

1987 CVOA GETTYSBURG, PA ROUND-UP

by Bob Chin

It was nice to travel to Gettysburg, PA for this year's CVOA Round-Up. After visiting Indianapolis, IN and New Bedford, MA, the rolling hills of Pennsylvania would be a pleasant change of scenery. Of course, some of those rolling hills turned into steep up and down hill grades that seemed to last forever. At one point coming home from the Round-Up the downhill grade was so long that I had to ask Stacy if we were going up or down! At least the vacuum gage on our Cosworth agreed with her.

Arriving in Gettysburg on Thursday, we were well ahead of most of the arrivals for the event. We were able to see that Brian Pecenco and Scott McLucas had already arrived but were not anywhere to be found. Upon unpacking, we walked around the small town of Gettysburg to see what nearby sights could be seen and what eating establishments were available for dinner that night. We had a very pleasant dinner with Brian and Scott in the tavern of one of the local restaurants and talked about Cosworths, kids, and just about everything else! Later that evening, Dan Chieppa and Meridith Persson arrived with enough time to stop and chat with us.

Friday dawned with hazy skies, which is how the weather stayed all weekend. I proceeded to wax the Cosworth that morning and watch the arrival of all the other members. Many people were just old friends from other previous Round-Ups, and there were many that had come to their first Round-Up ever. The Holiday Inn contained 100 rooms, in which 50 were reserved just for CVOA members. I guess that we can say that we had overtaken the hotel. Many greetings were passed and before we knew it, it was time to have dinner before the Directors meeting.

Gene von Gunten had arranged for all of Saturday morning to be used for Concours judging, swap meet, and a literature and parts display. After a continental breakfast in the Hospitality Suite, everyone gathered for the Concours

judging. The judging was divided into three areas, engine, interior, and exterior with a judge for each area. This helped to speed up the judging.

Inside, the literary exhibit displayed just about every article printed about the Cosworth with some members also bringing in their own personal scrap books. There was a slide presentation with pictures taken of the 1974 Cosworth in the field that used to exist across from the GM Tech Center. This Cosworth exhibited a gold carpet for evaluation that was never used in actual production. The unique display of CV engine parts amazed everyone. The collection of many of the preproduction Cosworth engine

Continued on Page 4

In This Issue

Letter From the Editor.....	3
Message From the President.....	3
Round-Up Participants.....	5
Round-Up Pictures.....	6
Round-Up Award Winners.....	8
Round-Up 1988.....	9
Cosworth Engine History, Part II	12
Technical Tip.....	15
Minutes of 1987 Directors Meeting.....	16
CVOA Financial Report.....	17
Parts For Sale.....	18
Cosworths For Sale.....	19
Parts Wanted.....	19

Cosworth Vega Owner's Association

1987 - 1988 Officials EXECUTIVE COUNCIL

1310 Spring Street

5603 Edwards Dr.

P.O. Box 1783

President-Deb Thomas

Des Moines, IA 50315

(515) 285-7294

Vice President (Membership & Finance) - Clark Kirby

Arlington, TX 76017

(817) 465-6596

Vice President (Merchandise Promotions) - Bob Chin

Bloomington, IN 47402

(812) 339-0838

OTHER OFFICIALS

Magazine Editor/Publisher - Bob Chin

Bloomington, IN 47402

(812) 339-0838

1988 Roundup Chairman - Bob Maloy

El Toro, CA 92630

(714) 582-1503

Co-Historian - Dick Baumhauer

Clawson, MI 48017

(313) 288-2126

Co-Historian - Paul Wicker

Birmingham, MI 48009

(313) 258-0472

Technical Advisors

Mark Grimm - Grimm Chevrolet

Morton, IL

(309) 263-2241

Gary Hill - Hi Torque Specialists

Phoenix, AZ

(602) 944-6131

Bill Hutton - Hutton Motor Eng.

Clarksville, TN

(615) 648-3333

Robert Maloy - RAM Engineering

Santa Ana, CA

(714) 582-1503

D.J. Martin - (Independent)

Hillsborough, NC

(919) 477-6162

Carl Rumberger - Performance Dynamics

Sacramento, CA

(916) 488-3114

REGIONAL DIRECTORS

Region I - Massachusetts, Rhode Island, New Hampshire, Maine, Vermont, Connecticut and all foreign countries (except Canada)

Dan Chieppa
81 Brownell Street
New Bedford, MA 02740
(617) 993-6764

Region II - New Jersey and New York State

Keith Meiswinkel
Box 94, Plains Road
Wallkill, NY 12589
(914) 895-3027

Region III - Pennsylvania, Delaware, D.C., Maryland, Virginia & West Virginia

Gene Von Gunten
809 Springdale Rd. S.
New Windsor, MD 21776
(301) 635-6435

Region IV - North Carolina, South Carolina, Georgia, Tennessee, Mississippi and Alabama

Fred Kieffer
3649 Highgreen Dr.
Marietta, GA 30067
(404) 971-4958

Region V - Florida, Puerto Rico and Virgin Islands

Ron Byers
1401 51st Avenue NE
St. Petersburg, FL 33703
(813) 522-4512

Region VI - Colorado, Wyoming and New Mexico

Dave Erisman
3144 Blue Mountain Way
Colorado Springs, CO 80906
(303) 540-9123

Region VII - Ohio

Jim Straub
1951 Eddy Road
Wooster, OH 44691
(216) 264-2897

Region VIII - Michigan

John Cowall
9677 Fox
Allen Park, MI 48101
(313) 388-1026

Region IX - Iowa, Minnesota, South Dakota, North Dakota, Kansas, Nebraska and Canada

Fred Thomas
1310 Spring Street
Des Moines, IA 50315
(515) 285-7294

Region X - Kentucky, and Indiana

Bob Chin
709 Wellington Court
Bloomington, IN 47401
(812) 339-0838

Region XI - Illinois, Missouri and Wisconsin

Mark Grimm
532 Nelson
Morton, IL 61550
(309) 263-8828

Region XII - Texas, Oklahoma, Louisiana and Arkansas

Clark Kirby
5603 Edwards Drive
Arlington, TX 76017
(817) 465-6596

Region XIII - Arizona, Utah and Nevada

Paul Cornell
8421 E. Cortez
Scottsdale, AZ 85260
(602) 948-3996

Region XIV - Oregon, Washington, Idaho, Montana and Alaska

Pierre Gerard
15568 S. E. Wildwood Ct.
Milwaukie, OR 97267
(503) 654-0972

Region XV - Northern California (Zipcodes higher than 93569) and Hawaii

Jay Bortolotto
5962 Angelo Drive
Loomis, CA 95650
(916) 652-9015

Region XVI - Southern California (Zip codes 90000 - 93569)

(we are searching for a director)

Letter From The Editor

Bob Chin

The 1987 Round-Up at Gettysburg, PA hosted by Gene von Gunten was just a blast. The time spent by Gene in planning all the events proved to be a great time for all who were there. All those that drove to Gettysburg and took PA 30 into town were all in for a big surprise! Unbeknownst to most was the fact that PA 30 is a twisty, winding road with lots of uphill and downhill sections. Some of those sections seemed miles long. Try that in your Cosworth with a week's luggage, wife, and children! There were some sections my 5 speed Cosworth was dropped down to third gear and 4500 rpm just to hold its own up the hills! It was definitely not a road to take at night if you didn't know your way around the hills. I should have listened to Paul Wicker when I talked to him on the phone before we left. You can bet we took a different way home from Gettysburg after the experience that we had getting there!

I must be getting older or more responsible. I passed the chance to autocross #2172 this year to insure that my Stacy and Erica would make it home. I would like to thank Gene VG for letting me use his Cosworth at the autocross site. His reasoning was that it was a shorter tow to get his Cos home if it blew up!

Never follow Clark Kirby to find a restroom. Four Cosworths went into the industrial area of Harrisburg, PA after the autocross (which is a place I wouldn't be caught in after dark since I left New York!) looking for a restroom for the ladies. We finally found a highway to get us out of that area and later found a Wendy's fast food 15 miles down the road. After lunch, the Kirby's, the Syrus's, Shawn Muench, Stacy, Erica, and I felt much better.

Finally a big welcome to the three new Regional Directors, Keith Meiswinkel, Ron Byers, and Jim Straub. I would also like to thank all the Ohio members that I have come to know in the past three years as "interim" Regional Director. Even though I will not be directly in contact with the Ohio region, I will always be willing to go to any event in Ohio if time permits. A lot of friends have been made in those three years and will not be forgotten.

Message From The President

Deb Thomas

Greetings fellow CV owners!

Those of you who missed the Round-Up really missed a great time! Gene, Dave, and Ann von Gunten, worked their tails off the entire weekend and pulled off a very successful event. Of course, behind the weekend of work there was an entire year of planning and scheduling. Thank you guys and Ann!

