



# VintageVoice

July/August 2021

Volume 46 • Number 4

The Vintage Volkswagen Club of America Newsletter • Established 1976

## 45th Anniversary Issue



# Welcome

**W**elcome to the latest edition of Vintage Voice.

Our most ambitious and jam-packed issue ever! As you turn the pages of this edition, you will notice a few changes throughout which allow us to bring you more content than ever. We hope you like the redesign, let me know what you think!

Speaking of content, now that events are back in action, I'd like to invite all of you to submit your event coverage for publication here on our pages! If you're up for telling the story of the event you attended or hosted, and you have a nice selection of photos to accompany the story, please let me know. Our readers would love to attend vicariously.

In this issue, Project 1385 is back in full swing as Jake begins assembly of the subject engine, and describes the intimate details involved therein. Fish Head Louie goes out to buy a bicycle, and comes back with a Bus. Lois Grace reflects on learning to drive a stick shift, and I break down how to install a fresh modern speaker in your original Bay window dash speaker bracket, and more. When I said this was our most packed issue EVER, I wasn't kidding!

Are you ready? I'm ready.  
Eric Arnold, Editor  
[editor@vvwca.com](mailto:editor@vvwca.com)



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website: [www.vvwca.com](http://www.vvwca.com)

Membership information is available on our website. Please visit [www.vvwca.com](http://www.vvwca.com) for details.

The VVWCA is a registered non-profit organization. All positions are volunteer.

The Vintage Voice is published bi-monthly: Jan/Feb, Mar/Apr, May/Jun, July/Aug, Sept/Oct, Nov/Dec.

**Member's Only Area E-Edition**  
The electronic version can be found at [www.vvwca.com](http://www.vvwca.com) in the Members Only section.  
**If you haven't already, please go to [vvwca.com](http://vvwca.com) and register for your free membership!**

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Eric Goodman  
[president@vvwca.com](mailto:president@vvwca.com)

**Editorial Guidelines:** To help you start writing, please use the following word counts to determine the type of article you will submit. Letter to the editor: 500-699 words. Monthly column: 750+ words. Pictures (2-3) may be included in a 700-800 word column. Feature story: 1000-1500 words, plus up to 10 digital photos. Send to:  
[editor@vvwca.com](mailto:editor@vvwca.com)

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# VintageVoice

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Cover photo by Eric Arnold

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Plan to attend your next VW show or camp out!

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After a bit of a detour with "Project 1385" where we made a pit stop to go over my experiences with performance engine coatings, we are now back underway, and will begin engine assembly in this installment of "Project 1385"...



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In late 1941, the famous VW Schwimmwagen Type 166 came into mass production, to become the most numerous amphibious...

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**29**

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Motor Vehicle Company  
The official account of the Vintage Volkswagen Club of America, founded 1976.  
Please tag us #VVCA.  
[www.vvca.com/](http://www.vvca.com/)



**24**

# The Podium with President Eric Goodman

Dear VVWCA Members,

2021 is our 45th year as an organization. This month marks our incorporating back in 1976. The main reason I got involved was the great history the VVWCA has. It always had a great reputation and has always been respected by the VW community. I am very proud of our leadership past and present. Not many all-volunteer organizations last 45 years. All the presidents before me and I am sure after, have lead the organization because of their passion for VWs and its community. All the board members and officers feel the same way. We have an amazing group of leaders nationally and with each of our chapter clubs. Our chapters are the fuel of the organization and they drive all the events functions across the USA.

As you can see, we are starting to have some of our major events again this year. Some are also celebrating decades of tradition. We also have many new chapter clubs who have great new events planned for this year. Watch our Facebook page and the clubs page's for more information. I also, want to thank all our chapters for everything you do and have planned to get the VW community back driving again, after the year we all had last year. We are all getting through this together.

Lastly, I want to mention the amazing articles we have had from Jake Raby, our Chief Technical Director. If you have read any, you know how in-depth they have been and the wealth of information he has been sharing. These articles are worth way more than the cost of membership. If you were paying Jake's company for information like this, it would cost you thousands of dollars. I can't thank him enough for supporting our organization and members. Jake and his company are a great example of how a very successful business in our industry is giving back. We have many great companies supporting our efforts to keep the VW hobby alive.

And as always, big shout out to our Editor, Eric Arnold for another AMAZING Vintage Voice and the amazing cover shot last issue to celebrate and honor Bruce Meyers.

Thanks,  
 Eric L. Goodman  
 President, Vintage Volkswagen Club of America  
 President@vvwca.com



# The Historian's Corner by Heinz Schneider

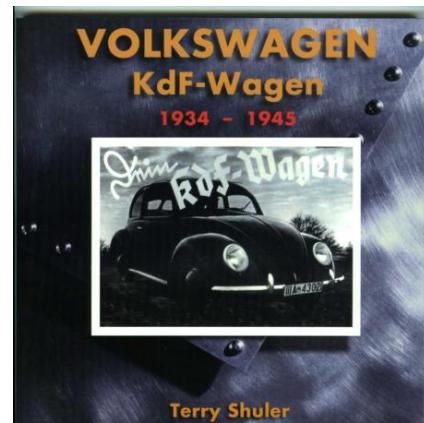
## VOLKSWAGEN IN 1954

### MORE VOLKSWAGEN POWER TO THE PEOPLE

**V**olkswagen in the US: The Volkswagen export department in Wolfsburg was really not too keen to divert cars to the US. Worldwide demand for their cars was such that they were afraid to not have enough cars to go around. However, Nordhoff was very impatient and wanted to sell his cars in the US, especially since an increase in production in Wolfsburg was imminent. He had tried to enter the US market since 1949. After the underperformance of the up to now official importer Hoffman in New York, he insisted to get VW's own organization started just as he had successfully started in Canada in 1952. On a visit to Canada, he was very impressed by the VW owned organization. In a country with a much smaller population than the US they sold more cars. After having sent a first representative from Wolfsburg to set up an official office in San Francisco on the west coast in late 1953, now in April 1954 another man was sent to take care of the eastern part of the US. He set up his office in a two-bedroom suite at the St. Moritz Hotel in New York operating under the name "Volkswagen United States" to take care of the remnants of the Hoffman organization and eventually of the whole US. I thought it was interesting to see that the VW export department sent a man to the US who spoke little English and had no selling experience. Maybe they were trying to slow down the US expansion despite Nordhoff's wishes. However, the new man, an ex-fighter pilot, did apparently take his job very seriously and in short time had set up many distributors and dealers. Some of these new dealers had previously received cars from Hoffman. Stuart Perkins who years later was put in charge of VWoA for its most successful 26 years in the US would later comment that during the early years anyone who ordered three cars could become a VW dealer. Many Americans having traveled to different parts of the world noticed these strange looking cars, the Beetles, and became aware of their success and the long waiting lists for them, generating their interest in becoming dealers. Service station operators,

motorcycle shops and even a clothing store owner were the first ones to sign up. And so it went, and it went quickly. In 1954, 15 distributorships and 136 dealers were established and sold 6,343 Beetles plus 271 Transporters for a total of 6,614 units, compared to Hoffman's 1,013 in 1953. What really made a lot of difference, and most likely contributed to its recent success was that now only the Deluxe/Export Beetles were imported with their more attractive looks and a partially synchronized transmission, unlike the austere looking ones with their unsynchronized ones requiring double-clutching to down shift gears which Hoffman had to sell. As well, the price was now reduced to \$ 1,495 POE east coast, from previously \$ 1,750. Convertible price = \$ 1,995.

In other countries: Production of Volkswagen begins in Clayton, Australia having 100% Australian content begins. 1,746 Beetles and 299 Transporters were built the very first year. Belgium importers set up an assembly plant to assemble about 100 Beetles a month. Belgium eventually became the largest European market for Volkswagen in 1954, with 53,000 VWs



**VOLKSWAGEN  
Kdf-Wagen  
1934 – 1945**  
By Terry Shuler

The story of design and development of the world's most recognizable automobile, including the prototypes and early production models is told with large historic photos and text by Terry Shuler.

Included are photos of prototype production and rigorous testing program before the war and the many wartime models and modifications to Hitler's Strength Through Joy car. Exclusive Porsche family insider photos never previously published are also contained. The book concludes with the British Army's restarting of the makeshift VW assembly line in the bombed out Wolfsburg factory in occupied Germany. A must for any VW enthusiast or automotive history buff. Almost sold out!

Softbound, 150 pages, 138 photographs. \$25.00 Shipping included worldwide. Send your check to: Terry Shuler 1120 Lloyd St., Nanty Glo, PA 15943

registered. Another assembly line was set up in Brazil, in what was described as a shed, starting to produce Transporters. An independent company assembled Volkswagen cars in Ireland. Imports to Mexico began. In November, the Mexican Volkswagen importer arranged for seven Beetles to participate in what was known as the world famous 2,000 mile "Carrera Pan America Race". While better-known and more popular cars participated, it was the Beetles that received most of the world's media attention. All seven participating Volkswagen Beetles finished without having to add any oil, or needing any repairs. An interesting attention getter was that all Volkswagen engine lids were sealed at the beginning of the race to demonstrate the Volkswagen reliability. None of the seven cars had even a flat tire. It was a sensational demonstration, especially in Mexico where many had considered the Volkswagen to be a lightweight and not up to the tough Mexican road conditions. As I have mentioned many times before many people in the Volkswagen organization have taken credit for the great success of the Volkswagen but in my opinion, it was the car that sold itself.

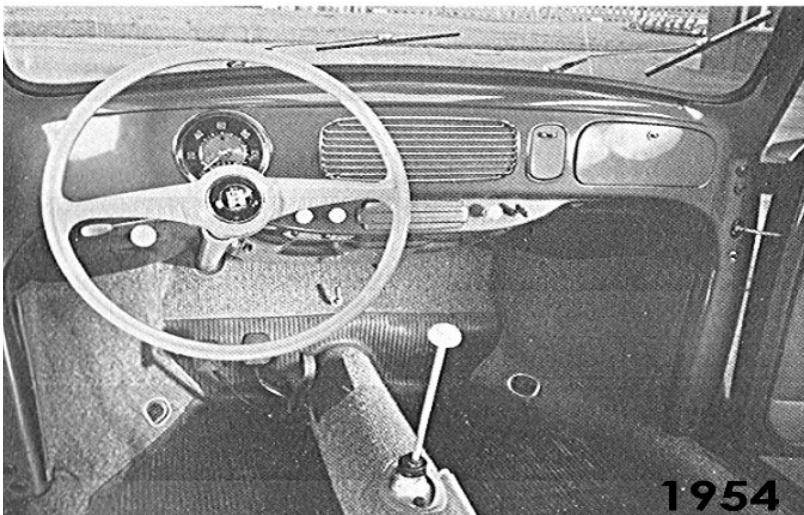
Volkswagen was getting attention at the international level. The February 15 "Time" magazine published an article on the recovery of Germany with Heinrich Nordhoff on its cover. One interesting conclusion by Time: "At a time when other European nations were leaning towards socialism, Germany preferred free enterprise. Its chief ingredient: hard work". A saying in Germany was: "Others work to live, the Germans live to work." That was then.

