#234

Nines

SAAB CLUB OF NORTH AMERICA

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Saab at the Bonneville Salt Flats

In this issue: Saab reveals the replacement for the 9000... the 9-5!

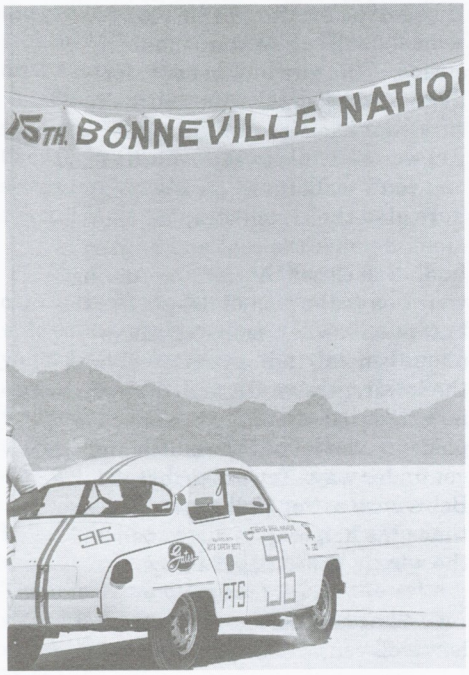
Saab at Bonneville

On the way back from the Saab Convention in California this past summer, we took I-80 specifically to go past the Bonneville Salt Flats. Ever since I was a kid, I have been fascinated with the exploits of men trying to break the Land Speed Record at the famous salt bed. How well I remember the head-to-head battle to own the record that went on one summer between Art Arfons in his Green Monster versus Craig Breedlove's Spirit of America.

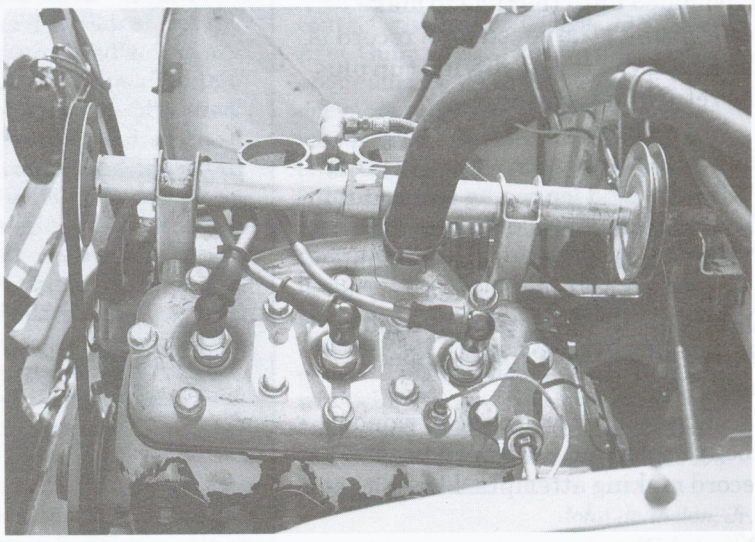
I had been past the Salt Flats several times before, most recently while running One Lap of America in 1990, when we stopped for a few moments at the overlook for a driver change. Diane had never seen that part of the country and asked specifically if we might go near the track.

We spent the night in Wendover, Nevada, in order to see the Flats by daylight. Imagine our delight to find the Southern California Timing Association was running their annual Bonneville National Speed Trials - Speed Week on the salt! We paid the $5 admission fee and wandered the paddock area for several hours, talking to drivers, crews and workers, marveling at the detail work on most of the vehicles. There were plenty of sleek machines - cars, trucks, motorcycles, production based and handmade. Quite a few early '50s Studebakers are still used in record attempts, plus some later model Avantis. There were several imported sports cars and sedans including a Volvo 122, a Datsun 210, an MGA/Chevy, a Mazda RX7, a Fiat X-1/9 and a 998cc Porsche/VW 914.