We would like to welcome as new Regional Directors, Keith Meiswinkel for Region II, Ron Byers for Region V, and Jim Straub for Region VII. Please refer to the list at the front of the magazine for their addresses and phone numbers. We are, however, still looking for a Region XVI Director. Has everyone in Region XVI slid into the ocean? Let's get motivated! Perhaps two of you guys out there can share the duties, let's hear from you, OK?

We have adopted Concours and Solo II guidelines. They will be available to you through Bob Chin just for the asking. If you would like a set, please contact Bob. We would like to have printed them in the magazine, but they are just too lengthy.

The surveys that were mailed to everyone were a success. We received 137 responses out of 511 mailed for a rate of return of 27%. That's really not too bad, but I wouldn't rave about it. What happened to the other 73% of you? Remember, before you complain about the Club, I will have to ask if you did your part and returned the survey. The results are far too lengthy to report here, but generally we all got high marks in all areas of the survey.

The 1988 Round-Up will be in Reno, Nevada. We are all looking forward to hearing from the Round-Up committee consisting of the five western regional directors in the near future with a preview of the weekend, and details as the planning progresses. What is planned so far sounds like a great time to me, so plan on being there!

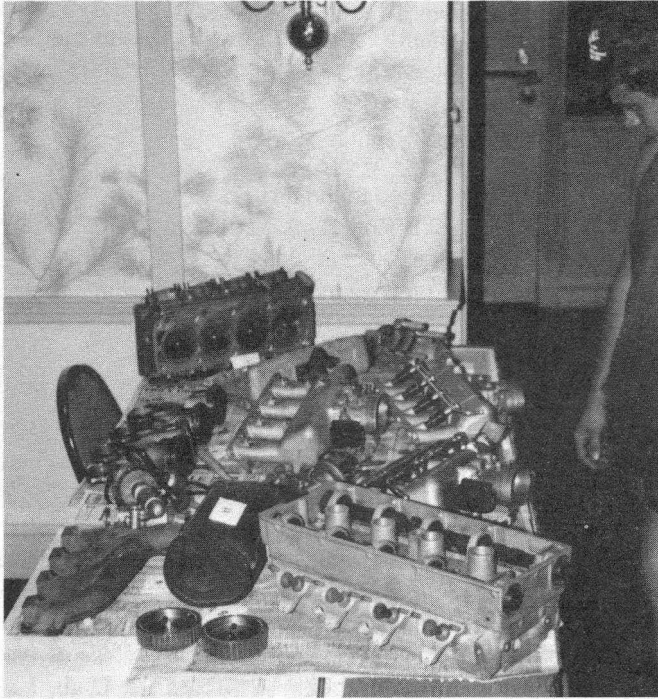
I am hoping to see a "Behind the Lines" article from someone in this issue. If you haven't sent yours in yet, get on the horn and whip one out! Everyone is interested in a good Cosworth story.

Finally, many thanks are extended to Al Taylor, who came to us from GM to speak at the banquet in Gettysburg. Al has just retired and was part of the Cosworth Vega Project up to 1974. He brought photos and brochures on the Cosworth with him and he had enough photos to let each person at the banquet have one as a souvenir! Many of the photos were sometime or another used for the promotional campaign and therefore will be valuable someday! Many of us also had Al autograph the photos, adding to the sentimental value of our Cosworth. Thanks again Al!

8th Annual CVOA Round-Up

Continued from Page 1

parts were there to be seen. Various models of the single port intake manifold, a cast iron exhaust manifold, a EAA Formula II cylinder head including valvetrain, 1974 piston set with rods, and Quad 4 parts completed the display. Of the Cosworths that were there, the majority of the cars were black, two mahogany, one firethorn, one white, and one blue.



Jack Iliff arrived with his turbocharged CV Bonneville streamliner for display. Jack presently owns the GG/S World Record with a speed of 216 mph. Dick Baumhauer brought his Cosworth #3136, (the ex-Grimm race car), to be shown among the rest of the Cosworths that were there.

That afternoon, there was a very short road rally that took us around the Battlefield sights, testing our eyesight with all the monuments that were in the battlefield.

Saturday evening, everyone took a short drive to the dinner picnic for food and talk. There was plenty of food for everyone! The Cosworths were lined up for pictures and it was well into the evening before everyone had left. Of course, when we did arrive back at the hotel, everyone was either huddled around the Cosworths or in the pool enjoying the water. I guess the most amazing sight was Mark Rock's Cosworth with number 2 and 3 exhaust header glowing cherry red!

Sunday arrived very quickly and it was a trek to the autocross site. The autocross was being held in Harrisburg, so we had to drive 45 minutes to get to the site. Once there, the local autocross club handled our Cosworths first through the timed event before they even started theirs. The

course was fairly large compared to what we have seen in the past and was a challenging circuit to drive. Luckily, no one damaged a Cosworth during the event. That afternoon, there was the Battlefield bus tour. The tour lasted approximately two hours and visited all of the important sites of the battle. The bus was the doubledecker style bus with an open air upper deck and a air conditioned lower deck.

The evening banquet was the highlight of the entire weekend. A final get together for all participants, a wonderful dinner for all with plenty to eat, the tally of all events for the best in class, and a discussion with Al Taylor, our Guest Speaker for the event.

Al has spent many years with GM and spent the early years with the Cosworth program till 1974. Al related his experiences with the Cosworth up to that point in time. Al was manager in charge of non-engine related items. This would include air cleaners, rubber boots, acquisition of the EFI system, etc. He presented a slide show of a presentation he gave to the University of Missouri at Rolla back in 1974 concerning the new high tech fuel injection system. Al related stories to us of the initial Cosworth Vega test vehicles way up north for cold start and emissions testing in which the Cosworth was always the first to start but it didn't have a good heating system at the time, about climbing Peaks Peak with two white 1973 Cosworths and only reaching the bottom with one Cosworth left, the initial single port manifold rubber boot that under certain conditions of throttle and steering input would cause the boot to collapse and choke off the throttle body, the fact that the wheels were produced by GKN was because no one else could produce porosity free aluminum wheels at the time, the air cleaner was originally an item for tractors found in AC warehouses modified for the Cosworth, how the color of the car and wheels were picked by Billy Mitchell, Head of Styling, and the conflict of form and function with cost and necessity with engineering and accounting. Before Al was finished, he gave everyone that was there pictures taken during the Cosworth project that were used for press releases. Also given to the Club was an original Press Release Kit, a Chevy Power publication just for the Cosworth, and other items that could not be found elsewhere. As Al said, "I was just cleaning out my desk drawer and I can only take so much with me!"

Finally, the awards were given out. Al Taylor recieved a plaque thanking him for his time spent talking to the group. There were many door prizes given away. Thanks go to HME, and everyone else that donated door prizes for the event.

Most people left Monday morning and it was sad to see everyone off. But it makes for a grander reunion at the next Round-Up in Reno, NV in August 1988.

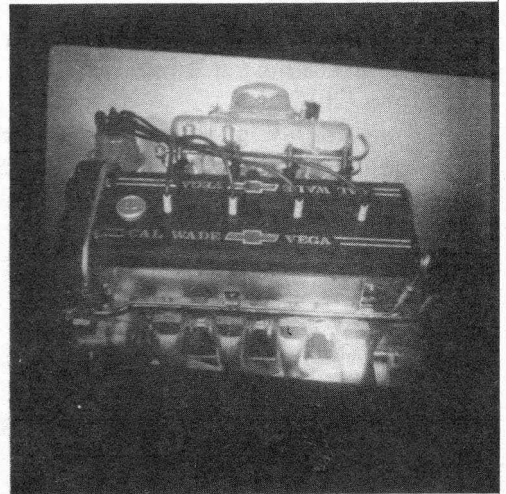
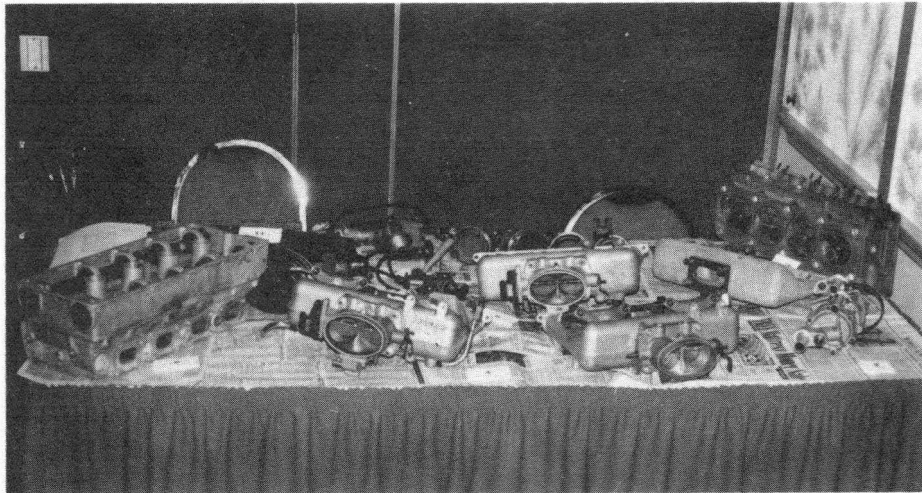
PARTICIPANTS LIST

