



# ARCC UPDATE

January 2010

## *Toronto Chapter Holiday Dinner 2009*

by Anthony Tersigni, Richmond Hill

On the evening of December 13, 2009, about twenty of us gathered at *That's Italian Ristorante* in Woodbridge, Ontario, to enjoy an evening of company, stories, a glass of wine or two and great Italian food. Let me tell you, the menu was plentiful!



*Photo by Anthony Tersigni.*

We had our own private room; a room full of Alfa talk and we also had the luxury of watching a video called "Racing Through Time", an appropriate backdrop as Alfa enters its centennial year! This was our 2nd annual holiday dinner. I would like to thank Joe at *That's Italian* for his work to put together a traditional Italian six course dinner for a reasonable price. Everyone who attended enjoyed it thoroughly. My wife Lina and I had a wonderful evening and look forward to doing this all over again at the end of 2010.

## *Dave's Twin Spark – Part 1*

by Dave Munro, Toronto

**Editor's Note:** *Dave has successfully transplanted a 2 litre Twin Spark engine into his 1969 Spider Jr. and subsequently adapted an aftermarket electronic engine management system to the engine. Due to space limitations, this article will cover the initial twin spark installation, and a subsequent article will describe the conversion to the engine management system. – G.B.*

It all started when I got a copy of Jim Kartalamakis' book *How to Power Tune Alfa Romeo Twin Cam Engines*, Now in a new edition called *The Alfa Romeo DOHC Engine High Performance Manual*.

The reason I got Jim's book was to make more power from the original motor. Then I started reading the section on how much Alfa improved its classic Alfa Nord four cylinder engine with the introduction of the "new" Alfa Twin Spark (TS). The TS was the base engine in the European 75 but in the Milano (as the 75 was named in North America), the Alfa V6 was the only engine used. The TS also came in other forms but they are hard to come by. The 1.8 Litre turbo TS would be loads of fun to play with if you could find one.

It was looking like a stock TS would make lots more power than a highly modified 1300 engine or even a modified 2.0 litre engine. Alfa lists the power of a TS as 148 hp, a gain of 58 hp over the stock 1300 engine's 90 hp. It's hard to tell if the claimed power numbers can be compared directly, but to make 50 extra hp from my 1300 engine would take a lot of work and it would likely not last very long.

The Twin Spark short block is the same basic design as the standard Nord motor. It has the same motor mount locations and bolts to the 105 or 115 gearbox.

The Twin Spark head uses a smaller included angle between the valves (it's reduced from 80° to 46°), piston crowns are relatively flat, the combustion chamber is a more efficient shape, and the intake valves are bigger. At the same time the exhaust valves were made smaller. This might seem like a step

backwards but it makes more power, so it's hard to argue with. The valve sizes leave no room between them for a spark plug in the centre of the chamber. Placing one plug in the front or the back would cause very poor flame spread so Alfa used two plugs per cylinder, one at the front and the other at the back of the combustion chamber. This gives a nice even burn and reduces the amount of spark advance required. The motor does run fine on single spark but it is hard to tell how much power is lost by the seat of the pants. Some day, I should try a dynamometer run using a single spark to see what happens to the power numbers.

The narrower valve angle makes the overall TS engine taller than the older engines. This is no problem if the engine is going into a GTV but it is a tight squeeze in a Spider's engine bay. The highest spot is the oil filler cap, and moving its location to avoid interference with the hood is a project I am currently working on.

The stock setup is just the start for the TS. With bigger valves, cleaned up ports, new cams and higher-compression pistons more than 200 hp is possible. Alfaholics will sell you a modified head or a complete motor in this range. Just get out your cheque book!

I got my TS on e-bay from the land of its birth and had it shipped by sea container to me here in Toronto. A number of changes were required to accommodate and operate this engine in my Spider Jr. Fortunately, others had been there before me and I was able to benefit from their experiences.

The plenum for the Bosch Motronic fuel injection system that came with the TS wasn't going to fit in the Spider Jr.'s engine bay, so I decided to use 45 mm Weber DCOE carburetors. This required a custom intake manifold made by AH motorsports.

The original equipment ignition system on the TS involved two four cylinder distributors, one mounted in the usual place at the front on the intake side, and the other was driven from the front end of the exhaust cam. In my installation there was no room in front of the engine for the second distributor! I installed a customized Nissan distributor from Jim Steck at AutoComponenti.

