

Color Action

**DON GAY'S NEW GTO**  
170 MPH TIGER-R-R-R FROM TEXAS

# CAR CRAFT

**CAR CRAFT**



*DRAGGIN' SPRINGS*  
*SUPER CRUISE-O-MATIC*  
*THE "BALANCING" ACT*

SEPTEMBER 1966

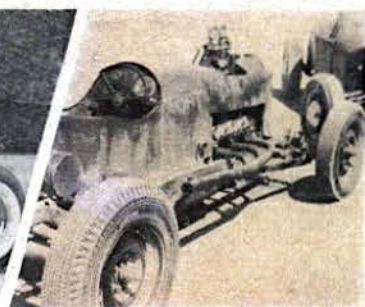
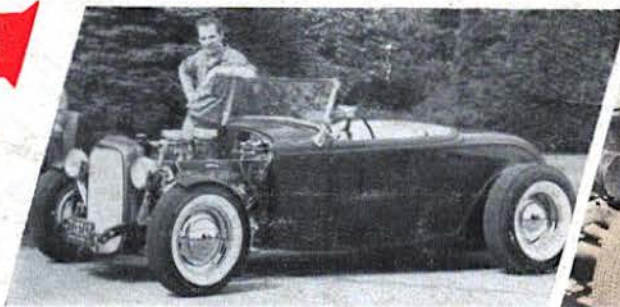
**NOW! FOR THE FIRST TIME...**

50c

# THE



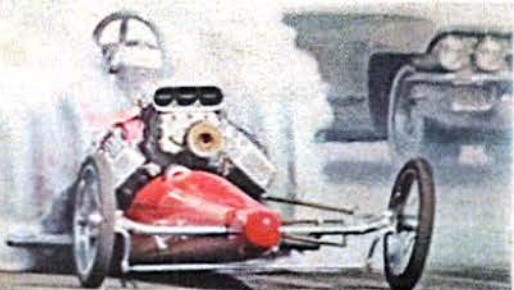
# HOT



# ROD



# STORY





## Sunday Driver.

Richard Petty does his most spectacular driving on Sunday afternoons. Since the '66 NASCAR season opened, Petty and his Hemi-engined Plymouth Belvedere have rewritten the qualifying lap records on just about every track in the Grand National circuit. And first place in this year's Daytona "500" went to Petty with an all-time race record average of 160.625 mph. Of course, Petty's Hemi Belvedere isn't for sale at your Plymouth Dealer's... even if you wanted one. It was built just for racing.

But Petty races a Plymouth for a lot of the same reasons so many people buy the production version of the Plymouth. Things like torsion-bar front suspension.

Asymmetrical rear springs. And a complete package of safety features like safety door handles... all standard equipment. And options like disc brakes, heavy-duty suspension, limited-slip differential and a choice of engines on up to the street version of the 426 Hemi. And the same history of reliability that makes the race car a winner. So see your Plymouth Dealer and check out one of the '66 Plymouths... they're winners Monday through Saturday too.

PLYMOUTH DIVISION  CHRYSLER MOTORS CORPORATION

*Plymouth* ...a great car by Chrysler Corporation.



# 46 out of 50 Cadillacs accelerated faster with Champion spark plugs!

(And 49 out of 50 Chevies accelerated faster, too!)

Does it really matter what brand of spark plugs your car uses? You bet it does!

In tests at the famous Sebring Race Track, sanctioned by the United States Auto Club, 46 out of 50 new Cadillacs accelerated faster with Champion spark plugs than with the brand that originally comes with Cadillacs. Here's how the tests were run. Two Cadillacs were paired against each other in each test. Both were started simultaneously by an electronic device and accelerated at full throttle for 200 yards. The brands

of plugs were switched, the test repeated. In 46 cases out of 50, Cadillacs with Champions accelerated faster.

In other tests with Chevies, 49 out of 50 Chevrolets accelerated faster with Champions. What's more, in still more tests 48 out of 50 Chevrolets got better gas mileage with Champions. More proof that the brand of spark plugs *does* make a difference in your car.

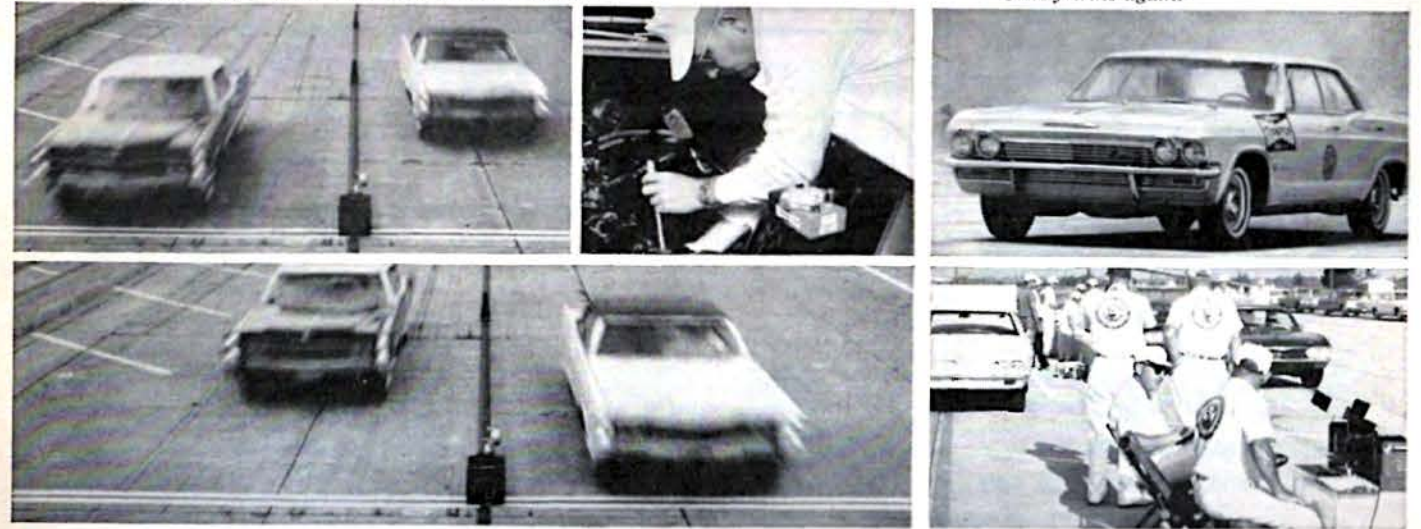
All tests were conducted by Nationwide Consumer Testing Institute and sanctioned by the United States Auto Club.



CHAMPION SPARK PLUG COMPANY, TOLEDO, OHIO 43601

1. Crossing the finish line on acceleration test, the dark Cadillac with Champions wins easily. 2. Now we switch the brands of plugs. 3. This time, the white one wins with Champion!

1. 49 out of 50 Chevrolets accelerated faster with Champions. 2. Electronic timers confirm it... Champion-equipped Chevy wins again!



NUMBER

1

In every field, ONE product excels above all competition. In the automotive speed equipment field, EDELBROCK sets the standard of quality... the No. 1 name, the most respected name in the industry.

**Edelbrock**  
MANIFOLD  
VALVE COVERS  
MARINE EQUIPMENT



Chev. V8 dual quad Model C-26/Cat. #2125

All Edelbrock dual, triple and four carburetor manifolds feature the exclusive 180° balanced firing order design or the Isomite isolated design. Our many years of experience plus our reputation is your assurance of the ultimate in quality and performance. For the finest in auto or marine speed equipment — buy the finest — buy Edelbrock.

Send fifty cents for big 1966 catalog to:

**Edelbrock**  
EQUIPMENT COMPANY  
4921 W. Jefferson Blvd. • Los Angeles 16, Calif.  
Dept. CC

# CAR CRAFT

**DICK DAY**  
Publisher  
**ALEX XYDIAS**  
Editor  
**BOB LEIF**  
Managing Editor  
**DICK SCRITCHFIELD**  
Associate Editor  
**BUD LANG**  
Technical Editor  
**BOB YOUNG**  
Art Director



THE AUTOMOTIVE GO & SHOW MAGAZINE

## features

**MAN IN THE MIDDLE** NHRA's Official Starter Buster Couch.....12  
**THE HOT ROD STORY** Chapter 1 on the start of the sport.....22  
**WOULD YOU BELIEVE THESE FUNNY CARS** Pictorial essay.....34  
**HOT ROD MAGAZINE DRAGS** 7.24 e.t. & 221 mph made the program....36  
**DRAGGIN' SPRINGS** By Leroi "Tex" Smith & Bud Lang.....40  
**BUILT WITH JEWELER'S TOUCH** Tom Booth's masterpiece roadster.....42  
**TIGER FROM TEXAS** Don Gay's "Infinity" blown GTO.....44  
**THE MATING GAME** Get things flat & don't blow your gaskets.....48  
**GASSER GORILLA** Under the hood of "King Kong" lurks a big Chevy.....50  
**THE BALANCING ACT** By Alex Walordy.....54  
**THE MASTER'S TOUCH** By Bud Lang—Art Carr builds up the Ford C6 trans...58

CC ACTION SHOWCASE: Photographed at the Houston Raceway, Houston, Texas by Bud Lang

## departments

MAIL RUN ..... 6  
 OUR POINT OF VIEW.....10  
 STRAIGHT SCOOP .....20  
 SHOW CIRCUIT .....86  
 CC SHOPS .....88  
 CC GASSERS .....90

## COVER

Kicking off with the Hot Rod Story, this month is a special cover creation that spans the hot rodding sport from its inception to the present day. Art Director, Bob Young handled the graphics.



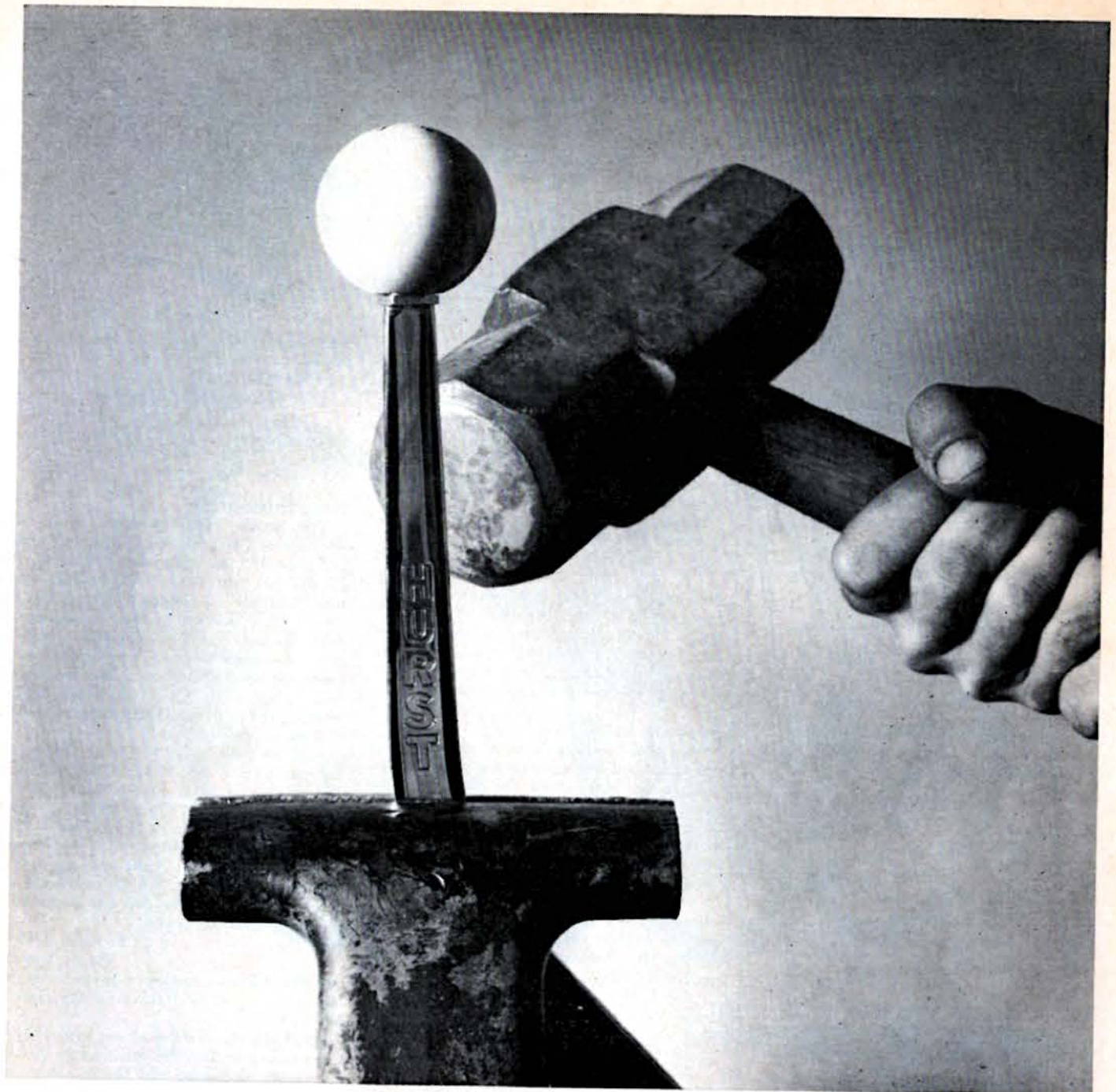
**Robert E. Peterson** President  
**F. R. Waingrow**, Executive Vice-President  
**Kenneth Hudnall** Advertising Director  
**Herbert Metcalf** Circulation Director  
**Jack Preston** Production Manager



**M. S. Rawitsch** Purchasing Director  
**Albert Michaelian** Research Librarian  
**Albert H. Issacs** PCC Art Director  
**Robert D'Olivo** Photo Director  
**Donald Maxwell** Controller

PETERSEN PUBLISHING CO. ADVERTISING OFFICES: CALIFORNIA, 5959 Hollywood Blvd., Los Angeles 28, HO 6-2111; MICHIGAN, 2208 Detroit Bank & Trust Bldg., Detroit 48226, 963-8040; ILLINOIS, 401 N. Michigan Ave., Suite 1444, Chicago 1, 222-1920; OHIO, 601 Rockwell Ave., Cleveland 14, 621-2006; NEW YORK, 770 Lexington Ave., New York 1, 751-5260.

Car Craft magazine. © Copyright 1966 by Petersen Publishing Company, All Rights Reserved. Second class postage paid at Los Angeles, California and at additional mailing offices. Subscription rates: U.S. Possessions — 1 year \$5.00, 2 years \$9.00, 50c per copy. All others — 1 year \$6.00, 2 years \$11.00. Give six weeks notice for change of address. CONTRIBUTIONS: Should be mailed to 5959 Hollywood Blvd., Los Angeles 28. They must be accompanied by return postage and we assume no responsibility for loss or damage thereto. Any material accepted is subject to such revision as is necessary in our sole discretion to meet the requirements of this publication. Upon acceptance, payment will be made at our current rate, which covers all authors and/or contributor's right, title, and interest in and to the material mailed including but not limited to photos, drawings, charts and designs, which shall be considered as text. The act of mailing a manuscript and/or material shall constitute an express warranty by the contributor that the material is original and in no way an infringement upon the rights of others.



## Now if you really want to break a Hurst shifter...

Our motto has always been, "Shift as hard as you like, but don't break your arm." We're sure of the strength and stamina of our shifters. That's why we guarantee them for life, and why you find them in the cars of the big winners.\*

Recently we've heard that being able to break a Hurst shifter is recognized as the mark of a man, a driver who can throw superhuman effort into his shifts. We're inclined to agree. Because even though our shifters are made by human hand, nothing less than superhuman abuse is going to hurt them. When we do come across the rare broken one, we find it's the result of welding on extensions or an attempt by someone to re-engineer the shifter.

If you're dead set on breaking one of our shifters, play it safe and use a sledgehammer or a hacksaw. You see, our warranty guarantees your shifter forever, but it doesn't cover broken arms and shifted-out drivers.

As for the mark of a man—the sign of a pro driver—join the HURST RACING TEAM and get all the credentials you need: membership card, jacket patch, car decals, Hurst Hustler hat (specify size), a year's subscription to the Hurst Racing Team News and a new '66 catalog. Membership fee is only \$5.00 for everything. Send it to The Shifty Doctor, Dept. 52C, Hurst Performance Products, Warminster, Pa. 18974. Hey, today.



\*Like these recent Springnationals winners: Jere Stahl, Stock Eliminator, in his Hurst shifter- and Line/Loc-equipped Plymouth. Mike Schmidt, Street Eliminator, in his Hurst-equipped BFK Ford. Arlen Vanke, Jr. Stock Eliminator, in his GTO, the stock factory shifter modified with a Hurst KPD kit.



**MR. NORM**  
the  
HI-PERFORMANCE  
CAR-KING  
says:

**PERFORMANCE  
PROVED  
Parts and Know-How  
are  
OUR BUSINESS!**

**IF IT'S MOPAR  
HI-PERFORMANCE PARTS  
WE HAVE THEM...**

391 TO 521 GEARS  
HEMI TORQUEFLITES  
HEMI CONVERTERS  
4-SPEED TRANSMISSIONS  
SPICER REAR ENDS  
HEMI HOOD 'SCOOPS  
RACER BROWN CAMS  
M/T HEADERS  
M&H TIRES, All Sizes  
ELIMINATOR TIRES  
BONDED HEAVY-DUTY  
CLUTCH DISCS FOR HEMIS  
NHRA-APPROVED STREET  
HEMI BELL-HOUSINGS



**Would You Believe?  
BRAND-NEW '66 CORONET  
2-DR STREET RAM**

426 Street Ram  
2-Dr Sport Coupe  
4-Speed, Full  
Factory  
Equipment

**\$2495**

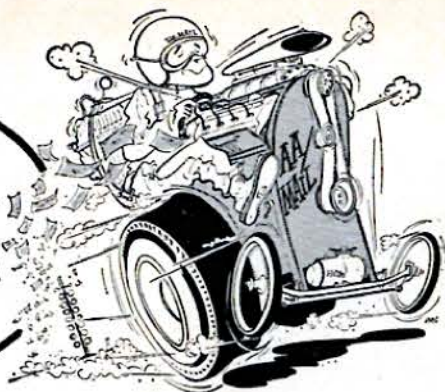
FULL PRICE

**GRAND-SPAULDING  
DODGE**

3300 W. GRAND AVE.  
CHICAGO, ILL.

We Mail Anywhere in USA  
Open Nitely Till 10, Sunday, Too  
Call Mr. Norm for Special Discounts  
Area Code 312 — 227-3300

**MAIL  
RUN**



**Engines & info**

Please tell me where I can possible get a specification chart or booklet on the '58 and '61 Chevrolet 348" engines. Everywhere I go, people tell me they don't know.

Also, I think it would be a good idea if the writers permitted their addresses to be published so that we could communicate with one another.

Incidentally, Car Craft is one of the most informative automotive books.

Otis L. Clark, jr.  
Philadelphia, Penn.

Full details on those 348" engines can be found in "The Complete Book of Engines," which should be available at your nearest book shop. We agree that publishing the address might be a good idea, but many of our readers prefer the present method. Ed.

**Just the facts, man...**

As I was thumbing through some old issues of Car Craft, a few items caught my attention.

First, on page 17 of the September '65 issue, a more or less top photo of the "Hurst Hemi Under Glass" was shown. The same photo was to appear in the next issue, but alas this picture was more or less bottom view. What gives?

Second, on page 71, the competition fuel eliminator is listed as having a Ford engine, but the caption on page 22 says a Chrysler engine. By studying the photo closely, the mill looks like a Chrysler hemi.

Third, on page 16 in the Straight Scoop, Steve Scott is said to be building a dragster. Can you tell me what has become of this project?

Fourth, in the July '65 issue, in the Straight Scoop again, the radio program "See You at the Drags" was mentioned. Is this program being broadcast this season?

Last, what is the address of the NHRA so I can get a '66 Rule Book?

Your magazine is the only one I buy without opening it first — except Mad Magazine.

Tony Marsh  
Winamac, Indiana

To answer your questions in order. 1. Did we say we would be using any special photo in the centerspread? It sure didn't, just the car. 2. Our error on the results sheet, it is a Chrysler. 3. Top secret at this time. 4. To our knowledge, it is. 5. 3418 West First Street, Los Angeles, California 9004. Ed.

**396 or 327?**

On page 58 of June '66 Car Craft, you said that "A bore of 4.001 and stroke of 3.25 gives you the 396 inches.

Well, I worked it out just to be sure I was right and the bore of 4.001 and stroke of

3.25 doesn't make 396 cu. in., but 327 cu. in. instead.

I think what you want is a bore of 4.09 and a stroke of 3.76, that makes 396 cu. in.

Glenn Perrine  
Jackson, Michigan

You're right. It should have read 4.094 x 3.76. It figures out right. Ed.

**Dragquestions**

Your article "Big Digs West" in the May '66 issue of Car Craft has me snowed under. On page 18 you state that originally, the NHRA has run their championship meets where the low 16 elapsed time cars ran for the top fuel title on Sunday, following the AA/FD class racing on Saturday — but because of foggy conditions, they decided to increase the top fuel field to 32 and the top gas field from 8 to 16. Would you please explain what fog has to do with increasing the number of cars in an elimination.

Also on page 21 of the same article, you say that Ed and Ray Kohler's Anglia turned 131.38 mph in 10.41 seconds to beat Johnny Loper who turned 136.36 mph in 10.32 seconds! How does a 10.41 e.t. beat a 10.32 e.t.? I've been away from racing for about a year due to the U.S. Army and this war in Vietnam, but brother, I'm yet to see the day I turn 10.32 and some guy who turns 10.41 walks off with the trophy!

P.F.C. Hugh B. Goetz  
Pleiku, Vietnam

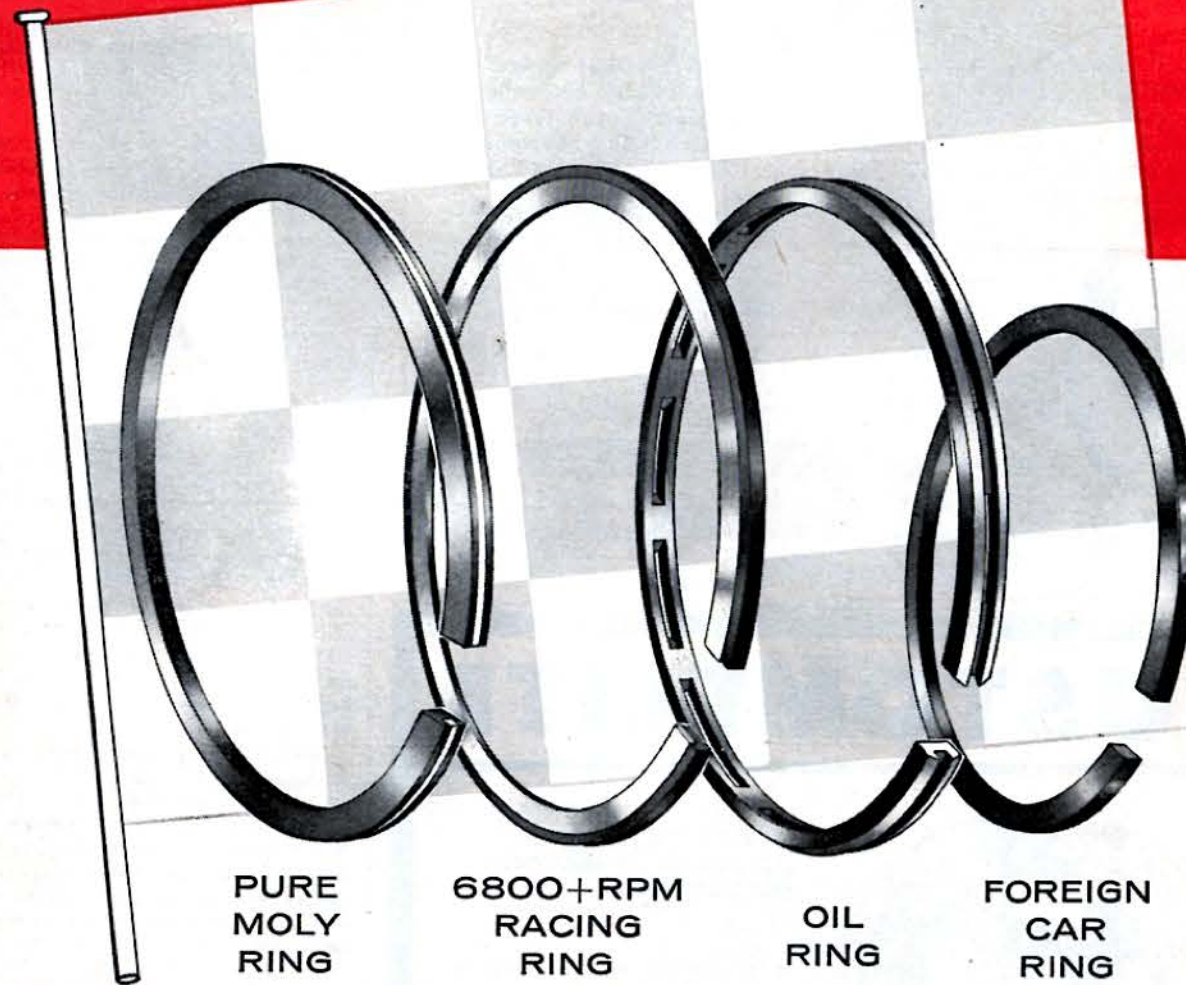
We know a fair question or questions deserve fair answers, right? I think we can clear up all the mysteries.

First off, the NHRA always runs AA/FD class racing on Saturday followed by eliminator racing on Sunday with the low 16 elapsed time cars of the meet. Performance on Saturday has absolutely no bearing on who gets to run on Sunday. The Saturday winner sits out and races the Sunday winner. This is the standard practice. Now, because of extreme fog, like visibility about 100 feet at the very best, cars could not take to the strip until mid-morning not only because of fog, but because of a damp strip. This did not allow many drivers a chance to make a single run and qualify. So NHRA officials decided to extend the field on Sunday and allow qualifying on Saturday to continue to 32 fuel cars and 16 gassers.

Traveling at 200 mph which is roughly about 290 feet per second with visibility limited to 100 feet, everyone concerned thought the change was made for the best. It's too bad you weren't there on Sunday because the racing was some of the best we've seen in many years.

We stood on the starting line and watched  
(continued on page 8)

**Win with Grant  
piston rings!**



PURE  
MOLY  
RING

6800+RPM  
RACING  
RING

OIL  
RING

FOREIGN  
CAR  
RING

For every type of driving,  
competition or street, Grant  
piston rings are BEST!

**Grant**

**PISTON RINGS**

3680 Beverly Blvd.

Los Angeles, Calif.

Telephone 382-1375

(area code 213)

## NEW! Wood-Grain EXTERIORS by PIP!

Ultra-  
Stylish

New elegance  
in automobile  
customizing!



Only recently PIP set the style for auto-wood INTERIORS! Now, it's WOOD-GRAIN EXTERIORS by PIP! Pre-cut and in kits! Everything necessary to instantly customize your car's exterior! Tough exterior vinyl film with permanent, non-shrink pressure bonding. Weather and sun proof. Will not stain. Scuff resistant! From \$7.95



Complete your wood ensemble with PIP's sensational NEW wood rim steering wheel. Genuine walnut. Full steel frame. Segmented, bonded, riveted. Only \$29.95 Adapter \$12.95

SEE YOUR  
DEALER

Write direct for  
free literature



WOOD-GRAIN VINYL SHEETS FOR CUT-IT-YOURSELFERS! Also use in home, on boats, etc. 3 ft. x 3 in. 98¢ 6 ft. x 3 in. \$1.96

IT'S A  
**PIP**

Pacific Interchange Parts, Inc.  
3674 Beverly Boulevard, Los Angeles, California 90004  
Telephone 382-1379 (area code 213)

## KUSTOMFLITE



AT \$32.50 THIS RUGGED NEW  
KEYSTONE BEAUTY RUNS CIRCLES  
AROUND THE REST

Compare the wheel. Compare the cost. This tough new beauty is precision engineered with die cast, aluminum center, welded construction. Designed with a rim of steel for greater strength—and a heart of aluminum for lighter weight and added resistance to corrosion. Perfect for both tube-type and tubeless tires. 14" and 15" wheel sizes. Priced complete with chromed plated hub cover and lug nuts.



KEYSTONE RIMS, INC.  
700 East Bonita Ave.  
Pomona, California 91767

Enclosed is 50¢ (U.S. COIN ONLY) for KEYSTONE DECAL and 32 PAGE COLOR BOOKLET.

NAME \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
CITY \_\_\_\_\_  
STATE \_\_\_\_\_ ZIP CODE \_\_\_\_\_  
 50¢ in U.S. COIN ENCLOSED

### NEW 1966 KEYSTONE BOOK & DECAL OFFER

Includes KEYSTONE DECAL and 32 PAGE COLOR BOOKLET crammed with new wheel specifications, racing facts and photo contest offer. 50¢ covers everything.

### MAIL RUN

(continued from page 6)

the race between Johnny Loper and Ed Kobler. I think you know that he who leaves first often times wins, and Kobler did. Ed.

### G/S vs GTO

In your may issue of CC you have an article on the CC test of the Buick Gran Sport. You also said that it falls into the D/S class and turns 104 mph in 13.30 seconds. Here, I think you could have made a mistake because my cousin's '66 GTO (3-2's & 4-speed trans—runs in BB/PS) raced a Gran Sport and beat him by over a car length and he did this by only turning 96 mph and in the mid 15's. I don't understand the two second and 8 mph difference. Please try to explain to me the difference and why you think there is such a difference.

Sam Nasea  
North Collins, N.Y.

Just something to think about, Sam, but maybe the Buick your cousin raced was not equipped the same as the one which we tested and reported on which was definitely on the strong side. Also proper tuning and tires plus chassis tricks always help. Ed.

### Anti-north

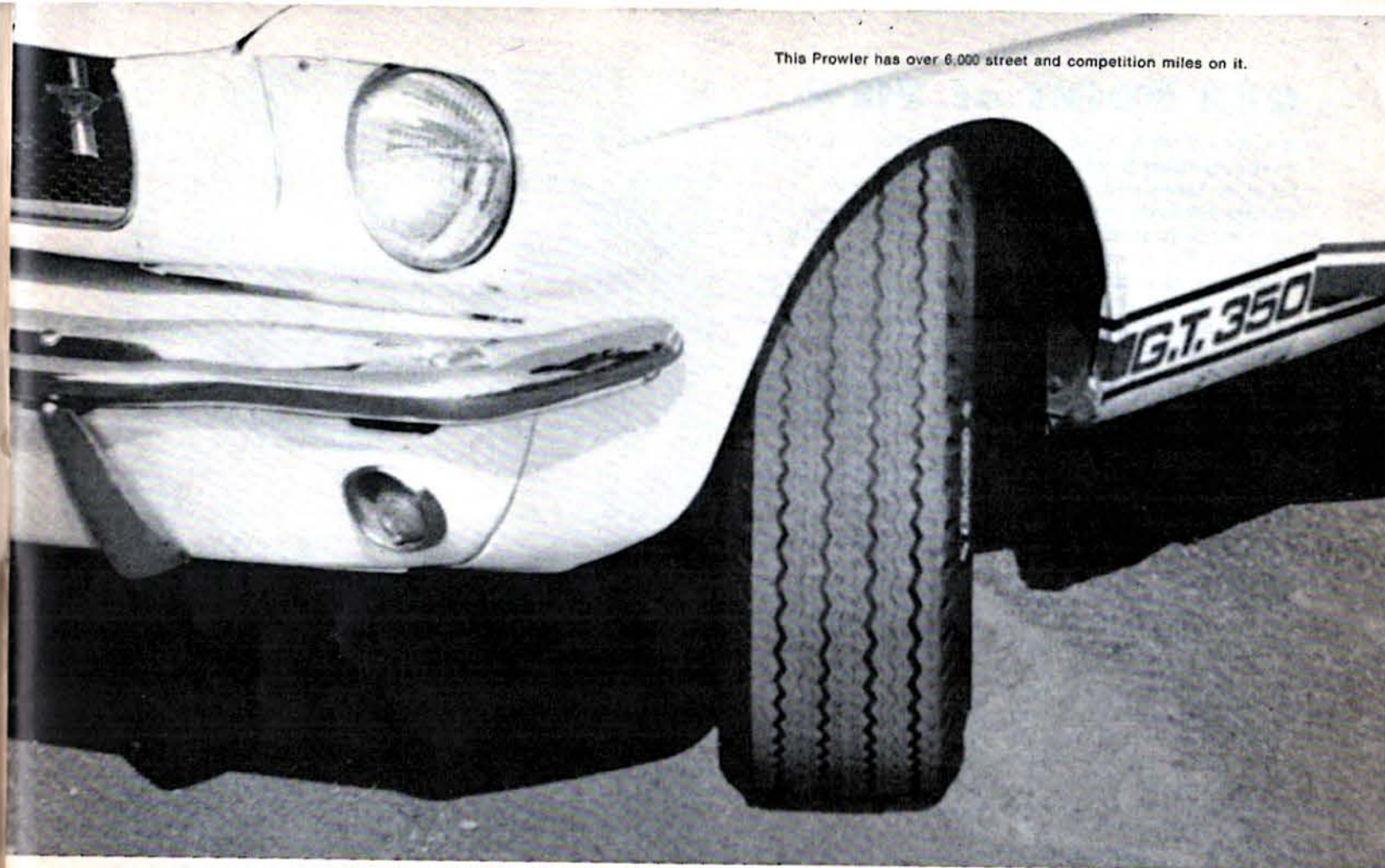
I must truly say that your magazine is the greatest in my book. Everyone is given a chance to voice their opinion so here's mine. I'm tired of hearing about the great West, the great South and the great East. Brother they're all crazy in the carburetor. The NORTH is what's happenin'.

Want some names? Here are a few examples—Don Garlits, Chris Karamisines, Connie Kalitta, Maynard Rupp, Ramchargers, Dick Jesse, Golden Commandos, Bob Ford (The Quiet Ones) and "Ohio" George. Also there's Roger Lindamood and Dick Branstner. Let's see the so-called greats compare with these names.

Well, that's my opinion. Keep up the good work.

David Leach  
Detroit, Michigan

Now when did we ever say that the North was behind? There are plenty of good running cars in the north as well as south as well as east, plus west. We just try to cover everything. Ed.



This Prowler has over 6,000 street and competition miles on it.

## How to make your Mustang bite

Prowlers, the new street slicks by Eliminator, put Mustangs—or any of the other wild ones—on a concrete and asphalt diet... big bites of it, with the big, sure Prowler footprint.

Eliminator is the first to make a really sensational, really sensible cross between the acceleration bite of slicks and the all-weather, long-life virtues of street tires. But not the way some confused tire manufacturers do: wrapping a drag-racing tread compound around a premium carcass and nicknaming it a street slick... even though it has the standard sort of high-crowned contour... and a tread pattern you wouldn't wear to a drive-in movie... and not much more than a big toe's worth of extra footprint.

Prowlers are the street slicks designed by the people who understand racing tire design. Isn't that the sensible way to go at high performance? We started with the drag-racing features of our Super Stock tire: Light, strong, low-profile nylon carcass. Sticky yet long-wearing tread compound. Tread shaped to race-ready contour. Broad shoulders with molded in pressure points. Tread width within NHRA/AHRA specs.

Then we tooled it with a tread pattern that sheds water like a goose loose in a carwash. Four big, bold grooves, wide enough to trench off water and prevent hydroplaning... and spaced far apart so the tread can't pinch up and lose traction. Twelve rows of zigzag siping... thousands of biting edges that gnaw through rain or grease when cornering.

Now bug out. This Prowler takes a big bite across the entire tread, evenly. Prowlers, rated at over 100mph, accelerate like slicks, keep going, hour

after hour, like street tires. So you can have it both ways. In all weather, from heat wave to moonsoon. Stability and controllability at all speeds... and panic braking too. Prowlers are boss rubber for boss cars. If you're still way back in the herd—



Here are the sizes that Prowlers are available in for 'cudas, GTO's, 'vettes and mustangs (with a thin red line as standard sidewall decor):

SIZE	TREAD WIDTH
825 x 14	6"
855 x 14	6 1/2"
775/815 x 15	6"
885/820 x 15	6 1/2"
900 x 15	7"

And here's the coupon. For the 1966 Catalog  and for the Eliminator decal (25¢ please)

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Mail to: Eliminator Tire and Rubber Company, 78 Enfield Street, Thompsonville, Connecticut 06082 CC

Eliminator TIRE & RUBBER COMPANY, 78-C ENFIELD ST., THOMPSONVILLE, CONN. 06082

# eliminator

## OUR POINT of VIEW

● On a recent trip to Detroit, I had the rare opportunity to drive around one of the famous proving grounds the large automobile manufacturers use to test the functions (durability, economy, safety, etc.) of their new models. This particular test track was the Ford Motor Company's, located in Dearborn, Michigan. The main track is two and a half miles around and resembled Route 66. It was loaded with vehicles of all types — cars, trucks, jeeps, etc. — cruising along like they were on the way to L.A. The infield contains "obstacle" courses which duplicate every kind of road condition including a steep hill, mud and water, railroad crossings, pot holes, bricks, rocks and ridges. There is also a straight section that is used for a drag strip and Dick Brannan was giving the "quarter mile" treatment to a new model. It's quite a scene and I found it a little hard to realize that each of these machines was on a special assignment — that each mile something was being learned that would benefit the product in some way. One car in particular proved of great interest and in turn led to the most impressive part of the entire testing program — a tour through the new Ford Reliability Laboratory just a mile away. This car was almost a computer on wheels with a maze of wires attached to components throughout the vehicle. As it was driven around the test course, the actions of the springs, shocks, steering, seats, brakes, etc. were recorded on tape. The tape would then be run and, through a highly technical and ingenious method, would recreate the test track conditions. This enables the engineers to completely test a car right in the Lab and in doing so, speed up the process so that in many cases 100,000 miles of test track driving can be condensed into a 24-hour period. Advances like this insure us of better, safer and more durable cars in the future.

—Alex Xydias

● I think everyone of us who races or ever been associated with a race car has been "Caught In The Act" at least once and possibly twice or more by the ever watchful official. Every racer (and if you ask some, they'll never admit it!) has tried at one time or another, to pull a sneaky. And, sometimes, they even get away with it. Now possibly you're wondering what this is all about? As all regular readers of Car Craft know, each month we feature "Caught In The Act," a situation that demonstrates the point of not cheating. Now, the copy and story ideas come from racers and officials who we would rather not name because, well, just because. They are very much real and have happened to racers from the fastest AA/FD to stockers. They have been pulled at biggest and smallest event and all over the nation. While going over this feature in our magazine with another staff member recently, we hit upon an idea. Since these situations have happened and still do, why not let our readers tell us of a "harrowing experience" that has happened to them. Of course, we would keep everything involved, readers names, places and persons in the strictest confidence to "protect the innocent." Naturally, when something like being disqualified for a very unique reason is not a bit funny at the time, as the years go by, many a laugh is had at bench racing sessions. While we're on the subject of sending things in, we would like to encourage everyone to send in more CC/Gassers and letters. The jokes are great! Something else in the humor line are "photo funnies." If you ever spot any pictures in our magazine that you can think up a clever caption for, send it in, we would love to use it. Letters are also wild. They contain ideas for stories plus comments and opinions on same. It's always easier to go about planning a new issue with several fresh ideas. So if you have anything to say, don't hesitate for a minute; we like to hear from people like you, our readers.

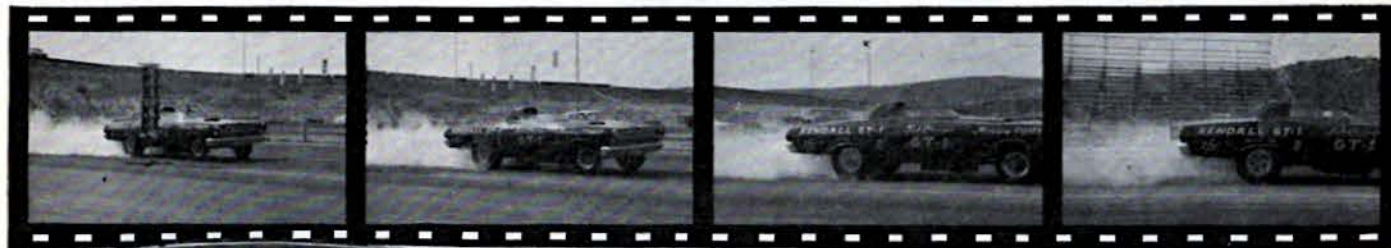
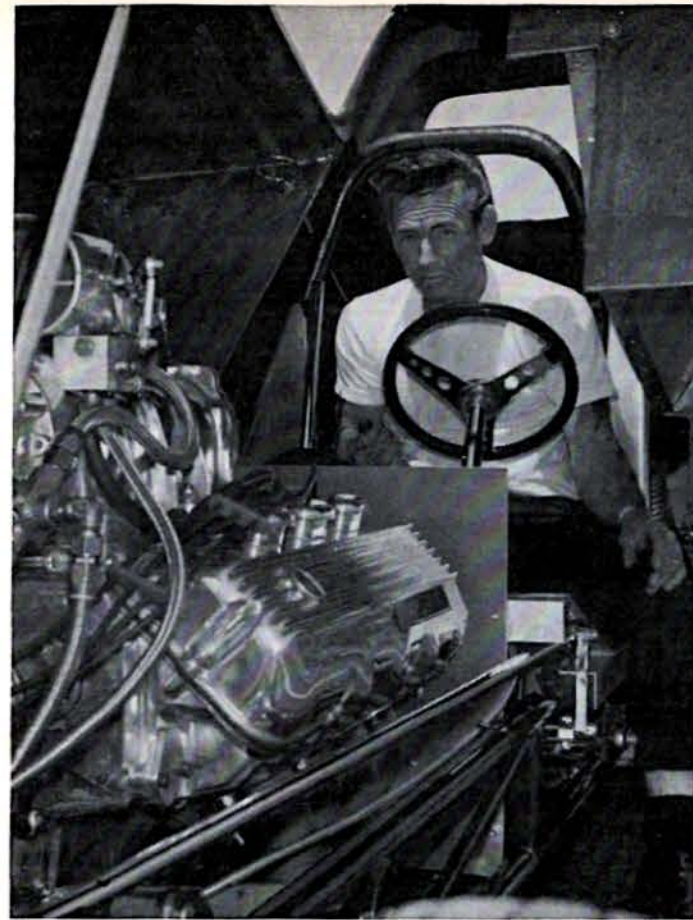
—Bob Leif

● This has become a fascinating subject to me and something that you usually forget is involved with the manufacturing of automobiles. It's also something that might be looked into further and considered when building that new street machine. The other day I ran across an interesting fellow. His name is J. W. Cothran who's known as the "Quiet Man." Not because he stands around and doesn't bug anybody, but because he's head of a team which has undertaken a massive anti-noise campaign with the Ford Motor Company vehicles. His team was confronted with the job of quieting some 15,000 components, each one capable of producing its own peculiar sound. It was the research team's assignment to eliminate as many sounds as possible either by insulation or by making them harmonious with each other. An interesting comparison is the symphony conductor who knows immediately which of the 80 or 90 instruments in his orchestra has produced a wrong note. The "team" on the other hand had to contend with thousands. In reducing the noise level, they uncovered sounds that had before been masked by a higher general noise level. As an example, the noise of a heater fan had never been noticeable until a new level of quietness was given the passenger compartment. Suddenly the whirr of the fan became quite annoying. A new frame-body relationship introduced on '65 model Ford cars made a breakthrough in the battle against noise and vibration. Prior to '65, Ford cars had been built with a rigid frame and a flexible body. With the '65 models, the relationship was reversed; the frame was flexible, and the body rigid. Mounts between the two were designed so that the frame would absorb most road shocks without transmitting them to the body. Pretty interesting.

—Dick Scritchfield

● How many times have you viewed an action photograph of a couple of dragsters smoking away from the line, often with smoke trailing around the cockpit for the full quarter-mile? And how many times would you have been in the dark as to who was who if the captions hadn't clued you in? More than once, I'm sure. With exception to the few rails fitted with a full nose section, clearly lettered with identifying names, just about every dragster looks alike in a 8x10 glossy photo. And if you think you have trouble, consider the plight of the poor journalists who cover the major meets where maybe 60 different dragsters are on hand and upwards of 300-500 action photos must be sorted through to find a good selection of cars. With the name and/or number safely hidden behind a well-laid smoke screen, it's virtually impossible to distinguish one car from the next. Generally, the trick is to have good still photos of the top cars before selecting the action shots. Then when you find a wild photo, all you have to do is compare blower drives, fuel tanks, breathers, injection systems, air foils, and most important of all, the number and placement of decals. These little goodies often save our day. The associations are aware of this problem. This is evident at major meets where they instruct push-car personnel to keep their right window, the one with the car number on it, rolled up — or face being eliminated. Even they can't identify rear numbers when they're engulfed in tire smoke. The solution? It's simple! A small oval aluminum number plate could be designated as necessary for all dragsters; one that would be mounted atop the chassis, behind the front wheels. Background colors could be white or according to the car's respective regional division. The number can be owner's choice, or his standing in the association's points system. In any event, standardization of this system would be a boon to competitors, associations and journalists alike. Why not give it a try.

—Bud Lang



## PLAIN TALK FROM JACK CHRISMAN TOP ELIMINATOR and NHRA CHAMPION ABOUT KENDALL GT-1 RACING OIL

“There are some mighty good oils around and I've tried about all of them. But I selected Kendall GT-1 Racing Oil because it's the only one that can take the beating my 9,000 RPM engine hands out and still do the job.”

“I call GT-1 a boss oil because it lubricates boss engines without foaming, thin-out or breakdown and eliminates scuffing. I count on Kendall to protect my 1966 GT-1 Comet and I recommend it for the high performance car you drive.”

Write to Kendall for free GT-1 decals, the story of Jack's GT-1 Comet and information on GT-1 Racing Oil.

**KENDALL REFINING COMPANY • BRADFORD, PENNA.**

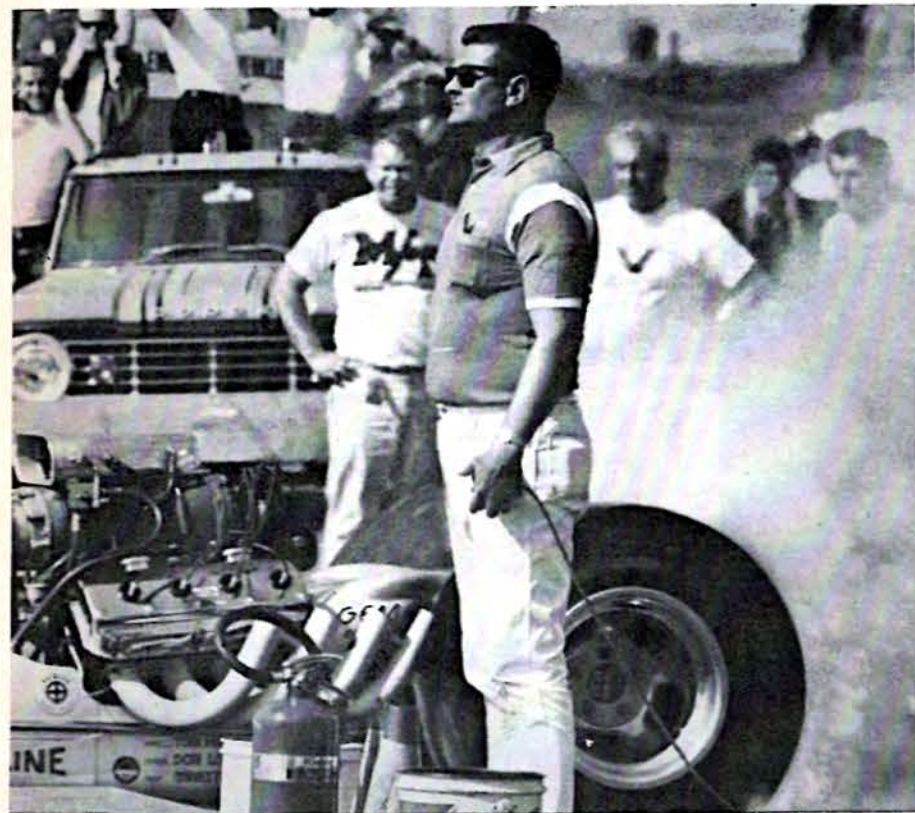
DIVISION OF WITCO CHEMICAL COMPANY, INC.

CAR CRAFT □ SEPTEMBER 1966 11



Every two-car drag race involves three men. Here's the inside story on the third, the often unnoticed, but vital...

## man in the middle



By Howard Pennington

THOUSANDS OF EAGER spectators jump to their feet in anticipation of the big showdown. A crack of engines echo out of the staging fire-up area as two low slung AA/Fuelers paced themselves to the starting line. Waves of noise spiced by the pungent perfume of nitro pollute the air as two masked drivers whing their throttles to keep their big engines alive and cleaned out for the bucks-up run that is only moments away.

This is the main event in drag racing — and the Top Fuel Eliminator run at the NHRA Nationals is the one with all the marbles.

All eyes are on the cars. Each belching high-powered monster slowly moves up to the first staging line while taking their careful staging instruction from the starter, which by now is strictly a sign language affair. A few more inches and both cars are staged, the staging lights go on. Thousands of eyes now quickly refocused for the countdown as the yellow lights start their march downward. GREEN! The two rails ex-

plode like missiles at blast-off, leaving their heavy smoking trail of twin roost-ertails as an indication of a clean start and a great run.

Left behind, obscured in the dense clouds of burning rubber, stands a big guy in a bright red shirt. He's a guy that everyone in the stands notices then quickly forgets when the revs come up. But to every driver who comes to the line ready for that crucial stage and elimination run, the big guy in the bright red shirt is — THE MAN!

Buster Couch, chief starter for the National Hot Rod Association, is what you might tag as the "man in the middle." More important, he is the key guy who calls 'em as he sees 'em and is responsible for every run being classified a good run. This, for your information, is a tall order with drag racers.

Just how important is the starter? Ask Wally Parks, NHRA president, and he'll tell you. "The starter is the final safety man, the custodian of fair starts, and the man who paces the action on the strip. Every start of every race be-

comes his personal responsibility. After everybody else has done his job, he's the man who must decide when it's time to push the blast-off button."

Buster Couch pushes that button, which is mounted on a small box he holds in his hand, any time after both staging lights come on. Before he pushes it, he makes sure both drivers are ready.

"I look at the positions of the drivers, and listen to the sounds of their engines to know when they're ready. When they're all set for a clean, fair start, I punch the button."

Important as that blast-off button is, it's only one of many things Buster Couch has to be concerned with as chief starter.

Before competition gets underway at a meet, he must check out the starting system to make sure it's working properly. When two cars roll up to the line he must check last minute safety details, like shoulder harness and seat belts, helmets, fire suits if needed and make sure that goggles are being worn, not just pushed up on the helmet somewhere, forgotten to be pulled down by some overly excited driver. His concern with safety doesn't stop at this check, either, but continues all through the actual run. At the Bristol Springnationals, for instance, Buster noticed that the driver of a D/Dragester made his run with his arms sticking outside of the cockpit. Later he cautioned the driver. During Eliminator runs that same driver again drove with his arms outside.

"It's a good thing he lost the run," Buster told me, "because I would have disqualified him for that if he had won."

One of Buster's assistants defended the driver by saying that he had to have his arms out like that to reach his chute ring.

"He should have the ring in a different spot, then," Buster said. "His arms belong inside."

