluate these premium quality oil filters, but the nature of the test means that the ratings would be difficult to interpret. Filters made from pressed fibers are not sieves with uniform sized openings. Using the TCA report's terminology, a filter which is 98% efficient at removing 15 micron particles in a single pass might be 70% or 60% efficient at removing 10 micron particles. That means that after an hour of recirculating the contaminated oil, the less effective filter would also have removed virtually all of the 10 micron particles. The SAE standard test dust has no particles less than 5 microns in diameter, and relatively few in the 5 to 10 micron range. This means that the J1858 efficiency

In making our recommendation, we must also consider the issue of timing chain wear in the 2.3 liter engines, as was discussed in NINES #249 (January/February, 2001). Until we learn otherwise, abrasive wear inside the chain, i.e., between the roller and the sleeve and between the sleeve and the link pin, remains a possible source for early wear and failure in the cam and balance shaft chains. In this area there is relatively little motion between the components, which means that a nice thick film of oil will not form. It makes sense for owners of those vehicles to use the best oil filter they can reasonably obtain, and that is the AC Delco Duraguard Gold. The 2.3 liter engine is the engine in our Saab, and the UPF-13 filter is the only one we will use now. For Saabs without balance shafts, we believe that the standard AC Delco filter, which is also available as a "Saab" branded filter, is probably adequate, and the AC Duraguard "Silver" is a logical choice for those who wish to use a "premium" filter. It tested out to be at least as good as any other brand of premium filter in every category, and every other was "worse" than the Delco Silver filter in at least one category. And those with two stroke Saabs, in which the

rating might range from perhaps 97% for the worst filter in this collection to 99% for the best, or a 2% difference between best and worst. This is not nearly as striking a difference as saying that the best filter has a 98% single pass rating of 10 microns, while the worst has a rating of 20 microns: a factor of 2.

We doubt that the processes which generate abrasive particles in an engine's oil quit at 5 microns. We suspect that a careful analysis will find particles of all sizes, all the way down to the molecular scale. Thus a filter which captures 98% of the 10 micron particles in the single pass will be capturing many of the 5 micron particles and even some of the 1 micron particles in each pass, while most of those might whistle on through a filter with a 98% single pass efficiency rating of 20 or 25 microns. When paying a premium price for an oil filter, select it on the basis of tests which are designed to highlight a premium filter's properties, not one designed for rating standard types.

Stephen Goldberger

engine lubricant is used once and then ejected out the tailpipe, don't have to worry about oil filters at all!

ACDelco Gold (UPF-13 and UPF-53) filters for Saab 4 cylinder engines are available nationally at Pep Boys, and locally at ACDelco distributors such as Ohio Auto Supply in Canton, Ohio. It is not available (yet) from mass marketers.

After cutting open oil filters for the report in NINES #237, we have been recommending the ACDelco "Made in UK" filter, which is also the current Saab labeled filter. During our research for this article, we were informed by an ACDelco employee that the UK made filters will cease to be available (in the USA, at least) in the near future. The PF13 and PF53 size filters will be furnished as Made in USA filters with the internal construction typical of other ACDelco filters. We were assured that the new design will be made to the same performance standard as the English made filters. Those who prefer using the English made filters may wish to stock up now.

Another Premium Oil Filter

"Old World Industries", the manufacturer of Peak and Sierra coolant and Splitfire spark plugs also markets a line of premium oil filters through their web site, <http://www.harddriver.com>, under both the "Hard Driver" and "Splitfire" brand names. The features and claims are very similar to those for the ACDelco Gold line of filters: wire backed synthetic filter media, superior filtering capability, and significantly less flow resistance versus standar filters. To those features they add zinc plated base plates and "O-ring" style filter gaskets. These filters have been available for several years. We purchased one of their filters to compare to the ACDelco product.

Statements by Old World Industries that their filter is not the same as the ACDelco are certainly true. They use the bypass relief valve at the far end of the filter rather than the filter entrance, a design we favor less because bypass oil must first flow past the dirt trapped in the filter. There is only a small chance of something coming off the filter medium and circulating to the engine, but putting the bypass valve at the filter inlet eliminates even that chance. (The

English made ACDelco oil filters and the Mann filter also have their bypass valve at the far end.)

The base plate looks different, and the method for crimping the outer can to the base plate is different between the two filters. The claimed filtering efficiency is different, too. Old World Industries claims that 87% of 10 micron particles are trapped after circulating for 10 minutes in a J1858 test apparatus. This compares with the ACDelco Gold's claimed 98% single pass efficiency for 10 micron particles. The Old World Industries seems to have the performance of the second-best premium filters, but they are available only by mail order and are as expensive as the ACDelco Ultraguard Gold, which seems to be a better filter.

Quoting directly from Old World Industry's web site:

Numerous studies have confirmed the relationships between filtration efficiency and engine wear rates. Perhaps the most noted and advanced testing in this area was conducted by General Motors Corporation and published by the Society of Automotive Engineers, Inc.

The engine wear model developed from the GM testing evaluated a wide range of filter efficiencies in both heavy-duty diesel and

automotive gasoline engines. Filter efficiency was measured by sophisticated optical equipment to count upstream and downstream particles — testing technology similar to SAE J1858 multi-pass testing and efficiency ratings. Engine wear was quantified through actual weight loss measures at specific bearing, pin, and ring points and through spectro-chemical analysis of used oil metal content, both under accelerated engine wear laboratory test conditions.

The SAE J1858 testing of the HARD DRIVER® filter and competition products provides the filter efficiency rating data to compare engine wear impacts. For each tested product, we determined what is known in the industry as the "absolute efficiency level" — the micron particle size at which the filter traps 98.7% of particles that size or larger. For example, a filter with a rating of 30 microns traps 98.7% of particles greater than 30 microns in size.

The filter micron ratings for the tested products ranged from 20 microns for HARD DRIVER® to 45 microns for the FRAM® High Performance and Purolator High Performance Filters. Using the previous chart, corresponding engine wear rates would be 0.3

for HARD DRIVER® and 1.2 for the FRAM® and Purolator high performance filters — a reduction in oil-related engine wear of up to 70%!