Among those that I found most intriguing were a streamliner powered by a 500cc Godden single-cylinder motorcycle engine, aiming for



Above: The 1962 record breaking 96, looking very stock.
Left: Leaving the starting line for the 1963 record attempt.
Below: The 850cc Saab engine, ready to make a record attempt with the addition of a Solex dual downdraft carb and the cooling fan removed.



a record of 148 mph; a Nissan pickup with a 16-valve, 4-cylinder, shooting to top 150 mph; and a 1971 Citroen D-Special with a big block Chevy engine topped with a massive supercharger, looking to break a record of 221 mph!

Several machines made their qualifying attempts at the records in the "cool" of the morning (temperature only in the 80s), but the tracks were quite far away from the spectators so it was difficult to see anything more than a silhouette speeding across the horizon. First there was a low roar from the south, then we could make out a small dot heading across the flats. Sometimes you could make out what it was as the silhouette whizzed by. An announcer would call off the speeds at the quarter mile, mile, 2 mile, and so on, depending on if they were on the long course (7.25 miles, for cars that can exceed 175 mph) or the short course (5 miles). Both courses have a two mile approach with the first timing light there. The short course has timing traps at the first quarter of the third mile and at the end of the third mile. The long course timing traps are at the end of the third, fourth and fifth full mile.

After passing technical inspection, a vehicle must Qualify for a record attempt by beating an existing record by 0.001 mph. Since records are established by a two way average of the same physical mile, the car is impounded until the time to make return runs. The speed for a record is the average of the qualifying run plus the return run.

As we talked with some of these folks, we shared our own road racing, PRO Rally and ice racing tales. But in the back of my mind I kept thinking, "That 99 body is pretty aerodynamic. I wonder what class it would run in? Or how about a Sonett? And what is the record for two-stroke engines under 1000cc?"

This, of course, led me to wonder about Saabs that have been used in record making attempts. I knew that

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The view from the starting line

by John Johnston, Jr.

As your basic Southern California motorhead whose dreams included competing at Bonneville, The Mexican Road Race (Carrera PanAmericana), the Pike's Peak Hillclimb, and the Baja 1000 (Ensenada to La Paz off road race), I've been very lucky in this life to have done some of my dreams. Part of the reason I have fulfilled some of these dreams is the SAAB automobile itself. SAAB people stick together and like to include other true believers in their projects. I've been lucky to have known some really great folks.

I've run both Bonneville and the Baja 1000 I've done many times with pleasant results. I am very close to realizing the Mexican Road Race dream, as the race has been revived as a Vintage race and I just happen to have a SAAB 93 which will qualify. Of course in the last 28 years of SAAB ownership I've done a lot of other fun things but they just happened, they weren't dreams.

Bonneville is one of the truly strange places on the face of the earth. White salt bordered by light brown mud.

The Bonneville experience starts at the Stateline Hotel in Wendover, Nevada. Great place. Make sure you reserve your room at least a year or more in advance. Next you and your machine should present yourselves at the "airport" for tech inspection. The airport is the old World War Two B29 Atom Bomb training base that Col. Paul Tibbets used. Lots of history here. The next day they allow you to travel across the salt to the pit area. It used to he a short trip from the end of the paved road, but years of commercial mining of the salt from the area have done their work. Now you must go a very long distance to where the salt is thick enough to race on. Then you've got to go a little farther to get to where it's dry. The chemical company that removes the salt floods the place to move the salt on to their work area.

Upon arrival at the pits you set up your work area and get ready to get in line. There didn't used to be such a wait, but racing at Bonneville is fairly cheap thrills so every year there are more participants. Sometimes there are as many as 450 entries, so 5 and 6 hours between runs is now the norm.

Once in line you do things to keep boredom at bay and to stay cool. On hot, bright days you can get sunburned in some really odd places, like the underside of your nose! The salt is a real good reflector. Broad brimmed hats help, but sunscreen is mandatory.

At the line you will be strapped in at least six cars from your start. Three lines of cars and bikes launch one after the other as the course is cleared. In the thick Nomex driving suit you will sweat your brains out waiting. The line for those aiming to go faster than 185 mph takes the longest per car as there is lots of fussing about. Don't get behind a van towing a bike. Once they get to the front of the line they unload four more. It will add another hour to your wait while guys who started way behind you in the next line are racing.

