



Here is Jerry and MaryLou Kramer from Ft. Recovery, Ohio. Jerry is one of our Eastern Directors. MaryLou is our UVMCC Secretary. They are standing in front of their coach #424 also known as "Whitey". They like to travel and spend quite a bit of time on the road and seem to have one of the best running original Corvair engines.

Whales On Wheels

a publication of the Ultra Van Motor Coach Club

Volume 2012

April Issue # 2

The Whales on Wheels is a quarterly publication of the Ultra Van Motor Coach Club, Inc. a CORSA Chapter and is dedicated to the preservation and use of the Ultra Van. This 22 foot, unique, motor home was designed by David Peterson and built in Kansas until 1970. About 365 units were built. Dues are \$10 annually. Please remit to the Treasurer, Lew Young. Make checks payable to Ultra Van Motor Coach Club. Send submissions to WOW by email to the Editor, Brenda Standal (Digital submissions are preferred, but even hand written are acceptable)

UVMCC, Inc.
278 Garden Circle
Manteca, CA 95336

PRESIDENT
 Clyde Stanton #
 8401 Bowens Mill Rd.
 Middleville, MI 49333
 (269) 795-9078
clydestanton@gmail.com

VICE PRESIDENT
 Norman Standal #480
 1285 Driftwood Dr.
 N. Fort Myers, FL 33903
 (239) 656-3075
brennorm@aol.com

TREASURER
 Lewis Young #504
 278 Garden Circle
 Manteca, CA. 95336
 (209) 823-6293
sly111@comcast.net

SECRETARY
 Mary Lou Kramer
 1869 Union City Rd.
 Ft. Recovery, OH 45846-9316
 (419) 852-9380
krammary@bright.net

NEWSLETTER EDITOR
 Brenda Standal
 1285 Driftwood Dr.
 N. Fort Myers, FL 33903
 (239) 656-3075
brennorm@aol.com

TECHNICAL EDITOR
 James Davis #388
 312 Butterworth Road
 Murray, KY 420718241
 (270) 435-4572
jld@wk.net

Eastern DIRECTORS
 Doug Pratt (570) 549-8136 '12
 Jerry Kramer (419) 852-5720 '13
 Ron Zoutendam (712) 324-4660 '14

Western
 Chuck Hanson (702) 743-2021 '12
 Eric Kirven (562) 981-0823 '13
 Cindy Nelson (702) 345-8635 '14

E-Mail Guy: Ken Wildman #338, 419 North Johnson Street, Ada, OH, 45810
 Phone: (419) 634-4874. Email: kwildman@onu.edu
 Web Site: <http://www.corvair.org/chapters/ultravan/>

INDEX

Page	Subject
1	Ultra Van Newsletter Cover
2	Index Calendar of Events Mystery Question
3	Message from your Treasurer A Special Note from your Editor Another Mystery Picture Answer Corsa Events
4-5	Ultra Vans for Sale Ultra Class Ads & Merchandise
6	Clark's Ad
7	Western Summer Ultra Van Rally
8-9	2012 UVMCC National Rally Observations on Building a Big Block
10-11	Western Spring Rally Report Eastern Spring Rally Report Beau's Shop Tales
12	Installing Rack and Pinion in Ultra Van

2012 Calendar of Events

Jul 12-16	Western Summer Ultra Van Rally	Page 7
Jul 25-28	International CORSA Convention	Page 3
Sep 17-22	National Ultra Van Rally	Page 8

Mystery Question????

**What is the history of the dreaded fuzzy slippers? Do you know who bought them originally?
Have they traveled a great distance?**

Message from your Treasurer:

Your 2012 dues are now due and payable. Send your \$10.00 dues to LEW YOUNG, 278 GARDEN CIRCLE DR. EAST, MANTECA, CA 95336.