Tough? Sure. He has to be tough to get his job done and maintain safety. Yet all during a meet drivers keep coming up to thank Buster for something he did that was a big help to them.

One of his biggest problems comes with cars that are push started. They seldom start simultaneously, and he has to make sure one driver doesn't stall for time and try to overheat his opponent's engine. Anytime there is a delay that isn't the fault of the driver, Buster will ask him, "Not too hot, are you?" Obviously, overheating is really a problem with fuelers, and sometimes Buster will send them back to staging and let them run later when they've had a chance to cool down the engines.

Another big part of the starter's job is watching the condition of the track to make sure it's clear of oil or debris. Buster and his crew keep a sharp eye out for the smallest item that might

(continued on page 14)

**STP WINS**  
**1-2-3-4**  
 Graham Hill Jimmy Clark Jim McElreath Gordon Johncock  
**5-6-7-8**  
 Mel Kenyon Jackie Stewart Eddie Johnson Bobby Unser  
**AT THE 'INDY 500'**



Also **STP** has won 1-2-3 at all USAC 1966 Championship races to date. PHOENIX...TRENTON...MILWAUKEE...LANGHORNE...and ATLANTA. **STP** Oil Treatment is used by men whose lives and livelihood depend on their cars. They count on **STP** to protect the power and performance of their engines. **STP** blends with any motor oil to form a tough, protective film on the moving parts of any engine. The first time you need oil, every time you change oil, protect your engine the way the pros do—add **STP** Oil Treatment. At service stations everywhere. Used by most racing drivers, and millions and millions of motorists in cars like yours.

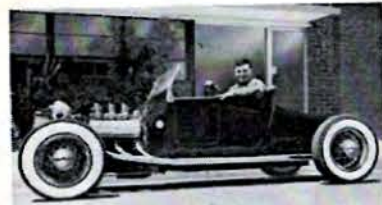


**STP** DIVISION  
 Studebaker  
 CORPORATION  
 125 OAKTON, DES PLAINES, ILL.

# THE NAME OF Iskenderian is synonymous with hot rodding

The above headline is an actual quotation from a note of appreciation, sent to us by a young hot rodder. Another wrote us, "As far back as I can remember, I've heard the name 'Isky' whenever rods or drags were discussed". Still another wrote, "Isky has done more for the novice hot rodder than anyone else". It makes us feel very good to know that hot rodders all over the world think so highly of us... and our products and our way of doing business. This is the stuff upon which reputations are built... and we are proud of ours.

## FREE FROM ISKY



An 8" X 10" autographed glossy photo of Ed Iskenderian in his first hot rod, which he built in the early days of hot rodding before World War II, when he was a teenager. Also included, an Isky decal plus a six page reprint from a top auto mag. All sent FREE and postpaid. Mail coupon below or send postcard.

## 1966 1/2 ISKY CATALOG

More pages, more data... the largest catalog in the industry. Featuring the world's largest stock of racing cams and related speed equipment. LIMITED OFFER: embroidered jacket patch emblem (reg. \$1.00) FREE with '66 1/2 Isky catalog... BOTH for only \$1.00!

## ED ISKENDERIAN RACING CAMS

16020 SOUTH BROADWAY ■ GARDENA, CALIF. 90247

O.K. ED! CC-9

- Please send me your free photo deal.  
 Here's my buck for catalog 'n patch.

Name \_\_\_\_\_  
 Address \_\_\_\_\_  
 City \_\_\_\_\_  
 State \_\_\_\_\_ Zip \_\_\_\_\_ Age \_\_\_\_\_

## MAN IN THE MIDDLE

(continued from page 12)

come off a car. And of course he has to make sure that the track is clear at the far end before sending another two machines hurtling through the eyes and into the shutoff area.

Buster Couch has a regular crew of four that work with him as pre-starters, in shifts of two, at all the big meets. Jim McCutchen is a high school teacher and coach from Memphis, Tenn. Jerry Coley is the operator of Alabama's Phoenix City Dragway, and also of the Dixie Southland Dragway in Montgomery, Alabama. Jib Barnes, from Buster Couch's home town of Decatur, Georgia, also works on NHRA record certification teams. The fourth regular member of Buster's crew, cousin Kenneth Couch, is in the service. Beland McClure, a strip manager and announcer from Charlotte, N.C., is filling in for him.

"Being a pre-starter is a real tough job," says Buster, and tough it is, but Buster's great sense of humor has the crew smiling or laughing almost every moment they aren't busy. But from the moment two cars roll out of the staging lanes until they clear the track at the other end, it's strictly business.

Drag racing is a full time "business" with Buster Couch. He's the NHRA Divisional Director for the Southeastern United States, and, as Buster puts it, "A Divisional Director is with his job 24 hours a day."

That job includes assisting prospective track builders with layout and planning, helping racers with tech problems, advising strip operators how to improve their tracks, attending major races at NHRA tracks in his Division, and always acting as a goodwill ambassador for drag racing.

How well Buster Couch has handled his job as DD can be summed up with a couple of quick facts. When he took over as Director in 1964, the South was often known as the "forgotten area" of drag racing. Starting with six strips, Buster now has nineteen active strips in his Division, with two more under construction.

Born in Loganville, Ga., thirty-one years ago, he was named Eddie H. Couch, but soon became known to everyone as "Buster." He was always interested in race cars, and often went to stock car races with his father. He attended high school in Atlanta. When a drag strip opened up nearby in '55, Buster played role as a spectator. Next week he was back as a racer. In '57 he bought a new Pontiac and set it up for racing. Running in A/Stock, he won numerous trophies and set several strip records.

He became an announcer, assistant strip manager, and flag starter at the

old Newton County strip. Field Director Ed Eaton came in with an NHRA tech crew to put on the first NHRA record meet held at that strip. Buster Couch was impressed with what he saw.

"Their attitude toward legality and safety made quite an impression on me," Buster recalled, "plus the fact that they also had a heck of a lot of fun."

NHRA was also impressed with Buster, and he was asked to come and help at the Nationals. He worked as a pre-starter at the '62 Nationals, and again in '63, first year of the Xmas Tree. In 1963, he also started helping Phil Bonner, as a crew member. He went with Bonner to the 64 Winternationals, and asked NHRA if he could be of any help to them. He could. They gave him the job of starter.

About a year earlier, NHRA had asked Buster to join them full time. He was interested, but didn't feel he was ready. "Without realizing what he was doing," his wife Ann said, "he started to study and prepare himself for the job of a Divisional Director."

After the way Buster handled the starter's job at the '64 Winternationals, the DD job offer was repeated and he accepted.

But what is it like to actually be out there on the line during all the action?

I got a chance to find out when NHRA gave me permission to be with Buster on the line at the recent Bristol Spring-nationals.

The first thing you notice is NOISE! It's not too quiet anywhere around an operating drag strip, but sitting in the grandstands at a big meet is almost like being in a public library compared to what it's like out there between the rods and rails as they rev up and blast off.

I had managed to get fairly used to it when two big AA/FD's rolled into position. This would be my first time between a pair of these 200 mph missiles. Sticking my fingers in my ears, and opening my mouth to help equalize the pressure on my ear drums, I got all ready and braced for the blast. That's what I thought! "The Tree" went Green and two big feet stomped on two hard-working loud pedals! WHAM! WHAM! Double shock waves of sound shook my whole body, almost knocking me off my feet. I never did notice which car won that round... at that point, how could I care, what I wanted was... out!

Yet time after time, Buster Couch stands between a pair of fuelers, as steady and motionless as if he were carved from a slab of stone. (Later, I asked Buster how he endured the noise) "Believe it or not," he said, "you become so accustomed to it that it's just part of the job."

(continued on page 68)

**LARGEST STOCK OF CHEV. PERFORMANCE PARTS IN THE WORLD**

**CHEVROLET ENGINEERING KNOW-HOW FREE**

**WE RACE PROVE WHAT WE SELL**

**WE'VE GOT IT IN STOCK SAME DAY DELIVERY**

**SPEED SPOKEN HERE**

**CHEV. PERFORMANCE PARTS FOR SALE**

**SUPER RIGHT PRICES**



Direct from Chevy Engineering	
327-350 H.P. Engine w/clutch	\$572.00
427-425 H.P. Engine w/clutch	797.00
283-327 Four Barrel Manifold	21.23
10 1/2" H.D. Clutch, Plate, Disc, Bearing (any)	44.95
411 Ring and Pinion for 1955-64 Chev.	28.25
456 Ring and Pinion for 1955-64 Chev.	28.25
488-513-538 Ring and Pinion for 1955-64 Chev.	55.95
When ordering gears always give us your present ratio.	
Hi-Perf Carter 4 Bbl. Carburetor	35.29
283-327 Hi-Riser Aluminum Manifold	58.88
Holley Quad for Hi-Riser Manifold	42.21
283-327 Dual Point Distributor	21.46
Muncie H.D. 4 speed transmission	315.00
Muncie Regular Duty 4 speed transmission	249.00
(4 speeds are Genuine Chev. not obsolete rebuilds).	
370-411 or 456 Complete Posi-Traction for 1955-64 Chev.	114.00
327 Fuel Injection short block (complete)	239.00
w/solid lifter cam	239.00
327-350 H.P. Short Block with hydraulic lifter cam	239.00
Fuel Injection Camshaft	21.90
Hi-Performance Hydraulic Lifter Camshaft (350 H.P.)	17.40
Set (16) Solid Lifters	15.04
Set (16) Hydraulic Lifters	25.32
327 Fuel Injection Cylinder Heads (each)	36.30
Intake Valves for above (each)	3.20
Exhaust Valves for above (each)	3.29
ALL 427 SPECIAL HIGH PERFORMANCE PARTS IN STOCK. IF NOT LISTED WRITE FOR INFO.	
Nickey Proven Speed Equipment. Largest Stock in the Mid-West.	
Wheels	
Astro Supreme	\$37.47 ea.
Astro Custom	26.50 ea.
Astro Chrome Super Reverses (SUPER SPECIAL!!!)	19.92 ea.
Astro Chrome Reverses	17.92 ea.
Ansen Apollo 14" Mags (complete)	36.50 ea.
Ansen Apollo 15" Mags (complete)	38.50 ea.
Ansen True Knock-Off Mags (complete)	55.00 ea.
Rebel Wheels	33.50 ea.
Chrome Lug Nuts	45 ea.
(Complete means hardware, nuts, spinners, etc.)	
NICKY... CHEVROLET... SPEED PARTS	
M/T Headers for any Chevrolet car	\$99.50 set
Dougs Headers from	99.50 set
Mr. J's Headers	99.50 set
Bill Thomas 427 Headers	139.50 set
Hurst Competition Plus 4 Speed	58.98
Hurst Synchro-Loc 3 Speed	46.50
Hurst Mystery Shifter 3 Speed	27.95
Offenhauser Finned Aluminum Valve Covers 396-427	32.50
M/T Finned Aluminum Valve Covers 283-327	17.95
Buco Helmets	29.95
Mallory Dual Point Distributors	25.00
Mallory Rev Pol Distributors	55.00
Mallory Mini-Mags	105.00
Scheifer Pressure Plates	48.00
Scheifer Discs	18.50
Scheifer Aluminum Flywheels	48.00
Sun Tachs	Write for special price
Isky 310 Hydraulic Cam and Kit (complete)	124.95
Isky 320 Hydraulic Cam and Kit (complete)	134.95
T-Bar Shift Handles	2.75
Fuel Blocks	2.50
Offenhauser Dual Quad Manifolds... as low as	55.89
Edelbrock C 4 B Manifolds	55.89
Offenhauser Power Ram Manifold for 283-327	98.00
Offenhauser Dual AFB Manifold for 396-427	55.89
Offenhauser Dual Quadrajet Manifold for 396-427	60.50
Offenhauser 3-2 Manifold for 283-327	55.89
Offenhauser Ram Adaptors	17.89
Dickie Harrell will be at Nickey's all year round (except on race days) to help you select the proper parts and equipment for your car.	

**FUEL INJECTION HEADS FOR ALL 327 CHEVROLETS**  
**\$36.30 each**

**ASTRO CHROME REVERSE**  
 Most wanted Steel Wheel at a super low price.  
 Special  
**\$17.90 ea.**  
 Heavy Chrome Lug Nuts, .45 ea.  
 We stock Ansen, Cragar, Rebel, Astro, Hurst, all at Nickey Prices.

It's good news for Chev. competitors... Nickey Chevrolet... the world's leader in Chev. Powered Performance, winners in all types, all classes of racing from Laguna Seca to the Phoenix Winternationals bring you Genuine Chevy know-how, race-how speed equipment. Race Tested, Proven Products... proven by Genuine Racers in Genuine Race Cars. And, Nickey Stocks what Nickey Sells... your order will be shipped TODAY! If it's for a Chev., if you want performance, if you want super-right prices, if you want FAST DELIVERY... order direct from this ad.

**RACING TIRES—SLICKS**  
 Nickey has 'em all. Firestone, Goodyear, Red Lines, Blue Lines, M&H, Tiger Paws, Super 500's, Sport Car 200's. All sizes.

Nickey will sell you a cam for your Chev. that is Engineered for GO. Solid or Hydraulic Lifters. Isky, Sig Erson and Bill Thomas as well as Genuine Chev. in stock.  
**AS LOW AS \$18**

**HEADERS FOR STREET-STRIP-ROAD**  
 all Models Chevrolet M/T, Dougs, Hedman, Mr. J, Bill Thomas, All Models... priced as low as...  
**\$72.50**

**ANSEN WHEELS**  
 Apollo Knock-Off, \$55.00 ea. complete  
 Apollo Bolt-On, \$38.50 ea. complete  
 T. E. Mag, \$38.50 ea. complete



Nickey Chevrolet Dickie Harrell Funny Car



Nickey-Vinegaroon owned by TV's Dan Blocker piloted by John Cannon.



Nickey-McLaren Special chauffeured by Charley Hayes.

Nickey-Stilleto Gasser called world's fastest Chevrolet on Gasoline.

**4501-C IRVING PARK RD. CHICAGO, ILLINOIS**  
**PHONE 312/777-8300**  
 (direct line to Speed Equipment)

**NICKY CARS WIN** Las Vegas, U.S.N.R.C., Laguna Seca, Drag Strips Nationwide, watch for the cars with the backwards X and the forward finish!

Mail To: Nickey Chevrolet  
 4501-C Irving Park Rd.  
 Chicago, Illinois

Please send the following \_\_\_\_\_

\_\_\_\_\_ enclosed find \$\_\_\_\_\_

Here's \$1.00, send copy of exciting new Speed Equipment Catalog (refundable on first purchase of \$1.00 or more).

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_ Zip \_\_\_\_\_



September 8<sup>th</sup> has been proclaimed by Car Craft Magazine as "Tube Nite!"

You'll be the personal guest of CBS Television, DuPont and the Petersen Publishing Company for one of the biggest, most exciting evenings of television. DON'T MISS IT!

The night of September 8th is going to be one to remember for the millions of us who are enthusiasts of one or more of the many sports and hobbies devoted to and dependent upon the movement of the wheel. On that night, "THE WONDERFUL WORLD OF WHEELS," produced by Petersen Productions, Inc., will be coming your way on CBS, brought to you in color by DuPont. This is one of the most exciting shows ever to be seen on television. For a full sixty exciting minutes, you will be sitting on the edge of your seat, and very often that seat will become the driver's cockpit of some of the most powerful racing machines as they hurtle around the track at Indianapolis, Riverside, Daytona, or down the drag strips at Pomona, Indy, etc. You will hold on for dear life as you take the wildest go-kart ride ever filmed, but don't turn loose yet — there's still a ride with James Bond in his famous "007" car as he sprays oil on a pursuing car, machine guns his way through a road block and ejects an enemy agent through the roof. Had enough? Well, how about a ride with Craig Breedlove down the black line at Bonneville in his world land speed record jet car — it gets a little hairy when the drag chute tears off and the car is out of control, but don't worry — Craig saves the show with one of the most unbelievable crashes ever captured on film. There's much, much more — car shows, dune buggies, slot cars, motorcycling, stock car racing, antique cars, customs, etc., but we don't want to give it all away. Just be sure you're ready at 7:30 p.m. on September 8th and don't forget your crash helmet!

# The Wonderful World of Wheels



## GREATER FIRE POWER

with dependable, top performing ignition systems or replacement units — select one from the Mallory line and watch your performance climb!

- A. SUPER-MAG MAGNETO** — Designed for 8 cyl. racing engines only. Produces twice as much voltage and spark energy as any ignition system.
- B. MINI-MAG MAGNETO** — Finest Magneto available for battery started, gasoline burning engines. Compact design permits fast, easy installation.
- C. REV-POL IGNITION** — The ultimate of conventional ignition systems. Uses less current, reduces half the wear on contact points. A truly long life system.
- D. PHOTO-CELL BREAKERLESS CAPACITIVE DISCHARGE IGNITION** — Operates on a "Beam of Light." No points to wear out. Capacitive Discharge feature improves engine performance, fires fouled plugs. Spark Plugs last 50,000 to 100,000 miles.
- E. BREAKER-ASSISTED CAPACITIVE DISCHARGE IGNITION** — Converts your distributor to capacitive discharge ignition. Improves engine performance. Capacitive Discharge feature fires fouled plugs. Spark Plugs last 50,000 to 100,000 miles.
- F. FLASH-FIRE COIL** — Epoxy molded coil. Designed for today's high compression engines. Produces 25% more voltage on 25% less current. Your best tool for a real tune-up job.
- G. DOUBLE-LIFE DISTRIBUTOR** — The only Heavy-Duty, high performance replacement distributor manufactured today. Outperforms all standard ignition distributors.

For over 40 years automotive enthusiasts have relied on Mallory products for quality, dependability and PERFORMANCE. You, too, can rely on Mallory. See your dealer, or write today for complete information and free colorful decal.

**Mallory** ELECTRIC CORPORATION

12416 Cloverdale Avenue, Detroit, Mich. 48204



# Daytona, Sebring and now Le Mans.

**Goodyear tires sweep  
the three longest endurance  
races in the world.**

First came the Daytona Continental—the only round-the-clock race in the United States. Then, victory at Sebring's 12 Hours of Endurance. And now, one, two, three at Le Mans—the original 24-hours of tire torture. All three races won on Goodyear Blue Streak Racing Tires.

Although it was the second year in a row that Goodyear took the first-place honors at Le Mans, it was a race that still made history.

First win for an American car. A new lap record of 143.5 miles an hour. The longest distance ever run—3,020 miles

worth of acceleration, braking, twists and turns—at a record average speed of 125.5 miles an hour. And although first position was a see-saw battle throughout the entire 24 hours, a car on Goodyear tires was always in the lead.

The tire that ran away with Le Mans is called a Goodyear Blue Streak Sports Car Special.

Special, because it's designed to meet the rugged demands of the track it runs on. Made for maximum getaway in the straights. Extra side bite in the curves.

The results at Le Mans speak for them-

selves. Another victory for Goodyear racing tires.

No wonder winners go Goodyear.

Goodyear Race Tires are distributed to Goodyear Dealers and Service Stores by: Gofaster, Inc., New Rochelle, N. Y.;

Huggins Tire Sales, Thomasville, N. C.; Lauderdale Auto Marine Service Inc., Ft. Lauderdale, Fla.; RRR Motors Inc., Homewood, Ill.; Bob Schroeder Race Cars, Dallas, Texas; Carroll Shelby Enterprises Inc., Gardena, Calif.

**GOODYEAR**  
Winners Go Goodyear

Blue Streak—TM, The Goodyear Tire & Rubber Company, Akron, Ohio.

# THE STRAIGHT SCOOP

**FORD'S SWEEPING 1-2-3** victory at Le Mans may well mean that Ford will ease off somewhat on its powerhouse racing program. Victory in the international 24-hour classic was Ford's big, publicity stated objective for the year, and it was achieved in all-out style. The Ford engines at Indy proved last year's win was no fluke with their strong finish there, and what's left to conquer? There is a strong feeling around Motor City that Ford will cut back its successful and expensive racing program quite a bit, now that all major objectives have been won. At the moment, it seems doubtful if Ford will go back to oval track stock car racing, either, although that could change at any time, depending on whether or not the rules change. And Chrysler seems to be holding up on its stock car racing plans for the next year until it learns what Ford plans. Looks like all the action will be at the drag strips.

**MULTIPLE CARBURETORS ARE** a thing of the past for General Motors cars, at least for 1967. That's a recent report from the Motor City, which says that all the GM line will go to single carbs, even the 442 Olds. A new and improved 4-barrel carb is said to have been developed for the high-performance cars. Although reports and rumors from Wheeltown indicate that GM is backing off on performance vehicles.

**DON GARLITS HAS** built an all-new Don Garlits' Dart, replacing the earlier Dart-Charger-Polka Dart, Don Garlits Dart machine. Big Daddy describes the new machine as "a dragster chassis with a plastic body." Following the newest trend, it's roadster style. The light weight, tube frame, fiberglass vehicle tips the scales between 1600 and 1700 pounds. The Dodge hemi engine is not rear mounted, as driver Emery Cook sits behind the mill. He doesn't have to worry much about missing a shift, as it has high gear only. Don looks for it to be a real runner. There's other surprising news about Garlits, too. He's going to close his Detroit shop and move back to Tampa, Florida. The business has been highly successful so far, Don said, but his family just can't get used to the rugged, often miserable Michigan winters around Detroit, and all of the Garlits' girls grandparents are down in Tampa. It's a decision based strictly on Don's concern for his family's happiness, and those who know Garlits well, know what a family man he is.

**WORD FROM DETROIT** is that Pontiac is going to standardize on one engine size, and that will be 400 cubes. (For the V-8's, that is.) Grand Prix Pontiacs, GTO's, Bonneville's, everything, so this rumor runs, will have 400 cubes, no more, no less. Gone will be the 421" mills and the 389 inchers, also.

**GET OUT YOUR** fastest crayons and color Roger Lindamood "Gone" once again. Lindamood will soon be match-racing around the country with a lightened, steel bodied Dodge Charger, named "Roger Lindamood's COLOR ME GONE". Both the rear and front wheels have been moved forward 11 inches, and the Dodge hemi engine has been moved rearward about 9 inches. The car will be injected on fuel, and has a tubular front axle. The body has been chopped about three inches by the windshield posts. Lindamood, you will remember, first gained national drag racing fame when he took Top Stock Eliminator honors at the 1964 NHRA Nationals, driving "Color Me Gone," built by he and Dick Branstner. Later, the car became one of the first wheel-standing funny cars. Lindamood says his new Charger is built for fast, strong, wheels-on-the-ground-and-turning-like-mad match racing.

**AT LEAST ONE** new car model that's ready to go this fall won't be seen for some months yet, according to reports that have reached STRAIGHT SCOOP. That car is said to be Pontiac's version of an "answer to the Mustang". Our information is that this car will use the overhead cam 6-cylinder Pontiac engine, and weigh a rather light 2700 to 2800 pounds. Earliest release date is now said to be next March or April, although the car could have been introduced this fall.

**YOU MAY HAVE** to check both ends of the 1967 Corvairs to find the engine, if rumors around Detroit are true. Word is that some will have the traditional (for Corvair) rear-engine placement, while the new car Chevrolet is bringing out to combat the Mustang will be front engine, but in the Corvair lineup. Latest report is that this model will be known as the "Corvair Camaro," but don't bet too much money on that spelling of it. (Reports are conflicting.)

**THE CONTINUING BATTLE** between Craig Breedlove and Art Arfons to see who can hold the title of "fastest man on earth" will continue this fall, it seems, and also possibly spread to the water. The first move was made by Arfons who is scheduled to go on the Bonneville Salt very soon. He is hoping to rack up a speed of about 650 miles per hour. If he succeeds in regaining the record, look for Breedlove to go out soon after and try to recapture it. Later this fall, Arfons plans to test a special vehicle that he has developed to go after the World's Unlimited Water Speed Record, presently held by Englishman Donald Campbell. And word is that Breedlove has a model of a boat he plans to build in an attempt to hold both land and sea records. Although Arfons is guarding the secret of his craft, word is that it will employ a completely new idea, which even Arfons himself isn't sure will work. Should be another interesting fall for fans of all-out speed.

**FORD'S HIGHLY-SUCCESSFUL** Mustang will have something even more to offer the performance fan in 1967, according to reports from Detroit. It will be a 390 cubic inch engine. Combined with the light weight of Ford's performing pony, the engine should make it quite a package. Sources in Dearborn also say it looks like the Ford Fairlane and Mercury Comet will both be offered with a 427 inch engine option, which should make a couple more potent performers.

**WILD WORDS ARE** always floating around Detroit before new-car introduction time, but none have been wilder than the report that Pontiac is planning to bring out — hold on to your hat—an ECONOMY GTO. Word is, it will have a low compression engine, two barrel carb, and no more than 250 horsepower. This will give a guy the status of having a GTO, so the thinking behind it is said to run, without having to pay the higher insurance rates that many companies are slapping on high-horsepower models. Question of the month has got to be: How will GTO lovers react to this?

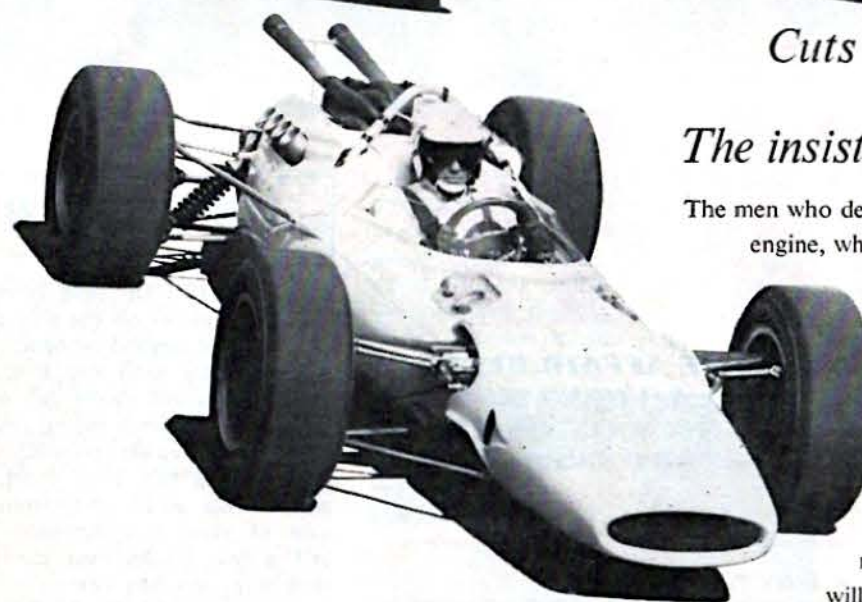
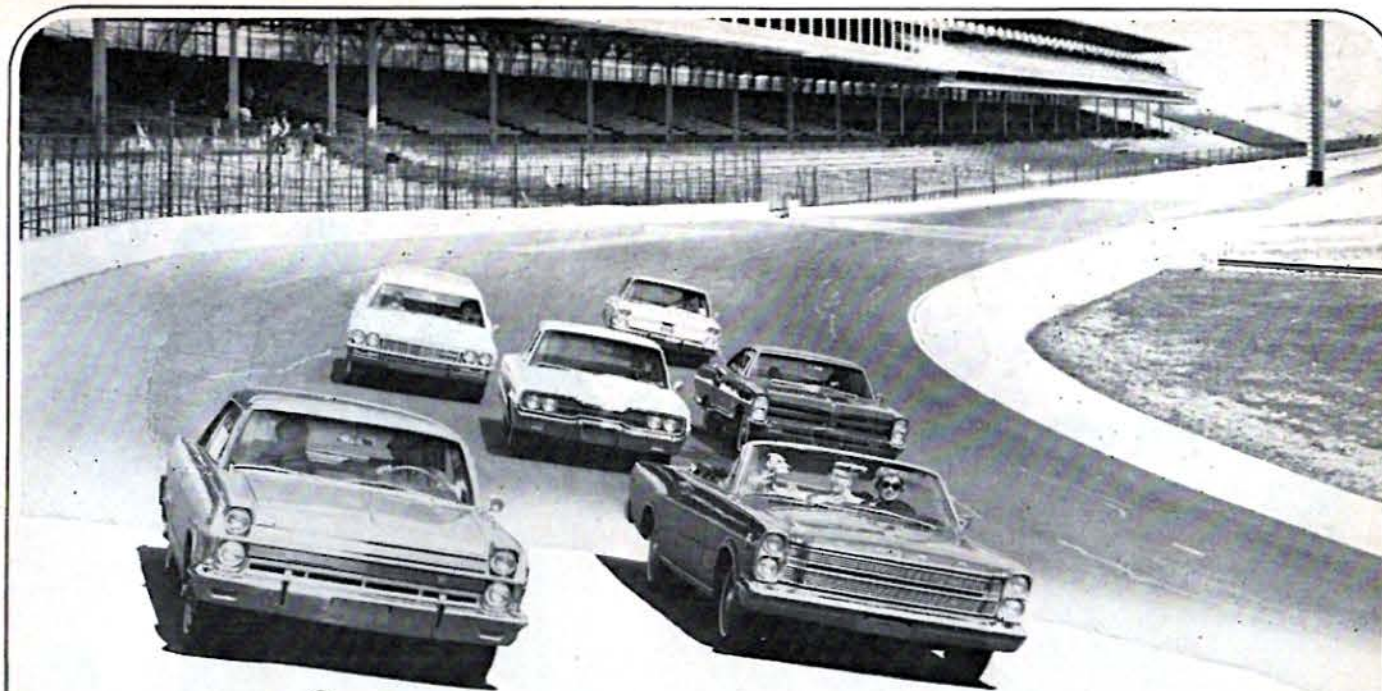
**THE NEW COUGAR** which Mercury is bringing out as their counterpart of the tremendously-successful Ford Mustang is reported to be somewhat more of a luxury car, and less of a sporty car, than the Mustang. It will be somewhere between a Mustang and a Thunderbird, according to unidentified reports flying around Detroit. It is said that Mercury intends to keep the Comet as its main performance car.

**CHEVROLET IS SAID** to be seriously considering dropping the 360 horsepower engine from the Chevy II, since its high power to weight ratio makes it about as potent a machine as a Dodge or Plymouth street hemi. It's another phase of GM's rumored easing off on high performance vehicles, according to reports.

**THE SOUTHERN DRAG** team of Ronnie Sox and Buddy Martin are building a new fiberglass, tube-frame, fuel injected Barracuda for their match race efforts.

**THE FUNNY CAR** fad has spread even to the ranks of Volkswagen fans. EMPI, the Riverside, California outfit that has made a big business out of providing speed and custom parts for the popular VW Beetle, started work recently on a lightweight, tube frame car with a fiberglass VW sedan body and a VW engine. Biggest news is the projected weight of the car. They figure it will be around 750 pounds! EMPI has had some good dragging VW's before, especially their H/Gas car, but never anything as wild as this promises to be.

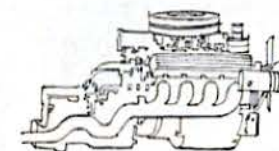
**ONE OF THE** country's largest Pontiac dealers, Packer Pontiac of Detroit and Miami, is getting somewhat active in racing once again. Back when Pontiac was a big contender in NASCAR oval-track racing, the name Packer Pontiac was on the most successful cars of all, those driven by the great Fireball Roberts. Now they are sponsoring a B/Stock entry in drag racing. The car is a 1962 Pontiac Catalina 421 cubic inch super duty model. When it was new, it was a super stocker, one of 275 mostly-aluminum S/S Pontiacs built that year. Tuner and driver is Howard Maseles, who feels that the biggest obstacle that stands between him and a crack at the Junior Stock Eliminator title at the NHRA Nationals will be the recently released Chevilles with the 396 cubic inch engines. These are also in B/Stock. Another obstacle might be Wiley Cossey, who won B/Stock at both the NHRA Winternationals and Springnationals with a '66 Belair Chevy powered by a 427 inch mill. As a sidelight on GM and performance, it's interesting to note that Junior Stock at both Winternationals and Springnationals went to '66 GM cars . . . Cossey's Chevy at Pomona and Arlen Vanke's GTO at Bristol.



*Cuts weight.  
Raceway or highway.  
The insistent metal from Alcoa.*

The men who designed and built the famous "Indy" engine, which revolutionized racing last year, called for Alcoa® Aluminum as their basic material. The blocks were cast in Alcoa's foundry. Aluminum insisted on being used. Aluminum racing engines are light. They're strong. They're easy to cool. How light? Well . . . light enough to cut the weight of the machined block in half. Now, that car will accelerate quicker, stop faster, handle better, show less wear on its tires, and use less fuel.

These are the very performance qualities that help sell passenger cars. This is why, eventually, aluminum is going to insist on being the standard in passenger-car engines. Alcoa will help make it so. Alcoa's unmatched experience with all forms of casting—die casting, permanent-mold casting, sand casting and plaster casting—will provide the means. No one has worked with aluminum longer, using so many techniques in so many related fields.



**ALCOA**

*Change for the better with Alcoa Aluminum*

# THE HOT ROD STORY



**WHAT INNOCENTLY STARTED AS A LOVE AFFAIR BETWEEN A STRIPPED DOWN "TIN LIZZIE" AND A YOUNG HOT ROD "MAVERICK" WITH A WRENCH—HAS BECOME THE GREATEST, MOST EXCITING AUTOMOTIVE SPORT EVER KNOWN.**



## BY DAN ROULSTON

The author of "The Hot Rod Story," has watched and reported the growth of this exciting sport from many different viewpoints. His introduction to the wild world of wheels came near his native Lubbock, Texas, when he climbed off a quarter-horse mare and took a ride in a hill-climbing jalopy, popular in the area. He was hooked on cars after that breath-taking experience.

Service in the Marine Corps brought him to Southern California where he was introduced to hot rodding immediately following the Second World War. Dan was interested in all types of auto racing at the time, but when organized drag racing arrived, he "found his home."

Soon after Dean Brown founded "Drag News," he joined the staff of the fledgling publication, first as a writer/columnist and then managing editor. During this period of time, he was also a newspaper editor and public relations man with the Marine Corps, stationed at several Southern California posts. "Drag News" was a "full-time" job in the evenings, with drag racing consuming every weekend. He managed to work in the corps during the week.

Marine Corps transfer orders interrupted his drag racing activities in 1960, but after his discharge, he was back with the hot rod clan as a public relations man for the Paxton Division of Studebaker Corporation exploiting superchargers. From that time on, he was a hot rodder 100% of the time.

In January, 1964, he went back behind a newspaper desk as Editor of NHRA's "National Dragster." With NHRA, he also doubled as Publicity Director and handled the editorial copy for the special event programs produced by the NHRA.

Roulston joined the public relations staff of the very promotion-minded Hurst Performance Products organization in July 1965 and among many varied activities, directs the firm's Hurst Armed Forces Club project, in addition to their other publications. His selection as author for The Hot Rod Story rated as "one of the highlights of my life and career. I only hope that the hundreds of individuals I've left out or passed over will realize that every hot rodder has contributed a paragraph to The Hot Rod Story, but the editors of Car Craft are limited to only three segments."

## CHAPTER ONE

THE SANDS OF time have streaked the number on the side of the first hot rod beyond recognition and the driver's entry form has long been lost amid boasts and challenges rendered at thousands of bench racing sessions. But everyone agrees who he was.

He was a tall, thin, short, fat teenager in his early 20's, from the east side of West Los Angeles, who lived just a few blocks over the Hollywood Hills from the San Fernando Valley. His world started with the Ruxtell two-speed rearend and stopped just a few feet in front of his roaring Fronty-equipped Model "T".

This is HIS story—The Hot Rod Story. It is written on a unique combination of salt, sand and asphalt, brilliantly colored by rubber dissolved in a combination of gasoline, alcohol and nitromethane.

Auto performance enthusiasts probably formed the initial chapter of the motor sports fraternity and pledged its first members immediately following completion of the second car. Right from the start there were devil-may-care types obsessed with the desire to put these horseless carriages to a competitive test. There were also fearless fans anxious to view the performance and a populace thirsting to learn of the results.

From this beginning motor sports have developed, like poker, into many versions and varieties, some of them almost unidentifiable with the original.

But it also has its basic "five card draw" and "five card stud".

On one side there are the conventional clans, driving purpose built vehicles on road courses and around ovals. You might say they are the "draw" poker players of the club.

Then there is the hot rodder . . . the wild card in a deck of uniformity, a self-made mechanic/machinist/engineer who fails to be impressed by theoretical limitations and doesn't understand the meaning of "can't" and "impossible" when it comes to cars.

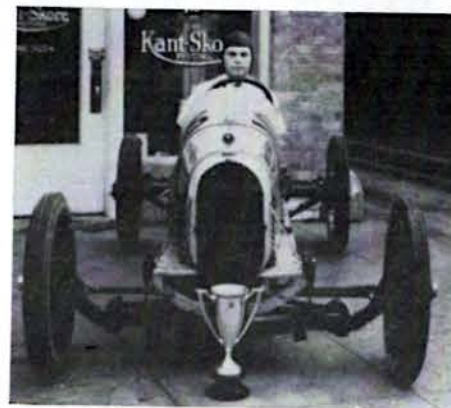
In essence, the hot rodder is a maverick with a wrench. He's full of ideas, ability, enthusiasm and unanswered questions. And there's nothing he likes better than bucking a "pat hand", for he does his finest work when the odds are highest and things look the darkest.

He started from oblivion and had no place to go, but he wanted to traverse the distance, fast. Fortunately, for the breed, he slowly brought his goal into sharp focus, set his sights, polished his sport to a high luster and finally placed it on display for public acceptance.

This eventuality was probably the farthest thing from his mind in the pre-World War I days when Henry Ford issued his version of the "Emancipation Proclamation" for the restless youth of an emerging era. His freedom came in the form of a low cost, readily available expression of individuality affectionately known as the "Tin Lizzie."

Under the embryonic hot rodder's hands, "Lizzie" was transported from the farm to the big city in a dazzling spiral that brought converts and condemnation.

"Lizzie" was fickle and played with the affections of many men after she was exposed to the bright lights, glitter and gaudy paint of the auto performance world. We are concerned only with her flirtation with the hot rodders, a chance meeting which turned into a life-long



Acclaimed "The Father of Hot Rodding," Ed Winfield pioneered the hot rod sport and went on to become its first speed equipment manufacturer. He was an avid track racer as well as a lakes rodder.

love affair that has surrounded her with a multitude of healthy grandchildren.

The early hot rodder went to the root of the situation in his quest for speed by removing everything he considered unnecessary from the Model "T". His next step was to coax more horsepower from the basic four cylinder engine and improve on the mass-produced method of getting his increase to the ground where it could be converted into a cloud of billowing dust, fighting a losing battle to

stay attached to the rearend of a boxy roadster.

One of the first exponents of this strip and modify society was Ed Winfield—the father of hot rodding. As an 11-year-old youngster in La Canada, California, Winfield stripped a "T" to its bare chassis and used up about four generations of luck as he drove it to a frightening 60 mph. Two years later, in 1914, he was a much more experienced mechanic and design engineer. Winfield's second creation featured a lowered chassis, reworked suspension and modified engine. This time the rooster-tail of dust trailed behind the landlocked missile as it reached near orbital speeds of 80 mph.

Other drivers had gone much faster, but they were all backed by well-financed programs and utilized specially built racing cars and engines (the draw poker type).

Winfield's accomplishments launched the hot rod movement with dual recommendations. The Model "T" was both readily available and simple in design. It was also surprisingly de-tuned.

Within a few short years, Southern California hot rodders (apparently this title was adopted right from the start) had developed the Ford four-banger far beyond the wildest expectations of the factory engineers.

The small amount of what could be classified as speed equipment available for the "T" engines at this time came from oval track racers and reached the hands of street machine users in second-hand condition. Early hot rodders, like

(continued on following page)

Winfield were not satisfied with this situation and contributed some original ideas of their own, usually fabricating them in backyard garages.

Outward appearances were of no concern as long as it worked. Winfield demonstrated an early attention to detail, however, and soon other hot rodders were asking him to duplicate his craftsmanship for their own engines. This launched him as the sport's first businessman/manufacturer, as he designed and offered for sale an array of high performance cams, carburetors and high compression heads. Like many

was the hot rod of the age. This was the hot setup of the day and consisted of dual overhead cams, 16 valves, 8 spark plugs, a conversion unit that made the proud owner literally tremble in anticipation just at the sight.

This could well have been the powerplant that pulled the first de-nuded Ford roadster across Muroc dry lake. Only the thrill of having reached the absolute maximum speed of his car could have overshadowed the excitement experienced by this first adventurous hot rodder when he rolled over a small rise and viewed for the first time that vast

## Individually, and in small groups, they found the area that was to become their "Mecca" ... the dry lakes.



**THE HOT ROD STORY**

others who would follow him, he probably did not plan to follow this vocation but followed success with more success.

For the most part, test facilities for trying out the performance capabilities of these early hot rods were dual purpose, also serving as public by-ways for regular city traffic. Society's limitations put a definite crimp in this initial street racing activity, however, various hot rodders began searching for better places to hold their high speed activities.

This search eventually brought the drivers and their hot machines to the dry lake beds of the Southern California Mojave desert region. But the only organization involved was their common desire to put their engineering efforts to the ultimate test of maximum speed.

The same period of hot rod evolution that spawned Winfield high compression heads and longer duration cams, also marked the appearance of the Fronty "T", designed by brothers Louis and Gaston Chevrolet. The Frontenac equipment was introduced to the oval dirt track racers of the era, but quickly found acceptance with the hot rod fraternity. The overhead valve conversion eliminated much of the "monkey motion" and assisted in sending a surge of new power to the popular Ruxtell rearend.

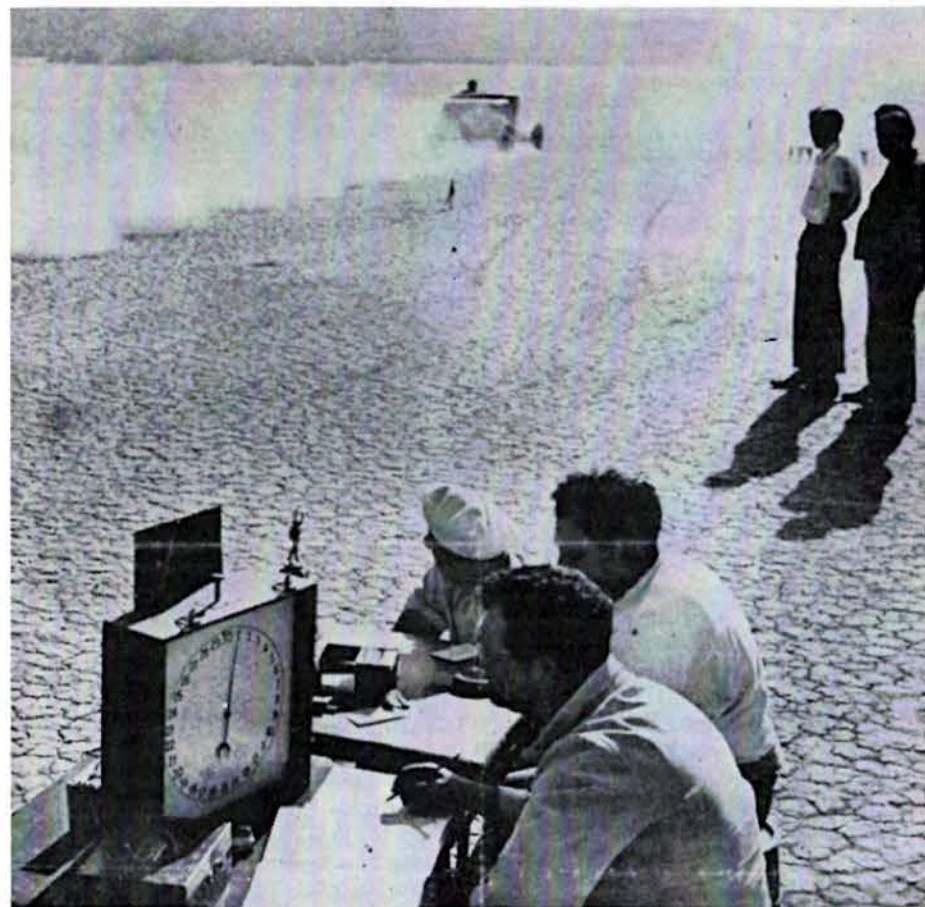
Success breeds competition, however, and the flow of specialized high performance equipment from the Frontenac shop in Frontenac, Michigan primed the pump for a rash of other manufacturers that soon appeared in Southern California hot rod circles.

Joining the Fronty swing was another red-hot "option" from "Racing Joe". He almost matched Ford's production line efficiency with his "Rajo" (Ra-Jo) high performance heads, featuring 17.3:1 compression.

The ultimate Fronty "T" however,

expanse of the flat, sunbaked dry lake.

As soon as he had had his day of glory of flat out speed assaults, he probably replaced the stripped off windshield, top, fenders and other non-essentials and headed back to Los Angeles at near duplicate speeds to inform all of his



Typical of early day lake meets illustrates that safety standards had not yet arrived. Note close proximity of timers and spectators as roadster roars thru the timing trap. Cars were hitting 80-90 mph on the hard baked lake beds that were swept clean by the wind.

fellow rodders of his wonderful, isolated discovery.

Individually, and in small groups, they also journeyed to this site that was to become their "Mecca," to taste of the previously forbidden fruit of "on the floor and flat out." To say the least, they quickly became addicts.

Their uniforms were neither standard nor colorful, and this situation was duplicated by their cars but concerned no one. A meet was quickly organized and consisted only of spreading the word.

A trip to the dry lakes might result in a solitary experience or a turnout of a dozen or more modified "T" and "A" roadsters, "tubs" (open two-seater touring cars appropriately stripped) and a smattering of other types. They would house powerplants featuring Fronty and Rajo equipment for "T's", while "A's" would make use of racing heads from Riley, McDowell and Schoefield of two and four port, overhead valve variety.

Naturally, the real "hot dogs" transferred this increased power through a Muncie 3-speed transmission and into a Ruxtell rearend. This gave the big spin to the special Buffalo spoked racing wheels.

Cross-breeding of components also added variety and speed to the picture as Chevy engines consumed Durant rods and Olds three-port four-banger heads.

During the 1920's, most of the lakes activity was of an impromptu nature with little organization. This fact, plus increasing complaints of street racing by "young toughs in rakish-looking sports cars" threatened all of amateur auto racing in Southern California, so steps were taken to bring the groups together.

The first Muroc lakes meet was held on March 25, 1931, under the sponsorship of the Gilmore Oil Co. and supervision of George Wight, founder of Bell Auto Parts.

Cars were divided into several classes for this first meet. At the top of the heap were Rajo-equipped Model "T" entries. Flathead "T's" all ran together, while Chevys and Frontenacs were lumped into another class. Overhead Model "A's" and flathead Model "A's" completed the two remaining brackets.

A pace car brought the entire class down to a flying start. If any car jumped the start, it was placed 100 feet behind the others for a handicap restart. First and second place finishers were eligible for open competition with all of the other class winners for a "Top Eliminator" run-off. An entry fee of \$1.00 per car was charged at this first meet.

Within a few weeks, the Purdy Brothers of Los Angeles had developed a stop watch timing mechanism for individual speed runs and crowds of several thousand youthful fans were commonplace. Most of the cars at these meets were running in the 85-100 mph bracket, but at least one modified, stripped down pick-up truck, topped the field at 100.

On April 19, 1931, Gilmore Oil Co. sponsored a special trophy for the Muroc meet for the overall winner and Ike Trone took home the award with his Riley equipped "A", running 105 mph.

A little more than a year later, Joe Mozetti really shook up the troops when he whistled across the Muroc expanse at a speed of 118.43 mph on July 10, 1932. He was driving a wild Fronty "T".

Records were unimportant to these early hot rodders, but by September 17, 1933, they had broken the competition down to include three overall winners. Frank Lyons was the big gun with 117.64 mph with his Riley four-port. Pete Clarke ran with his fenders, unlike Lyons' stripped machine, and turned 114.65 mph in another Riley four-port. In the flathead division, Regg Schlemmer pushed his Winfield equipped "A" to 113.21 mph.

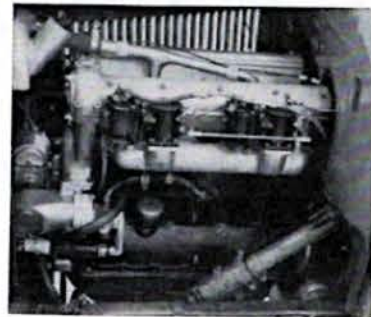
It took a couple of days to unwind after a thrilling day at the lakes and then it was back to building and planning for the next outing. Most of the bench racing sessions were held at the famed Scully's Cafe, a booming hang-out in Los Angeles during those wild early 30's.

A year after the first Gilmore Oil Co. sponsored event at Muroc, with the nation still reeling from the effects of "Black Tuesday" — the day the bottom fell out of the stock market, hot rodders

received a legacy which was placed in trust for them. It would be several years, however, before they would collect on that windfall.

That inheritance took place on March 12, 1932, when the Ford Motor Company introduced a pair of new engines. One, the Model "B", an improved version of the standard four-cylinder Model "A" mainstay. The other was to become the "immortal flathead V-8", the auto industry's first low-priced, mass-produced V-8.

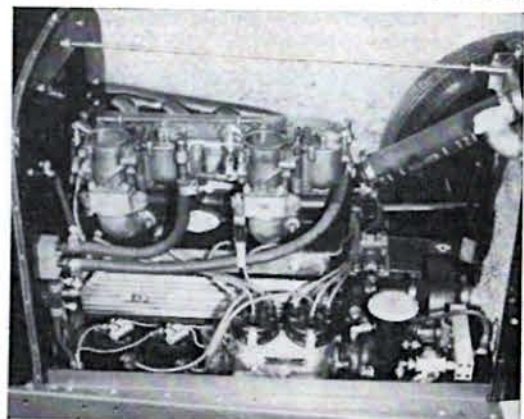
By the mid-1930's, Merle Finkenbinder of the "Revs" hot rod club had improved on the timing system, using a



Left — One of the most radical of the early adaptations for Model "A's" was this dual OHC McDowell head. It provided plenty of extra horses but proved expensive for the average rodder.

Below — Famous Cragar overhead valve head was a favorite of the hot rodder for the Model "A's" and "B's". Head gave a lot of punch to the little 4-bangers.

Below — Earliest of the overhead valve conversions was the Rajo. Winfield down-drafts carbs are mounted on this head. Not capped off port where 3-carbs could be run if desired.



Right — Twin pods on the Riley OHV unit was true identity of a wild hot rod during Thirty's. It was in great demand and assisted in powering many 4-barrels to class records.

taut piano wire stretched across the course to trip a set of electric clocks. An enterprising hot rodder, he rented this system to his own club for several meets as hot rodding continued to take faltering steps toward organization.

Just as man emerged from his cave and banded together in a mutual society, these lakes meets began to take on a form of organization, but no one complained of the restraints being too tight.

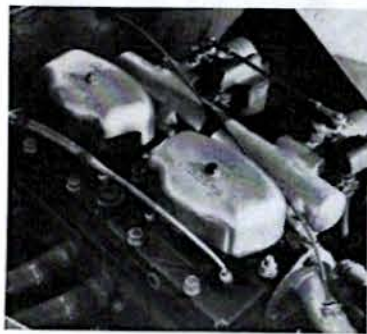
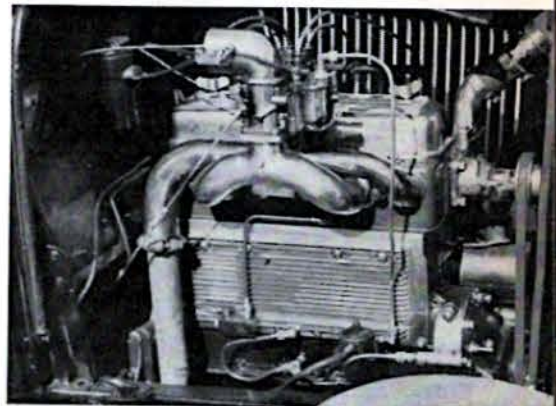
Most of this organization was the simple concession of running one car at a time against the clocks instead of everyone blasting off helter-skelter.