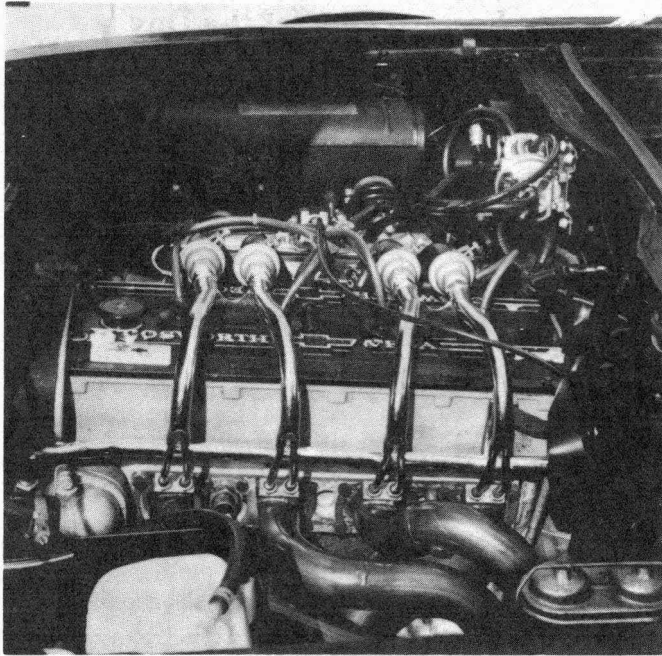
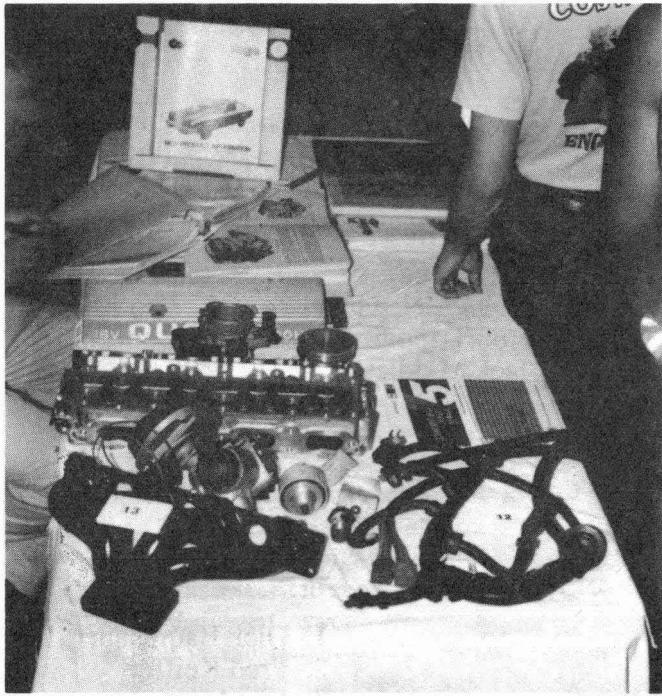
8th Annual CVOA Round-Up

(arranged by registration order)

Bob, Stacy & Erica Chin	Bloomington, IN	#2172
Clark & Jean Kirby	Arlington, TX	#0078
Bob & Dianne Tripodi	Williston Park, NY	
John, Jeanine, Heather, & John Krause	Warminster, PA	
Bob & Ann Syrus	Poland, IN	#1823
Fred & Deb Thomas	Des Moines, IA	Fiero GT
Cliff & June Eroskey	Euclid, OH	#3504
Tim, Lynn, Shawn, & Aimee Foy	Fort Wayne, IN	#2239
Lou & Harriet Marr	Ann Arbor, MI	#1000
Phil Rust	Indianapolis, IN	#2228
John & Margaret Scorza	Brooklyn, NY	
Dan Chieppa & Meredith Persson	New Bedford, MA	
Brian Pecenco & Scott McLucas	Pawling, NY	#0953
James & Robert Stallwitz	Pekin, IL	#2797
Steve & Bonnie Mayefske	Green Bay, WI	
Mr. & Mrs. Dick Baumhauer	Clawson, MI	#3136
Paul & Stephanie Wicker	Birmingham, MI	
Fred Kieffer	Marietta, GA	#3236
Mal, Hyla, & daughter Kooiman	Zeeland, MI	
Jeff & Catherine White	Auburn, NY	
John Chidester	Bowie, MD	#0069
Keith Meiswinkel & Jerry Privitera	Wallkill, NY	#0334
John, Kathy, Kathy, Jonnie, & son Cowall	Allen Park, MI	#0803
Jack Middleton	Woodstock Valley, CT	#0331
Patrick & Marion Hayes	Monson, MA	
Jay Bortolotto	Loomis, CA	
Walt Potchatek	Strongsville, OH	
Mike & Jenny Dillon	Douglasville, GA	#3266
Dan McNally	Verona, PA	#2240
Eric Bluebond	Cherry Hill, NJ	#1384
Mr. & Mrs. Robert Schwager	Baltimore, MD	#0271 & #3012
Robert Dorgan	Pittsfield, MA	#1715
Tom & Nancy Geiman	Brodbecks, PA	#3466
David Erisman	Colorado Springs, CO	
Bob Morrow	Peapack, NY	#2560
Maurice Schechter	Glen Cove, NY	
Ron & Doris Charles	Doylestown, PA	#0649
*Jack Iliff	Annapolis, MD	CV Streamliner
Mark, Barbara, & Ken Rock	Strongsville, OH	#1253
Melvin & Pauline Ayers	Walkertown, NC	
D.J., Jason Martin & Frank Brunton	Hillsborough, NC	#0444
Jim Straub & Linda Farmer	Wooster, OH	
Ron & Margery Byers	St. Petersburg, FL	
Lewis Jackson	Upper Marlboro, MD	
Shawn Muench	Indianapolis, IN	#0874
Mark Manjarrez	Allentown, PA	??
Dave & Ann von Gunten	Westminister, MD	
Gene von Gunten	New Windsor, MD	#2214
*Mr. & Mrs. Pat Snyder	LAFB Hampton, VA	#0912
*Charles Trimpey	Allentown, PA	#0464
*Donna Boyer	Biglerville, PA	#1480
Mark Grimm	Morton, IL	

* Indicates visitor - not registered entrant





1987 CVOA ROUND-UP

ROUND-UP 1987 AWARD WINNERS

CONCOURS

0-25K Miles

1. Tom Geiman
2. Bob Schwager
3. Dan McNally

25K-75K Miles

1. Ron Charles
2. Mark Rock
3. Tim Foy

75K+ Miles

1. Keith Meiswinkel
2. Bob Tripodi
3. Jack Middleton

Custom

1. Lou Marr
2. Bob Chin

AUTOCROSS

Stock

1. Mark Grimm
2. Mark Manjarrez
3. Dan McNally

Modified

1. John Cowall
2. Mike Dillon
3. Maurice Schechter

Unlimited

1. Dick Baumhauer
2. Fred Keiffer
3. Lou Marr

Female

1. Deb Thomas
2. Jenny Dillon

Non-Cosworth

1. Fred Thomas
2. Walt Potchatek

Fastest Time of the Day

Dick Baumhauer

MISCELLANEOUS AWARDS

Outstanding Regional Directors

Dan Chieppa, Bob Chin, Clark Kirby

Best Regional Newsletter

Dan Chieppa

Peoples' Choice Award

Lou and Harriet Marr #1000

Farthest Distance Driven

Bob and Jim Stallwitz

Highest Mileage

Bob Chin 146,000 Miles

Lowest Mileage

Dan McNally 23 Miles

Highest Dash Number

Cliff Eroskey #3504

Lowest Dash Number

John Chidester #0069

Road Rally

1. Dick Baumhauer and Paul Wicker
2. Mark and Ken Rock
3. Fred Keiffer and Jay Bortolotto

RENO!

August 5-6-7

Roundup '88

Hot August Nights. In Reno during the first week of August that phrase means just one thing – cars and 1950's and 60's rock and roll music. The entire week of August 1st thru the 6th, 1988 is dedicated to the "good old days." During August, 1987, over 3000 50's and over 3000 examples of American automobiles from the era of Annette Funicello and *Beach Blanket Bingo* movies took over in Reno and created one of the most exciting weeks possible for true 50's and 60's car and music fans.

The music. It's hard to describe watching fifty or sixty big name bands and performers on stage one night after another, night after night entertaining nearly 12,000 fans, from 6 to 60. Among the entertainers on hand – the one and only Frankie Ava'on, The Shirrelles, Little Richard, The Chantes, The Big Bopper, Little Anthony, who by the way has eight children and four grandchildren, Jan and Dean, The Platters, Brook Benton, Chuck Berry, The Ventures, Shaboom, Bill Haley & The Comets, Del Shannon, Jonie Summers, Dodie Stevens, Wolfman Jack, The Drifters, The Tokens, The Will Porter Band, The Penguins, The Crystals, The Checkmates, Sam and Dave, Four Tops, The Diamonds, Bobby Day and just about any other fifties and sixties group you can name!