In 1954, after the Volkswagen had reached a very high level of quality, Nordhoff felt free to talk about the Volkswagen as he found it in late 1947. In a speech to reporters at the opening of the Geneva Auto Show in Switzerland in 1954, he talked about the quality of the Volkswagen in 1948: "Its engine had a life of only 10,000 miles and a noisy death rattle right from the start." Another observation he had made years before but never had been made public, was that the Volkswagen, despite the general belief to the contrary, was a very expensive car to build. It had taken Nordhoff years to get the quality under control. Many have made the claim that Volkswagen was the most tested car and the Porsche Company had improved the final design throughout all the years since 1938. But it was really now, under Nordhoff, that the car finally reached a level of quality that had unjustly been



claimed before. To get it where it was now, some of the original parts, as Nordhoff admitted, had to be redesigned 10 times or more. Only the original shape and general concept remained. Nordhoff, in his own original and in an understated double meaning way expressed it like this: "The unusual Porsche design lent itself to be a perfect subject for continuous improvement". It needed it! With all the success, Nordhoff was in his element and as many Germans like to do, he started to lecture: He told Americans, "that the future lies in the small car. American cars have ten times more power that cannot be put to any use and thus violates every principle of engineering and technical science." Nordhoff thought with his Volkswagen he could change car buyers buying habits and attitudes all over the world.

By 1954, all the quality improvement work done by Nordhoff and his engineering staff started to pay off as demonstrated by the second and last 100,000 km meetings, after the 1952 first one. Volkswagen owners and their cars having over 100,000 km without major repairs to their engines were invited to a large meadow outside the city of Stuttgart on July 10th to receive their Swiss gold watches and official certificates and 18,000 people showed up with 4,500 cars. These gatherings were getting out of hand and giving out all these gold watches was getting too expensive



and was too much effort to organize. Volkswagen had made its point; the engines were now very reliable. It was time to move on, besides that; engines needing repairs could be exchanged for rebuilt ones for as little as 500 marks in Germany, which was about US \$120 at the time.

Even though the engines had reached a high level of reliability as demonstrated with the before-mentioned gold watch-gatherings of the 100,000 km cars, Volkswagen went one step further and had started to produce a new and much improved engine as of December 21 1953, starting with engine # 695 282, first installed in chassis #1-0575 415. 5,415 of these new engines were produced in December of 1953.

The new engine increased displacement from 1131 cc, which it had since 1943, to 1192 cc. This small increase was accomplished by increasing the bore by 2 mm from 75 to 77. Stroke remained the same at 64 mm. Taxes on cars in Germany were based on engine displacement in increments of 100 cc, the main reason engine displacement was kept below 1200 cc as to not move into a higher tax bracket. However, no matter how small the increase was, in conjunction with other changes, in addition the compression ratio was increased to 6.1 and later to 6.6, from 5.8. The increase in power was clearly noticeable to anyone who drove a car with this new engine. The actual DIN horsepower had increased to 30. In SAE hp the increase was from 30 to 36. The new engine not only was more powerful but it sounded more powerful too. With its two chrome pipes coming out the rear it almost sounded like a Porsche. At least that is what many enthusiasts imagined. Other changes to the new engine included the use of a vacuum advance for the ignition timing. A larger carburetor and the aluminum jacket around the

pre-heater pipe that was attached to the intake manifold were enlarged to eliminate the bothersome icing at the same time the cooling fins of the cylinders and the cylinder heads were enlarged. Cars built between January 1st and December 31st of 1954 had chassis numbers 1-0575 683 to 1-0781 884. Engine numbers were from 695 282 to 954 526. Total production in 1954 reached 242,373 with an average of 769 per day. Of this total, 108,839 were Type 2 and 4,740 four-seater Karmann convertibles, which included the convertibles for the police. Volkswagen employed 25,652. - 9.5 cars were produced per employee compared to 6 in 1950 and 8.7 in 1953 another indicator of improvements in efficiency.

#### **Important Volkswagen dates in 1954**

July 10th: Second meeting in an area near Stuttgart took place of cars with 100,000 km without major a repair. 4,500 cars showed up.  
October 9th: the 100 000th Transporter produced and a decision was made to build a new Transporter plant.

#### **Colors used in 1954**

L35 Blue Metallic, L41 Ebony Black, L73 Chestnut Brown, L213 Island Green, L227 Strato Silver, L271 Texas Brown, L275 Light Beige, L276 Ultra Maroon. For standard models L37 Medium Blue and L225 Jupiter Gray. For hubcaps, bumpers and other small, usually chromed parts on export models, the metallic paint Silver Gray L226 applied.

#### **Important Volkswagen events in 1954**

On February 15, Time Magazine had Heinz Nordhoff on its cover of a special edition about Germany.

#### **Changes in 1954**

January: Dipstick had a ridge for better seal on tube and a handle shaped loop for a better grip starting with 1 0 591 433.  
February: Production Date of oil cooler now placed on the bottom from 1 0 598 795.  
March: Fuel filler cap now galvanized from 1 0 611 493.  
May: From 1 0 645 501, Instead of four bolt now only two bolts to hold brake cylinders. From 1 0 656 098 four lubrication grooves instead of the previous three for front suspension arms. From 1 0 659097 more

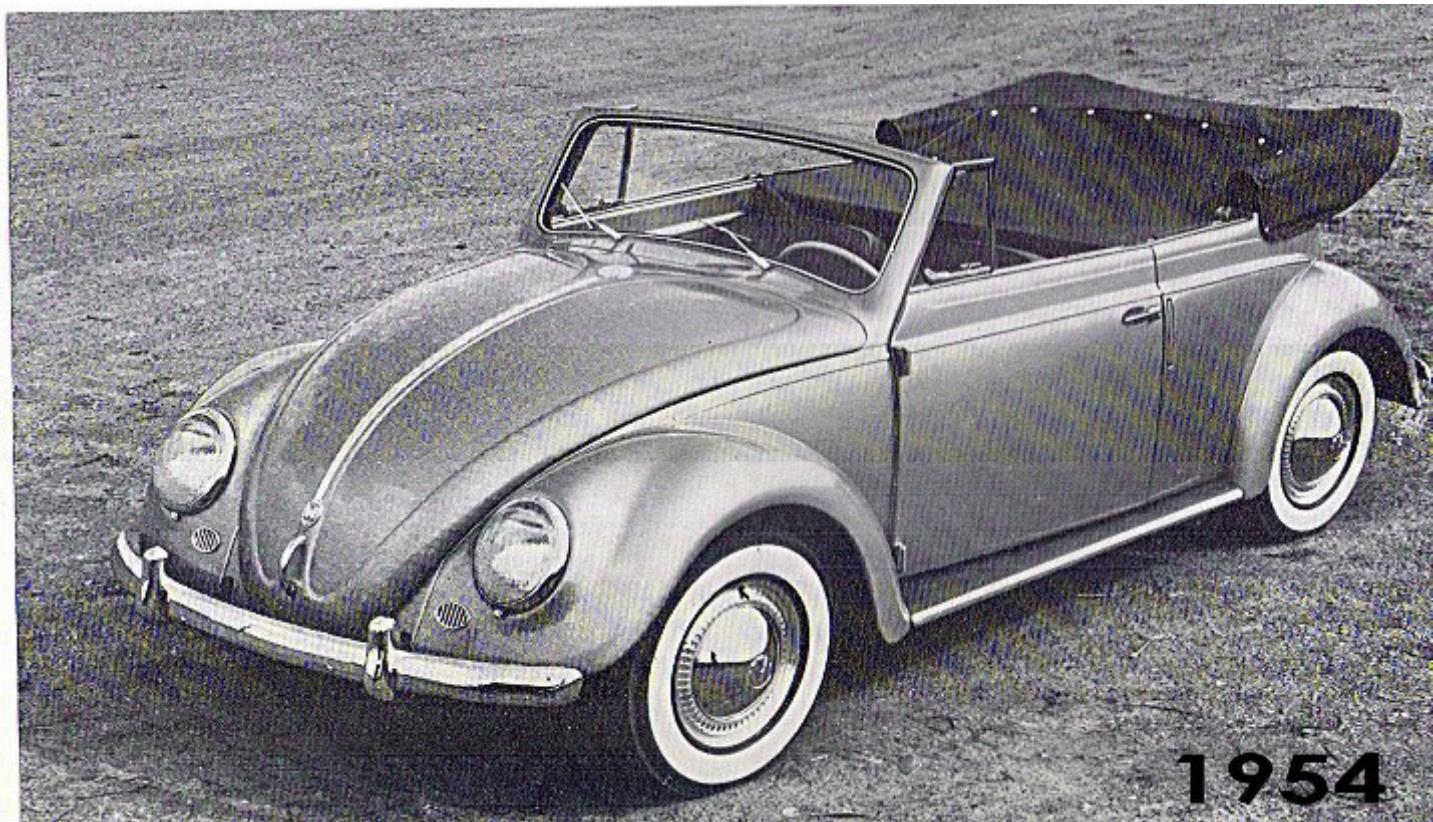
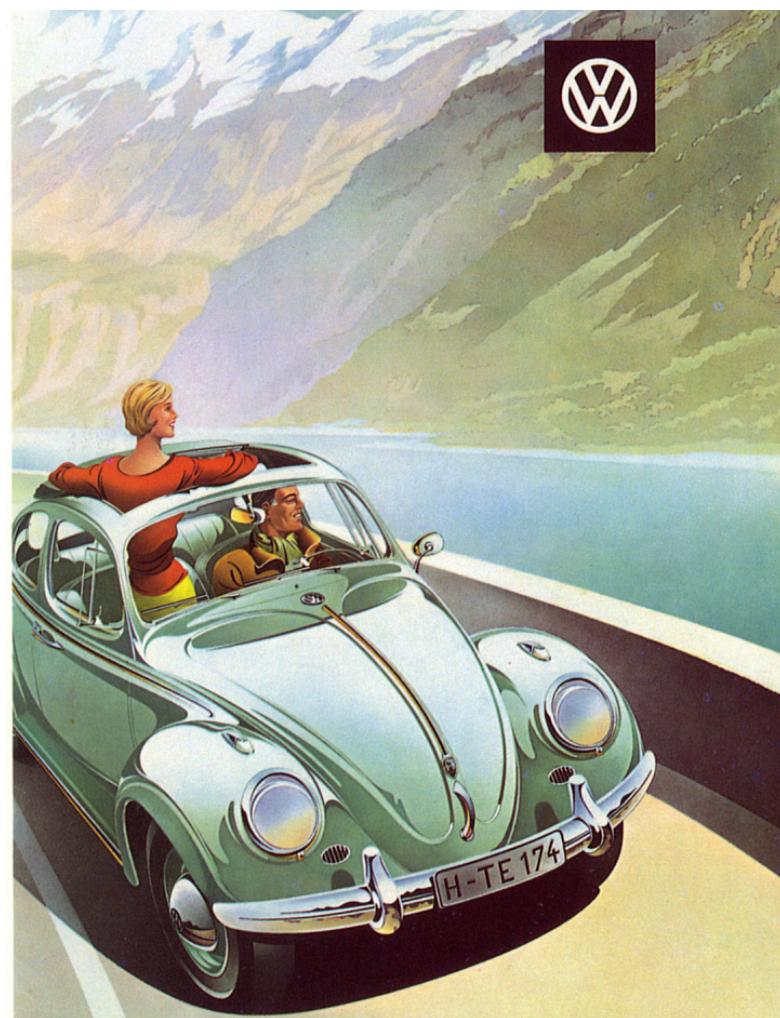
heat resistant intake valves used. From 1 0 660 000 Frame head welding procedure changed for additional strengths. Convertibles painted now form 1 0 652 823 on with backed enamel instead of lacquer. August: Compression ratio increased from 6.1 to 6.6 by using flat pistons starting with 1 0 702 742 also carburetor main jet size increased from 117.5 to 195. At the same time float made out of plastic introduced. November: Starting with 1 0 753 096 fan and pulley now balanced to minimize vibrations.