Muroc was a vast expanse of clay-like

alkali mud, baked solid over the generations by the desert sun, smoothed by occasional rains and swept reasonably clean by strong winds, winds which also contributed a major share of danger occasionally to the flat-out speedsters.

Extending some 12 to 14 miles in length and six to eight miles across, the open land allowed plenty of room to run in virtually any direction. This favorable feature served as a very dangerous diversionary offshoot that eventually brought scheduled organization.

While one car was racing on the designated course, others would be holding impromptu speed sessions along the



sidelines. This frequently resulted in spectacular, even fatal collisions.

Seeing the writing in the sand after receiving increasing attention from law enforcement officials and other civic leaders, the hot rodders began to spend a little more of their free time talking instead of tinkering.

During this time, organization of the hot rod movement started in depth at the ground level. Car clubs were mushrooming all over Southern California. Meeting in garages and club rooms, the members compared notes and experimented. Everyone's goal was Muroc.

Hot rodders are an adventurous group (continued on following page)

and soon they found other dry lakes and within a short period of time, Rosamond and Harper were also resounding to the throaty roars of these backyard bombs.

Lakes meets were generally held on weekends, with a steady flow of hot rodders arriving throughout the night. The cold desert air kept most of them snug in their caravan of cars or stuffed in their sleeping bags on the desert floor. There were always the brave ones who spent the night tuning their cars, much to the discontent of those who were attempting to catch up on a few "z--s." And then there were also the all night big game hunters who had to see who could hang draft on a ten pound desert jack rabbit as he sped a zig-zag thirty-five mph course across the lake bed trying to make it home safely before dawn, while trying much harder not to become a permanent hood ornament on a '32 grille shell.

The first rays of morning light met with an explosion of exciting engines as the lake bed literally came alive. Huge old tire bonfires with their trailing black clouds of smoke marked the beginning of the hot rodder's day as he warmed himself before moving to the line of high speed battle. The course was marked by small red flags and was usu-



### The explosion of exciting engines at early dawn marked the start of the hot rodder's day

ened; desert temperatures of one hundred degrees or more always had its marked effect on total engine performance, for there was no substitute for those cool, fresh early morning hours for peak engine efficiency.

With a full day of racing behind them, the hot rodders headed back to Los Angeles for a week of inactivity — theoretically. Los Angeles area police would challenge this. Any stretch of open and reasonably level public thoroughfare in-

ing. The sport's first "technical inspection" was launched to insure proper clearance of all components (chassis under-carriage) for the piano wire. Several times during a meet things came to a halt when some bad guy broke the wire.

J. Otto Crocker came to their rescue with a system using photocells and light beams. Not only were they reliable, but the new clocks were more accurate. The San Diego, Calif., watch repairman soon became one of the most important men at the meets and a tremendous contributor to the growth of the hot rod sport.

During all this time, the quest continued for more horsepower. With a wide variety of special heads available, the search went inside the engines and the first cam grinders for the hot rodders began to emerge. Ed Winfield began to receive competition from Pierre "Pete" Bertrand and Harry Abazian. The latter was being assisted by an inquisitive youngster named, Ed Iskenderian.

As more and more speed and high performance equipment became available, George Wight's Bell Auto Parts began to stock additional shelves and he took on a helper, Roy Richter, who also drove George's midget track racer. After a very successful career as first a driver, and then a race car builder, Richter would eventually take over the entire Bell Auto operation and take it to even greater hot rod industry heights.

Through an evolutionary process, Richter took over part of the Cragar operation, an offshoot of the famed Miller-Schoefield racing engines from Crane Gartz "CRA-GAR", a member of a prominent plumbing manufacturing family. Under Gartz's operation, the Cragar heads and other speed equipment found great acceptance in the overhead valve conversion field for the popular Model "A" four-banger.

Hot rodding was going and growing faster and faster, but it still wasn't getting very far on a formal basis.

"Pete" Bertrand gave an indication of things to come when he clocked an amazing 121.62 mph in a four-banger running one of his cams and a Winfield head. These early pioneers of speed were always surrounded by young hopefuls, looking and learning. Bertrand's crew was headed up by young Clay Smith, who would make his own mark in the cam grinding and racing engine business a few years later.

As the speeds increased, the obvious need for better organization and control became more apparent. Wild runs across the lakes by non-competitors and a destruction-bent vandal element threatened to undermine the entire hot rod movement.

Nightly street races on Lincoln Boulevard were also drawing the wrath of law enforcement officials and the local

citizenry. Inadequate facilities and lack of supervision at these well attended, but outlaw street races often ended in tragedy. One of hot rodding's most promising young engine builders, Phil Weiland, only seventeen at the time, was one of the many accident victims of these activities. Displaying the same determination that he put into his racing activities, Weiland came back from a spectacular roadster flip to become one of the sport's strongest supporters and most successful businessmen.

Finally, in mutual self-defense, a meeting was held by representatives of about a dozen car clubs with the idea of conducting inter-club lake meets. Everyone realized this would require a more formal organization and the Southern California Timing Association emerged.

Initially, membership consisted of the "Road Runners," the "Knight Riders," "Sidewinders," "Ramblers," "Throttlers," "Idlers," the strong "90 MPH Club" — and now the "Bungholers." The "Derelicts" were added at the next meeting. Then came the "Albatas," "Desert Goats," "Hot Irons," "Knight Flyers," "Velociteers," "Pacemakers," "Mobilers," "Kingsmen," "Gophers," "Outriders," "Mercuries," "Dolphins," "Rattlers," "Ridge Runners" and "Revs."

One of the first orders of business was a schedule of meets for the 1938 season. Before this could be resolved, however, discussions were launched concerning the various engines and equipment in use. This led to the new association's first rules. After long and heated discussions, to put it mildly, four cylinder engines were separated from the new V-8's. Dual overhead cams were outlawed, but single overhead cams and superchargers were given the SCTA stamp of approval. Undoubtedly, the first rumblings against the "establishment" were uttered at these meetings.

More came later when the classes were set up along speed lines. Cars ran in class breaks of 80-90 mph, 90-100, 100-110 and over. Additional classes were added as speeds increased.

SCTA really started some of the hot rodders grumbling when they later banned coupes and sedans at their events. If it wasn't a roadster, it wasn't a hot rod, was the leaders' philosophy.

Within a few weeks after SCTA was formed, other groups began to band together, patterning their activities after this pioneer clan.

The "Road Rebels" Club of Los Angeles had a set of clocks and this became the basis of the Western Timing Association. One of the founders of this group was Bill Burke, who would make his big marks later on the Bonneville Salt Flats.

Another set of clocks that spawned a racing association was Ray Ingraham's

The hot rodder and car that shook up the troops and put everyone on the trailer for almost 10 years, was Bob Rufi and his 140 mph rear engine streamliner. He even had the gall to do it with a 4-cylinder Chevrolet. Needless to say, this really hurt the Ford lovers. Note Rufi's creative wheel covers used in those early years. Later he enclosed rear wheels with special individual "pants" covers.



timers that eventually evolved into the Rusetta Timing Association. "Rusetta," is the Greek god of speed.

Although of lesser size, the Bell and Mojave Timing Associations were also formed and added further organization and strength to the rapidly growing hot rod movement. Each of these groups held their own separate meets.

Under the guidance of Ed Adams, SCTA's first president, and with big assists from Vern Hurst, Arthur C. Tilton and Jack Harvey, the first SCTA lakes meet in mid-1938 was a roaring success and set the pace for all other lakes activities. The future held even more promise and the entry fee was raised from \$1.00 to \$1.50 per car.

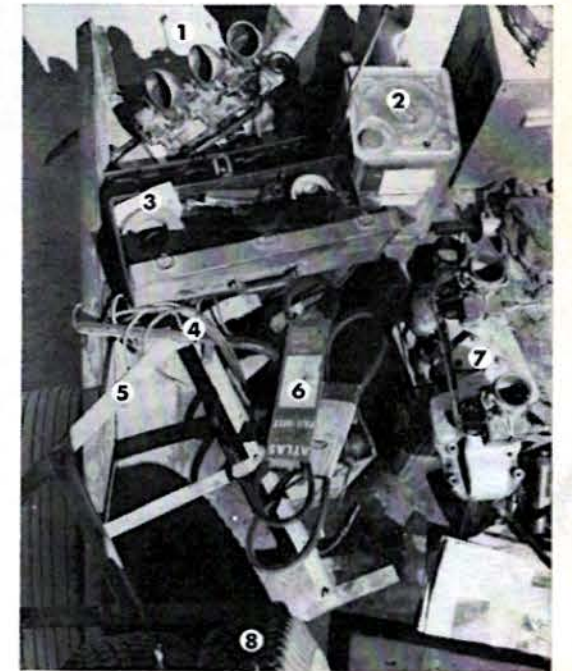
Although still rebels at heart, the hot rodders now had organization, rules and regulations. They weren't being invited in droves to Beverly Hills mansions, but the rodders were suddenly finding a strong friend and supporter in Southern California law enforcement officials as a result of their organizational activities. This was a far cry, and an enjoyable feeling, from illegal street racing.

Names also began to establish dominance in various areas. Tony Capana, Sandy Belond, Jack Andrews, Lou Senter, Paul Schiefer, Vic Edlebrock, Ak Miller, Randy Shinn, Wally Parks and Roy Richter were frequent class winners and typical of the ambitious youths who would become by-words in the sport.

But the name that was on everyone's lips in the late thirties was Bob Rufi. For out of the tremendous invasion and supremacy of the Ford legion came, of all things, a Chevrolet four-banger powered rear-engine creation. Rufi put everyone on-the-trailer as he and his Chevy streaked across the dry lakes at Muroc, Harper, and Rosamond at speeds above 140 mph. These performances would remain as the best for almost 10 years.

One of the reasons for Rufi's long-standing record was the war clouds that were gathering over Europe. The first hot rodding casualty of the war danger was the race course itself. Just as the wide expanse of desert appealed to the racers, it also appealed to the government as a gunnery range for military flyers.

Actually, the dry lakes were owned by the government, but the racers had as-



Hot rodders are a meticulous group. They have a place for everything and everything has its place. Competing at remote lake meets meant coming prepared, and they did! This typical pickup bed is a great example. #1 and #7... if two carbs didn't work, try three. #2... the almighty fuel was never left behind. #3... a true rodder's trademark, a tidy tool box. #4... spark plugs, wires, and an extra igniter were a must. #5... this guy was one of the chosen few; he towed to the meet. #6... fan belts? ... they were never used; must have been for the truck? #8... new set of skins for that all-out blast. "Zinfandel" and large box of Boraxo not shown!

sumed a fraternal affection for the dust and dirt and resented the intrusion. The end came in early 1941 when a small group of soldiers informed the hot rodders they were no longer welcome to use the lake bed at Muroc. The war spirit had not yet encompassed the country and the assembled hot rodders advised the soldiers they were not welcome at their race course. The soldiers were better organized than the hot rodders. They insisted that the hot rodders leave.

Cool heads prevailed as additional soldiers arrived and a heavy-hearted group of roadsters began the trip back to the old Muroc General Store and the

(continued on following page)



Aerial view of El Mirage lends vivid picture of rodders in action during weekend lake meet. Various streaks across lake's floor are old courses used over period of events. When course became too rough and dangerous for high speed trials, track would be moved to smoother locaton. El Mirage measured some 5 miles in length, 2 miles wide.

ally two miles long with a quarter mile timing trap at the end. The order of the day was simple but also could become very complex. Move to the line, make your run, return to the pits for more tuning modifications, even overhauls if you were unfortunate enough to fry a couple of pistons or cough a rod. Back to the line again for another attempt at the class record, or to protect it if you were one of the more astute "mavericks" in competition. When the sun had climbed to high noon the pace of activity less-

stantly became a little Muroc when a couple of rodders got together.

When the weekend rolled around again, the streets were cleared as everyone headed for the lakes. Rolling in from various directions were members of the "Road Runners," "Knight Riders," "Sidewinders," "Ramblers," "Throttlers" and "Idlers." One far-sighted group called themselves the "90 MPH Club."

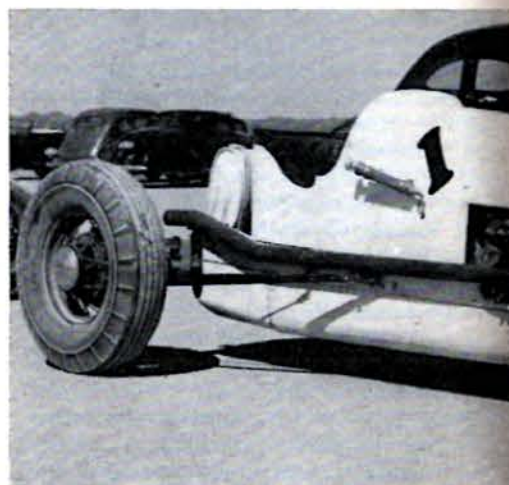
Seeing the need for more accurate and reliable timers, the hot rodders continued to look for new methods of tim-

## Backyard hot rodders innocently spawn a multi-million dollar Hot Rod Industry

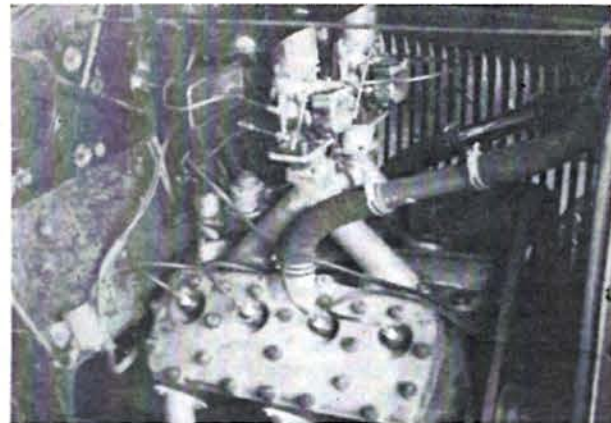
**THE HOT ROD STORY**



One of the first V-8 rods to really turn on was Karl Orr's modified, 134.40 mph. Modifieds ended at rear seat for body shell, tail piece or other fairings beyond this point classified car as a streamliner.



Lake meets always meant a little "camp-out" for the boys. Arriving late at night everyone tried to catch up on a few Z...s. This was extremely difficult though for throughout the night there were always those who had to finish tuning their engines and others who had to seek out and chase their favorite big game... rabbits!



Tommy Thickstun (right) explains his first 180 degree manifold to Vic Edelbrock Sr. Above is one of Edelbrock's first backyard "Y" manifolds used on his famed roadster. Heads were Arco, filled and milled.

highway for the last time. There was none of the usual enthusiasm and speed. A colorful era of The Hot Rod Story had come to an end.

The area around Muroc became the now famous Edwards Air Force Base, site of one of the nation's largest test facilities for experimental aircraft. One section of the old hot rod timing course now serves as the main landing site for the X-15 rocket plane. It inherited an impressive history and some of the pioneering spirit of those early speed merchants must have rubbed off.

Because Harper was much farther away and Rosamond was also being incorporated into the military expansion program, the hot rodders turned to nearby El Mirage dry lake for their continuing racing activities.

El Mirage was smaller, less smooth and more changeable than Muroc, conditions which previewed the decline of lake meets as the war grew closer.

The only consolation for these un-

favorable conditions was a pit stop at a small winery in Adelanto, Calif., near the El Mirage area, following each meet. "Zinfandel" became synonymous with El Mirage lake meets and it took a lot to wash the dust from your throat after a weekend of racing.

By mid-1941, the meets were better organized than ever and classes were more realistic. Competition was the keynote and the reckless abandon of the earlier days was gone.

Competition also served to accelerate the development of the Ford V-8 engine

as a hot rod powerplant. At first, these "double boilers" did not enjoy wide acceptance by engine builders, but the desire for more horsepower and speed overcame tradition and nostalgia. Competition within the various clubs was intense, no stone was left unturned in bolting together an engine offering more experimental horsepower.

This "do or die for the old," "Road Runners," "Sidewinders, etc." was one of the mainstays of the lakes meets.

New names came out of this switch to the V-8 as individuals developed new

products and accessories that were duplicated or desired by others. One of the first to reach major proportions was Vic Edelbrock, Sr. A pioneer in the sport, Edelbrock made the flathead roar with authority. He suddenly found himself out of the driver's seat and into an executive's chair with a successful line of speed equipment. A carburetion manifold he designed was so superior to the factory produced item that Edelbrock found himself in the speed equipment manufacturing business. He would later develop a line of high compression heads for the V-8.

Edelbrock's entry into the field provides an interesting case of how the speed equipment industry developed, how one man improved on another's idea. Originally, Edelbrock ran a garage in Los Angeles and carried manifolds built by Tommy Thickstun as a sideline. He felt the Thickstun units had some limitations and suggested some modifications. Thickstun did not take advantage of his dealer's comments, so Edelbrock dropped the line and began making his own manifolds.

He was one of the first manufacturers to offer high performance components on a true business-like basis with a dealer network.

Edelbrock received plenty of competition from another dry lakes competitor, Eddie Meyer. Both men were producing excellent equipment and were out to prove the worth of their products by running their own personal roadsters at SCTA meets. Edelbrock's entry was a stock looking '32, while Meyer ran a rear-engined creation. They were constantly battling for the class record.

Individuality is the life's blood of the hot rodder and additional ideas and adaptations continued to appear on the scene. Phil Weiland collected a following with his intake manifold design and another business venture was launched.

Earl "Pappy" Evans, one of the sport's true pioneers, was also manufacturing a complete line of heads and manifolds.

With more speed equipment appearing on the scene, street rods were increasing in both number and quality.

While most of the engine builders were concentrating on developing more power through the usual heads, pistons, and carburetion, a completely different approach was used by brothers Tom and Bill Spalding. They were perfectly happy with the equipment available, but felt there was a definite need for an improved ignition system. Speeds in excess of 130 mph proved their Spalding ignition was the way to go. Another famous name among hot rodders who branched out into established products was "Kong" Jackson of Kong ignition fame. Jackson's ignitor, in addition to possessing dual coils, points and a precision ground cam lobe, also featured a steering column lever system for degreasing spark advance manually—and it worked like a champ for its day.

With the Ford V-8 supplying previously unknown amounts of horsepower, new designs began to creep into the roadster realm as the European war grew hotter.

Jack Harvey had built the first "streamliner" several years before, utilizing sheet metal from a convenient soft drink sign. Karl Orr, operator of Karl's Speed Shop—one of the first pure hot rod establishments in Southern California, reached 134.40 mph in a Modified roadster powered by a V-8 engine fitted with Weiland manifold and Bertram cam.

The speeds turned in by these hot rodders became even more impressive with a check of the SCTA record book. In 1940 the records listed only 29 cars as having topped 100 mph. An average meet would attract 75-100 entries.

It was at this point that the hot rod world, along with the rest of the country, found itself in a wild spin. Roadsters and coupes went up on blocks and in storage as hot rodders donned military uniforms and went off to war.

SCTA formerly suspended its racing activities on December 4, 1942, on motion of president Bozzy Willis.

On ships riding the high seas, at lonely outposts at the corners of the world and in the battle lines, hot rodders recounted their activities for the anxious ears of thousands of other young Americans. Most of them had probably never heard nor seen a Southern Californian hot rod. Oh, they had their own pride and joy sitting at home, but nothing like the likes of a true hot rod So-Cal style. But like good food, it doesn't take

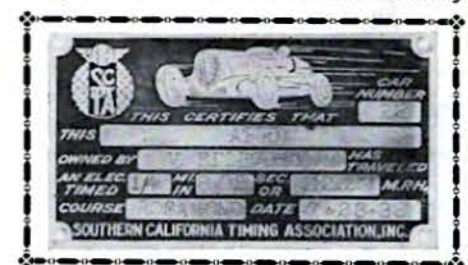
long to develop a taste for the thrill of excitement such as that experienced by Southern Californian rodders.

In barracks bull sessions, the hot rodder became the center of attention and thousands more learned of the intriguing automotive backyard sport that blanketed the Pacific Coast southland. The war may have quelled actual participation in hot rodding, but it also served as a dissemination center and a spawning ground for interest in the sport and the new generation of enthusiasts would be active rodders, not just bystanders.

They were learning to work with their hands, new engines were being developed for the war machine, and a giant economy meant they would have money to spend for cars, engines and equipment.

The established hot rodders also found their answer for news of their former way of life being filled by a special monthly newsletter. The SCTA News was a project headed by Veda Orr, wife of Karl Orr. Each month's mail brought news from home and such additional items of interest as Sgt. Wally Parks' "Veep" which was "tearing them up" in the Philippines.

The vehicle was a standard military Jeep which had been outfitted with a V-8 "60" engine. Parks, today the head man of the National Hot Rod Association, declines to remember exactly



An SCTA officially timed dash plaque was the sign of a very fast car. It served as authority like this one belonging to Vic Edelbrock, clocked at 112.22, 1939. Dash plaques were symbolic with a true rod.

where he acquired the engine in such a far-away land.

When the war ended, hot rodding did not simply resume its pre-war activities, it exploded into a nationwide epidemic.

The entire country was threatened with burial under a pile of stripped off fenders, running boards, hoods and other non-essentials as youthful WW II veterans scooped up their "Rupture Duck," discharge papers... and their three hundred dollars mustering out pay.

As Detroit resumed production of cars, older models, which had served honorably during the conflict, were suddenly pushed aside for the newer beauties.

(continued on following page)



To the hot rodders this was like getting money from home, and with \$300 hot bucks in his new "civics" pocket, he was an automotive king.

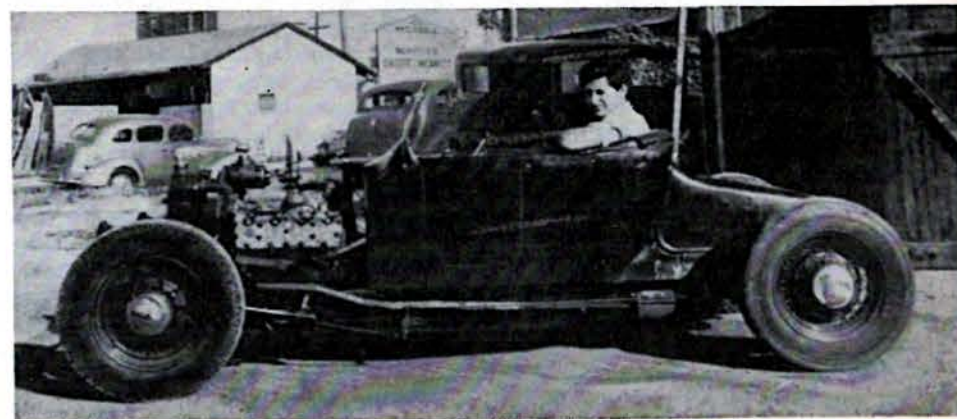
A completely different atmosphere greeted the hot rodders when they returned from war. Their military training had expanded their mechanical abilities, dangers of war had honed their recklessness and a booming economy was introducing hundreds of new methods of manufacturing and production.

It wasn't the dry lakes, however, that echoed to the roar of the souped up engines. It was the public streets and highways. All of the earlier public acceptance activities by the pre-war hot rodders were wiped out as the number of hot rods on the streets grew fantastically. Street racing was the "in" thing in Southern California. On any given night in the dazzling post-war era hundreds of hot rods could be found at the drive-ins around Los Angeles.

They would range from beautiful channeled roadsters running all of the hot set-ups to stripped down jalopies from the fringe element. The true hot rodders were proud of their equipment and these drive-ins served as their showcases — actually, the first glittering concept for future car shows. But the "shot rodders" were also there, adding their unsavory highlights to the hot rodder's reputation.

Picadilly's drive-in was one of the first and most popular of the Los Angeles area at the end of the war. It nestled at the corner of Washington Place and Sepulveda Boulevard and at the bewitching hour resembled the later day pits at a major drag race.

DeMay's, on the corner of Slauson and Stocker, was another favorite haunt. And in Long Beach you could always hit McDonald's, at the traffic circle, and find an array of fine street machines. Pat's Pantry was the spot to meet around



## Illegal street racing

trip across town. The reason was simple. To curtail the inexcusable street rod activity the city was faced with, the Los Angeles Police Department laid down the law. Without going into detail it read, "stop all street rods or similarity thereof, cite them for every vehicle infraction that can be levied, in short, make it as tough as possible!" Within weeks it became impossible to travel across town without being stopped two or three times within a given two or three mile distance. The pressure did the trick, and soon it took a braver soul than most to venture out of his driveway with a beautiful street rod for everyone to admire.

The true hot rodders, organizers of the pre-war clubs, associations and meets, were concerned with this outlaw activity and began plans to resume their lakes activities. Bozzy Willis, who had called a halt to the SCTA activities at the start of the war, brought together the group that started it off again. The lack of organized events was believed to be one of the main reasons for the mushrooming street racing.

Muroc was still closed to the hot rodders — never again would they be permitted to aim their sleek racers down that vast expanse except for a brief exhibition-test appearance several years later by Mickey Thompson's "Challenger I" . . . so El Mirage was selected as the base of activities. The sincere hot rodders affiliated with a car club drew up strict rules governing street racing and established penalties for those who violated the rules. Club jackets and car plaques became status symbols of emerging respectability.

Hot rodding thus launched one of the most concentrated, and eventually successful, image building, public relations campaigns ever organized. And it succeeded with simply the enthusiasm of dedicated amateurs.

Organized hot rodding was back in action!

Most of the cars were pre-war roadsters running four-banger engines (there

was the cry, but a bunch of dedicated amateurs had the answer.

were only 23 V-8's out of 140 entries) that were quickly dusted off after their wartime retirement. Don Blair took the top time mark back to his shop in Pasadena with a 134.32 mph run. This gave the competition something to shoot at. Other outstanding performances at that meeting included Karl Orr's 124.65 in a Modified roadster.

Pre-war stars like Vic Edelbrock at 121.13 mph, Ak Miller, and Paul Schiefer were right behind them. Further down the list of entries were names like Phil Remington, "Nellie" Taylor, Lou Baney, Jim Lindsley, Chuck Potvin. Connie Wiedell showed up with a Cadillac powered roadster and turned 130 mph, shaking up the Ford purists.

New classes were introduced, built around the number of modifications to the body and chassis, plus engine size.

The new SCTA classes were broken down to include "A" class for roadsters with stock bodies and American automotive production engines, unsupercharged, of under 260 cu. in. original stock displacement. "B" class was for modifieds with bodies of either modified stock or special construction consisting of firewall, cowl, sides and back. There could be no streamlining back of the driver's seat. The engine had the same limitations as "A" class. Class "C" was for Streamliners and allowed any body shell except stock. Here again the engine requirements were the same as those for "A" and "B" class. "D" was the unlimited class which could have any type

of body allowable in the other three classes and any American automotive production engine not covered in the three preceding classes.

With these new guidelines, the rodders started building new machines. For the most part, they selected the flathead V-8 engine which was widely available and ready. By this time, there was a wealth of speed equipment on the market perfected especially for them and these speed goodies were aimed strictly at the hot rodder, and not like the early four-banger conversion speed equipment that found its way over from the circle tracks. The hot rod business was there and waiting.

It was only natural that a certain amount of interest by a select group of hot rodders commenced to take shape in the form of hot rod round-round racing, but not as we know it by today's standards. A quarter mile dirt oval had been converted out of an old rodeo stadium in Newhall, California, about thirty-five miles from Los Angeles proper.

Strictly established on an outlaw basis, this track and its early participants were the pioneers of the later formed California Roadster Association (CRA). Here on Sundays, everyone who thought he could go fast and was a pretty good handler at turning left would file through the pit gate and sign up for the day's afternoon of street roadster racing. Most of the entrants drove their street rods to the track, very few were privileged with the facilities of a tow bar and a push car.

In the pits it was a simple task to ready your street racer for post time. You merely removed your headlights and other extremities that could easily become damaged by nerfing, etc., (and there was a lot of that!) and you were ready for a heat. Oh, there was qualifying and a trophy dash, but that's about where it ended. From there it was "everybody races," with qualifying heats determining who was to gain a berth in the main event . . . and what a destruction derby! The wild part of it all was the tremendous payoff for the daring novice racers. A heat race paid six-to-ten dollars and a case of oil for a win, while the main event paid the grand total of twenty-five bucks and another case of oil if the lucky driver scored twice in the afternoon's exciting activity.

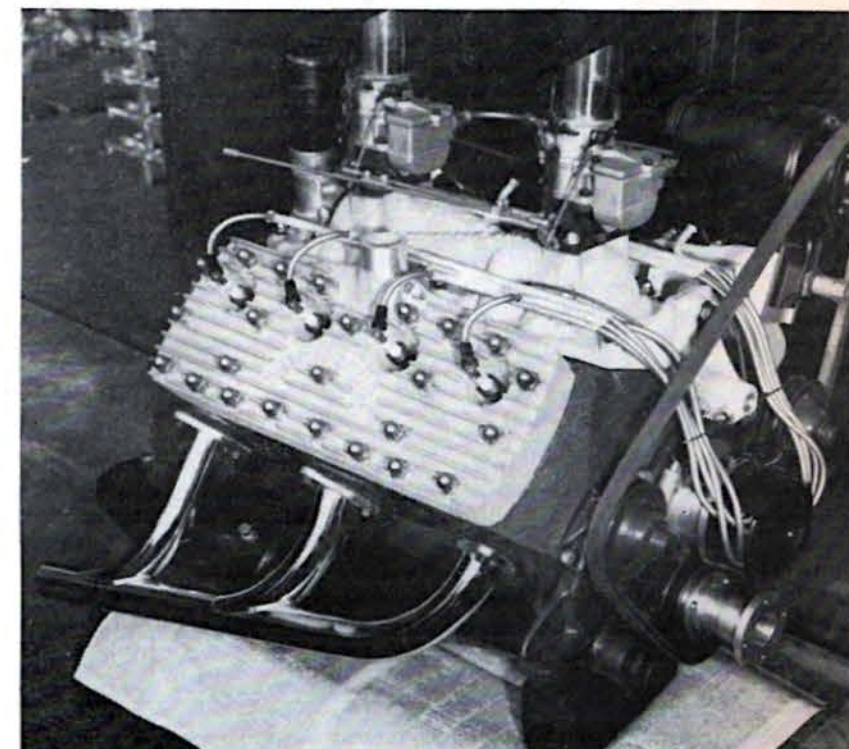
Out of this street-rod track racing emerged some of the greatest drivers the professional racing business has ever known, drivers like Troy Ruttman, Manual Ayulo, Jack McGrath, the Rathman Brothers, etc. This activity and its popularity also contributed to the birth of the renowned Gardena half mile "Carrell Speedway" (now in a new location and called "Ascot Speedway"). Carrell Speedway's first christening contest was that of the hot rods.

As hot rodding grew in activity . . . so did the manufacturing industry. Joining the already established manufacturers were other hot rod bred businessmen like Paul Schiefer and Harry Weber who

(continued on following page)

Enough can't be said about the "Immortal Flathead" . . . and here it is in its true hot rod form. Shortly after the war there were over two hundred manufacturers producing special speed equipment for this single powerplant. With this emphasis, interest and support, the engine pushed many cars well over 200 mph!

Nestled in the bucket of his pre-WW II street rod at left is teenager, Ed Iskenderian. Ed's '24 "T" body was perched upon a set of Essex rails, running a '32 Ford engine. After the war, rodders took a much different approach and created what is considered today, "The Classic Hot Rod". The 1932 Ford roadster below is a great example. Note attention paid to construction and detailing of the post-war breed. Building cost would sometimes go as high as \$3000, but who cared, it was a beautiful street-rod, ran like stink, and . . . bucks were plentiful.





## Track roadsters were "In" and so were the lakes—Hot Rodding Was Back In Action!

THE HOT ROD STORY



captured the clutch and flywheel market, and a clan of cam grinders ranging from Ed Iskenderian, Kenny Harmon, Howard Johansen, Chuck Potvin, Jack Engle and Chet Herbert. Weber also was a leading cam grinder. New heads and manifolds were being manufactured by Offenhauser, Navarro, Sharp, Tattersfield, Fenton, etc. The versatility of their abilities is reflected in their various approaches, which all resulted in increased performance.

One of the really impressive machines running at these initial El Mirage meets following the war was Tony Capana's 16-cylinder Marmon. Driver, Babe Ouse had pushed this storming monster to a new SCTA mark of 145.39 mph.

Official two-way records, however, were still held by Rufi's 140.00 mph in the Streamliner class. Don Blair had the Unlimited record of 134.08, followed by Karl Orr's Modified mark of 133.03 and Randy Shinn's 127.09 in the roadster class. Crocker continued to improve his timing equipment and speeds were being recorded with greater accuracy.

Hot rod ingenuity was always at work and it didn't take them long to find that Detroit-produced high performance equipment was also available to them. Special high compression Denver heads and Rocky Mountain brakes were designed for high altitudes and mountainous roads, but were purchased in great numbers for near sea level use on long, flat straightaways... like El Mirage.

The post-war era also brought a new hope to the lakes. War surplus centers were loaded with interesting looking items and one of the first the hot rodders grabbed were airplane fuel wing tanks. PBY wing struts, made of long, strong chrome moly tubing, were also within the financial reach of the builders. These wing struts were light, and quickly replaced bulky roadster frame rails that had been using for chassis.

With a wing tank, designed to cut through the air with a minimum of resistance, wrapped around a light weight chassis, the hot rodder had a streamlined race car at a reasonable cost. One of the first such machines was built by Bill Burke, who had decided on this approach while in the service. This machine was immediately tabbed as a

"tank" or "lakester" to set it aside from the roadsters and enclosed streamliners. Burke also built most of the other tanks used by fellow rodders.

With SCTA's ban on coupes and sedans still in effect, a dissident group led by Lou Baney and Bob Corbett branched out and reformed the Rusetta Timing Association and welcomed the hardtops with open arms. From this group would come names like Ed Pink, Bob Meeks, Don Towle, Fran Hernandez, Mickey Thompson, Red Wilson, and Bob Pierson.

By the end of August, 1946, SCTA was running very hard with some 25 clubs and an average of 175 to 200 cars per meet. It was a big show. The entry list at the August 18th outing included such now familiar names, in addition to the veterans, as Rudy Ramos, Lewie Shell, Dean Moon, Doug Hartelt, Doug Caruthers, Chuck Daigh, Frank Coon, Tom Beatty, "Racer" Brown and Jack McAfee. Caruthers' modified roadster would eventually turn into Art Chrisman's famed #25 dragster in later years.

In 1947, Ak Miller took over the reins of SCTA, with Wally Parks as secretary and full time general manager, and hot rodding took on more organization and image.

As the lakes meets continued to run smoother and smoother, and the speeds moved steadily upward, the hot rodders began to look into the future, setting their sights on higher goals. Some 700 miles north and east of Los Angeles was one of the world's finest sites for high speed runs. Many a bench racing session included a few minutes of day dreaming about the possibility of hot rodders getting an opportunity to run on the famed Bonneville Salt Flats.

Even though the organized rodders wanted nothing to do with the outlaw street races, they still met at their favorite drive-ins to compare equipment. From this pastime, a humorous design evolution transpired. Initially, no one ran hoods as they proudly wanted to show off their engines.

This situation was ideal for sticky fingered individuals who were not above collecting parts for their own cars at the expense of others.

Solid hood panels soon took over in an effort to hide what you had lurking in the engine room for prospective opponents, as well as conceal your treasure and investment of a beautifully built engine that could immediately whet the appetite of any "midnight auto suppy" gang member.

One of the first automotive retail stores to concentrate exclusively in the specialty of street-rod accessories was a small two-stall-plus-counter establishment on South Grand Avenue called Eastern Auto Supply. Two young brothers, Alex and Phil Kraus, who had worked with their father in the business prior to WW II, returned from the service to take over the reins of the business with one sight in mind—the hot rodder. They not only pioneered their field, but offered hard-to-get, rejuvenated grille shells, custom-made hood panels, special-built chromed spoke wheels, and developed a whole line of inexpensive engine bolt-on accessories of their own design. On any given Saturday morning groups of rodding enthusiasts would line Grand Avenue, some from as far away as fifty to a hundred miles, waiting for Phil or Alex to crack the doors for a full day of shopping from the counter cases to the walls and ceilings heavily laden with hard-to-get components. The scene would be reminiscent of a bargain basement sale at Macy's.

The store became so successful that the Kraus brothers ventured further into developing special bolt-on accessories for the rod builders; this was in addition to stocking many rebuilt and chromed goodies for the early model body shells ('32 to '41) that were experiencing prodigious popularity with the young enthusiasts. Naturally, things have changed today. The small two-stall-plus-counter store is dark and deserted, the walls and ceilings bare, and the business moved. Its new location is a three and a half acre site in south Los Angeles and on the front of the new 70,000 sq. ft. building is the firm's new name, "California Custom Accessories Manufacturing Company." Cal Custom's stock in trade today numbers approximately three hundred and fifty specially designed products for early and late model cars, distributed nationally, all for that customized street rod look.

Street racing had grown to full strength by the summer of 1947. It was running wild and dedicated hot rodders were faced with a full grown problem of oblivion if something wasn't done.

In an effort to tell the story of organized hot rodding, a special meeting was called, in response to proposed legislation that would put an end to all hot rod activity. Those attending included police, civic officials, SCTA membership and other interested hot rod club groups. Hot rodding had some

friends in the law enforcement offices led by Ez Ehrhardt and Chuck Pollard of the California Highway Patrol, Gordon Browning of the Los Angeles Police Department, and Chief Ralph Parker and Sgt. Bud Coons of the Pomona Police Department. These officers had been assigned previously to work with car clubs and spoke up on their behalf. The hot rod sport, thanks to the supporting group attending, won a reprieve.

Another booster at that meeting was Robert E. Petersen, a young hot rodder working in the publicity department at MGM studios.

Soon after that meeting, Petersen began to lay the groundwork for one of the greatest contributions to the hot rod sport, a publication to be known as

"Hot Rod Magazine." The first issue appeared in January, 1948, and was a grand total of twenty-four pages in size. One of the reporters of that first publication was Anthony Granatelli, a member of Grancor Speed Equipment Company in Chicago and now a vice president in the Paxton Division of Studebaker Corporation and well known today for his work on the famed Novi Indy cars.

The magazine was quickly adopted by the entire hot rod fraternity and served as a vehicle for dissemination of news concerning lakes meets, club activity, track roadster racing, pictorial features on top rods, tech stories and rod building tips. Some of the early editorial pioneers were Wally Parks, Walt Wor-

on and Bob Hoepfner, (Woron is now Publisher of Motor Trend, another leading Petersen publication in the general automotive field). Don Francisco, Racer Brown and Ray Brock took their turn at the helm as technical editors, (Brock today is HR's Publisher). No one could be more responsible for photographically capturing the growth of the sport of hot rodding than staff photographer, Eric Rickman, who has recorded over a million photographs of the sport in historical progress. Today, "Rick" Rickman is still top gunner with his camera for HR.

Synonymous in those early years with Hot Rod Magazine was a cartoon character by the name of "Stroker McGurk." Any hot rodder who didn't keep abreast of Stroker's antics might as well turn in his 100 mph dash plaque.



The steam generated around Stroker and his universal appeal of satirical pantomime humor for hot rodders everywhere was its creator, Tom Medley. Tom, one of the old hot rodders, is still with Petersen today in the capacity of Publisher of Rod & Custom magazine. It was a sad day when the little mascot was retired and Medley put away his pen and India ink for the last time because the imaginative character conveyed to thousands of enthusiasts the bright side of the old adage, trial and error, which has been the theme of hot rodding since time one.

Hot Rod Magazine and the staff behind it over the years have contributed more to the sport's growth than any other aspect since it became the established automotive bible of new and old hot rodders throughout the world. The format basically remains the same today after eighteen years of publication. But the magazine, as with the sport of hot rodding, has grown in size considerably. What was once a twenty-four page magazine now greets almost eight hundred thousand avid monthly readers with one hundred and thirty-two pages of colorful action and technical reporting today.

One of the first ads to appear in the initial issue of Hot Rod Magazine told of the first annual Automotive Equipment Display & Hot Rod Exposition on January 23-25, 1948, at the Los Angeles National Guard Armory. This was the first hot rod show ever staged, and, of course, served as a showcase for the sport's achievements and automotive craftsmanship. The show was promoted by a group of private businessmen who, in turn, coordinated their commercial efforts through the co-sponsorship of the Southern California Timing Association.

(continued on page 70)

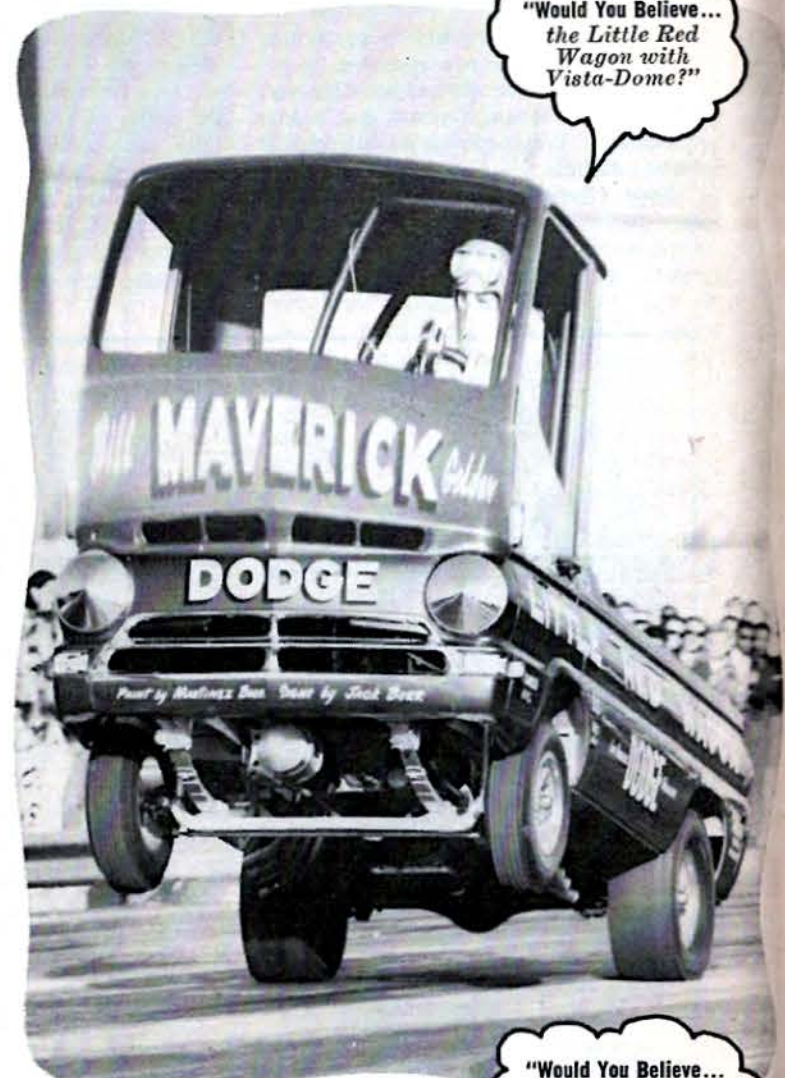


After WW II, the prodigious growth of dry lakes activity called for additional classes to accommodate new developments in engines and chassis. Examples were: 1. Paul Schiefers' "T" roadster, one of the first channeled rods. 2. Rusetta Prexy, Lou Baney's chopped coupe. 3. Another first was Bill Burke's "icing tank", a new type streamliner; later the full-bodied streamliner would move this open wheeled body shell into the "lakester class". 4. Tony Capana's V-16 Marmon powered lakes rod qualified for the wild, hairy and fast unlimited class.

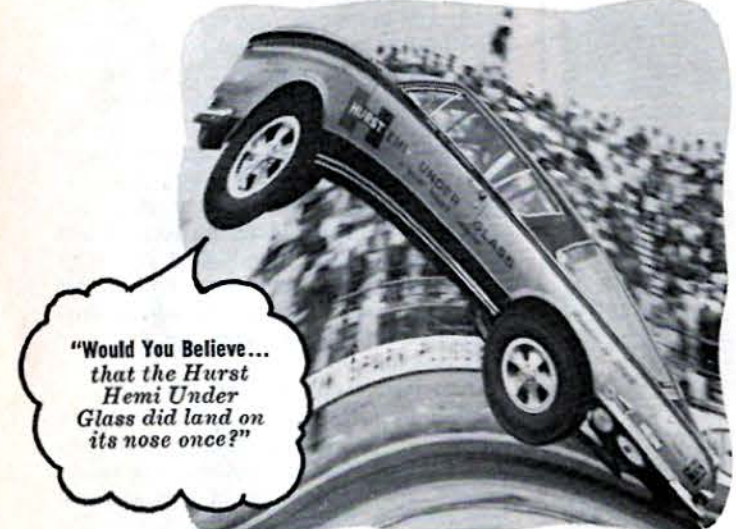
# Would You Believe...



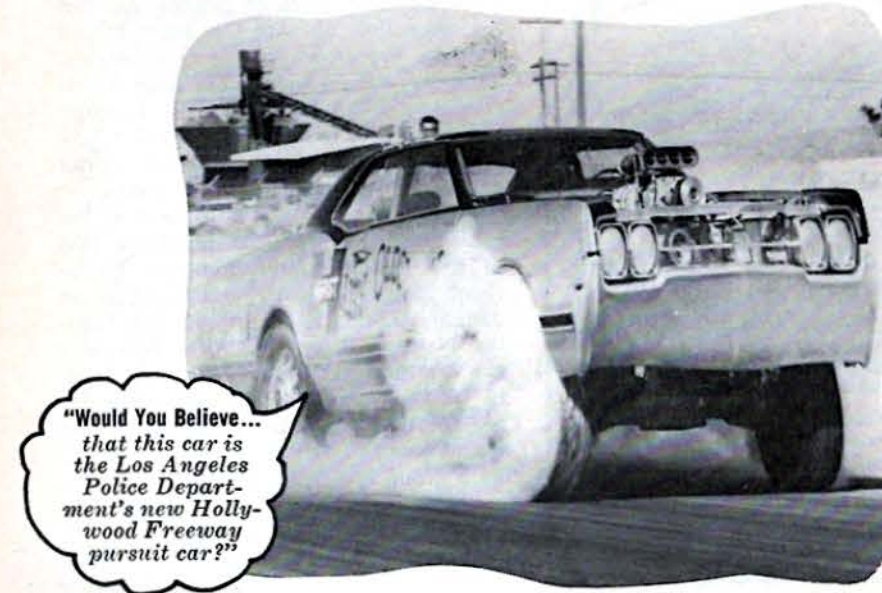
"Would You Believe... this funny car weighs only 33 1/2 lbs.?"



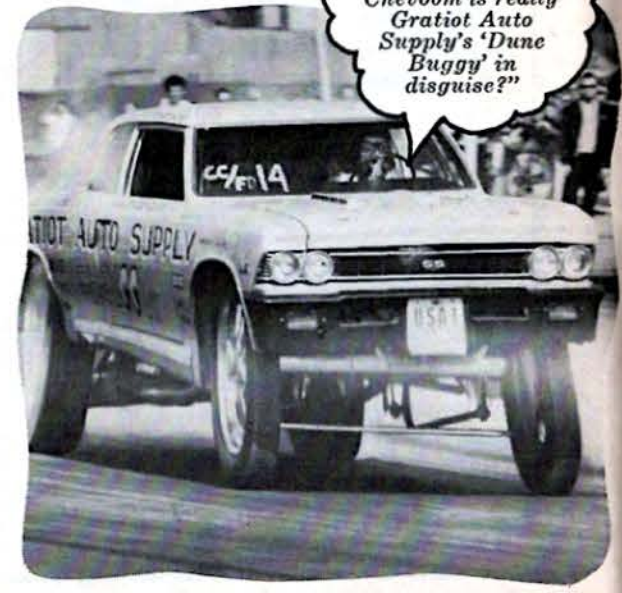
"Would You Believe... the Little Red Wagon with Vista-Dome?"



"Would You Believe... that the Hurst Hemi Under Glass did land on its nose once?"



"Would You Believe... that this car is the Los Angeles Police Department's new Hollywood Freeway pursuit car?"



"Would You Believe... Maynard Rupp's Chevooom is really Gratiot Auto Supply's 'Dune Buggy' in disguise?"

# These Funny Cars?



"Would You Believe... THIS meets NHRA's new funny car rules?"



"Would You Believe... Dick Landy does this with mirrors?"



"Would You Believe... this is Goodyear's answer to the new M & H 4-ply slick?"

"Would You Believe... that National drag race champion, Bill Lawton, is only four feet tall?"