Once you get to the front, Bob Higbee, the starter (for life, it seems!), will tug on your shoulder straps. This guy builds boats for a living and he's real strong so make sure your back is straight! Otherwise you won't be able to see over the dash and you'll walk funny for a while. Sure glad the crotch strap adjustment is under the seat and hard to find! Bob closes the door (assuming your in a real automobile) pushes the button on his belt mounted microphone control, radios your number to the tower, gets an OK and gives you a nod. It's that simple. At your pleasure you let out the clutch and get under way. Try not to tear up Bob's wire as you pull away. Sometimes his helper gets distracted and the wire is left in harm's way.

What happens next depends on how well you've done your homework.

The acceleration and noise is real exciting. First the One Mile marker comes into view, and you pick your lane. You want to get the power to the ground and you do that by steering to the smoothest, driest salt. When you reach the Two Mile mark you are into the first clock. There is a quarter mile clock which will give you a time. If you believe you've reached Qualifying speed, you can now shut down and pull off the course to the right, or you can see if your machine has more speed left by the Three Mile clock. To qualify for a Record Run you must exceed the existing record. It can be in the quarter mile or the mile, it doesn't matter.

Record runs start very early the next morning. For record runs you will get your two miles to get up to speed then a full timed mile. One hour later you will be required to turn around and run the course in the opposite direction. The average between the two runs is either called a record or an attempt.

Driving the course is a real HOOT! Once you've said Adios to Bob you go through the gears (hopefully with some kind of strategy), moving the car up to speed as quickly as possible without straining anything. Again by the One Mile you'll be scanning the course for the best traction and smoothest area. The salt is graded and is flat but there are rough patches and shallow bumps. These steal speed and need to be avoided. You've got to get the power to the ground and smooth driving helps. It still takes finesse to go fast. The fewer driver inputs the better.

The sensations you will get are like nothing else I've encountered. Even the twenty-two mile long, full-throttle section in the 1989 Baja 1000 did not exactly compare. Neat stuff!

On a truly good year the really fast cars - the streamliners - get a full nine mile course at Bonneville. If you're lucky, you may just get to see a streamliner exceed 400 mph. This is really a thrill from the return road, you are so close to the action. The majority of all the race cars will use only the short course.

The air pressure up front puts one hell of a load on an engine and you won't want to travel too long at the red line. The minimum distance required to set a record is 8.5 miles (qualifying and return runs). Some engines are completely shot by then!

If successful in your Record Run you will be required to tear down your engine and provide a gasoline sample. A good tip is to check each cylinder for bore and stroke when you build the engine. You will be surprised at how they vary and you don't want to be oversize.

I like the SAAB at Bonneville. Because it has front wheel drive a SAAB has never spun at the salt or the Dry Lakes. Jaguar XKEs may go airborne at 150 mph, but SAABs never have shown any bad behavior.

The limitation of the SAAB at Bonneville has been the gear ratios. The best 93/96/97 ratios will limit you to about 100 mph, plus or minus 10 mph. One of my active projects is to install a Volkswagen transmission with a Webster or Hewland 5-speed gearset into a Sonett, using an adapter made by Kennedy Engineered Products. This gearset in a Karmann Ghia has gone 133mph. I have a stroked V4 engine that set a record at 118 mph that I think could top 140 with this gear set easy.

If you plan to build a 99 or 900 you are still limited to about 155 mph with stock gearing; this by using the late 3.67 ring and pinion and the 5-speed primary gear sprockets of 32/25. From there, you'll have to use larger tires to go faster.

Generation Two 900s could easily benefit from a custom made ring and pinion. But if you're going to spend the money on a new 900 race car you might prefer a custom made 6 or 7 speed transmission.