Beginning 2013, dues will be \$5.00 per year for those receiving the Whales on Wheels newsletter by e-mail only and \$15.00 per year for those receiving the newsletter on hard copy and mailed through the postal dept. NO ADJUSTMENTS WILL BE MADE FOR THOSE WHO HAVE PRE-PAID FOR YEARS BEYOND 2012. LEW YOUNG, TREASURER

A Special Note from your Editor:

If there some of you out there who now have e mail and would like to receive your Whales on Wheels very fast (It takes 2 seconds to e mail it to you), please let me know and I will take you off of my Snail Mail list. You can e mail me at the address below.

Brenda Standal
239-656-3075

brennorm@aol.com



Mystery Picture - Jim Davis says: The picture was taken on the Finger lakes rally (EMU Summer rally) on June 20, 2005. Coaches are from left to right Pratts #373, Coles #555, Pache #389, Helmkeys #408, Zoutendams #375, Potters #394, and Davis #388. The picture was taken by me as the rally stopped for breakfast and a tour of Cornell University in Ithaca, NY. ---should anyone ask. A great rally with Doc Potter hosting around his home.



The following is the 2012 Rally t-shirt information.

Roy Davis has designed the 2012 UVMCC Rally T-Shirts. Theme is ROCKY MOUNTAIN HIGH. The T-shirts are being made for JUST the members who **order in advance**. There will be no extras. Price is \$15.00 payable at the rally. To order call or e-mail Roy Davis, 270-435-4572/jld@wk.net or Lew Young, 209-823-6293/sly111@comcast.net.

Corsa Events

(For details on each event, go to www.corvair.com)

- | | |
|---|---|
| April 20-22, 2012
Hosted by: | Heart of Texas Roundup in Salado, TX, 401 N. Main St., Salado, TX 76571
North Texas Corvair Association |
| April 20-21, 2012
Hosted by: | Springfest in Helen, GA, Edelweiss Strasse, Helen GA 30545
Corvair Atlanta, Heart of Georgia Corvairs, Queen City Corvair Club |
| July 25-28, 2012
Hosted by: | International Convention in Sturbridge, MA, 366 Main St., Sturbridge, MA 01566
Northeast Corvair Council |

Ultra Vans For Sale

#232 Ultra Van. This unit has about 1200 miles on a rebuilt 110 engine. I have invested over \$12,000 for renovation and upgrading. I had just returned from a 1,200 trip with my Ultra before taking it in for some body work and paint job. At that time, it was in great running condition before the wiring was removed. There is a brand new refrigerator, Onan generator, exterior body parts, and (2) windshields that are stored with the Ultra Van in Las Vegas. It also has a rebuilt transmission. Included are heavy duty brakes, new front suspension, air conditioner and swamp cooler. The exterior body is in fairly good shape. The wiring, interior paneling and carpet have been removed in a renovation attempt. Would consider the buyer using some bartering, or doing the mechanical work that needs to be completed. Ultra Van #232 has been relocated to the property of Chuck Hanson in Mesquite, Nevada. Chuck is our current Western Ultra Van Club Board Member. He intends to do some upgrades and improvements on Ultra Van #232. His cell phone number: (702) 346-1688. We can thank Chuck for saving another Ultra from the graveyard. **Darrell Woofter contact at 417-725-8088 or email me at woofcorvair@aol.com for questions. Please make offer.**



#479 Ultra Van. Ready and roadworthy...just move in and roll. Newly Restored Antique Motorhome. 1969 Ultravan #479 (Corvair Powered) 22' Newly painted: White with red pin striping. Highly coveted all white interior with white appliances

New carpet: tan and freshly made curtains. Ralph generator..Coleman 1300 Air conditioning unit. New rubber around windshields. Large rear window. Awning across entry side. Located in Apache Junction, Arizona. \$8,000 or best offer. **Contact Howard Boso Phone (480)288-2636 Cell (480) 518-4103 Email Hamboso@juno.com**



#2019 Tiara This unit is for sale. It is in very good running condition. It has new air conditioner, rug, mattresses like the astronauts use, refrigerator with big freezer two doors. MANY OTHER ITEMS that I can't tell you about as I'm no mechanic. Asking \$15,000.00 or best offer. **Ruth Harvey, 7685 64th St., Pinellas Park, Florida tel. (727) 541-3433**



Ultra Class Ads:

WANTED to buy: The brown plastic trim strip that goes across the top of the refrigerator door on a Dometic RM 360 gas electric, this wording is in gold writing.

