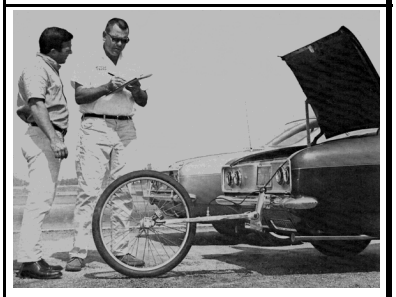
Newsletter of Lehigh Valley Corvair Club Inc.

the fifth wheel

MAY 2020 HTTP://WWW.CORVAIR.ORG/CHAPTERS/LVCC ESTABLISHED 1976

Inside this issue



No May Meeting due to COVID-19

LVCC intends to comply with the Governor's social distancing directives until the pandemic is deemed to be over. In the mean time, we wish our members the best of health.

The Fifth Wheel is published monthly by Lehigh Valley Corvair Club Inc. (LVCC), a chartered chapter for the Corvair Society of America. We accept articles of interest to Corvair owners for publication. Classified advertising of interest to Corvair owners is available free of charge to all persons. Commercial advertising is also available on a fee basis. For details, email our newsletter editor, Allan Lacki, redbat01@verizon.net.

The Great Transcontinental Electric Car Race

In 1968, students from California Institute of Technology competed against their rivals at Massachusetts Institute of Technology in The Great Transcontinental Electric Car Race.

The Caltech team, led by student and EV pioneer Wally Rippel, converted a 1958 VW Microbus powered by lead cobalt batteries provided by the Electric Fuel Propulsion Corporation of Detroit. Wally remained an electric car pioneer long after he graduated. Among other things, he worked for Jet Propulsion Laboratory on electric vehicle battery research, AeroVironment – a consulting company that was involved in designed the GM EV1, and Tesla Motors.

At the other end of the country, the MIT team converted a 1968 Chevrolet Corvair powered by NiCad batteries provided by Gulton Industries. Of the two entries, the MIT effort received far more support in terms of pieces, parts and equipment from industry although CalTech received some. The MIT team was led by Leon S. Loeb. Of course both teams had many other student volunteers and plenty of support from their professors.

The MIT team raced from Cambridge, Massachusetts to Pasadena, California, while the Caltech team raced in the opposite direction.

Recharging Stations. A network of 54 electric charging locations was set up in advance along the 3,311-mile route by the Electric Fuel Propulsion Company in a joint effort with the Edison Electrical Institute and local utility companies.

The charging stations were located at or near high-capacity power transformers owned and operated by the local utilities. They were selected to provide more than sufficient capacity to charge each car's batteries quickly as they rolled into each station. A typical charge required 45 to 60 minutes.

Chase Vehicles. Nevertheless, there was no assurance that the cars would be able to make it from station to station without a recharge somewhere along the way. And so, each team augmented their entries with chase vehicles equipped with on-board generators in case the cars' batteries didn't have sufficient juice to make it to the next station. The chase teams also carried backup drivers as well as spare parts for the journey.

Judges. In addition, each team was accompanied by a station wagon manned by a judge to keep things fair. The judges were responsible for assessing penalty points to the teams whenever they found it necessary to charge-up between the pre-arranged stations or when they required a tow.

Results. The race began on August 26, 1968, and ended on September 4. Although the MIT team reached the CalTech campus at Pasadena 37 hours before CalTech arrived at MIT, the MIT team was towed part of the way. After assessing penalty points, Caltech was declared the winner with a corrected time of 210 hours 3 minutes.

The MIT Corvair. MIT's entry was a then-new 1968 Corvair coupe that was converted to electric power. Modifications were extensive . An advanced-design electronically commutated motor was not ready in time, so the MIT team had to do with a conventional DC motor like those used on forklift trucks, but there was more to it than that.