The cars. Have you ever seen a parade with 1600 perfect examples of 50's and 60's iron going past? We were in the parade driving a 1964 Chrysler 300K Coupe recently acquired from Lee Lasky. 9.3 miles per gallon, and worth every penny!

The food. 32 ounce (yes, a two pound) Porterhouse steaks for \$6.95, including a monstrous baked potato, salad and vegetable.

The history. Harrah's Automobile Museum, the most celebrated collection of cars in the country, maybe the world. The Ponderosa Ranch and Lake Tahoe are just a few minutes drive and gold and silver mining towns like Virginia City – you'll see it all and do it all at Roundup '88. Be there!

The events. Prior to, and during the Roundup, there's a full week of car and nostalgia events. a Street Dance, Cruzin Burn-Off Contest, Reno Bandstand, Ditch Day at Hamburger Heaven, A Cavalcade of Stars, Prom Night, The Beach Party and Soul Night.

TECHNICAL SUPPORT HOT LINE – SEVEN DAYS A WEEK



RAM ENGINEERING



(714) 582-1503

Bob Maloy, Proprietor
Founder of CVOA

Member, Society of Automotive Engineers
Registry No. 184229405

RAM ENGINEERING has in stock for
immediate delivery –

CYLINDER HEAD

- Cosworth of England Valves
- Schmetthelm "Indy" valve springs
- Cosworth of England valves springs
- Chevrolet Cosworth valve springs
- Cam carrier cover gaskets
- Cam carrier to cylinder head gaskets
- Camshaft seals
- Chevrolet valve stem seal kits
- Cosworth high-performance teflon stem seals
- Valve stem key locks
- Refinished Cam Carrier covers - better than new!
- Custom cylinder head polishing and porting
(all work done in our shop, not subcontracted.)
- Camshafts hardened

ENGINE

- Complete overhaul gasket sets
- All engine seals
- Low friction neoprene rear main seals
- Custom designed piston, pin and ring sets
(any compression to 12:1 – any overbore to +.080)
- Clevite engine bearings
- Stroker crankshafts
- X-ray and other high-tech stress examination processes
- Custom connecting rod rebuilding service
- Compete engine blueprinting and balancing service
- High-performance engine rebuilding
- Cosworth oil pump rebuilding
- Crankshafts reground and hardened

IGNITION

- Spark plugs – AC – R43LTSX and Bosch Platinum
- Plug Wire Sets - with original "tipped retainer ends"
- Distributor pole piece
- Rotor
- Module
- Cap
- Harness, coil to distributor
- Distributor drive housing seals

TIMING BELTS

- Cam timing belt
- Distributor drive belt

What "Cosworth Vega Only" Means To You.

We have a lot in common.

We are dedicated Cosworth Vega owners, and we want only the best for our cars. RAM Engineering's cars have consistently taken First Place in competition after competition, winning "Best Engineered", "Overall Champion", "First Place, Unlimited Class" and on and on.

We have the only competition Cosworth Vega equipped with an original Cosworth of England Formula II EAA motor developing 285 HP (dyno readings). We support a Cosworth Vega in SCCA competition. We work only on Cosworth Vegas, period. Our shop is equipped with the latest in diagnostic equipment such as exhaust gas analyzers, A 5th wheel vehicle dynamic analyzer like the one's used by major automotive magazines, a Bendix EFI analyzer and several other high-tech electronic and traditional diagnostic tools like leak-down testers, valve spring testing equipment, etc.

It's a big investment in both equipment and what we believe to be the largest parts inventory anywhere dedicated to a car as rare as the Cosworth, but we believe, as you do, that the car merits special attention and care. That's why, years ago, we began to stockpile parts (now over \$30,000 worth) so that you can have them available now, when you need them.

Do we provide support before and after the sale? Yes, for the past eleven years, since founding CVOA in 1979.

We have owned twelve Cosworths, and as many as five at once. We are down to just one right now. Ms. Maloy says that's plenty. We are co-sponsoring the 1988 CVOA Roundup in Reno, NV.

(continued on next page)



Cosworth Vega "ONLY"

P.O. Box 910 El Toro, CA 92630-0910 (714) 582-1503

ALTERNATOR

- Alternator bracket bushings
- Alternator belt

STARTER

- Rebuilding of the Cosworth Vega Starter

SPEEDOMETER CABLES

- 1975 and 1976 cables - shrouded
- 1975 and 1976 cable only

CLUTCH CABLES

- 1975 and 1976

HURST COMPETITION SHIFTER KITS

- (4 Speed Only)

HOOD RELEASE CABLES

AIR CLEANER ELEMENTS

PCV VALVES

FUEL INJECTION COMPONENTS

(Most components are available as new or used parts)

- Computers
- Coolant temperature sensor
- Air temperature sensor
- Throttle position switch
- Speed sensor
- Air solenoid valve
- MAP Sensor
- Fuel pressure regulator
- Fuel pump - high pressure (under car)
- Fuel pump - in tank
- Fast Idle valve
- Wiring harness - computer to engine sensors
- Injectors - new and rebuilt
- Injector seals
- Pulse air system components including formed hoses

FUEL INJECTION DIAGNOSTIC MANUAL

BENDIX FUEL INJECTION THEORY BOOK

COSWORTH VEGA SHOP MANUAL

GAUGES

Gauges rebuilt to new specifications, also excellent used gauge inventory.

DECALS, LABELS AND STICKERS

- Air cleaner sticker
- Signature sticker
- Tune-up label on edge of hood - 75 and 76 specifications
- All interior "Cosworth Only" stickers
- Cold start on visor
- Catalytic convertor sticker on visor
- Weight and Vehicle ID sticker on door
- Tire pressure sticker on door
- Jacking instructions
- Aluminum wheel cautionary label
- Price sticker on window

We have provided telephone support to "Cos" owners all over the world since 1979.

Have a problem with your Cosworth? Call us, we can help. If we're not in, leave your name and number on our answering machine, We will return your call at our expense. 7 days a week technical support - 7AM to 9PM, P.S.T.

We are currently negotiating to have a Cosworth Vega displayed in the most prestigious automobile museum in the world, Harrah's in Reno, Nevada.

Our prices are competitive for first class work. No B.S. on horsepower claims. We can document horsepower figures with computer dyno sheets. We stand 100% behind the work we do and the parts we sell. We also publish a RAM Engineering newsletter. Send us your name and your Cosworth's dash number to get on our free mailing list.

Send to RAM Engineering, P.O. Box 910, El Toro, CA 92630-0910, or call us at (714) 582-1503. We accept telephone orders for parts and you can use your MASTERCARD, VISA or

AMERICAN EXPRESS Card.

Same day shipping on 99% of our orders.
Overnight delivery available.

HISTORY OF THE COSWORTH TWIN CAM ENGINE

1969 - 1976

PART II

by
Paul Wicker and Dick Baumhauer
#1440, #2564, #3136, #3520

Introduction

This second installment, of the four part series of articles, covers the period from January 1971, through December 1972. It was during this period that the Cosworth Ltd. EAA engine first ran and the Development program for what was to become the Chevrolet Cosworth Twin Cam engine began. For ease of reading, we have divided this installment into two sections, the first dealing with activities by Cosworth Ltd. on the racing version of the engine and the second, covering the initiation and development of the Chevrolet engine program in the United States.

The EAA Race Engine Runs!

As we ended the last installment, the first cylinder head castings were beginning to arrive at Cosworth Ltd. from suppliers. Building of the first motor commenced during the latter part of January and February 1971, with the first engine running in late March or April of that year. Cal Wade first traveled to England to witness one of the early, if not the first running test of the EAA engine at the Cosworth facility. Unfortunately, the test was short lived as the aluminum Vega block supplied by Chevrolet failed early in the test. Through the spring and summer of 1971, Cal Wade continues to supply Cosworth with additional blocks, including special T6 and T7 heat treatment in an attempt to improve on durability. In addition, cylinder liners of both aluminum and iron are tested. By the late summer, additional dyno testing for longer time periods resulted in improvements in the piston rings, a reduced volume water pump impeller, a revised ignition system, a reduction of the compression ratio, and replacement of the stock head gasket with the pressurized o-rings.

In September, Cal begins working with the Massena, New York foundry, where the Vega blocks are being die cast, to develop an additional block die for the program which would include minor die modifications to strengthen the engine block casting in areas where the Cosworth testing program had found the block to be deficient. Certain of these modifications would be incorporated into the production block that Chevrolet used from the 1973 model year until production ceased in 1977. By the middle of September 1971, Mike Hall of Cosworth Ltd. writes that three engines have completed the 25 hour dyno test which consisted of cycling the engine between 6000 to 9000 RPM.

