



The Canadian Avanti

Official Newsletter for the Canadian Avanti Owners Association

January 2017

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President's Message



Welcome to 2017 and the beginning of another year of activity and looking forward to re connecting with old friends and meeting new ones. It is already looking like a busy Spring for some of us as in Ontario we have three events almost back to back. First off is the annual SDC swap meet and get together at Badenoch on April 22nd with a planned CAOIA meeting on the 23rd. More details on that later. Only a week later is the AOIA International meet in South Bend which many of us are planning to attend. South Bend, home of Studebaker is a great venue with much to see and do. In early June is the Fleetwood Country Cruisin near London Ont. I would like to make a special note of this as at our last meeting we discussed having an Avanti presence. We would like to see a good turnout as we did a number of years ago. This is a great show with a wonderful host and many exhibits and activities associated. I will be sending out a notice to all members sometime in Feb. to get an idea of how many of you might be interested in showing up for this. The reason for asking for your 'intent', not necessarily a commitment, is that if we

have 5 or more cars attending, I will phone Steve Plunket to arrange for a designated location so that we might all park together. It is important to do this well in advance as there are many different clubs, categories etc. and all of this must be organized well in advance. With a few thousand cars showing up for this event, planning is essential. I'll look forward to your response.

Look for a number of interesting articles in this issue, thanks to Peter Sant, our tech guru and Pete Yuen from BC. Likewise an update from Larry Gibson on his latest project and a few sneak pics of Mike Emmerich's Avanti finally back in his garage after a complete overhaul. Thanks to all who have renewed your membership so far this year and we hope to see and hear from as many of you as possible in events taking place across the country. Also remember that we have no charge for classifieds so if you have anything to offer or a service to advertise, send it along to our editor. Next newsletter is planned for sometime late April/May. Cheers and all the best.

Steve

Editor's Message

Having never been an editor before "The Canadian Avanti" the recent editions are works-in-progress for me wherein a slightly older dog is learning new tricks, it just may take him (albeit me) a little longer (my recently having celebrated a milestone birthday). That being said behind the scenes of preparing each new newsletter are your very own notable contributions. With what you provide I have the privilege to compile our newsletter.

So to supplement the quarterly newsletter, and editor ramblings, please continue to send to my email sb58regent@outlook.com, or mailing address Shawn Brockhoff, P.O. Box 6703, Bonnyville Alberta, T9N-2H2, your photos, stories, or anything else you would like to share with "The Canadian Avanti" readership. You may also call or text me on my cellular at 780.812.5452 anytime. Let's document together this incredible Avanti automobile journey!

Always grateful for your ongoing support☺,
Shawn

P.S. - I am humbled and honored to have received this prestigious award from the AOIA for the CAO "The Canadian Avanti" newsletter.



Canadian Avanti Owners Association, Chapter Officers and Support Personnel



The Canadian Avanti Owners Association (CAOA) is a non-profit organization committed to preserving the history of the Avanti automobile. We currently have +45 members located in all provinces across Canada. We are a Chapter of the Avanti Owners Association International (<http://www.aoai.org/>). Our group strives to promote the research and study of the Avanti and the companies that have produced it over the years. We wish to share our knowledge with others and encourage the acquisition, preservation, restoration, and maintenance of all Avantis produced by Studebaker and successor companies. Our Canadian Chapter also promotes fellowship and camaraderie by publishing a newsletter quarterly, participating in local CAOAs or Studebaker Drivers Club events and our general meetings held quarterly at various members' homes. Ownership of an Avanti (Studebaker or successor) is not required.

Should you have any questions please contact any of the following:

CAOA Chapter Officers or Support Personnel

President	Steve Wohleber	705.383.2432	sbwohleber@gmail.com
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Meeting Minutes of CAOAs meeting held on November 27, 2016

Call to order	12.15 pm by Steve Wohleber
Members Present	Jim and Barb Anderson, Larry and Barb Gibson, Steve and Barb Wohleber, Roly and Sue Lusted, Bill Harris, Dave Simonson, Dave and Barb Moxham, Hugh Campbell and Bonnie Brooks.
Opening Remarks	Steve welcomed everyone to the home of Bill Harris and thanked him for hosting the meeting again this year.
Minutes	Minutes of the May 01, 2016 meeting were presented by Steve Wohleber. Motion to approve by Jim Anderson, seconded by Hugh Campbell.
Treasurer's Report	Report year to date November 26, 2016 presented by Dave Moxham. Current bank balance is \$1,853.16. Major expenditures this year have been \$624 for

purchase and distribution of 2016 calendars, \$267 for Adopt a Car sponsorship of the Ron Hall Bonneville Avanti, \$75 for Kansas City 2016 AOAI meet sponsorship and \$108 for website renewal. Based on the cost of the free calendar program, particularly U.S. exchange and postage, we have decided to sell the 2017 calendars this year to members. Price will be \$10 in person and \$15 if mailed. Motion by Dave Moxham to approve, seconded by Bill Harris.

Correspondence

Steve Wohleber advised he had received six tickets for the Studebaker National Museum Car Raffle at \$50 U.S. each or 3 for \$100 U.S. In lieu of a car the prize is \$20,000 U.S. Second prize is \$5,000 U.S. Tickets must be purchased before Dec13th.

Steve read a thank you letter forwarded from Max Starkey he had received from Canadian member Pete Yuen who was nominated and presented with a Distinguished Member Award by the Avanti Owners Association International this year. Congratulations Pete!

Membership Report

Larry Gibson reported that we had 41 paid members for 2016, the same as 2015. There were two new members but sadly two of our long time members past away in 2016, Ralph Hart and Dwayne Jacobson. Larry indicated he had emailed previous members but received few responses due to old addresses or the fact previous members had sold their cars.