Oil-related engine wear will certainly be a more prominent oil filter performance feature, especially as particle counting technologies improve. All studies conclude that engine wear rates are directly correlated to contaminant particle levels in lube oil systems. From these advanced studies, it appears that controlling particles from 2 to 20 microns in size has the greatest impact on engine wear — larger particles being unable to enter maximum bearing clearance, and smaller particles remaining in the fluid stream with minimal surface contact. The new technology SYNTRON® filter media found in the HARD DRIVER® filter has been uniquely designed to trap these most engine-abrasive particles.

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Classic 900 Clutch Hose

I am writing you in regards to the article on page 40 of issue #249 titled "Classic 900 Clutch Hose," to correct the misinformation given in this article.

The brake fluid reservoir on classic 900 Saabs provides fluid to the brake and clutch systems. The bottom part of the reservoir, at approximately the "min" level mark is divided into three separate depositories. Two of these serve the brake system, the third, the clutch control. These three depositories are not interconnected; fluid can not pass from one to the other. Therefore, if there is a leak in one of the two brake circuits, or in the clutch control system, fluid will leak only to the point at which the level of fluid in the reservoir reaches the upper edge of the separate depositories. At that point, fluid can/will continue to leak from the damaged/failed circuit until the depository which feeds it is "dry", but fluid remains in the other depositories to supply fluid to their respective circuits.

Regarding the quality of the hose material used on the clutch line/hose assembly: the amount of pressure exerted in the clutch circuit is insignificant compared to the braking system. The hose does not need the same burst strength as the brake hose. It may be that the hose used for the clutch line is more resistant to heat than the brake hose material yet still has lower burst strength. One would have to read Saab's technical specifications for this hose to know exactly what Saab is demanding of its suppliers, whether internal or external. The fact that the hose is labeled "not for brake" does not, ipsofacto, indicate that it is substandard for clutch line use.

The author of the article does not indicate that this component has been previously replaced. If it has not, utilizing a component installed at the factory on a 14 year old car is "running on borrowed time." Natural and synthetic components deteriorate with age. Ten years or 100,000 miles and a component or assembly may fail. Some will go on for another ten years/100,000 miles or more. However, there should be no surprise from a consumer if an item fails after 10 years/100,000 miles, especially when this is usually long after the warranty has expired.

Saabs have been my hobby since I purchased my first in November, 1966. For the past 2 years I have been Parts and Service Manager at a small exclusively Saab dealership in Perrysville, Indiana (Gibson Motor Company - Ed.). The kinds of questions raised in the article are similar to many asked me each week.

Monte Tarr
Catlin, IL

We did make an editorial comment that in all cars with common reservoir hydraulic clutches, sufficient fluid remains in the reservoir to cover the brake master cylinder in the event of a total loss of fluid through the clutch. Thank you for providing additional detail regarding the reservoirs on classic 900 models. That reinforces our statement.

We did not point out that the clutch hose pressure requirements are much less than those of a brake hose, because we thought it is self evident that a clutch is not a brake. Perhaps we should have pointed that out as well. While we reserve the right to edit the content of all submissions, we do so sparingly, and we usually only remove

parts of the submission which we believe are of a personal nature and/or are not essential to the topic. The opinions discussed in the referenced article concerning the suitability of the original Saab part for its intended purpose are those of the author.

What is not at issue is that the referenced part, the flexible hose linking the steel clutch fluid supply line to the clutch slave cylinder, has a tendency to break down over time and to burst suddenly when it is in the 100,000 mile plus age category. It certainly should be given a close inspection any time a clutch replacement is performed. Should one replace this part routinely and replace it in kind with an original part? Should one replace it with a custom built part having much sturdier construction? These are service considerations that owners of older cars face. We believe it is our role is to help identify such service areas and to provide owners with the information to enable them to make informed decisions on these issues. Printing letters from subscribers is one of the methods we use. -Ed.

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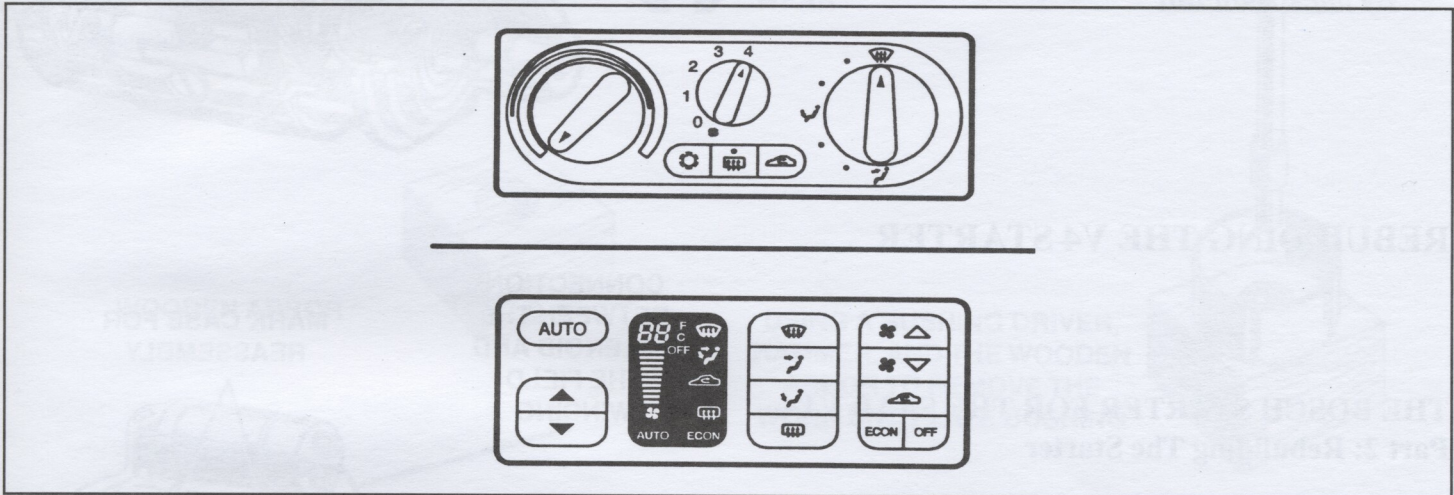


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SERVICE INFORMATION

SI No. 854-2205	Date August 2000	9-3
PI No.	Distr. All	

Stiff controls for temperature and air distribution dampers/ Stepping motors tick or do not work in the ACC system



Cars affected

Saab 9-3 M99 - 00 within the following VIN Serial Number Ranges:
 X2000001 - Y201 6481
 X7000001 - Y7005479

Background

The grease in and around the dampers of the heating and ventilation unit dries up, making the temperature damper and distribution knobs difficult to turn.