He states that the test data for these engines indicate 270 HP at 9000 RPM. He also states that it is their hope to place one of these engines into a Chevron Racing chassis to be fielded in the South African Springbok Racing Series in early November. Although the actual race history of the EAA will not be covered in this article, the engine did in fact compete in some races during the end of 1971, qualifying and running well but plagued by continued reliability problems.

In February, 1972, Chevrolet and Cosworth Ltd. reached a trademark agreement which resulted in all Cosworth Ltd. EAA engine camshaft covers carrying the logo Chevy-Cosworth and gave the Chevrolet Motor Division of General Motors Corporation the right to use the Cosworth name on a special edition of the Vega automobile. This was the first time that Cosworth allowed their name to be used in connection with an automobile model line and it would not be granted again until the early 1980's when they would allow Ford Motor Company (England) such permission for one of their models.

Although specifics are not known, it appears that the engines continued to suffer block failures due to the fact that the production block design, casting technique, and machining processes are not in harmony with the requirements of a 270 HP racing engine. Cal Wade points out in a memo to Lloyd Reuss in late May, 1972, that "Unless casting problems are solved, the program with Cosworth is rapidly approaching complete disaster." He goes on to state "To quote Cosworth people, Car constructors are becoming very leery of this engine because of the durability of the case." Wade suggests that Massena Foundry plant management travel to England to review the problems first hand with the Cosworth people. In a detailed report of the trip, the Massena Foundry personnel identified and resolved the machining and casting defects they had witnessed, but point out that block failures from cracked cylinder bores appear to be the result of the clamping loads being placed on the free standing bores when the pressure seal o-ring is used. They identify the requirement of "design application necessary" to resolve this major problem which would be a redesign of the die cast block. Finally, Massena states their intent to run the special modified version of the present die cast Cosworth blocks on the die cast machine which has provided the highest consistent quality castings.

In late September, 1972, Keith Duckworth writes directly to Lloyd Reuss requesting a meeting to discuss the possibility of additional significant cylinder case

Continued on Page 13

HISTORY OF THE COSWORTH TWIN CAM ENGINE

Continued from Page 12

modifications to eliminate the continuing problem of bore splitting. Duckworth indicates his personal willingness to travel to Warren, Michigan to meet with Reuss to resolve this situation. He states "Unless GM are (sic) prepared to proceed with these die modifications speedily, we will only be able to field an engine for the 1973 Formula II category which is hopelessly unreliable, or not competitive."

Although it is not known whether this meeting ever took place or the results of that meeting if it did, it is the authors understanding that this request was eventually to result in the Chevrolet Special Products group's effort in producing the heavy-duty off highway cylinder case. Unfortunately, this effort seemed to come too late for the Chevy-Cosworth EAA engine as Cosworth effectively suspended work on the engine in the fall of 1972 and the program was never reactivated after the heavy-duty cylinder case became available in the second half of 1973. Cal Wade's undated notes of a meeting with Cosworth Ltd. indicate that they had rebuilt failed engines for no charge and had eventually repurchased the EAA engines from the racing teams using them to protect their excellent reputation. Although the relationship with Cosworth Ltd. would remain active through midyear 1973, the engine development activities had ended in late 1972.

It has been reported previously that the Cosworth EAA was a failure due to the inability of the block to retain its integrity when used as a "stressed member" in a racing chassis. The authors have seen no correspondence that reflect this and it is quite apparent that certain cylinder case design aspects and reoccurring quality problems resulted in frequent failures in the test cell was most likely the reason the EAA failed to become a competitive race engine. In closing this section of the engine history, it is interesting to note that when Chevrolet went looking for racing engine technology and expertise for their Indy racing program, they again went to England and two former Cosworth Ltd. employees.

Chevrolet Goes Twin Cam

As was stated in the last installment, Cal Wade had begun the development of a detuned Chevrolet version of the EAA racing engine late in 1970. Although formal approval of the project was not received until early April 10, 1971, Cal was quite busy pursuing the modifications to the Cosworth engine components that he believed were necessary to produce a viable street motor. Examples of these early revisions include revised spark plug diameter (14mm versus 10mm) and replacement of the 1/4 inch diameter bolts and studs at the intake and exhaust flanges with 5/16 inch diameter. This may seem trivial but Cal was concerned about the longevity of the smaller stud diameters during

maintenance. By March, it was becoming apparent that the Cosworth Ltd. program was likely to produce a running engine, and that prospect seems to really start the ball rolling at Chevrolet.

In early March 1971, Gertrude (Jimmy) McWilliams, an advertising and marketing consultant to Chevrolet, prepares a short study on the marketability of a special Vega model based on the detuned version of the Cosworth Ltd. racing engine.

Mrs. McWilliams compares this proposed model to some of the current foreign models being marketed in the U.S. including the MG, Triumph, Datsun 240Z, and Porsche, suggesting that this new model might very well allow Chevrolet an opportunity to draw off sales from those models. She also discusses the significant importance of racing heritage for the model to be a success. She states "The car must ultimately be able to account itself well in SCCA racing." She indicates the model must be competitive with the Kastner and Tullius Triumph, as well as the Pete Brock Datsun. In closing Mrs. McWilliams states "If a Vega with a detuned version of the Cosworth engine will do approximately 126 MPH (I believe that's the claimed top speed of the Datsun 240Z) and 0-60 in about 8.1 seconds, in the form available in dealerships, I cannot imagine how 6000-odd Chevrolet dealers can fail to sell 30,000."

It certainly appears that Mrs. McWilliams' marketing report was well received by Mr. Thomas Staudt, who was then the Manager of Passenger Car Merchandising for Chevrolet, although he does request a second opinion of the market viability of such a vehicle from the internal Chevrolet marketing staff. That response prepared in mid-March points out that the engine development has barely begun, and there are indications that this might very well be a high priced engine of suspect power capabilities in the wrong car! It is apparent that this opinion did not prevail as Lloyd Reuss quotes John Delorean concerning the twin cam engine project in the notes of a March 26th meeting "We should be doing this as fast as we can to continue the high level of interest in the Vega."

Mr. Delorean's comments are quickly transformed into actions as a formal engineering program release is prepared in April which identified a new engine option based upon the English Cosworth cylinder head. The engine would be a lower compression version with modified camshafts, an air injection reaction system, and a fuel system that would consist of dual Holley-Weber carburetors or fuel injection depending upon emissions results and cost. The goal of this new engine option was stated as, "Provide a vehicle with excellent performance and low emissions level without the penalty of high insurance rates. Also to compete with import vehicles such as Alfa, Triumph, Datsun, BMW, not to mention Ford's Pinto effort forthcoming." Annual sale volume is predicted at 15,000 units per year with a mid 1972 model year introduction.

Continued on Page 14

The idea for fuel injection was likely a result of the Bendix Fuel Injection Systems groups previous proposal for equipping the XP vehicles with fuel injection back in 1969. Although Chevrolet declined that offer, they requested another proposal for a similar program in April. Chevrolet Management thought that the introduction of this electronic fuel injection system on a limited production specialized vehicle would permit an early field trial and evaluation to establish their confidence level of the system, before introducing it on higher volume regular production vehicles.

On June 28, 1971 General Motors and Bendix initiated a cooperative engineering effort to design, test and develop an electronic fuel injection system for use on a new 122 cubic inch displacement DOHC 16 valve L-4 engine. The actual contract included such items as complete vehicle concept, developmental testing, reliability and tolerance testing, as well as emissions testing and certification. Bendix began work on the prototype injection system as Cal Wade continued the development of the engine components while pursuing the twin carburetor induction system at Chevrolet. An early September status report on the project indicates that the first engine build has been completed on August 31st, some two months behind the original schedule due to piston availability. The report indicates that the twin carburetor version of the engine would be available for testing as early as mid-September. It is the understanding of the authors that this engine did in fact run, but unfortunately, no pictures, tests, or reports have been located to date concerning this version beyond the mention of it within this report. The report forecasts a start of vehicle production date of October 31, 1972, still one year away.

Bendix development continued with the first prototype engine running on fuel injection in late November. By now the program has adopted the "Vega TC" vehicle nameplate. The vehicle options were to include, in addition to the twin cam engine as standard equipment, a 4 speed transmission, 8000 RPM tachometer, special 6 inch wide mag styled steel wheels carrying A70 x 13 bias belted tires, and a 3.70 positraction rear axle ratio.

In December, the decision to place the Electronic Control Unit (ECU) for the EFI within the passenger compartment is finalized. There had been suggestions that this unit be placed within the engine compartment, but cost and reliability factors dictated the final placement. Bendix alerts Cal Wade to the fact that this will require the EFI wiring harness to penetrate the engine compartment bulkhead. So as 1971 draws to a close, we find the engine development well underway with Bendix now concentrating on testing of the engine package as well as completing the final configuration of the vehicle itself, including the mounting of fuel pump, fuel lines, and sensor package.