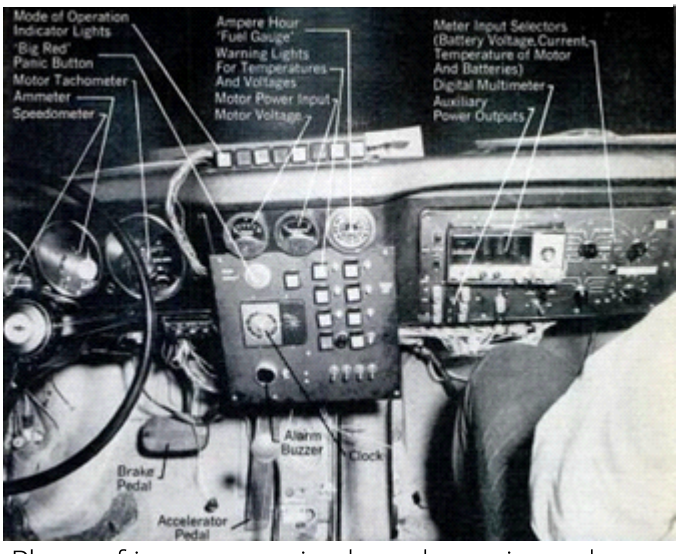
The MIT Corvair was developed in a rush and wasn't fully sorted out when the race began. It was beset with overheating problems that affected both the motor and the battery packs, especially during charging. And because of overheating, the batteries couldn't accept

(Continued on page 4)

the competition....

MIT s Electric Corvair. Photo Gallery

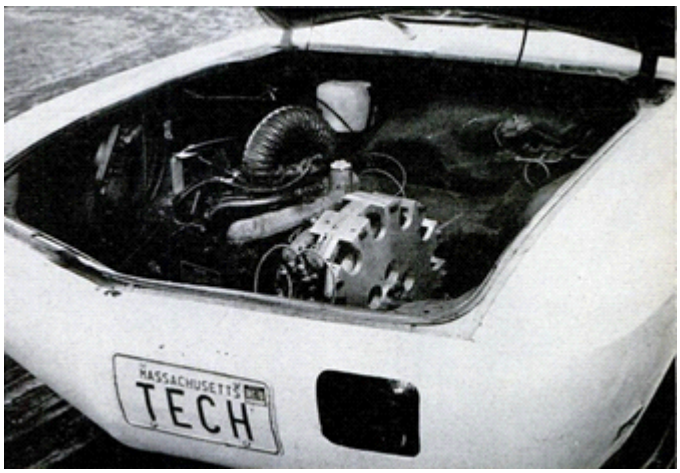
Waiting for the start of the Great Transcontinental Electric Car Race of 1968.



Plenty of instrumentation kept the navigator busy.

Electric utility linemen assisted both teams by charging up their battery packs from power lines.

Cooling the battery packs....with ice cubes!



For the 1970 Clean Air Race, the MIT Electric Corvair was converted to a hybrid with engine in front.

anywhere near a full charge.

On its trial run before the race began, the poor Corvair ran out of juice in just 17 miles and the electric motor overheated. The students attempt to fix the latter by fitting copper coils filled with recirculating water around the motor case. This helped but didn't completely cure the problem, so the crew resorted to throwing wet towels on the motor during charging stops.

Cooling With Ice. Keeping the batteries cool was more challenging. The Corvair was fitted with two battery packs; one in the trunk and one where the back seat would normally be. Battery pack cooling air was ducted from headlight cutouts, into the front battery compartment, through the interior of the car and then into the rear battery compartment, finally exiting through vents cut into the right side of the body. But it was not enough, especially when the car stopped to recharge the batteries. The solution was to pile ice cubes on the battery packs while charging – 350 pounds of ice cubes at a time.

Battery Charge. Even then, the batteries would not recharge to full capacity and this severely limited driving range until Gulton Industries, the manufacturer, recommended that the batteries should be recharged at one-and-half times their rated capacity– a risky proposition. But the procedure worked and the MIT Corvair was finally able to go from one pre-arranged charging station to the next without needed a boost in between. On one leg, they went 80 miles without a charge.