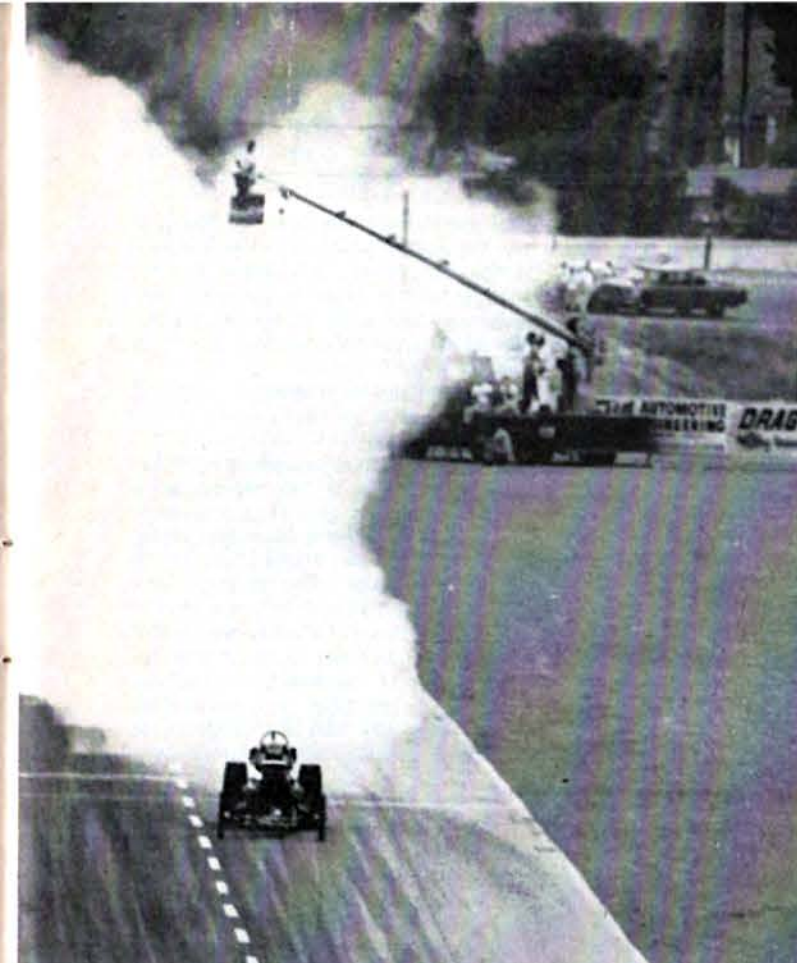
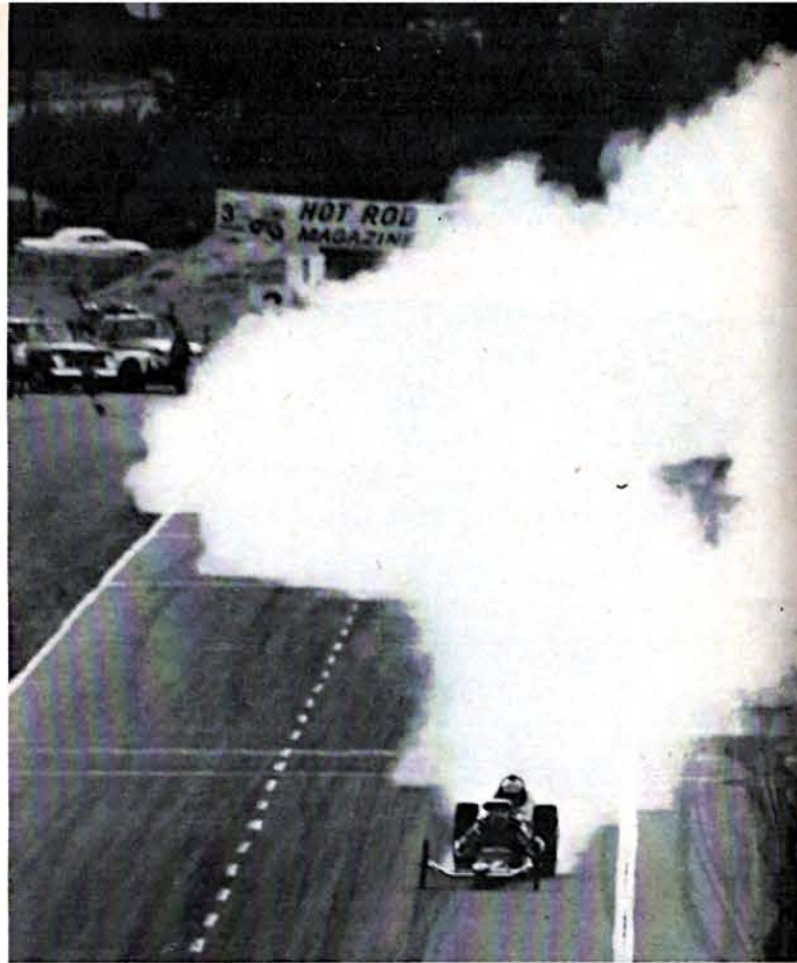
Photos by Hid Takano

**When all the smoke had cleared, the Riverside Raceway was truly the world's fastest battleground. Speeds in the 215-220 mph range and e.t.'s in the 7.20's & 7.30's made the speediest drag race ever run.**

BY BOB LEIF

HAVING A HERITAGE of being one of the fastest and quickest drag meets each year, the Third Annual Hot Rod Magazine Championships didn't tarnish their image at all. On hand for the three days of exciting racing at the Riverside Raceway were a top select field of 210 mph plus dragsters, fantastic stock bodied exhibition machines and a cross section of some of the best racing equipment around.

Concerning the quick and fast department. How's a 221 mph run by a dragster sound? Ron Rivero did it. How about a 7.24 e.t.? The Adams and Wayre dragster did that with John Mulligan at the controls. How about a 184 mph pass by a stock bodied "funny car"? Jack Chrisman in his "little red Comet" Kendall GT-1 roadster was the man. This was a drag meet and every racer on hand knew he had to run if he wanted to



win because one quick trip through the pit area indicated that all the slow cars stayed home.

With better than \$23,790 in prize money floating about for winners, one might get the idea that the competition was stiff. It was! All categories boasted top quality runners. Leading the top fuel list were such names as Danny Ongias, James Warren, Kenny Safford, Tommy Allen, Ron Hampshire, Dave Beebe, Jim Dunn, Nick Marshall, Mike Sorokin, John Mulligan, Connie Swingle and we could go on. Gas burning dragsters also were in evidence with Billy "The Kid" Scott, Gary Murphy and Tom Larkin all on hand for the fun.

The ever popular funny cars were headed by Jack Chrisman's Kendall GT-1 roadster (See June and July CC) Dick Landy's Dart, Joe Davis' "Colt 45", etc. Stockers fielded such celebrities as Butch Leal, Mike Schmitt and Bob Spears.

During the first two days, qualifying for dragsters was the item and before all the rubber had been plastered on the Riverside surface, many interesting things would happen. On Friday, all present got a good idea of just what could happen as Dave Beebe in the Beebe Bros. and Sixth fueler cranked off a wild 7.48 e.t. at 210 mph. Several other adventures were made into the mid seven second bracket by fuel pilots.

Trying for top speed with Beebe was Nick Marshall driving the Marshall & Vermilya entry. Second in the elapsed time department was John Mulligan in Gene Adams and Jack Wayre's screamer with a 7.51 e.t. hitting 206.88 mph.

These performances were just a teaser of what was to come. The weatherman said warmer days were on their way which meant speeds and elapsed times would continue to pick up as the traction improved.

Possibly one of the reasons why speeds were picking up was some of the new tuning principles being utilized by both gas and fuel racers. Many had disclosed that they were running their engines "leaner" in the jetting section than ever before because the air was very dense. Several other Top Fuel contenders disclosed that the traction seemed to improve as the day got hotter, thus cars were able to turn in better elapsed times and speeds in the afternoon sun than in the early morning cool.

(continued on following page)

# HOT ROD MAGAZINE DRAGS

Left — Butch Leal's "California Flash" Plymouth won Top Stock crown even with Harry Holton turning a better e.t. on trophy blast. Leal ran 11.65 e.t. while Holton lost with a quicker 11.56 e.t. mark.

Right — Ron Rivero is all smiles and well he should be following big blast of 221.66 turned during eliminations. Assisting in the pushing chores (center) is engine man Jim Fox who tuned healthy blown Chrysler.

Below left — Smoke and lots of it is the calling card of the Hurst "Hairy Oldsmobile" which delighted fans with super runs such as this one under "full smoke" conditions. Joe Schubeck drives Olds monster.

Lower right — This is the run that set the crowd on its ear. Ron Rivero (foreground) came out even against Nick Marshall but in a mere 7.33 seconds, not only got a win but a new speed mark at 221.66 mph.



Tom Grove's "Ford Charger" won Experimental Stock Elim, kept its string of major victories going. Grove won Comp. Elim. at Bristol Springnationals. Jim Wetton's Dodge fouled to give Grove the victory.



Exhibition Stock Elim. went to Jack Chrisman at the expense of Jim Liberman driving "Brutus," a blown Chrysler powered GTO. On final blast, Chrisman's wild "topless" Comet hit unreal 182.18 mph.

Left — Tom "The Mongoo\$e" McEwen collected the Top Fuel goodies from Hot Rod queen Penny Ward which amounted to better than \$3,750 in cash. McEwen drove Lou Baney's Brand Motors Spl.

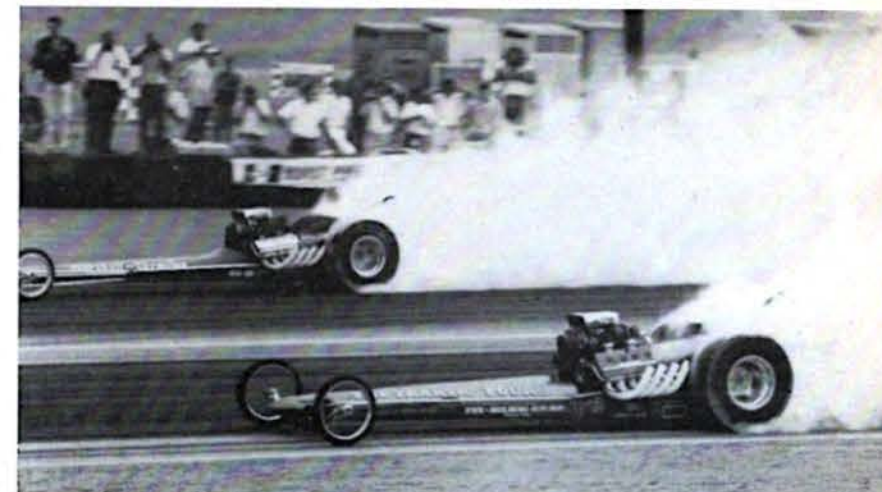


Left — Butch Leal's "California Flash" Plymouth won Top Stock crown even with Harry Holton turning a better e.t. on trophy blast. Leal ran 11.65 e.t. while Holton lost with a quicker 11.56 e.t. mark.

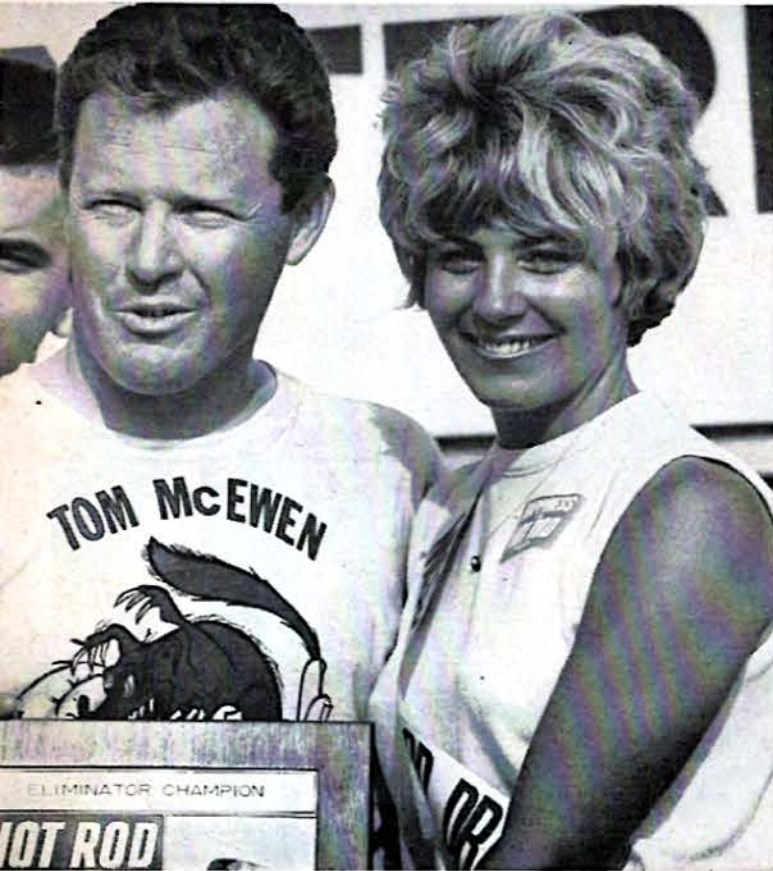
Right — Ron Rivero is all smiles and well he should be following big blast of 221.66 turned during eliminations. Assisting in the pushing chores (center) is engine man Jim Fox who tuned healthy blown Chrysler.

Below left — Smoke and lots of it is the calling card of the Hurst "Hairy Oldsmobile" which delighted fans with super runs such as this one under "full smoke" conditions. Joe Schubeck drives Olds monster.

Lower right — This is the run that set the crowd on its ear. Ron Rivero (foreground) came out even against Nick Marshall but in a mere 7.33 seconds, not only got a win but a new speed mark at 221.66 mph.



Photos by Pat Broffier, Bob D'Olivo, Fred Enke and Randy Holt



## HOT ROD DRAGS

Looking at Saturday's racing, fuelers and gas dragsters were on the grid to qualify while stock and street classes were set for eliminations, however, Sunday would be the day devoted to all eliminator title racing.

Top speed of fuel dragsters held the spotlight on Saturday action with John Mulligan finally coming out the winner with a fantastic 219.29 mph in a 7.24 second sprint. When tuner and engine builder Gene Adams was queried on what changes he had made to the powerful Adams and Wayre car to achieve this fantastic run, he replied that the nitro percentage had been upped to 73% from 70% along with a tire change. Mulligan could only say that "it felt good and strong." Ron Rivero driving the "Frantic Four minus One" fueler astounded the troops with a sensational 7.39 e.t., 217.90 mph clocking just before the Adams & Wayre pass. What was the real clincher was that power came from a 354 cubic inch Chrysler, the engine that everybody thought wasn't strong enough to do the job. Apparently engine man Jim Fox had other ideas and the results proved it. The crew reported no "speed secrets" were employed, just a matter of getting the injector just right. Also in the big run department was Connie Swingle driving Ed Pink's "Old Master" AA/FD which punched in at 7.38 e.t. and 212.26 mph.

Stock class activity was limited to elimination racing with the various winners and runner-ups going into eliminator racing on Sunday. For the S/S title, Butch Leal with his four-speed equipped Plymouth proved to be the man as he dusted off all comers for the title. Leal used his standard "California Flash" Plymouth to get the job done.

Tiny Anglias running big bad blown engines were not running A/GS for the Hot Rod meet but AA. (Since the meet was run on NHRA rules, blown Anglias cannot run A/GS.) Two of the nation's quickest and fastest were on hand. Jim Shores and Skip Hess and their "Crittter" running strong while Ed and Ray Kohler's "King Kong" was not to be forgotten. When it came time for the big race, the Kohler car was hurtin' in the engine room (piston ring problems) and was really blowing smoke. At the green light, Shores and Hess jumped out with a slim lead and extended it for the win with a 9.56 e.t.

While all street class machines were going through the elimination process, several runs for the wild Hurst Performance "Hairy Olds-

mobile" were unleashed. Driver "Gentleman Joe" Schubeck brought everyone on the vast Riverside grounds to their feet when the four-wheel drive monster charged down the quarter mile engulfed in smoke. Speeds were held down because of "excessive" wheelspin, said Schubeck.

When Sunday popped its head, every driver and tuner on the premises knew that this was the day. The weather was ideal, warm sunshine which meant even warmer traction. Surprisingly, few teams had reported any burning of the "midnight oil" in order to get their cars ready, in fact, despite a few blower pops and minor engine failures, the meet was relatively free from major problems, thus no all night repair jobs.

Festivities opened following a parade of top fuel contestants with the first round of racing. The day's events would go like a round of Top Fuel, Top Gas and other eliminators.

Opening round of Top Fuel was left all on hand wondering just what more could happen. Ron Rivero hit 221.66 mph in 7.33 seconds while in the process of beating Nick Marshall. This was good for top speed of the meet plus being the fastest time ever turned at a major drag racing event. Other notable accomplishments was a losing 7.52 e.t. and 213.28 mph by Dave Beebe which was turned in while losing to Leroy Goldstein's hole shot. Tommy Allen for Allen & Huff got to James Warren for Warren, Corburn and Miller with a strong 7.45 e.t. and 211.76 mph. In losing, Warren clocked a better 7.42 but again, it was the question of the hole shot. In the middle of the melee, Tom McEwen driving Lou Baney's "Brand Motors Spl." now fitter with an Ed Pink Chrysler, failed to take an easy run when Billy "The Kid" Scott fouled out in Terry Gall's fuel rig. McEwen, eventual winner turned in a 7.51 e.t.

Gas dragsters were having a field day. Several cars went out of competition because they could not pass a fuel check while several others were fouling out. Competition was stiff with such names as Adams, Rasmussen & Scott, Tom Larkin, "The Gaslite", and Bob Keith all present. As a point of information, the gas dragster Scott was driving was the same car which grabbed off Top Gas honors at the '65 HRM meet with Rick Stewart at the wheel. In the final go, Scott nailed Dan Madigan on the starting line and sailed to a 8.48 e.t., 180.72 victory.

Looking for funny cars we find Jack Chrisman's "GT-1" Comet roadster. Bob Davis' "Jolly Green Giant" Chevy, Al "The Flying Dutchman" Vander-Woude's Dodge roadster. Of the seven cars in the class, Dick Landy's Dodge Dart was the only injected entry. To prove that these machines not only look wild but go fast, Chrisman cranked on a fantastic 8.72 e.t. and 184.42 top speed making his beautiful red Comet roadster the fastest of its kind in all the land.

In the second round, Landy beat Jim Liberman driving "Brutus", a blown Chrysler powered GTO while blowing his engine in the process, so Liberman advanced to the next round. (A special rule was in effect for this meet allowing for the loser to enter the next round should the car that won be out because of mechanical problems.) Chrisman then beat Davis. In the final, it was Chrisman the winner over Liberman with an 8.71 e.t.!

Through use of handicap starts, eliminator racing in Super, Competition, Top Stock and Junior Stock takes interesting forms. Can the faster and quicker car that leaves late catch the slower car that goes early?

Super Eliminator pits both street and competition class supercharged cars together. Shores and Hess grabbed the trophy with their rapid blown Chevy engined Anglia running consistently in the 9.50 e.t. area. Hugh Tucker, the man who grabbed off the bracket at the NHRA Winternationals and Walt Marrs both lost the hard way. When cars are paired, they can also lose by going too quick. This happened to Tucker's roadster and Marr's coupe when they faced each other in the opening round.

Ed Weddle's J&J Muffler modified roadster equipped with B & M Automatic trans dominated racing in Competition Eliminator with consistent e.t.'s in the 10.40's. Wading through the stiff field, Weddle downed Dan Geiger's flathead Ford dragster for the final loot.

One of the most awesome collections of e.t. bracked machinery composed Street Eliminator. Such notables as Mike Schmitt with his B/FX SOHC powered Galizie, winner at the Bristol Springnationals, was on hand also with Dean Lowey's EMPI "Inch Pincher" Volkswagen Greer and Barber's Willys and many more. Outsider was Roland Gravell with his immaculate injected Chevy powered Street Roadster. Gravell showed what his machine could do beating Schmitt in the

second round. With this in hand, he breezed through the next pair of races to claim the title of Street Eliminator.

A special eliminator for the HRM meet was Experimental Stock. This was for fuel burning injected "funny cars." Tom Grove, winner of Competition Eliminator at Bristol again proved he was the man to beat going just fast enough to win each race. Grove outdistanced the competition with his SOHC Mustang hitting 9.98 e.t. at 131.45 mph on his final win over Jim Wetton's Dodge.

Going along with the Top Fuel program was Jr. Fuel. This is a class run basically in Southern California which is for small displacement dragsters running unblown. Small they might be, but fast they are as eight of these screamers dashed for the loot. Winner was Lincoln & Jones with their injected Chevy which hit 8.38 and 188.22 when the smoke (and heavy nitro fumes) had cleared the air.

Back on the top fuel program, the red light along with a hole shot or two was taking its toll on the "big guys." Mike Sorokin in the popular "Surfers" AA/FD caught the red light against Kenny Safford while Winternationals runner-up Jim Dunn did the same thing against Connie Swingle. Leroy Goldstein also gave Ron Hampshire a charity pass. In the meantime, McEwen hit 7.43 e.t. while beating Rick Stewart driving for Bill Crossely and Hank Clark for the Beaver Brothers used his early lead and 7.50 e.t. to get Paul Sutherland who clocked in a 7.46.

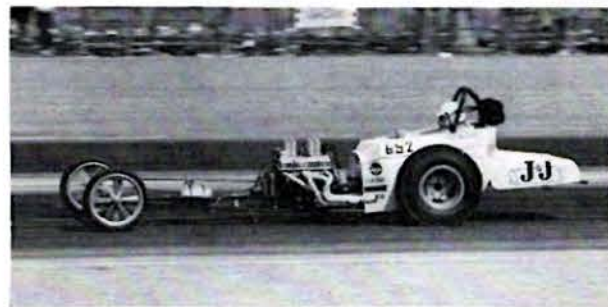
When it comes down to Stock and Junior Stock Eliminator, a book could be written. Everybody has a favorite and this is where the fans really get up and cheer. Follow his previous day's win in S/S, Butch Leal did the job on all the boys with middle eleven second runs. Falling by the wayside were Mike Schmitt, Bob Spears and Harry Holton on the final race. Leal's four-speed equipped Plymouth was the measure over the remainder of the competition and the "California Flash" never missed a shift.

Junior Stock was a hotly contested battle mostly between older GM iron. Boiling it down to the final, the group originally started out with nineteen cars; it was Keith Berg, Jess Tyree and Ramon Lowe for Lowe and Beardsley. Despite protests, fuel checks and other things that make the lower class stockers so interesting, Lowe and Beardsley's Pontiac was the winner following a protest.

In the Top Fuel third round, Safford dumped Hampshire and

(continued on page 76)

Left — Off the line tactics like this won the Top Fuel title for Tom McEwen. Big Crower/Schiefer equipped Chrysler built by Ed Pink performed flawlessly all day. Right — Steady e.t.'s in the 10.40's for Ed Weddle were enough for the Comp. Elim win over a strong field. Neat roadster features sprung engine, automatic trans. Middle right — One of the biggest upsets of the meet occurred in the second round of Street Elim when eventual winner Roland Gravelle dumped Mike Schmitt's B/FX'er. Below right — Top Gas winner Billy Scott shows Dick Landy (center) and Gary Gablich the technique of wheelies ala bike during a bit of special intermission fun. Below — While other backers may be more inclined towards watching, Brand Motors sponsor Lou Baney prefers to perform much of the fuelers trackside tuning himself.



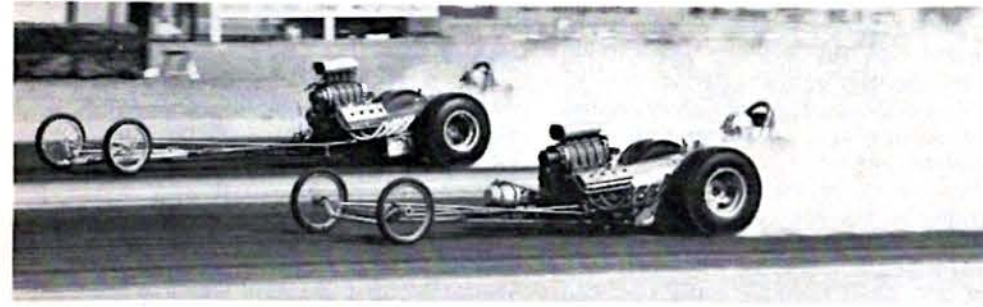
Handling the tuning on Shores & Hess' Jr. Stock Elim. went to Lowe & Beard-



sley's '60 Pontiac. Steady runs in the mid 13 second bracket were the answer.



Making the long tow from Seattle, Washington was Alan Green 427 powered Chevy II fastback. Driven by Dick Milner, car lost out in hot elimination racing.



New driver, same car provided the winning combination in Top Gas. Billy "The Kid" Scott driving Gene Adams and John Rasmussen's Beacon Auto Spl. did the job on a host of hearty competitors. In the final round, Dan Madigan fell to the 18 year old handler's 8.48-180.72.

Left — Ed "the Old Master" Pink lived up to his title as he provided horsepower for the Brand Motors entry. Pink's own car driven by Connie Swingle didn't do bad either, clocking a 7.38 e.t. at 213 mph. This was the first meet for which Pink supplied engine to McEwen.

Right — Linda "Miss Hurst Golden Shifter" Vaughn was also on hand for big affair to aid with awards presentation. Here, she declines an offer to "take a ride" with Top Gas winner Bill Scott. Clad in her official black and gold outfit, Linda was a very big hit.



**Your engine can be puttin' out lots of ponies but if the suspension isn't designed for draggin', you'll never get past the first round. Here's the dope.**



## DRAGGIN' SPRINGS

BY LEROI SMITH & BUD LANG

*Blasting off the line above is Hugh Tucker's Chrysler powered '32 Chevy roadster. It runs a transverse leaf spring, only a couple of leaves, and suspension shocks at front axle.*

**T**HERE'S A SNEAKY change taking place in drag racing. A trend so subtle it has gone virtually unnoticed by the majority of hot rod enthusiasts. Yet, little known as it is, the idea has been almost directly responsible for the amazing increase in quarter-mile acceleration performance these past few years.

It all has to do with springs; those seldom considered components that connect the running gear to the frame. As one might suspect, these appendages of specially treated steel have not been overly important to the rapid development of all-out drag vehicles, but they've played an extremely underrated role with anything remotely considered a street class machine.

With most initial development atten-

tion directed toward the all-important aspect of power, the early Ford transverse leaf spring was long considered adequate. In the last two years, however, especially with the development of fantastically performing stock bodies cars, springs have become as critical as superchargers.

In some of the earlier drag strip experiments, the rear springs were discarded altogether (a possible carry-over from popular Bonneville practice), with less than ideal results. In the very late 1950's, with an abundance of power available via superchargers, big inches, etc., serious drag racers competing in the street classes began a concentrated assault on the mysteries of vehicle weight transfer. From that time forward, as much attention has been paid the drag racing chassis (sometimes more) as the entire powertrain.

Out of these initial inquiries came realization that the ordinary spring could play a vital role in effective weight transfer, and subsequent vehicle performance. Leading the way in this

research were the gasser and roadster boys, since they had much more latitude within the strip rules than did the stock drivers.

One of these early suspension pioneers was a relatively unknown (outside the West Coast) roadster owner from Ventura, California. Competing with a healthy Oldsmobile powered Chevy street roadster, Hugh Tucker soon was king of the roost. This with a car considerably heavier than current rivals (the old Chev sunk scales at over 3000 pounds), and about as streamlined as a locomotive.

Tucker's formula for success was really quite simple — get every possible fraction of horsepower on the pavement — and keep it there! To all outward appearances, the big silver barn door was built just like most other contemporary race cars. The major difference was the rear springs. Instead of the common Ford transverse semi-elliptic spring, there were two half-springs used (formally known as quarter-elliptics); one at each side.

This type of car springing system was not new, but it had not been very prevalent on drag machines. In fact, except for occasional revivals in this or that road racing powerhouse and the late Crosleys, they were more or less obsolete. Tucker started with two old Ford springs. One end of each was sawed off just to the edge of the center-bolt. This thick centersection was then positioned against the inside of the boxed frame rails, the one remaining eye settling adjacent to the bearing hub of the '57 Oldsmobile rear end, attached to a shackle. Mounted in this trailing arm fashion, the spring was free to move up and down at will.

Because each individual spring connected to the rear axle well out toward the ends, and since the front of each spring was located parallel with and against the sturdiest part of the modified channel frame, a much better control of the huge slicks was obtained. Each spring was free to flex, but the resultant transfer of forces to the chassis did not have as adverse an effect as with a single cross-leaf spring.

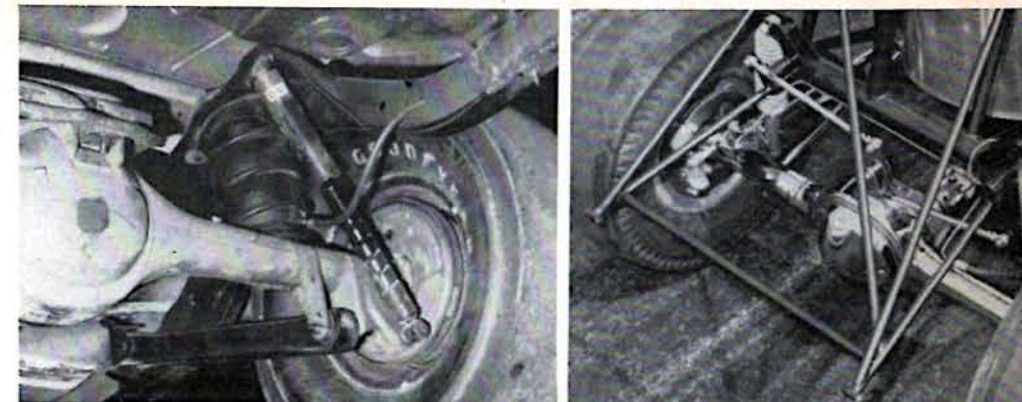
Furthermore, the quarter-elliptics could be individually "tuned" to the chassis. That is, one side could be made stiffer (loaded) than the other to resist torque reactions, etc., by the use of spring clips which retard spring action. Whether the front of the spring was placed high or low in relation to the rearend did not seem to have a big bearing on traction, although K. S. Pittman reported his Willys gasser had much better bite with the front mount above the rearend centerline. When the frame mounts had been low, the car would break loose wildly, with traction improving as the mounts were raised. Tucker used adjustable mounts, but had little indication of traction change.

The point that is evident here is that every modified automobile cannot utilize the same spring arrangement with the same results regarding traction so long as the basic cars and running gear are not identical as to design and weight distribution. There are far too many factors involved to simply stipulate that any given spring design, etc., will work equally well on any number of cars. Such is not true. However, where cars are similar in make, similar results can be achieved.

When quarter-elliptics are used at the rear, very strong torque rods are an absolute necessity. Where an enclosed drive shaft is used, pre '48 Ford type, the torque rods should be the same length as the shaft itself, so as to "swing" with it from the single front universal joint arc. A strong anti-sway bar must be installed to eliminate side travel of the body and frame over the rearend, too.

Coil springs have also been used with

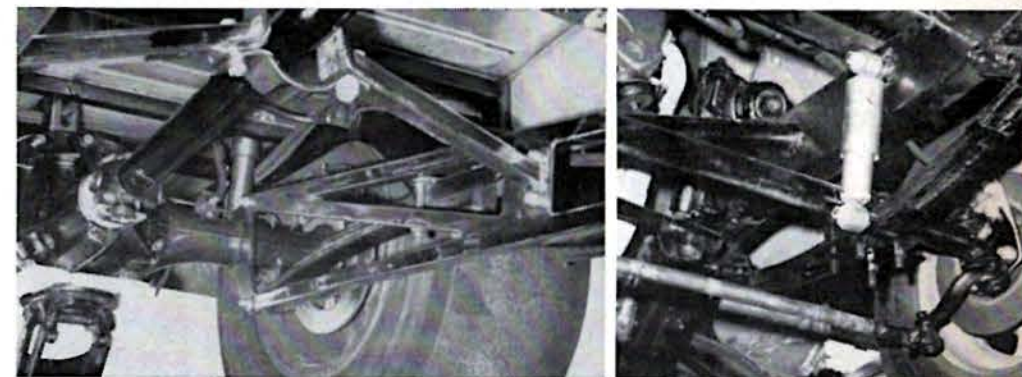
(continued on page 78)



*The rear end under this '65 Pontiac GTO is an earlier '58 unit. Dick Jesse selected it because of added durability required in match racing. Trailing arms and center-mount is stock. Air-Lift bags inside the coil suspension allow weight to be jacked.*

*At upper right is Jack Chrisman's Comet roadster which features Autolite suspension shock absorbers (coil-wrapped shocks) and Watts linkage stabilizer bars. Such a combination keeps weight down along with providing stability needed at high speeds.*

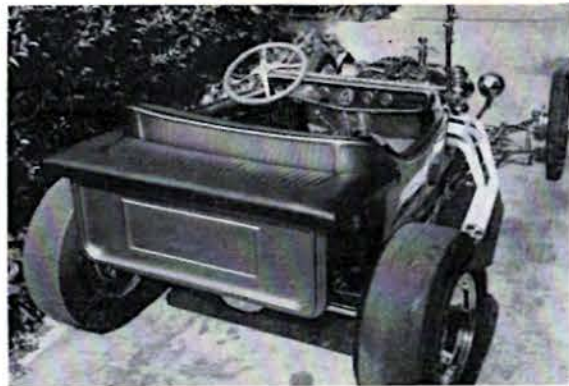
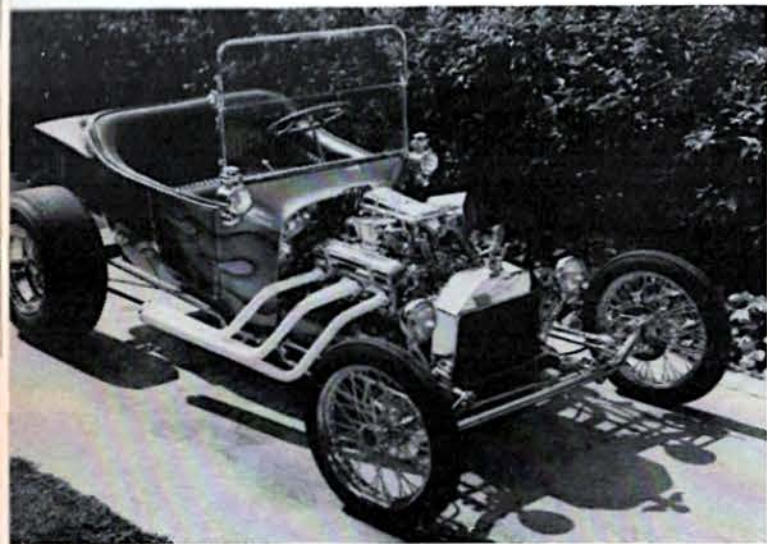
*Steve Bovan's '65 Chevy II match racer at right features a '57 Pontiac rear end outfitted with coil springs and 50/50 Monroe tube shocks. '50 Olds trailing arms were attached to new rear end pads and a tube crossmember. Note simple sway bar set-up.*



*A set of real beefy stabilizer bars are attached to the rear end of this gasser. A pair of quarter-elliptic springs are outboard of the bars, hang below housing by short shackles. An anti-sway bar and big tube shocks at rear complete this package.*

*Right center — Quite a few late model autos being set up for drag racing are being stripped of those heavy independent A-frames. This '55 Chevy now runs a tube axle equipped with parallel semi-elliptic springs. Shackles are attached at front.*

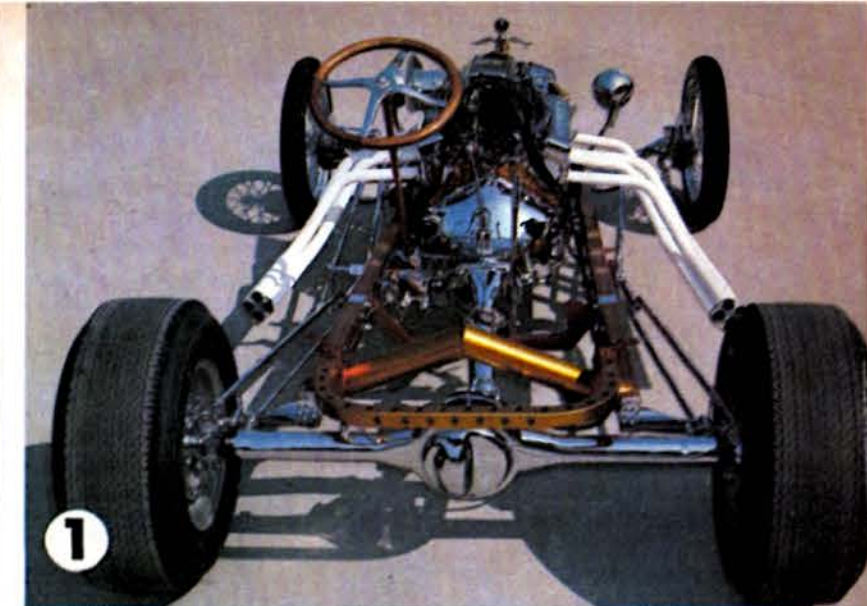
*The photos at right illustrate how Hugh Tucker mounted his quarter-elliptic rear springs. He used one Ford transverse unit for each side, cutting it a couple inches from the centerbolt, discarding the short end. The centerbolt aligns the spring to the perch plate welded to the inside of the frame rail, preventing it from shifting fore and aft. U-bolts hold it secure. The spring eye and shackles are centered beneath the axle housing, outside of the husky Heim-joint equipped stabilizer bar.*



A Cal Auto fiberglass '23 pickup box was mated to a '14 Class Tee body, then package was completely upholstered in black Naugahyde with full rolls, pleats. Reminiscent of "yesteryear," neat flames extend over Candy Gold lacquered body panels, displaying talent of Dennis Rickeloff of Compton. Tom did body work.

1. Sunglasses are needed to view Booth's chrome chassis. 10.60 x 15 Firestone Indy tires are mounted on Cragar 10" wheels. Rear end is '51 Ford with addition of tubular radius rods at rear. Tubular rear X-member fits inside the bed.

2. Discs of Air-heart spot brakes have been chrome plated after Henry's Machine and Booth modified them for '40 Ford front spindles. Tires are 3.45 x 18 Dunlop on '36 H-D spoke wheels.

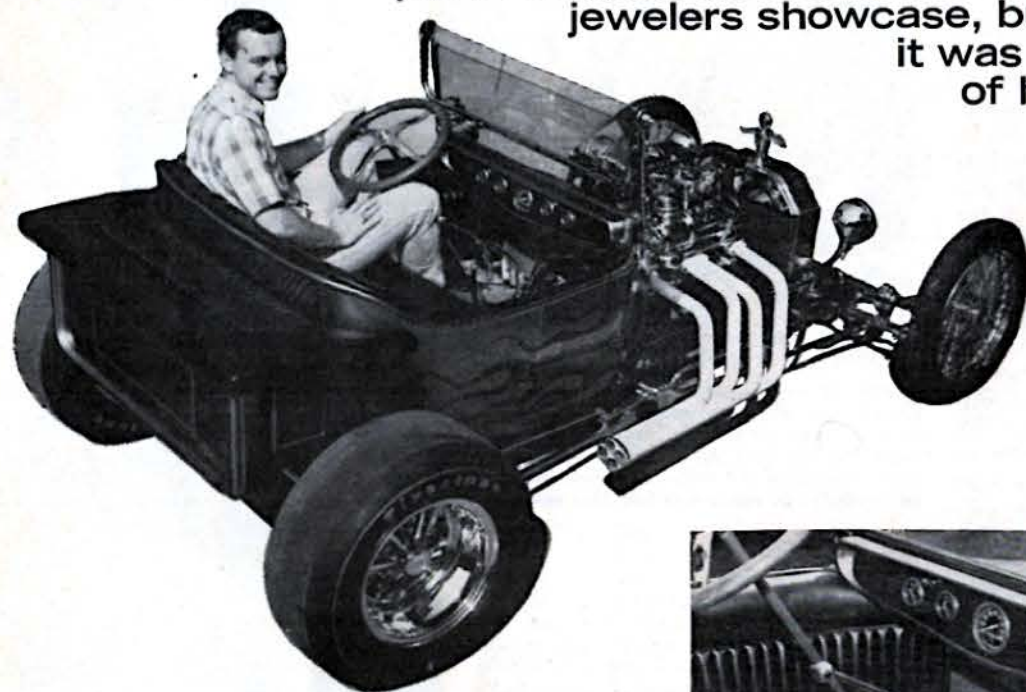


COMPTON, CALIFORNIA

# BUILT WITH A

# JEWELER'S TOUCH

Finished to perfection, Tom Booth's masterpiece could have easily come out of any jewelers showcase, but instead, it was driven out of his garage.



Photos by Fred Enke, Dick Scritchfield



Instruments are by Stewart-Warner, have been set in a wood-grained tunneled fiberglass dash. With carpet removed, chromed trans and bell housing are revealed.

At left and above center are two more views of this wild little street rod built by Tom Booth over a 16 month period. Fuel injected engine is a 301" Chevy.

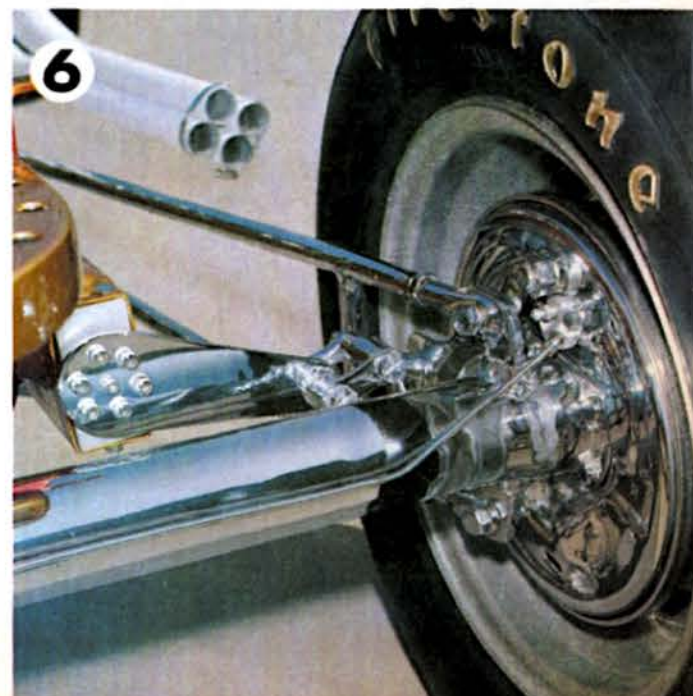
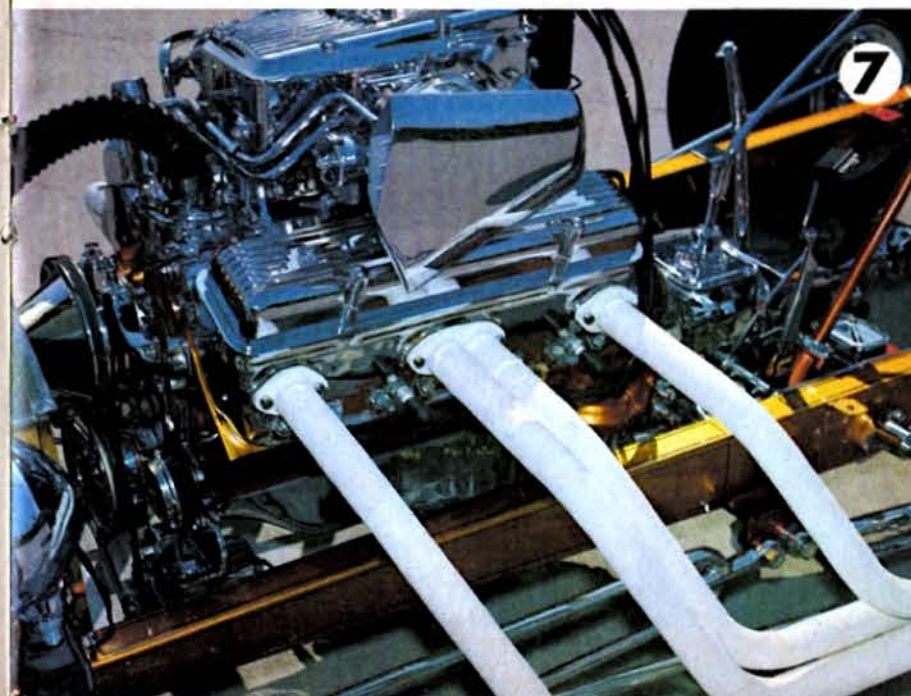
3. 2" x 4" steel tube frame was further reinforced to hold Ross steering. All welds and brackets have been filled and ground smooth. Exhaust system features eight cycle mufflers.

4. Owner/builder Tom Booth had Gilbert Metal Products of El Monte, Cal. reproduced the '14 "T" radiator. It has a 4" core and holds 3 quarts over stock capacity.

5. Even aluminum received chrome treatment! Unusual transmission is an aluminum cased "X-Shift" built by Turner's Garage for late model Chevy gears.

6. Every nut, bolt, and tube is plated, including the '51 Ford backing plates. Rear torsion bars, like the front, are 3/4" rod spring steel; mounted inside of frame.

7. Engine is basically stock 301 c.i. fuel injected Chevy with chrome plated heads and accessories by Custom Chrome. We said you'd need dark glasses. Right?



**BY ROGER HUNTINGTON**

The Gay Pontiac team out of Dickinson, Texas, wasn't completely satisfied with last year's exhibition GTO that turned e.t.'s in the high 8's at over 160 mph! They wanted something *really* hot for the 1966 season. So Mr. Carl Gay, head of the team, contracted with Jay Howell of Howell Automotive Engineering in Oak Park, Michigan to go from the ground up on a brand new super-lightweight '66 GTO that would make Don Gay's old one look like a mild hop-up job. Howell is in partnership with Pete Seaton Enterprises to handle complete performance design, engineering and construction under one roof. It's one of a growing

list of highly-capable speed shops in the midwest that offers this type of service. The only thing Gay specified for the new car was that it have a light tubular steel frame and look as much as possible like a stock GTO. It has been Howell's theory that some of the new '66 tube-frame funny cars have frames that are too stiff

and rigid, so the frame won't "work" to give the best rear-tire bite off the line. He feels that best off-the-line traction is had when

the frame can *twist and give* a little to absorb some of the initial surge of engine power before the tires burn loose violently. He notes

that the quickest cars off the line—at least the ones with upwards of 1000 horsepower—seem to twist their frames quite a bit, so the left wheel rides several inches above the right. The effect is to cushion the explosion of power to the rear tires. Cars with super-stiff frames seem to burn easier off the line—so

well. So a tubular steel frame that would have good *beam* stiffness (up and down bending), but with relatively low *torsion*, or twisting stiffness, was designed. He did it by bowing the main side tubes out around the cockpit area in a sweeping curve. The secondary side tubes (below the main tubes) are set closer in, giving a kind of bowl shape to the framework. Minimum cross bracing gives an assembly with relatively low twisting stiffness. Meanwhile high beam stiffness is maintained by combining the roll cage with the frame structure. The roll cage braces run diagonally from near the front of the frame clear to the back so the whole assembly acts like a truss. Ho-

# TIGER FROM TEXAS

Photos by Bud Long, L. B. Remington



Blown 421 Pontiac features Enderle injectors top side. Blower drive is M/T unit. Inside good stuff includes Crane cam, Forgertrue pistons, stock crank.

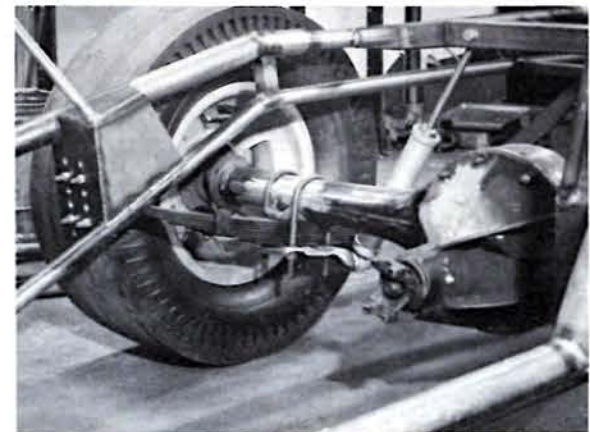


Above—Gene Massie (left) and Don pack Simpson chute after test run. Strong chute is a necessity on hard running GTO to bring it to stop after speedy blasts.

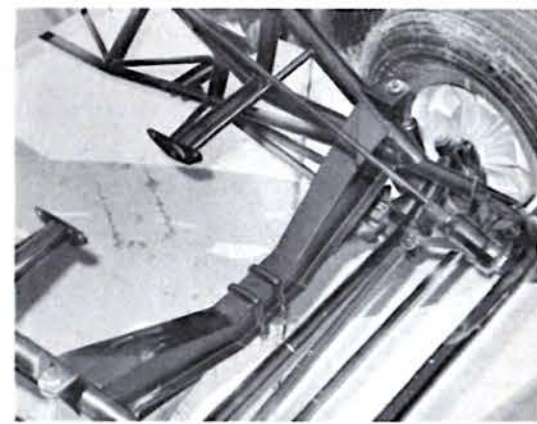
Left—Tuners James Osteen (left) and Massie built engine and handled all of the finish work on Pontiac powered match racer. Squirt can eases engine starting.

Lower left—Barren interior features a Covico steering wheel which is coupled to a Corcair steering unit. Moon gas pedal and foot operated brake are featured.

Below—Rear suspension is similar to Mopar super stock setup, '57 Pontiac rear end mounts on 6 leaf springs which can be adjusted at front for any type of strip.



Car builder Jay Howell shows how easy it is to pick up entire front end of car. Minus engine and running gear, machine tips scales just over 410 pounds.



GTO front end features tube axle mounted on a single transverse spring. Wheels are mounted on Ford spindles. Shocks are Monroe 70-30 models.

# TEXAS



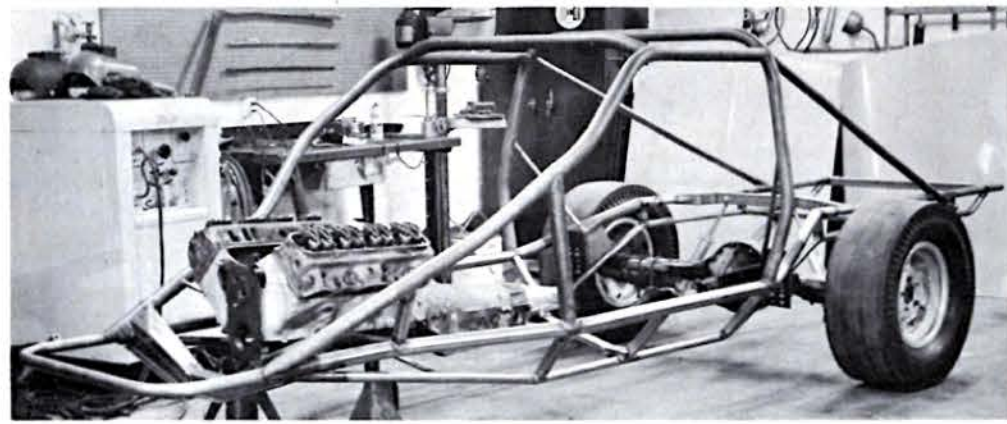
Fiberglass body of GTO was built by A & A Engineering of Atlanta, Ga. Features absolutely stock lines even though front wheels have been moved up seven inches and the rears 14. In first outing in major competition at the NHRA Springnationals, car won class, but lost in eliminator.



Left—Candy red "Texas Tiger" rolls on Halibrand mags all around with M&H slicks used to put power to pavement. If you want to see this terror go, turn page.

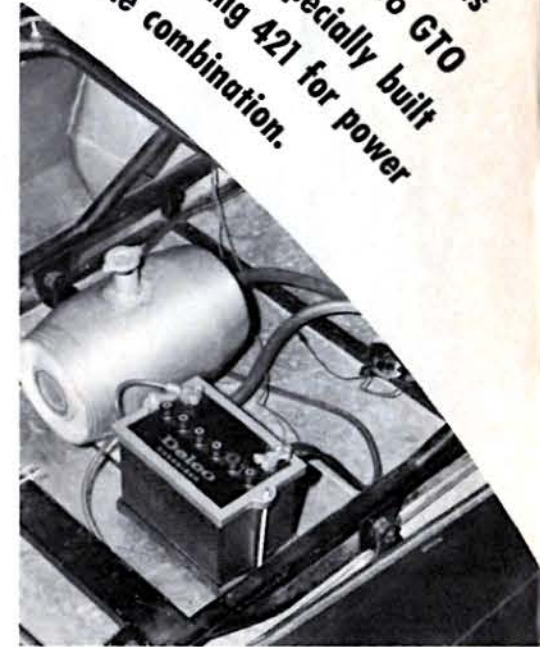
Right—In the trunk we find Delco heavy duty battery which supplies starting power and small "tapper" keg used for water. A Jabsco pump does the circulating chores.

Below right—Well cushioned drivers seat is mounted in standard position. Lever nearest seat is chute release while control for B&M Turbo Hydro pops out of floor.



Tube steel frame was constructed so as it would "flex" enough to give good weight transfer. Design incorporates good beam stiffness (up and down bending) but by bowing out the sides, also maintained low twisting stiffness. Main rails are 2" o.d. tube with .060" wall.

Don Gay, that Pontiac fella is here again and this time, he's really outdone himself with his '66 GTO. A wild fiberglass body mounted on a specially built tube chassis with a blown fuel burning 421 for power provide the ultimate match race combination.