One cast aluminum Ultra Van, Hutchinson, Kans. name plate and one plastic or aluminum Ultra Coach nameplate. **Contact: John Howell, 1875 Grubb Rd., Lenoir city, TN 37771 , UV417@0306.org. (865) 986-8898**

WANTED: Hoping to buy or barter out a very good conditioned Corvair-110 engine. It must have less than 25,000 miles on it, or has been recently rebuilt. I plan to have it installed in my Ultra Van #358. **Please contact me: Darrell: woofcorvair@aol.com or telephone: (417) 725-8088.**

For Sale: Reprinted Ryerson Ultra Van Manual

I now have the Ryerson Ultra Van Service/Repair manual and a CD version of it available.

Prices: Manual only \$50.ea. (Mailed in USA.)

Manual only \$70.ea. (Mailed to Canada.)

CD only \$17. (Mailed in USA.)

CD only \$22. (Mailed to Canada.)

CD mailed with manual \$15. (To all.)

Make check to: Eric Kirven.

Mail to: 3585 Cerritos Ave., Long Beach, CA 90807



**New Uncut WINDSHIELDS. Limited number of sets available.
Great price..... Make your Ultra Van look like new.....
Also have two sets of newly fabricated REAR TRAILING ARMS..
Get great alignment. Reduce tire wear.....
Strong.....Rear shock mounts.....Pics available.....
Will.....575-770-6798.....williampanzerart@sbcglobal.net
WILLIAM PANZER, Studio de Talpa
34 Archuleta Road
Ranchos de Taos, NM 87557
www.WilliamPanzer.com, www.ultravancoaches.com
575-770-6798**

ULTRA MERCHANDISE



CUTE Miniature Cloisonné Ultra pins \$5.00 each
Club badges – 1st one free at rally or \$2.75 replacement
"Corvair Powered" bumper stickers \$3 or 2 for \$5
DVD of Ultra Archives \$5.00
VIN # plates (blank – you provide coach #) \$3.00
Blue Golf shirt with stitched "Ultra Van" \$5 (sizes XL & 2XL)
A few T-shirts from past rallies @ \$5.00
Booklet "From Covered Wagon to Ultra Van" \$5.00
½ " X 4 ½ " Stitched patches w/ Ultra on US map & flag \$3.00
Tech tips, sets 1 or 2 (\$13 + \$2 shipping each mailed)
Window decals: UVMCC with Ultra \$1.00
Postcards and note cards @ various prices
Various Viton "O" Rings by Safari priced from \$1 - \$9.00
(Plus shipping)
Call or e-mail about these items...
OR BETTER YET, SHOW UP AT A RALLY!
Available at rallies or by ordering from Nancy Pratt, Merchandise Chairman
570-549-8136 dnpratt@juno.com

2007 - 2012 Clark Catalog

This will be **THE Catalog** until 2013

Includes All our **NEW** parts, **KITS**, improvements and updates.

Over 6
solid months
in the making!

Includes
updates
on **80%** of
the pages!

Thicker
than
ever!

Over
670 pages
1900 photos
1100 sketches

Over
500 exploded diagrams
14,000 parts listed
11,000 index entries

M - O - R - E
Clark Multi Kit choices,



3 volume
set

You need **THIS** catalog!

How to Get One!

Rush order - JUST the catalog - Order over the internet or by any of our regular methods.

\$6.00 USA, \$8.00 Canada, FOREIGN contact us

WITH a Parts Order: order CAT-O \$4.00 3 Lbs.



CLARK'S CORVAIR PARTS,® INC.

400 Mohawk Trail Box C, Shelburne Falls, MA 01370 • 413-625-9776

www.corvaair.com • e-mail: clarks@corvaair.com



Western UltraVan Rally 2012

Mark your calendars

for July 12-16

Salem, Oregon



Host park:

Hee Hee Illahee RV Park

4751 Astoria Street Northeast

Salem, OR 97305

Call today to reserve your spot!