Snatched from Victory! From Buffalo on to California, the MIT Corvair made good progress and was actually beating the Cal Tech VW bus coming from the opposite direction. Then, disaster struck. On the final day of the race, in Newberry, California, the electric motor wiped out. The MIT Corvair had to be towed the rest of the way to the CalTech campus. Although it arrived at its destination hours before the CalTech VW reached the MIT campus, the MIT team incurred so many penalty points that CalTech was declared the winner.

Aftermath. After the race was over, Leon Loeb wrote several papers about the race and the electric Corvair.

Here's a little anecdote from Leon's son, David Loeb. "If you are wondering how MIT got the their car back to Cambridge, upon arrival in California the Secretary of Energy called my dad and asked for the car to be displayed the next week in the lobby of the DoE. Dad said that wasn't really possible for them due to exhaustion. They were told to drive out to the nearest Air Force base. When they got there a C-5 loaded the car and the whole team up for the flight back to the East Coast." Such was the esteem accorded by the government to the Massachusetts Institute of Technology!

This team of MIT students and instructors completely rebuilt their electric Corvair as a hybrid electric car for the 1970 Clean Air Car Race.

The 1970 Clean Air Car Race. The '68 Great Transcontinental Electric Car Race was followed by a much more ambitious event in 1970 Unlike the 1968 event, which had only two competitors, the 1970 event had more than fifty. It was an intercollegiate event that drew entries from technical schools all over the country.

The primary goal was to demonstrate that engineering students had the ability to build cars that would meet the then-proposed federal air emission regulations for 1975. Each car would undergo emissions testing three times along the route: in Cambridge, before leaving MIT, in Pasadena at the end, and in Detroit where more thorough testing would be performed at automaker labs.

Separate classes were established for the various kinds of technologies. Entries included not only electric cars but also hybrids and cars powered by turbines, propane, alcohol and steam. Winners in each class were selected using a complex mathematical formula heavily weighted toward emissions scores, but it took more than a clean engine and finishing the race to win.

Hybrid Conversion. The MIT electric Corvair made a return appearance for the 1970 event. It was extensively revamped by David Saar and William Carson; two students who were members of the original team in 1968. No longer a pure electric, it now sported a 30 horsepower Kohler gasoline engine which, in turn, drove a 12 phase 100 volt alternator developed by MIT. The drive motor was a 100 horsepower jet aircraft starter.

The overall winner was a 1971 Mercury Capri sponsored by Wayne State

University and powered by a more-or-less conventional 302 cubic inch Ford V8 engine. It ran on a special "sterile" blend of no-lead gasoline and was equipped with a catalytic converter, an EGR pump and extra tall gears. None of the exotics could outscore it.

But nevertheless, some of them won their respective classes. They included an LPG-fueled Chevy II entered by Worcester Polytechnic Institute, a methyl-alcohol fueled Gremlin entered by Stanford University, the turbine-powered Chevrolet entered by MIT, a scratch-built electric car built by Cornell University and electric hybrids entered by Worcester Polytech and the University of Toronto. The MIT Corvair didn't place in the standings.

So, whatever happened to the MIT Corvair?

Professor Schmerzler's Hybrid Corvair by Allan Lacki

Newark College of Engineering (also known as "NCE") was one of the several colleges that had high hopes for winning the 1970 Clean Air Car Race. During the Spring of '70, Professor Lawrence Schmerzler, Dr. Leonard Schaper and a gang of NCE students were hard at work converting a 1961 Corvair coupe to hybrid drive, much like today's Toyota Prius. They intended to enter it into the race and their effort was described in local newspapers at that time.

Professor Schmerzler was the director of this clean air project car. In an interview with a Daily News reporter, he claimed, "This engine will reduce air pollution by almost 90%. When we're finished, the nation will have a workable means to clean up its dirty air."

Dr. Schaper was also quoted in the papers. "The big cause of automotive pollution these days is that the engines are constantly accelerating and decelerating, forcing burnt air, leftover gas and carbon monoxide into the atmosphere at an alarming rate," Schaper said. "In contrast, our hybrid unit runs at constant speed and can be accurately adjusted to use minimum fuel and in turn create the smallest amount of exhaust", he explained.