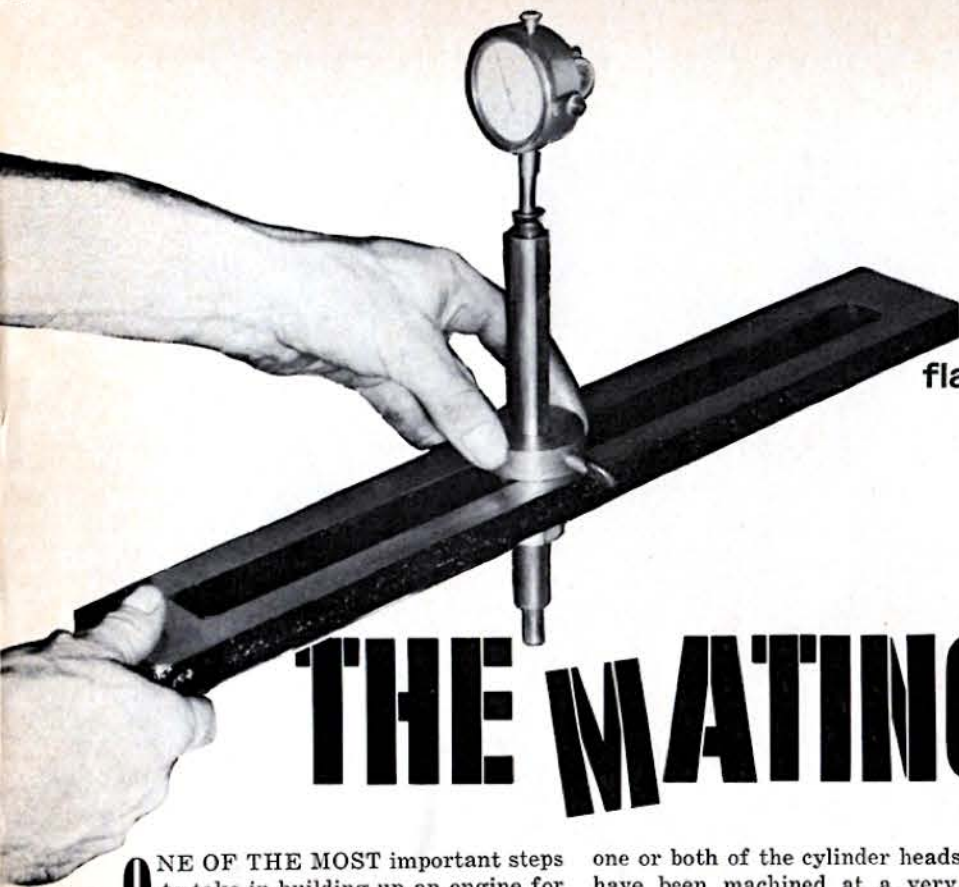


(continued on page 80)



CAR CRAFT *AcTion* SHOWCASE  
That Texas Terror — Don Gay's Blown GTO Tiger





**Beware of your stock block and heads—They're not as flat as you think! For low stock or big fueler, Parallel surfacing is a must. If you don't, you'll just blow your gaskets.**

BY BUD LANG

# THE MATING GAME

ONE OF THE MOST important steps to take in building up an engine for competition use, be it stock or blown, is to have the cylinder block and heads parallel surfaced, guaranteeing they are parallel with the crankshaft axis. Due to mass production methods of building engines, and allowable tolerances, what may be okay for a stocker is far from right in an engine designed to put out maximum horsepower. Jim Cavallaro and Gary Koehler of Dynamic Engine Service in Detroit, Michigan will be the first to inform you of the importance of this service.

Many an engine has blown because a gasket was not held down firmly; it blew or burned away, and water poured into a cylinder bore. When this happens, man like your engine is out to lunch, right now. Water just doesn't compress. But where the heads and block mating surfaces are perfectly flat, chances of blowing a gasket in this manner are nil. Still, even with flat surfaces, your engine can be suffering. This is because the block surfaces, or

one or both of the cylinder heads, could have been machined at a very slight angle during manufacture, causing you to have varying amounts of displacement in the cylinders, thereby giving you different compression ratios at each cylinder. The only answer would be to have the block and heads checked accurately to guarantee that in addition to being flat, these surfaces are also in perfect alignment with the crankshaft axis.

To accomplish this, Dynamic first align bores the cylinder block main bearing bores, after which a true machined mandrel is installed in the block in place of the crankshaft. The mandrel is then secured in a unique wet surface grinder, a Lempco 545BL, and a dial indicator is used to determine the approximate amount of material that must be removed from both banks to bring the surfaces down to an even, level plane. Since the crankshaft axis and surfaces of the block must be absolutely parallel, both head surfaces of the block have to be checked to deter-

mine which surface will require the greater cut. It would not necessarily be true that both banks would be ground the same amount, though this is possible.

Run-of-the-mill blocks, according to Dynamic, generally require cuts of from .010" to .025" to true them up with the crankshaft axis. This machining process is referred to as parallel grinding or surfacing. The Chevrolet block being surfaced here, as an example, required an .018" cut with the wet surface grinder on one bank and a .006" cut on the other. The reason for the difference in cut depth was due to a .010" taper from front to rear on one bank and the unequal distance from center of the crankshaft to each block surface. Had both been cut .018" then the displacement in the cylinders of one bank would be minutely greater than that of the other bank, with a corresponding change in compression ratio. Granted, .012" difference isn't going to amount to much, but why not have everything right on. After all, that is what we're

going to all of this trouble for.

To true the cylinder heads, the head roll-over fixture is bolted to the exhaust manifold pads and secured in the wet surface grinder. Alignment and leveling is performed in the same manner as the block surfacing set-up. Normally a .010" cut will true up new heads, with somewhat larger cuts required for heads that have been in service on an untrued block. Surfaced heads on an untrued block will warp after use and will require resurfacing once they are pulled off. This applies to stock street engines, too.

When surfacing the cylinder heads, if a cut greater than .020" is required, the intake manifold mating surfaces on the heads must also be ground. Because the block features cylinder banks (we are referring to V-8 engines only) at a 90° angle from each other, as the block and head surfaces are milled away, the heads actually move down closer to the crankshaft. Imagine a large V being whittled down from the top. If a plate (a manifold in our case) of a certain length were laid across the top of this V before it was shortened, then it would certainly be "longer" after the V is reduced in height, simply because the two "legs" of the V are closer together

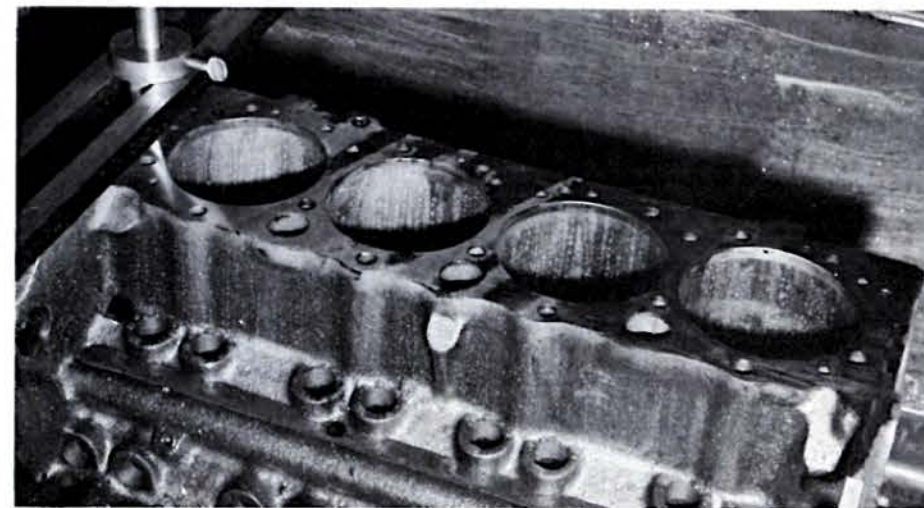
at their top ends. Therefore, the manifold itself would be "too wide" for the engine if the heads are cut more than say .020". The mating angles would remain the same but the bolt holes and ports would no longer match perfectly because the manifold would ride too high between the heads. The formula for figuring the amount of material that must be cut from 283"-327" Chevy head manifold surfaces is: multiply the amount taken off the block surface by 1.2. On Chrysler hemi and 409 Chevy engines this ratio is 1.4. With the 283"-327" Chevrolets, material must also be removed from the front and rear surfaces of the intake manifold pads where it rides on the block, or the same cut can be made from the top block surface. Because the Chevy manifold rides on top of the block, when the head manifold surfaces are ground using the 1.2 ratio to extend the width between the heads to take the manifold, the manifold pads or the block top must still be cut to lower the manifold the required amount. The ratio for figuring this latter cut (off the manifold pads or block) is 1.6.

For example, to clear things up, these modifications would go something like this: if 283" Chevy heads were cut

.025" to true them up, then using the ratio 1.2 we would remove .030" ( $1.2 \times .025 = .030$ ) from the manifold mating surface of each head. Then, because the manifold is still riding high on top of the block, using the ratio of 1.6 we would remove .040" of material either off the block top itself or from the front and rear manifold pads ( $1.6 \times .025 = .040$ ). It's that simple. With engines that feature valley covers rather than having the manifold seal off the block center, the latter cut is unnecessary.

After parallel surfacing the heads, whether you would need to have the combustion chambers cc'd or not, would depend on how much the heads were out of alignment in the beginning and to what purpose the engine will be put. If it's competition use, definitely so. If it's just for street use and the heads and block were pretty "square" to begin with then it might not be necessary.

As you can see, this job is really not a gigantic task, but it's one that takes the right equipment and some know-how. At Dynamic, an engine seldom goes out the door without having been parallel surfaced. Since a lot of their work is with modified engines, it's the only way to go if the customer is going to get the results he's after. ©



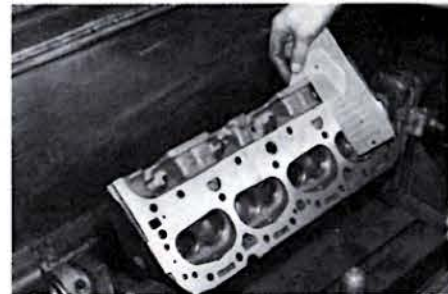
What might be right for a stocker is far from right in an engine designed to put out maximum horsepower. Block mating surfaces must be perfectly flat in addition to being exactly aligned with the crankshaft axis. Material must be removed from both banks to bring the surfaces down to an even level plane, then the heads are ground to match.



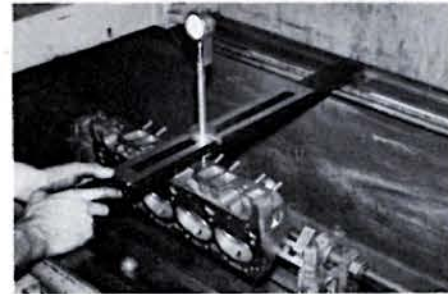
With the true machined mandrel in place of the crankshaft, it is aligned in the grinder by using a dial indicator. The head mating surface is then measured.



The roll-over fixture is bolted to the exhaust manifold pads and mounted in the wet surface grinder. Dial indicator is then used to check head warpage.



After the head has been resurfaced, a stock removal gauge is used to determine the amount to be removed from the intake manifold mating surface for proper fit.



If head is ground over .020" the intake manifold surfaces must also be ground. On 283-327" Chevys, the amount taken off the block surface is multiplied by 1.2.



Run of the mill blocks generally require cuts of from .010" to .025" to true them up with the crankshaft axis. This is referred to as parallel grinding or surfacing.



Gary Koehler of Dynamic Engine Service sets up a Chevy block in their Lempco 545BL wet surface grinder. Before mandrel is installed, mains are align bored.



**CAR CRAFT ACTION SHOWCASE**

Ed & Ray Kohler's Anglia "King Kong"

WHEN BUILDING A car for a specific drag racing class, several different items must be considered. Many enthusiasts just merely cover the surface items, and give a little thought to little things. A quick glance at Ray & Ed Kohler's beautiful little Anglia and you could easily see that these guys have forgotten absolutely nothing.

Billed on Southern California drag strips as "King Kong," the beautifully finished orange coupe started out originally as an A/G entry (in fact, it won its class at the '66 Winternationals) but recently the sturdy chassis has been revamped to accept a wild blown 427 Block Chevy. The time and effort involved was proven worthwhile as the coupe hit 9.23 e.t. and 154.21 mph while dusting off some of the finest A/GS cars in the nation. Running the injected 388 cubic inch in A/G, the best e.t. recorded was a 9.85 seconds.

Along with super sanitary workmanship and material, the Kohler Anglia carried forth a few departures from the tried and true drag racing ideas.



**GASSER  
GORILLA**

First off, the car was fitted with a Torqueflite trans by Art Carr. This was one of the first cars in the nation to run this type of trans and the results were well worth it.

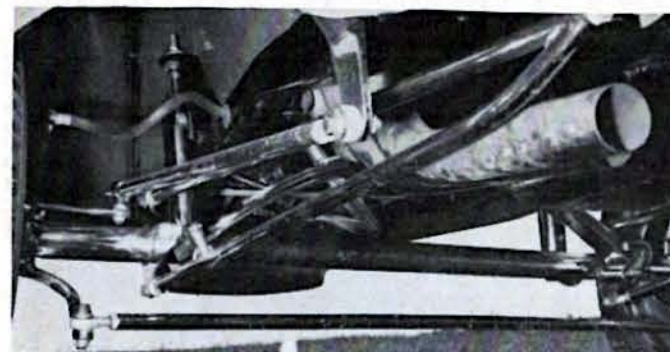
Ed and Ray handled the chassis construction by themselves while Demar Ray was called upon to do the critical engine work. Features of the big blown engine include a Hilborn injector setup on top feeding a mighty 6-71 GMC blower. Blower drive and manifold equipment is by Cragar with the popular 3" drive being utilized. Making those valves move faster than ever is a 990-C Sig Erson cam which has proven reliable. While many feel that roller cams are the item, the Kohlers' have retained the flat tappet idea and with these performances, who could argue.

Champion plugs in the 454 cubic inch are fired with a Schiefer mag while stroked crank and pistons all come from the CrankShaft Co. Push rods are by the Smith Bros.

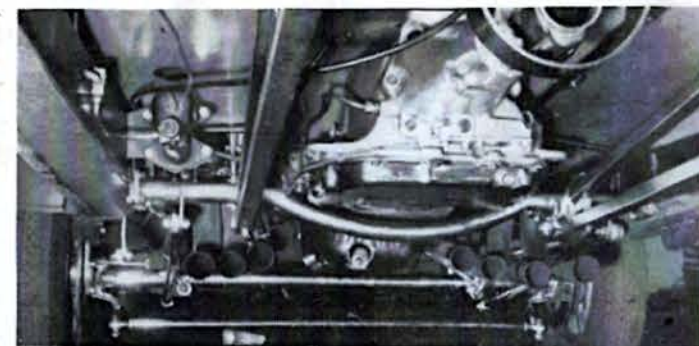
Most of the original body has been replaced with Cal Automotive fiberglass

*(continued on following page)*

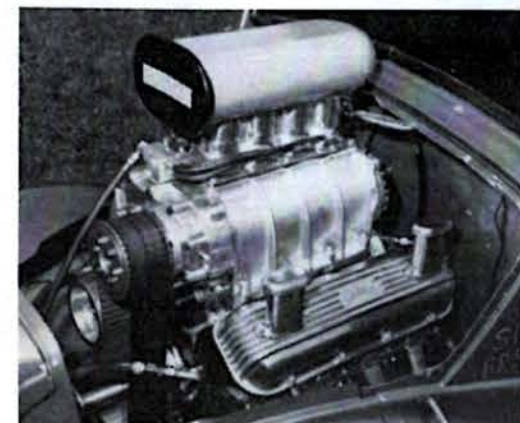
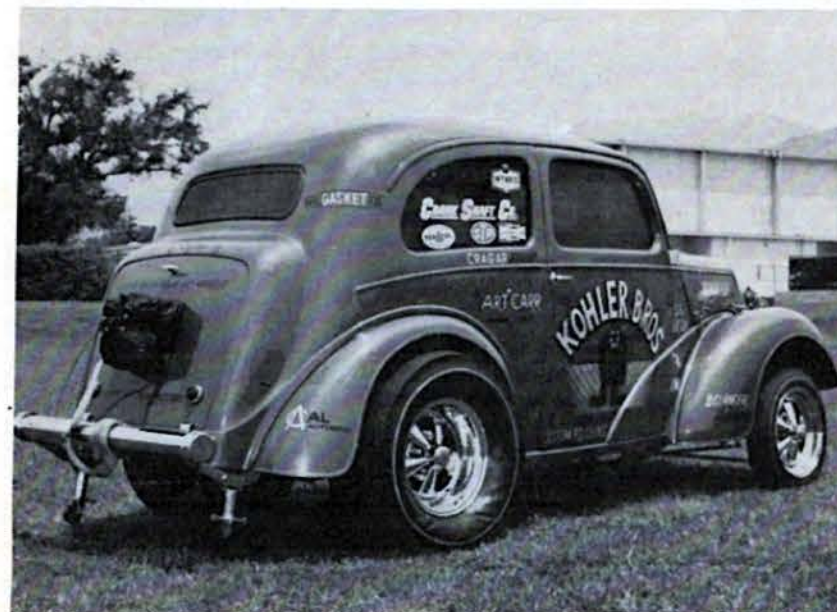
"King Kong" will be long remembered by movie fans as the "baddest gorilla" of all time. Ed and Ray Kohler's swing'n coupe is getting the same reputation, only this time in A/GS.



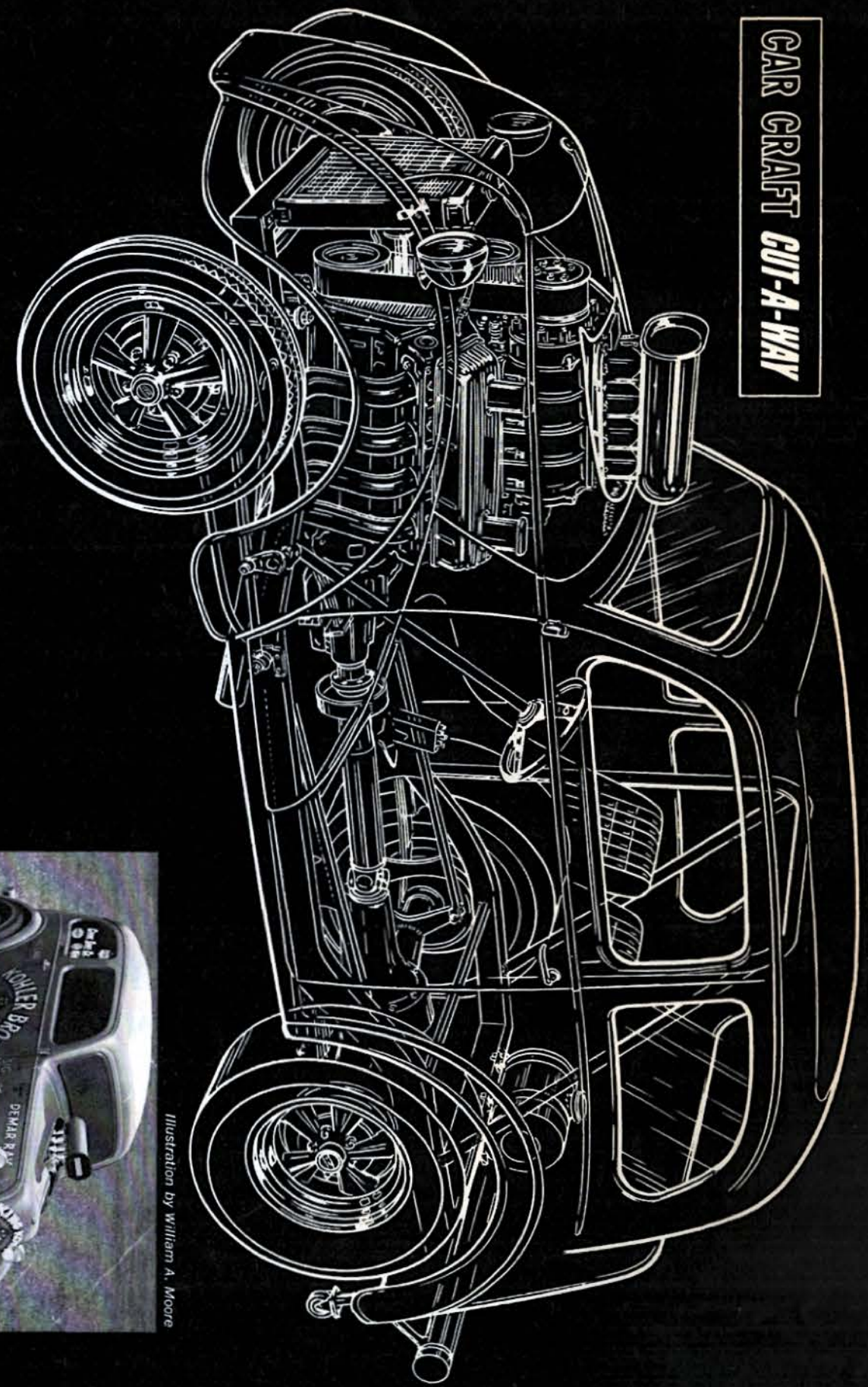
Bottom side look at the steering and front end assembly shows how radius rods are neatly attached to frame. Note shock location.



Looking from the rear axle forward, we note sturdy crossmember under Torqueflite. Brake master cylinder is located at the left.



Here's where those 9.23 e.t.'s come from. 454 cubic inch blown Chevy features Sig Erson cam, CrankShaft Co. crank, pistons & rods, Schiefer mag. firing Champion plugs, Cragar equipment. Left — Tiny coupe rolls on Cragar wheels all around with Goodyear slicks putt'n' it to strip. Paint was touch of Martines Bros. Parachute is from Chute Metal Co., rear bumper is by Bros.



Ed and Ray Kohler's beautiful Anglia is a perfect example of the present state of the hot rodding art. It combines the finest of engineering principles with flawless workmanship into a crowd pleasing, race winning car. Formerly fitted with an injected Chevy, the bright Tahitian orange tu-door now features a blown 454 cu. in. Chevy under the hood coupled to a Torqueflite transmission. It all adds up to one of the strongest gassers ever built. So far, the Kohler clan has collected wins in A/G at the NHRA Winter Nationals along with many special gas car events—with a low e.t. of 9.23 seconds, it's little wonder.



Illustration by William A. Moore

panels which aids a lot in the weight losing department. Stock wheelbase is featured with the front being tied down with a "buggy spring" arrangement while quarter elliptic suspend the Pontiac rear end. Steering gear was once in a Volvo. Anglia spindles guide the front wheels.

If you're wondering about that color, it's candy Tahitian orange which was applied in flawless form by the Martines Bros. of Azusa, Calif. Stylecraft of Covina did the simple but very effective upholstery job which is done up in black naugahyde with black carpets.

Added stopping power comes in the

form of nine foot ring slot parachute by the Chute Metal Co. Stock brakes are used at the rear while the front runs with Airheart spots.

Topping off this little beauty are a complete set of Cragar wheels with Goodyear slicks for that gettin' it to the ground.

Recently, several critics of the Kohler Bros. car popped up stating that the performances were just flukes and not the real thing. Shortly afterwards, the boys answered these and others with five runs all under 9.50 seconds all at the same event. Does that answer your questions?



Photos by Chan Bush, Dan Bott

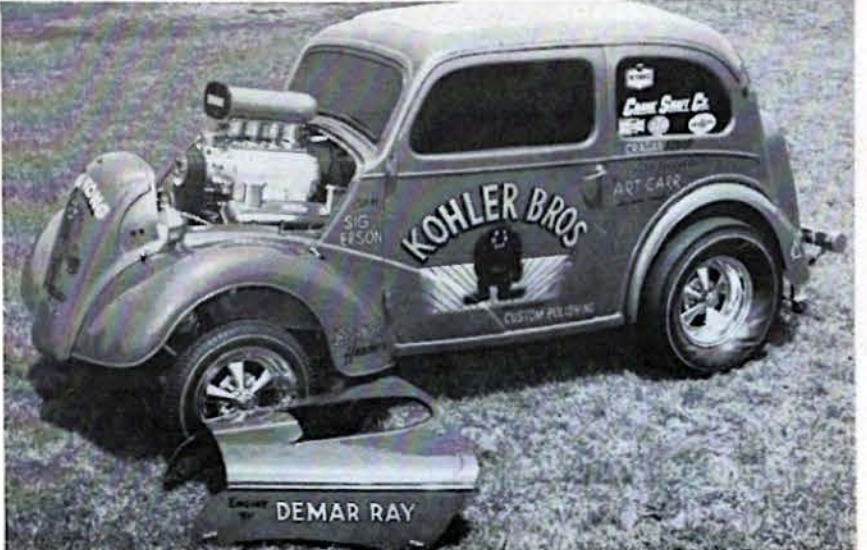


"King Kong's office" was done up in black naugahyde by Style Craft. Steering wheel is a Covico hooked to Volvo unit. Push buttons between seats control trans. Pontiac rear end is suspended with a quarter elliptic spring setup in conjunction with heavy duty shocks. Sturdy traction bars were custom fabricated. Rear end gears are 4.56. All chassis work on car was handled by Ed & Ray.

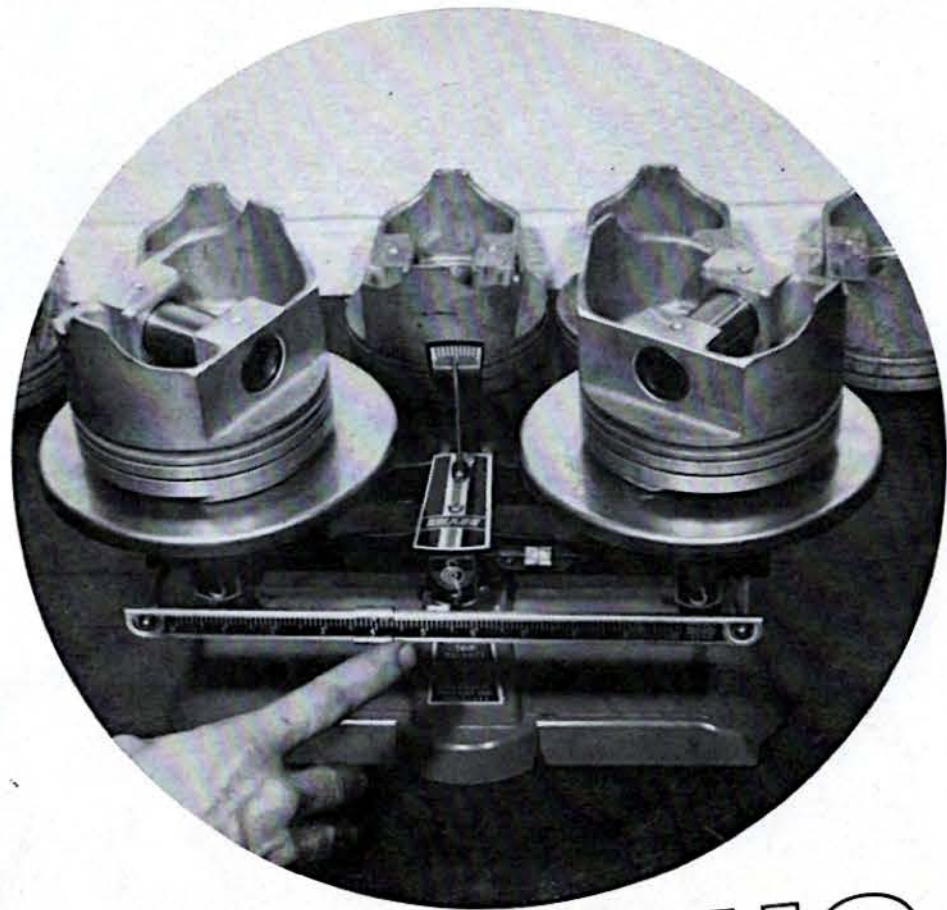


Protecting the driveline assembly should front U-joint break is special frame anchored hoop. Driveline was pirated from a Chevrolet and has not offered any problems. A special adaptor is used at front of drive shaft to mate the unit with modified Torqueflite trans by Art Carr.

Above right — "Flat" dash board is covered in black naugahyde. Instruments filling the center are Stewart-Warner oil pressure water temp. and tachometer. Switches at top left of photo are for ignition and front and rear lights. Gas pedal is mounted to far right of the driver.



Right — Fiberglass by Cal Automotive was used for fenders, doors, hood and grille to keep the weight down to 2270 pounds. Exhaust noise of engine comes out Belanger Headers. Talented sign craftsman Jack Burr is responsible for wild lettering and artwork on "King Kong" gorilla.



# THE BALANCING ACT

If that expensive high revving mill is out of balance, something more than just the 'tilt' light might come on. Why chance it? Hustle everything down to the balancing shop before putting it together.

BY ALEX WALORDY

**T**HE MOST COMMON example of unbalance recognizable to the average driver is a front end that goes into a shimmy and dance routine at 55 or 60 mph. A heavy spot at one point on the tire or rim excites the front suspension and when the system goes into resonance, it can shake the whole car. But more important, these same forces can destroy an engine. Unbalance forces grow with the square of rpm to that what represents acceptable engine balance at 5,000 rpm is enough to crack main bearing webs at 8,000 to 9,000 rpm. Since the heavy point causing the

unbalance revolves, the force it exerts continuously changes direction. The resulting stress cycling helps fatigue bearings and break out main bearing webs. Thus we can say that balancing helps an engine live longer. Since a balanced engine can twist tighter, you could even say that balancing helps raise horsepower.

A routine balancing job on a stock engine, using one of the small units found at the better equipped speed shops will do little over the factory balance in terms of overall engine smoothness. After all, the car makers use some pretty

sophisticated equipment to do the job. When you install new forged pistons or a stroker crank and proceed to modify the rods, there is no choice but to balance the engine since all the weights have been changed.

While looking into the finer details of Pete Seaton's "Shaker", one of the hottest Chevelle funny cars around, we got to talking to Pete and Jim Cornell, who balanced Pete's engine, about some of the steps involved in a good balancing job. Jim has accumulated some pretty specialized electronic equipment and feels he can balance to much finer toler-

ances than most. To prove his point, he proceeded to set a crank in the cradles of a balancing machine then positioned his electronic pickup. Just blowing lightly against the side of the crank was enough to send the meter needle across the scale. Jumping on the concrete floor several feet away from the machine also resulted in clearly visible reading changes. The same electronic gear can also be used for a variety of other checks, such as tracing down driveshaft vibration problems, and balancing right in the car, or mass balancing the engine, but we are getting ahead of ourselves.

Unbalance is measured in terms of ounce inches. One ounce inch is equivalent to an unbalance of one ounce, swinging on a 2 inch radius. The product of the swing arm times the unbalance weight is expressed in ounce inches. A good stock production engine would probably be balanced to within .25 ounce inches. After all balancing errors are stacked up, you might find .125 ounce inches on a finely balanced race mill and this will be cut down to approximately half that value by mass balancing.

Any unbalance results in a force which in turn causes motion. For instance, on a drive shaft, a motion of .003 to .004 inches will be uncomfortable at 70 to 80 mph. On an engine, the minimum amplitude of motion should be around .0001 inches, equivalent to .062 ounce inches.

To check the extent of unbalance and the peak to peak amplitude of the motion, Seco Engineering uses a sensitive I.R.D. electronic pick up. When this pickup is placed against the cradle of a crank balancer, or against an engine, it will detect motion, and translate its velocity into an electrical voltage output which is then detected, amplified and measured by an electronic "black box." The pickup has a floating coil that moves past a magnet, and senses only the motions along its axis of travel, so it doesn't pick up extraneous information.

The metering section of the IRD includes a tuner that can be set so that it will read only the vibrations coming in at a certain frequency. For instance, if the engine is run at 2,000 rpm, any unbalance will come in at 2,000 cycles per minute. The instrument is set to that value and automatically excludes other vibrations. For instance, firing frequency on an eight is four times per turn, instead of once per turn for unbalance, so there is no chance of mistaking firing impulses for unbalance.

When you want an engine balanced, you can either complete the preliminary work yourself, or send in everything that turns and moves, including the damper, crank, flywheel and clutch, plus the rods, pistons, rings, bearings and any locks or buttons that hold the pins, plus any related bolts.

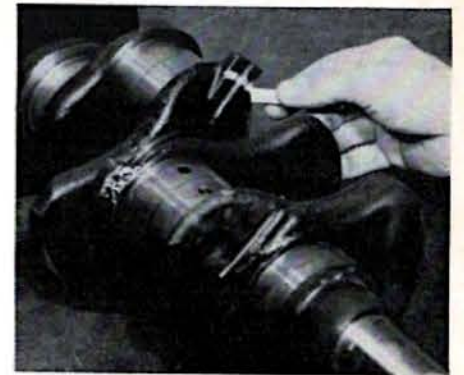
Since the pin and piston are fitted to

each other, swapping pins to equalize piston weight is poor practice. All of the piston and pin weights must be brought down to that of the lightest one. Don't weaken the piston by removing metal directly under the wrist pin area. Wherever possible, remove the excess weight from the corners of the boss or from the upper part of the pis boss (some Chrysler stock pistons are lightened that way). Any drillings and changes in the piston must be completed before the actual balancing is begun.

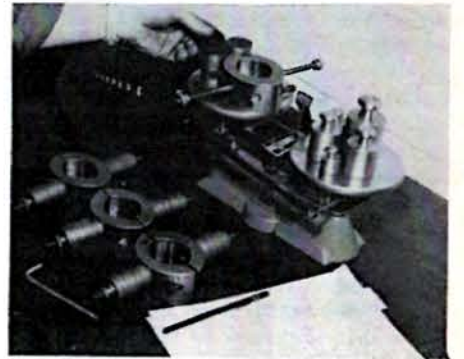
In stock classes, you are not allowed to rework the rods. However, in the gas and unlimited classes, there is much room for lightening and improvement if you plan to stay with the stock rod. For instance, you can polish, remove all marks, and also save considerable weight by cutting down on the balance pads at either end of the rod. These balance pads are the manufacturers way of correcting for variations in production weight due to eventual wear in the forging dies or differences in production of forging dies.

Polishing the rods strengthens them by eliminating any incipient cracks and surface defects. However, you should avoid cross scratches and certainly should not grind the rod hard enough at any one point to induce heat and grinding checks. Also, don't grind away metal in critical areas, such as the rails

(continued on the following page)



The crank can be lightened at several locations, by eliminating casting risers as this one. Any reinforcing by welding ribs should be done before crank is balanced.



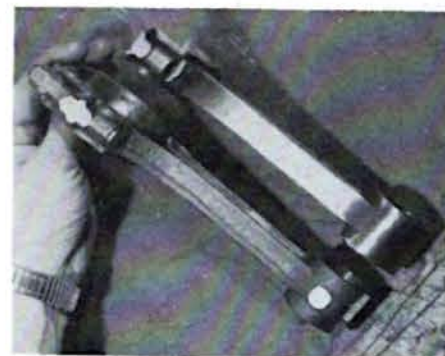
After balancing, reciprocating weight of rod, piston, pin with clips, rings, bearings is equaled with bob weights. Weights are attached when balancing crankshaft.



By suspending one end of a connecting rod from a chain or swivel fulcrum, the other end can be weighed. It is important that end weight of rods be held to same figure.



For accurate balancing, even out the gaps between bob weight halves, divide washer weights on rods equally, and center pairs of bob weights on the crankshaft journal.



If you are going to remove any forging marks from the rods by grinding, do this before balancing. Likewise, avoid grinding marks across rod to prevent cracking.



Jim Cornell uses an I.R.D. electronic pickup and strobe light for balancing. It is a very sensitive unit, capable of getting a reading if you even blow on a crank.

## THE BALANCING ACT

around the cap. Some builders use a pilot on which they can swing the rod in front of sanding belt or a grinding wheel at a desired radius to cut down on the balance pads evenly.

If you are going to do this preliminary work yourself, leave enough metal for the balancing to finish equalizing the weights. The upper part of the rod acts as the reciprocating weight while the bottom end of the rod tends to approach pure rotating weight. For balancing purposes, the rod must be weighed not just to equalize overall rod weight, but also to equalize the top and bottom end weight. The rod is suspended from one end by either a long chain or a movable support, and the other end is weighed on a scale; the procedure can then be reversed. Another method is to equalize all top end weights and then equalize the total rod weights by milling or grinding the balance pad at the cap.

The reciprocating weight of the piston and rod assembly comes to a dead stop at the top and bottom dead centers, and must then accelerate sharply again in the opposite direction. This "push-pull" motion causes secondary unbalance forces which must be compensated for within the crank by built-in counterweighting. In addition, the crank must also provide counterweighting for rotating unbalance of the individual throws. Put a crank on a balancing machine without the benefit of additional bob weights to compensate for the piston and rod weight and it would literally try to jump out of the machine as soon as it begins to spin. This is simply because the counterweights are designed to operate with the rods and pistons, and not by themselves.

The amount of bob weight needed is no mystery. On a standard V8, you compute it by adding the reciprocating weight in one cylinder to the full rotating weight. For a typical engine application, the list of weights would look as follows:

Rings .....	64.30 grams
Piston .....	748.50 grams
Wrist Pin & Circlips or Buttons .....	148.00 grams
Reciprocating Rod Weight .....	240.00 grams
Two sets of inserts .....	47.30 grams
.....	47.30 grams
<b>Total Bob Weight .....</b>	<b>2481.20 grams</b>

Bob weights are generally made of brass, both for weight and to avoid scratching the rod journals. A long screw with a thumb lock which allows the additional balancing washers for making up the bob weight to individual requirements. Once the bob weight is determined, the necessary amount of washers is split between the bob weight halves. Bob weights are installed so that the gaps are equal within .001 inches and they are also centered on the

crank. Jim Cornell takes the additional precaution of balancing the main portion of the bob weight so that its center of gravity is located along the axis of the crank pin.

There is practically no limit to the amount of changes that can be made in the crank itself. One often overlooked item in the addition of center counterweights. In the high rpm crank, stroked or stock, this cuts down center main loads. On some cast cranks, risers can be removed from the crank pin area, reducing the rotating mass. Any lightening that is done at the crank pin area translates itself into double the weight saving since a corresponding amount of metal can then be removed from the counterweights.

Some engines, such as Buick, Olds, the 260 and 289 Fords, call for the crank to be balanced together with the flywheel and the harmonic balancer (damper). If you plan to run a non-stock flywheel and no damper, the crank counter weighting will have to be changed accordingly. If you change cranks on these engines, the engine must be rebalanced with the flywheel and damper or you will run into definite problems. Some builders rework the crank so that no external counterweighting is needed. This is particularly true of modifieds run on round and round tracks.

Stroker cranks must counter balance considerably larger forces since the swing on the journals is increased. You can reduce the problem to some extent by going to lighter pistons and wrist pins, or you can add fish plates at the sides of the counter weights. This is inexpensive, but whenever the crank has to be reground or rechromed, the plates must be removed. A more permanent but also more expensive cure is to mill out part of the counter weight and weld a strap to cover the opening. The hollow section is then filled with lead. Since lead weighs approximately 2½



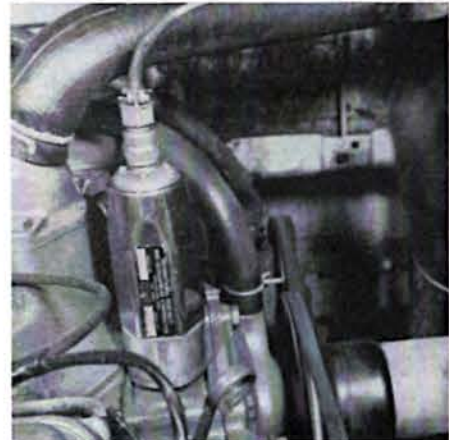
A blunt drift punch is used to stake and tighten clutch cover holes. After clutch and flywheel are balanced, they should be marked to insure future proper alignment.

times more than steel, the gain in counterweighting is considerable. If you have gained clearance between the crank and the piston skirts by using longer rods, an external strap can sometimes be added to the counterweight to good advantage. Since the strap is on the maximum swing radius, it will also provide the most counter balancing for a given weight. Least expensive and also least desirable is the possibility of adding external counter weighting, at both the flywheel and the damper.

On the more straightforward balancing jobs, without external counter weighting, the crankshaft is balanced first. The flywheel then can be balanced by either bolting it onto the crankshaft or mounting it on a separate mandrel. The mandrel generally has a .003 inch taper to accurately and positively pilot the flywheel. If you send out the crank for grinding, do have the flywheel flange trued up and check it with a dial indicator after the crank comes back. Keep the crank pushed forward so that the end thrust play does not induce an error. Any wobble at the flywheel flange will cause both balancing and clutch problems.

With the notable exception of Chevies, most flywheels are mounted without the benefit of a locating dowel. You should use new tightly fitting bolts at both the clutch and the flywheel. Seco Engineering always marks the flywheel with an up position before bolting it to the crank, balances it that way, asks you to reinstall it in the same position, thus any clearance that allows some drop off at the bolts is automatically taken up in the same direction each time. If you encounter a clutch cover with loose bolt holes, you can use a square drift to flatten them down and size them inward. The new bolt that you insert then pulls the opening into shape and insures a snug fit.

Balancing an engine without also balancing the clutch is hopeless, because



After engine is fully balanced and assembled, you can still benefit from mass balancing as a finishing touch. Here the pickup is used to detect any unbalance.

the clutch represents a larger unbalance potential than any single engine part. Dual disc clutches with a floater plate require a certain amount of clearance at the floater so they don't bind up. This means that the floater plate will never be accurately piloted and you just close your eyes to wherever unbalance it induces.

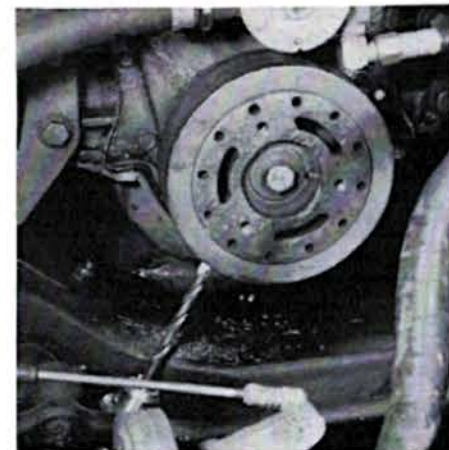
Clutch discs are generally balanced separately on a mandrel, together with their facings. They are usually pretty good but a bad one can destroy itself. Before you send out a clutch for balancing, be sure that it is aligned and adjusted or you will be wasting your money. Similarly, a worn flywheel or pressure plate should be either reconditioned or replaced before the balancing is done. Wherever possible, the balancing of the pressure plate assembly should be done by drilling out the bosses in the pressure plate. When this is not possible, a small bob weight can be tacked to the cover, a practice on which all clutch manufacturers frown. Keep welding heat at a minimum to locate the balance bob weight on a rib so that distortions are minimized.

A flat disc such as a flywheel is balanced in a single plane and both static and dynamic balance will be equivalent. Where a long object such as a crank or driveshaft is involved, it must be balanced in two planes. Suppose for instance that we have an unbalance of one inch ounce at the front of a long driveshaft. If we now put this driveshaft on a set of knife edges, the heavy spot of the driveshaft will tend to roll downward. We could balance the driveshaft statically by adding another weight at the rear end, 180 degrees opposite to the unbalance. The drive shaft will now be statically balanced and will stop at any point on the knife edge. If we now attempt to spin the driveshaft, it will wobble violently on its supports because there are now two individual unbalanced ends each one trying to move around in a circle of its own. To achieve dynamic balance, each end of the drive shaft must be balanced separately. Since there is some cross effect, after you balance in each plane, the balance in the opposite plane must be rechecked.

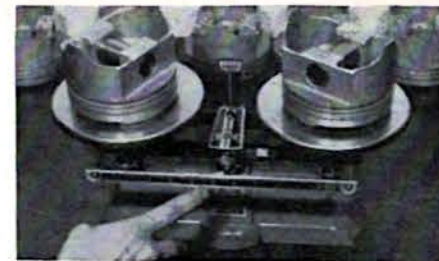
When balancing an item such as a drive shaft directly on a car, Jim scribes a chalk mark at one end, uses a strobe light and a pickup, then proceeds to run his instrument so as to freeze the chalk mark with his strobe (since the strobe flashes once each time the part turns, the part itself appears to stand still). The unit is now turned exactly to the rpm of the driveshaft and excludes other extraneous sources of vibration such as the rear wheels which turn at a lower speed. The pickup gives both an indication of the amount of unbalance and also a phase angle shown by the position of the chalk mark. A trial

balance is now attempted by adding clay at some arbitrary point and watching both the angular change in the chalk mark and the amount of unbalance indicated by the pickup. From this a trend can be accurately established in the amount of clay as well as its position can be altered accordingly. A very similar method is used for balancing cranks or mass balancing the complete engine. In the case of the driveshaft, the two plane balancing is achieved by checking the driveshaft with the pickup at the rear axle and at the transmission extension housing. The pickup is seldom put on a rotating shaft, since it would then be exposed to an additional source of error, such as out of roundness or runout. The mounting of both the rear axle and the transmission is sufficiently flexible so that even the slightest unbalance can be detected.

Even after a good engine balancing job, there is a stack up of tolerances which can affect the final smoothness of the engine. Some of the things are within the control of the balancer, such as equalized weights, and some are not, such as large main bearing clearances, differences in the keyways on which the damper is mounted, etc. Not too long ago, we spoke to one of the top mechanics at Holman & Moody and he defined the benefits of "mass balancing" (balancing after the engine is completed) by saying "It takes the shake out of the steering wheel." On a new car, the engine is mass balanced right at the factory and little pins are pressed into the damper. On a rebuilt engine, mass balancing is an easy way out. For a race mill, it is pretty much a finishing touch that helps smooth out the feel of the car. When the engine is checked for mass balance, the pickup is placed at the clutch housing and at a location such as the front of the pan or the water pump and a corresponding amount of drilling done at the flywheel or at the crankshaft damper.



When and if any unbalance is detected in the assembled engine by utilization of the electronic pickup, it can be corrected. This crank dampener is being drilled.



The pistons, complete with their pins and circlips, are weighed individually. Then the heavy ones are machined, usually on the inner skirt, to weight of the lightest.



A drive shaft can be balanced directly on the car. An electronic filter system makes it possible to isolate the many driveshaft vibrations from those caused by the axles.



The electronic pickup will also detect vibrations at the rear of an engine in the car. Here an automatic transmission flywheel is being drilled to balance assembly.



With the mandrel riding on knife-edged rollers, the heavy side of the flywheel goes to the bottom. Clay is added to find light side, then heavy side will be drilled.

*Here's all that's needed to turn a standard FoMoCo C6 automatic transmission into a purebred racing unit; and Art Carr shows you how to go about it.*

# the master's touch

BY BUD LANG



Jack and Art had earlier installed a modified C6 trans in Jack's former '65 Comet when the C6's first became available. This supercharged fuel funny car was the original test lab on wheels, proving and disproving theories involved with modifying the C6 for racing. Shortly after these tests began, Jack had his '66 roadster ready for the match race circuit and had to leave for tour commitments. He replaced the supercharged SOHC Mercury engine in the '65 car with its earlier powerplant, a blown 427 cubic inch wedge Mercury, and sold the package to Andy "Dee" Keaton, who had campaigned with Jack in '65 as head mechanic.

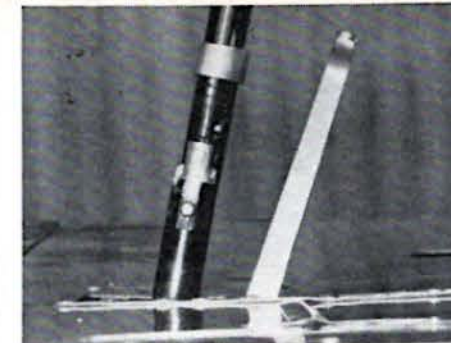
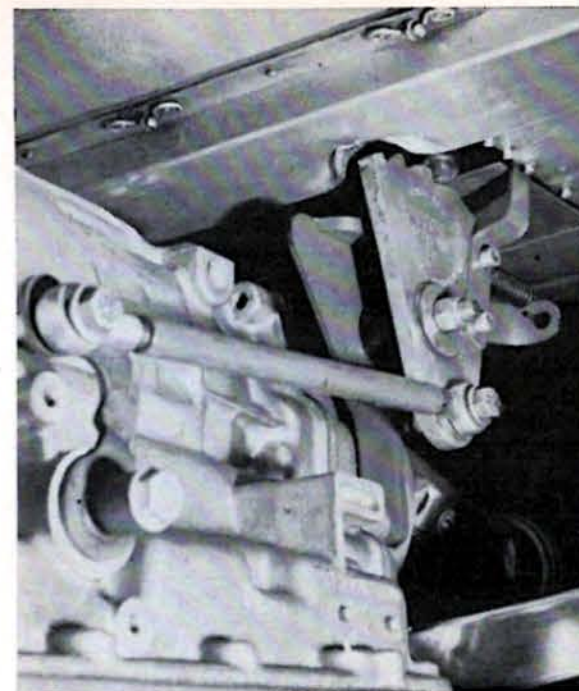
Since taking over the '65 Comet, Dee has been working with Art in a continuing effort to build a dependable racing transmission. And you wouldn't believe how many times these units have been pulled, torn down for modification, and replaced. Time and again Carr would "open" the trans, make a small adjustment, change a part, modify one segment of the valve body, try new clutches, etc., even though the unit was functioning perfectly. He knows these transmissions inside and out, and with every change, he knows what he is doing and what he's after. But, like everything mechanical, a new development should be "put to the test" under actual competition conditions before it can be proven right or

(continued on page 60)

FOLLOWING THE TREND initiated by Chrysler Corporation, The Ford Motor Company decided to introduce their Merc-O-Matic and Cruise-O-Matic transmissions in 1964, using one of many three speed automatic transmission gear trains developed by the late engineer, Howard Simpson. This in itself is not astounding, but the fact that this "self-employed" inventor personally developed and patented nearly two dozen ways in which simple planetary gear sets could be used for transmitting power in a three speed auto trans while using fewer parts with greater quietness and more efficiency is. It should be clear then why these two giants of industry, along with General Motors, decided to spend considerable sums of money retooling to one of the Simpson principles — and pay for the right to do so.

The Ford transmission that we are concerned with here is the new C6 three speed automatic that is standard in both Ford and Mercury automobiles and as a "Sports Shifter" in the GT series of Fords and Comets. The Sport Shifter backs up the big 390 cubic inch engine, and is a design that can be easily converted to a "racing transmission" capable of safely handling the explosive horsepower available in today's drag racing engines.

Art Carr of Arcadia Transmission Service, 400 N. First St., Arcadia, Calif., has been working with Mercury Division's Director of Sales Promotion, Fran Hernandez, for quite a while trying to come up with some answers concerning the C6 for use in competition cars. One of the most prominent of the cars being used as a "mobile lab" has been Jack Chrisman's '66 Comet GT-1 roadster.



A Logghe Stamping Co. ratchet shifter featuring twin handles is used on Jack's C6 trans. The short handle on the right can be used to shift each gear manually.