(877) 564-7295

4 nights for the price of 3!

(Let them know you're with the UltraVan Club)

Swimming Pool, Work Out Room, Jacuzzi

Pull through parking, Large Meeting Room

www.heeheeillahee.com

Planned Events:

Brooks Powerland Museum

Car & Truck Museum

International Harvester Weekend with working Equipment on site!

www.antiquepowerland.com

Oregon Gardens

www.oregongarden.org

Evergreen Air Museum

www.evergreenmuseum.org/the-museum

Covered Bridge Tour

www.orebon.com/covered_bridges

Woodburn Outlet Mall

www.woodburncompanystores.com



We welcome all Ultra Van and Corvair enthusiasts!
(Your Ultra Van not road ready? Brand X RV's are also welcome)

Itinerary to follow in the next weeks

Your hosts

Jerry and Patty Mellow

Doug and Meg Bell

(Any questions? Call Doug at 503-260-8920)

2012 UVMCC National Rally

Mountindale Cabins & RV Resort
2000 Barrett Rd.
Colorado Springs, CO
719-576-0619
www.campground1.com

WHERE: Mountindale Cabins & RV Park, 2000 Barrett Rd., Colorado Springs, CO (719) 576-0619

WHEN: Arrive Sept.17th. Depart Sept. 22nd.

WHY: To have a great time with like minded people. See interesting places such as Pikes Peak, Royal Gorge, Seven Falls, Garden of the Gods etc.

FACILITIES: Full hook-ups with spacious lots. Large heated clubhouse with meeting room, game room and full kitchen. Rental RVs and Cabins available. Small store on site. Restrooms are available.

COST: \$31.40 per night for RV spot. Call for Cabin & RV rental rates. To secure exclusive use of kitchen and meeting room, we must have a minimum of 10 reservations made prior to June 17, 2012. While making reservations, be sure to mention UVMCC. The RV park will want a 25% deposit at the time of reservation. The is non refundable after June 17th.

Dinner on the day of arrival, breakfast the second day and the banquet will be furnished at no expense to the participant. Any questions? Call Lew Young (209) 639-6293.

Hosts: Shelley & Lew Young, Larry Foreman and Rosie Walker

**Reservations must be made before June 17, 2012 to make sure we are together as a group.
Be sure to mention UVMCC when making reservations**

The following is the 2012 Rally t-shirt information.

Roy Davis has designed the 2012 UVMCC Rally T-Shirts. Theme is ROCKY MOUNTAIN HIGH. The T-shirts are being made for JUST the members who **order in advance**. There will be no extras. Price is \$15.00 payable at the rally. To order call or e-mail Roy Davis, 270-435-4572/jld@wk.net or Lew Young, 209-823-6293/sly111@comcast.net.

!!

Observations On Building a Big Block 3.1 Motor for my UltraVan

By Bob Gilbert

This is not a "how to" article but more a summary of my experiences over the last few months while building a big block (3.1 liter) 4 carburetor engine for 404.

Costs

Let's start with the cost beast first! It is not cheap! I did a moderate build, nothing fancy, no EFI, no roller rockers, no custom push rods, etc. and the final numbers will be somewhere in the \$4,000 to \$5,000 range. That's Canadian dollars but we are at par or close. That does include shipping costs to Canada but in the bigger scheme of things that wasn't that much. Your costs may differ depending on your starting point, how far you

want to go, etc. but I doubt if you'd get it below \$4,000 and adding the bells and whistles could double that. Is it worth it? Ask me later! I did it in part for the extra torque but also because building a big block Corvair motor was on my personal bucket list. By the way, my strategy was focussed on increased power but not at the expense of reliability, general usability and parts that I couldn't fix or replace while on the road. That's why I stayed away from such features as high compression requiring premium gas and EFI for example. The one "luxury" I did get was a Ray Sedman SafeGuard ignition control unit. I call it a luxury because it is expensive but it's a great piece of equipment for the UltraVan.