The NCE hybrid Corvair was equipped with a rehabilitated 28 horsepower Harley-Davidson engine, an industrial battery pack, a surplus aircraft generator and a variable-speed electric motor. The motor got power from its battery pack, the generator or both, depending on demand.

Schmerzler, Schaper and the rest of the team expected the car to get at least 40 miles per gallon due to the efficiency of running the small engine at constant speed. When drawing current simultaneously from both the generator and the battery pack, the electric motor was capable of putting out 70 horsepower. Top speed was estimated to be 65 miles per hour. Another feature of the NCE Corvair was regenerative braking but it's unclear if the necessary electronics were ever installed.

It was an ambitious project built on a shoestring budget. Unlike MIT which received millions in funding from large multinational corporations, NCE catered to local manufacturers who preferred graduates with a practical working knowledge of engineering. Predictably, grants from outside sources were far and few between.

Professor Schmerzler attempted to obtain funds for the hybrid Corvair from the federal Department of Health, Education and Welfare but was turned down. The NCE Alumni Association kicked in a few bucks, but not enough. The NEC hybrid Corvair never made it

Dr. Leonard Schaper, all of 25 years old, working on the 1961 hybrid Corvair dreamed up by Professor Lawrence Schmerzler at Newark College of Engineering.

to the race.

Your editor was a student at NCE in those days and I vividly remember the hybrid Corvair sitting in one of the garages at the campus. Dr. Schmerzler was my thermodynamics professor and a very cool guy. He commuted back and forth between home and NCE in another Corvair - a 1968 or 69 Monza coupe. He was a real Corvair enthusiast and liked to talk about the hybrid '61 Corvair that he, Schaper and the students put together. I have long since lost track of him.

Dr. Schaper went on to have a very successful career in the electronics industry. I managed to catch up with him just this month and we exchanged emails. Here is what he wrote:

Hi Allan, Wow. That's a real blast from the distant past.

Larry and I worked on the Corvair hybrid along with a couple of students. I was an Instructor in Electrical Engineering, after getting my MS at MIT. We were going to put the car into the cross country hybrid/electric car race. We had basically no funding and tried to get donations of everything we needed.

The project was so long ago I barely remember it. I don't have any photos, let alone plans or specs on what we put together. But I do remember it was a series hybrid with, I think, a small motorcycle engine driving a generator, a few car batteries, a motor control system, and an electric motor driving the rear wheels.

What I do remember is our first test drive, and something blowing up while we were on Lock Street, and having to push the thing back to the physical plant garage.

We never made it around the block, let alone to California. It was a dismal failure, which may be why my memory of the escapade is so dim.

I don't remember what year and model our Corvair was, but I do remember we replaced the back seat with batteries and the motor control system on a hinged aluminum panel that folded down. I think the engine and generator were in the front.

I realized from the experience that we needed a lot more manpower, money, and expertise if we would ever have a chance of success.

But I still love hybrids. I had a Prius for 10 years, and replaced it with a Hyundai Ioniq. I'm getting 50 mpg here in Florida.

Thanks for bringing up an old memory.

FYI, my career after that was much more successful. After getting my Dr. Engineering Science at NJIT, I taught there for a few years. Then, I spent 12 years at Bell Labs, working in microelectronic packaging and corporate planning. My final 18 years were as an Electrical Engineering professor at the University of Arkansas, where I ran the High Density Electronics Center. I'm on 23 patents and a couple of hundred publications. I'm an IEEE Life Fellow. A lot of fun, and not bad for a guy who couldn't get a homebrew car around the block.

The Corvair was a neat car, regardless of what Ralph Nader said.