On cars with ACC, this could cause the stepper motors to make a "ticking" sound or make one of the motors stop working.

The procedure in this SI will reduce torque by 40% -60% for the dampers, assuming the control cable between the knob and the damper linkage is not faulty.

If the cable has become slow, it should be replaced with a cable marked with yellow. Cars equipped with AC have the correct cable (marked with yellow) from VIN Y2023040 and CV Y70008161.

Saab Automobile AB Bulletins are intended for use by professional Saab technicians only, NOT a "do-it-yourselfer". They are designed to inform these technicians of conditions that may occur on some vehicles, or to provide information that could assist in the proper service of a vehicle. Saab trained technicians have the equipment, tools, safety instructions and know-how to do a job properly and safely. If a condition is described, DO NOT assume that the bulletin applies to your vehicle, or that your vehicle will have the condition. See your authorized Saab Dealer for information on whether your vehicle may benefit from the information.

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This procedure should be followed upon complaint of stiff controls or that the stepper motors tick or are not working.

Symptom description

Stiff controls for temperature damper and air distribution drum on cars with MCC.

Stepping motors tick or are not working on cars with ACC.

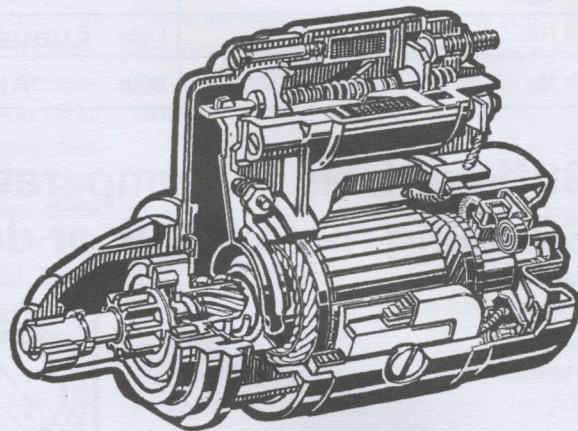
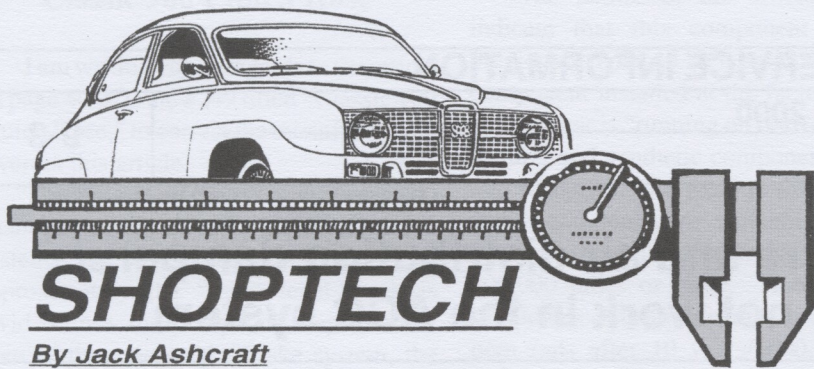
Parts required

87 81 718 Silicon grease (10 g tube) 2 per car
(CA: 30556876)

Small brush, approximately 8 mm in diameter and 300 mm long

51 74 669 Control cable for cars without ACC
(CA: 30585921)

Note: This is Page One of a 9 page Service Information document. Since the referenced vehicles are within Saab's warranty time limit of 4 years, we do not see a benefit to publishing what is a rather involved and lengthy excursion into the HVAC system. Owners experiencing the referenced difficulty should see their dealer.



REBUILDING THE V4 STARTER

THE BOSCH STARTER FOR THE SAAB V4 Part 2: Rebuilding The Starter

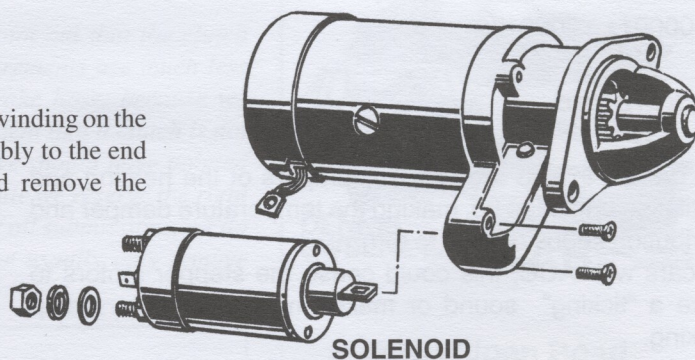
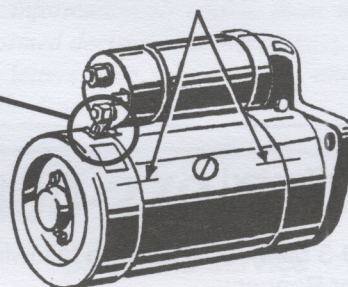
DISASSEMBLY AND TESTING

De-slime the starter. Mark the end caps to the starter body, using a sharp awl or scribe so the unit can be properly re-assembled later.

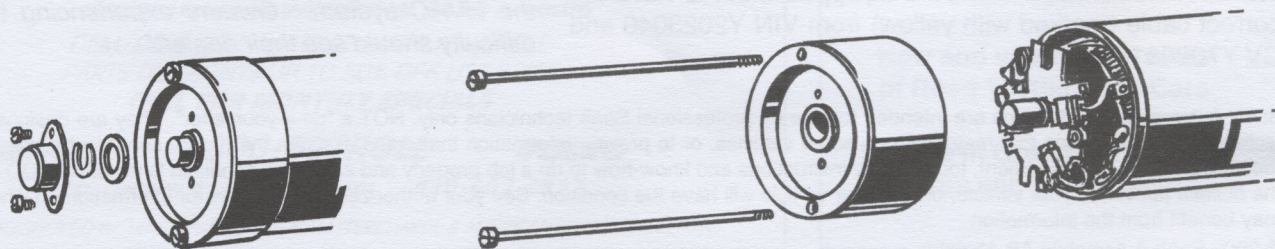
Remove the 13mm nut and washer from the connection to the field winding on the solenoid unit. Remove the two screws holding the solenoid assembly to the end casting. Unhook the solenoid plunger from the yoke lever and remove the solenoid from the starter.