The TS engine as used in the 75 came with an exhaust system similar to the European Alfetta design, and won't fit any 105 series Alfa. The solution was purpose built exhaust headers from EB spares.

By the time the TS engine was introduced, Alfa had begun to use electronic tachometers. To use the mechanical tachometer in my Spider, it was necessary to install an Alfetta-era water pump and have a small modification made to the intermediate sprocket. See Jim Steck's drawing on the AutoComponenti web site if you need more detail.

The trough-style oil pan on the TS cannot be used in a 105 series Alfa because it interferes with the front cross member. A two-piece Spider oil pan was installed along with a new oil pump. Here's what the engine looked like just before installation:



*Photo by Dave Munro.*

As in the older 2.0 L engine, the TS uses a bypass thermostat to control coolant flow. Unlike the older engine, the TS thermostat is located in the upper radiator hose, and this arrangement doesn't fit in a 105 series engine bay. The workaround is a thermostat commonly used in the BMW 2002. The shape of the BMW part works better in a 105 car and it is available in three different temperatures at any auto parts store. With a plumbing tee and a few hoses it all went together neatly and worked perfectly.



*Photo by Dave Munro.*

I expected that I would have to drill a hole in the back of the crankshaft for a pilot bushing. For whatever reason, the TS engine I used already had that pilot bushing hole in it, so I'll count that as one thing I did not have to do.

I used the motor in this form for three years and it performed quite well. Power was way up from the original 1300 and the torque made it possible to drive

without using 2nd gear which I had to do for a time because of second gear synchromesh issues.

I spent a lot of time tuning the Webers but never got the motor to run the way I wanted. I read all the tuning information I could find and tried many jet combinations but never got it quite right. I ended up running the motor with very rich idle jets. This setup bandaged over most of the tuning problems. It was good for power and O.K. for driveability but terrible for gas mileage and stinky exhaust fumes were also a significant issue. While looking for options, I came across some interesting postings on the Alfa BB that got me thinking about converting the engine to electronic engine management.

*(To be continued...)*

## ***Vintage Racing in Alfa Dogs 105***

**by Christopher Creighton, Toronto**

### ***The End of Season 2***

In my last report, Fil (my 1972 GTV) and I had just finished racing at the 2009 VARAC Vintage Racing Festival at Mosport on June 21. I was pleased with the progress and my best lap time had dropped to just over 1:57. As Ken Lee mentioned at the end of last season, 1:55 was going to be the next benchmark.



*Fil about to be lapped by Carlo. Photo by Vic Henderson.*

It was a very long eight week wait for the next event. The BARC weekend was mixed rain and dry. That, as it turned out, was to be the predominant theme for the 2009 racing season in Southern Ontario. My tires were still in fairly good shape so the rain wasn't an issue. Hoosier Street TDs are great wet tires as long as they haven't surpassed their recommended heat cycles and haven't worn too much. Fil ran flawlessly all weekend and in the Sunday feature race, I had a great, race-long dice with John Kinnear in his very pretty MGB. We swapped positions all through the race and due to an unfortunate move on my part. I cut across the nose of John's car exiting turn 2. I lost him in my mirrors and assumed, incorrectly, that he

had dropped back, when actually he was just off my rear fender. Another lesson learned the embarrassing way... I held John off to finish third in class for the weekend. There was talk after the race about how his car had a serious misfire but I chose not to consider that version of events. This was my second trophy from the August BARC race- the first being a second the previous year. That race weekend is becoming one of my favourites! I shaved just under 2 seconds off of my best lap time during the race to finish just shy of my 1:55 goal.

Candace Edmonds did the Saturday morning practice session in Fil and proved that she has what it takes to race Alfas. She was very smooth and predictable on the track and she touched a 2 minute lap time in only her second session in a race car. Candace is Geoff Lane's wife and they plan to campaign a GTV 6 in 2010!

The weekend was also a special one as it was the debut of Vytas Svedas in his beautiful ex-Bernie Martinez Giulia Sprint. He proved himself to be a very careful and capable driver and a fine addition to the Alfa Dogs team and the Vintage/Historic grid in Ontario regional racing. Welcome Vytas!