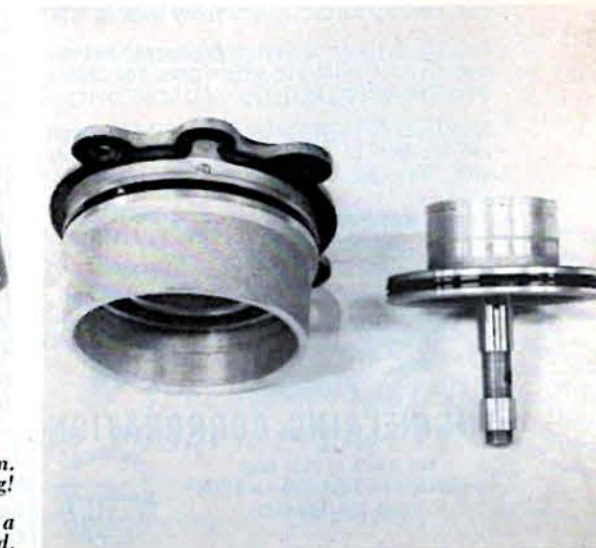
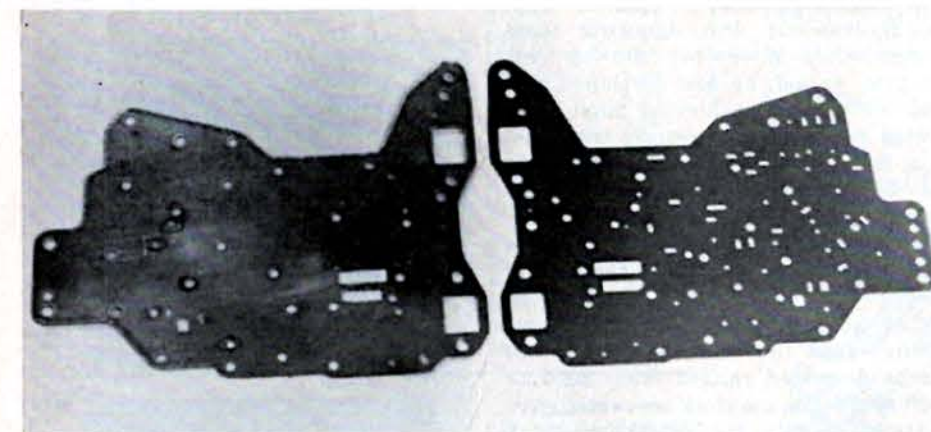
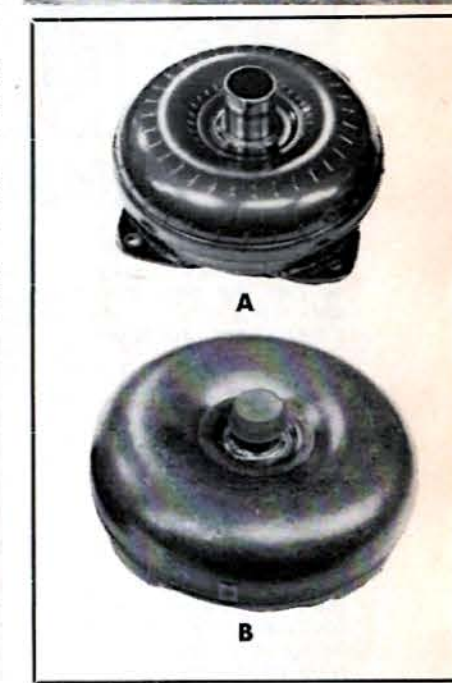
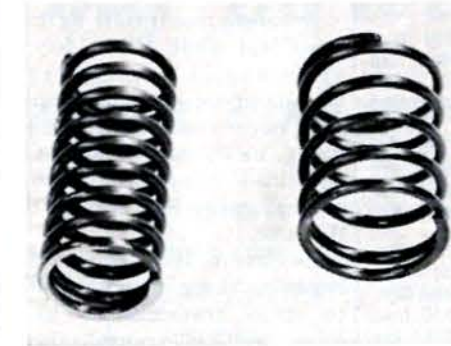
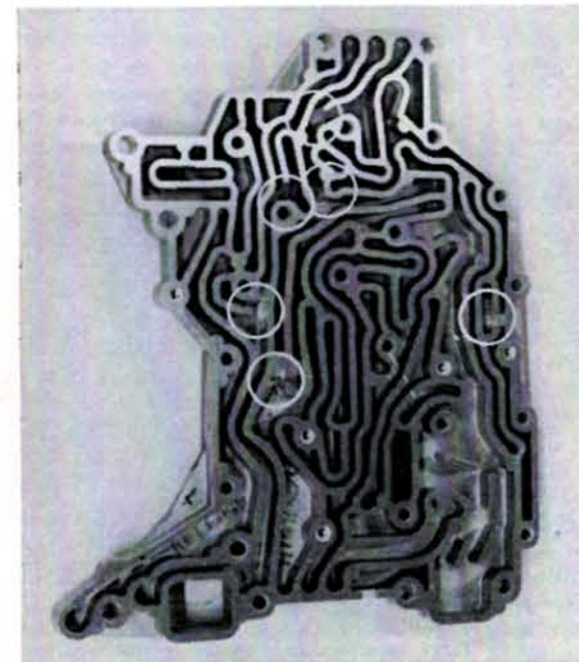
Right — A spring-loaded ratchet pin on the side of the large shift handle is utilized to shift gears. It is turned to side as shown to engage with shifter ratchet.

Left — With ratchet pin in up position, the small handle, right, is moved back to shift trans into 1st gear. Release pin, move handle forward and catch 2nd. Spring loaded, handle returns to rear ready for shift to 3rd. Small handle is for reverse.

Carr machines away the wall area in six specific passages so as to re-route trans fluid from one circuit to another. This is mute evidence of work put into C6 trans.

Right. Converter "A" is the special high stall speed converter Carr employs in the C6 trans. "B" is the stock C6 converter.

Below — At left is a stock front Serco band spring, at right a new one. Spring is often changed for more 2nd gear apply.



At left is the valve body separator plate Carr designed for use in the C6 transmission. Note the difference in it and the stock plate on the right. Talk about engineering!

At right is the Serco cover and piston. The upper end of the piston formerly featured a small lip and seal, similar to the large one shown. For reasons outlined, it's removed.



**RACING  
PISTONS  
DELIVER**



**TOTAL  
PERFORMANCE**

Total Performance is what you get with Custom Designed Racing Pistons by JE... Racing Pistons designed and engineered to take over where stock leaves off... designed to give you the difference you need to win.

When you order a set of JE Racing Pistons for a 327" Chev... we've got the very latest info on tape right up to the last race results. Want a set for your 289" Mustang for Smooth and Hot Highway Cruising? Same thing... latest reports from "the group" have gone into our computers memory banks... Or, you may need pistons for a Gasser or a Fueler or a Sprint Car... JE has 'em all, and they're each made for TOTAL PERFORMANCE.

The difference when you run JE is the results... Don't make the mistake of stuffing in a wild cam, bolting on a manifold, changing gears and then run a set of also-ran pistons... you won't like the results. Sure you can run stock pistons in your car... but NOT if you really want to WIN.

And, you get your JE Custom Engineered Pistons, computed for YOUR use, within days. You choose from Cast or Forged.

Send today for NEW Racing Piston Catalog, Decal and location of your JE Dealer sent together with "How To Order" information, only 50¢.



930 Monterey Pass Road  
Monterey Park 10, California 91754  
phone 213/268-9801



**MASTER'S TOUCH**  
(continued from page 59)

wrong. Many sleepless nights, thousands of hours, and untold dollars have gone into the developments displayed here. Yet, Art is still experimenting with other means to further improve the C6 automatic transmission.

The area we'll focus on first is the converter section which is found between the engine and transmission. Because it allows you to idle the engine without stalling, the converter plays a big part in the overall performance of an automatic transmission yet invariably people fail to understand the purpose of this component. Contrary to popular belief, you cannot raise stall speeds and increase performance in a stock converter by changing the stator or cutting the turbine blades as is done with Hydramatic transmissions. The hydro transmission uses a coupling, not a torque converter, to move the automobile and is locked into a direct condition, therefore it does not convert torque like a torque converter.

The hydro by-passes this coupling after it reaches third gear, thus going into a direct drive operation. This system is good because it allows you to "build in" a stall speed of say, 2000-2500-3000 or 3500 rpm, that would be compatible with the specific car you are operating. By increasing the stall speed in a given car to an rpm level that is "just right," you'll get off the line a lot quicker and realize better times.

A torque converter, by its name, relates just what it does for you. It converts engine horsepower into foot pounds of torque. The torque converter will never become a complete direct drive unit, so it cannot be cut or machined using the hydro principles, though some individuals apparently think so.

It was in 1956 when Carr initially began working with the torque converter type transmission, a time when other "racing" transmission companies were fully engrossed in the highly capable Hydramatic unit, ignoring these transmissions altogether. During this ten-year period, he has developed several methods of achieving high stall speeds in a torque converter transmission. Referring back to an earlier article Car Craft ran, entitled "Tuff Cruiso," (Aug. 1965) we find that Carr designed two different converter units for the Cruise-O-Matic trans that would offer two ranges of stall speeds, both higher and more desirable (for drag racing) than the stock unit. The stall speeds discussed ranged from 2000 to 4000 rpm while the stock converter gave a stall speed in the neighborhood of 1600-1800 rpm. At this time, Carr has but one converter developed for the C6 but it features design principles not found in any other transmission. It, too,

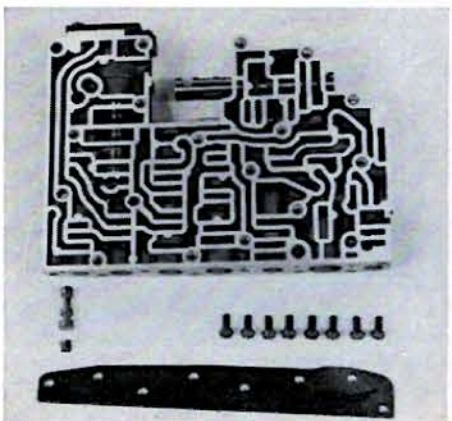
is smaller than the stock converter, and this feature alone allows a higher stall speed to be achieved, since the engine can overcome it (the converter) more easily.

Yet, when Carr builds a C6 automatic for a customer he also has to know the engine size, whether it's blown or injected, if it will be running on gas or fuel, weight of the car, etc. Then the converter will be designed for this particular car, allowing the highest "built in" stall speed possible for the power-to-weight ratio, etc., in question. Art refers to the changes he makes in the converter simply as "paddle wheeling." But this process is quite complicated in both theory and actual design change. It is also a big factor in Art's success with the "racing" three speed automatic trans.

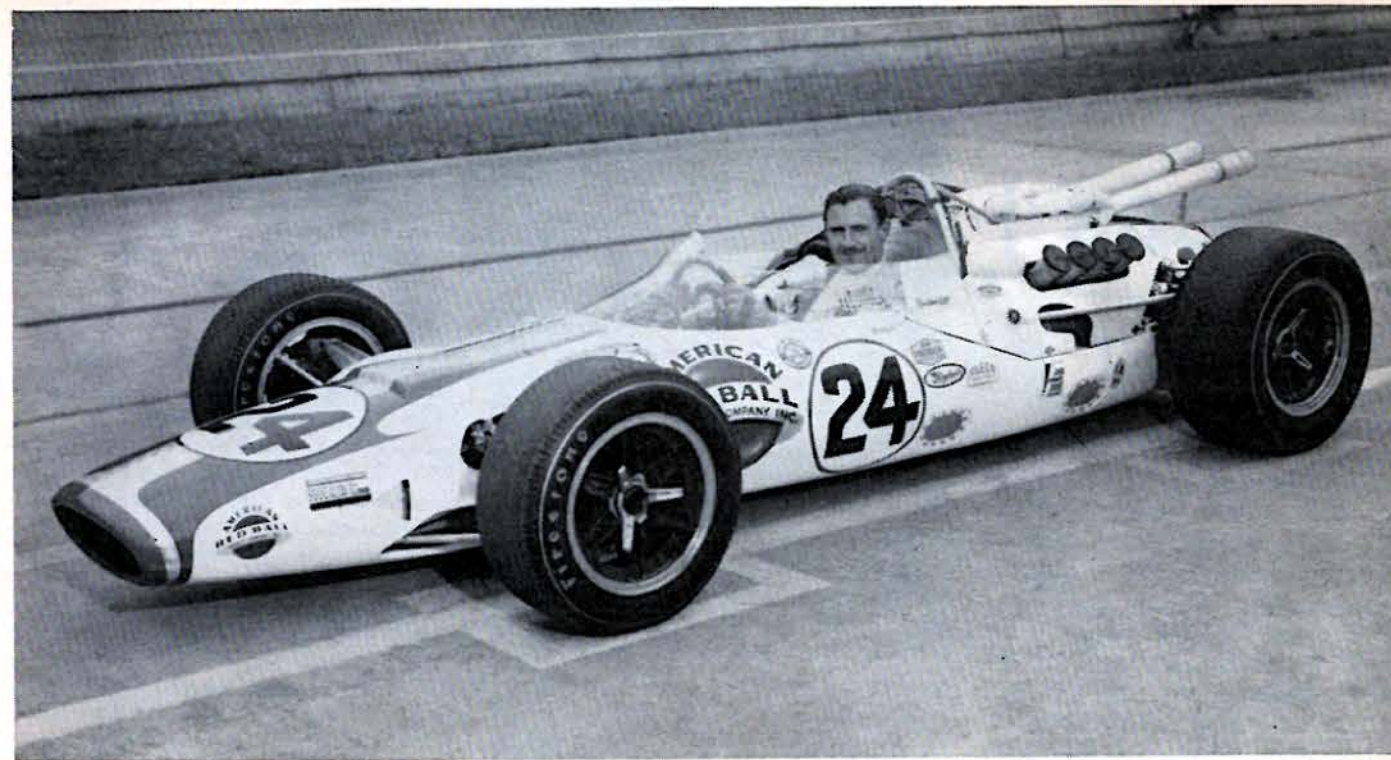
One of the first changes he makes in the transmission itself to convert it into a racing unit is to do away with the automatic shift mechanism. To do this, a valve body had to be developed to change the shift pattern. In performing this task, Art reversed half of the shift pattern so it works as follows: P-R-N-1-2-3. Reverse and neutral positions are away from the driver, as with stock transmissions, but the three forward gears are in the middle. (continued on page 62)



Here are the many components discarded in building the C6 into a racing trans. The large gear at top center is the parking gear, removed if car has a park brake.



The main valve body casting is not modified but it retains only the pressure regulator and cutback control valve, the latter seen removed, which is also plugged.



Graham Hill, winner of the 1966 Indy "500" at an average speed of 144.317 mph, flashes a winner's smile from the cockpit of his Ford-powered Lola, owned by John Mecom, Jr.

## Raybestos disc brake pads turn in 4 big '66 wins

**FIRST AT INDY "500" • SEBRING • DAYTONA • LE MANS**  
24 Hour Continental

HERE ARE 19 OF THE 36 RAYBESTOS HIGH-PERFORMANCE PADS  
(F—Front R—Rear E—Early L—Late)

Make, Year, Model	Raybestos Part No.	List Price Per Pad
Airheart, 1-23/32" Button for Cars, Karts, Motorcycles and 1/2 Midgets	ST-1	\$3.40
Austin Healey 1966-64L, 3000 (BJ8) (F)	ST-719	7.50
Cobra (1965-63) (R)	ST-721	5.60
Cobra 1963, (To Ch. CSX 2125) (F)	ST-705	9.75
Cobra 1965-63, (From Ch. CSX 2126) (F)	ST-719	7.50
Corvette 1966-65 (F or R)	ST-727	9.95
Jaguar 1966-61, "E" Type (F or R)	ST-717	7.60
Lotus 1966-61, Elite & Elan (R)	ST-708	5.05
Lotus 1966-64L, Elan Series 2 (F)	ST-7	5.60
M.G.B. 1966-62 (F)	ST-716	6.00
Mini-Cooper "S" 1966-64, All (F)	ST-747	5.55
Mustang 1966-65, (Opt'l F)	ST-730	9.00
Porsche 1966-63 (F)	ST-736	4.15
Porsche 1966-63, 901, GT 904, 911, 912 (R)	ST-735	4.15
Triumph 1966-61, Spitfire (F)	ST-723	5.20
Triumph 1966-62L, TR4 (F)	ST-719	7.50
Triumph 1965-64, 2000 (F)	ST-9	5.75
Triumph 1962E-57, TR4, TR3 (F)	ST-705	9.75
Volvo 1966-63, P1800, P1800S (F)	ST-724	8.35

**HOW TO ORDER**

Be sure to specify the number of pads by part number. Send check or money order to Racing Department, Raybestos Division, P. O. Box 1021, Bridgeport, Conn. 06601. NOTE: Add \$1 per 4-piece set for postage and handling east of Mississippi, \$2 west of Mississippi River. If the pads you need are not listed here, send 50¢ for catalog that gives complete information on the Raybestos high-performance line.

Raybestos makes the most complete line of high-performance brake pads in America, covering every major racing disc brake assembly. These pads have a high metallic content plus the Raybestos secret chemical R-500 that gives outstanding non-fade characteristics and practically eliminates rotor scoring and erratic braking action, resulting in "straight line" control at all speeds.

**Raybestos**  
SPEEDWAY TESTED  
FOR TURNPIKE SAFETY  
BRAKE LININGS — BRAKE PARTS — BRAKE FLUID  
RAYBESTOS DIVISION of Raybestos-Manhattan, Inc., BRIDGEPORT, CONN.

**CUSTOMIZE WITH**

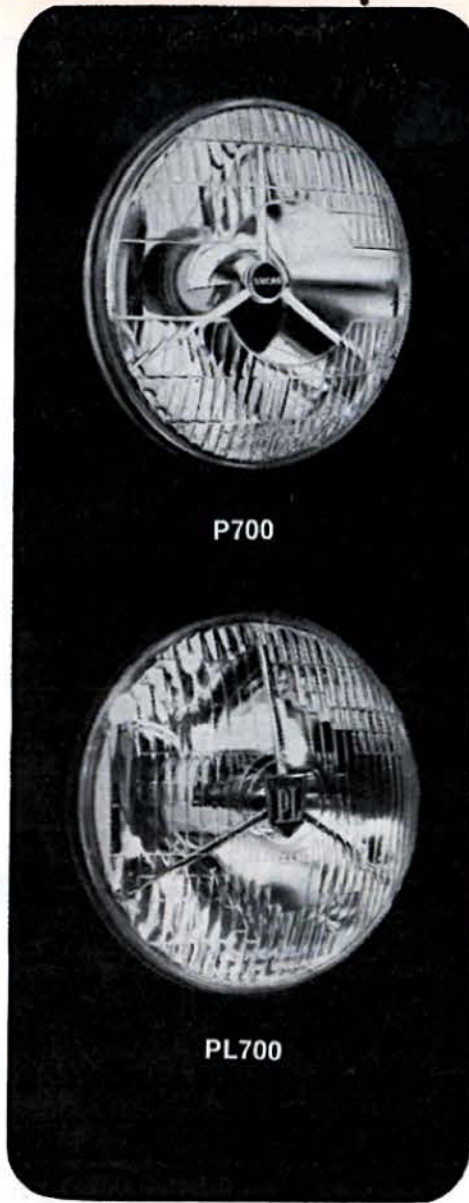


**HEADLIGHT  
CONVERSION KITS**

These beauties from England's foremost makers of automotive electrical equipment provide better looks and lighting output of all cars equipped with single, 7" sealed beam units. Chrome plated bulb shield and extremely efficient lens pattern combine to give a longer, concentrated high beam. Illumination in dimmed position is vastly improved with minimum glare. Kits include all components. Installation is simple with alterations rarely required.

The P700 kit is supplied complete with a pair of light units, adapters and 36/36 watt bulbs for 6 v. systems or 48/48 watt bulbs for 12 v. systems. The even more powerful Lucas PL700 kit provides 45/40 watt bulbs for 6 v. systems or 60/40 watt bulbs for 12 v. systems.

Note: These lamps may be considered to be too powerful for use in some states.



Send today for free Lucas catalog.



United States Factory Branches

**LUCAS ELECTRICAL SERVICES, INC.**

Dept. CC-9, 501-509 West 42nd Street, New York, N.Y. 10036

Englewood, N. J. • Los Angeles • Chicago • Houston • San Francisco • Jacksonville • Seattle • Boston • Denver • Baltimore  
In Canada—Joseph Lucas (Canada) Ltd., Scarborough, Ontario and Montreal, Quebec



Kohler Bros. A/GAS Supercharged Anclia uses an ART CARR Short Torque-Flite Transmission. This record holder runs 9.23 at 153 mph. Debbie is holding an Art Carr Torque-Flite Floor Shifter.

**HIGH PERFORMANCE AUTOMATIC TRANSMISSIONS ARE NEW TO SOME, BUT NOT TO SOME OF THE TOP RUNNERS.**

Bill "Maverick" Golden, '63-'66, Little Red Wagon, most popular Wheel Stander running today.  
Hayden Proffitt, '63-'65, and now running a '66 Corvair.  
"Flying Dutchman," '64-'66, over 2000 runs and no problems.  
Kohler Bros., '64-'66, A/Gas supercharged record holder.  
Blair's Speed Shop, '63-'66, Steve Bovan, fastest Chevy II.  
Milne Bros., '63-'64, Fastest Super Stock in the West.  
Horsepower Engineering, '63-'64, Top West Coast runner.  
Dave Kempton, '63-'66, class winner Winternationals, '63-'65-'66;  
Jr. Stock '65; Division Point Champ, '64; Runner '65.

Art Carr developed the first competition Torque-Flite over three years ago. Today this research and development has created the finest in precision automatic transmission.

Art Carr

ARCADIA TRANSMISSION SERVICE  
400 NORTH FIRST AVENUE  
ARCADIA, CALIFORNIA



**MASTER'S TOUCH**

(continued from page 60)

ward positions are reversed. The original shift pattern of the standard C6 transmission is P-R-N-D2-D1-L, while in the GT cars with their Sport Shift C6's, the pattern is P-R-N-D-2-1. With the Sport Shifter, the trans will stay in low gear if that is where the handle is placed initially, or will shift from low to second if it's placed in second, stopping at that gear position; same as with high or drive, it will upshift to that gear. Therefore, if functions just like a racing hydro trans, and you can shift it 1-2-3 the same way.

By now you are probably wondering why he changed the shift pattern around for the forward gears and converted it to a completely manually operated transmission, especially when the Sport Shift combination can be shifted manually through the gears. While the manual shifting feature of the Sport Shifter is desirable, the pattern leads you right into neutral and then reverse — if you throw a good strong shift. Need I say that if this occurs under heavy throttle, good-bye engine and/or transmission. And here we find the answer to why the forward pattern has been reversed. It all sounds so simple. Just reverse the shift pattern and drop from neutral into low and shift through the gears, away from reverse and toward the seat. Lots of action without blowing anything. But how to go about performing this feat was something else.

Since the valve body controls all shifts, it would have to be redesigned. If you haven't had one apart yourself, we have a few photos that will give you an idea of just how intricate this component is. The valve body and separator plate in their modified condition are responsible for this shift pattern alteration and are the end result of untold hours of research and testing. Art manufactures his own separator plate which contains fewer transfer holes than the stock component, and the holes it does possess are usually in a different location and are of different size than any previously used.

Specific wall areas in the valve body itself were also machined away so that fluid could be re-routed into other passages for the performance of work other than the stock transmission was designed for. Here we discover why many holes in the separator plate were eliminated, others added, and sizes varied. The stock valve body performed specific functions. Art desired to have it perform some of these functions, not all of them, and often in different sequence and under different pressures and/or conditions. Therefore, the entire valve body and separator plate had to be analyzed as a whole to realize what

(continued on page 64)



**Oil and blemishes usually go together.**

**That's why you need Clearasil—the blemish medicine that drinks up oil.**

Clearasil really does something to improve your complexion. It helps dry up pimples fast, and drinks up the oil that can trap dirt and clog pores.

Wash often. Then smooth on Clearasil wherever oil's a problem. Dab extra on pimples you have.

Clearasil really helps dry pimples—can drink up trouble-making oil hour after hour.

Get Clearasil working to help your complexion today. Clearasil—the blemish medicine that drinks up oil.



*This one gets results*



**Only SPEREX VHT  
(Very High Temperature)  
does the job!**

If you're not using VHT on headers, manifolds, exhausts, mufflers, superchargers... you're just wasting your time and your money. Believe it! Only SPEREX VHT has this USAC seal of approval. NOW at all speed and auto shops. \$3.98. Any super color you want! If your dealer hasn't got it, he goofed. Tell us. You'll get it. **BUT GET IT!**

SEPEREX CORPORATION  
2239 Pontius Ave.  
L.A. 90064, California

Distributed nationally: Ed Cholekian Enterprises Inc., 8125 Lankershim Blvd., North Hollywood, Calif.

# English Leather®

...the ALL-PURPOSE MEN'S LOTION, \$2.00, \$3.50, \$6.50  
...the ALL-PURPOSE SPRAY LOTION, \$5.00 (refill \$2.00)  
...the SHAVING CREAM, \$2.00...the PRE-SHAVE LOTION, \$1.50  
...the ALL-PURPOSE POWDER, \$1.50...the DEODORANT STICK, \$1.00  
...the AEROSOL DEODORANT, \$1.50...the SHOWER SOAP ON A CORD, \$2.00  
...GIFT SETS from \$3.00 to \$10.00

©MEM COMPANY, INC., NORTHVALE, NEW JERSEY

## MASTER'S TOUCH

(continued from page 62)

every spring, valve, passage, etc., in it was designed to accomplish. Then this same product has to be completely redesigned to perform other functions through an existing design. And if you think Carr didn't inherit a few grey hairs over this baby, you're mistaken.

In addition to re-routing transmission fluid through valve body passages and separator plate holes, every internal component in the valve body with exception to the cutback control valve and pressure regulator valve were scrapped. Even the cutback valve was blocked off though, so use can be made of its existing circuit for other purposes. Also, the governor assembly and vacuum modulator, along with the vacuum hose kick down linkage, were removed since they are no longer necessary.

A problem with the front band was encountered, so modifications in this area were also necessary. To conform to racing standards, the band had to be made to apply harder when going into second gear. This was accomplished by modifying the front Servo piston and plugging the neutral hole in the side of the Servo body. Normally the front band would release as fluid pressure was directed against the face of the piston's larger ring. During band "apply," fluid is directed against the smaller ring face at the opposite end of the Servo piston. But since the band apply action is not hard enough, causing slippage, something had to be done.

Art has machined the ring off the piston's small end (see photo illustration) thereby allowing fluid to continue working on it during apply as well as flowing on through what was formally a neutral area (between the two piston rings) and apply pressure to the neutral side of the larger ring. This increase in total area makes possible the harder apply action he found necessary to achieve. Because fluid is not normally in the "neutral" zone of the piston, the neutral hole in the side of the Servo body also had to be plugged to prevent the fluid from continuing on its merry way.

By performing these operations, band and clutch timing going into high gear have also been affected. Band release timing has been slowed down because the band apply area on the piston was enlarged through machining away the small ring. What has happened is that when the operations just discussed were performed, the greater apply area on the piston gives strong, hard apply action to the band when shifting into second. Everything takes place fast. But when a shift to high is being made, due to the larger amount of fluid on the piston's apply side, band releasing is slowed down. Then when you shift to

(continued on page 65)

## Where were you when they took this picture?



You like cars. You like working with interesting people doing interesting things. So what better place to be than right here — at a new car dealership.

Here's where a young man can become successful in one of the nation's most important industries — the retail automobile industry. Here is where you'll find the right kind of

man to work for — a fine employer who's also an important member of his community.

If you'd like to get into the retail automobile picture, too, write for the free booklet, "Careers in the Retail Automobile Industry." Send a card with your name and address to "Booklet," N.A.D.A., 2000 "K" Street, N.W., Washington, D.C. 20006.

**The National Automobile Dealers Association**  
Official Organization of America's Franchised New-Car and Truck Dealers



Are you a builder? Buy factory direct and save over half. Prices start at just \$109.95! Bird engineering has everything you need for your mini-bike or racing kart. Write today for details!



**WREN Kit**  
**\$109.95**  
**\$10 Down \$7 Month**  
 Build your own mini-bike in about 2 hours! No welding! Speeds to 30 mph. Ideal for errands, school or FUN!  
 Specifications:  
 • 2 1/2 hp. 4 cycle engine  
 • Precision welded frame  
 • Complete instructions



**HAWK Kit**  
**\$129.95**  
**\$10 Down \$8 Month**  
 Build your own racing kart with complete welded kit in about 3 hours! Speeds to 30 mph. Ideal for FUN or competition!  
 Specifications:  
 • 2 1/2 hp. 2 cycle engine  
 • Precision welded frame

**Send only \$10!**  
**TIME PAYMENT**  
 With Bird engineering's Time Payment plan you can pay-as-you-ride. You must be 21, or have parents sign. Send only \$10 with the coupon on the right.

**ATTENTION!!!  
 CAR CRAFT  
 SUBSCRIBERS**

If you're moving, missed an issue, or for any other reason wish to write us about your subscription, you'll insure prompt service by removing the address label on your magazine and attaching as shown. Please let us know at least 6 weeks in advance before moving what your new address will be.

▼ ATTACH YOUR MAILING LABEL HERE ▼  
 (or, if not possible, print your old address here)  
 Name \_\_\_\_\_  
 Street \_\_\_\_\_  
 City \_\_\_\_\_  
 Zone \_\_\_\_\_ State \_\_\_\_\_

▼ PRINT YOUR NEW ADDRESS HERE ▼  
 NAME \_\_\_\_\_  
 STREET \_\_\_\_\_  
 CITY \_\_\_\_\_  
 ZONE \_\_\_\_\_ STATE \_\_\_\_\_

MAIL TO: CAR CRAFT Magazine / 5959 Hollywood Blvd., Los Angeles, Calif. 90028

**LOWER E.T.'S  
 ARE IN THE BAG!**

When you install a set of Air Lift Air Springs you get better traction because you use ALL the POWER through BOTH rear wheels. Lets you jack weight, traction and power where you need it... so you can accelerate with real authority. There's an Air Lift Kit for any car... install 'em in less than an hour and the cost is less than \$50.00. You'll find Air Lift Air Springs on top winners in all classes from A/FX through P/S. Champions like Don Nicholson, Hayden Proffitt, Doug Kahl and hundreds more report as much as 5 tenths e.t. improvement with no other changes. Get full details in NEW PERFORMANCE CATALOG sent with decal for 25c. Air Lift T Shirt (size please) \$1.75, includes decal and catalog.

**AIR LIFT COMPANY**  
 Performance Products Division  
 P. O. Box 449H  
 phone 517/482-1378  
 2503 Snow Road  
 Lansing, Michigan 48902



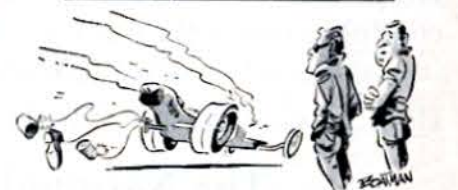
**MASTER'S TOUCH**  
 (continued from page 64)

third, the high gear clutch apply action is faster than the second gear band release. Therefore, to get the timing regulated, high gear clutch apply must be restricted, otherwise you will have high gear clutch "on" and second gear band trying to release simultaneously, which would cause damage to both band and clutch plates. This timing is regulated through the valve body separator plate which Art developed, and is extremely critical.

Now that the transmission has been modified sufficiently to turn it into a competitive racing unit, another area should be concentrated on if we are to keep this expensive piece of property functioning as (re)designed. Reference here is made to the automatic transmission lubricants available. The standard auto trans fluids (ATF) available, any of them, are regarded by Carr as being inadequate to provide protection to all of the vital transmission parts under the extreme operating conditions found today in high performance automobiles, especially those that are blown fuelers.

During the many years Carr has been developing racing transmissions, including Turbo Hydros, Hydros, Cruise-O-Matics, Torqueflites and the new C6 Ford transmissions, he has also been working with a wide variety of fluids to protect these units. Golden Bear Oil Company, a major producer of automatic transmission fluids, recently began working with Carr in an effort to develop a "racing" ATF that would not break down under high pressures, heat and load conditions prevalent in a racing trans. Art calls this fluid "Super ATF" and has it available in standard quart cans.

Everything considered, Ford has a very fine transmission here, and when combined with the changes illustrated, it has proven to be a real performer on the drag strip. Don't be surprised however if in a few months you learn from someone who is running an Art Carr modified C6 trans that theirs is a bit different in one respect or another from the one shown here; it's just that he is never satisfied. What is doing the job right today, Carr feels, can be doing it better tomorrow. If you're doubtful, ask his wife, Lori, she'll tell you how many times she has extinguished the flame on that "midnight oil."



"Is there any truth of the rumor that Joe got married last week?"



**SHOW  
 TIME 66**

**OVER \$125,000 IN PRIZES SCHEDULED FOR  
 WORLD'S LARGEST SHOW CAR SERIES!**

There's more in store than ever before for car owners and fans in the 1966-67 International Championship Auto Show Series. Over \$125,000 in prizes, including 1967 automobile, performance parts and accessories, and plenty more. Check the list and make your plans now. Or write for complete details to: International Show Car Association c/o Promotions, Inc., 19717 E. Nine Mile Road, St. Clair Shores, Michigan.

**INTERNATIONAL CHAMPIONSHIP AUTO SHOW FALL '66 SERIES**

- INDIANAPOLIS, IND.**—Sept. 2, 3, 4 & 5. National Custom Auto Fair. Murat Shrine Temple. Sponsored by National Hot Rod Association. Produced by Promotions, Inc. and International Productions.
- MANCHESTER, N.H.**—Sept. 23, 24 & 25. Annual Auto World Exhibition. John F. Kennedy Memorial Coliseum. Produced by Custom Enterprises.
- ST. LOUIS, MO.**—Sept. 30, Oct. 1 & 2. 7th Annual Autorama. Sports Arena. Sponsored by Torques & Coachmen. Produced by Promotions, Inc.
- CLEVELAND, OHIO**—Sept. 30, Oct. 1 & 2. 3rd Annual Auto World Exhibition. Cleveland Arena. Produced by International Productions.
- MINNEAPOLIS, MINN.**—Oct. 7, 8 & 9. 1st International Rod and Custom Show. Minneapolis Auditorium. Produced by Promotions, Inc.
- PITTSBURGH, PA.**—Oct. 7, 8 & 9. 7th Annual Rod & Custom Auto Show. New Civic Arena. Sponsored by Washington Timing Association. Produced by Promotions, Inc.
- SPRINGFIELD, MASS.**—Oct. 7, 8 & 9. 3rd Annual Auto World Exhibition. Eastern States Exposition Grounds. Produced by Custom Enterprises & Associated Promotions.
- MONTREAL, QUE.**—Oct. 14, 15 & 16. 6th Annual Auto-Sport Show. Show Mart Building. Sponsored by Piston Poppers Club. Produced by Promotions, Inc.
- WHITE PLAINS, N.Y.**—Oct. 28, 29 & 30. 9th Annual Auto World Exhibition. Westchester Co. Center. Produced by Custom Enterprises and Associated Promotions.
- MILWAUKEE, WISC.**—Oct. 28, 29 & 30. 4th Annual International Rod & Custom Show. Milwaukee Auditorium. Sponsored by Mellotones Club. Produced by Promotions, Inc.
- ALLEN TOWN, PA.**—Nov. 4, 5 & 6. 6th Annual Auto World Exhibition. Agricultural Hall. Produced by Associated Promotions.
- WORCESTER, MASS.**—Nov. 11, 12 & 13. 3rd Annual Auto World Exhibition. Memorial Auditorium. Produced by Associated Promotions & Custom Enterprises.
- CHICAGO, ILL.**—Nov. 17, 18, 19 & 20. 5th Annual International Rod & Custom Car Show. McCormick Place. Sponsored by Gass Hoppers Club. Produced by Promotions, Inc.
- PHILADELPHIA, PA.**—Nov. 18, 19 & 20. 7th Annual Auto World Exhibition. Convention Center. Produced by International Productions, Inc.
- SPRINGFIELD, ILL.**—Nov. 24, 25, 26 & 27. Annual Auto World Exhibition. Fairgrounds. Produced by Custom Enterprises.
- FLINT, MICH.**—Nov. 24, 25, 26 & 27. 4th Annual Auto World Exhibition. IMA Auditorium. Sponsored by Gear Grinders Car Club. Produced by Show Cars, Inc.
- NEW YORK, N.Y.**—Nov. 24, 25, 26 & 27. 5th Annual National Custom Car Show. New York Coliseum. Sponsored by Drivin' Deuces Club. Produced by Promotions, Inc., and International Productions.
- DENVER, COLO.**—Nov. 25, 26 & 27. 3rd Annual National Custom Auto Show. Denver Coliseum. Produced by Ray Farner.
- HOUSTON, TEXAS**—Dec. 2, 3 & 4. 7th Annual Rod & Custom Auto Show. Sam Houston Coliseum. Sponsored by Millwinders Club. Produced by Promotions, Inc.
- DAVENPORT, IOWA**—Dec. 9, 10 & 11. Annual Auto World Exhibition. Masonic Temple. Produced by Custom Enterprises.

**ICAS SPRING '67 SERIES**

Washington, D.C.; Chicago & Peoria, Ill.; Indianapolis, Ind.; Louisville, Ky.; Baltimore, Md.; Boston, Mass.; Detroit, Mich.; Asbury Park & West Orange, N.J.; Buffalo, Syracuse & Rochester, N.Y.; Charlotte, N.C.; Cincinnati, Cleveland, Dayton & Toledo, Ohio; Lancaster & Pittsburgh, Pa.; Memphis, Tenn.; Dallas, Texas; and Toronto, Ontario.

# What's your HR-IQ\*?

## What's your knowledge of...

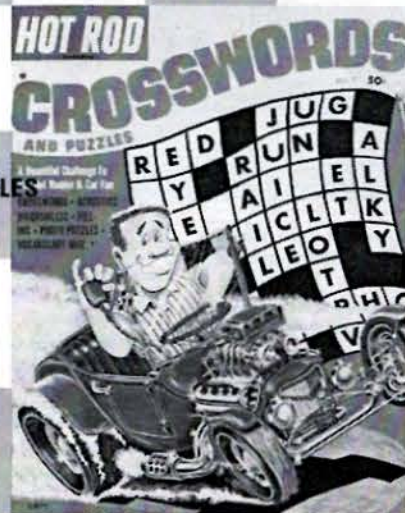
- Hot rodding as a sport
- Hot rodding lingo
- Sports car racing & drivers
- Stock cars and the auto world

Here's a chance for you and your friends to test your knowledge of the world's most exciting sport and pastime—*hot rodding!*

**HOT ROD CROSSWORDS** and PUZZLES is a real hot rodder's fun book!

Hours of informative, absorbing enjoyment that will test your knowledge, imagination and wits!

\*HR-IQ—Hot Rodding IQ



50¢ ea. At Newsstands Everywhere—  
Or Order Your Copy by Mail Today!

**HOT ROD Magazine** CC-966  
5959 Hollywood Blvd., Los Angeles, Calif. 90028.

Please send me \_\_\_\_\_ copies of HOT ROD CROSSWORDS AND PUZZLES @ 50¢ each. My payment is enclosed.

Below is your mailing label — Please print clearly in ink.

From: PETERSEN PUBLISHING COMPANY  
5959 Hollywood Blvd., Los Angeles, Calif. 90028

TO: \_\_\_\_\_

Street \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_ Zip \_\_\_\_\_

## MAN IN THE MIDDLE

(continued from page 14)

"Sometimes, after a big meet," he added, "it does take me a couple of days to stop shaking and get my hearing and sight back in focus."

Up until the staging lights come on, Buster is almost always in motion. He quickly inspects the driver of each car coming up, and motions them forward with hand signals, easing them into the staging lights. If one car fails to fire, or dies on the line, he holds up one finger to the other driver, telling him he can cool it, as it will be a single run. A slicing movement of finger across throat tells drivers to cut their engines. And when the big red foul light comes on, Buster takes a giant step sideways into the center of that lane and gives a big "thumbs down" signal, in case the officials in the tower missed the red foul light.

When the cars are about in place, Buster stands between them, facing down the strip. When both staging lights are lit, he checks to make sure both are ready, and presses the blast off button in his hand. He stands still as a statue until both cars have gone past, then moves from one lane to the other, sweating out both cars until they are safely through the lights and off the track.

The moment it's all clear, his serious manner drops off and out pops a joke or funny remark, easing the tension for himself and his crew, if only for a few seconds, until the next two cars roll up and it's back to business again.

I figure Buster Couch must have learned a lot about good driving techniques from his experience working with the nation's top drivers in every class, and asked if he would pass some of it along.

"Many, many races are won on the starting line," he said. "First, build your car well, to safety specifications. Familiarize yourself with the starting system at each strip where you race, and make as many practice runs as possible. Learn the bite at each track, and how your car performs at that track. And learn your own reaction time in connection with the starting system."

Nothing startling there, maybe, but try ignoring those rules and see how many important races you win.

But whether you're a racer or a spectator, next time you're at one of the big races where Buster Couch is starter, you'll find you get more enjoyment out of watching the action if you also watch the smooth, skilled, cool operation of the third man in the race. Watch the cars, certainly, but also keep an eye on Buster Couch, the man in the middle.

**AIN'T WE GOT A FUNNY NAME!**  
LAUGH AT US . . . THEN SEND FOR OUR CATALOG . . . OUR PRICES WILL REALLY TURN YOU ON!



HONEST POWERED DECALS

**HONEST 180° DYNO-TUNED HEDDERS**  
MADE FOR HONEST BY TRANS-DAPT OF CALIFORNIA  
**BIG 3" COLLECTOR**

HONEST SUPPLIED PARTS DOMINATE MOST CARS AT MOST DRAG MEETS! ASK THE BUILDERS.

Reason: Our fabulous inventory and lightning service.



79588	55-57 & 65-UP 265-283-327 CHEVY	YOUR PRICE
79587	64-UP CHEVELLE 283-327 Sigt. Shift	<b>79.95</b>
79590	64-UP CHEVELLE 283-327 w/ auto trans.	
79586	64-UP MUSTANG, COMET, FAIRLANE	PAIR
	FALCON 250-289	THAT'S RIGHT
75989	64-UP GTO & TEMPEST V-8's	79.95 PAIR
79591	58-64 283-327 CHEVY 4 into 1	PRICE INCLUDES FREIGHT TO YOU

• All Have Big 3" Collector Capped With Chrome Blocking Plate Removable With One Wing Nut.  
• Muffler Take Off Included.  
• They compare to sets costing 25 percent more or your money back.

## New From P&G for the HOT Engines . . .



Custom manufactured to provide precise valve settings for the new popular engines. Speeds valve adjustment time by 50 percent . . . with 100 percent accuracy. Provides exact valve lash settings required for peak engine performance. Allows valve gap adjustment with micrometer accuracy. Helps prevent burned or broken valves. Locates weak or defective hydraulic lifters immediately. Eliminates feeler gauge error.

Custom-manufactured for Chev 396, Chev 427, and Ford 289, all '65 models up.

### NO OTHER PARTS NEEDED

	Your Price
72087 For 396 CI Chev	29.95
72088 For 427 CI Chev 65-Up	29.95
72089 For 289 CI Ford	29.95
72091 For Dodge 426 Hemi-Head Engine	29.95
72092 For Volkswagen	29.95
72093 For Porsche	29.95
72094 For 425 Oldsmobile	29.95



**RACING JACKETS**  
Zipper Front  
Zipper Sleeves  
Elastic Waist  
Roomy Shoulders  
Free Sew-on Patch

## FLAME PROOF JACKET

78506	S-36	Your Price Each	12.99
78507	M-38-40		
78508	L-42-44		

Colors: Red, White, Navy, Royal (White comes with red or blue stripe; all others have white stripe)

SAME AS ABOVE, BUT NOT FIRE RETARDANT Like for Sports Wear Man!  
78527 Small-36 } Your Price  
78528 Med-38-40 } 8.99  
78529 Large-42-44 }  
PREPAID

**NEW 1966½**  
156 PAGE CATALOG  
"We squeeze a lot into our catalog."



**66½ Discounts Up to 50%**  
FROM OUR ALREADY LOW 1965 MAIL ORDER PRICES

Send new 1966½ mail order catalog. Enclosed is 25c to cover cost of handling and mailing.  
 Enclosed is \$1.00 send new 1966½ mail order catalog and two Honest Powered Decals 3½" x 6" size in 3 colors.  
 Enclosed is \$2.50—send Decals, Catalog and Hurst T-Shirt—Size  Small  Medium  Large  Ex-Large  
 ENCLOSED IS \_\_\_\_\_ SEND \_\_\_\_\_  
(How Many) \_\_\_\_\_ (Part No.) \_\_\_\_\_  
and Your Price Catalog (Catalog Free with any Order from this ad). We pay postage anywhere in the U.S.A. on orders from this ad.

NAME \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
CITY \_\_\_\_\_  
STATE \_\_\_\_\_ ZIP CODE \_\_\_\_\_  
PRINT YOUR NAME DERN IT  
Give us your zip code number. If you don't know your number, ask your postman—head better know.

**HONEST CHARLEY SPEED SHOP**  
DIVISION OF HONEST CHARLEY, INC.

THE RACING WORLD'S MAIL ORDER SUPER MARKET  
PHONE AREA 615 892-2114—ANYONE WHO ANSWERS CAN TAKE YOUR ORDER

P.O. Box CC 8535  
HONEST ST. AT HWY. 11, NO. CHATTANOOGA, TENN. 37421

# schiefer FLYWHEELS AND CLUTCHES WON EVERY NHRA AND AHRA MEET FOR THE LAST 11 years

Your Schiefer Forged Aluminum Flywheel & Clutch have a LIFETIME GUARANTEE against blowup and disintegration. Unequaled strength. Lightning acceleration & throttle response. Complete heat dissipation.

INSIST ON  
"THE CHOICE OF CHAMPIONS"  
See Your Schiefer Dealer or Send  
50¢ for New Catalog & Decal.

## schiefer

THE CHOICE OF CHAMPIONS  
508 E Monterey Pass Road, Monterey Park, Calif.



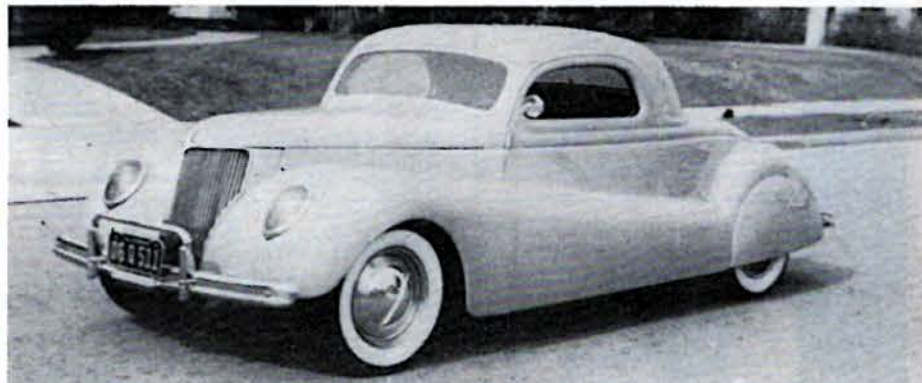
## THE HOT ROD STORY (continued from page 33)



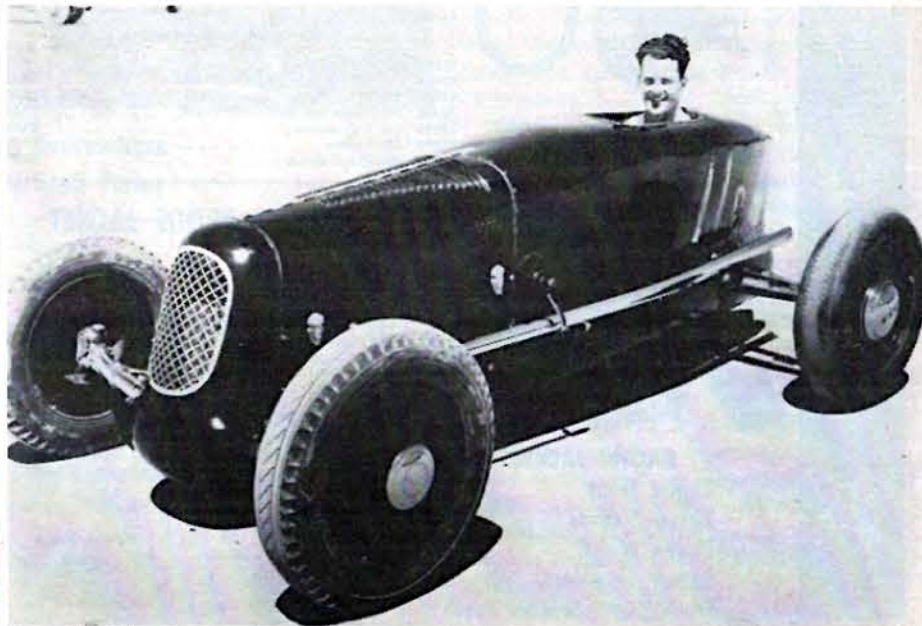
The show was an overnight smash. For three days it entertained 55,000 spectators and showed them what the hot rod sport was really all about. One display was a complete model mockup of a lakes meet, how the event functioned, safety requirements for participants, event organization, in short, a complete education program for the viewing public. Local automotive dealers associations took part with displays featuring

top record holders from the lakes, track and custom street-rod versions. And the hit of the show were two street roadsters that were built progressively on stage during the show hours that eventually were awarded on the last evening as door prizes to the lucky spectators who had the winning ticket stubs. The streets had two new hot rods . . . but ones that represented safety and legal construction.

Another phase of the hot rod move-



The first car that really felt the custom car builder's torch was the 1936 Ford. It offered stock styling that seemed to lend itself to restyling. Bob Fairman's three window is a good example of what took place. Fade-a-way fenders were popular as were solid hood panels. Bumpers were exchanged for either '36 DeSoto's or '41 Ford. All stock trim was discarded, door handles, etc.; ripple bar wheel discs and skirts, a must.



Owner-builder-driver, Stu Hilborn, cracked the magic 150 mph barrier with his Streamliner in '48. Under the hood of his sleek racer nestled a 1934 Ford flathead of only 221 cubic inches, but on top a "plumber's nightmare", his first fuel injection system built in the backyard. Stu continued to pioneer and develop the fuel injection theory and today's one of the leading manufacturers in the speed equipment field.

ment that gained tremendous exposure through this first hot rod show was the custom car craze. Unlike their go fast cousins, the "chrome and polish" clan built and stylized their machines strictly for exhibition. Craftsmanship was in big demand and customizers like Jimmy Summers, Roy Hagge, Valley Custom, Barris Customs, and Gil Ayala's Custom followed the trail of the speed equipment manufacturers and found themselves in business as artists in metal.

Out in the San Fernando Valley, a young ex-sailor, just home from the military service, rented a sewing machine for 30 days in order to upholster his new street rod. Tony Nancy had haunted the custom shops of Los Angeles for months and his decision to try his hand at fancy rolled & tucked fabrics and leather custom upholstery work resulted in a two-year rental of the sewing machine and another highly successful business, Nancy's Auto & Boat Upholstery. Today you'll find Tony's upholstery Seahorse trademark in just about every plush 200 mph dragster's cockpit in the country. And that's not to mention his own popularity in the sport as the builder of some of the finest drag race cars ever assembled.

By the middle of 1948, the lake meets were looking mighty strong. A young man with a dream named Stuart Hilborn, after several years of experimenting with a wide variety of carburetor set-ups, developed the sports first fuel injectors. With its revolutionary "plumber's nightmare," installed on a 221 cu. in. Ford V-8 engine, in a streamline chassis, he became the first roadster to travel over 150 mph.

At the same time, Bill Burke and Don Francisco were topping 145 mph with their tank and Regg Schlemmer had the "C" roadster record with a mark of 138.975. Doug Hartelt held the "B" roadster record at 129.365 for the two way average.

The Ford and Mercury V-8 flathead had completely taken over by this time. The entry list showed three hundred and two V-8's and only seventeen 4-Bangers.