Time

It does not happen overnight. The elapsed time for me was 6-8 months and that includes 2-3 months of research trying to figure out the best strategy for the build, who I'd get parts and special services from and so on. A sizeable chunk of the time was rounding up the special pieces needed for the build. Few of the parts are sitting on shelves and the people involved are doing what they can to help in their spare time so factor in some time working around their schedule. I haven't kept accurate track of my actual build time but it will be somewhere in the 100 hour range. This is not working at production speed and I could probably reduce that by a half if I really pushed it but that's not what I prefer to do now that I am retired. A lot of that time was on cleaning parts and cleaning and painting sheet metal.

Space and Tools

It takes space. I moved my Corsa out of my garage for the last 2 months and I laid everything out on two sheets of plywood on a few sawhorses. Having everything laid out like that really helped with the day to day planning process and getting my old brain back into "Corvair mode". I strung up temporary lights to ensure a bright and cheerful work place and best of all, I used the "family engine stand". It's a 30 year old heavy duty home built unit that you could mount a tank engine on and spin it effortlessly. It's the only way to work on a Corvair engine! I have a bad back and having the ability to sit on a stool while I did much of the work was a great help.

Seek out the experts

I've built a few Corvair motors over the years but nothing like this and not for at least 20 years. I've got lots of input and advice from others who have done builds like mine but mostly I used the services of Ray Sedman from American Pi at all stages and I can't say enough good words about him. He has provided guidance during the initial research stage, provided parts and machining services and generally been there when I needed him.

Documentation

I have 3 full book shelves of Corvair documentation and the shop and assembly manuals along with Bob Helt's book all got a good work out! Don't start a project like this without this type of material. The Internet is a great resource but it will only get you so far.

What would I do differently?

During the time of my other builds I had a sizeable parts inventory and in many cases I had a complete engine to start with. I sold off or gave away most of my inventory several years ago (saying I'd never work on Corvairs again! LOL!) and this time I started with a couple of semi-bare blocks. Why was that a problem? I found myself constantly getting stopped because of some missing item. Typically small items including, for example, engine bay grommets, choke linkages, missing nuts and bolts and a fan from a 64 which wouldn't fit my 65-69 blower bub. Nothing expensive but every order from Clarks takes close to 3 weeks to arrive, increasing the elapsed time and resulting in a definite loss of momentum. There probably won't be a next time but if I did it again, I'd start with a complete engine, preferably freshly pulled from a running Corvair.

Was it worth it?

Check back in 4-6 weeks after the first shake down runs! Seriously it's a lot of money and the 110 it had originally was a fine motor so considering it only from the perspective of the cash outlay probably doesn't justify the project. That being said I have no regrets so far and I can (almost) cross off another item from the bucket list!

Western Spring Rally Report by Betsey Senn

We all had a great time. The AVI is such a nice clean smaller casino - with green grass, a very special private beach area, a plush golf course abutting the KOA, ...and the KOA is so accomodating and friendly. The weather was sunny sunny sunny - one day was pretty windy, but it's the desert, and always windy there in Laughlin.

I cooked up my famous chili-soup and potato-ham-cheese soup - with cornbread for the Welcome Lunch - and we had a desert Pot Luck - and played our fun Yankee Swap Meet - and we all ate out every breakfast and every dinner. There's a lot of dining bargains there at the AVI - like every day, there's a shrimp cocktail with a beer for only 99-cents - and on Thursdays all day, it's 2-4-1 buffet - like only \$3.50 for breakfast and \$7.50 for dinner....so needless to say, we all gained a few pounds. Seems like all we were doing was stuffing our faces, eating eating eating! haha



And as usual, the other people at the RV Park were constantly coming over for a tour of the Ultras. They said we sounded and looked like a bunch of fun people -- we musta been pretty loud the entire 3 days! There was 5 Ultras and 1 Tiara, a few SOB motor homes.....there was 20 people altogether. We're a great group of fun-loving Ultra Van fans!!!