Old Business

Roly Lusted reported that the Studebaker factory historical plaque is now installed and dedicated and a copy has been presented to the Studebaker National Museum to be placed near the last car produced by Studebaker in March 1966. The plaque was funded by contributions from the Canadian Avanti Owners, Hamilton and Ontario SDC chapters, the Studebaker National Museum, Stu Chapman and Peter Downey. Thanks to the plaque committee for their efforts in getting this done.

Newsletter

Our new editor, Shawn Brockhoff, will shoot for up to four editions. Tentative dates would be January, April, July and October. Please send any articles for the newsletter directly to Shawn.

New Business

The open Secretary's position was discussed with no one yet willing to take on the full job. In the interim duties will be shared by a few members with Sue Lusted volunteering create a file for mail out to all members. She will forward this to Shawn and Steve. Compliance issues with AOAI notifications of meetings, minute taking etc. will be handled by other volunteers for now.

Sue Lusted, our web site administrator has arranged for site renewal for two more years at a bargain rate. Thanks to Sue for looking after this.

Events

There was a proposal discussed to have a separate area at the Fleetwood Country Cruizin in June 2017 just for Avantis. The organizers will be contacted to see if this is possible and we will advise of the date etc.

The annual Badenoch swap meet is on for April 22, 2017.

Many members have confirmed participation in the 2017 International Meet to be held in South Bend early May. Details in the next edition of Avanti Magazine and the AOAI website.

Meetings 2017

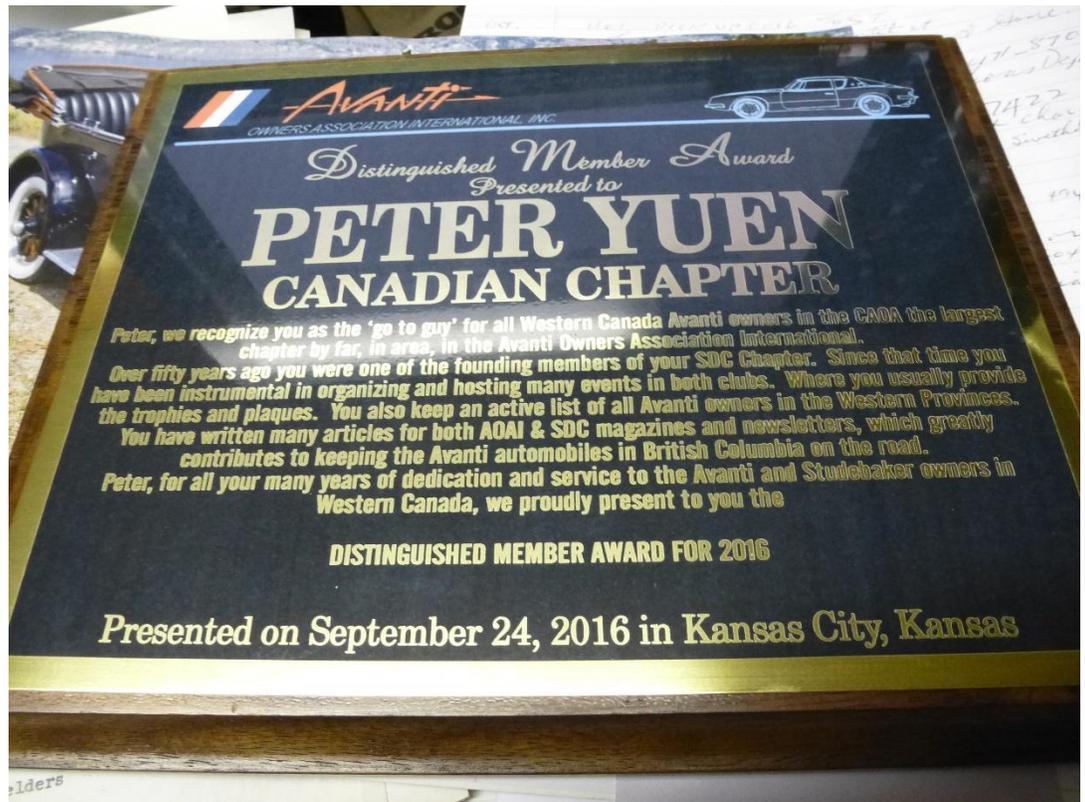
April 23, 2017, location TBA.

Motion to Adjourn

3.00 pm by Steve Wohleber.

Distinguished Members Award

Congratulations to Pete Yuen a recipient of the AOIA 2016 Distinguished Members Award! In follow up Pete has advised club executives that it was for just over 40 years and not 50 as indicated on the plaque. Forty or fifty is really just a matter of semantics as both are truly inspiring dedication. Great job Pete! In celebration of his momentous devotion and contributions to Studebaker and Avanti clubs please enjoy the following Pete tribute☺!



Pete Yuen

*SDC Member, Vancouver Island Chapter,
Honourary Member, B.C. Coastal Chapter
Distinguished Member Award Recipient.*

Avanti Owners Association International, 2016 Canadian Chapter

Birth

The Yuen family tree sprouted a branch on April 17, 1928. Pete has arrived.

Childhood

Grew up on a farm with 80 Acres to roam around on, nice.

School

1 mile to school. It was uphill all the way and uphill all of the way home.

Marital Status

Married over 61 years to a wonderful wife, Mary, deceased August 22, 2015. Blessed with a wonderful marriage.

Compatibility

Pretty good. . . 6 arguments in 60 years. 2 in the first year of marriage and none in the last, more than 15 years.

Children, Grandchildren

Daughter - Sandy, son - Craig and 4 grandchildren. Grandson, Jon (SDC Member) is married to a lovely young lady, Lily.

Another branch will be sprouting on the Yuen/Wong family trees, hopefully by spring with Thanks to Jon and Lily.