Up to WWII, the German car industry played only a minor role in the world car markets but in 1954 Volkswagen alone produced more cars than the entire French car industry. Volkswagen became the fourth largest producer of cars in the world, behind GM, Ford and Chrysler.

In 1954 Road & Track published two reports about the Volkswagen Beetle, both very positive. Summing up, they considered "the Volkswagen the most amazing and versatile car in its class, perhaps the VW is like the model T Ford. "It has its faults but we love them". These were very prophetic words written in 1954.

Wolfsburg factory for the first time paid a year-end bonus to its workers of about 4% of their yearly wages.

VintageVoice



# Upcoming Events

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**Event info as of May 1st, 2021**

**Contact show organizers/websites for the latest updates.**

**July 10, 2021 (rain date July 11)**

## 16th Annual Euro-American Auto Show

**Yardville, NJ**

Open to all other foreign and American autos and cycles. It is held on grass with shade trees and picnic tables available. Proceeds benefit the club's high school student scholarship fund.

Contact information: Trenton Donauschwaben, 609-585-1932

**July 10, 2021 (rain date July 11)**

## Deutsche Classic

**Oley, PA**

All-German automotive & motorcycle event, welcoming vintage, classic and late model German vehicles.

Rain or Shine. Gates open 8am to 4pm (7:30am for vendors)

Pre-registration not required.

<https://www.deutscheclassic.com/>

**July 10-11, 2021**

## 27th Annual Buckeye German Jubilee

**Columbiana, OH**

Jim's Custom VW's presents Ohio's Largest 2 Day Air Cooled VW Car Show & Swap Meet.

Sat.9am-2pm Sun.9am-2pm

Music\*Food\*Dash Plaques

<http://www.jimscustomvw.com>

jimscustomvw@yahoo.com

Phone: 330-482-0018

**July 10, 2021**

## Deutsche Marques

**Hickory Corners, MI**

All German Vehicle Gathering Show.

Gilmore Car Museum

<http://gilmorecarmuseum.org>

6865 W. Hickory Rd.

Hickory Corners, Mi. 49060

**July 25, 2021**

## Highland Air

**Louisville, KY**

Highland Air is a celebration of friends, food, and air-cooled automobiles. Registration is now open from the site, <https://www.highlandairvwshow.com> and is \$20 in advance. We have a very limited number of spots, register early.

**July 17-18, 2021**

## VW Thing Show - KTE

**2021**

**Flat Rock, NC**

VW/Type 181 Thing show and tour. Hosted by Mike & Mary Crisp - Email: [Thingshow2018@gmail.com](mailto:Thingshow2018@gmail.com) for registration and questions.

**July 17, 2021**

## CVA's 8th Annual FROG ROCK Gathering

**Eastford, CT**

This is a social event for all VW's old and new. Come spend a lazy summer afternoon in the shade listening to live music with your VW friends.

Bill Arute (860) 395-9964

[bill@ctvwa.org](mailto:bill@ctvwa.org) , or

Brent St Louis [brent@ctvwa.org](mailto:brent@ctvwa.org)

<http://www.ctvwa.org>

**August 21, 2021**

## Air-Cooled at the Orchard

**Middlefield, CT**

This show is open to all Air-Cooled Volkswagens and Corvairs. \$10 for show cars, spectators are free. Dash Plaques, People's choice awards, DJ, and Raffle. (No swap Meet). For VW information please contact Bill Arute (860) 395-9964 [bill@ctvwa.org](mailto:bill@ctvwa.org) or Chris Fox [chris@ctvwa.org](mailto:chris@ctvwa.org)

**August 29, 2021**

## Kelley Park Spring Meet

**San Jose, CA**

36th Annual Spring Meet at History San Jose at Kelley Park in San Jose on Sunday, August 29 from 8 am to 3 pm.

**September 18-19, 2021**

## Dubs at the Gap 2021

**Flintstone, MD**

Western Maryland's Finest Volkswagen, Audi, and Porsche car show.

<https://www.facebook.com/dubsatthegap>

# Upcoming Events

**VOLKS-FAIR 21**

**AIR COOLED VW CAR SHOW**

Saturday  
July 31, 2021

Deerfield Fair Grounds

34 Stage Road, Deerfield, NH  
9am to 2pm ~ RAIN OR SHINE

15 AIR-COOLED VW CLASSES

- BEETLES TO '57
- BEETLES 58 - 67
- BEETLES 68 & UP
- SPLIT WINDOW BUS
- BAY WINDOW BUS
- CONVERTIBLES
- KARMANN GHIA
- TYPE III & IV
- CUSTOM VW
- SPECIAL INTEREST
- DUNE BUGGY
- BAJA, RAILS & TRIKES
- THING
- DAILY DRIVER
- VANAGON '80 - '91

**SHOW CAR REGISTRATION - \$15**  
(includes driver and 1 passenger)

**Vendor Swap Space - \$15**

**Spectators - \$5 (under 16 FREE)**

**Trophies to 3rd place in each class**

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contact: Jason Rennick 603-475-1543  
[president.thebugclub@gmail.com](mailto:president.thebugclub@gmail.com)

October 1-3, 2021

## Buggies on the Beach 7

Fernandina Beach, FL

All Volkswagen Car Show!

Friday October 1st: Pre-Party Campout at Kraft Athletic Club.

Saturday October 2nd: Show registration \$20 includes camping.

Sunday October 3rd: Volkswagen Show N' Shine.

Contact Michael for more info:  
(904) 415 3079

October 16, 2021

## LowDown in DubTown

Hazel Green, AL

AIRKOOLED KUSTOMS

It's time for the annual charity car show at Airkooled Kustoms in Hazel Green, Alabama. Saturday, October 16, 2021 at 8 a.m.

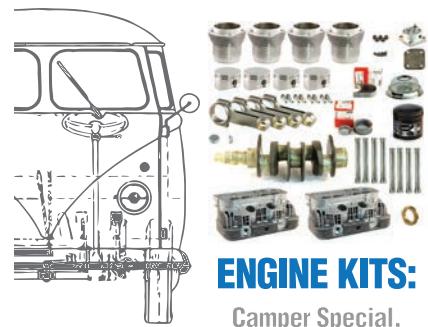
Admission is free for this family-friendly event.

<https://www.airkooledkustoms.com>  
[info@airkooledkustoms.com](mailto:info@airkooledkustoms.com)

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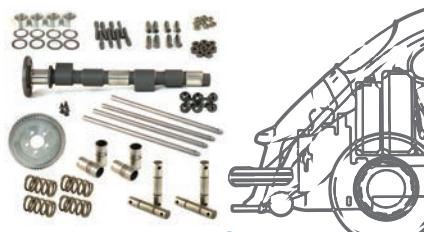


### ENGINE KITS:

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2056cc, 2270cc, 2563cc



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[info@type4store.com](mailto:info@type4store.com)

[facebook.com/type4store](https://facebook.com/type4store)

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We're looking for auction-ready cars—and trucks, and motorcycles too—for real-world enthusiasts and collectors who enjoy their machines out on the road. So, if you have a no-excuses, ready-to-roll specialty vehicle, the kind that can start conversations and attract bidders, Hemmings Auctions is the place for you.

## Classifieds

**COST:** Members receive 2 free classified ads. Limit of two per issue. Non-members: \$10.00. Each ad will appear in two issues of the *VintageVoice*.

**PHOTOGRAPHS:** 1 photo per advertisement please. Photos cannot be returned, digital preferred.

**LIMITATIONS:** Ads are published on a space available basis. Copy submissions must be emailed. ONLY VW parts, cars, toys or literature will be accepted. No cars for sale newer than 1991 can be accepted. VVWCA accepts no liability relating to the purchase of an item.

**ADVERTISING DEADLINE:** All advertisements must be received prior to the 1st of Feb, Apr, Jun, Aug, Oct, Dec for the following newsletter.

SUBMIT YOUR AD TO: editor@vvwca.com

## CARS FOR SALE

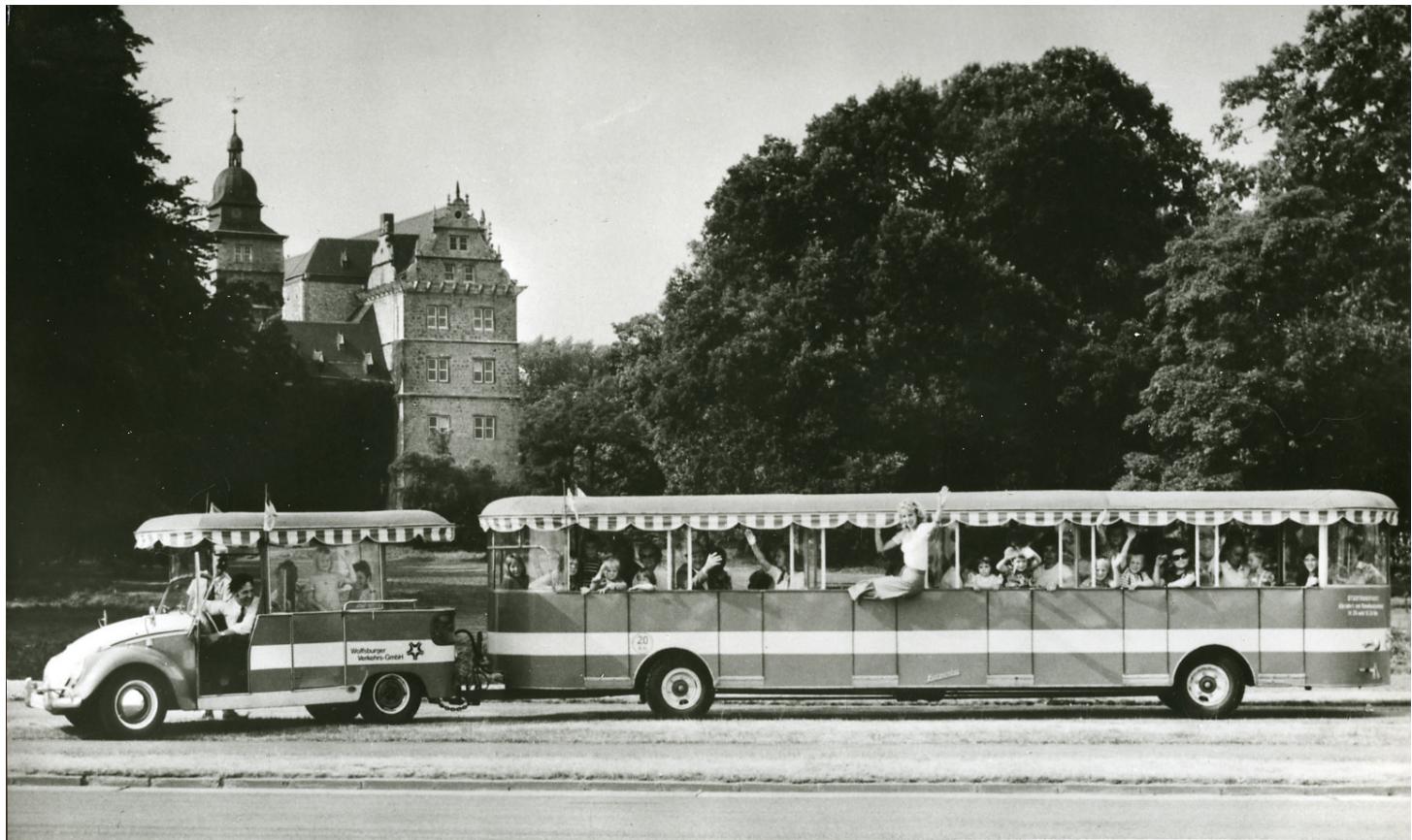
YOUR AD COULD BE HERE!