Once at El Mirage Dry Lake in California, I stood in line with the 96. A dude wearing Carroll Shelby's hat strolled by. He noticed the SAAB was running in the under 2-liter sedan class (G Production). He asked me how fast I intended to go. I honestly replied that 106 mph was probable. He laughed - at me and the SAAB - RUDELY! Then without another word he strolled off, even more puffed up. My run was over 107 mph. The hat guy was driving a Cosworth Vega 16 Valve - very high tech for the day and also in G Production. I arrived back at the starting line to get my timeslip just as the Cosworth launched. Julian Doty handed me my slip as the announcer said "83.58 mph on the Cosworth". Julian told me later the Hat looked like he'd won the lottery before he got his timeslip; afterwards he looked like he'd been shot. Could not believe it, lots of drama and rechecking of records, but 83.58 stood. The Vega and Carroll Shelby's hat disappeared. Later that day I saw Mr. Hat with a friend and his race car. I also found the Vega with Ole Shel's hat on the back seat parked as far from the real race cars as possible. After that I never saw the Cosworth again.

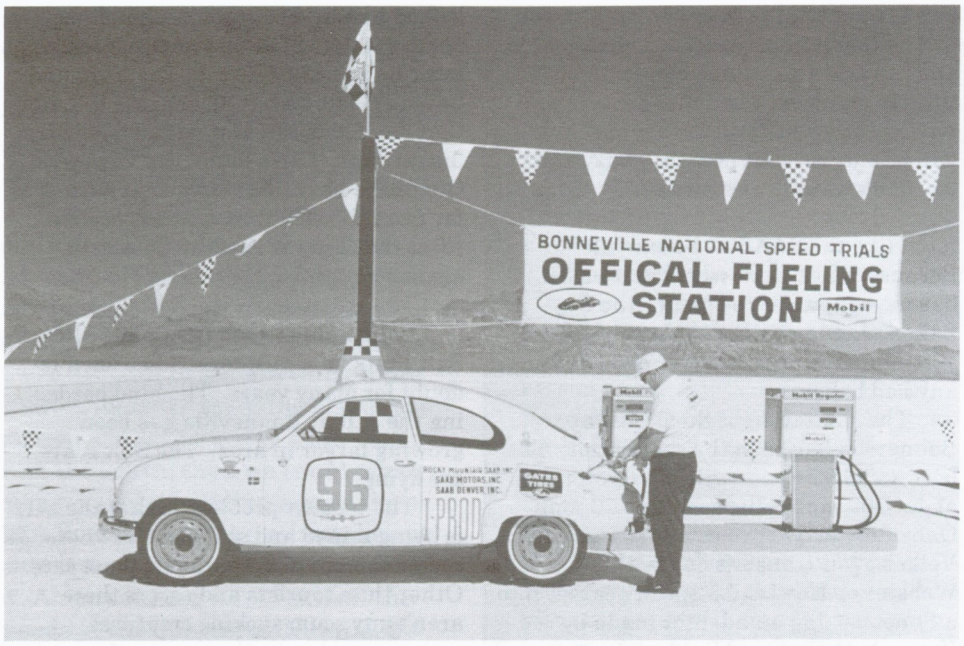
Continuing to use the Bonneville Salt Flats as a race course has been in doubt for many years. The mud bordering the salt at Bonneville has been growing larger in area. The Salt Flats are dying.