Eastern Spring Rally Report

by Brenda Standal



This rally was a no host rally at Hillsborough River State Park in Florida. It was very unstructured. There was plenty of talk time. We had one Potluck meal and a visit to the Blackstone Steak and Seafood Restaurant in Zypherhills, FL. The whole rally was very relaxing. Attending were 4 Ultras and 1 other. Also at the rally was Paul Piche and Margot and Darrell Woofter; a total of 13 plus all of the visitors who took tours of our coaches.

BEAU'S SHOP TALES 2012

By James Davis

Beau entered the shop on January third. Not much work was due as most was performed on the road or in the shop during year.

First was to completely change the fuel pump system. I had changed the fuel pump three times and the relay twice on the road only to find in August that the problem was an intermittent ground on the power relay. A temporary fix got Beau through the rest of the traveling year. Starting with the rear fuse block, all new wiring and power relay were used. All the fittings and the wiring at the fuel pump were changed to make changing the fuel pump a one minute proposition. The spare fuel pump and filter were configured to fit the new position, wiring and fittings.

Next was to change the lower, rear, air spring mounts. I had one fail, due to a cold weld, which caused a three day delay, while I waited for parts. I removed the rear trailing arms to replace the inner bushings with new ones from Corvair Underground. These are the 90 d polyurethane ones just like the outer bushings installed in

2004. The arms were media blasted clean then dropped off at Murray Tool and Die for their periodic x-ray. No cracks were found. I painted them flat black using some Imron I had around the shop, I decided to make the new bolt in mounts that permit easy changing of the air spring should that ever be necessary. They are just 6.5" diameter pipe three inches long that slides over the existing 6" pipe that is the original spring retainer. The current spring retainer was reinforced on the inside of the trailing arm as there is nothing there originally. A 4 x 7 x 3/8" steel plate was welded to the top of the 6.5" pipe and the plate drilled for the 3/8" x 3.5" bolt retaining the air spring. A 3 x 3" pipe spacer floats on the plate providing the height necessary for the air spring. Finally, the 6" spring retainer was drilled and tapped for three 1/4-20 x 1" grade 8 cap screws. The 6.5" pipe was drilled with matching 9/32" holes. There are two screws in the forward position of the pipe and one in the rear position. The reason for this positioning is the loading of the lower mount when the air spring is inflated to near its maximum length.

The new temporary muffler and tail pipe experiment tried last year worked better than the old stinger and SuperTrapp muffler. My wife had reasoned the reason for the occasional exhaust smell in the coach was from the exhaust hitting the trailer box and being forced into the coach when the wind conditions were conducive. I temporarily built a new exhaust system from a Flowmaster 40 and some rusty steel pipe laying around the shop. As it had worked well, I purchased a couple sections of stainless steel 2.5" diameter "J" pipe from Summit racing and welded it to the existing header collectors. The tail pipe now exits on the right rear of the coach just aft of the air intake. I would have rather have had it exit on the left but with all the problems I have had with over heating the propane tank, I thought it best to keep the exhaust away from the tank. The exhaust sounds good but it is not in the league with Ed Lindsay's #330.

Beau had developed a windshield leak on the copilots feet. Following the leak trail, I found it was coming from the windshield molding joint. As the molding shrank, it left a gap under the right aluminum strip. I removed the aluminum strip to find a 1/4" gap which was filled with urethane windshield tape. To ensure there were no more windshield leaks, the pinch weld molding between the glass windshield pieces was lined with urethane tape. The aluminum strips were re-bolted into position and the excess urethane removed with a razor blade. The final thing was to replace the old carpet and pad. Roy picked out a salt and pepper colored, industrial grade Berber. This is similar to the original carpet Roy picked out in 1999. I decided on a heavy 1/2" pad covered with a slip-strip. I used the old carpet as a pattern, precut and then installed the new pad and carpet. The rear step and engine compartment looked dirty against the new carpet, so I decided to recover them also. The original carpet did not use a pad in these places, but I decided to use a pad here for insulation purposes. I stapled the carpet and pad to the top of the engine compartment along with glue to ensure it stays in place. The step carpet and pad are held only by glue. Small holes were burnt into the carpet for the 30 amp DC circuit breaker near the battery switches and the battery switches. Due to the extra thickness, wear plates were fabricated out of aluminum plate to fit under the engine door latch and the battery switches. That looked so good I decided to cover the trunk compartment with a pad and new carpet also. The front carpet was cut to fit under the pilot's and copilot's feet, edges burnished and Roy bound the edges with carpet tape. There is no pad as the carpet must be removed to access the storage compartments below and to check the brake fluid. Additional carpet pieces were cut to fit in the closet (under the cat's litter box) and as an entry door rug. These were also edge bound by Roy.