## PARTS, ETC. FOR SALE

YOUR AD COULD BE HERE!

## WANTED

I Buy Old Porsche & VW in any condition & title status.  
356, 911, 912, 914-6 & VW bus, trucks, vanagon, bug, ghia, thing. 540-358-0330 - FishHeadLouie





# THERE'S NOT AN APP FOR THIS

Members of the Vintage Volkswagen Club of America receive up to a 5% discount.\*

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# Turn Indicators On the Blink

**T**he lion's share of Ovals in the U.S.A. (MarchV55 and after) have "blinker" turn indicators. This is a good system, but by now, old enough to break down - sometimes taking the brake light function with it!

Over the years, many home mechanics have simply wired around this brake light problem, sometimes leaving only remnants of the original wiring behind. The attached drawing may help to restore the original system, if your machine has suffered this fate.

The first step is to clean connections and reattach wires at the five-lug connector strip located behind the speedo. This is where wires from the turn indicator switch on the steering column connect to the wires coming from the actual light fixtures.

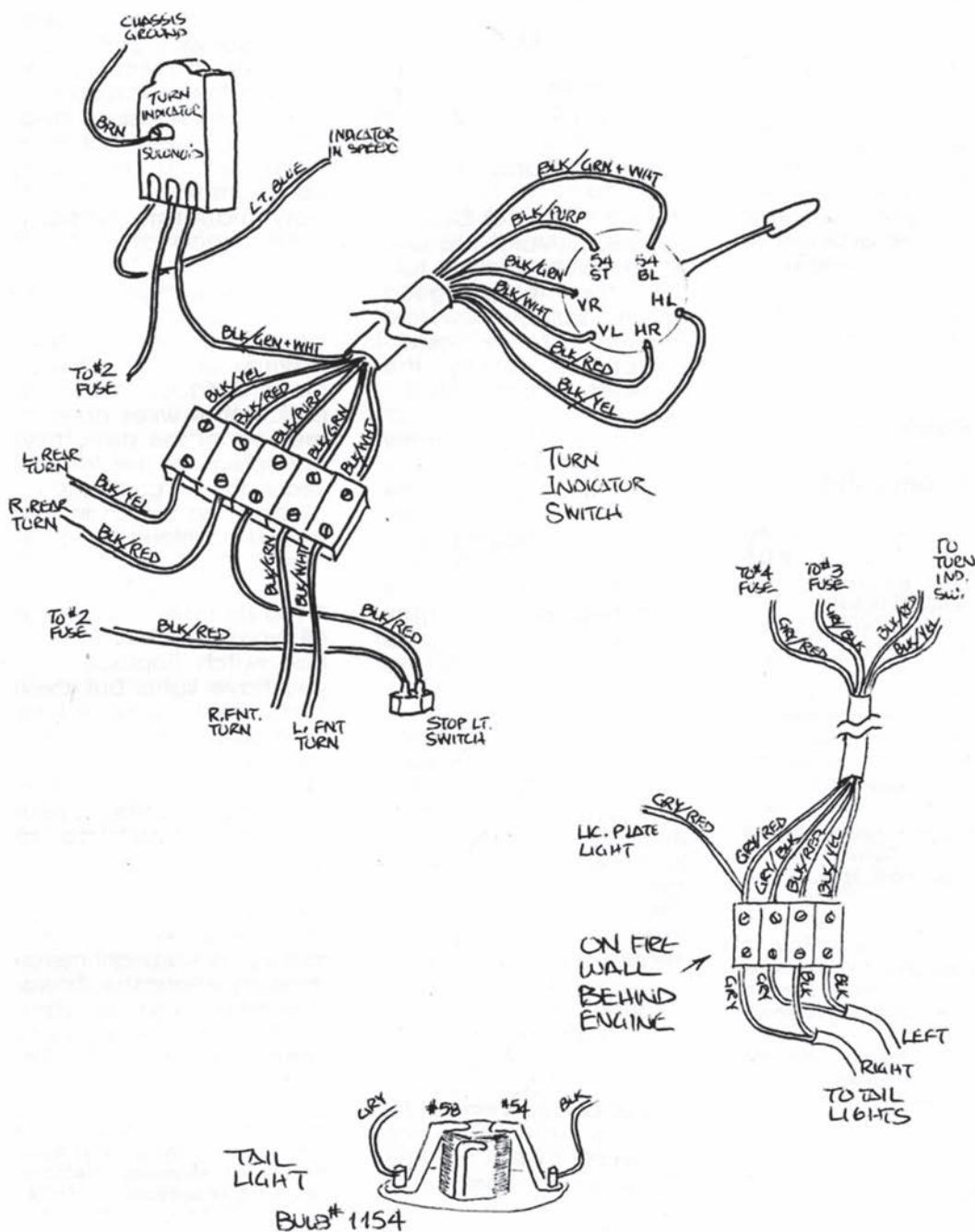
If brake lights are not working, check the switch, bolted to the end of the master cylinder. Turn the ignition key on, then test for voltage at the two connector pins at the end of the switch. There should be voltage at both pins when the brake pedal is pushed in, but only one pin when the pedal is released.

No luck yet? Disconnect the upper wires at the five-lug connector then remove the switch portion from the housing and inspect for wires that may have frayed or have come unsoldered. It is an easy matter to re-solder them.

When assembling, use electricians tape anywhere wires look frayed or rub against metal surfaces. You will notice that wires have a memory of the path they occupied for the last 35 years. This will guide you to placing the switch in the exact position it came from.

If you still have no lights at all, you probably have a bad switch. Replace it. If you have lights but they don't blink, you should probably replace the solenoid. If, on the other hand, you have weakly blinking lights, you probably didn't do a good enough job grounding the lighting fixtures. Take them apart again and this time, make sure you have bright metal showing where the fixture grounds against the fender. In some cases a separate ground wire may be necessary.

VintageVoice



## Project 1385

### Part 3 - Engine Assembly

**A**fter a bit of a detour with “Project 1385” where we made a pit stop to go over my experiences with performance engine coatings, we are now back underway, and will begin engine assembly in this installment of “Project 1385”.

In previous installments we discussed preparation work, machine work, and cleaning of components. These preparatory activities are very important, and they often set the stage for a successful, well-configured engine. In the case of our project, the engine is seeing some very small modifications to help it produce more usable power across the entire RPM range, so the necessity for extensive design changes to the engine combination of cylinder heads/camshaft/compression ratio, etc. were not necessary. This is not usually the case with what I create, so I had to constantly keep my desires in check and keep things simple!

While the engine combination design only saw small modifications from stock, the importance of the combination remained important. The character of my Bundeswehr (German Army) veteran Beetle must remain the same as when the car was in service, so it was imperative that the stock 30 Pict carburetor, and exhaust system stayed in place. Retention of these items proved to be a detractor from the overall performance capability of the engine, but luckily, we weren’t looking for horsepower from these mods/engine. That’s right, at the end of the day all we wanted was to enhance drivability, get some extra power for ascending grades, and put a little more pep under the decklid, while retaining a cool running, well-mannered daily driver engine that looked like it was bone stock. Being able to maintain the speed limit was a major goal, because the stock engine would not achieve this. Having our hands “cuffed” by the originality factor added a challenge to the project.

The basic design of the engine, is as follows:

-Displacement: 1385cc (64x83mm)



-Compression Ratio: 8.35:1

-Camshaft: Web Cam 73 grind (262 degrees of advertised duration, and 224 degrees of duration at .050" lift. Net .410" valve lift)

-Rocker Arms: 1.25 ratio (Genuine VW)

-Cylinder Heads: Late 40HP (1200cc) with Stage 1 port

and polish by Len Hoffman

(These are the basics, most everything else was left 100% as factory)

### DOWN TO BUSINESS

Getting down to business was exciting for me, since I hadn’t built a T1 engine in years, and hadn’t built a performance 1200cc engine in over 20 years. I gathered up all my sealants, and lubricants, as well as my special tools that had sat in the back corner of my tool drawers so long that they had started to rust! I spent most all my time building Type 4 VW/914, 911 and 356 engines, and building this simple Type 1 engine was very fulfilling, and a change of speed.

For sealants I’d be using a mix of Hylomar, Curiel T, Curiel K2, Loctite 518, and Dow-Corning 740. I hate oil leaks, so I have spent a lot of time developing sealants, and procedures to alleviate them. I learned long ago that a single sealant could not be used to successfully due to varying heat exposures, and expansion/fitment characteristics. Since surface flatness, and damaged areas

of the crankcase parting lines can make the sealant not do its job, I take one final pass over the case with a whetstone to ensure that it's all flat, and damage free before applying sealant.

Each engine family that I work with has its own set of rules when it comes to the sealants that should be used. What works on a 911 engine doesn't work worth a hoot on a VW Type 1, as an example.

## LUBRICANTS

For assembly lubricants I'd be using a mix of Driven Racing oil assembly gel, assembly grease, and "HVL" along with Driven BR40 engine oil. I keep assembly lubes very simple, and I watch viscosity closely. I avoid assembly lubes that are really thick, unless the engine will be sitting around for a long time after I finish it, and there's a worry of the assembly lube dripping away from the components and not protecting them during the first start. This engine would be fired up on the Aircooled Technology engine dyno the same day its completed, so we had no need for preparing the engine for a startup that was weeks, or months down the road. I try to avoid super thick assembly lubes, since they impact the tactile feedback from my hands knowing exactly how the components should feel when the engine is turned over by hand. In short, I build by feel more than most people do.