CONNECTION
BETWEEN THE
SOLENOID AND
THE FIELD
WINDING

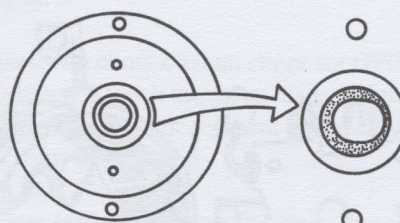
MARK CASE FOR
REASSEMBLY



Remove the protective end cap screws, the dust cap, the U-shaped washer and the shim washers from the commutator end of the starter.

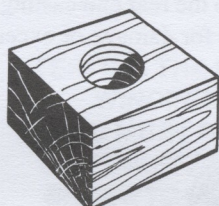


Remove the two long screws from the commutator end of the starter and remove the end cap. Clean and inspect the end bushing in the cap you just removed. If the bushing is worn (elongated as shown), replace it. Use a piece of wooden 2 x 4 with a 1.25" hole drilled in it as an arbor. Set the end cap on the block and drive the worn bushing out of the cap with a bushing driver.

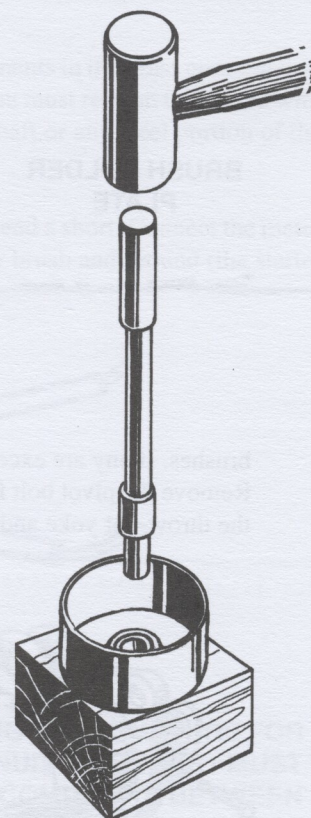


STARTER END VIEW
NOTE BUSHING
ELONGATED FROM
WEAR

Clean up the end cap and carefully tap a new bushing into place in the end cap, using the same wooden block to support the end cap.

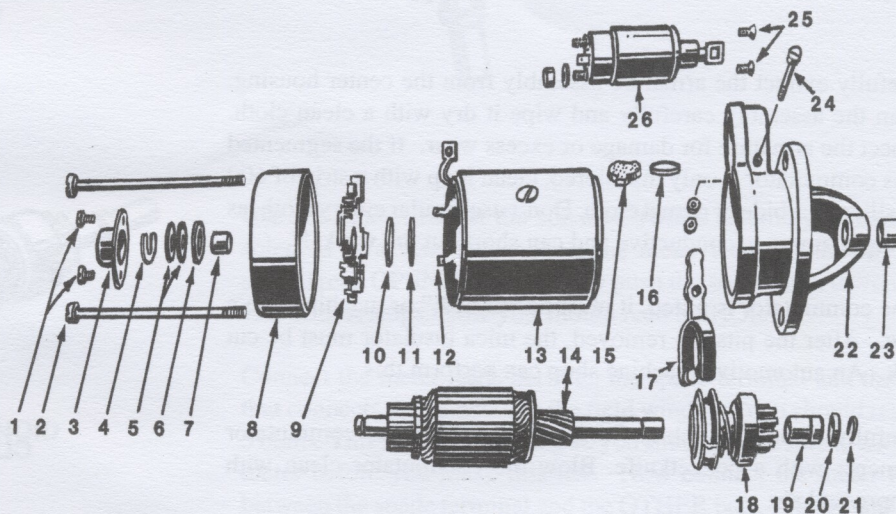


WOODEN ARBOR

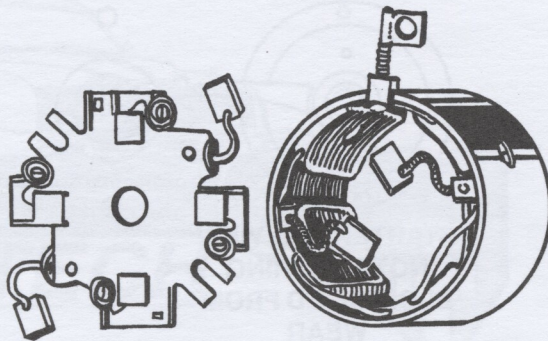


USING A BUSHING DRIVER,
HAMMER, AND THE WOODEN
ARBOR TO REMOVE THE
WORN END PLATE BUSHING

- 1 SCREWS, PROTECTIVE CAP
- 2 SCREW, COMMUTATOR END CAP
- 3 PROTECTIVE CAP
- 4 U-SHAPED RETAINER CLIP
- 5 SHIMS
- 6 RUBBER GASKET
- 7 BUSHING, COMMUTATOR END
- 8 END CAP
- 9 COMMUTATOR END FRAME (BRUSH HOLDER PLATE)
- 10 FIBER WASHER
- 11 STEEL WASHER
- 12 FIELD WINDING (STATOR)
- 13 STARTER HOUSING
- 14 ARMATURE (ROTOR)
- 15 RUBBER SEAL
- 16 STEEL PLATE
- 17 ENGAGING YOKE
- 18 BENDIX ASSEMBLY
- 19 BEARING BUSHING, BENDIX
- 20 STOP RING
- 21 RETAINER CLIP
- 22 PINION HOUSING
- 23 REAR BUSHING
- 24 PIVOT BOLT
- 25 SOLENOID RETAINER SCREWS
- 26 SOLENOID ASSEMBLY