In a February 18, 1972 meeting on the "Vega TC" vehicle a somewhat revised program mission states the vehicle will allow Chevrolet to introduce a Bendix EFI system to the market which would meet the 1974 emission requirements. It would allow the marketing of a Vega with an increased performance level (Target 180 HP) and stimulate customer enthusiasm with unique driveability and improved pleaseability. In addition, the presentation includes references to the phenomenal HP to CID ratio of 1.47, while still maintaining a family vehicle insurance rating of 12.5 LBS/HP. The vehicle development program is to include hot testing at Mesa, Arizona, the location of the General Motors Desert Proving Grounds (DPG), above sea level and hill climb testing at Pikes Peak, Colorado, and cold start and very cold start testing at Pellston, Michigan and Kapukasing, Ontario, Canada respectively. Other program milestones included EPA certification complete by January 1, 1973, vehicle pilot building to start January 15, 1973 with a March 15, 1973 start of saleable vehicle production.

On March 27th, the first operational Twin Cam Vega is delivered to Chevrolet. The first car built was a white 1973 hatchback Vega coupe which had started life as a standard 140 CID powered car which was delivered to the GM Technical Center where the original engine was removed and replaced with the Twin Cam version, most likely carrying a Cosworth of England head assembly. The then, non-running car was transported to the Bendix EFI development facility in Troy, Michigan, a distance of approximately ten miles where the injection system was installed by the Bendix engineers.

Total vehicle development continued with the construction of additional test fleet vehicles and engines which are used for numerous exhaustive tests. These tests included component vibration testing, drive belt failure analysis and extensive ECU development with special emphasis on part throttle performance and emissions levels. The final accelerator linkage design is completed at the end of July and the vehicle program has now gained a new name. It would be known as the Cosworth Vega 16 Valve. This came about as a result of the trademark agreement reached by Chevrolet and Cosworth Ltd. which has been discussed earlier.

By September 1972, the vehicle had been released for a total production of 5000 units for the 1974 model year and now provided a 0-60 MPH acceleration performance time of 10.5 seconds. With the added cable wheel hop control used to control rear axle windup the 0-60 time could be lowered to 10 seconds. Engine dynamometer tests were yielding 170 HP at 7600 RPM and 126 ft-lbs of Torque at 4400 RPM. The vapor lock sensitivity of the Bendix supplied high pressure fuel pump, identified during testing at DPG, was solved with the addition of a 6 PSI in tank fuel pump originally developed for use in the Buick vehicle line.

Continued from Page 14

The vehicle program continues to slip with the new forecast for assembly pilot of April 23, 1973 with start of saleable vehicle production to start on August 13, 1973 with an introduction date of September 1973. The engine pilot assembly at Tonawanda was scheduled to start on April 1, with production engine assembly to begin on July 2, 1973.

In early October, the first submittal of data to the Environmental Protection Agency is made as groundwork for the certification of this unique engine family. The certification testing would be accomplished using two 50,000 mile and two 4,000 mile certification vehicles.

November, 1972 brings a major program review by Chevrolet and Bendix management during which it is determined that only wide open throttle (WOT) performance is acceptable. Part throttle or light crowds resulted in very poor driveability and attempts to resolve them had resulted in unacceptable emission levels. By this time the development fleet consists of ten running vehicles equipped with 4 speed transmissions and 3.70 positraction axle. 13 test engines with an additional 10 engines still to be

assembled for use in both vehicles and dynamometer testing complete the development fleet. The test vehicle fleet included a single red hatchback and orange version, and eight white hatchback units. White was destined to become the first official factory color for the Cosworth Vega 16 Valve vehicle package.

Through the month of December slight improvements are made in vehicle part throttle performance and emission levels. Additional changes include a revised alternator bracket, a new fender mounted air cleaner, and a revised positive crankcase ventilation system. The unique EFI component numbering system was also defined that month. The year ends with plans still on track for the start of EPA vehicle certification testing on January 29, 1973.

NEXT ISSUE:

**EPA CERTIFICATION FAILURE AND DELAY!
CHEVROLET SPECIAL PRODUCTS GOES
COSWORTH VEGA RACING!**

CVOA Technical Tips

Please correct the bad advice in the most recent CVOA Technical Tips. It is DANGEROUS to hot wire the high pressure fuel pump to the ignition. Bendix and Chevrolet designed the computer to shut off the fuel flow in the event of an accident serious enough to stall the engine. The current to the high pressure fuel pump and regular in-tank pump is cut off as soon as the speed sensor tells the computer that the engine is no longer rotating. You can test this for yourself. Simply turn the key and you will hear the high pressure pump run for one or two seconds and then shut down. It resumes as soon as the engine begins to crank over.

In an accident with a ruptured fuel line, a dead engine and an operable battery, a "hot wired" fuel pump will drain the fuel tank into the crash scene in a very few seconds.

If the problem is a loose or bad connection, find it and fix it. The life you save may be your own.

Sincerely,

Mark A. Rock

INTERMITTENT ENGINE OPERATION

REVISED FROM VERSION PRINTED IN JULY 1987 ISSUE

A frustrating problem that can cause the Cosworth Vega fuel injected engine to die suddenly or run intermittently has happened to me and a few others. Sometimes the engine would run perfectly and other times it would die and not restart. After trying just about everything including replacing the computer, I discovered that the problem was the connector on the back of the computer that controlled the fuel pump. Whenever the engine would die or wouldn't start, I found that I could jiggle the fuel pump connector and the car would run perfectly again. If anyone else experiences similar intermittent engine operation, try opening the glove box and jiggling the left most connector (black in color) on the back of the fuel injection computer. If this allows the car to start, poor connection should be fixed. The causes could be dirty terminals to cracked solder joints at the PC board inside the computer. **The fuel pump should never be directly wired to the fuse box!** This will eliminate a hard to find problem that I suspect may be affecting a number of other Cosworth Vegas.

COSWORTH VEGA OWNERS ASSOCIATION
Board of Directors Meeting
Gettysburg, PA
August 7, 1987

The meeting was called to order at 8:15 pm by President Deb Thomas. Present were Gene von Gunten, D.J. Martin, Fred Thomas, Bob Chin, Phil Rust, Mark Grimm, Mark Rock, Fred Kieffer, Clark Kirby, Dick Baumhauer, Paul Wicker, Maurice Schechter, John & Kathy Cowall, and Deb Thomas.

There was a review and discussion on the policies and procedures of the Club. It was moved by Fred Thomas and seconded by Bob Chin that the Historians be granted the right to vote on the Board. The motion passed unanimously.

Financial reporting was discussed. It was moved by John Cowall and seconded by Clark Kirby to print financials in the National Magazine once a year. The motion passed unanimously.

Monthly Directors mailing lists were discussed, including the cost incurred and how often they were used. It was moved by Clark Kirby and seconded by Dan Chieppa to offer mailing list either monthly or quarterly, at the discretion of each director. Passed with one abstention. It was moved by Gene von Gunten and seconded by Bob Chin to send a membership list to the National Round-Up Chairman of names and expiration dates of current members. Motion passed. It was moved by Gene Von Gunten and seconded by Clark Kirby to authorize the National Round-Up Chairman to determine who is a member at Round-Up registration. Motion Passed.

Other items discussed were the mailing of written proxies to Directors who cannot attend the National Round-Up to vote with, and also expanding the Executive Council to five members. No action was taken on either of these topics.

There was a review of Regional costs and also a disbursements from National to the Regions. It was determined that the Directors are spending about \$5 per member per year on Regional activities. There will be no change in the Regional dues structure. The \$5 early renewal discount was also discussed, and it was determined that the Treasury can bear any reduction in revenue due to discounts being given.

Clark Kirby presented the Annual Financial reports for review. It was moved by Fred Thomas and seconded by D.J. Martin to approve the Financial reports. Passed unanimously.

D.J. Martin gave a report on the shim program and stated that it is a success so far. There is a problem with obtaining thicker shims, and also with price increases from the supplier. D.J. was directed by consensus to search for

alternate suppliers. Paul Wicker agreed to ask GM who the original supplier of the shims was.

There was a discussion on the National Magazine, and Bob Chin reported that all was going well.

Maurice Schechter nominated Keith Meiswinkel to replace him as Regional Director and also asked to be added to the staff of Tech Advisors. The motion passed unanimously.

There was a discussion of incorporating and obtaining a tax exempt status. It was moved by John Cowall and seconded by Dick Baumhauer that Mark Rock investigate and proceed with this. Motion passed unanimously.

There was a discussion of the 1988 Round-Up at Reno, NV. Jay Bottolotto and Dave Erisman reported that all things are going smoothly according to schedule. Deb Thomas will write a letter to the Committee Chairperson, Bob Maloy, to touch base on several matters.