Sources for Both Articles:

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1970 Clean Car Race: How College Teams Helped Bring About Emission Limits on New Cars (and Show Up Detroit) After the First Earth Day, by Eric C. Evarts. Posted April 22, 2018. Green Car Reports website. https://www.greencarreports.com

Clean Air! Clean Air! Rah! Rah! Rah! Dispatch from the College Clean Air Car Race of 1970, by Bill McCarty. Automotive Fleet website. Posted November 1, 1970. https://www.automotive-fleet.com

Emails between Dr. Leonard Schaper and Allan Lacki. April 16, 2020.

A Low-Pollutions Converted Corvair. The Herald-News, Passaic, New Jersey), June 24, 1970, Page 7.

This Li'l Engine Can Lick Smog, Sez Prof, by Patrick Clark, Daily News, New York, New York. August 2, 1970, Page 258.

LVCC Club News

Fred Scherzer, LVCC VP and all-around good guy, was sidelined this month. He was taken to Doylestown Hospital for triple-bypass surgery and heart valve replacement. Please send a card or email to wish him well. Here is his contact information.

Mr. Fred Scherzer
1885 Gravel Pike
Perkiomenville, PA 18074
jukeboxman@comcast.net

Nancy Moyer, Jerry's wife, is recovering from a bout with pneumonia. I'm sure a get-well card would be appreciated. Here is the address:

Mrs. Nancy Moyer
7110 Jasper Street
Navarre, FL 32566

Dennis Stamm, our club President, is spending his COVID lockdown time by refurbishing yet another Corvair. Aside from a new headliner, it's just about ready for sale to some lucky buyer.

Curt Stone and Wes Heiss have Corvair stuff for sale. Check our classified ads for more information.

On May 15, Paul Bergstrom and Mike Hall at CORSA headquarters in Minnesota drew the winning raffle ticket for possession of a very nice 1965 140 / Powerglide Monza coupe. The lucky winner is Jamie Reinhart. The proceeds from the auction exceeded $30,000 and will go a long way toward maintaining the Corvair Museum in Glen Arm, Illinois, on old Route 66 just outside of Springfield.

The Northeast Corvair Council, also known as NECC Motorsports, is going forward with a day of high performance driving at New York Safety Track in Jefferson, NY. The date is June 13. NECC will be implementing special social distancing rules to combat the spread of COVID-19 at the track. New York Safety Track is currently open for business. LVCC is an NECC member club and is represented on the NECC Board of Directors.

Hi! Larry Ascheuer and I (mostly Larry) have been hard at work on Dennis Weaver's van, and it is nearly ready for a road test ride. It runs and drives, has gotten all new brakes, lines, hoses, tires, new gas tank and a long list of other little things. I'll try to put together a story. In the mean time, here is a picture:. Bob Weideman.

From Hemmings.com By Jim Koscs, May 13, 2020 at 9:00 AM

The half-century lineage of mid-engine Corvette teasers was on display at this year's Amelia Island Concours d'Elegance in March.

Among the group, and even among rotary-engine 'Vettes, the Chevrolet Engineering XP-819 had long seemed to be an outlier due to its rear-mounted, not mid-mounted, V-8. The XP-819's recently completed restoration by Corvette Repair in Valley Stream, New York, has confirmed, however, that this car was a critical link in the Corvette's evolutionary chain. Photo credit: GM

Unusual Options for Your Corvair 95

While looking for directions for the clock he had bought for his Greenbrier, Rich Greene found these instruction sheets for installing other rare factory accessories for Corvair cars and trucks. Thank you Rich!

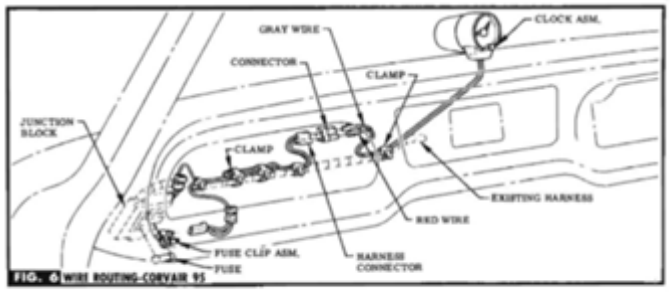

FIG. 4 WIRE ROUTING-CORVAIR 95

STEP 5 INSERT CABLE INTO 3-WAY CONNECTOR & PLUG IN CLOCK WIRES, MATCHING COLORS. SEE FIG. 5, 6, 7, OR 8. NOTE: (ON TRUCKS WITH RADIO) Route clock wires over edge of speaker. See Fig. 5 or 8.