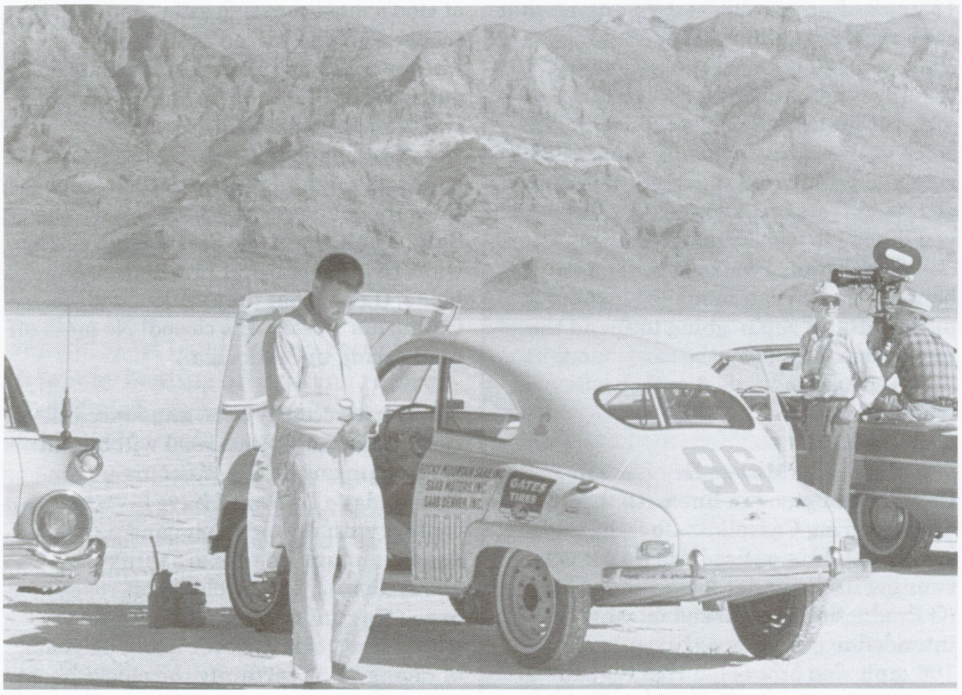
The biggest problem is that the salt is being mined and shipped elsewhere. It seems the environmentalists don't care. Other than tourists and racers there aren't any scum sucking creatures endangered by the thousands of gondola cars that are hauling the salt away. One of God's most massive gifts to us will be scooped up and carted away, gone forever... and no one cares! The latest guess is that Bonneville will be ready for tract housing in about 15 years.

If you happen to belong to the Sierra Club you might dare to ask them why they am not doing anything to save the Salt. Then again the Sierra Club might want the tourists and racers to stay home. (Look what they've done for the California Desert. It's closed! No more off road racing in California.)

It has recently been announced that the 30th annual Baja 1000 will be run once again on the Classic course: Ensenada to La Paz. I have been in contact with my old friend and partner Arne Gunnarsson. We are thinking about dusting off the old 96 off-roader for one more run. Arne is a fine engineer who refined this car over about 15 years of racing. It is certainly the oldest (most races run) and most successful (most races finished) off road race car ever to turn a wheel. If it is raced this November it may be the last time. I hope the car goes out a winner and then is preserved. This valiant little 96 has certainly earned a place of honor somewhere. A win (which is very possible) in the Baja 1000 could well be the final international rally victory for a 96, 18 years after it's production ceased!

John Johnston, Jr.
Carson City NV





Top: The factory-backed 93F used for the 1964 record runs.

Above: Dick Catron makes some last minute preparations on the Saab used to set records in 1964.

Bonneville

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Dick Catron of Denver set records in two-stroke Saabs in 1962 and again in 1964. Catron was owner of SAAB Denver, a Saab dealership, and Rocky Mountain Saab Inc., Saab's West Coast distributor during the 1960s.

In 1962, Catron took a new Saab 96 to the Bonneville National Speed Trials to take a shot at a record speed, then in the low 80 mph range and held by a VW Beetle. Catron's 96 had an engine built by Saab Motors (the predecessor of today's Saab Cars USA) under the direction of Bob Wehman. Starting with a Qualifying Speed of 101.99 mph (helped by a tailwind), Catron went on to establish a record in Class F Touring & Sports of 98.079 mph. Early in the day, the Saab established a record of around 93 mph, but Catron kept running the car, setting new records five times, up to the final record of 98.079.

Catron and the 96 went back to Bonneville in 1963, but the record was taken by an Alfa Romeo which set the speed at 104.406 in I/PRO (Production class, 0.76 to 1.00 liters).

So Catron went back again in '64, this time with a SAAB 93F, believed to be slightly more aerodynamic, equipped with a 940cc engine built by Saab's competition department under the direction of Rolf Melde. (That engine is still in the Saab Car Museum in Trollhattan.) In addition, Gates Tires supplied oversize tires that had been shaved to minimal tread depth. The theory was that the tires would have less rolling resistance and provide a little higher speed at maximum engine r.p.m. Catron set a qualifying time at 107.39 mph, and established the new I/PRO record at 105.453 mph. Though the Saab was qualified to make another attempt at the record on the last day of the trials, the rains came and the course became soft, canceling remaining runs for that year.