Hobby

Writing, car restoration, modification and teasing the wife. We laugh a lot together as we tease each other.

Work

Production plant engineer/millwright. Now retired. . . Retired. . . Not retired.

First car

1928 Hupmobile

First Studebakers

Car: 1947 Studebaker Champion purchased in 1970
Truck: M16 (Do not have either vehicle now.)

First Pacific Can-Am Zone Meet

1974 at Olympia, WA., Co-hosted by Greater Seattle and the Tacoma Area Chapter. Great time.

Past Club Positions

National: Regional Director.
B.C. Coastal Chapter:
Membership Secretary, treasurer (About 10 years)
Vancouver Island Chapter: Editor, 7 years

Editor, B.C. Coastal Chapter

Award: Herb Keller Award for newsletter creativity while being editor for the Vancouver Island Chapter B.C. Coastal Chapter: Editor 3 years in the 1980's, and for 3 years in the 2000's
Awards: 3 - First place newsletter awards in the 2000's

I would like to compliment all editors, past and present for their devotion to the club and for their terrific effort to produce their newsletters.

Material Supplied To Newsletters

"That's What I Heard" column -15 years,
Currently writing, "Odds 'N' Ends" column for distribution to other chapter editors to use as filler if they choose to do so on a monthly basis since November 2013.

Pacific Can-Am Zone Events

Planning committee member for B.C. Coastal Chapter hosted events: 1975 - Zone meet, 1980- Zone meet, 1986 - Zone Meet, 1990 -Zone meet, 1995 Zone meet, 1999 Zone meet, 2002 Northwest Overdrive, 2006 Northwest Overdrive, 2011 Pacific Can-Am Zone Meet. Planning committee member for the Vancouver Island Chapter: 2000 Northwest Overdrive.

For me, every SDC meet and event was a study and a learning experience as to how can we host an event that will be most memorable. Small things like attention to small details makes a good event into a better event.

Hosting an event takes a lot of time and planning. I would like to compliment any chapter and their committees for their effort.

Presentation Awards And Table Prizes

Have now made close to 2000 items with the chapter paying the material cost for the presentation awards. Table prizes were being donated. Have donated many items for raffle prizes to other chapters hosting Pacific Can-Am Zone Events, mostly Studebaker/ Avanti car profile clocks.

Club Membership:

Member for over 40 years in the B.C. Coastal Chapter.
Member over 25 years in Vancouver Island Chapter .
Member, Canadian Avanti Owners Association since 2014.

Remember: Participation is part of the fun. Enjoy the club more by participating in it.

The Studebaker Driver's Club Connection *by Pete Yuen*

1984 Avanti "Lily's Car" . . .

During the time that I was the editor for the Vancouver Island Chapter, SDC, there were a couple of members that had Avanti's that I had never met. On a monthly basis, I would send the VISTA newsletter to these members and soon we had e-mails going back and forth. In a short time, I found that the Avanti owners were friends and very quickly, I was in the loop. One of the members, Roland Vardon lives in Orangeville, Ontario and the other, his friend, Barry Selfe lives in the Victoria area. As we all know, the Studebaker Drivers Club is a fantastic club and where one can meet people that they will have a high regard for. These are "Keepers" . . . And what Roland and Barry are to me.

Both, Roland and Barry bought Avantis that were in California at some time. Roland has a beautiful 1963 Avanti and Barry had an equally beautiful 1984 Avanti. Barry had his Avanti with him when he participated in the last Northwest Overdrive, hosted by the Vancouver Island Chapter at Parksville.

In 2013, Barry had wanted to sell his Avanti but it remained unsold until his friend, Roland, wrote an ad: A 30 year old –Sleek and Sexy with great lines. Her stunning Autumn Orange metallic paint captures your attention from yards away. She is more than a "pretty face" and comes highly optioned with leather Recarro seats, Dayton Wires, wood /tilt steering PLUS an excellent undercarriage-no rust. Shipped to CA when new and carefully towed down after each ride, very pampered for all of her 50,000 miles. Never hard driven or driven in bad weather. He then told me that Barry would like to advertise it in the SDC Chapter newsletters. A list of SDC Chapter Editors were sent to Barry and word got back to me that since Barry did not know the editors and that he was not a club member, he felt that his ad would not likely be included in the newsletters. Since I knew the editors in Pacific Can-Am Zone, I sent the Avanti ad to them.

In the latter part of March, the ad was included in the local chapter's April newsletter, The Studebaker Packard Post.

Since I did not need another car, I sent e-mail to grandson, Jon saying that the '84 Avanti sounds like a nice car for Lily, his recently wedded wife. Jon responds with, "It's a nice car, but we don't need another one." (He has 4 cars now with his '51 Studebaker that we worked on together sitting in my garage.)

Not exactly sure how my daughter, Sandy got word of the Avanti for sale. She said, "Dad, why don't you go and take a look at the Avanti. It sounds like a a nice car." This would be on a Friday evening when she came to visit. After thinking about it, I did decide to make arrangements to see the car. The day would be Monday, March 31st, the last day of free ferry rides for the seniors on the B.C. Ferries. When I got to the ferry terminal at Tsawwassen, there was an unbelievable horde there already to take advantage of their last free ride on the ferry. Barry would pick me up at Swartz Bay and on the way to his place, he would volunteer a whole bunch of info regarding the Avanti. . . Hmm, sounds like a pretty good car, knowing that Barry would be sincere with the info.

We arrive at his garage where the Avanti is and it is everything that he claims it to be. Nice and clean interior with leather upholstery and Recarro seats, nice and clean exterior shining with a gleam and the car is clean underneath as well.