STEP 6 ROUTE CABLE WITH EXISTING HARNESS TO JUNCTION BLOCK & ATTACH TO EXISTING HARNESS WITH PROVIDED CLAMPS. SEE FIG. 5, 6, 7, OR 8.

Here's how you in install a clock on the dashboard of your Corvair 95!

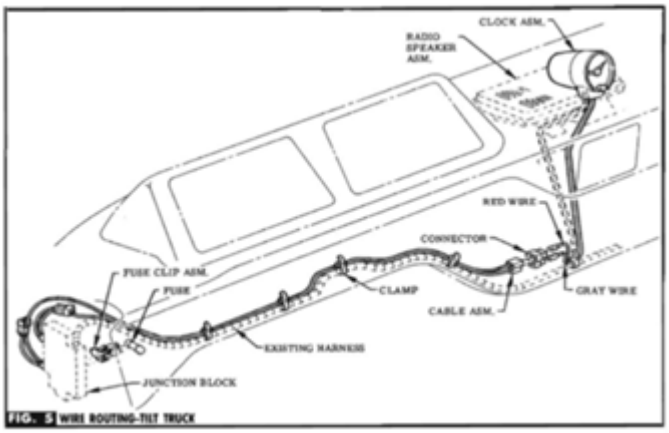

FIG. 5 WIRE ROUTING-TILT TRUCK

The same clock kit could be installed in any of the heavy-duty tilt-cab trucks offered by Chevrolet.

985359
CHILD BED INSTRUCTION SHEET
CORVAIR 95 GREENBRIER

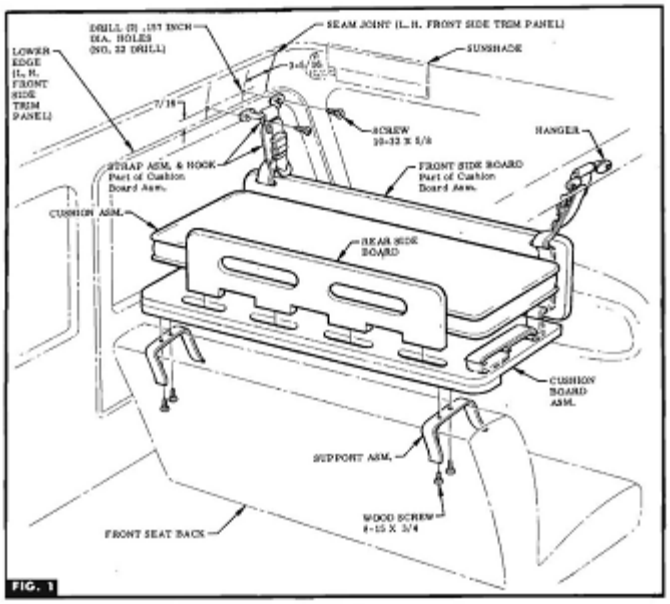

FIG. 1

STEP 1 LOCATE, CENTER PUNCH & DRILL HOLE IN L. H. & R. H. FRONT SIDE TRIM PANEL. USE STRAP HANGER AS TEMPLATE TO DRILL REMAINING HOLE. SEE FIG. 1.

STEP 2 INSTALL HANGER TO L. H. & R. H. TRIM PANEL WITH SCREWS. SEE FIG. 1.

STEP 3 LOCATE TWO HOLES IN EACH SUPPORT BY PERCHING THRU VINYL SLEEVE WITH AWL & INSTALL SUPPORTS TO CUSHION BOARD (PILOT HOLES PROVIDED) WITH SCREWS. SEE FIG. 1.