The next scheduled VARAC race was to be the ICAR event held at the former Mirabel airport near Montreal. Due to a scarcity of entries, the event was cancelled and a last minute deal was arranged to add a Vintage/Historic grid to the Labour Day weekend races at Mosport. This race was also in a bit of a mess as the traditional organizers had pulled out and CASC had taken over the running of the races. Despite the confusion, a few hearty (read: available) drivers attended. The weather was gorgeous without a drop of rain all weekend. The grid was very thin with 12 cars starting the Saturday morning practice. By the feature race on Sunday afternoon however, we were down to 6 cars on the grid. Needless to say that after I watched Joe Cannella and the other really quick guys drive away from me on the first lap, I was pretty much running by myself until they came by to lap me near the end of the session. I finished first in my class for the weekend. Of course, I was the only driver in Class D still running on Sunday afternoon so I'll have to check my ego and take that win with a grain of salt. As the race was a last-minute substitute, no championship points were awarded for the event. It doesn't matter though as I made a best lap time of just slightly over 1:54. That was satisfying!

The final event of the season for me was the Celebration of Mosport the first weekend of October. Vytas and Joe and Andre were there so we had a good contingent of Alfa Dogs cars. My tires were in pretty bad shape so I took my ex-street performance tires as wets. The Saturday morning practice was a dry session and I really surprised myself by doing a 1:53

lap. I wasn't trying to set a new personal best. (Note to self: relax and be smooth and consistent and the lap times will fall...). I wish that I could report that the rest of the weekend went as smoothly.

The rain started on Saturday afternoon and it didn't let up much for the remainder of the weekend. My choice of Toyo street tires as wets was a serious error as I spent about as much time sliding off the track as I spent trying to stay on it. Candace took Fil out for the qualifying session and spun in Turn 5 (well, it had to happen to her sooner or later). She returned to the paddock a little perturbed but unshaken. Sunday was monsoon-ish with running and standing water everywhere. I had a good re-dice with John Kinnear and was doing well until I had a serious 'tank slapper' exiting Turn 5 and he got by me. It wasn't much fun out there with so little control and the result was that I couldn't go very quickly. Candace took Joe's magnificent GTV out on Sunday morning and regardless of the rain, ran very well. It's really quite amazing what difference a new set of tires and a perfect set-up makes.

I had a good race with a Sprite during the Sunday afternoon feature race -in the rain- and we were having fun until the skies really opened up. I was leading into Turn 3 when I spun to the inside and over the speed curbing. I managed to keep rolling and get back onto the track just behind the Sprite. As we were exiting the turn, the Sprite had a big wobble and spun to the outside so I was able to get back in front. On the last lap, I dropped the clutch a bit too abruptly into Turn 5 (that corner has been mentioned far too many times) and spun to the inside. The Sprite passed me again and I couldn't catch him before the checkered flag.

So ended my 2009 season. I'm very pleased that I got my lap time down to 1:53 and I expect that I'll be able to go sub 1:50 next year with my 42mm carburetors and stiffer race springs. I'm also going to have the roll bar extended into a cage for safety. I think that I said that last year as well so I'll see how far I can get for 2010.

There will be some changes in VARAC for 2010. A rather controversial motion was passed at the AGM in November which will allow cars to be prepared to SVRA or FIA specifications. This is a departure in that previously, VARAC standards were strictly adhered to. The motion came about as the result of many members' views that our eligibility standards should be more inclusive of what other vintage racing clubs are doing. Personally, I believe that it will be a positive development for VARAC. I'm hoping that we will also be a bit more attractive to the large number of truly great Alfas that are currently racing outside of Canada. Perhaps you could talk the other drivers from Roman's shop into venturing north, Bruce!

## ***Upcoming ARCC Events***

### **Toronto Chapter**

<b>Date</b>	<b>Time</b>	<b>Event</b>
January 19	6 pm	Pub Night, Cam's Place, 2655 Yonge St.
February 23	6 pm	Pub Night, Cam's Place, 2655 Yonge St.

### **Alfa Romeo Club of Edmonton**

### **Calgary Alfa Marque Society**

### **Ottawa Chapter**

## ***Alfa Romeo Club of Canada***

### ***National Executive***

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Harry Hamilton	Western VP	(403) 463-2235
Tony Adams	Eastern VP	(416) 222-2406
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