The wire wheels that really sets the car off to be an eye catcher were immaculate. For a 30 year old car, you would be amazed at the condition. I am told the car was never taken out during times when it was raining but Barry told When asked if there were any water leaks in the car, he told me that he really did

not know as he chose to drive the car in nice weather only but had been caught in the rain on a couple of occasions. This has me looking all over for water stains but could not find any.

As previously mentioned, the car is 30 years old. I am not looking at a new car so I realized that should I buy it, there would be some things that would need to be done to it. The tires on the car had the wider whitewalls with about 80% tread on them but they were 12 years old. They would be good enough for city driving but not good for highway driving from a safety point of view. We take the car out for a test drive and found the steering to be a bit light but other than that, everything else seemed to be fine.

Soon, it would be decision time. . . What to do? Here is a beautiful Avanti waiting for someone to give it a good home and me not needing another car or the space to park it in the garage. I like the car, so to make room for it, my '27 Model "T" Ford streetrod would have to go into daughter, Sandy's garage.

Barry and I decided on a price and I wind up giving him a deposit for the car. Arrangement was made for me to pick the car up on April 2nd., 2 days after The government terminated free rides for the seniors. There were a lot less people at the ferry terminal this time.

Before leaving with the Avanti, Barry suggested that I asked to be put on the truck deck of the ferry with wider lanes on the way home so that there would be less likelihood of having someone slam their car door on to the Avanti. This is a good idea and something that all Studebaker owners should do when using the ferry to or from Tsawwassen.



Picture on the left is former owner, Barry Selfe taken moments before he sees his beloved Avanti being driven away. . . Sorry, Barry, if it brought moments of sadness.

While the car is described as orange, it is more Copper/ bronze with metallic gold. Gorgeous in the sunlight.

During the month that I had the car, the steering connection between the pitman arm and the hydraulic control valve has been tightened and the front alignment done with slight change in the caster angle so that the car is more stable on the road and the tires have been replaced. We're ready to take the car on the highway now.

The next object is to get the Collectors plates for the car. While Barry had the car, he did have the Collector plate for it but there cannot be a direct transfer of the Collector plate and that I would need to apply for it.

Oh, about the Studebaker Drivers Club Connection. . . Chances are that I would never have bought the car without it. I would most likely never have met Roland or Barry without being in the club.

After seeing and riding in the Avanti, Lily, (Grandson, Jon's wife), the newest addition to the Yuen-Wong families has declared the Avanti to be hers. Being the sweet person that she is, she has given me permission to use the car at any time. . . . Lucky me! *Note: Article written in 2014, amended Jan.2/17*

A Sneak Peak of Mike's Avanti *from Mike Emmerich*

It is now October 2016. Two years ago I delivered the Avanti to Forrest and Forrest to have the rack (based on an article on a rack and pinion swap in Bob Johnston's website <http://www.studebaker-info.org/>) installed and begin the update. Never did I think that it would cost twice as much and take two years! The plan was to drive home – after a two year update, I would drive the car 398 KM (which should take 5 hours). Foolhardy? Nope – I had full confidence in Kevin and his attention to detail. Not all of the seals are installed yet (something for me to tackle next year) so it was a cool ride home. Car run perfect and got us home in less than 5 hours. Gas mileage was great. I was not sure what I would be getting with the new engine (its engine on the dynamometer was 396HP, 480ftlb of torque) and gears (changed from 2:87 to new 3:31 gearing), but it revved about 2000rpm on the 401 and I made it home with ¼ of a tank to spare. I was pleased as this Avanti may be travelling to its roots next year (Florida winter of 2017/2018).



Kevin giving the thumbs up! Been a long project.



Looking forward to the drive home!

Home at last!



You Need One of These *by Peter Sant*

Most United States car shows demand that every car must be equipped with a fire extinguisher in order to be entered. This is a good practice and one that should apply to all car shows.

Our vehicles are over 50 years old and the original wiring in most vehicles is at the point of deterioration, fraying, and exposing bare wires. If these wires are anywhere near gasoline, and short out, it becomes an instant fire problem you need easy quick access to an extinguisher to stop the fire before it gets out of hand. Extinguishers are usually kept in the front part of the cab (mine is on the passenger kick panel). DO NOT PUT THE EXTINGUISHER IN THE TRUNK, trying to open the trunk with a raging fire is asking for trouble.

I only wish that small inexpensive fire extinguishers were the CO2 type as they are effective on gasoline fires and they do not make a mess.

I am not aware if the insurance companies are insisting on fire extinguishers but it is obvious to me that they will fairly soon. Buy an extinguisher (less than \$20.00) and install one now.

12 Volt Starter Solenoid *by Peter Sant*

I recently got stranded in my 1963 Avanti R2 with an Automatic Transmission. I turned the key and the dreaded click click sound came from under the hood but no sound of the starter being engaged. Being an automatic there is no way to move the car other than push it and at my age I am not into pushing heavy objects.

I first checked that the battery terminals were OK and that the battery had a full charge. It then became inevitable that I had to replace the starter solenoid. Not an easy task on an Avanti with a dual master cylinder but it had to be done.

First thing is to unhook the battery then start to remove the Big battery cables on the solenoid end, both the one that runs to the positive post on the battery then the one that runs to the starter. Be very careful to take note of where every wire connects to the solenoid. Then remove the solenoid from the vehicle. Take the old unit to Canadian Tire and they will promptly tell you that they have not carried these items for years and had no idea where to obtain one. On a hunch I stopped in at Parts Source (a subsidiary of Canadian Tire) and placed the old solenoid on the counter and asked if they had something like it. The teenager behind the counter reached in under the counter and handed me a box with the exact solenoid I was looking for. Who says these young kids are useless without a computer.