STEP 4 INSTALL CUSHION BOARD IN POSITION OVER TOP OF FRONT SEAT. SEE FIG. 1.

STEP 5 HANG HOOKS INTO HANGERS & ADJUST EACH STRAP SO THAT CUSHION BOARD IS HORIZONTAL. SEE FIG. 1.

STEP 6 PLACE CUSHION ON CUSHION BOARD & INSERT REAR SIDE BOARD INTO SLOTTED HOLES IN CUSHION BOARD. SEE FIG. 1.

Child Bed Instruction Sheet for your Greenbrier. Not to be occupied while vehicle is in motion!

985300-985314
ROOF LUGGAGE CARRIER COVER INSTRUCTION SHEET

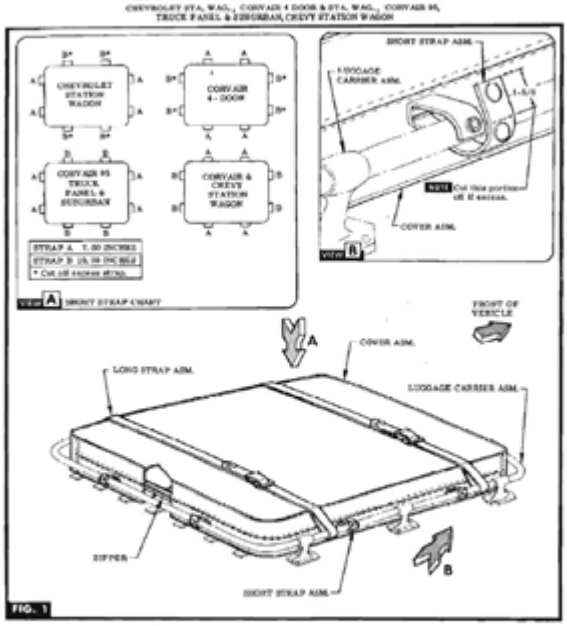

FIG. 1

STEP 1 PLACE COVER ASM. INSIDE ROOF LUGGAGE CARRIER ASM. WITH SHORT STAPLED STRAPS (SHOWN) ON LOWER HALF & ZIPPER FACING TOWARD REAR & RIGHT SIDE OF VEHICLE. SEE FIG. 1.

STEP 2 PLACE TOP END OF SHORT STRAPS ON TOP OF RAIL ASM. & FASTEN WITH BUTTON DESIGNATED. SEE VIEW A.

STEP 3 STRAPS THAT HAVE TWO BUTTONS ON ONE END & WHEN INSIDE BUTTON IS USED, CUT OFF OUTSIDE END BUTTON TO DIMENSION SHOWN. SEE VIEW B.

NOTE: USE SHORT STRAPS TO SECURE COVER ASM. ONLY, USE LONG STRAPS TO HOLD DOWN LOAD. SEE FIG. 1.

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Roof Luggage Carrier Cover. To be used with the luggage rack on any Chevrolet car or truck.

Classified Ads

LVCC Member Curt Stone is offering up this beautiful 1965 Corvair Monza convertible. 110 with a 4 speed. 4 new tires and serviced at the Ranch last year. Runs great. Curt bought it from the original owner in Erie Pa.. It has just over 48,000 miles on it. Asking $9,500.. Cherry Hill, NJ 201-776-8328 cwscurt@gmail.com

LVCC Member Wes Heiss writes, "I am cleaning up a bit and have a few parts I'm looking to pass on for free. A pile of decent 66-69 Monza hubcaps, two serviceable 66 Monza door panels in bright blue and an FC gas tank (recoated by the Corvair ranch). Would anyone in the club be interested?" The parts are located in Allentown. You can contact Wes by phone at (713) 446-7910 or by email at wes.heiss@gmail.com

Clark's Corvair Parts® Update

Clark's Corvair Parts re-opened Monday May 11 with a limited staff with 2 phones for orders & limited people for shipping. No rush orders, no tours until at least August. (413)625-9776 http://www.corvair.com

Calendar of Local Events

CORONAVIRUS UPDATE! If you plan to attend any of the events below, please contact the organizers to see if they are still "on". Almost of all the listings include contact information, so give 'em a shout.