New competitors were making their mark, too. Chuck Scott (father of AA/GD driver Billy "The Kid" Scott), Don Nicholson (that's right, "Dyno Don" was running a Chevy six roadster) and Kenny Parks, younger brother of Wally Parks, were among them.

One of the more interesting machines during this period was Charles Dimmit's V-16 Cadillac powered rear-engined roadster. The car featured a 147 inch wheelbase and was equipped with two Cadillac transmissions to handle the tremendous 452 cubic inch engine.

The Spalding Brothers took a different approach and unveiled a new roadster with full torsion-bar suspension on all four wheels. Built from a '27 "T," it was powered by a 240 cubic inch Chevy six with a new head designed

(continued on page 72)

# 'MAGS'

## WHEEL CARE WIRE LOOMS

# CRAGAR

CRAGAR Industries is proud to offer the finest equipment to the competitive racer and the auto enthusiast. For these and other Cragar products see your dealer now . . . you'll be glad you did.

### STEERING WHEELS

### BLOWER DRIVES

**CRAGAR INDUSTRIES**  
5829 E. Firestone Blvd., South Gate 8, Calif.

Would you believe:

Jimmy Nix, Don Prudhomme  
The Hawaiian, The Surfers  
Frantic Four, Adams-Warpe  
Beacon Auto Parts, The Freight  
Train, Jim Minnick, Earl Poage  
receives special attention and gets a special grind of camshaft?

Well they do! right out of the Engle Catalog. These are professional racers, most race for a living, they know that in order to stay out ahead they have to have the best equipment money can buy. This is the reason the professionals turn to Engle, they know that all the advertising in the world doesn't make an inferior product run any better. No where in the racing cam industry can you buy a camshaft so highly endorsed by professionals. Take the advice of those who know what runs best, see your Engle Dealer. Send .25 for catalog & decal.



**Engle Racing Cams**

1621 12th St. — Dept. C, Santa Monica 1, Calif. 451-1476

## A quarter-century ago DOUGLASS Headers could be bought for your flathead Ford!

DOUGLASS was making headers for flathead Fords way back in 1941. And we're still making headers today — only better. The DOUGLASS Dyno-Tuned® headers you buy today are backed with 25 years of experience by the oldest header manufacturer in the business. Want your money's worth? Then ask for DOUGLASS Dyno-Tuned® headers.

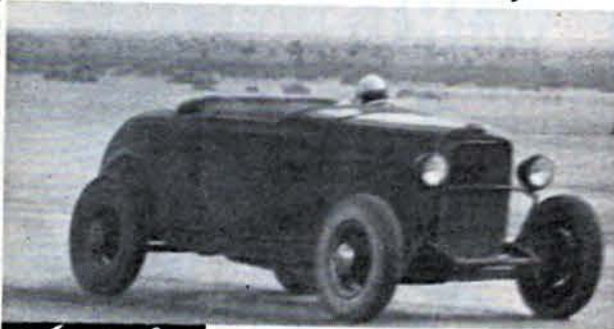


Photo taken at El Mirage Dry Lake, summer 1941. Rosetta Timing Association meet. Douglass '32 Ford Roadster equipped with Douglass headers, V-8 flathead with '36 Ford truck cast iron heads milled & polished, Winfield 3/4 cam, ported & relieved, .060 over stock bored, heavy duty pistons, Thickest dual manifold, 97 Ford Carbs, Bendix Scintilla Mag. At Muroc Dry Lake (now Edwards Air Force base) this Ford was clocked at 108.18 and 111.94 for 1st & 2nd places, L.A. Gophers meet summer 1941 thru measured 1/4 mile run.

**Douglass** MUFFLER MFG.CO., 5636 Shull St., Bell Gardens 28, Calif.  
send 50c for header brochure and decals.

## THE HOT ROD STORY

(continued from page 71)

by Wayne Horning, a pioneer in the Chevrolet speed equipment field.

A third route to power was being explored by Tom Beatty, using Rootes-type GMC superchargers. Pre-war lake meets had seen McCulloch "cream separator" type superchargers and blowers from Deussenbergs and Grahams in use, but none had made a big impression. Beatty was on the right track, but was a couple of years away from his big score in the high speed record books.

The search for power continued. Big engines, little engines, heavy cars, light cars, superchargers, injectors, everyone had a different idea on how to go fast. Club competition continued to be the red-hot basis for most of the activity. At the end of the year, the "Lancers" were one point winners over the "Road Runners" in a real nip and tuck affair.

While Southern California continued to be the hot-bed of activity, the movement was spreading throughout the country. Without the advantage of a nearby dry lake, most of the country's other hot rodders were forced to be content with an occasional street race, but interest was growing and everyone was trying to find the answer.

At El Mirage, streamliners and modifieds were increasing their speeds almost weekly and the distance available for racing, which had been adequate in the past, was slowly bringing about a change due to the rate of speed and shut-off area.

Every meet brought more and more discussion about the possibilities of a new site. Even though they were looking all over the Southern California area, the SCTA officials were keeping a sharp eye looking north toward Bonneville. Their dream was a full size meet on this site where so many famous men had carved their names in the international World Land Speed record book.

At times, they must have admitted to themselves it would be quite a task to challenge these highly financed attempts by large corporations and governments with their homemade bombs. But they were anxious to try.

SCTA assigned themselves the project and began negotiating with Utah state officials. Preliminary publicity had brought considerable interest from car enthusiasts throughout the country and the tempo began to pick up for a national hot rod event.

The customizers were caught up in wild designs and exotic paint jobs, the now professional track roadsters were enjoying tremendous success up and down the Pacific coast, and jalopy racing was beginning to find a following. None of these, however, held any interest to the avid hot rodder who wanted

(continued on page 74)

# BLACK JACK

HAS WHAT IT TAKES

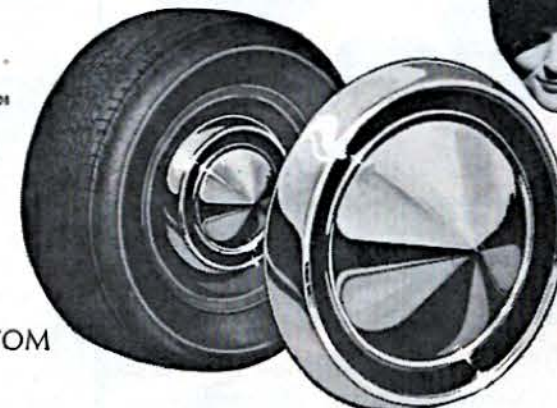
The New Moons with the "Forward Thrust" look

BLACK JACK MOONS™

America's newest hub cap sensation with the hot black racing stripe

... naturally

CAL CUSTOM



- Deep drawn steel stamping
  - Skin tight fit
  - Brilliant chrome
  - Jet black racing stripe
- ... Priced to make you feel like a million for a few bucks.

Even standing still these beauties look like winners... Will make any wheel sparkle—great, too, with the new racing stripe tires.

Black Jack Moons™ and a 1001 more eye grabbing CAL CUSTOM "goodies" at better dealers everywhere. You'll know they're better dealers if they handle CAL CUSTOM.



© 1966 CALIFORNIA CUSTOM™ ACCESSORIES MFG., CO.

1650 West Rosecrans Ave., Gardena, California



## Blow-up Proof Flywheels — High Performance Clutches — Racing Cams

Weber is where you find the performance proven speed parts to make you GO... and GO safely... time after time. You can make your trip-through-the-traps a Trophy Collector instead of a "You lose... Pal" with a Weber Performance Package. You get TOTAL OUTPUT PERFORMANCE on the street, strip or track. And, when you buy all 3... you save plenty. Check out your Weber dealer... he's a good man to know. Get your copy of the new Weber catalog, only 50c and you get 2 FREE decals and a FREE Flywheel Keychain. NEW Weber T-shirt, \$1.50 (size please), sew on jacket patch, 50c. Foreign and Sports Car Cam Handbook, 50c, get all items above for only \$2.50.

WEBER SHIPS TODAY

**Weber** SPEED EQUIPMENT

310 S. CENTER ST., SANTA ANA 8, CALIFORNIA. PHONE 714/547-2595



Shirts by Kampney 15 Fluorescent Colors

- Sweat Shirt: 4.00  T-Shirt: 2.00  
 Small  Med.  Large  X-Large

- DESIGN  
 Custom Design Shirt — You Name It: 5.00  
 Tall Hillbilly Hat (black): 2.00

- Maltese Surfers Cross & Chain: 1.00  
 4" Maltese Surfers Cross Decal: .50  
 1966; Catalog: .50

We Pay the Postage • Canadians Please Add Exchange • Dealer Inquiries Invited

the Novelty Shop

Box 107 Cortland, New York 13045

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_

Send Cash, Check or M.O.—No C.O.D.  
N.Y.S. Res. Add 2% Sales Tax

## New "solid state" tachometer!

It's Stewart-Warner's brand new "960" model.

Fully transistorized circuitry gives the "960" a big, full-sweep dial face, plus all-in-one construction for greater dependability and easier installation. There's no separate battery, relay, or sender.

Mounting brackets and a handsome chrome housing allow you to place the "960" wherever you want: in your instru-

ment panel, or on your dash, steering column, transmission tunnel, or console. The "960" looks built-in, not tacked on.

Stop at your local speed shop, service garage, or automotive parts shop. Ask to see the Stewart-Warner "960" and our other models of electric and mechanical tachometers.

Whichever tach you take, it will have the name you can trust: Stewart-Warner.

**S-W**  
**STEWART-WARNER**  
INSTRUMENT DIVISION  
1840 Diversey Parkway, Chicago, Illinois 60614

**MAIN SUPPORTS**  
The only Guaranteed Blow Up Proof main support made. Supports for over 20 Detroit engines. New gaskets for Chevy and Chrysler supports.

**G-METER**  
Goes beyond the engine performance readings of a tach to total car performance. Reports car acceleration not engine R.P.M.'s. Like a dyno on the dash.

**COOL CAN**  
The most efficient means yet to cool fuel. Dry ice alone or with alcohol will drop temp. to minus 190°.

T-SHIRTS (S, M, L, XL), \$1.00  
For full information on these and other quality Milodon Speed Equipment send 50¢ for catalog to:

**MILODON ENGINEERING CO.**  
7762 Gloria Ave., Van Nuys 2, California (213) 782-4373

Bill Martin — WORLD'S FASTEST CHEVY  
201 M.P.H. — Fontana & San Fernando  
7.65 E.T. — A.H.R.A. Winternationals  
HERBERT CAMS ARE BEST! THESE RECORD HOLDERS PROVE IT! DIRECT COMP. TESTS PROVE IT! NEW MAGNESIUM BUG CATCHER, 671 INJECTOR, COMPLETE LESS PUMP. DEALER PRICE \$150.

Bobby Allison — NASCAR MODIFIED 327 CHEVY  
NATIONAL CHAMP 1962, 1963, 1964 & 1965

396 & 327 CHEVY ROLLER CAM KITS DEALER PRICE \$130.00

327 CHEVY — 289 FORD CAM AND SOLID LIFTERS DEALER PRICE \$35.00

**CAMS**

CHET HERBERT 1935 S. Manchester, Anaheim, Calif. 92802 Ph: 714/537-1246

**MOON EQUIPPED LOOK TO MOON**  
ORDER FROM YOUR NEAREST MOON ADVERTISER

**NASCAR TYPE HOOD PIN KITS**  
This is the best answer for racing and utility in hood installation performance. Quick and easy to install. No need for any tools or special equipment. Includes a complete set of instructions. Guaranteed to fit all 1962-1964 Chevrolet and 1963-1964 Ford cars. Includes: 2 sets of pins, 2 sets of nuts, 2 sets of washers, 2 sets of spacers, 2 sets of lock washers, 2 sets of lock nuts, 2 sets of lock washers, 2 sets of lock nuts.

**MacKay "Iso-Ram" Weber Carb Kits**  
New low, low prices for complete set-up. Includes "Iso-Ram" MacKay manifold, four 481DA-1 Weber Carbs, fuel harness, ball bearing linkage, and carb modifications to your engine.

Kit No.	Year	Make	Model	Price
MWH-100K	1962-1964	Chevrolet	V8	\$595.00
MWM-105K	1962-1964	Chevrolet	V8	\$595.00
MWM-101K	1962-1964	Ford	V8	\$595.00

MOON EQUIPMENT COMPANY 10820 S. Norwalk Blvd. Santa Fe Springs 51 California  
CALIFORNIA SPEED & SPORT 298 Jersey Ave. New Brunswick, New Jersey  
GRATIOT AUTO SUPPLY 9146 Gratiot Ave. Detroit 13, Michigan  
RADKE SPEED & KUSTOM 6666 N. Columbia Blvd. Portland, Oregon

**NEW BELLHOUSING FOR STD SHIFT CHEV**

Not cast or welded but **HYDROFORMED** — the new Space Age process that means **ACCURACY** and **STRENGTH**. 1/4" steel. Weight 32 lbs.

\$94.00  
'66 Catalog Everything for the Dragster—only 50¢

**LAKEWOOD CHASSIS, Inc.** (216) 521-1559  
1324F Hird Ave., Cleveland, Ohio 44107

**FOX MINI-BIKES**  
Kits to Complete  
14 MODELS from \$59.50

Simple enough for even 10 year olds — they're fun and easy! Any empty lot, field, or woods is your playground. And, many models are licensable for street use. Small enough to fit in a car trunk... take it camping, to the cottage or beach it goes anywhere!

Literature FREE  
Plans, Parts Catalog \$1

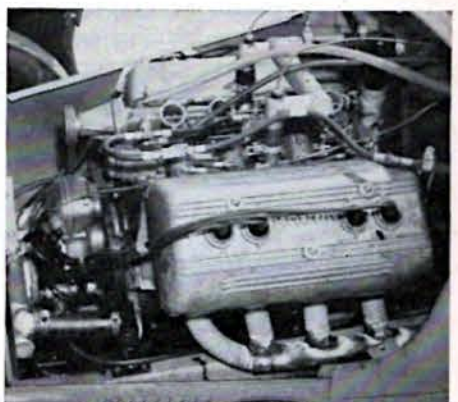
**FOX CORP.** Box 797C, Janesville, Wisconsin 53545

**THE HOT ROD STORY**  
(continued from page 72)

to go as fast as he could. Yesterday's "fast" was today's "not good enough," so he continued his search for power.

One route he went was a wild engine conversion that appeared on the scene following the war. Zora Arkus-Duntov, today, the man who is Mr. Corvette at Chevrolet but then an engineer with his brother, Yura, at the Talbor racing cars of England, was commissioned to design an overhead valve conversion unit for a fleet of Ford flathead powered garbage trucks in London. Their efforts were to produce more power for the vehicles.

Little is known as to the success of the trucks hauling English refuse with better daily e.t.'s, but the post-war era found many Ardun-(Ar-Dun) equipped flatheads hauling across the dry lakes of Southern California. Clem TeBow and Don Clark, proprietors of C&T Automotive, were among the earliest pioneers and successful users of the Ardun heads which provided plenty of power to prove their specially built C-T stroker crankshafts in actual competition. C&T Automotive and the newly discovered Ardun head were soon to become partners in one of the greatest,



One of the late entries seen at the end of the lakes meets was the Ardun OHV conversions for flatheads. This was part of the combination that C&T Automotive employed to capture the first International speed record for the hot rodding sport.

major hot rod breakthroughs in the early post-war era.

Hot rodders continued to look under every hood in their search for power. But everytime they found more power, the desire for better facilities to try it out flamed up in their minds.

By the end of 1948, officials of SCTA felt they had all the arguments they needed and launched their drive for a National championship at Bonneville.

Next month's continuation of The Hot Rod Story will feature their sensational debut on the salt and the beginning of a new phase of the hot rod sport — the thrills and excitement of organized drag racing!

**CHAPTER #2**  
COMING IN OCTOBER CAR CRAFT

**Look—what's on its way!**

"Illegal" street racing finds its way to the first California drag strips, then moves on to all points East!

Custom built street-rod are "in" and car shows are strong!

So-Cal rodders capture the Bonneville Salt Flats... and commence their assault on World Land Speed records...with backyard bombs yet!

Death of the "Immortal Flathead" as the big overheads, the Hemis, politely steal the scene!

Organized drag racing is born... and wait 'till you see the Super-Rails that gave birth to the big 200 mph fuelers of today!

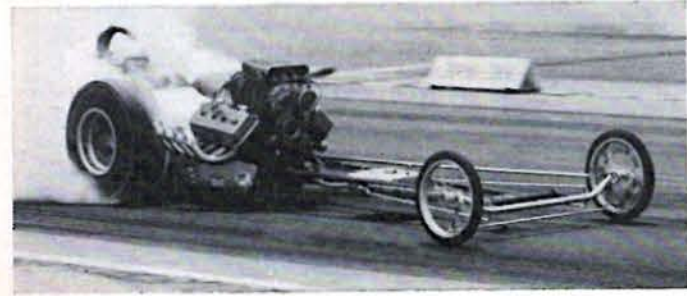
**THE HOT ROD STORY**

Hot rodders discover NITRO!

**Subscribe Today!**

START YOUR SUBSCRIPTION WITH THE OCTOBER ISSUE FEATURING THE 2nd INSTALLMENT OF THE HOT ROD STORY!

TAKE IT FROM US... THIS IS THE TYPE OF EXCITING READING YOU CAN EXPECT FOR THE NEXT 12 MONTHS! AND REMEMBER, IN ADDITION TO ALL THIS, CAR CRAFT WILL TELL YOU HOW TO GET THE MOST OUT OF YOUR MACHINE FOR STREET OR STRIP! YOU'LL GET ALL THE BEST IN ROD BUILDING TIPS, ENGINE HOP-UPS, PERFORMANCE HOW-TO'S AND CAR CLUB ROAD TESTS! PLUS ON-THE-SPOT COVERAGE OF ALL SPEED EVENTS AND FULL-COLOR ACTION PICS OF THE LATEST RODS, DRAGSTERS, STOCKS, FUELERS!



**CAR CRAFT Magazine** CC-966  
5959 Hollywood Blvd., Los Angeles, Calif. 90028

Enter my subscription to CAR CRAFT for 1 year @ \$5.00\*.  
Start my subscription with the October Issue.  
\_\_\_ My payment is enclosed.

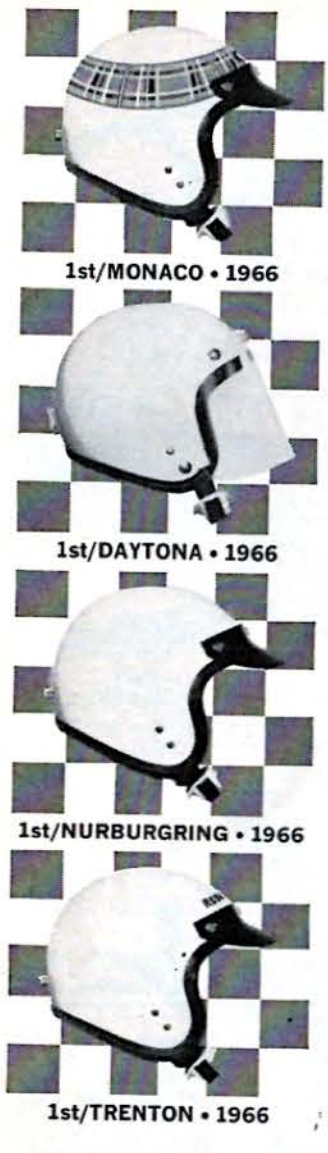
Name \_\_\_\_\_  
(PLEASE PRINT)

Street \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_ Zip \_\_\_\_\_

\*For U.S. & Possessions only. Other countries add \$1.00 for post.



# BUCO

Puts **SAFETY**  
Where the **ACTION** Is!

1st/MONACO • 1966  
1st/DAYTONA • 1966  
1st/NURBURGRING • 1966  
1st/TRENTON • 1966

**1st at "INDY" 1966**

We're not going to be name droppers, but it's true—Buco Safety Helmets are fast becoming the number one helmet in the world. We've had to pay for it though—thousands of dollars—spent in scientific research so that the Buco Helmet would be right for you in terms of protection and comfort.

Buco's total protective design stems from head injury investigation on through to impact testing that would make you shudder. So, when you think of safety helmets, think of Buco, the world's most thoroughly designed and tested helmets.

**SAFETY HELMETS • ACCESSORIES**

"WRITE FOR FREE 1966 BUCO CATALOGUE, INCLUDE 10¢ FOR 26-PAGE SAFETY HELMET RESEARCH REPORT"

"BUCO PRODUCTS • BOX 1080 NORTHLAND CENTER STATION, SOUTHFIELD, MICHIGAN 48076"

PRODUCTS

A DIVISION OF AMERICAN SAFETY EQUIPMENT CORPORATION OF MICHIGAN

## PERFORMANCE PROVEN

BIG JOHN MAZMANIAN  
STONE, WOODS & COOK  
JOE DAVIS COLT 45  
AIRISO BROS.  
TOM MCEWEN  
DON GAY

DON PRUDHOMME  
K. S. PITTMAN  
NORM CONWY  
GENE ALTIZER  
DICK LANDRY  
TOM STURM  
HEMICUDA  
BILLY HOLT  
GARY CAGLE  
JOHNNY LOPER  
JOHNNY LEIBHAM  
JEG'S AUTOMOTIVE  
BOBBY KNIGHTON  
MALCOM DURHAM  
SILLY BEAR SPL.

**B&M AUTOMOTIVE**

Hydro-stick  
Tork-flite  
Turbo Hydro  
Tork-master

Precision Adapters  
Floor Shift Kits  
B&M T-Shirt ..... \$2.00  
Specify sm. med. lge. or X-lge  
Transmission Catalog ..... 50c  
Parts Catalog ..... 50c  
Tork-Master Catalog ..... 25c  
All Three ..... \$1.00

VAN NUYS, CALIF.  
7711 Ventura Canyon Ave. Dept. CC, Van Nuys, Calif.

### HOT ROD DRAGS

(continued from page 39)

McEwen beat Clark while Edmunds was putting Swingle "on the trailer." Jerry Glenn for Winkel, Trapp and Glenn trounced Ron Rivero only to break on the run, thus allowing Rivero to come back.

By the time the final fuel round had rolled around, all other eliminator bracket racing had concluded and everyone stood waiting and watching. McEwen fired first and Rivero soon after. Both cars went to the extreme outside of their respective lanes to stage. McEwen moved up first, with Rivero following, suddenly . . . a staging malfunction, Rivero had rolled out of the staging beam, he then re-staged his powerful machine. When both of his staging lights came on, the starter began the count down—then a red light in Rivero's lane and McEwen streaked for the win. What had happened was that Rivero's car had rolled out of the beam and thus the light.

After the final race, the strip was then quiet, cars were rolled on their trailers and racing fans packed up to go home, to treat their sunburns and tired feet, something they really didn't mind getting after a great day in the Riverside sun.

CLASS WINNERS			
Class	Name	Engine	E.T. Speed
A/G	Bill Brasher, Chev	10.94	129.87
B/G	Richard Barber, Chev	11.28	120.64
C/G	Buzz Wadsworth, Chev	12.70	109.89
F/G	Desi Gamboa, Chev	15.39	90.81
G/G	Loren Sapp, Hudson	12.49	108.04
H/G	Dean Lowrey, VW	13.77	96.35
A/MP	Bob Thomson, Plym	12.44	116.27
B/MP	Jim Carr, Olds	15.69	61.39
C/MP	Walt Schumacker, Chev	12.93	109.75
D/MP	Steve Beach, Chev	13.38	104.65
E/MP	Dick Trope, Hudson	15.42	88.14
F/MP	Don Williamson, 'Vette	14.70	95.64
D/G	Vern King, Jr., Chev	15.30	91.09
A/A	Vic Rosetti, Chev	9.92	152.28
B/A	Anthony Trillo, Chev	11.23	119.52
C/A	Manuel Herrera, Chev	11.21	123.96
D/A	Kay Sissel, GMC	10.86	129.68
AA/A	Ron Mandella, Chev	9.70	149.00
A/SR	Jerry Hayes, Chev	10.88	130.24
B/SR	Roland Gravel, Chev	11.64	117.64
C/SR	Tom Stone, Buick	14.01	98.68
B/C	Ed Weddle, Chev	10.59	152.15
BB/FD	Dale Emery, Chev	8.72	157.06
CC/FD	Bob Pickett, Chev	10.44	126.76
A/FD	Gary Cochran, Dragster	9.52	162.47
B/FD	Joe Pirronello, Chev	9.48	148.78
D/FD	Dan Geiger, Ford Flathead	9.51	152.80
D/GD	Tommy Wheat, Chev	10.94	130.62
CC/G	Walt Marrs, Chev	12.31	117.95
S/SA	Harry Hailton, Plym	11.81	122.80
S/S	Butch Leal, Plym	11.54	124.12
B/S	Jess Tyree, Pont	13.08	108.58
A/SA	Tom Fox, Dodge	12.47	106.12
D/SA	Ray Lowe, Pont	13.36	113.92
A/S	Bob Spears, Ford	13.26	113.95
E/S	Ed Holman, Chev	15.50	100.03
C/S	Ron Rodhead, Olds	13.25	106.60
F/SA	Jay Hamilton, Pont	14.34	98.57
C/SA	Gordon Williams, Stude	13.25	105.20
E/SA	John Sauer, Chev	14.49	96.56
G/SA	Eric Dahlquist, Dart	15.40	90.27
H/S	John Mars, Comet	16.52	84.19
J/SA	Gary Glover, Chev	15.54	90.18
I/S	Jim Lamatrice, Chev	15.79	86.70
F/S	Ernest Warner, Chev	15.46	99.00
M/S	Ike Smith, Hudson	17.32	81.37
L/S	Larry Olney, Ford	18.03	74.76
B/FX	Mike Schmidt, Ford	13.52	104.85
C/FX	Ed Terry, Ford	13.27	105.23
G/S	Jay Watkin, Chev	14.36	98.14
O/S	Jeff Swinnerton, Plym	21.19	64.19
K/S	John Burkholder, Chev	15.59	84.26
D/XS	Steve Evans, Plym	12.52	117.18
E/XS	Jerry Burdick, Plym	None	123.97
N/S	Keith Berg, Olds	16.77	81.84
N/PS	Terry Kinsella, Falcon	22.84	60.68
G/PS	Don Alvord, Barracuda	16.43	85.50
E/PS	Robert Knapp, Ford	16.10	87.63
B/PS	Paul Flanders, Ford	15.48	95.44
C/PS	George Takli, Comet	14.77	93.07
AA/C	Lonnie Butts, Chrys	10.34	156.26
B/GD	Ken Crowe, Chev	9.96	147.70
AA/MSP	Steve Fraser, Chev	10.14	132.93
C/MSP	Gordon Chittenden, Sunbeam Tiger	13.46	105.88
A/MSP	Rusty Dellinger, 'Vette	11.30	129.87
D/SP	Art Kerr, 'Vette	13.30	105.01
A/SP	Stuart Kushin, 'Vette	12.08	120.16
C/SP	Skip Van Kirk, 'Vette	12.99	107.63
A/XS	Tom Grove, Mustang	9.33	160.15
C/XS	Ray Alley, Dodge	11.44	125.00

# 1/2 PRICE SALE!

SPECIAL WAREHOUSE CLEARANCE SALE ON AUTOMOTIVE TECHNICAL & CUSTOM BOOKS

BUY NOW & SAVE!!! COMPLETE YOUR HOW-TO-DO-IT LIBRARY WITH THIS GREAT HALF/PRICE OFFER!!!



### AUTOMOTIVE HANDBOOKS

**CHRYSLER PERFORMANCE HANDBOOK**—A look at Chrysler Corp. engines; Ramcharger & super-stocks; drive train; tune-ups; speed equipment & accessories; competition cars, 96 p. ....\$1.00

**PONTIAC PERFORMANCE HANDBOOK**—Evolution of the Pontiac engine; specialties for speed; drive train; Pontiac chassis; Tempest suspension; Pontiac competition; drivers, 96 p. ....\$1.00

**VOLKSWAGEN HANDBOOK**—testing the 1200 and 1500; "people's power"—the VW engine; supercharging; other modifications; high-speed handling; Kombi to Campmobile, 96 p. ....1.00

**STOCK CARS FOR THE DRAGS**—Super tuning, chassis and transmissions, classes and cars, experimental models, all on modifying stocks for drag action. All 1963 super stocks, 96 p. ....\$1.00

**HOW TO BUILD A HOT ROD**—Basic rodding techniques; construction tips; how-to-do-its; engines; gearing; frames; chassis; body work and detailing; brakes; steering, 96 p. ....\$1.00

**SPEED TUNING AND TROUBLE SHOOTING**—Tuning principles; carburetion, ignition, valve timing; dyno testing; super tuning; economy tuning; chassis tuning, 96 p. ....\$1.00

**HOT RODDING THE COMPACTS**—Ways to hot rod Corvair, Falcon, Tempest, Lancer, Valiant, Lark, Rambler, F85 Olds, Buick Special. Engine swaps, turbo supercharging, 96 p. ....\$1.00

**AMT MODEL CAR HANDBOOK**—Complete handbook for model enthusiasts. How to build and customize stocks, rods, dragsters. How to stage model car shows, 96 p. ....\$1.00

**MODEL 'A' HANDBOOK**—photos of all models produced, listing prices, number of cars built. Big photo section on modifications; rebuilding & restoring; full factory specifications, 96 p. ....\$1.00

**BODYWORK, FINISH, DETAILING**—There's more to a hot rod than the engine, and this book gives you all the facts and how-to's for building a winning hot rod body, 96 p. ....\$1.00

**CHASSIS, BRAKES, SUSPENSION**—A fact filled book with easy-to-follow how-to's to help prepare your machine for street, strip or track, 96 p. ....\$1.00

**CAMS, VALVES, IGNITIONS**—Tells how to super tune for maximum performance. Covers: cam shafts, valve timing, high performance ignitions and exhaust tuning in detail. 96 p. ....\$1.00

**REMEMBER—STOCKS ARE LIMITED—SEND YOUR ORDER TODAY!**

### AUTOMOTIVE YEARBOOKS

**HOT ROD YEARBOOK NO. 1**—Getting most out of super-stocks; math & formulas for hot rodders; drag chutes; hot ignition; transistors; mag wheels, 1961 National champions, 224 p. ....\$2.00

**HOT ROD YEARBOOK NO. 2**—New super stocks; latest floor shifts; 4-speeds; welding secrets; Bonneville—flatheads to jets; hot rod showcase; 1962 Nationals & NHRA record, 224 p. ....\$2.00

**HOT ROD YEARBOOK NO. 4**—New techniques for high performance ignitions, roller bearing cams; semi head engines and much more. Big pictorial showcase on hottest cars, 224 p. ....\$2.00

**CUSTOM CAR YEARBOOK NO. 1**—Basic customizing: beginners & experts; detailing; engine glamour; interiors; show classifications; meet the pros; showcase pictorial, 224 p. ....\$2.00



### TECHNICAL & CUSTOM MANUALS

**S-506/CUSTOM CAR GRILLES**—How to swap & install custom grilles; new designs; new methods; expanded metal; plastic; tubes, 64 p. ....25¢

**S-510/HOT ROD ENGINE SWAPS**—Out with the old; mounting the new; choosing transmission; fuel, ignition, exhaust systems, 64 p. ....25¢

**S-520/STEERING AND CHASSIS**—Frames; rear ends; front ends; steering; shocks; springs; new trends in chassis design, 48 p. ....25¢

**S-526/20 TOP CUSTOMS**—George Barris picks the top twenty; loads of pictures featuring Forcasta, Golden Sahara & 18 more, 64 p. ....35¢

**S-527/CUSTOM WHEELS & LOWERING**—Leaf and coil spring lowering; C and Z frames; glamour, chrome & wire wheels; caps, 64 p. ....35¢

**S-528/DASHBOARDS & DETAILING**—Mylar tapes, push-button latches; crackle, smoked, spider-web finish; Silgard, Sutone, muffs, 64 p. ....35¢

**S-529/SCOOPS AND SCULPTURING**—How-to data on cowl fender, skirt, trim scoops; molded rear and front fenders, doors. Skirts, 64 p. ....35¢

**S-530/CUSTOM CAR ENGINES**—Detail an engine; chrome; fancy covers and wiring, firewall treatment; custom accessories, 64 p. ....35¢

**S-531/CUSTOMIZING WITH FIBERGLASS**—All about fiberglass—filling to complete bodies; tops, buckets seats, fenders, repairing, 64 p. ....35¢

**S-532/CUSTOM PICKUPS**—Famous pickups and show trucks; tarps; taillight & roll pan styles; Caminos and Rancheros, 64 p. ....35¢

**S-533/CUSTOM HOT RODS**—How-to-do-its for custom rods, and pictorials on sedans, roadster pickups, T & A and other favorites, 64 p. ....35¢

**S-534/CUSTOM HEADLIGHTS & FENDERS**—Split-level quads; show covers; Lucas lamps; futuristic headlights, sculptured fenders, 64 p. ....35¢

**S-535/HOT RODDING THE FORD V8**—Ford story; 221, 260, 289, 332, 352, 406, 427 engines. Modifying Fairlane, Galaxie. Tuning, 64 p. ....35¢

**S-536/CUSTOMIZING THE MODEL A**—Front, rear interior customizing; coupe and roadster pictorial; competition rods; woodies, 64 p. ....35¢

**PAY ONLY 1/2 LISTED PRICE!**

**PETERSEN PUBLISHING COMPANY • 5959 Hollywood Blvd., Los Angeles, Calif. 90028** **1/2 PRICE SALE!** CC-966

Please send the books that I have checked. My full payment (1/2 total listed cost) of \$\_\_\_\_\_ is enclosed. (MINIMUM REMITTANCE: \$1.00)

<input type="checkbox"/> \$1.00 CHRYSLER PERF HANDBOOK	<input type="checkbox"/> 25¢ S-506 CUSTOM CAR GRILLES	<input type="checkbox"/> 35¢ S-530 CUSTOM CAR ENGINES	<input type="checkbox"/> 35¢ S-537 HOT RODDING THE BUICK
<input type="checkbox"/> \$1.00 PONTIAC PERF HANDBOOK	<input type="checkbox"/> 25¢ S-510 HOT ROD ENGINE SWAPS	<input type="checkbox"/> 35¢ S-531 CUSTOMIZ'G W/FIBERGLASS	<input type="checkbox"/> 35¢ S-538 MODEL CARS
<input type="checkbox"/> \$1.00 VOLKSWAGEN HANDBOOK	<input type="checkbox"/> 25¢ S-520 STEERING AND CHASSIS	<input type="checkbox"/> 35¢ S-532 CUSTOM PICKUPS	<input type="checkbox"/> 35¢ S-539 10 TOP HOT RODS
<input type="checkbox"/> \$1.00 STOCK CARS FOR THE DRAGS	<input type="checkbox"/> 35¢ S-526 20 TOP CUSTOMS	<input type="checkbox"/> 35¢ S-533 CUSTOM HOT RODS	<input type="checkbox"/> 35¢ S-546 CUSTOM FORDS
<input type="checkbox"/> \$1.00 HOW TO BUILD A HOT ROD	<input type="checkbox"/> 35¢ S-527 CUSTOM WHEELS & LOW'G	<input type="checkbox"/> 35¢ S-534 CUSTOM H'LIGHTS & FENDERS	<input type="checkbox"/> 35¢ S-547 HOT ROD'G PLYMOUTH
<input type="checkbox"/> \$1.00 SPEED TUNE & TRBL SHOOT'G	<input type="checkbox"/> 35¢ S-528 DASHBOARDS & DETAIL'G	<input type="checkbox"/> 35¢ S-535 HOT RODDING FORD V-8	<input type="checkbox"/> 35¢ S-548 CUSTOM COMPACTS
<input type="checkbox"/> \$1.00 HOT RODDING THE COMPACTS	<input type="checkbox"/> 35¢ S-529 SCOOPS & SCULPTURING	<input type="checkbox"/> 35¢ S-536 CUSTOMIZING MODEL A	
<input type="checkbox"/> \$1.00 AMT MODEL CAR HANDBOOK			
<input type="checkbox"/> \$1.00 MODEL "A" HANDBOOK			
<input type="checkbox"/> \$1.00 BODYWORK, FINISH, DETAILING			
<input type="checkbox"/> \$1.00 CHASSIS, BRAKES, SUSPENSION			
<input type="checkbox"/> \$1.00 CAMS, VALVES, IGNITIONS			

(THIS IS YOUR MAILING LABEL — PLEASE PRINT CLEARLY IN INK)

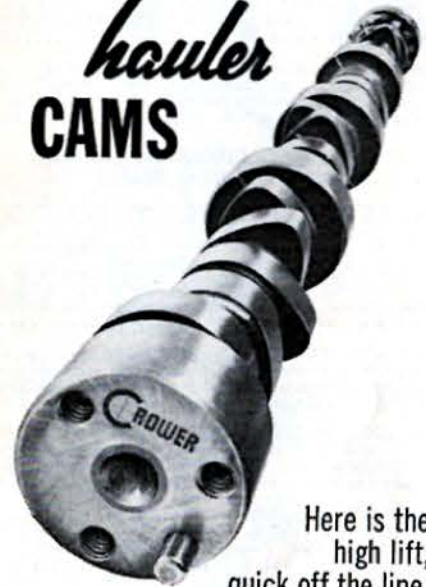
From: **PETERSEN PUBLISHING CO.**  
5959 Hollywood Blvd.,  
Los Angeles, Calif. 90028.  
SPECIAL FOURTH-CLASS RATE

TO: \_\_\_\_\_  
STREET: \_\_\_\_\_  
CITY: \_\_\_\_\_ STATE: \_\_\_\_\_ ZIP: \_\_\_\_\_

NOTE: All books subject to prior sale—We reserve the right to substitute.

• BOOKS •

# CROWER hi-draulic hauler CAMS



Here is the high lift, quick off the line,

top end power Cam that brings you first to the lights. The Crower Hi-Draulic Hauler is the Hydraulic Lifter Camshaft with the winning ways built in. Silent Power. Engineered for use with stock valve train components to coax every ounce of power from every drop of gas. Declared Unbeatable at Drag Strips everywhere. Available in all grinds with up to .525 lift! Don't wait for your competition to pull a hole job on you, YOU be first with the winner... check out the Crower Hi-Draulic Hauler today. Ground on new billets. A MUST for competition stockers determined to win. Full list price only \$80.00.

## THE FABULOUS CROWER IMPERIAL

fully rollerized Camshaft continues to trailer competition everywhere. Stuff a Crower Imperial Cam in a competition engine, add a driver with a will to win, and ADD UP THE WINNINGS. You can join Garlits, Kalitta, Hoover, Leavitt, Lechien and many other top money winners. The difference between you lose... and YOU WIN... may well be the extra horses the Imperial hands you as a bonus as it wipes out friction... and... you can forget timing chain problems forever. The Imperial installs like stock, no machining of the block is necessary, stock cam bearings remain in place. The Crower Imperial is the exclusive Cam that takes the friction out of the valve train. Complete Imperial Roller Cam and Kit \$450.00 list price. Camshaft only, roller, flat or hydraulic tappet \$300.00 list price.

Foreign and Sports Car Owners here's good news. The Crower Imperial is now available for your engine. That's right, the same "live bearing" cam used by winners in Oval Racing, Dragsters, Super Stocks and Marine Racing is now ready for you. NEW Steel Billet Imperial Cam, roller or flat tappet, for any 4 cylinder engine \$210.00 list price. NEW Complete Cam and Kit, roller or flat tappet, with aluminum roller tappets, push rods, dual springs and retainers, for any 4 cylinder engine \$350.00 list price. Racing Regrinds: A new winning profile ground on your stock cam, you select from over 30 grinds available, from \$45.00.

RACERS: We're here to help you run better and faster in ALL classes and types of racing. If you have a question on Cams call Bruce or Dave Crower today 714/422-1178.

1966 catalog \$1.00. 2 decals, catalog \$3.00. T-shirt (what size, please?), 6 assorted decals, 4 Iron-Ons, Catalog \$5.00.

Phone 714/422-1178

# CROWER

CAMS AND EQUIPMENT CO.  
3333 Main St., Chula Vista 16, Calif.

## DRAGGIN' SPRINGS

(continued from page 41)

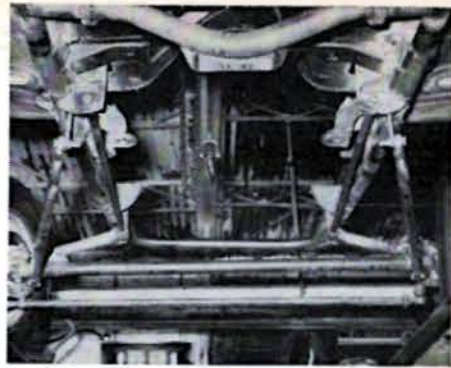
much success on drag cars; including gassers, altered, funny cars and roadsters. They offer one big advantage; reduced weight—the average coil weighing less than half an elliptic spring. The coil overall size is such that it can be easily fitted in small working areas, and it is the ideal container for that effective pre-loading device, the air bag. In addition, the coil spring has more than twice the stored energy (inch pounds) per pound of spring material than the leaf spring.

Selection of the proper coil spring to use is much the same as with leaf springs: just enough to support the car. However, the spring must be long enough that the coils do not bind on maximum rear end travel, which for an average street class drag car will be about three inches.

Renault, Borgward, Corvair, and similar lightweight compacts have provided coil springs for drag cars not so equipped, with the units being mounted as far toward the end of the axle housing as possible. In this way, the slightest deflection of the tire makes a rather similar deflection to the spring.

Cars running coil springs at the rear generally use an air bag (Air Lifts) to load the right rear wheel. This is accomplished by running more bag air pressure over the right wheel. This is necessary to provide even traction through both rear tires, since torque loading from the engine tends to shift body weight to one side. Another method that can be employed where coil springs are used with respect to jacking weight is to employ springs of different "return rates." But the many variables available with the Air Lift bags cannot be had in this instance.

With exception of cars already equipped with coil springs and A-frames up front, few drag car builders have ever resorted to them as a means of suspending the front axle assembly. Two simple suspension systems are most commonly used with tube or I-beam front axles under the majority of drag cars today. These are the long standard *transverse semi-elliptic* spring, of the type used on Ford and Mercury passenger cars until 1948, and the twin *parallel semi-elliptic* springs as used on many other passenger cars until the independent A-frame arrangements became prevalent. Just a few words to clarify the terminology used in relation to these spring types should be in order as I've noticed in the past that many rodders frequently refer to *quarter-elliptic* springs as *semi-elliptics*. *Full-elliptic* springs would be where you had two leaf type springs joined together, forming a football shape when viewed from the side. The bottom spring would be attached to the axle



The suspension arrangement Steve Bovan is using is simple, light-weight and ideal for dragging. Morris Minor torsion bars allow weight jacking on his '65 Chevy II.

whereas the upper one would be attached to the frame, both from the centers, leaving their joined ends free. A *semi-elliptic* situation is had where only one, or two springs mounted independent of one another, are used. These springs would, of course, form a single curve, or a half-football shape. When mounted across the front, or rear, of the frame, then this single spring is called a *transverse semi-elliptic* (this is the type Ford employed through 1948). Where two are used, one on each side of the frame running parallel with the frame main rails, then you would have *parallel semi-elliptic* springs. Chop one of these units in half, have a half spring made up, or use one from a Crosley rear end, and you have what is called a *quarter-elliptic* spring. If you want to get scientific about the whole thing, none of these configurations are truly full, semi or quarter-elliptical in shape, but since the similarity is there, and it sounds so much more technical in nature than referring to your springs such as: "I'm running semi-footballs in front and quarter-footballs in the rear" that you can't blame the persons who first pinned this name of them.

Like the aforementioned coil springs, with or without Air Lift bags, any of the elliptical forms of springs can also be designed to "jack" weight. This is performed simply by the addition, or subtraction, of spring leaves on one side or the other. This is possible only where you run parallel springs, however.

All Chrysler and FoMoCo products running on the street and strips feature parallel semi-elliptic springs at the rear but while both are similar in design (semi-elliptic), the similarity ends right there with respect to drag racing. Practically all of the FoMoCo's, both private and factory backed entries, are equipped with what are commonly referred to as traction bars, lift bars, stabilizer bars, torque bars, etc. In order, these terms, by their very names,

(continued on page 80)

**IF YOU WANNA SEE THAT PENSION.....YOU'LL BE GETTIN THAT "ROTH CATALOG" TO ME,, PRONTO!!!**

Let's face it... the kats wot delivers our mail, has got to be cool, straight, people makin' it thru all of that snow, and hail, and being put down by all the crazy mucks wot don't dig cowhide mail sacks to begin with. Outa sight man! So if da catalog wot ya ordered is late, or fer some other reason delayed, cool it kats, and don't come on strong wid some off da wall jazz wot's gonna put down da man in blue, cause he's puttin' lotsa miles on dem feet every day. Hooray. All you cats wot orders a surfin' kap during the month of September, "Big Daddy Roth" is gonna send you a free present which is a Japanese flag decal. Banzai!

"13" Good Luck Necklaces worn by all "bad motorcycles" (cool cycle cats), which feature a large 1 1/2" x 1 1/2" and a 20" chain to go around your neck, or wear it as an earring, or put it on your motorcycle jacket! The 12th letter of the alphabet is M which stands for Mother \$1.00

FREE JAPANESE FLAG DECAL WITH EACH SURF HELMET

## Ed 'BIG DADDY' ROTH

4616 Slauson Ave. Maywood, California

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_

SWEAT SHIRT: \$3.98     T-SHIRT: \$1.98

SMALL     MEDIUM     LARGE     X-LRG.

DESIGN: \_\_\_\_\_

NAME, NICK NAME, MOTTO, ON FRONT OF SHIRT

10¢ PER LETTER:

1966 1/2 A.D. CATALOG: 50¢     LUCKY "13" NECKLACE EA. \$1.00

ANY ROTH DESIGN ON 17"x22" PAPER: 50¢ ea. DESIGN: \_\_\_\_\_

3 inch DECAL: 50¢ (AVAILABLE ONLY IN DESIGNS SHOWN WITH ASTERISK (\*))

DESIGN: \_\_\_\_\_

PLASTIC SURFIN CAPS     BLACK PLASTIC \$2.00

METAL FLAKE     SILVER     GOLD     RED

BLUE     GREEN     \$3.50     CHROME \$3.50

SATISFACTION GUARANTEED

BIG DADDY PAYS POSTAGE ON ALL ITEMS. CANADIANS ADD 50¢    SORRY! NO C.O.D.

78 CAR CRAFT □ SEPTEMBER 1966

CAR CRAFT □ SEPTEMBER 1966 79





# T-Shirts by MAY/POY



**ALL NEW: MAL'TEASE CROSSES**  
MADE FROM DURABLE METAL - NOT CHEAP BENDABLE JUNK!  
STILL ONLY \$1.00 each

**SURF & PIT HELMET**



**T-Shirts \$2.00 each**  
MAY/POY pays postage



self adjusting liner fits all head sizes  
**Your Price \$2.95**  
we pay postage

Send to: **MAY/POY** of California, Dept. C-9  
3143 N. San Gabriel Blvd., San Gabriel, Calif.  
Check T-Shirts for size:  S  M  L  XL  
Send me: T-SHIRT No. \_\_\_\_\_  
SURF & PIT HELMET   
MAL'TEASE CROSS   
Enclosed \$ \_\_\_\_\_  
Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_  
Dealer Inquiries Invited.



**New SPEED & CUSTOM CATALOG!**  
**FREE!** with any order 1966 1/2  
Hundreds of new items, at lowest prices or send 25c to cover handling and postage... See the "Latest" from every Speed & Custom Manufacturer... New items... New ideas... Get Yours Today!

ISKY • OFFY • CASLER • HURST • DRAGFAST • EDELBROCK • ERSON • SCHIEFER • STEWART-WARNER • MALLORY • HAYS • WEBER • MICKEY THOMPSON • ASTRO • SUN • SEGAL • CRAGAR • and others.

NEWHOUSE AUTOMOTIVE INDUSTRIES, Dept. C-9  
5805 E. Beverly Blvd., Los Angeles, Calif. 90022  
Please Rush NEW Newhouse Speed & Custom Catalog.  
Enclosed find 25c for handling, postage.  
NAME \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_  
CAR & YEAR \_\_\_\_\_

**COMING NEXT MONTH - In Full Color**  
**AMT's "Piranha"**  
**"Dyno Don" Nicholson's Comet**  
**IN CAR CRAFT**

## HOME WORKSHOP ARC WELDER!



ELECTRIC WELD BRAZE, SOLDER, CUT ALL METALS - LIFETIME BURNOUT GUARANTEE - 10 day money back trial. Works on any 110 volt "Plug in." Welds up to 1/4" steel with 1/16" to 1/8" rods. EXTRA Special twin pressure type arc torch (shown) develops up to 10,000 deg. heat - HAS A MILLION USES - for CARS - HOME - FARM - FACTORY. No experience needed - FREE Welding book teaches YOU. Thousands of users.  
**SEND ONLY \$2.00** (Cash, Ck., MO) and pay postman \$12.95 COD. Pkg., or send \$14.95 for P.P. Del. in USA. COMPLETE ready to use with 12 ft. H.D. Cables, Arc torch rod holder, carbons, welding and brazing rods, flux solder, work clamp and full face mask. **FREE EXTRA** "Dark" eye goggles - If you order at once. **THIS BEST FOR THE MONEY** welder sold ONLY by **MIDWAY WELDER**, Dept. DKM-9, Kearney, Neb.

## ATTENTION PONTIAC LOVERS!

GTO & PONTIAC HEADERS IN STOCK - IMMEDIATE DELIVERY (THESE HEADERS FIT!!)  
Traction Bars, Tow Bars, Functional Air Scoops for GTO's & Suspension Packages  
"Bobcat Packages" mailed anywhere  
**"Hard to get Pontiac parts our specialty"**  
Completely reworked Tiger Hydro's  
Special prices on any new cars!!  
Racers or regular cars to anyone!!  
Write or Call:  
**DICK JESSE RACING ENTERPRISES**  
12105 Hamilton, Box CC, Highland Park, Michigan  
AC 313 865-4422 or 868-0220  
Home of the original GeeTo Tiger & the World's fastest unblown GTO

## DRAGGIN' SPRINGS

(continued from page 80)

a blown, fuel 396 engine and employs a pair of Morris Minor torsion bars on the tube front axle.

Stock bodied cars when outfitted with coil springs at the rear are also equipped with an anti-sway bar and rear end stabilizer bars. The former prevent the body from moving sideways over the rearend while the latter prevent the axle housing from attempting to shift fore and aft. Naturally, anytime coils are added to the rear of a car not formerly equipped with them, both of these components must be utilized. An anti-sway bar is connected to the chassis at one side over the rear end while its opposite end is connected to the axle housing on the other side.

With regards to an anti-sway bar system, another means that is much better, performing the same function with more finesse, is the Watts linkage arrangement. It consists of two bars and a shorter "scissor" bar in the center which pivots on a post. One bar is connected to one side of the chassis, extending to just beyond the rearend vertical centerline. The other bar attaches to the axle housing, on the opposite side of the car, and extends to just beyond the rearend centerline. These bars are usually about 8 to 10 inches apart and though parallel to each other, are on opposite sides of the rear end in relation to one another. The inner ends of the bars connect to the centrally located "scissor" bar which pivots about a bolt attached to a bracket on the rearend centersection. As the rear end moves up and down, the two horizontal bars maintain their attitude at all times while the smaller "scissor" bar moves from its near vertical static position to a near horizontal one. Each time the axle housing moves, this pivoting bar goes through its scissor-like movements. The major difference between this arrangement and the single anti-sway bar is that Watts linkage maintains the body in the exact longitudinal plane it is in at all times. A single bar, because it swings on an arc, will tend to induce some amount, however slight, of body side movement as the rearend functions up and down under the chassis.