Got back home and started the reinstallation. A very painful task. I even enlisted the aid of my son who has smaller hands than me and even he had trouble. (Maybe we should have removed the brake master cylinder and booster)

Anyway I finally got it on and now the moment of truth. Will the Avanti burst into life? No such luck. The ammeter went to full discharge with nothing happening. As I have said many times before I am electrically challenged, never being able to sort out even why electricity works. I must have the wires installed backwards. I switched them and tried again. This time the starter engaged the engine ran but the starter kept on running. Not a good thing. I dug out the Avanti manual with the wiring diagram and traced the wires. I examined the instructions for mounting the solenoid which came with the unit

(translated from the original Chinese) I pored over both instructions but could not see where I had got something connected incorrectly.

As a last resort I switched the input wire from the ignition to the other post and bingo, it started as it should. It seems that the Chinese version of the starter solenoid has the posts switched from the original.

That's not the end of the story. I did a test run with the Avanti to buy more gas (a common thing with R2 Avanti cars) and immediately noticed a smoother running engine, throttle response vastly improved and the ammeter doing the correct thing with lots of charging. Wow what a change. This should improve things at the dragstrip which comes up in September.

As I have said before I have no idea what changing a solenoid did to improve the performance but I will take it. I suspect that the old solenoid had some internal short which drew electrical power constantly causing the alternator to work overtime. I still do not know.

Now, I recommend that you drop in at your local Parts Source and pick up a spare starter solenoid and keep it in your trunk, especially if you have an automatic. They only cost \$12.00!!!

12 Volt Electric Choke Conversion by Peter Sant

I recently converted my automatic choke on my Carter AFB to an electric unit. It is made by Allstate Carburetors. I purchased it over the internet at <http://www.allcarbs.com/detail.php?pid=97> . These are good people to deal with. Very prompt delivery.

This is an inexpensive unit and very easy to install. It comes with a new set of screws and clips as well as a new gasket. All that you have to do is remove the old plastic cover and replace it with the new unit. Then you have to run a wire from the new choke to a good ground. You will need a power source. They are clearly marked for positive and negative terminals (I used the battery side of the ballast resistor to run a wire to the positive terminal) so that when you turn the key on there is power.

Final step is to adjust the choke. Wait for the engine to be completely cold then turn the new choke cover so that the choke closes then lock it in place by tightening the three cover screws.

Try it out. Your engine should fire quicker and the choke will come off quicker now.

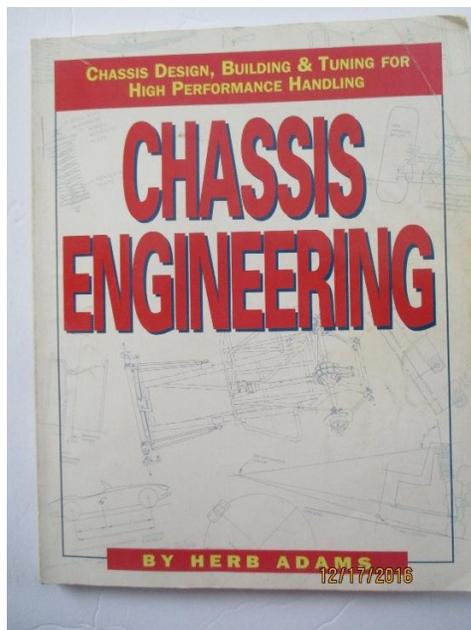
Gibson Tribute to the Steve Blake 1986 Avanti GT by Larry Gibson

(Installment #3: Chassis and Driveline)

The Steve Blake interview quoted in the book –“*More than they Promised, - The Studebaker Story*” by *Thomas Bonsall* indicated that the 1986 Avanti GT would use a chassis very similar to the one in the 1983 - 84 Escort Avanti GT, engineered by Herb Adams, a former GM engineer. It specified that it would be a backbone, step down style chassis with both front and rear independent wishbone suspension and four wheel disk brakes, with rack and pinion steering. Given the era and the close connection to GM by both Adams and Blake, one could anticipate that many of these components

would be C4 Corvette, including the aluminum differential, although the rear (wishbone) upper and lower A frames would have to be custom built.

However, the donor car that I used for most of my suspension and driveline components was a 2007 C6 Corvette. The 364 cu. in. LS2 engine is being rebuilt with mostly stock components, except for a high performance camshaft and valve train. With a free flowing exhaust system and a recalibrated 2010 ECM, I expect it will result in an increase from the original 400 H.P. to more than 450 H.P. The use of a C5 Corvette 3.42 differential, converted to use an open driveshaft, allows the use of a 2010 6L80E, six speed transmission in the conventional position, attached to the engine (instead of the differential), as found in the newer Camaro or GM pick-up trucks. Initially the electrically controlled transmission will be shifted by the Avanti console shifter, but once the car is complete and performing well, I will consider changing to a newer Corvette TCM tune and a paddle shifter.



To understand the design details of the Herb Adams chassis, I referred to my copy of *Herb Adams' "Chassis Engineering"* book which has a whole chapter on designing the Backbone Chassis. The examples cited were for a Trans Am race car and a Cobra "kit car" chassis.