Once all main, and camshaft bearings were measured for the proper running clearance, I found that one of the NOS (New Old Stock) bearings was a bit too tight, and it wasn't measuring completely round. This is an issue with NOS parts, since in many cases they have been sitting on a shelf for decades, and may have had a bearing swapped out, or maybe someone had dropped it over time. What we learn is that at times NOS components ended up not being used 40 years ago, because they were found to be factory seconds. Our project engine used all NOS components, except the gasket set, and a few pieces of hardware, so each NOS component needed to be checked very closely.

With the bearings measured, and clearances recorded, it was time to perform a final ultrasonic cleaning, then fit the #3 main bearing onto the crankshaft, followed by the crankshaft timing gears. Special attention was paid to the fitment of the woodruff key into the crankshaft, since improper fitment here can cause premature timing gear/ crankshaft wear. I found a whopping .0015" of deviation between my assortment of woodruff keys that I had on hand, which is a huge delta.

With the assistance of some heat, the gears were fitted to the crankshaft and I commenced to fit the Calico-Coated connecting rod bearings into their respective connecting rods, then lubricated the bearing faces, and fitted them to their respective crankshaft journal. Care was taken to keep each set of rod bearings matched to their journals that running clearances were measured to.

Working toward an assembled crankshaft sub-assembly being fitted to the left side crankcase half, the next step was to measure the main bearing locating dowels



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to ensure they were no longer than 8.0mm. If these are too long, they will protrude too deeply into the locating recess of the main bearing, and will destroy the bearing shell. Aftermarket dowel pins are often found wildly out of spec, and usually too long, so we are accustomed to trimming their length down just a tad bit to reach the 8.0mm specification.

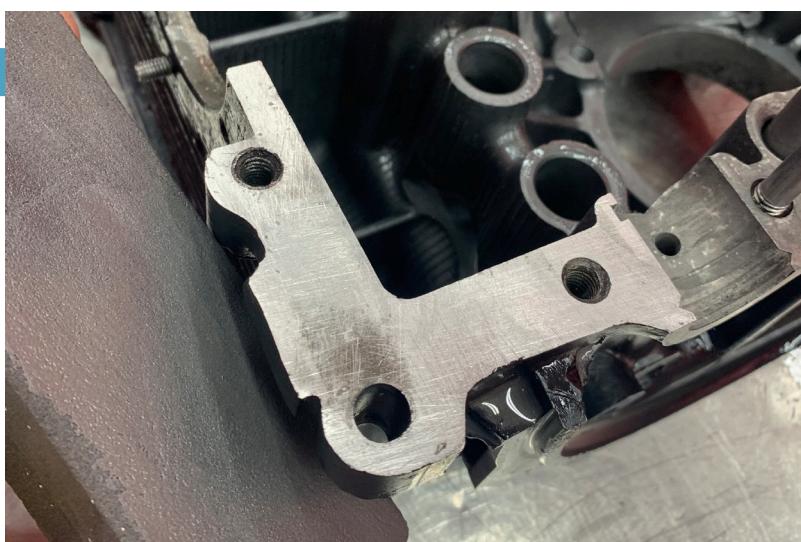
Dropping the crankshaft into the left side crankcase half signifies the first of many small accomplishments that will collectively create a completed engine. I have learned to think of each step as a miniature goal before moving to the next task. Doing this is a key to success, as each small task sets a milestone, and the building of the engine is actually a set of 10-15 small tasks that equate to a completed project. People that do not do this end up with one big task, and they don't have small milestones to reach, thus affecting their engine process, and increasing the chances of making a mistake.

With the crankshaft fitted, its time to bolt on the camshaft gear, install the valve lifters into the left side crankcase half, and fit the camshaft. With the cam installation comes two blueprinting points, as we must set camshaft end thrust (target of .002") as well as the backlash setting between the steel crank gear, and camshaft aluminum. If the backlash isn't correct the engine can make noises and see premature wear.

Follow along with my captions here as we complete the engine into a "shortblock" assembly, with the case halves sealed, and torqued to value. In the next issue of "Technically Speaking" we will address the assembly of the long block assembly, to include setting compression ratio, measuring cylinder head volumes, and valve train geometry. Things are coming together and thank you for following along!

Jake Raby  
Chief Technical Director VVWCA  
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VintageVoice



Final preparation for the crankcase ensured that the sealing surfaces were leveled. These were decked with a whetstone using a 3-step process of semi-coarse, fine, and super fine grits. These practices ensure optimal sealing of the crankcase halves, thus reducing oil leakage.



An area of weakness for the Type 1 engine is stripping of the oil sump plate studs. To avoid future issues with these, a 6 X1.0mm Time-Sert kit was used to insert the threads, adding strength for decades to come.

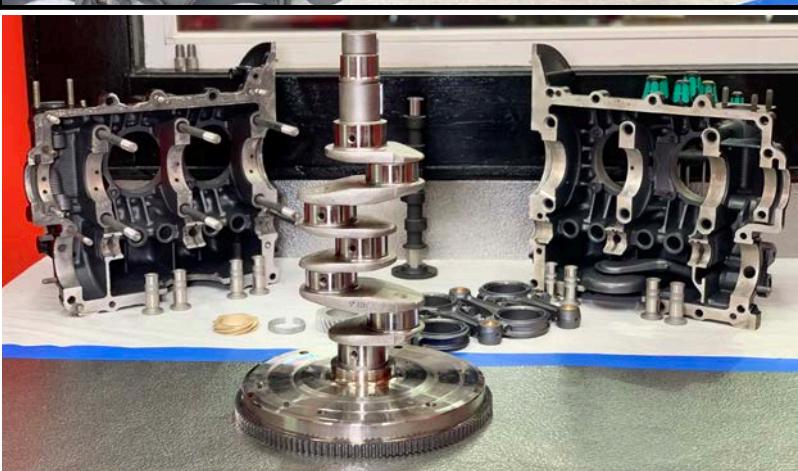
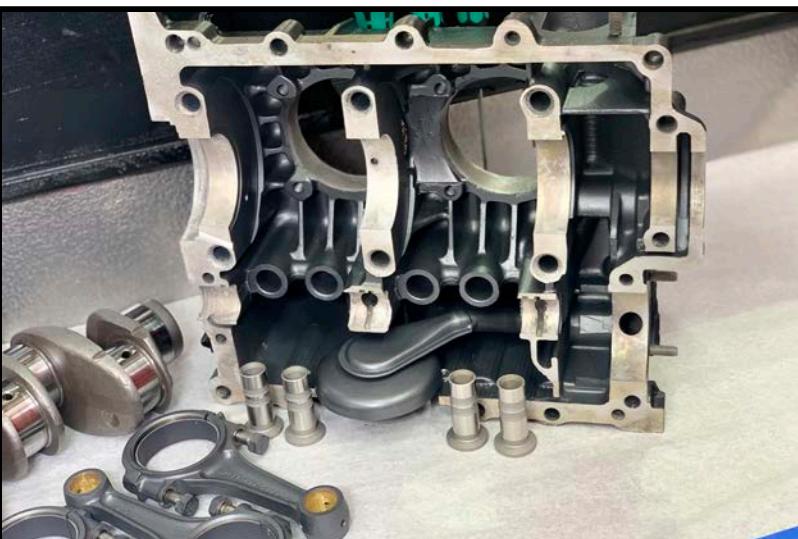




All components for our “short block” assembly were treated to a two-step Ultrasonic wash, followed by a hot water rinse, and thorough forced air drying just before assembly.



Short block components fully prepared, cleaned, and ready for assembly. Clean lines are next to Godliness, the key to excellent performance, and long-term durability is always left in the details, and cleanliness of the components, and workspaces.



The first task when it comes to assembly is fitting the connecting rods, and crankshaft gears onto the crankshaft. Always take note of the proper main bearing index onto the crankshaft, if not the main bearing alignment dowels fitted to the crankcase will not locate properly with the near bearings.

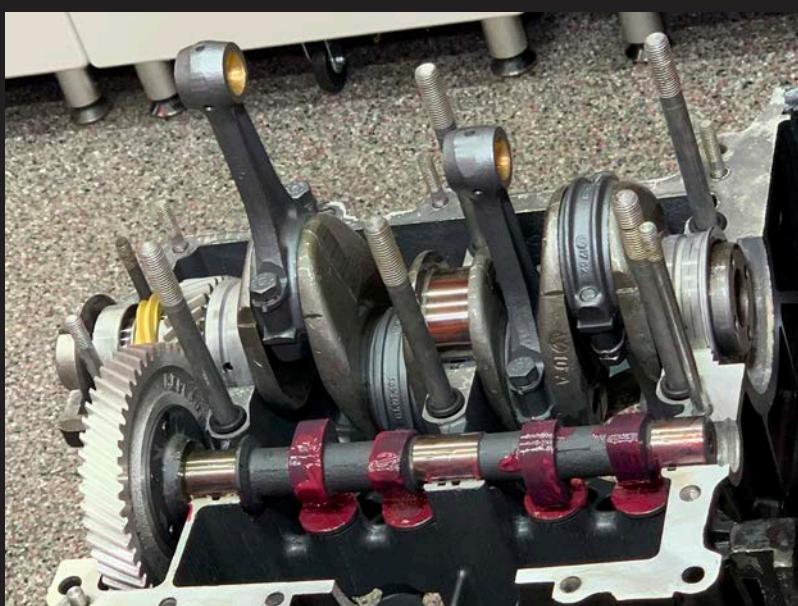




Fitting the main bearings to the crankshaft, and cam bearings to the crankcase, along with lifters. Note the late 40HP case that is fitted with O rings on the 6 large case studs, this is not found on earlier engines. Working with all NOS (New Old Stock) components is very nice, despite the time that it takes to locate, and procure them.

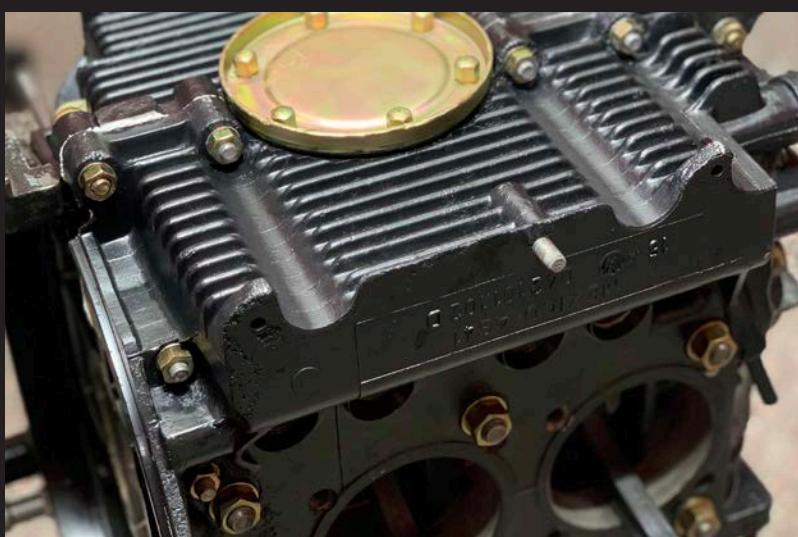


Adding assembly lube to the lifters, and camshaft lobes is the first step before installing the custom camshaft from Web Camshafts. Note the alignment of indexing marks on both the camshaft, and the crankshaft. Color is added to these for quick quality control during assembly. Nothing is worse than assembling an engine where these have lost their index! Finally, the camshaft is installed, backlash and end thrust are checked, and we are ready to move on.