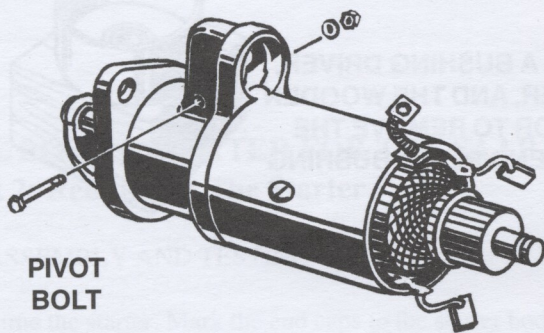
**BRUSH HOLDER
PLATE**



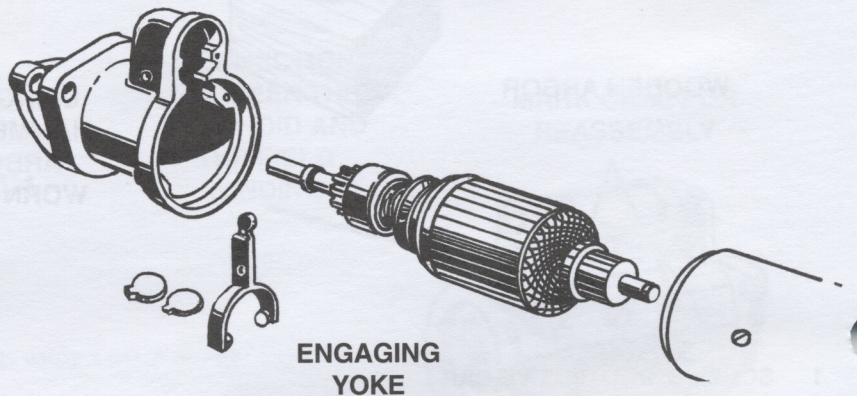
On the starter, pull back the brush tension springs and remove the + bushes from the brush holder plate. These are the brushes that connect to the field windings in the starter housing. Remove the brush holder plate from the starter and collect the steel and fiber washers from the commutator shaft, noting their positions.

Clean the brush holder plate and inspect all brushes. If any are excessively worn, they must be unsoldered and replaced. Remove the pivot bolt from the rear casting on the starter assembly. Tap the rear end casting off the starter housing. Collect the throw-out yoke and the rubber seal and steel plate. Inspect the yoke for damage or excess wear. Replace as necessary.

Clean the brush holder plate and inspect all



**PIVOT
BOLT**

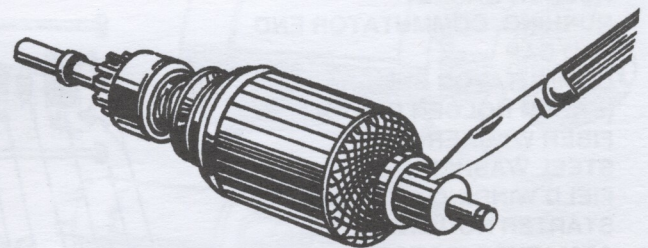


**ENGAGING
YOKE**

Carefully extract the armature assembly from the center housing. Clean the assembly carefully and wipe it dry with a clean cloth. Inspect the armature for damage or excess wear. If the segmented brass commutator is only discolored, clean it up with a strip of 600 grit silicon carbide or garnet cloth. Don't use regular emery cloth, as grit from emery is conductive and can short out the works!

If the commutator is pitted, it must be "turned," or machined on a lathe. After the pits are removed, the mica insulator must be cut back. An automotive machine shop can perform this.

Carefully clean any debris from between the brass commutator segments with a pocketknife. Blow the commutator clean with compressed air.



**CLEANING THE COMMUTATOR
SLOTS WITH A KNIFE**

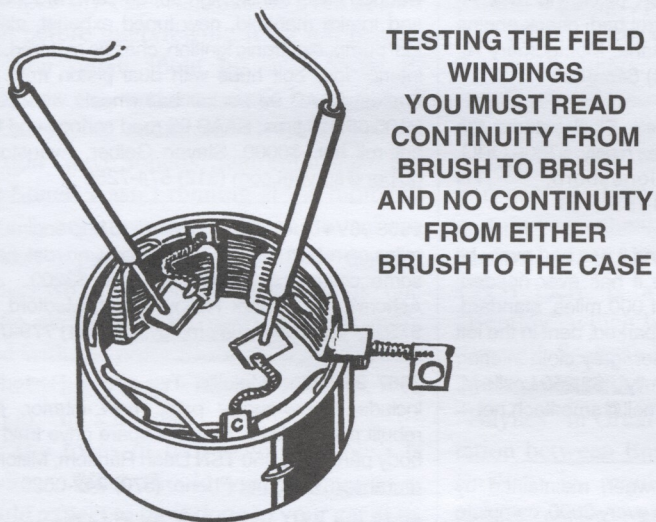
On the other end of the armature shaft, test the Bendix unit for proper operation. The Bendix should rotate counter-clockwise (as viewed from the Bendix end of the shaft) and the whole Bendix should screw outward towards the end of the shaft, on the helical threads on the shaft. You should also be able to rotate the Bendix assembly clockwise until it is screwed in (toward the armature) and then the starter ring engagement gear should still rotate clockwise (though extra force will be required to turn it). This tests the freewheeling portion of the Bendix.

Check the spring on the Bendix. It must not be broken. If the Bendix unit fails any of these tests, you must replace it. To replace it, tap the retaining ring inward, off the retaining clip. Remove the clip, the retaining ring, and then the Bendix. Put a bit of wheel bearing grease on the helical gears and install the new Bendix unit.

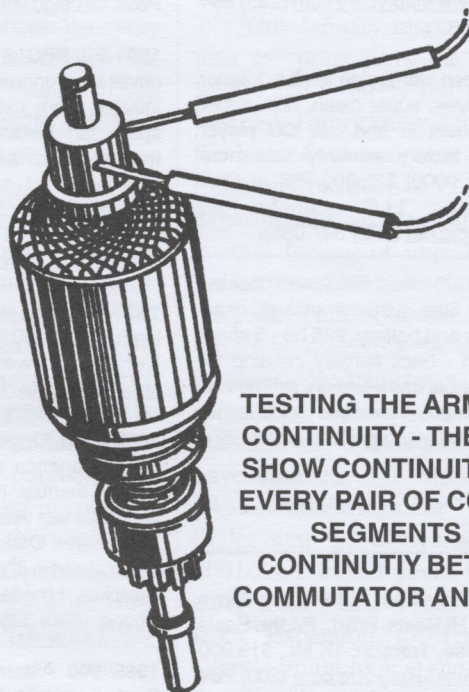
Inspect the bushing in the engagement end casting. If it is worn excessively, replace the bushing. Use the wooden arbor to support the rear casting while you tap the old bushing out and the new bushing in.

Use your voltometer to test the armature electrically. Set the meter on ohms x 1, and check for OPEN segments in the brass commutator. The segments must ALL read a short (full-scale deflection, as when you touch the meter leads together). You must read an OPEN (as with NO connections) when making the connection between any brass commutator segment to the armature shaft or any steel portion of the armature assembly. If the armature fails ANY of these tests, it must be replaced.