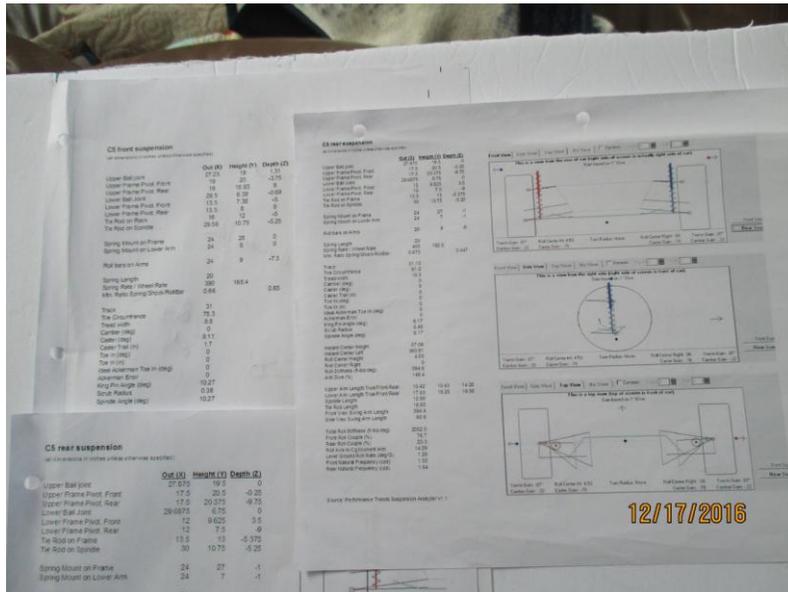
The unique feature of the backbone chassis is that the transmission and driveshaft tunnel become the primary structural component supplying a high level of torsional rigidity, linking the front and rear suspension components.

The step down feature refers to the floor being located at the bottom of the frame, providing a lower seating position, and thus a lower center of gravity to promote good handling. With a good understanding of how I should design my Avanti GT chassis following the Herb Adams concept, I now needed to understand how to

incorporate the C6 Corvette suspension components.

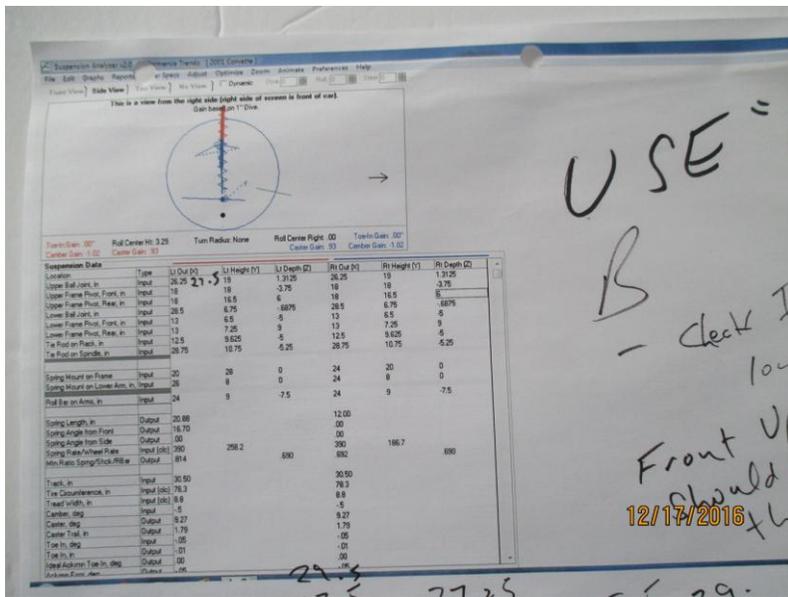
I first needed to know where all suspension pick up points are located on a stock C6 Corvette and then modify them to suit my requirement for a slightly narrower track. With a bit of research on the internet I was able to find very detailed 3 dimensional drawings of the exact information I required. C6 suspension is fairly stiff and has limited travel. As a GT touring car, I wanted to come close to the handling potential of the modern Corvette, but it was very important to have a comfortable ride for long distance travel, which would require the suspension to have greater travel than a Corvette. This also meant that some of the suspension pick up points would have to be relocated to ensure negative camber gain was managed with greater suspension travel in a manner that did not result in a significant change in toe in or out.

All of this information was combined with the dimensions of the modified body to establish the front and rear track as well as the wheelbase, and planned ride height. With a plan to use primarily 1.5" X



1.5" X .125 tubing for the front and rear chassis modules, dimensional sketches were made to accommodate the desired chassis design and the physical dimensions of the C6 Corvette suspension components.

And finally, the body was again referenced, to determine the width to locate the 1.5" X 3.0" X .125" perimeter frame tubing to establish the passenger compartment size, with the frame rails located in the rocker panel area, so as to nest with the 2.0" X 3.0" X .250" Aluminum "Hog Troughs".



With the Chassis layout designed and sketched out with dimensions, it was time to test the modified suspension pick up points to be sure they would perform as required. While the majority of the C6 Corvette suspension pick up point relationships were maintained, the upper A frames have a greater degree of adjustability. All the critical data was entered into "Performance Trends "Suspension Analyzer 2" computer program that my son

purchased when we updated his Late Model stock car suspension. By using the different heights available for the inner pivot points of the upper A Frames, we were able find the best position, that gave us the desired negative camber gain, with minimal toe change.

Before actual fabrication could start, I had to build a "Frame Table" so that all the components could be assembled (clamped & welded) in a square and level manner. I built it out of heavy wall 2" x 4" tubing which bolted together, to form a 4' X 11' rectangle, which has 12" legs with leveling adjusters and removable wheels, so that it can be used as a dolly for the chassis or body. The 16" height was chosen to work with our 12" high alignment and scale racks, so that with minor shimming, construction will be at ride height, with the wheels on the scale racks.