Sunday, May 24, 2020 :::: 27th Annual Lake Lenape Jamboree Car Show
Location: Lake Lenape, entrance on Constitution Ave, Perkasie, PA 18944. Time: 9:00 AM to 3:00 PM EDT. Price: $15 Pre-Registered / $20 Day of Show. Rain or Shine. Dash Plaques for the 1st 100 cars. Trophies, vendors, Chinese auction, DJ. goodtimemotorvators@yahoo.com

RESCHEDULED to June 17 - 20, 2020 :::: Spring Carlisle
Location: Carlisle Fair Grounds, 1000 Bryn Mawr Road, Carlisle, PA. Admission: Daily Wed- Sat: $12. Sunday: $7. Event Pass: $35. Kids 12 and Under Free. Event Hours: Wed- Sat: 7AM- 6PM. Sunday: 7AM- 12PM. Spring Carlisle is one of the largest automotive flea markets in the world and one of the best opportunities to get your hands on all things automotive. With 8,100 spaces of vendors selling a vast array of automotive parts, accessories, cars, collectibles and memorabilia, it's almost certain that you won't go home empty handed. https://carlisleevents.com/events/events-detail/index?id=spring+carlisle

Sunday June 21, 2020 :::: 34th Annual Father's Day Rod Run
Location: Oley Fairgrounds, 477 Main Street, Oley, PA 19547 (enter on Jefferson Street). Time: 8 AM to 3 PM. Price: $15 day of show. Rain or shine. All show cars and trucks welcome. Dash plaques to first 200 vehicles. Door prizes, vendor spaces, raffles, games, NSRA safety inspection, etc. Contact Rick @ 610-678-3948 or Fran @ 610-944-5515.

Sunday June 21 2020 :::: 18th Annual Silver Creek Father's Day Car Show
Location: 2943 Route 212, Springtown, PA 18081. Time: 8 AM to 3 PM. Rain or shine. Price: $10 day of show. Food, entertainment, 50/50. Voting 12:30 to 1:30 PM. Trophies at 2:30 PM. (No Corvair class). SilverCreekAA@gmail.com. Www.silvercreekathleticassociation.com

Friday through Sunday, July 31 through August 2 2020 :::: Das Awkscht Fescht
Location: Macungie Memorial Park, 50 Poplar St, Macungie, PA 18062. Pre-registration required! Deadline: July 1. Price: $15 per car per day. Das Awkscht Fescht is a three day automotive festival featuring cars, flea market, music, arts and crafts and entertainment for the entire family at beautiful Macungie Memorial Park near Allentown. On Sunday, LVCC participates in club day joining 40 other marque car clubs for a day of fun and fellowship. For a registration packet: Randy Kohler, 3010 Woodlane Ave, Orefield, PA 18069. Phone 484-239-2067. Email rjkvair@aol.com. Website https://awkscht.com

Sunday August 9, 2020 :::: 44th Annual Collectors Car Show & Flea Market
Location: Macungie Memorial Park, 50 North Poplar Street, Macungie , Pennsylvania 18062. Registration begins 8 AM. Show time: 10 AM to 3 PM. Price: $15. All makes, models and years welcome. 50 trophies, top 35 and 15 special awards. Independent judging. Auto and household flea market. Dash plaques to first 250 cars. Food. 50/50 drawing. DJ. (610) 227-5312 1stpamustang@gmail.com gbaxter34ford@gmail.com http://www.firstpamustang.org

RESCHEDULED to Saturday September 26, 2020 :::: 34th Annual NNL East Model Car Show
Location: Wayne PAL Building, 1 PAL Drive, Wayne, NJ 07470. Time: 9 AM t 4 PM. Model car show, scale marketplace and cottage industry expo. Presented by the Tri-State Scale Model Car Club. This year's theme: Known Survivors - Original old customers from our youth. www.nnleast.com

LVCC Officers

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