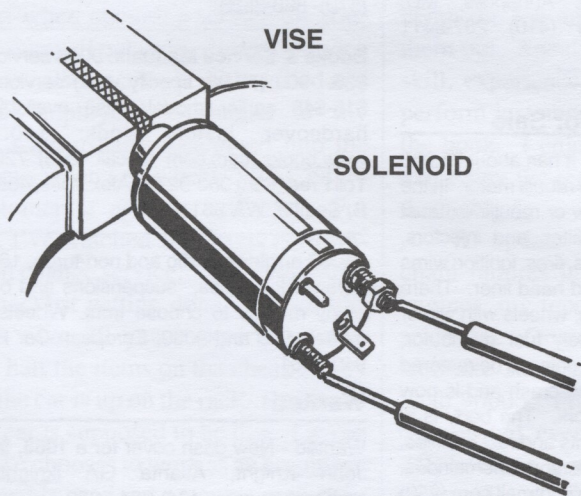
Use your voltometer to test the field windings. Connect the meter leads from brush to brush. You should read a short. Connect the meter leads between the input lug and either brush. You should read a short. You must read open between either brush and ground (the starter case). If the field winding fails ANY of these tests, it must be replaced.



**TESTING THE FIELD WINDINGS
YOU MUST READ CONTINUITY FROM BRUSH TO BRUSH AND NO CONTINUITY FROM EITHER BRUSH TO THE CASE**



TESTING THE ARMATURE FOR CONTINUITY - THE TEST MUST SHOW CONTINUITY BETWEEN EVERY PAIR OF COMMUTATOR SEGMENTS AND NO CONTINUTIY BETWEEN THE COMMUTATOR AND THE SHAFT



WISE

SOLENOID

TESTING THE SOLENOID

Use your meter to test the solenoid switch assembly. Mount the solenoid in a vise and connect the meter leads as shown. You should read OPEN. Now carefully push the solenoid in toward the vise until it stops. Now you should read a SHORT.

Connect the meter leads between the spade terminal and the bolt that connects the solenoid to the field winding. You should read 3-5 ohms. This is a small reading so you should make sure to zero the meter before you make this test. Now connect the meter leads between the spade terminal and the OTHER bolt. You should read OPEN. Push the solenoid in toward the vise until it stops. Now you should again read 3-5 ohms. If the solenoid fails ANY of these tests, it must be replaced.

NEXT: Reassembly of the starter

THE BOSCH STARTER FOR THE SAAB V4

9⁵, 9000 For Sale

2000 9⁵ SE TURBO, V6, Auto, 4 Dr, A/C, PW, PDL, P/Srf & Mrf, Frt/Side ABGS, Traction, Ht Seats, Harmon-Kardon St. Cass. W/CD, Alloys, ABS, Frost Grey, Special Paint, Lthr, Cruise, \$27,900, Only 5K Mi., Imports Unlimited, www.luxurycars.com (203) 284-8989 Stock #SY016499

1999 9⁵ TURBO, V6, Auto, 4 Dr, A/C, PW, PDL, P/Srf & Mrf, Frt/Side ABGS, Traction, Vent. Ht Seats, St. Cass. W/CD, Alloys, ABS, Frost Grey, Special Paint, Lthr, Cruise, \$26,900, 18K Mi., Imports Unlimited, www.luxurycars.com (203) 284-8989 Stock #SX036569

1998 9000 CSE, green with beige leather interior, automatic, 34,102 miles, super clean, one owner, well maintained, perfect in and out, CD player, bumper to bumper factory warranty and more. LAST YEAR for the 9000! \$22,000 Phil or Chris @European Motors LLC, Omaha NE EMOmaha@concentric.net (402) 397 0655

1994 9000 Aero 66,000 miles. Black with charcoal leather interior. New tires, exhaust, brakes, clutch and clutch hydraulics and battery. 225 hp - 5 speed manual transmission - back surgery causing the inability to drive a manual transmission. synthetic oil since new. TSN Contact: Theodore J. Haussner, Cranford NJ haussner@att.com (732) 420-8129 or (732) 319-5385

9³, 900 For Sale

2000 9³ S TURBO, Blue/Tan, Auto, 5 Dr., Alloys, ABS, PW, PDL, PM, Ht. Seats, P/Srf., P/Lthr. Seats, St. Cass. W/CD, Cruise, Traction, 1K Mi., \$19,900, Imports Unlimited, www.luxurycars.com (203) 284-8989 Stock #SY028559

1999 9³ SE CONV., Turbo, Auto, PW, PDL, PM, Tilt, Traction, Alloys, Dual ABGS, Cruise, St. Cass. W/CD, Wood Trim, ABS, Ht. Seats, A/C, 18K Mi., Blue/Tan Lthr., \$24,900, Imports Unlimited, www.luxurycars.com (203) 284-8989 Stock #SX051138

1999 9-3 Convertible. MINT CONDITION - 15,700 miles - Standard - strictly non-smoker car. COLLECTOR'S CAR: Monte Carlo Yellow - one of only 183 in U.S. Wind Screen. Walnut Steering Wheel. Walnut Trim Package. Integrated Motorola Cell Phone with 10W Booster Kit. \$35,500 David W. Parsons, Roswell GA dwwparsons@mindspring.com (770) 518-6604

1999 9-3 5 door. Cosmic Blue (like Vigen) with Charcoal cloth, 2.0I Turbo/5-speed transmission, 28,900 miles. Sunroof, CD player, heated seats. Sport Exhaust (+7 hp), Sunroof wind deflector, hood chip guard, rear splash guards, 2 years/19,000 warranty. no smokers, no pets, records, near Rochester, NY. \$18,995 Gary Stottler, Honeoye Falls NY stottler@frontiernet.net Phone: (716) 582-2435

"TSN" indicates a photo is available at The Saab Network Classifieds: <http://www.saabnet.com/tsn/class/>
Annual "Spring Cleaning" special - parts for sale ads in the May-June issue 25 words for just \$3.00 - subscribers only - deadline for receipt of ad is March 31.