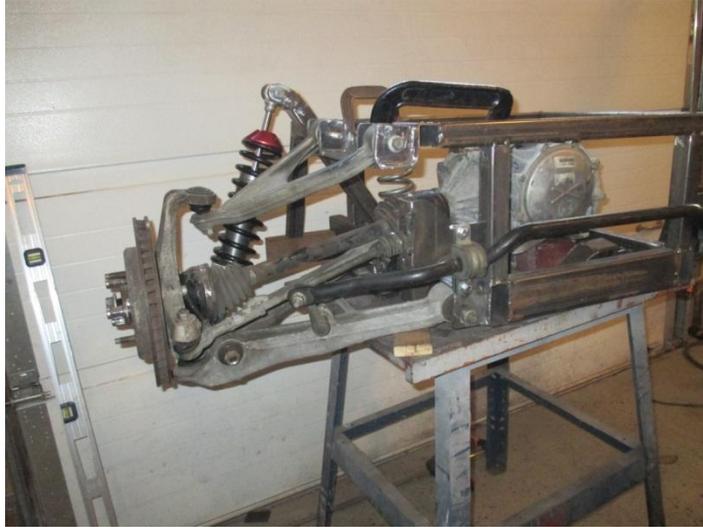
First, a simple rectangle was made from 1.5" X 3.0" X .125 mild steel tubing, 57" wide to fit up into the rocker panel area, and 60" long, the size of the modified central passenger area of the body. This was squared and tack welded to the frame table. The rear cross member was marked and drilled for the area where the driveshaft will pass through but not cut out. Similarly the front cross member ran the full width, and the area for the transmission will be cut out later.

Next, the front module was laid out, positioning the lower C6 A frames exactly as they are on the Corvette, except with a slightly narrower track. The .25" thick attachment brackets welded to the 1.5" X 1.5" X .125" square tubing are spaced about .5" wider than they are on the Corvette to provide the opportunity to provide an additional means to adjust castor, or fine tune the wheelbase from side to side, by inserting large aluminum spacer washers to either end. The Howe upper A frames are mounted to their shafts with bearings at each end. The shafts are bolted to .625" plates with machined slots, in which various slugs with different offset holes are captured between the shaft and mounting plate.

This mounting plate is positioned in the frame to provide the same degree of anti-dive as the Corvette, 10 degrees of positive caster, and 1 degree negative of static camber, and a centered roll center about 3" above ground. Use of slugs with different offsets provide the ability to raise or lower the inner pivot points of the upper A frames to adjust the rate of negative camber gain or to move the roll center. The use of shims on the A frame attachment bolts, provide adjustability for static caster and camber. C6 Corvette Uprights and spindles connect to the lower and upper A frames or wishbones. I will initially use C6 – Z06 rotors and calipers for brakes, which will readily accept many high performance aftermarket systems later. I will use Coil Over springs, with double adjustable Viking shocks which provide the ability to easily tune ride quality, handling and ride height. The universal mounts for the steering rack are intentionally placed low so that the intermediate brackets required to mount either the initial C4 or anticipated custom built steering rack can be spaced for optimal bump steer.



In addition to suspension requirements, cross members were located to accommodate the LS2 oil pan and exhaust system. The overall width of the upper rails was determined by the slightly modified Avanti fiberglass inner panels. Because the front wheel position has been moved forward 4", new aluminum lower fender panels have been fabricated to adapt the Avanti panels to the new chassis.



Frame work for the rear C5 differential and suspension was fabricated in a similar manner to the front, exactly duplicating the C6 Corvette suspension pick up points, again with a slightly narrower track. Attachment of the rear upper A frames to the chassis is by way of a removable bracket. No height adjustment is provided, but once the Avanti GT is complete, a different bracket can be substituted to lower the roll center or increase the rate of camber gain if deemed an improvement once ride height is finalized.



The C5 Z06 – 3.42 Differential, has been converted for use with a conventional open driveshaft, is suspended from .25" plates attached to the front and rear of the differential. The plates have welded cross members, with adjustable rubber mounts, encased in steel, bolted to the frame which will allow minimal deflection.



The structural backbone consisting of the transmission and driveshaft tunnel was fabricated with the two lower cords made of 1" X 3" X .125" rectangular tube that established shape and size of the tunnel in a horizontal plane. The two upper cords are made of 1" X 1" X .125" square tube, and established the height of the drive shaft tunnel at the rear, increasing in height in the transmission area. The shape mirrors the bottom cords, but is narrower, so that the sides taper in at the top. While the top is flat above the driveshaft, the additional height of the transmission and bell housing area required a domed top framed with the 1" X square tubing. The upper and lower cords were joined with 1" X 1" square tubing, and stiffening bridging is provided by .750" X .750" X .125" square tubing.



External 16 gauge steel sheeting, welded to all the framing components ensures that the backbone structure is extremely rigid. The top above the driveshaft and console area is removable, as further fabrication will be required to mount the console, shifter, and possibly the emergency brake in this area. Torsional strength is provided by three cross members, one welded in at the rear, a mid bolt in transmission mount, and an engine plate at the front of the transmission.



It was now time to weld all the modules together to create the chassis. Additional 11 gauge plating extends the central backbone into both the front and rear modules, flaring out to connect to the left and right frame sections. The sheeting was plug welded to additional diagonal bracing to improve torsional strength.

Then it was time to test fit the LS2 engine and 6L80 E transmission.



Unfortunately, despite measuring and checking numerous times, the huge transmission could not be raised high enough to provide the desired ground clearance for it's oil pan, which is about 2" lower than the engine oil pan. The contact area just behind the bell housing had a rib which was touching the cross framing of the transmission tunnel. Trimming both gained some clearance but not enough. Moving the engine forward 1" allowed both the engine and transmission to be raise an additional 1" to provide adequate ground clearance.

Everything was then dissassembled, to prepare for painting. The inside of the transmission tunnel was reconfigured, and the motor mounts were redone using the stock C6 Corvette mounts, swapped side to side. At the same time, the frame was modified to allow the stock Corvette air conditioner compressor to fit in the stock position, so that the serpentine drive belt could remain in the stock position, tight to the block on the harmonic balancer. Mounts for the mid engine plate also had to be relocated. At this stage the cockpit floors were added, as well as numerous brackets and mounts for such things as the bumpers, battery, gas tank and trunk floor.



The C6 Corvette sway bar mounts were also slightly repositioned.