Bearing inserts fitted to the bank 1-2 crankcase half, and our sealant of choice is conservatively applied. In this case Dow Corning 740 is used to seal the case halves, which is sure to cause some debates among readers who have yet to directly experience it in this role. With the case halves assembled, the fasteners are torqued to value, and assembly progresses.



Our soon to be 1385cc "short block" is assembled, and ready to accept the head studs, cylinders, and cylinder heads.



In preparation for the next steps, we checked the chamber volume of both cylinder heads. In this case our original heads that were slightly cleaned up gave us a chamber volume of 40.1ccs using the burette. Differential between all chambers were less than .2cc from the factory.



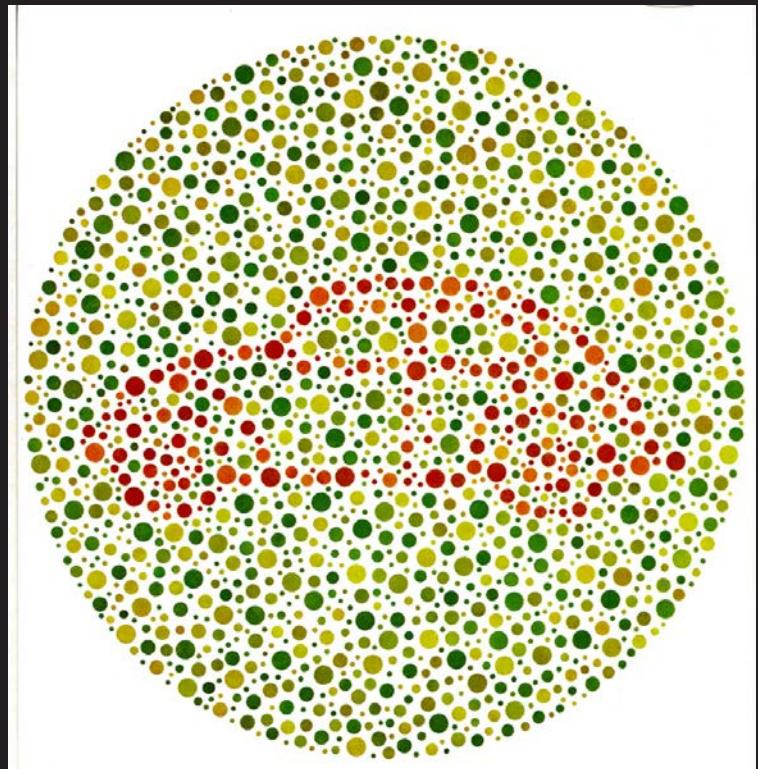
Preparation of cylinders, gapping piston rings, and thorough ultrasonic cleaning of all components was next on our task list. Here you see the surface finish measurements provided by our Mitutoyo SJ210 Profilometer as we measure the peaks, and valleys of the cylinder hone. These are quite rough when measured by today's standards, to say the least. What can you expect from a set of NPR cylinder & pistons that are over 40 years old, and new in the box? In this case I chose to correct the hone a bit to make me feel better.





We'll close out this volume of our series looking forward to the next issue. We'll install cylinders & pistons, cylinder heads, rocker arms, and set the valve train geometry.

VintageVoice



# Scale Model Building with Mike Epstein

## VW MODELS FOR GERMANY'S WAR MACHINE, WORLD WAR II

Sondertyp 129 Rocket Boosted Amphibious Demolition Drone  
1/35th Scale Resin Kit from Lead Warrior

In late 1941, the famous VW Schwimmwagen Type 166 came into mass production, to become the most numerous amphibious car in history.

But before that, the small series of 30 Schwimmwagen's Type 128 was built. Unlike the Type 166, which had only 200 cm. wheelbase, the Type 128 was based on the standard all-wheel-drive Kubelwagen Type 86 chassis with the wheelbase of 240 cm. That led to insufficient rigidity, so the Type 128 was not put into mass production.

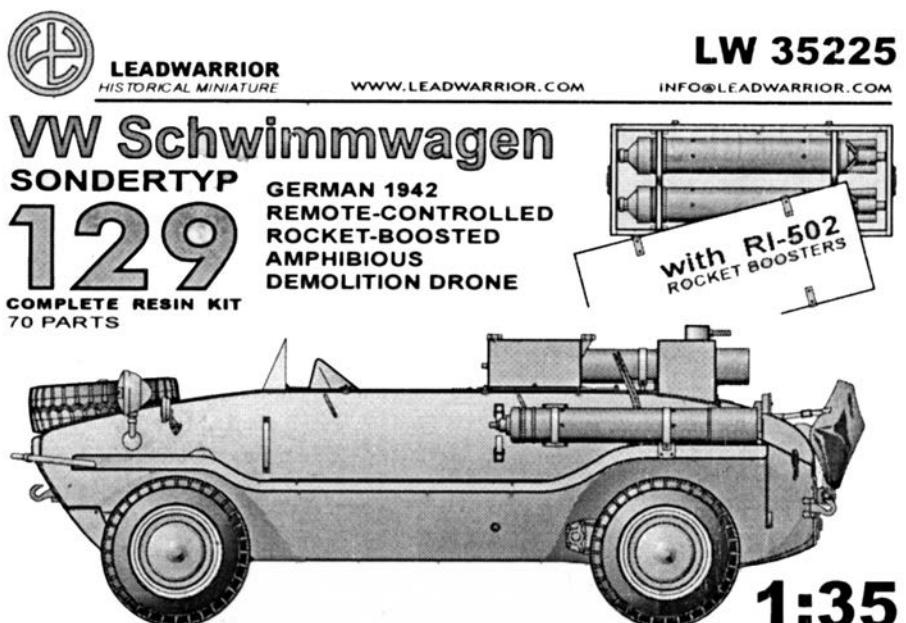
On 8 April 1942, two VW Schwimmwagens were delivered from the Porsche company in Stuttgart-Zuffenhausen to the Panzer-Versuchs-und-Ersatz-Abteilung 300. These two Schwimmwagens were deeply modified 128 Types, designated "Sondertyp 129" - Special Type 129.

The Panzer-Abteilung 300 was quite special division, where different types of experimental vehicles were tested. Among them - Sd.Kfz.300 Borgward BI/BII demolition drones, and Borgward "Ente" amphibious radio-controlled self-propelled mine.

The VW Schwimmwagen Sondertyp 129 also was to be a radio-controlled amphibious demolition drone, but the steering wheel was also left intact.

The crew compartment was sealed with metal hatches, and the explosive charge was accommodated inside, probably overweighting the vehicle greatly. The exhaust mufflers were rearranged into vertical position and shielded with metal boxing - maybe, to avoid steam generation. The fuel tank was moved to the back.

Sondertyp 129 was to be used to destroy heavy-



ily-armored objects on the shores. The problem was that the remote-control operator had no feeling when the vehicle touches the ground. To help the vehicle to get out of the water, up to four rocket-boosters had to be used.

Looks like these boosters were Rheinmetall-Borsig RI-502 type (109-502 by RLM designation) - (or similar) - solid fuel, electrically-ignited rockets, used by Luftwaffe as Rocket-Assisted-Take-Off (RATO) boosters for heavy gliders like Gotha Go-242, or even jets like Me-262. One booster delivered thrust of 600 kg. during 6 seconds, so four boosters could lift the Sonder-typ 129 off the ground, even vertically!

As it was standard to mount two boosters on most aircrafts, these rockets were shipped in pairs, in a special crate. This model kit includes such a crate with a pair of RI-502 boosters.

In spring of 1942, one Schwimmwagen Sonder-typ 129 was tested on the River Spree, in the course of which one vehicle was expended.

The second vehicle issued to Panzer-Abteilung 300, most likely, was reconverted into conventional Schwimmwagen, as it seen on the period photos. But, knowing that Panzer-Abteilung 300 soon was relocated to the Crimea peninsula, Russia, where the Siege of Sevastopol took place, it's possible that it was used as it was initially intended. However, it's just an assumption.

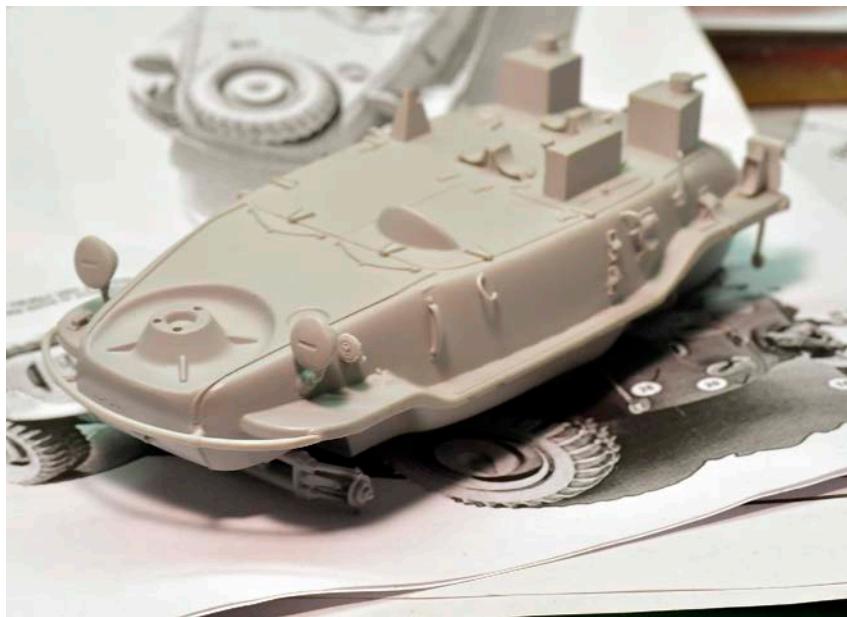
## THE MODEL KIT

Great kit with extreme detail! This is a stand-alone kit, meaning it didn't need anything from another kit. Generally you may find a kit that converts one thing to another like a Beetle to a wood burning Type 239, but this is a complete kit. Some of the parts are ridiculously small to cut out of the resin and shape, but there was only two pieces I couldn't use and lead foil did the trick for making thin straps that held the rockets in place.