		Bonneville			El Mirage		
		/PRO	/PS	/GT	/PRO	/PS	/GT
F	2.01L - 3.00L	164.641	199.036	168.721	145.828	Open (160)	158.95
G	1.51L - 2.00L	139.916	196.824	157.805	137.976	164.264	144.671
H	1.01L - 1.50L	131.769	158.982	135.89	133.53	Open (135)	131.77
I	0.76L - 1.00L	123.224	106.393	121.779	109.739	Open (125)	107.655
J	0.51L - 0.75L	86.935	na	80.143	72.838	Open (80)	Open (70)

Southern California Timing Association records from the 1996 rule book.

Saab Club members John Johnston, Sr., and Jr. of Carson City, Nevada, are also members of SCTA. They have run Saabs several times at Bonneville and the dry lake beds of El Mirage (1.3 mile course) and Muroc since 1976, including some 96s, a couple of Sonett V4s and a 99. John Senior set a record at El Mirage of 118.42 mph in the Sonett V4 in the G/GT category (2-seat production cars, 1.50 to 1.99 liters) in 1981, using a V4 engine that had been stroked to create a displacement of nearly 2-liters. The record was broken by a factory-backed Ford EXP built by off-road racer Bill Stroppe later that year.

John Junior ran a 99 one year, geared to reach a speed of 155 mph, but was only able to manage 122 mph due to an electrical problem. He planned to make another attempt a year later, but the event was rained out.

Can a Saab make a run for a record at Bonneville or the dry lakes? I believe it can happen. But which Saab, and which records?

As production cars, the naturally aspirated models would run in the SCTA's "Production Coupe and Sedan" category or /PRO, while the Turbo models would run under "Production Supercharged" or /PS.

Starting with current production, Saab's 225 hp 9000 Aero should be able to set a record in F/PS at El Mirage, where there is no current record. Properly modified, a 2.0L 900 Turbo should be able to make a run at G/PS at El Mirage. The problem of running at El Mirage is that the course is shorter, so the car would be more likely to run out of track before it has accelerated to its potential top speed.

It would probably take the engineering department at Saab Automobile AB to take on either the F/ or G/PS records at Bonneville, as the cars would have to exceed 200 mph to guarantee a record. Saab has plans of introducing a special edition 900 Turbo with a projected 250 hp in 1998 or '99. A record at Bonneville followed by aggressive advertising of the feat might help them to sell a few more copies of that car, or at least generate some traffic in the dealer's showrooms to sell some other Saabs.

Using a spreadsheet that calculates road speed based on gear ratios, tire size, final drive and engine speed, the numbers show that a 99 or 900 with a 3.67 ring and pinion and the 0.78 primary drive, equipped with 195/65x15 tires, should be able to exceed 150 mph at 6,000 rpm. That would be good enough to establish a new record in the G/PRO class at either course. My choice would be a 16-valve 900 3-door.

The V4 Ford engine that Saab began using in 1967 is 1498cc, so would fit into H/PRO, where the choice would be a 96... or a 95! Either the Sonett V4 or Sonett III would run in H/GT (/GT category is for two-seat sports cars). Due to the gearing in the stock V4 transmission, the estimated top speed would only be around 110 mph. However, any transmission, as long as it retains FWD, may be used. John Johnston figures a Webster transaxle designed for a VW could provide the gearing for a run at about 140 mph.

Saab's 750cc engines would be in the J classes, again with a 96 or 93 in /PRO and a Sonett in /GT. Erik Carlsson recently set a Swedish flying kilometer record of 99.046 mph in a Sonett I (see NINES #232), so the possibility of setting a new record in the U.S. is likely.

This is all mere speculation on the part of someone who would love to challenge the Salt Flats, but whose income precludes any real possibility of building a car for this purpose. Seldom content to sit by and watch, reaching ultimate speed on the salt at Bonneville would be a dream come true. And thanks to participation in the Saab 900 Talladega Challenge, I now have this FIA "Land Speed Record" license....

Tim Winker