There was a motion by Gene von Gunten and seconded by Clark Kirby to have the 1989 Round-Up in Des Moines, IA. Region IX will host the event with Fred Thomas and Deb Thomas as Chairpersons. Also included was the targeting of the 1990 Round-Up in the Southeast. Passed unanimously

There was discussion of the National Questionnaire and Deb Thomas reported that the National organization got high marks from every region. The Directors were invited to examine them and read the comments.

There was a discussion of the Tech Bulletins. A motion was offered by Gene von Gunten and seconded by Dick Baumhauer that the Tech Advisors review the bulletins before publication. Passed unanimously.

There was a lengthy discussion of the proposed Solo II Guidelines. Due to the late hour, the discussion was tabled until Sunday night to give every one time to think about the many proposals. It was moved by Gene von Gunten and seconded by John Cowall to take Gene's 1987 Round-Up Autocross rules and amend the proposal in Section A, Stock Class to read "Any size D.O.T. approved tire will be allowed." It was moved by John Cowall and seconded to amend the proposal in the same section to read "No wear rating marked on the sidewall of less than 150 will be allowed." Both motions passed.

Nominations were taken for next year's Executive Council. The same officers were retained unanimously.

Continued on Page 18

COSWORTH VEGA OWNER'S ASSOCIATION
Financial Report - Fiscal Year 8/1/86 thru 8/1/87

Beginning Balance (8-1-86)

\$ 2,553.79

INCOME

Membership Fees	\$ 10,632.20
Merchandise Sales	1,233.19
Paid Magazine Advertisements	637.50
Miscellaneous	356.04

Income Total - \$ 12,858.93

EXPENSES

National Magazine (4 issues)	\$ 4,833.27
Recruitment (magazine ads)	2,135.95
Regional Fees (to Directors)	2,050.00
Office Supplies (computer paper, etc.)	842.25
Merchandise Sales Administration	786.17
Administrative Postage	559.09
Miscellaneous	480.43
Printer Purchase	335.30
1986 Round-Up Awards	210.00
Membership Survey	206.12
Long Distance Telephone	192.27
Tool & Shim Program	190.00
President's Expenses	160.15
Charge Card Use Fee	73.20

Total Expenses - \$ 13,054.20

Ending Balance (8-1-87)

\$ 2,358.52

I hereby declare that all monies are reported accurately, that all bills are paid, and that all bank accounts are balanced as of this date.

Clark Kirby
Treasurer, CVOA



1976 CV #2562 Black, Black cloth, am/fm stereo, rear defogger. Runs like new, 41,000 miles. A very good car. Asking \$4,000 but will deal. Tony Waleski. (201)437-6589 evenings. Bayonee, NJ. 10/87



PARTS FOR SALE

Sleeve/piston sets, standard bore or .070 over with pins and keepers. Compression ratios, 10:1 or 13:1, \$550 per set. (313)258-0472 or (313)288-2126. Evenings or weekends please. 4/87

New 16:1 "FAST STEERING" gearboxes. Last of the GM warehouse stock. \$195 includes shipping. Paul Wicker, 1424 Pierce St, Birmingham, MI 48009. Call evenings (313)258-0472. 7/87

1 set of 75 Cosworth wheels, a pair of black door panels, and a set of brand new, never used black floor mats, many other interior parts. Call with needs. Tom Pilcher, (703)451-1302 VA 7/87

Dismantling 1975 & 1976 Cosworth Vegas. All mechanical, electrical components for sale. Most body panels are still available. Call: Mark Rock, (216)238-7888 evenings. OH 7/87

Chevrolet Hi-Po ABS rear deck spoiler for Vega, \$100. 1975 22:1 steering box, \$75 OBO. Shawn Muench, (317)546-4275. IN 7/87

Chevrolet Hi-Po ABS three piece front spoiler for Vega, never used, \$175. Bob Chin, (812)339-0838. IN 7/87

NEW GM CV/VEGA PARTS: CV Water pumps \$65, air deflectors \$25, LH & RH door weatherstrips \$62. Other new and used engine, interior, and body parts available. Call after 6:00 PM CST. Tim Morgan, (713) 589-0449 TX

Used and new Cosworth parts available. Better than stock and super high performance 2.5 liter engine. Expert rebuild service. Schechter Motoring (516)759-3645. NY 10/87

Fuel injection parts for sale, including rare adjustable computer unit made for #0998 "GOLD RUSH." Set of Chevrolet short track racing cams, 12.5:1 pistons, 4-speed with Hurst linkage. Call Sacha Gerrish, (303)494-7354, evenings. CO 10/87

FOR SALE - PARTS-PARTS-PARTS-PARTS!! New fitted blocks, cranks, heads, cam carriers, covers, bezels, cams, spoilers, floor mats, filters, tent, batteries, and lots more--except no stripes!! Jim Dingell, Jr. (703)281-0078 home or (800)336-0423 X29 work. 10/87

DIRECTORS MEETING

Continued from Page 16

Votes were taken for Best Regional Director and Best Regional Newsletter.

There was a motion by Fred Thomas and seconded by Clark Kirby to approve the actions of the 1986-1987 Executive Council. Passed unanimously.

It was moved by Gene von Gunten to adjourn at 12:45 am. Clark Kirby seconded and the motion passed.

Respectfully submitted,

Fred Thomas

Sunday evening at 6:30 pm.

The meeting of the Board of Directors resumed.

There was some discussion and it was moved by Fred Thomas and seconded by Clark Kirby that we adopt the Solo II Guidelines and use them for the 1988 Round-Up with the before mentioned amendments. Motion passed with John Cowall dissenting.

COSWORTHS FOR SALE

1975 CV #0012. 42,000 miles, all original, only \$3950. Call Bill Harris, (303)674-9814. CO 10/87

1975 CV, 400 MILES, black, black vinyl, AM/FM, swing-out windows, refo, door edge guards, tinted windows, posi, rear speaker, aux lights, floor mats. All factory/dealer paperwork. Definitely for collectors or show. Stored properly. \$3000 over sticker and

1976 CV #3224. White, red vinyl, 4 speed, driven daily, some minor rust but restorable. No reasonable offer refused. Steve Larson, (312)934-3672 (weekends or evenings) IL 10/87

1975 CV #0271. Every option including posi, cloth interior, etc. Immaculate, 19,000 original miles. Runs very strong in unaltered 100% stock form. Definitely the pick of the litter! If you want the best call (301)484-0805, Robert Schwager, Baltimore, MD 10/87

1975 CV #0416. Black, Black vinyl, am/fm stereo, tinted glass, swing-out glass, body in good condition, garaged in winter. 4 spd trans, 4:10 rear gear, quick ratio steering box, Gabriel adjustable shocks, like new Goodyear Wingfoot tires. Wheels have been freshly painted the correct color. Good running, solid car. \$2,900 OBO. Call evenings and weekends (309)263-7017, Glenn Goggins, Morton, IL 10/87

1975 CV #0437. Black, black vinyl, good condition, 58,000 miles, posi, JVC AM/FM CB radio, aux. light package, \$2500. Tom Rourke, (518)456-3693. 10/87

1975 CV #0731. 68,000 miles, original black on black, swing-out windows, defogger, am/fm, posi, 4 spd, new paint and decals. \$2,500. R.R. Williams, (312)964-6313. IL 10/87

1975 CV #0797. Black, black vinyl, 27,000 miles, tint glass, posi, swing-out windows, rear speaker, rear defogger, aux. lighting, cloth headliner, frt. & rr spoilers, excellent condition. \$6000 OBO. Mark Brown, (518)234-7677. NY 10/87

1975 CV #0961, Black, Black vinyl, 60,000 miles, tinted glass, swing-out windows, cloth headliner, straight and original. Also have complete spare '75 Cosworth motor and transmission. \$2,000 OBO Brian Schafer (214)436-2464. Lewisville, TX. 10/87

1975 CV #1417. Black, original, vinyl, posi, tint, 4 spd, am/fm, defog, 24,600 miles. \$2,100. Dan Lindbom, (404)556-9166. Grovetown, GA. 10/87

1975 CV #1440. Black, white vinyl, AM/FM, rear defogger, original wheels and tires, never titled with MSO, only 483 miles! Offers over \$6500. Paul Wicker, (313)258-0472. MI 7/87

1975 CV #1953. Black, black vinyl, Hurst 4 speed shifter, posi, Koni shocks, Eagle ST's, Webers, 33,000 miles. Asking \$4000 OBO. Tom Pilcher, (703)451-1302. VA

1975 CV #1967. Black, Black vinyl, posi, swing-out windows. 76,000 miles (5,000 miles on rebuilt sleeved engine) rest is original. Needs paint, have all stripes and an extra set of 1976 wheels (5 total). \$2,000 Mike Garland (818)363-5411 Northridge, CA. Call 6-9pm West Coast Time or weekends. 10/87

1975 CV #2034. 27,000 miles, all original except tires and wheels, positraction, swing-out windows, rear defogger, door edge guards. Real good shape, asking \$3,200, OBO. Mike Setnan (714)857-2968. Irvine CA. 10/87