With resin, you have to use Super Glue of some type, regular plastic model glue won't do here. I found a new favorite for me, it's an instant setting gel, works great and quickly adjustable. The model was 70 pieces, so not bad at all, but my kit came without the wind screens unfortunately and it came from overseas so it wasn't worth trying to do anything about. Luckily, I am doing another model at the same time, a 62/63 Panel from Revell with decals for a Jaegermeister delivery van in Green and Orange, more on that later. Fortunately, it came with windows for a deluxe and the corners windows had the right curve to them but needed to be whittled down a lot, so I sat and filed for a long time to shape them like the originals, other than that, it went together great.

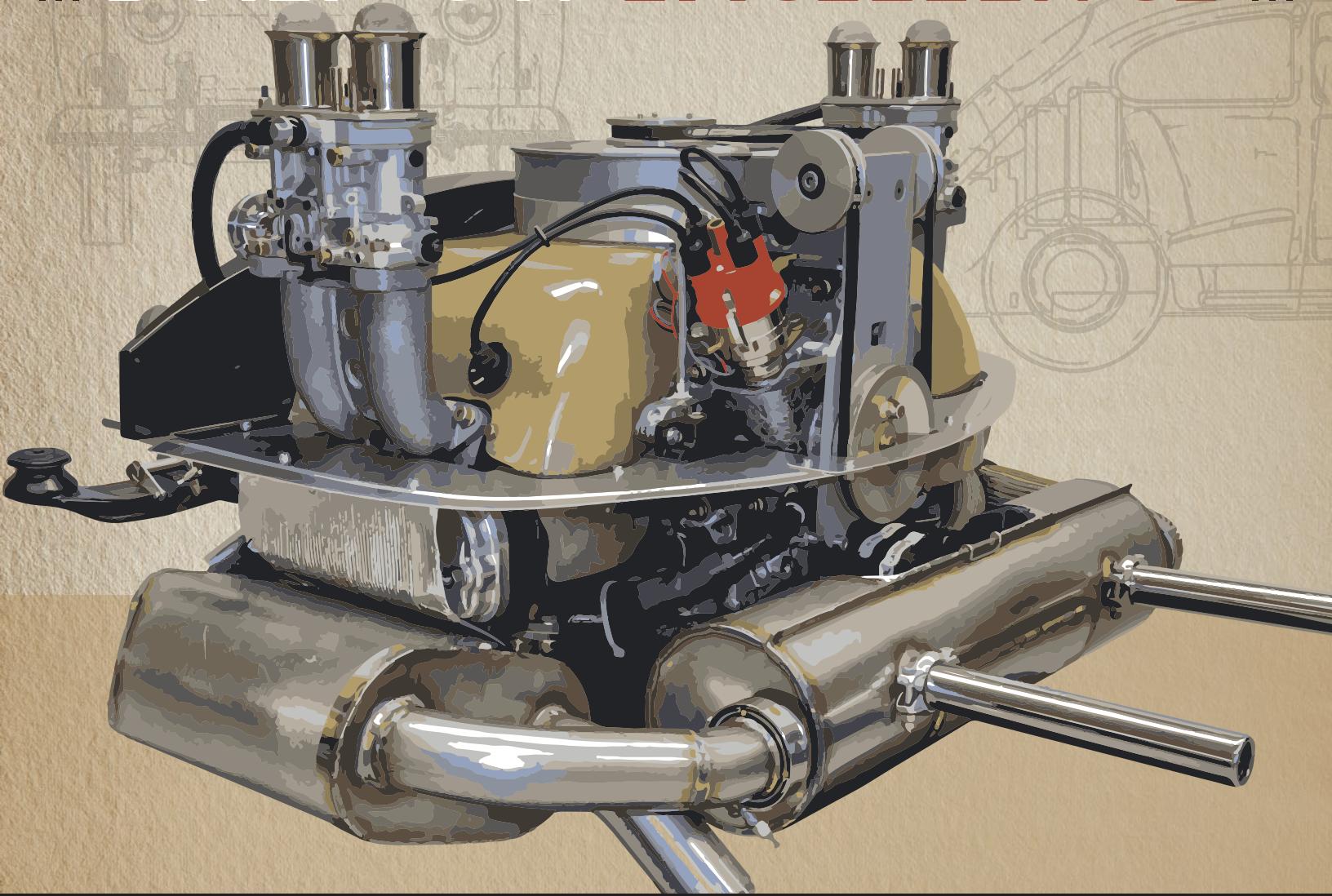
I muddied it up like it had been doing some trials in the water and getting up and down the banks, I just can't seem to build a regular clean model any more. This is the fun part, trying to make it look convincingly like it's really back in time doing its job. Anyway, I do this to have fun, a friend of mine comes over once a week, some of you may be familiar with him, Steve Carr, he writes the Date Coding articles, and we build our VW or WWII models and have blast talking and watching the History Channel.

So have fun making your models and be safe, always have a well ventilated area when painting and or using strong glues.





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Photo: Eric Arnold

# Planned to Buy A Bicycle

by Fish Head Louie

Besides VW & Porsche, I enjoy many types of collectibles including vintage bicycles. That being the case, I placed a wanted ad in a local periodical for old bikes. A gentleman named Charlie called me and said to come by to take a look at one, this was back in 2011. What he also had was a 15-window bus stuffed with parts. The bus could not be sighted from the highway and for that reason, it had been there was 40+ years. The bus had no transaxle and I lacked the equipment to load it up and get it up the steep hill which had so loving protected it from would-be buyers all these years.

As it was pouring rain, I asked the owner if he would sell "some parts off it" including the ambulance fans, deluxe trim, dash clock, taillights, and 2 sets of early Bug pop-out windows laying across and inside of the engine compartment. After we got everything off and struck a deal including the bike which I truthfully forgot about, I was soaked.

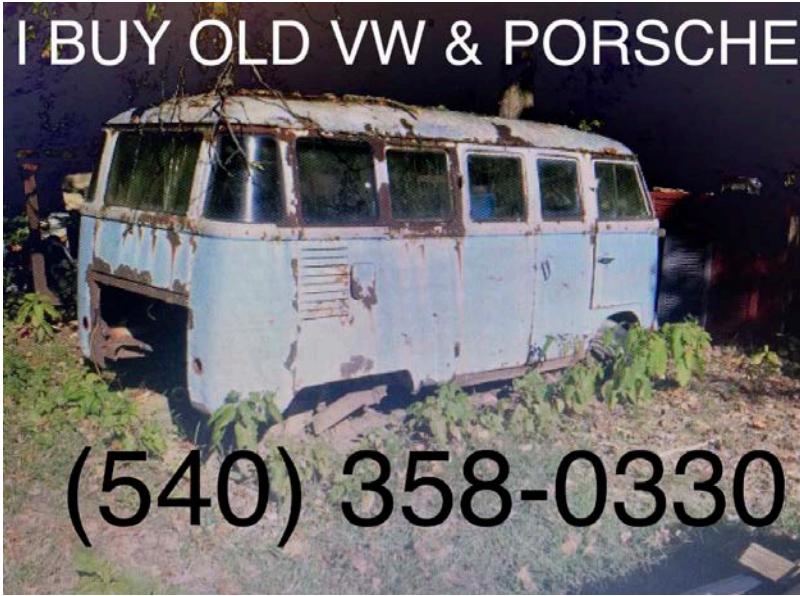
I carefully tied down the longest piece of belt line trim on my mini cooper's roof so not to bend it. In the rush to get out of the rain, I had forgotten the 2-inch piece of trim that is located between passenger door and cargo door, but the man kept it for me for when I could return later.

I thought more and more about the bus and came by six months later to see if Charlie would sell the corner windows; he decided that he didn't want to as to keep the parts dry that were inside, which I was later grateful for.

Years went by and I offered to buy the rest of the bus; the owner said he promised it to someone who was going to "make a flower bed" out of it, by cutting off the top half.

In 2016, he finally agreed to sell it to me on the condition that I get a professional tow truck to winch it out; he even would give me a discount of \$100 to help defray the towing cost because a professional would save us time and effort.

We used a combination of a tilt trailer, its 12,000-pound winch, his floor jack, and some wood to get the bus situated, having had to load it on its rear

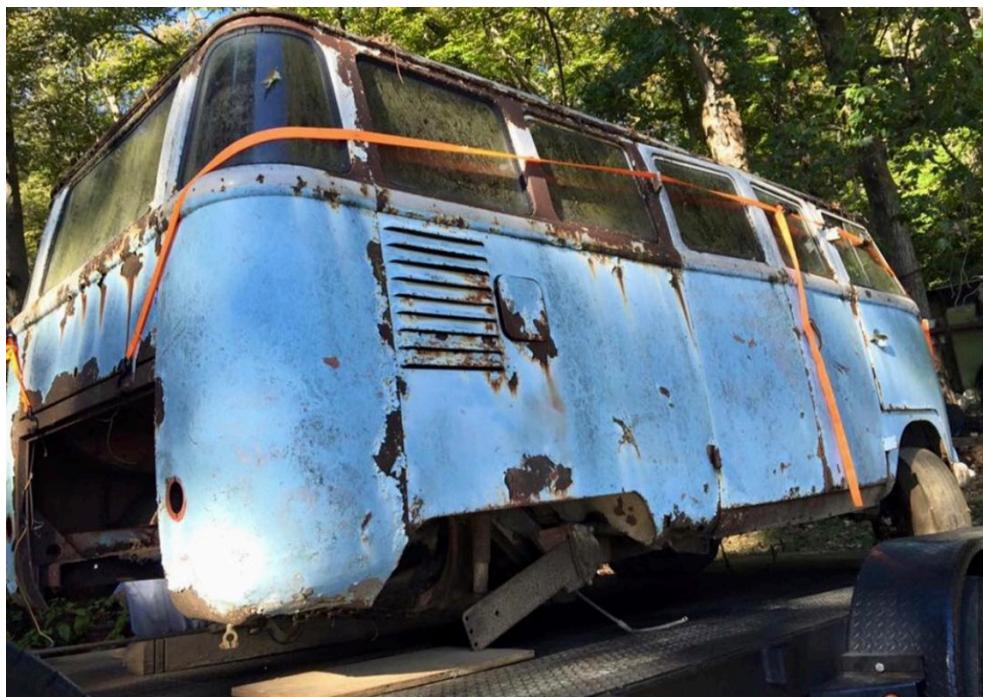


spring plates. The originally SWR walk-thru lacked its m-code plate and all the parts I had robbed off it and sold five years earlier (to my dismay).

What I learned later is that 15 window buses are rare because most of them have been customized to become 23 window buses. Well, rest-assured, the fairly solid example will remain in my collection as it left the factory.

Since then, I have secured a pair of front seats for it. Said seats cost me 3x the cost of the whole bus! Finally, the "as found" photo sure makes a great business card.

VintageVoice



# Installing a Bay Dash Speaker

by Eric Arnold

## Installing a Modern Speaker in Your Original VW Bay Bus Dash Speaker Bracket

Some Bay buses left the factory with radios, and others had them installed on the lot at the dealerships, but in all cases, the speaker was always in the same location – the center of the dashboard. This single speaker wasn't designed to be the best thing on the market, but it got the job done. Today we are going to show you how to use the stock Volkswagen bracket with a modern speaker, designed to work with both original and today's stereo units.