The good and bad news is the carpet comes in 12 foot wide rolls and you need a 13 foot piece to go from the step to the front. The max width is 7 feet 8 inches at the entry door so there is a lot of waste from which to make special pieces. It took a day from start to finish, but I have done it once before. The cost was just over \$300 for everything, including special tools I rented.

Installing Rack and Pinion Steering in the Ultra Van

By Norm Standal #480 & #500

The simplicity and low cost of manufacturing and installation and the precise steering control with rack and pinion (R&P) type steering have caused it to be used in almost exclusively in all modern, light, and medium duty highway vehicles.

If you would like to use your Ultra Van to travel at highway speeds on our modern freeways, it probably will be safer and more comfortable driving if you have R&P steering and it is now easier than ever to install it because the units used in GMs '07 to '11 medium weight vehicles (like pickups) will fit very nicely under the floor between the wheel wells and toward the front where the original cross rod went through, and they have a long 7 ½" of travel (stroke). From there, the tie rods go straight out (when the wheels are straight) and connect to the steering arms with the outer tie rods (steering arm ball joints) to turn the wheels.

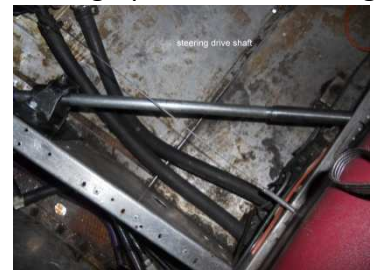
For power assist turning, the R&P is hydraulic connected to an engine or an electric driven hydraulic pump.

Steering Wheel to R&P Connection

At the base of the steering column the steering shaft turns toward the rack pinion through preloaded steering shaft Cardan universal joints and about a 24" long shaft (all under the original floor boards) and connects to the pinion. Thus turning the steering wheel turns the pinion and moves the rack to the left or right turning the wheels.



The design and drafting of the critical components and their layout to obtain the proper Ackermann steering geometry was provided by Glenn Lemke, Coach #247, using his CAD system.



Installation of R&P steering on the Ultras is significantly simplified if it has 14" or larger front wheels and disc brakes, due to the forward and outward spread of the steering arms (relative to the spindles) interfering with the backing plate of drum brakes.

On Coach 480 we had 15" wheels and good working drum brakes on the front, but always felt that disc brakes would be safer for hard braking, so we installed a '64 to '72 GM disc conversion kit that fits nicely, gives us the desired clearance for the steering components and keeps the coveted short Ultra steering radius, and the R&P steering. We now have 350 test miles on it.

Out of Pocket Costs

The best place to buy the R&P is from your local auto recycler because when you buy the R&P you can often times get the outer tie rods (ball joints), pinion connector and ball joint, hydraulic fittings and tubing, and mounting bolts with it for a couple of hundred dollars, & rebuild it if necessary. A bare rebuilt unit will run up to \$300.00. The disc brake conversion kit we used was \$239.00 from Speedway and the 5 used (like new) 911 Porsche steering u joints were \$35.00 ea. (EBAY) Add \$200.00 for misc and you have about \$900 to \$1000 plus a hydraulic pump is needed.

This may sound like quite a bit of money but when you drive down the freeway and feel that sure, velvety, and wind defying steering or you ever need that extra braking, you will know it was worth every penny of it.