1997 900S 5-spd, 5-Dr, Dual Bags, ABS, A/C, Htd. seats, PDL, PM, P/srf, PW, Gold/Tan, 54K Miles, \$12,900, STK# SV050727, Imports Unlimited www.luxurycars.com (203)284 8989,

1996 900 SE Convertible, black. 5 speed. 47,225 miles. One owner, mature 66 year old Orthopedic Surgeon. Compulsive car car type. OZ wheels with Dunlop SP9000 and original Viking wheels with winter Michelin Alpine. Piper ski rack. Abbott springs, Koni shocks. Virginal interior and exterior. \$16,500. TSN Contact: Darrell Weinman, Central Point OR bigd@wave.net (541) 899-1020

1991 900 SPG, 5 speed,! Red, 120K miles, heated driver seat, upgraded/removable CD stereo, factory louvers, many extras (locking Thule ski/bike racks, spare fan belts/electric antenna motor, Bentley manual, radar/laser detector). 134A A/C system, new headliner, turbo at 115K miles, no rust. All service records. Cruise control bad, check engine light on. \$5500 TSN Mike Gantt, Montgomery AL ganttm@darwinmail.net (334) 546-9823

1990 900 Convertible 5-speed. Black exterior, tan leather, 132,000 miles. Drives nicely. \$7500 OBO. Ken Edwards, Jonesboro, TN kensaaabe@excite.com 423-753-3153

1989 900S. Original owner and it has had every bit of maintenance and service it has ever needed; service manual, records. 121,000 miles, standard. New tires last year. Hit while parked, dent in the left rear fender. Dark blue exterior, grey cloth interior, never eaten in it "runs beautifully". \$2,250 Leslie M. Savickas, Hinsdale IL lmsemail@ameritech.net Phone: (630) 325-8882

1985 900 Automatic, 2nd owner, maintained by Saab mechanic. Oil changes every 3000, complete service records, hit on passenger side. Best offer. Call Phyllis, Norwalk, CT (203)846-0078.

1984 900 Turbo 2-dr (hatchback) automatic, 92K miles, one owner, excellent mechanical and body condition. Garaged kept, no excuses, nice car. \$3500. Clyde McLaughlin, Annapolis, MD. Chesapeakeimport@erols.com (410) 267-8411 days.

93, 95, 96, 99, Sonett For Sale

1977 99 5-door for sale. Red. It has about 75,000 miles (with A/C) on a completely rebuilt motor. In the last 2 to 5,000 miles it has new or rebuilt: exhaust pipe and muffler, fuel lines, filter, and injectors, cooling fan, starter, EMS wheels, tires, ignition wires and distributor, trailer hitch, and head liner. There are many spare parts including: wheels with winter tires, fender trim, rev. counter, fuel distributor, alternator, and rear light. It was going to be restored but the owner was in an aircraft crash and is now physically unable to do the work. The body is in good shape with only minor dents and rust bubbles. OFFERS PLEASE. Fergus Anderson, Chemainudus, BC, Canada. anderson_fergus@hotmail.com (250) 246-2861

1973 Sonett T-top project car. Complete, but needs help. \$600. Jack Ashcraft, 4305 Dark Hollow Road, Medford, OR 97501. jackashcraft@prodigy.net (541) 779-0731

SIX Sonett Ills 1972-1974, various conditions, \$500 to \$1000. Lots of extra Parts. Emily Plankey, Seminole, FL. (727) 584-7147

Saab95, older complete professional restoration, mechanical rebuild by local club president, 900 front seats, Sonett wheels, SW PA TSN John Lotz 724-934-2769

1970 Sonett Ser No. 5. Red NY Auto Show car, all original. Nice, no rust. \$3500. Jack Ashcraft, 4305 Dark Hollow Road, Medford, OR 97501. jackashcraft@prodigy.net (541) 779-0731

1969 Sonett, green. 1700cc modified engine, webbed case trans., high speed cam, MSS Carb. and Intake manifold, new tuned exhaust, electric fuel pump, electronic ignition, chassis restored, new interior four bolt hubs with dual piston front disk brakes, SAAB 99 socker ball wheels with TOYO P185/65R15 tires, SAAB 96 road springs and front anti-roll bar. \$6000. Steven Golber, Evanston IL golber@sprynet.com (312) 574-7258

1968 96V4 blue, 2000 miles on 115 bhp engine, 100 miles on rebuilt trans. Straight body, no rust, needs some cosmetics. Very good car, \$3200. Jack Ashcraft, 4305 Dark Hollow Road, Medford, OR 97501. jackashcraft@prodigy.net (541) 779-0731.

1967 96 Indigo Metallic. Two-stroke. Restoration includes show-quality paint, new interior, new/rebuilt mechanicals. Includes spare drive train and body parts. \$10,950 TSN Dean Ransom, Milton PA dmransom@ptd.net Phone: (570) 742-0620

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Books & Service Manuals: 9000 service manual: \$35. 900 (79-98, specify year) service manuals: \$15-\$48 earlier models also available. 9000 hardcover history book: \$40. See www.books4cars.com or call (206) 720-3077, or Toll Free (888) 380-9277. Alex Voss, 4850 37th Ave S, Seattle, WA 98118.

SAAB engines, turbo and non-turbo, 16 valve and 8 valve, low miles, suspensions and other parts, Many models to choose from. Wheels and tires models 900 and 9000, European Car Parts (203) 949-4881,

Wanted

Wanted - New dash cover for a **1966, 96, 2-cycle** John Knight, Atlanta GA jknight@sharpe-architecture.com (404) 954-5252

Since last April I have had the opportunity to spend some time at my nearest Saab dealer, Dave Towell Cadillac Saab in Akron, Ohio, as we worked out the bugs on our newly purchased 9000 CSE (Nines #247). On my second visit there as a service customer, I was introduced to the "new Saab service manager," a fellow who looks even younger than his twenty-something age. I'd been down this road before, "breaking in" new service writers to Saabs in general and my own personality and needs in particular. I was thinking of that and not paying attention during the introduction.

So the new guy started talking, saying how nice my car was, (had he even *seen* a Saab before interviewing for a job here?). He then spoke about his own Saabs (a positive sign), and then about his Sonett. I started paying attention. Ordinary people just don't have Sonetts; Saab enthusiasts do. The Sonett wasn't running at the moment, he said, not an unexpected condition for a car that is probably 10 years older than its owner. So I mentioned that Jay Davis, one of the mechanics at Towell Saab, is really good with the older Saabs, and I'm sure he could be a big help with it. "I know", said the kid, "he's my dad."