This procedure is designed to be a step-by-step guide on how to access and replace the speaker in your Bay window bus. Your experience may be slightly different, based upon any modifications made to your bus by yourself or a prior owner. As they say 'your mileage may vary'.

### DASH REMOVAL

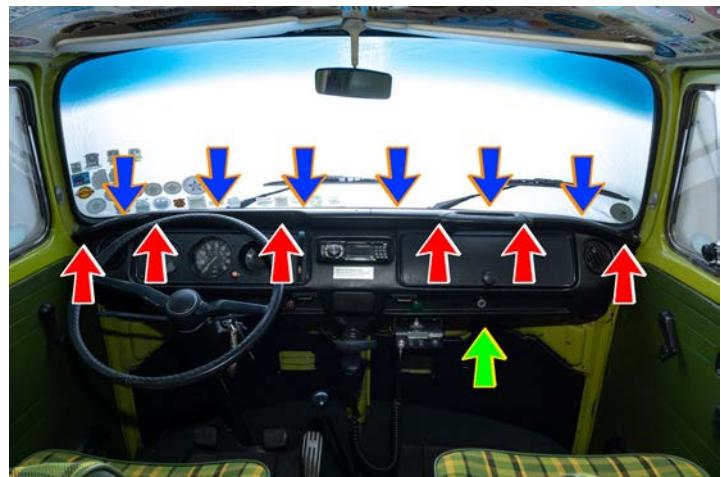
First, for the sake of clearance, remove the glove compartment by unscrewing the retaining strap just under the bottom of the dashboard, indicated by the green arrow. Pull the glove box insert out from the bottom and set it aside.

Next, using a short Phillips head screwdriver, remove the six screws and washers along the front of the dashboard, as indicated by the blue arrows. Remember, front is front of the Bus. [Pic: Detail 1]

While working on the top of the dash, use your screwdriver to remove the defrost vent covers. Set the covers and screws aside. [Pic: Detail 2]

Reach under the dashboard and find the underside of the vents for the heating ducts. These are held in the dash by clips. To remove them, use your fingers to squeeze the clips together and push them through to the top side of the dashboard. This can be both time consuming and frustrating. Hang in there and be patient, you will conquer these! [Pic: Detail 3]

Grab a 10mm socket and remove the six nuts along the rearmost edge of the dash, indicated by the



red arrows. With the glove box already out of the way, the two behind the grab handle are easy to reach. Two on either side of the instrument cluster are rather accessible as well.

Personally, I have a bit of struggle with the two on the most outward edges, at the pillars. To make more clearance, I remove the fresh air ducting, which also requires removing a portion of the metal duct



Detail 3



Detail 6



Detail 4



Detail 5

lay it top down on your workspace.

## ORIGINAL SPEAKER

Let's take a look at our original VW dash speaker setup.

A basic 5.25 inch speaker, with a plastic spacer, retainer bar, and steel mounting bracket. Held to the dashboard with a single screw and two rubber spacers (missing from this bracket). Astonishingly, this speaker still worked! I attached two speaker wires from my CD player and much to my surprise it performed...not very well, but music was playing! [Pics: Detail 4,5,6]

Today we are going to update the system with a brand new speaker, specifically designed for classic car dashboards, by RetroSound. The D-52, 5.25 inch Stereo Dash Speaker, is dual voice coil speaker, providing a stereo mix from a single speaker. Seemingly an upgrade to the simple design VW had in mind with its single-speaker system in the late 60s through the 70s. More features of this speaker are listed as dual mylar tweeters, a poly speaker cone, dip-cut magnet, and 30 watts power handling (more on this later). Inside the box is speaker wire, some mounting hardware which we will not need in our application, and a kit to wire the speaker for an 8 ohm radio, if you happen to have one in your bus. [Pics: Detail 7,8, 8-1, 8-2]

After dismantling and cleaning our old bracket and spacer (now would be a great time to paint as well if you wish), test fit the new speaker with the spacer and bracket. [Pic: Detail 9,10] Make sure nothing sticks out above the top of the bracket which could touch the metal dash and cause an issue.

Install the retainer bar [Pic: Detail 11,12], and glue a swatch of speaker cloth over top of the speaker

covers. This may not be necessary for you, but it works best for me.

Once you have all the nuts removed, gently pull the grab handle out from the dash.

You are now ready to remove the top of the dashboard from the bus. If you have a speaker in the dash currently, you will need to carefully lift the dash enough to disconnect the wires from the speaker.

Prepare a table, or similar workspace to place your dash. Lift the dashboard top from the bus, and

Detail 7



Detail 8



Detail 8-2



Detail 8-1



Detail 9



itself. This may be considered optional, but this speaker will get a lot of sun exposure, so might as well give it as much UV protection as possible. [Pic: Detail 13]

As mentioned earlier, the speaker bracket is held in the dash by only a single screw and two rubber spacers, and the spacers on this bracket were missing. Unable to find the exact shape as original, I opted for rubber grommets of the same size,  $\frac{1}{2} \times \frac{1}{2}$  inch, glued in place. These 'hook' in place on two molded tabs under the dash. [Pic: Detail 14]

Before we reinstall our dashboard, this is a great time to do any clean up you might want to do with your windshield wiper system, ducting, instrument cluster, wiring, etc. The access you have with the top of the dashboard removed is fantastic, you might as well take advantage of it!

This is also a great time to give attention to the top of the dashboard itself. If yours is like mine, it could use a bit of love. If you need to sand, prime and paint it, you may want to take the extra time to tackle that project while you're already this far in. I'm going to leave that for another day...let's get back to this speaker install!

While the dashboard is still on your work-bench, attach the speaker by placing the rubber spacers under the two tabs, and driving the screw in from the top side of the dash. [Pic: Detail 15] Prepare the wiring for the speaker as well by attaching the leads provided in the box. NOTE: This speaker is designed as a stereo speaker, so it connects to BOTH your left and right channels at the same time. You will have four speaker wires connected. At this time I also prepped the wiring at the radio in the bus so it was ready to go.

## REINSTALL

Carefully move the dash back into the bus, resting the upside-down dash on across the cab area while you connect the speaker to your stereo. [Pic: Detail 16]

Finally, install your dashboard, with installation being the reverse of removal. Take your time and follow the removal steps in reverse order.

Now your speaker is ready for listening! But first, let's talk about power. This speaker is rated for 30



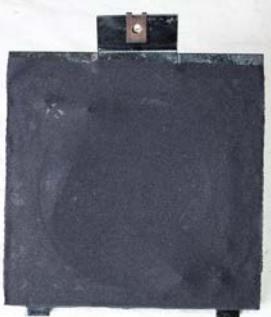
Detail 10



Detail 11



Detail 12



Detail 13



Detail 14



Detail 15



Detail 16

watts peak power. This is important, especially when connected to a modern radio, which usually has that much or more per channel. As I mentioned earlier, this speaker connects to both your left and right channels at the same time, and if your stereo puts out 50 max watts per channel, like mine, it will be easy to overpower this unit. You must be cognizant of the volume/power you are giving to the speaker at all times, or you risk permanent damage.

## REVIEW

My first test is the driveway test; parked, engine off. Listening to a CD with only this new dash speaker, the sound is quite pleasing. The highs are good, as are the mid-tones. Bass is just enough, as you should not expect too much from such a small speaker. Overall a good listening experience.

The next test was city driving, or as I call it, the commute test. Stop and go traffic around Las Vegas. As expected, city traffic plays a part in the listening experience when you just have one speaker activated. Still good, even sound coming from the one speaker, and with it being so close to the bus windshield, the sound bounces well at moderate volumes.

Final testing was highway speed. Rolling at 60mph in my Westfalia isn't exactly a quiet situation, and I don't expect much out of a single speaker. However, I did get decent performance from this RetroSound dash speaker though, much better than expected on the highway.

**The Bottom Line –** This speaker performs very well as a direct replacement for the stock VW dashboard speaker and requires no modification to a stock setup to install. If you're looking for a modern alternative and a stock look, this is the way to go!

# Stick It! by Lois Grace

**M**y dad was of the opinion that if you learned to drive on a stick shift, you'd end up being able to drive anything. Car, truck, van, whatever it was, you'd be able to handle it. As a result, all four of us kids learned to drive on stick shift vehicles. In fact, there was no such thing as an automatic transmission in my family. To this day there still isn't: my 83 year-old mother still drives all three manual shift cars she has (one of them a 1971 Datsun 240Z). Over the years the sticks that have shifted in and out of our family have been a varied bunch, but I drove them all, even though some of them I drove badly. The '64 Jeep Wagoneer sticks with me, that thing was torture. Anyway, I was glad I learned early on how to drive a manual shift car because it gives one a sense of being capable of driving anything (as Dad said).

Sure, driving an automatic is kind of fun, after years of shifting for yourself. In a freaky sort of way, it's interesting, just sitting there steering while the car does its thing. I always find my right hand reaching around in the middle, between the seats, searching for the gear shift that isn't there. That old "thanks, I'll do it myself" tendency dies hard. Never mind the left foot that is always reaching up and stomping the floor, looking for the clutch. The two appendages that have nothing to do in an automatic can be a bit of a nag, always trying to shift an invisible gear. Honestly, I think there is something a bit unnatural about a car that changes its own gears. I mean, what's the point of driving then? Driving becomes merely the act of pushing on the gas and pointing the car in the direction you want to go. There is no interaction with the vehicle, no conversation, no sense of accomplishing anything. You can't slow down with the gears in anticipation of a turn. You can't downshift to nicely accelerate up a hill. Nope, you just turn the key and point the car in the direction you want to go. Now, I do realize that some people don't want to converse with their cars and would rather just get where they are going in a timely and dependable manner. But for the rest of us, automatics are a bit of a loss. You lose the relationship that made you feel like a driver in the first place. I



Photo: Eric Arnold

guess some people would rather talk on the phone, or watch TV, when they are behind the wheel. They need an automatic because they are probably too busy with other things to actually DRIVE.

Driving a stick shift is a blend of timing and instinct. In learning this fine art, you manage to find just the right blend of timing and finesse, where the compression of the clutch and the move of the shift lever coincide and the gears change, with the car taking off with new gusto and awaiting your next move. What a feeling of power and control! YOU decide what the car does! WOW. What a concept. With an automatic, YOU don't control much, the car decides when and where to shift and you have very little say in the matter. Sometimes it's pretty unnerving too, like going up a steep grade or coming down one. The car doesn't know if it's better to plow along in second gear and grind slowly on up, or better to shift up and down, up and down, till the crest of the hill is reached. Sure, if the car is laboring too much on its own you can tell it what to do, by shifting the indicator from D to 1 or 2. But what fun is that? You're just along for the ride. With a stick shift, you have to be your car's brain, and tell the transmission which gear works best. This takes some practice, and is different with every car, but once you get the hang of it it's easy. Get used to the car you're driving and pretty soon you'll decide which gear you need without hardly even thinking about it. Some of us just like that control. For the rest, there's the automatic transmission.



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