Prepping the chassis for paint was done while the body shell was at the body shop for painting. It included rolling the chassis over to inspect, and redo any suspicious or missing welds, dress all welds smooth to the surrounding metal where possible, and fill others with spot putty and then prime paint.



Visible areas of the frame are painted 2006 Mustang Tungsten Gray (paint from my '66 Commander) with a semi-gloss clear coat. Unseen areas (and floors covered with Dynomat) are painted Krylon Smoke Gray Gloss. The underside of the floors and wheel wells will be painted with black bed liner.

With the painted body shell returning home, it is time to reunite it with the bare chassis, temporarily adding enough suspension to turn it into a roller, so it can move on to the upholstery shop.

(To be continued) Final Installment: The Wrap Up

Upcoming Events

Chapter Events/Meetings

April 23: CAO A meeting, details TBA.

As in previous years, CAO A will attempt to tie a meeting to an event. We are always looking for suggestions and/or meeting places, so please send in your thoughts to Steve Wohleber or Shawn Brockhoff.

AOAI Events

May 2 - 6: 2017 AOAI Meet in South Bend - 55th Avanti Anniversary.

See <http://www.sdcmeet.com/> for details. This also coincides with the SDC International Meeting.

SDC Events

April 22: Annual SDC swap meet at Badenoch, Ontario.

May 3 - 6: Into the Future – 53rd Annual Studebaker Drivers Club Meet.

Meet in South Bend. See <http://www.sdcmeet.com/> for details.

July 21 - 23 Pacific Can-Am Zone Meet in Calgary, Alberta. See

<http://www.studebakerdriversclub.com/eventsintlzone.asp> for details.

Other Club Events

Early June: Fleetwood Country Cruisin near London, Ontario. Details TBA

Housekeeping

- 2017 CAO A Membership Dues - If you haven't already paid your dues please send to our CAO A Treasurer David Moxam. Details for doing follow below in the section of Membership Forms.
- 2017 Avanti Calendars – They're Grrrreeeaat! If you haven't already purchased they may still be available through our CAO A Treasurer David Moxam for \$15.00 including shipping.

Miscellaneous

- ❖ **Collector's 700-car stash heading to auction** - If you've been looking for an obscure project car, we can think of few better places to find one than at this upcoming car [auction](#). Minnesota auction company [VanDerBrink Auctions](#) will sell off the collection of over 700 vehicles [Ron Hackenberger](#) has amassed over



the years. Everything will be sold at no reserve, and from what we can tell, even fans of the most unusual machines will be able to find something. Even with all the variety in Hackenberger's collection, one brand of vehicle does stand apart as a clear favorite. Among the man's 700 vehicles, 250 were built by [Studebaker](#). This likely has something to do with the fact that, according to VanDerBrink Auctions, Hackenberger's first car was a 1948 Studebaker. In the pictures of the collection, you'll find loads of Studebaker trucks, compact Larks, and stylish Hawks. He has at least one original, Studebaker-built Avanti, as well as some horse-drawn wagons and buggies from the company's early days. If you're interested in purchasing any of these vehicles, or even just taking a look at them, the auction event starts on Friday, July 14 at the collection in Norwalk, Ohio. That Friday is just a preview day, and the following Saturday and Sunday are auction days. And if you can't make it, you can bid online, or check out more photos and video at the [VanDerBrink](#) and [Hackenberger](#) websites.

Membership Forms for CAO A and AOAI

- Canadian Avanti Owners Association (CAOA) – CAO A membership forms can be accessed from the CAO A website at <http://canadianavanti.ca/membership.html>. Alternatively, a copy of the form is on a following page. Ownership of an Avanti (Studebaker or successor) is not required.
- Avanti Owners Association International (AOAI) – AOAI membership forms can be accessed from the CAO A website at <http://canadianavanti.ca/membership.html>. Alternatively, a copy of the form is on a following page. Ownership of an Avanti (Studebaker or successor) is not required.



Membership Application & Renewal Form

The A.O.A.I. welcomes anyone with an interest in Avanti vehicles and history. Annual Memberships receive four (4) quarterly issues of Avanti Magazine. Send a completed copy of this form along with payment in the form of a check or money order made out to "A.O.A.I." in U.S. Dollars to the address below.

<input type="checkbox"/> New Membership <input type="checkbox"/> Renewal	AOAI Membership C/O Cornerstone Registrations, Ltd., P.O. Box 1715 Maple Grove, MN 55311-6715 U.S.A.	Phone (763) 420-7829 Fax (763) 420-7849
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OR JOIN ON-LINE AT WWW.AOAI.ORG

Membership in U.S.:

Annual Membership (includes \$25 for a one-year subscription to Avanti Magazine)..... \$ 31.00

Special introductory rate for first-time members (includes one-year subscription)..... \$ 25.95

Special: Pay for five years, get a 20% discount. It's like getting the 5th year free!..... \$ 125.00

LIFE MEMBERSHIP: \$ 1000.00

Canada and foreign Membership:

Annual Foreign Membership (includes \$32 for a one-year subscription to Avanti Magazine)..... \$ 39.00

Special introductory rate for first-time members (includes one-year subscription)..... \$34.95

LIFE MEMBERSHIP \$ 1000.00

Museum Donation:

Studebaker National Museum Donation (\$5, \$10, \$25, \$100 or other) \$ _____

Total Amount: \$ _____

Check (enclosed) Mastercard Visa Discover Amex # _____ Exp. ____

Name: _____

Address: _____

City: _____ State/Prvnc: _____ Postal Code: _____

Phone: _____ () E-Mail: _____

Where did you learn about the A.O.A.I. ? _____

Date of Birth: _____ (Optional)

AOAI Member # (if renewal): _____ (from membership card or magazine label)

Year Avanti owned	Model (Example: "Avanti II")	Serial Number
1		
2		
3		