The focus of this issue of NINES is service. What should you as an owner should expect to have done to your car at its regular service intervals, and why can a quick stop at the local lube shop be costly in both money and convenience? Most of the stories on Service were written by the owners of independent service facilities, but remember when obtaining service for your Saab that many, if not most, dealer's service facilities are also excellent, with skilled and dedicated employees. Thanks to my position, I am usually welcomed into the service bays when I visit dealerships, either as a customer or as "Mr. NINES." For example, I've watched Jay Davis performing an "oil change service," with everything on the checklist getting done. A tech like Jay, with over 20 years experience, can perform half the items on the check list by the time the car is up on the rack. He knows what the car is supposed to be like. I asked him why he chooses to work as an employee at a dealership, and not open his own shop like our authors, Mark Kline and Tom Townsend, have done. He answered that essentially he wants to fix cars, not run a

repair shop. He doesn't want to worry about collections, he likes having a department to handle the acquisition of parts and supplies, and he likes having access to Saab's "factory" training on new products as they are released.

If you perform your own routine service, you can do just as good a job. Be thorough. The check list is in your owner's documentation, so take the time to follow it. As an owner, you have the opportunity to perform some items on the check-list every time you drive the car. Pay attention to the way the car steers, stops, and sounds. If you can't see well at night, maybe it's your headlights and not your aging eyes. If you park in a garage, press the brake pedal and look at both back corners for the red glow of the brake lights. Invest some of your "savings" in a service manual. Saab manuals are available in sections. Even though the complete set is very expensive, you can purchase just the sections which pertain to the service you will be performing. For Classic 900 models (1979-1993) there is a manual published by "Bentley" which was prepared in cooperation with Saab, and it is very thorough. For 9000 models there is a manual published by "Haynes" in Great Britain. Some interpretation between English-English and USA-English is required, and it's not as comprehensive as the Saab "Factory" manual, but the book is still much more thorough than the owner's manual. Please dispose of waste oils and coolant responsibly. What riles Mark Kline about us "DIY-ers" is he only seems to see the ones who botch the job and then run to him to bail them out. Speaking for myself, I have the skill, experience, tools, and inclination to perform just about every routine service in the book. I enjoy the time I spend, and I make sure the service is done correctly and thoroughly.

To update the issue of early timing chain failures in Saab's 2.3 balance shaft engines, my report is more anecdotal than scientific. One email we received on our web site started: "I just inherited a 1991 Saab 9000S. Probably the best car I have ever owned, even with 377,000 miles." On "Turbo!", an e-mail Saab interest group, I followed a thread responding to a solicitation by The Saab Network for people's interest in "mileage badges." There were plenty of owners of 2.3 models

with mileage well in excess of 100,000 miles. I e-mailed them privately and asked about timing chain problems, and they reported none. There's no denying that some 2.3 liter engines have suffered early timing chain failures, but it also seems that many (including the earlier vintage models) do not. We are continuing to investigate, and in the mean time I believe it is prudent to note the recommendations in this issue's service and oil filter articles.

This January marked my second ever visit to "press days" at the Detroit Auto Show, and it surely felt different than the first one. I don't know if that was because of the lack of relevant new car introductions (nothing from Saab or Volvo, mainly niche, experimental, or truck-like entries), or a general feeling of impending doom from industry watching as sales seem to tip over the peak of the mountain. Still, the scope of the show, reflecting the size of automobile business, is staggering. What is also staggering is the blossoming of the SUV marketplace, just as fuel prices in the US have doubled. The March 2001 issue of "Automobile Magazine" shows a digest of SUVs with 57 different name plates for 2001/2002 model years, not counting any entry from Saab. From Acura to Toyota, from "Excursion" to "Tracker," a Rip van Winkle might look at the list and conclude that somehow all the pavement had been removed from North America. Saab's own contribution to this silliness is coming, we're told, and we can only wonder how they will stake a claim in what may then be a shrinking market with their late entry.

Of more immediate concern is how Saab can gain, or at least maintain, sales momentum in today's competitive market. More power might be one way. Reviewing Saab's current product mix, what strikes me is how close the price of different 9⁵ models has become. With the price compression we pointed out in NINES 247 (September/October, 2000), there just isn't much difference between comparably equipped "base" and "SE" models in the US market. We wonder if the output of the base 4-cylinder power plant isn't being kept artificially low to provide "room" for a higher priced V-6 which isn't really that much more expensive any more. A base model, with premium package and automatic, lists for about \$37,200 (excluding shipping) versus the SE's list of \$38,650.

The Garrett T17 can feed enough air for the 2.0 HOT in the 9³ to reach 205 hp, so theoretically the 2.3 liter engine should reach that same level. For the small difference in price, why not let the 2.3 produce its full power and write off the difference in price as the difference between a V-6 and a 4, or even compress the prices further? A 4 cylinder model with the standard cloth seats and a 5-speed can provide a lower entry price. Everyday mid sized Oldsmobiles and Buicks have 200 hp in their base versions; why shouldn't the 9⁵?

"Nokian, it's not just for winter any more." Nokian Tyre, the Finland based manufacturer of the renowned Hakkapalliita line of winter tires, has in the past few years broadened and updated its product line to include the NRW, an all-season H-rated (130 mph) tire biased toward excellent winter performance, and NRH2 (130 mph), NRV (149 mph), and NRZi (over 150 mph) summer tires. Independent of anything you might have noticed in this issue of NINES, I had already purchased a set of NRH2 summer tires to take over from the "good for one more summer" factory tires. The plan is to tip-toe through the winter on the Nokians, wear out the Michelins next summer, and then replace the Michelins with proper winter treads.

There's been more snow this year than the past two combined, and the "summer" Nokians are indeed that: not so hot on snow. They're driveable, but caution is required. When the ice clears and we're back to pavement, the NRH2 is as good in the ride and handling department as any HR tire I've tried, and better than most. Added to that are a stylish directional tread pattern, an innovative molded-in tread-depth gauge, and a 2-ply rayon carcass - an expensive construction normally seen on Z (over 150 mph) rated and some V (149 mph) rated products. I've no direct experience with the NRV, and NRZi, but I'd expect them to exhibit progressively crisper steering at the expense of a firmer ride as the speed rating increases. Nokian has become more widely available, too; there is even a dealer here in Canton, Ohio. There are also Nokian dealers advertising in NINES who provide mail order service. You can check Nokian's web site (<http://www.nokiantyres.com> and follow the "American Flag" link) for additional product information and dealer locations.

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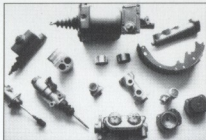
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