1976 CV #2441. Black interior, needs work. \$3000 OBO. Call June at (619)463-7277 home or (619)237-3782 work. CA 10/87

1976 CV #2618. Only 32 actual miles. A brand new Cosworth! Never licenced to run on the street. Black, black vinyl, 5 speed. \$7850. Contact Harry Merrit, P.O. Box 210, Husum, WA 98623 or (509)993-2369 and 1976 CV Black, black cloth interior, 15,000 miles, runs good, needs paint. \$2000

1976 CV REPLICA. Black, black cloth, swing out windows, sky roof, rear defrost, 5 spd, posi, new BF Goodrich TAs, tinted windows, 13x7 vector wheels, koni shocks, new paint, front and rear spoiler. 8,000 miles on motor. Stock Cosworth motor, dual webers, exc. cond. \$4,000 Michael (303)666-4113. CO 10/87

PARTS WANTED

White interior door panels. Contact Bob Chin, 709 Wellington Ct., Bloomington, IN 47401 or call (812)339-0838

Complete bracket needed for front exhaust header pipe. Keith Meiswinkel, (914)895-3027

Complete pulse air assembly, contact Ken Duncan, 602 Cayce Street, Hopkinsville, KY 42240

Pulse air tubes for my Cosworth. Contact Tom Hutton, 7839 Wood Court, Kansas City, KS 66112

ANOTHER WORLD'S RECORD for the COSWORTH VEGA

During the racing meet held in August, 1987, Harry Merritt of Husum, Washington, set a new World's Land Speed Record for G-Fuel Lakester cars at Bonneville, Utah, with arecord shattering 166.78 MPH.

The car, powered by a basically stock fuel injected 2.0 liter (1996 cc) Cosworth Vega motor and sponsored by Kalbach Brothers-Merritt-Fischer Racing Team, demolished the old record by nearly 10%.

Technical support for the successful record attempt was provided by RAM Engineering of El Toro, California.

ADVERTISING POLICY

Business Ads: \$25 for up to 1/4 page
\$50 for up to 1/2 page
\$100 for full page
\$75 for full page camera ready

Classified ads: CVOA Members shall be limited to one free ad per issue.
An additional 30 word ad for CVOA members will be \$5 extra.
Photos are \$10 extra.

Classified ads: Non-members will be charged \$15 for each 30 word ad per issue and \$1 for each additional word.
Photos are \$10 extra.

The CVOA is not responsible for any advertised claims, products and/or services from independant/commercial vendors. However, reoccurrence of complaints may result in denial of advertising space and reference in the COSWORTH VEGA MAGAZINE.

**Classified Ads for the January
Issue must be received no later
than November 30, 1987**

COSWORTH  VEGA

Service Facilities Listings

Telephone *HOTLINE* Service

CARL RUMBERGER — FUEL and IGNITION SYSTEMS

**Performance
Dynamics** ●

DIST. AND CARB MODIFICATIONS • PERFORMANCE TUNING
2346 TOWER AVE. • SACRAMENTO, CA 95825 • (916) 488-3114

Hi Torque Specialists

Builders of Truly Unique Cosworths
up to 2.6 liters - 4 wheel disc with/without power
Power Steering Conventional/Variable Ratio
with/without air conditioning
Perfectionists at cyl. head restoration/modification
Bumper to Bumper restoration/modification
New process for Cosworth wheels
602-944-6131 Gary Hill
Phoenix, AZ

Technical assistance always available.

GRIMM CHEVROLET, INC. MORTON, ILLINOIS 61550

Cosworth Parts and Service
Ask for Mark Grimm
(309) 263-2241

We stock over \$7000. in Cosworth Parts
10% Discount to C.V.O.A. members - UPS Shipping

Hutton Motor Engineering

P.O. Box 3333

Clarksville, TN 37040

Bill Hutton (615) 648-3333

Specializing in High Performance Cosworth of
England Pistons, and expert motor and cylinder
head work, Same day shipping on most stock C-V
parts. We welcome your calls for technical
assistance.

RAM ENGINEERING

AUTOMOTIVE EXCELLENCE

POST OFFICE BOX 910,

EL TORO, CALIFORNIA 92630

(714) 582-1503

Robert A. Maloy, *Proprietor*

COSWORTH TWIN CAM STRIPES GONE FOREVER??

NO! After a great deal of hounding, badgering, clawing and name calling, not to mention a little good luck, General Motors has given CVOA permission to reproduce complete stripe kits directly from their supplier, the 3M Company. This allows us a one time purchase only and we must purchase at least 100 sets to proceed. Please use the order blank in the magazine. A few points to remember about the new sets; to the best of our knowledge, the sets will be preproduced on the same type tooling as the original. Please keep in mind the words "Cosworth Twin Cam" may not have the black background but we are 95% sure that it will. The 3M people tell me that the process calls for three items to include both black and gold silk screens. Also, the use of a portion of the new set with original or other replacement stripes may not match the gold exactly. The aging of older stripes and exposure to the sun may cause slight variations in color.

Now for the best part, Chevrolet's last price when complete sets were available was around \$240. The CVOA has managed to reduce the price slightly, the complete stripe set delivered to your door by UPS is \$95. This price is for members only. Non-members may purchase the kit for \$125 and this would include a one year membership in the CVOA.

Delivery from 3M will be 90 days from date of the CVOA order.

Dash and VIN number on order blank confirms membership and are needed for new memberships!

Orders must be confirmed by November 14, 1987.

Order now! If you let it slide, your only opportunity to purchase a new set of GM approved reproduction stripes may just slide away!

Please send _____ set(s) of Cosworth Vega Stripe Kits @ \$95 per set. Included is my check or money order for \$_____

My dash number is _____ VIN# _____

Cosworth color: interior _____ exterior _____

(Send to) Please make check out to CVOA

Dick Baumhauer
450 N. Batchewana
Clawson, MI 48017

CVOA may refuse certain personal checks and request money orders as payment.

Brogan's Garage Sale



The ultimate Cosworth race car. 76CV, powered by Cosworth of England Formula II engine to the tune of 265 horsepower, with 285 available with cam change. Not only fast, but historically valuable as a surviving F2 engine. Low hours and properly cared for, this car was built by Bob "Gotta go Fast" Maloy and friends with no expense spared (Try \$30,000 in receipts!). Includes:

EAA 2 litre engine, fully blueprinted/balanced
Lucas mechanical slide valve injection
COE dry sump oiling system
Four link rear suspension
Ford 9 inch rear end
Gotti wheels - 8 X15 front, 9 X15 rear
Goodyear Blue Streak racing rubber
Hooker Fiberglass Body Panels and Bumpers

Full sub-frame and roll cage
Scheel Normex seat and six-point harness
NASCAR 4 wheel disc brakes, adjustable bias
21 gallon fuel cell
Aluminum hand formed interior panels
Full instrumentation and custom dash
McLeod Multi-plate clutch and aluminum flywheel
Possible street legal conversion in some states.

Offered now at \$7,850 obo. Call and chat. I will consider partially financing the right person.

Pat Brogan
(714) 499-2612

CVOA ANNOUNCES

REPRODUCTION DASH PLAQUES

24K GOLD PLATED BRASS, LOOKS LIKE, FEELS LIKE, SMELLS LIKE ORIGINAL.

MOUNTS WITH PRESSURE SENSITIVE TAPE INSTEAD OF STUDS.

ANY 4 DIGIT NUMBER OR BLANK AVAILABLE - YOU SPECIFY WHAT YOU WANT.

USE TO REPLACE MISSING OR DAMAGED PLAQUE OR MOUNT ON WOODEN PLAQUE FOR DEN OR HOBBY ROOM.

BUY 1 OR ALL 3508!

THIS WILL BE THE ONLY CHANCE THAT THE CLUB OR ANYONE ELSE WILL BE ABLE TO ORDER REPRODUCTION DASH PLAQUES FROM THE OEM SUPPLIER.

THE CLUB MUST RECEIVE PAID ORDERS FOR TOTAL MINIMUM OF 150 PIECES. DELIVERY IN 8 - 10 WEEKS FROM CLUB ORDER DATE.

ORDERS ACCEPTED UNTIL NOVEMBER 14, 1987.

\$12.50 EACH DELIVERED.

MAKE CHECK OR MONEY ORDER PAYABLE TO CVOA. PLEASE INCLUDE YOUR VIN# WITH DESIRED DASH PLAQUE NUMBER.

**SEND ORDERS TO: DICK BAUMHAUER
 450 N. BATCHEWANA
 CLAWSON, MI 48017**

**Cosworth Vega Owners Association
Post Office Box 1783
Bloomington, IN 47402**

**FIRST CLASS MAIL
U.S. POSTAGE
PAID
PERMIT #171
Bloomington, IN 47401**

First Class Mail

**POSTMASTER: Please notify sender of
change of address**