In brief, this is the story on what's happening beneath those drag chassis, with respect to suspension engineering. There is a tremendous area here that the serious rodder can work with, and if he takes the time to consider what he wants from his chassis, what other people (especially factory engineers) have done to achieve the same thing and what effect any changes will have on his car, he shouldn't have any problems getting that power on the pavement, not once but time and again, and with race winning results.

# ISKY • VERTEX • HILBORN • WEIAND • ENGLE

**NORTHSHORE Speed and Auto, Inc.**  
**"CHICAGO'S FOREMOST SPEED DEALER"**



IMMEDIATE DELIVERY • ALL ITEMS POST PAID • LARGEST DISCOUNTS



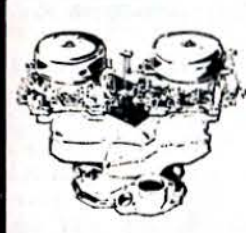
**GET OUR GIANT ILLUSTRATED CATALOG NOW!**

**25c**



# SPECIALS

Please RUSH ME MY COPY of your GIANT illustrated Catalog  
I enclose 25c for catalog, or 50c for catalog and 2 decals, \$1.00 for catalog and 6 decals (refundable with the first \$1.50 order).  
NAME (Print) \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_



**NEW 1966**  
Weiand Dual Quad Ram Log Manifold for 283-327 Chevys, with your choice of "A", "B", "C-1", "D", or "E" AFB Carbs, Linkage & Chromed Air Cleaners.  
**SPECIAL \$154.50 ppd.**



**4 RADER WHEELS**  
**4 BULLET SPINNERS**  
**20 LUGS List \$200**  
Now \$125.95 ppd.  
(Guaranteed for one year)

**HI RISER MANIFOLDS FOR 327 CHEVY, 289 FORD... ONLY \$51.20**



NOTE: Satisfaction guaranteed or money promptly refunded.

**DECAL SPECIALS**  
5 ISKY DECALS . . . \$1.00  
5 CRANE DECALS . . \$1.00  
5 JAHNS DECALS . . \$1.00  
5 CROWER DECALS . \$1.00  
ASSORTMENT OF 20 DECALS . . . \$3.50

# ORDER NOW!

**NORTHSHORE Speed and Auto, Inc.**  
3749 W. FULLERTON AVE. • Dept. CC9 • CHICAGO, ILLINOIS 60647  
Phone **252-5860**  
Area Code 312

OFFENHAUSER • MALLORY • MOON • WEBER



## Here's the most complete 'cycle book ever published

WRITTEN BY TOP AUTHORITIES AND CHAMPIONS  
... PLUS THE EDITORS of HOT ROD Magazine!  
IT'S THE MOST UP-TO-DATE GUIDE TO A TRULY  
GREAT SPORT — AND HOW TO ENJOY IT!

**CYCLING PASTIMES.** You'll learn how to enjoy every popular  
cycling pastime — Road Riding, Touring, Trail Riding,  
Hill Climbing, Hunting and Fishing Trips!

### 29 Chapters

**COMPETITION SPORTS**  
Know the official rules and  
learn how to participate  
in all the exciting  
competition sports —  
Enduros, Hare & Hounds,  
Scrambles, Smooth Track,  
Road Racing, Drag Racing  
and Speed Trials!

**MOTORCYCLE CATALOG**  
A complete catalog section  
tells you all about every  
known make of motorcycle



### 192 Pages

— its use, performance  
possibilities, complete  
specifications and prices!

**PERFORMANCE HOW-TO'S**  
Modification tips for top  
performance, speed and  
power for both 2 and 4  
stroke engines... PLUS  
repair how-to's  
for all the problem areas  
in your machine!

**\$2.00**

IT'S A "MOTORCYCLOPEDIA"!

AT ALL NEWSSTANDS NOW — OR ORDER YOUR COPY BY MAIL TODAY!

PETERSEN PUBLISHING COMPANY  
5959 Hollywood Blvd.  
Los Angeles, Calif. 90028



I enclose \$\_\_\_\_\_ in full payment.  
Please send \_\_\_\_\_ copies of the  
MOTORCYCLE SPORT BOOK at \$2.00 ea.

CC-966

Below is your mailing label — Please print clearly in ink.

From: PETERSEN  
PUBLISHING CO.  
5959 Hollywood Blvd.  
Los Angeles, Calif. 90028  
SPECIAL  
FOURTH CLASS RATE  
BOOKS



to:

Address \_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_

Zip \_\_\_\_\_

### TIGER FROM TEXAS

(continued on page 45)

well doesn't use chrome-moly tubing for his frames.

The main tubing is 2 inch o.d. with .060" wall with secondary tubes 1 1/4 o.d. x .060". The roll cage is 2 inch tubing with .105" wall. The entire frame weighs 160 lbs., which is 100 lbs. lighter than standard GTO frame.

Front suspension under Don's GTO is a dropped steel tube axle, 2" x .156" wall, hung on a single transverse spring. To keep it steady, 20 degree positive caster and 70-30 Monroe heavy-duty shocks are utilized. The steering unit is a Corvair aluminum steering box for minimum weight. Ford spindles are used for the front end.

The rear suspension is almost a duplicate of a MoPar S/S rear end. The basic rear axle is a 1957 Pontiac — chosen mostly because it has a narrow 57 inch tread width that allows big slicks inside the stock GTO fender wells. The Pontiac axle is suspended on standard Plymouth Super/Stock rear leaf springs (6 leaf), but with the axle mounted 2 inches farther forward from the stock mounting point. Traction arms are not used, Howell states, because a little torque flexibility is needed to cushion the initial take-off shock.

The rear suspension is completely adjustable for optimum bite off the line. The front spring eyes can be moved up and down a total of six inches (by a series of holes in the mounting plates), rear shackle length is variable, location of pinion bumper and moving one spring eye relative to the other are all possible. Monroe 50-50 shocks will be used to start with.

Don Gay's Infinity II GTO has a wheel base of 109" with the front wheels set forward an equivalent 7" and the rears forward 13". The body is set back 7". This setup should put at least 55% of the static weight on the rear wheels.

The standard body was completely stripped of every shred of upholstery, dum-dum, sound deadener, undercoating, glass, plastic, and all the wiring and instrument panel. Then out came the firewall, floor pan, fender wells, and much of the steel bracing inside the body shell. The torque box across the cowl had to be sectioned to clear the set-back engine; but was then reinforced with sheet steel. But the rest of the firewall, floorpan and fender wells were replaced with sheet aluminum. Plexiglass windows are used.

Don picked up his GTO and headed for Texas to install the '66 Pontiac 421 cubic inch High Output engine, originally delivering 376 hp. A pair of super-duty '63 Pontiac heads replaced the '66 models, though the latter are well-designed, because they are better suited to use on a blown fuel engine.

Inside the engine, Gay runs a set of Mickey Thompson forged aluminum

CHEVROLET

Ford



Mercury



## CYCLONE HEADERS give you BONUS H.P. in any engine

Bolt on a set of Bonus Horse Power Cyclone Headers and watch your e.t. drop! Cyclone Headers are engineered to hand you BONUS H.P. Designed for Bolt-On installation, no modifications of any kind needed. You install easily because Cyclone Headers Fit... they're engineered for best street-strip use... engineered for performance... they work!

Manufactured from Prime Materials, mandrel bent for absolutely wrinkle-free construction to give you unrestricted exhaust... Bonus Horse Power. And, your dealer has a set of Cyclone Headers to fit most popular cars... in stock NOW.

### WELD-EM

Header Kits, invented by Cyclone, are the do-it-yourself headers that are completely fabricated, ready for you to weld. Kit has every part you need to make your own headers... you do the welding and you do the saving. Available in semi-finished form with header flanges and collector flanges Heli Arced or in complete Kit form. You choose form best for you. Has identical components that go into custom engineered headers. Cost about half, you follow easy directions included with each header.

Send \$1.00 for complete header catalog, Decal, Header Tips Brochure, your dealers name and address, Weld-Em details.

**CYCLONE**  
AUTOMOTIVE PRODUCTS  
3401-D Winona, Burbank, California 91502  
phone 213/849-2166

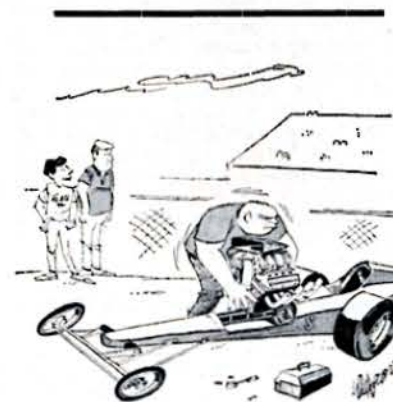
rods with Forgedtrue pistons and rings. The heart of the Poncho is a Crane roller billet camshaft, grind #298R, running .563" net valve lift. A Crane valve train kit, including lifters, retainers, pushrods, etc., are also utilized. Both intake and exhaust valves are custom chrome stemmed racing products by Donovan Engineering. Other head work consists of a fine port job by Crane Engineering. The heads were O-ringed.

An M/T aluminum blower manifold with port injection mounts the Gimmy blower which in turn takes an Enderle fuel injection system. Both supercharger end plates and drive system are M/T products. Firing a methanol/nitro mix is a Joe Hunt Scintilla Vertex magneto and Champion spark plugs. On the exhaust side of the ledger, we find Gay using a set of Doug's headers. James Osteen and Gene Massie, engine builders and mechanics, maintain both engine and car, a full time job when you're on tour.

A deep sump oil pan of 10 quart capacity was manufactured to hold that amount of SAE 40 Pennzoil and necessary amounts of STP additive. The entire reciprocating assembly was dynamically and statically balanced by Houston Engine and Balancing Service. Backing up this massive power plant is a modified '66 Turbo-Hydro trans, the work of noted racing transmission builders, B & M Automotive.

At this writing, Gay's greatest triumph came at the NHRA Springnationals in Bristol, Tenn. when he captured the CC/Fuel Dragster class. Don's best performance at this meet was 160 mph with an e.t. of 9.10 seconds. Since he only had the car in operation for a couple weeks before this meet, there is no doubt that he'll soon be in the eight's with his top times in te 170 mph bracket.

Infinity II looks so much better — like this machine was built to run — so we know it will. It's one of the most attractive funny cars campaigning now, and it's bound to be one of the most spectacular.



"He's a big dumb Ox, but good to have around."

# HOT PRICES

FROM THE WORLD'S LARGEST HOTROD SHOP



IT'S HERE!

NEW 1966 SUPER-DISCOUNT CATALOG FROM GRATIOT—(100 PAGES) SEND \$1.00 (REFUNDABLE 1st \$10.00 ORDER) FOR CATALOG & DECALS.

- 1) new chev. b.w. 2.20 4 speeds ..... 210.00
- above with hurst linkage ..... 265.00
- 2) new chev. muncie 2.20 4 speeds ..... 225.00
- above with hurst linkage ..... 280.00
- 3) new ford 4 speeds ..... 195.00
- above with hurst linkage ..... 250.00
- 4) new '65 chev. big heads 327-365 h.p. complete with valves, springs & retainers 2.02 in. .... 125.00
- 5) new duntov f.i. cam & solid lifters fits 265-283-327 chev. .... 34.95
- 6) new 327 chev. empty blocks ..... 88.00
- 7) new big chev. holly-4 bbl. 1-3 16 prim. 30.00
- 8) new afb carbs — 1-3 16 prim. .... 27.95
- 9) chev. 283-327 dual-quad ram-log manif. comp. w/ carbs-air cleaners & linkage 150.00
- 10) new 265-283-327 std. .010 & .020 under rod & main racing bearing kit... 14.95
- 11) new 260-289-hi-rise manifold ford ... 54.95
- above w. afb or holley carbs ..... 85.00
- 12) new 340 h.p. steel chev. single quad manifold ..... 28.00
- above with afb carbs ..... 58.00
- 13) new chev. 4.56 ring & pinion gears ..... 29.95
- 14) new chev. 4.88-5.12-5.38-r&p gears ..... 49.95
- 15) new chev. ('65 only) 4.56 pinions ..... 39.95
- 16) new chev. orig. equip. 4 sp. linkage... 19.95
- 17) new chev. 10 1/2" 3200 lb. racing clutch & disc ..... 34.95
- 18) chev 265-283-327 alum. valve cov. pr. 14.95
- 19) new 310 mo-par cam & lifters fits 361-426 c.i. .... 110.00
- 20) dual quads compl. all cars (w. afb's) 14" or 15" ..... set 79.95
- 21) 4 super-reversed-wheels, all cars, 14" or 15" ..... set 12.95
- 22) Elec. fuel pumps—12 v or 6 v ..... 12.95
- 23) '55 chev. and '64 falcon glass kits frnt. fndrs-doors, hood-trunk ..... 149.95
- 24) chev. '55-'64 4.56-4.88-12-5.88-posi units ..... comp 125.00
- 25) new chev-365 hp-327 short blocks with 11 to 1 comp. ratio ..... 250.00
- 26) mo-par chrome valve covers 361-426 c.i. .... pr 12.95
- 27) chev-265-283-37a" & 4" pop-up pistons set of 8 + pins ..... 39.95
- 28) chev. 4" racing chrome rings ..... set 12.95
- 29) 426 in. & ex. valves for mopar's ..... ea 1.00
- 30) gt 350 heavy duty shocks frt. & rear ..... 29.95
- 31) set of 4 fits all mustangs ..... 45.00
- 32) new quadra-jet carbs ..... set of 4 119.95
- 33) m. thompson 5-spoke whls. .... set of 4 119.95
- 34) ford-chev mustang glass hi-rise bubble hood ..... 75.00
- 35) glass hi-rise bubble only-all cars ... 29.95
- 36) 289" mustang headers 4 port ..... 74.95

SEND CHECK OR MONEY ORDER — OR WE'LL SHIP C.O.D. WITH A 25% DEPOSIT (MICH. RESIDENTS ADD 4% SALES TAX)

SEND TO "WHOLESALE DEPT." OF...

gratiot  
auto  
supply

9146 GRATIOT  
DETROIT 13, MICHIGAN  
AREA CODE 313-WA. 1-6692

FROM THE PAST  
COME THESE  
TWO STORIES....

....CLOSER THAN  
PAGES IN A BOOK



20 YEARS OF COMPETITION EXPERIENCE  
MAKES AVAILABLE THE BEST RACING  
CRANKSHAFTS OBTAINABLE.

Send 50c for your **GT** catalogue -  
it tells the story.

**GT**  
AUTOMOTIVE

7253 LANKERSHIM BLVD.  
BOX 102  
NORTH HOLLYWOOD,  
CALIF. 91605  
(213) 877-0347 • 765-3444



GIVE  
YOUR CAR  
THAT  
**NEW LOOK!**  
... AND HAVE FUN DOING IT

- Easy on! Easy off!
- No hard rubbing necessary
- Not a wax—but a surface protector concentrate
- Forms hard protective shield that lasts... And lasts...
- Excellent for new Acrylic and Lacquer car finishes

25¢ VALUABLE COUPON—SAVE—USE 25¢

CLIP THIS VALUABLE COUPON. Present to your neighborhood service station and save 25c on the purchase of your next can of Custom Gloss Cream.

Use space below if your neighborhood service station is out of Custom Gloss Cream.

NAME \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
CITY \_\_\_\_\_ STATE \_\_\_\_\_

Mail To:  
CUSTOM CREST CAR PRODUCTS, INC., Syracuse, Indiana  
Enclose \$2.25 Check  Money Order  Cash   
Offer expires December 31, 1966 Midnight



SHOW CIRCUIT

Last minute preparations are being completed for all new National Custom Auto Fair, scheduled for September 2-5 at the Murat Shrine Temple in Indianapolis and produced for the first time by Promotions, Inc., and International Productions. The MILK WAGON, a Rod & Custom Magazine cover car from Los Angeles, is billed with the MUNSTER KOACH as featured attractions for the event which will again be sponsored by NHRA and held in conjunction with the 12th Annual National Championship Drag Races. It promises to be a BIG auto weekend in Indy; we'll see you there! ■ The National show begins the 1966-67 International Championship Auto Shows which are fully sanctioned by ISCA. Companies already pledged to make merchandise awards thru the Parade of Prizes include Accessories International, Ansen, ARC, Cragar, Hurst, Keystone, Mickey Thompson, Popular Hot Rodding, Schiefer, and Weiland. Already planning to travel their displays for the entire season are American Racing Equipment, Cragar, Keystone, and Suzuki. P. A. Sturtevant has inaugurated the new club point system with a \$200 tool award. ■ Established by Promotions, Inc., the 1966-67 ICAS will include nearly 50 events produced by Bob Larivee, Bill Holtz, Carl Casper, Al Hayward, Ray Farhner, Don Stacy, and Warren Bookman. Check the full page schedule ad in this issue and plan to participate now! ■ George Barris has been commissioned by Capitol Records to build 21 candy-striped Mini Austin promotional cars for their personnel. George is also constructing for Bud Poore an unbelievable KAPSUL KAR, based on a 1934 Ford yet composed of parts from various famous movie vehicles. "Would you believe" that the KAPSUL KAR will be buried under the Silver Dollar Casino in Las Vegas? ■ Ray Farhner, well known car builder and show producer, has opened a new custom shop in his hometown of Rayton, Missouri, outside of Kansas City. His latest project, a HORSELESS HEARSE, should prove to be the wildest kookie car imaginable. Based on an actual hearse, which once carried the famous outlaws to "boot hill," the HORSELESS HEARSE will derive its power from a rear mounted Plymouth Hemi. We'll have to see it to believe it! ■ Bob Marianich at the Carriage Shop in Detroit is restyling and rebuilding the CAR CRAFT DREAM ROD to follow new design ideas developed by Harry Bradley. Model Products Corp. will release a new model kit reproduction during the winter. ■ Mike and Larry Alexander of Detroit are putting the finishing touches on a full custom 1965 Chevrolet for Tom Louise of Syracuse, N.Y., and we will undoubtedly be seeing it on the show circuit. The Brothers DEORA truck is finally ready for paint, really fulfilling our greatest expectations. ■ Gene Winfield has moved his facilities to Phoenix, Arizona, and is co-ordinating production of AMT Model Company's new full-size fiberglass sports rod. Directing the new auto accessory and car division is Don Beebe. ■ Dave Puhl, builder of the ILLUSION, has traced-down Spence Murray's old ROD & CUSTOM MAGAZINE DREAM TRUCK and begun restoring it to original show shape at his shop in Palatine, a suburb of Chicago. ■ Tom Holden, a fine craftsman and one of the Detroit AUTORAMA judges, has begun constructing a radical handbuilt show rod for Don. ■ ISCA, 1917 East Nine Mile Road, St. Clair Shores, Michigan.

FEATURING  
THE BEACH BOYS  
DICK DALE  
AND MANY OTHERS  
with the  
**HOTTEST** in  
**HOT ROD SOUNDS!**

They're on  
... and  
**HOT ROD's got 'em!**



1. SHUT DOWN Vol. 1—The Beach Boys
2. SHUT DOWN Vol. 2—The Beach Boys
3. CHECKERED FLAG—Dick Dale
4. LITTLE DEUCE COUPE—The Beach Boys
5. MR. ELIMINATOR—Dick Dale
6. HOT ROD DANCE PARTY—Jerry Cole
7. HOT ROD RALLY—The Super Stocks
8. THUNDER ROAD—The Super Stocks
9. HOT ROD HOOTENANNY—The Weirdos
10. RODS n' RATFINKS—Big Daddy Roth
11. BLACK BOOTS AND BIKES—The Kickstands
12. BIG SOUNDS OF THE DRAGS—Actual
13. BIG SOUNDS OF DRAGBOATS—Actual

**FREE** with each album  
you order... your choice of  
**HOT ROD YEARBOOK** Nos. 1, 2 or 4  
or **CUSTOM CAR YEARBOOK** No. 1  
value — \$2.00 each!

**ORDER TODAY** STOCKS ARE LIMITED

**HOT ROD Magazine** CC-966  
5959 Hollywood Blvd., Los Angeles, Calif. 90028  
Send me the following FREE Yearbooks (Circle your choice):  
HOT ROD YEARBOOK No. 1 No. 2 No. 4  
CUSTOM CAR YEARBOOK No. 1

YOU ARE ENTITLED TO 1 FREE YEARBOOK WITH EACH ALBUM ORDERED

ALSO SEND THE FOLLOWING HOT ROD ALBUMS IN \_\_\_\_\_ HI-FI at \$9.98 ea  
\_\_\_\_\_ STEREO at \$4.98 ea

1 2 3 4 5 6 7 8 9 10 11 12 13

My payment is enclosed.

Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_  
State \_\_\_\_\_ Zip \_\_\_\_\_

Louis Meyer offers  
**FORD INDY V-8**

detailed 1/8 scale model

Famous D.O.H.C. powerplant of the '65 Indianapolis 500 winner. Accurately reproduced in gold and chrome colors, fully assembled on walnut base 7 1/2" x 5 1/2". Only \$3.95 postpaid. (Indiana residents add 2% sales tax.) Send check or money order to Louis Meyer Inc., 4709 1/2 West 30th Street, Indianapolis, Indiana 46222.

FROM THE HOUSE OF "BIG BROTHER RATT FINK" COMPLETELY WASHABLE SHIRTS. GUARANTEED

SEND TO: **"BIG BROTHER RATT FINK"** POST OFFICE BOX 174 VERONA, NEW JERSEY

SORRY, NO C.O.D.

CATALOG - 50c  
T-SHIRT \$2.98  
SWEAT SHIRTS 4.98  
POPLIN JACKET \$7.95

NEW! FROM THE MAKERS OF TURTLE WAX

**TURTLE OIL**  
TUNES UP YOUR CAR  
IN JUST TWO MINUTES!

8mm Action Films in color!  
GREAT SCENES FROM GREAT EVENTS—CURRENT AND HISTORICAL! \$5.95 ea.

2. 1965 3rd Annual Motor Trend "500"
3. 1965 Smokers (Bakersfield)
5. 1965 Pikes Peak
6. 1965 Yankee "300" (Stockers)
7. 1964 Grand Prix at Riverside
8. 1911 The 1st Indy "500" (B&W)
13. 1964 Art Arfons
14. 1950-53 Highlights at Bonneville

**PETERSEN FILM LIBRARY** CC-966  
5959 Hollywood Blvd.  
Los Angeles, Calif. 90028

Send me the following films; I enclose \$5.95 for each one I have circled:

2 3 5 6 7 8 13 14

NAME \_\_\_\_\_  
STREET \_\_\_\_\_  
CITY \_\_\_\_\_  
STATE \_\_\_\_\_ ZIP \_\_\_\_\_

**DRAG RACING**  
YESTERDAY AND TODAY  
BY WALLY PARKS

Those of us who publish CAR CRAFT and those of you who read it, know that Drag Racing is one of the most exciting sports in the world. We know that it is also one of the most popular spectator sports with over seven million fans in total attendance at over four thousand meets last year. However, very few of us know the history of this great sport. There is one man, who not only knows its history, but has participated in every phase of its growth from founder to competitor, to president of the largest drag racing organization in the world—the National Hot Rod Association. If there is a "Mr. Hot Rod," it has to be Wally Parks. His hot rodding career began before World War II on the dry lakes of Southern California where he helped form one of the first timing associations. Wally was instrumental in the sport moving to the famous Bonneville salt flats where it would gain its first national recognition. He was also editor of HOT ROD Magazine. Because of his background and knowledge of the sport, he is recognized as the leading archivist and historian of drag racing. The history of drag racing has never been told before, but now the man who knows it best has written its first full story: DRAG RACING: YESTERDAY AND TODAY (Published by Trident Press, \$4.95). Here are not only the names, dates, and records from the Model T to the newest FX's, but the excitement, speed and color of the races, and the personal stories of the men who design and drive these rubber-burning missiles. Included too, is a glossary where terms like "hauler" and "rail" are translated for the beginner who hasn't been exposed to the drag racers' lingo. This is an excellent and accurate account of our sport. We enthusiastically recommend it to all of our readers.

**Just Pick the Kind of Body YOU Want**

CHECK THE COUPON BELOW  
Prove to Yourself How EASILY You Can Have It...Almost Overnight!

JUST tell me, in coupon below, the kind of body you want—and I'll give it to you SO FAST your friends will be amazed! "Dynamic-Tension," my easy, 15-minutes-a-day method, can make your chest and shoulders bulge... your arms and legs surge with power... your whole body feel "alive!"

**FREE 32-page Illustrated Book**

32 Pages on how "Dynamic-Tension" changed me from a 97-lb. weakling into "World's Most Perfectly Developed Man"—and what it has done for others. Mail coupon NOW! CHARLES ATLAS, Dept. 150J, 115 E. 23rd St., New York, N. Y. 10010. My address in England is: Charles Atlas, Chitty St., London, W. 1.

**CHARLES ATLAS, Dept. 150J**  
115 East 23rd St., New York, N. Y. 10010

Dear Charles Atlas—Here's the Kind of Body I Want: (Check as many as you like)

Broader Chest, Shoulders  Stimmer Waist, Hips  
 More Powerful Arms, Grip  More Weight, Solid  
 More Powerful Legs  Better Energy, Sleep

Send me, absolutely FREE, a copy of your famous book showing how "Dynamic-Tension" can make me a new man. 32 Pages crammed with photographs, answers to vital questions, and valuable advice. No obligation; no salesman will call.

Print Name \_\_\_\_\_ Age \_\_\_\_\_  
Address \_\_\_\_\_  
City & State \_\_\_\_\_ Zip \_\_\_\_\_  
In England Charles Atlas, Chitty St., London, W. 1.

racing is our **ONLY** business

**ALL NEW!**

**CAE RACING PRODUCTS**  
CULBERT AUTOMOTIVE ENGINEERING

**If you race, build or sponsor an Oval Track Car the 1966 CAE Racing Catalog is a MUST**

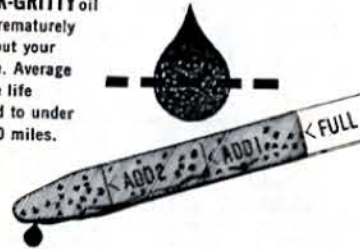
CAE is where you find it if you're an oval racer and it's usually in stock ready to ship now. In and Out Boxes. Complete front ends (DRAG RACERS... check the new CAE Bolt-On Front Ends). Axles. Bodies or parts of bodies including a new Super Modified Tail. Gas Tanks. Shocks and Steering. Steering Arms and much more... Frames. Birdcage Kits. Torsion Bars. Torque Plates... all the hard to find parts. All CAE Racing Products carry the famous Culbert name and know-how. If you're looking for chrome parts... save your buck. But, if you are a GENUINE RACER be certain to get your own copy of the all new 1966 CAE Racing Products catalog Today. Only \$1.00 sent with decals

**CAE Racing Products**  
Culbert Automotive Engineering  
6580C Federal Blvd.  
San Diego, Calif. 92114  
phone (714) 286-2444

# STOP LIQUID ABRASIVES

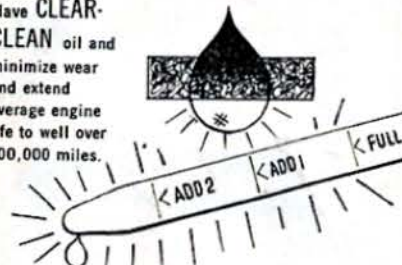
FROM CIRCULATING WITH YOUR OIL THRU FULL-FLOW FILTERS

BLACK-GRITTY oil will prematurely wear out your engine. Average engine life limited to under 60,000 miles.



TRAP ABRASIVES IN YOUR FILTER WITH AERO BY-PASS FILTERS

Have CLEAR-CLEAN oil and minimize wear and extend average engine life to well over 100,000 miles.



AERO OIL FILTERS screw directly on in place of regular filters or may be located under the hood with universal mounting kit. Uses inexpensive repacks—Thousands of cotton fibers trap abrasives and contaminants—Engine and oil are kept CLEAR-CLEAN continuously—Pay for themselves within 10,000 miles—Have been successfully used for over 15 years by thousands of satisfied customers including taxicab, truck, and delivery service operators.

Over 30 filters, kits and accessories available—Available for every engine—All required parts furnished—Special kits for just VOLKSWAGENS and MARINE engines—Complete instructions insure easy installation—Money back guarantee that product performs as claimed.

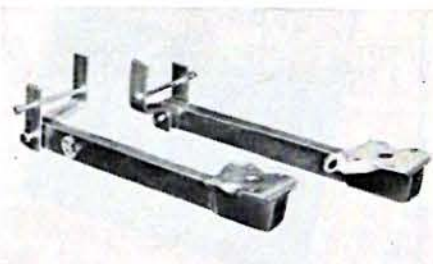
Model EIP Oil Filter Package, for most Ford and Chrysler engines, includes 7 repacks, extra gaskets, and servicing fixture. . . . \$25.50 plus shipping & handling.

Fill in coupon and send for complete details and instructions for ordering by mail.

ARHU PRODUCTS ARH ARH  
P. O. Box 1430 4 1 143  
Santa Monica, California 90406

Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_  
State \_\_\_\_\_ Zip \_\_\_\_\_

## CC SHOPS



### RC TRACTION BARS

Owners of Ford products can now improve the handling with the RC Industries traction stabilizer kit which was designed with both drag racing and highway driving in mind. Known as "Trac-Safe," the kit will not only improve a car's handling under acceleration, but braking as well. The rigid arms prevent spring wind up and wheel hop. Many hours of tests both on the drag strips and highways were put in the units to give maximum traction under all conditions. For information write RC Industries, Inc., Box 356 CC, Medina 21, Ohio.



### CUSTOM LACQUERS

Highest quality automotive finishes and toners that will mix with both acrylic and lacquer paints are now available from the John Chemical Co. Specially designed for the automotive painter, the finishes are made from the highest quality raw materials available to exacting standards. Colors of all finishes are compounded with the best raw pigments obtainable. Send \$5.00 for sample, refunded on first order. Dealer inquiry invited. John Chemical Co., Box 456 Dept. CC, Murphys, Calif.



### CAM TIMING KIT

Cam timing may now be easily altered through the use of the new Develco cam timing kit. Centerless ground to work with any engine, the kit makes it possible to alter timing from zero to 12 degrees directly at the crankshaft. To facilitate installation, all bushings are marked with the degree of off-set. Available for Chev 283-327, Ford 289 and all Chrysler "B" block engines. For information write Develco, 10207 Avon Ave., Dept CC, Cleveland, Ohio 44105.

## GRIP AND GO FLAT WITH SWA-BAR

FINALLY — TRUE GT HANDLING FOR YOUR CAR!

How? Install SWA-BAR the genuine rear torsion anti-sway bar (NOT a spring stiffener). What does it do?

1. It holds your car FLAT, thus 2. the front wheels aren't tilted causing scrub, 3. equal, 4. wear, 5. ending all the mushy FLOWING effect, 6. stops UNDERSTEER by keeping front wheels vertical to grip and by putting the roll-stiffness on the rear—thus unloading the outer front tire. Yet it keeps the soft ride! Who uses this type rear stabilizer? Corvette, XK-E, Ferrari, Avanti, Police Specials, Olds 442HD, optional—enough said? Kits for all makes—drill and wrench installs, 100% satisfaction or money back, \$19.95 ppd or COD. Dealers invited. Phone orders shipped in 24 hrs.: 312-337-1783 SWA-BAR CC, 704 N. STATE ST., CHICAGO, ILL. 60610

## AERO-LAC

AUTOMOTIVE FINISHES

### TONERS \* PEARL LACQUERS FOR THE CUSTOM PAINTER

BROCHURE & SAMPLE 50¢ \*ST. JOHN CHEMICAL P.O. BOX 456 MURPHYS, CALIF.



## Decal & Hot Rod Parts CATALOG

With Decal and 2 T-shirt transfers \$1.00  
**H & H CUSTOM**  
713 Torrance Bl., Dept.-CC, Redondo Beach, Calif.

## PRESERVE YOUR COPIES OF CAR CRAFT MAGAZINE FOR FUTURE REFERENCE!



This handsome leatherette binder holds a year of CC. Makes a handy and attractive reference that lasts a lifetime.

CAR CRAFT MAGAZINE BINDER DEPT. CC-966  
5959 Hollywood Blvd., Los Angeles, Calif. 90028

Send me \_\_\_\_\_ CC BINDERS at \$3.25 each.  
My payment is enclosed. (PLEASE PRINT)

NAME \_\_\_\_\_  
CITY \_\_\_\_\_  
STREET \_\_\_\_\_  
STATE \_\_\_\_\_ ZIP \_\_\_\_\_

### ATTENTION PONTIAC LOVERS!

GTO & PONTIAC HEADERS IN STOCK—IMMEDIATE DELIVERY (THESE HEADERS FIT!!)

Traction Bars, Tow Bars, Functional Air Scoops for GTO's & Suspension Packages "Bobcat Packages" mailed anywhere

"Hard to get Pontiac parts our specialty" Completely reworked Tiger Hydro's

Special prices on any new cars!! Racers or regular cars to anyone!!

Write or Call:  
**DICK JESSE RACING ENTERPRISES**  
12105 Hamilton, Box CC, Highland Park, Michigan AC 313 865-4422 or 868-0220  
Home of the original GeeTo Tiger & the World's fastest unblown GTO

### CSC "DYNA-REV" SPECIAL

283-3" or 327-3 1/4" "DYNA-REV" CRANK \$149.50 EXCHANGE  
283" core used \$25.50 327" core new \$69.90  
1422 So Main St Los Angeles 15, Calif. Richmond 9 6597

### car using oil? add Casite

at your service station

### FOR READERS IN FOREIGN COUNTRIES

CAR CRAFT subscriptions sent to countries outside the United States cost \$6.00 for one year and \$11.00 for two years in U.S. Funds. The equivalent value of those rates represented in foreign currencies is as follows:

Country	One Year	Two Years
Great Britain — £	2.29	3.18.6
Australia — Dollar	5.342	9.795
New Zealand — NZ \$	2.2.11	3.18.8
South Africa — Rands	4.268	7.826
Austria — Schillings	153.84	282.05
Belgium — Francs	29.76	54.56
Denmark — Kroners	41.27	75.65
France — Francs	29.34	53.79
Holland — Guilders	21.68	39.75
Italy — Lires	3,733.70	6,845.05
Norway — Kroners	42.74	78.35
Portugal — Escudos	171.43	314.29
Sweden — Kroners	30.93	56.70
Switzerland — Francs	25.95	47.58
West Germany — Deutsche Mark	24.02	44.04
Spain — Pesetas	358.21	656.72
Greece — Drachma	179.10	328.35
Argentina — Pesos	1,052.63	1,929.83
Brazil — Cruzeros	12,765.96	23,404.26
Chile — Escudos	24.90	45.64
Colombia — Pesos	106.20	194.69
Ecuador — Sucre	106.76	195.73
Mexico — Pesos	74.72	137.
Peru — Soles	160.	293.33
Uruguay — Pesos	392.15	718.95
Venezuela — Bolivars	26.83	49.20
Hong Kong — Dollar	34.15	62.61
India — Rupees	28.46	52.18
Japan — Yen	2,166.06	3,971.12
Pakistan — Rupees	28.57	52.38
Philippines — Pesos	23.30	42.72

## CC SHOPS

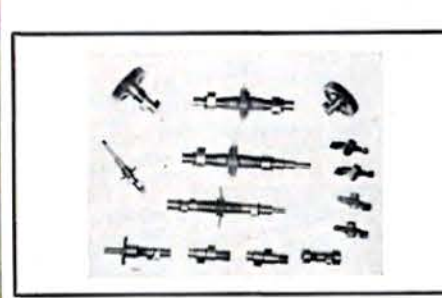
### 3 POINT PROTECTOR

Drivers and passengers alike can enjoy added driving protection with the new 3 Point Protector lap/shoulder seat belt combination manufactured by American Safety Equipment. The belt features a fingertip release and chest and lap adjustments. Made of 100% Du Pont Nylon webbing, it can be easily mounted in any domestic or foreign car in which there is a factory located anchor point. Available at better auto parts and accessory shops everywhere.



### IDENTO-CALS

Dress your stock or hot racers with these new high quality identification decals from AMT Corp. Attractive names and numbers add for that custom racing team appearance. Decals also give that professional hand lettered gold-leaf look with simulated deep blue shadows which truly add to the highlight of a car. "Idento-Cals" are one of the latest items from AMT's expanding speed and custom equipment division, available at speed and custom shops throughout the nation.



### MOTORCYCLE CAMS

Give your bike more in the "zoom" dept. with one of the new Weber high performance motorcycle cams. Harry Weber, pioneer in the speed equipment field designed all of the cams which are available for all popular cycle models to out perform stock items while lasting indefinitely because of a special hardening process. Weber has just completed a new catalog which carries a complete listing of cams and related equipment. Send \$.25 to Weber Speed Equipment, 310 CC South Center St., Santa Ana 21, California.

## MINI-BIKE PLANS!

BUILD COMPLETE FRAME FOR LESS THAN \$10!

Exciting new plans reveal step-by-step details with drawings how to build your own mini-bike! Ideal for school, paper routes errands and etc.

SEND \$2! RUSH YOUR ORDER!

FREE—FREE—FREE  
Learn how you can buy new engines \$30 up, wheels \$10 up, with FREE confidential list and coupons when you send \$2 for your plans.

RUSH information about plans. (I enclose 25¢) . . .  
HURRY and RUSH my Mini-Bike Plans and Confidential List. (I enclose \$2 cash, check or M.O.) . . .  
Money Back Guarantee. PLANS CC-5  
P.O. Box 517, Omaha, Neb. 68102

## P&G VALVE GAPPER

Custom manufactured, complete unit to provide precise valve settings.

ENGINE	ORDER NO.	ENGINE	ORDER NO.
265 Chev	ST-265	289 Ford	ST-289
283 Chev	ST-283	352 Ford	ST-352
327 Chev	ST-327	352 Ford(Hi-Perf)	ST-352H
348 Chev (Std)	ST-348	390 Ford	ST-390
348 Chev (Hi-Perf)	ST-348H	390 Ford(Hi-Perf)	ST-390H
348 Chev (w/Isky Ret.)	ST-348I	427 Ford	ST-F427
250, 280, 315HP	ST-348R	Volkswagen	ST-VW
409 Chev	ST-409	Dodge 426 Hemi	ST-D426
(61-65 Hi-Perf)	ST-409H	425 Olds	ST-425
409 Chev (w/Isky Ret.)	ST-409I	each complete ST	29.95
409 Chev (63-65 Spec. Hi-Perf)	ST-409SH	See your dealer or send check...we'll ship postpaid.	
396 Chev	ST-396	P&G Manufacturing Co.	
427 Chev	ST-C427	300 Jackson Tower	
*Special 11/16" socket wrench available for adjusting valves. \$4.95		Dept. C-8	
		Portland, Ore. 97205	

## BEST LOW COST ELECTRIC WELDER

MONEY CAN BUY ONLY \$14.95

5-YEAR GUARANTEE — 10-DAY MONEY BACK TRIAL. WELDS, BRAZES, SOLDERS, CUTS ANYTHING OF METAL

No comparison for performance and value. No experience needed to make or repair auto bodies, fenders, trailers, boats, furniture, farm equipment, garden tools, anything of metal. Use up to 1/4-in. welding rods and 1/4-in. carbons on up to 1/4-in. metal. Operates on 110 V. line. **WORLD'S GREATEST WELDING VALUE** over 500,000 in use by home owners, farmers, hobbyists, mechanics. **5-Year unconditional guarantee.** If insoperative, return. We will repair or replace and return free. Order on 10-day money-back trial.

SEND ONLY \$2.00

You get: FULL FACE SHIELD, heavy metal cabinet, ground clamp, 12 ft. heavy duty welding cables, special combination carbon arc torch and rod holder, carbons, welding and brazing rods, flux, solder, instructions. **SEND ONLY \$2.00.** Pay \$12.95 plus C.O.D. charges on delivery or send only \$14.95 and we will ship prepaid. Order today.

FOUR-WAY WELDER CO. LITERATURE FREE  
Dept. W64-J, 1810 S. Federal St., Chicago, Ill. 60616

Wilson Cammed Plymouth Runs 22 Times; Wins 32 Trophies

"I don't know how it could be possible to grind a better cam for this Hemi Plymouth, but . . . if you do, send me one!" That's what Jim Parrish (Yuba City, Cal.) says about the Wilson XE-3 cam in his SS A Plymouth. Best times to date: 10.71, 129 mph, and that's moving in this heavy class. Send 50¢ for latest catalog showing our full line.

DEALERS: Sell the Wilson Cams; send for your deal.

Dempsey Wilson RACING CAMSHAFTS  
4667 W. Rosecrans - Hawthorne, Calif.  
Phone: (213) 675-5558 or 675-5700

WILSON CAMS KEEP YOU OUT IN FRONT!!

# STURTEVANT FLOATING CONTROL HEAD



## KEEPS YOU HONEST

When you use a Sturtevant "Floating Control" Torque Wrench, your torque readings will stay honest—you'll never get a false torque reading because the patented and exclusive "Floating Head" automatically controls the way in which you apply torque. You can't mis-use this torque wrench!

Sturtevant "Floating Control" also gives the torque wrench the versatility of a hinge handle—you can spin down nuts or cap screws... angle the drive square to clear obstructions... reverse the drive to get at tough applications—in short, this is a professional man's torque wrench! Sold by leading hand tool manufacturers and speed shops.



Look for this mark on the torque wrenches you buy... it means a genuine Sturtevant lifetime guaranteed wrench.

Remember—Sturtevant invented and patented the pivoted handle that concentrates the pulling force at a fixed point and that permits accurate readings when using adapters.

**P. A. STURTEVANT CO.**  
ADDISON, ILLINOIS

**FACTORY DIRECT!**

**23 'T' KIT! \$169.95**

**BODY AND FRAME**  
Build your own 'T' with this kit! You get:

- 23 'T' fiberglass body
- Precision welded frame
- Plans and instructions

**RUSH 25c for brochure to:**

**510 Down \$9 Month**  
Plans only \$3 includes with wire

**BIRD engineering, Box 427, Dept. CC9 Omaha, Neb. 68101**

**NEED FORD FLAT HEAD PARTS?**

Cadmium Inserts, Main Bearings, New Rods, Lincoln-Zephyr Transmission Gears, R/Gr's & Pinions and many other items. Send 25c for current price sheet....

**B. & H. AUTO PARTS**  
1300 Venice Blvd. • Los Angeles, Cal. 90006

**FOR THE FUNNIEST OF FUNNY CARS**

Try this new VW Fiberglass body (weighs 40 lbs) from Ford Duplicators. For a complete catalog on all car bodies send \$1.00.

**FORD DUPLICATORS**  
8046 Lankershim Blvd.  
North Hollywood, California  
Phone: 764-5975-767-9338, eves.

**Jay Howell's**  
**AUTOMOTIVE ENGINEERING**

- Complete Race Cars ■ Tubular Front Axles
- Wheelbase Alterations ■ Blue-Printed Engines
- 427 Chevy & 426 Hemi Headquarters

**"SEATON'S SHAKER" SPECIAL LIQUID RESIN — \$3.95/GAL.**

14851 W. 21 MILE RD. OAK PARK, MICH., 48237  
Area 313 541-6244

**IF IT'S FOR A RACE CAR WE SELL IT!**

And, you'll get RIGHT PRICES on RIGHT SPEED PARTS. It's all in our big fresh off the presses catalog, get your copy today. Send 25c to: Auto Speed Supply, Greenfield 10, Tennessee 38230.

# CC/GASSERS



**ONE MAN IN A TUB**—Did you hear the one about the butcher, the baker, and the candle stick maker getting captured by cannibals? Well the butcher and the candle stick maker escaped. That's right, the cannibals studabaker.

**GLOSSARY**  
Spoiler—Whatever it is that makes the coffee at those drag strip concessions.  
Mildew—A term used when inquiring about someone's engine. "What will the mill do?"  
Pop Cycle—Dad's Honda.

**THE NAME GAME**—They call him "Auto Lite" because he has been fired so many times.

**A JUST REWARD**—Two of the bad bunch were talking and one of them said to the other one, "You haven't said a word all night Ralph, what's the matter with you, did you get caught siphoning gas again?" The other one answered, "No, not exactly; someone put a tiger in their tank and now the cat has got my tongue."

**CHEAPSKATE**—Two little boys were at the candy store buying some goodies and one said "Gee, that was sure nice of that old lady to give you a dime for helping her across the street." The other said, "Oh, that wasn't for helping her across the street, it was for carrying her skateboard."

**THE HARD WAY**—A woman pulled her convertible into a car wash and asked the attendant if he would vacuum it out for her. He looked inside and was amazed to see that it was full of sand all the way up to her waist. He said, "Wow, I'll bet you have learned to always put your top up when you are in a sand storm." She said, "No, but I have learned to never honk my horn at a dump truck that is having trouble getting started at a stop signal."

**LAME LIMMERICKS**  
A driver that could not be beat  
Lost at last when he raced on the street  
And to this day  
The people all say  
He got carried away... with conceit.

A car builder named Sunny  
Altered his Dodge to funny  
He reworked the chassis  
His hemi engine was gassy  
T'was a shame he ran out of money.

He was very good at steering  
He was a champion at gearing  
Too bad about Myron  
Ignoring that siren  
One thing he failed at was hearing.

**OH, THAT'S HOW THEY DO IT**  
A man took his new compact car back to the dealer for a check up. He said to the mechanic, "I like everything about it, except one thing." "What's that?" asked the mechanic. "Well, I don't get as good gas mileage as my friends get in theirs," he said. "Oh, that's easy to do," said the mechanic. "Just do the same thing they do, lie about it."

**HE WAS SO DUMB**—he thought souping an engine meant pouring chicken noodle in the carburetor!

**AT THE SIDE OF THE ROAD**—a woman looked helplessly at a flat tire. A passer-by stopped to help her. After the tire was changed, the woman said, "Please let the jack down easy. My husband is sleeping in the back seat."

**THE SHORTEST LENGTH OF TIME**—is between the time the traffic light changes and the nut behind you beeps his horn.

**AN ALARMED MOTORIST PULLED HIS CAR**—to a quick stop when he saw a young man standing beside an overturned small sports car. "Anybody hurt in the accident?" he asked. "No accident," said the young man calmly, "I'm just changing a tire."

**A SPEED SHOP RECEIVED**—the following note with the final long overdue payment on the engine reworking:  
"Dear Sirs:  
This should make us even.  
Sincerely, but no longer yours,..."

**CHARLES:** Do you know why a traffic signal turns red?  
**CHUCK:** No, why?  
**CHARLES:** If you had to change in front of all those people, you would turn red too.

**WOULD YOU BELIEVE?**—Two guys were riding in a car and one of them said, "Hey, did you hear that thunder?" and the other one said, "That wasn't thunder, one of my rain tires just blew out."

**HE IS SO DUMB HE THINKS**—a turkey shoot is a device for slowing down a fast turkey.

**A SPECTATOR AT THE DRAGS** was trying to shake some ice down from the bottom of a cup, when it all tumbled down at once, some of the ice going up his nostrils; whereupon, he sneezed, becoming the first man in history to literally blow his cools...

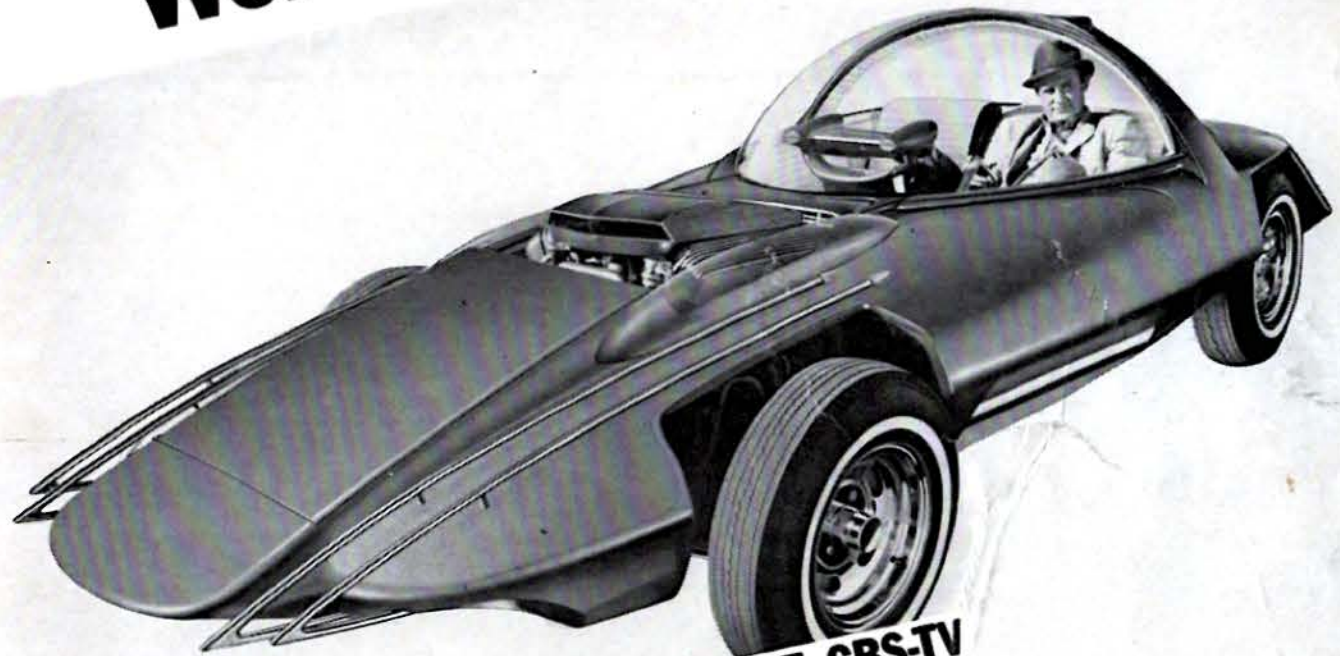
**BELIEVE IT OR NOT**—there is now an "Old Starters Home" for phased-out victims of the Xmas Tree starting lights. You should see the old codgers fight it out for who gets to raise the flag every morning!

**WOULD YOU BELIEVE** that I have a friend who's so hung up on his car that he installed a set of Friendship Rings??

**HE WAS SO DUMB**—that he thought Hemi Under Glass was a foreign dish.

**If you've heard a good one lately, let's hear it. Whether it's a funny tale, gag or even a wild poem — Car Craft will pay you \$5.00, if accepted. Address all material to Jack Crandall "CC/GASSERS" Editor Car Craft, 5959 Hollywood Boulevard, Los Angeles 28, Calif.**

# Ride with Lloyd Bridges through "The Wonderful World of Wheels"



**Thurs., Sept. 8, 7:30 EDT, CBS-TV**  
**Sponsored by Du Pont ZEREX®**

This full-color, full-hour TV spectacular has everything going for it. Everything on wheels. From the Indy 500, to slot cars, to stocks, to custom bubbletops like the one you see Lloyd Bridges in. Ride with him September 8. For TV excitement, this one comes on at 500 miles per.

**Special model car offer.**  
A super-realistic car model kit. Builds a fabulous custom bubbletop—complete with show trailer. Just \$1 while the supply lasts. Pick up a free mail-order blank wherever they sell Du Pont Auto Products.



**Get your wheels ready for winter.** With Du Pont ZEREX Anti-Freeze. It's the surest protection you can get against freezeups—and rust and corrosion—in any kind of cold. Get ZEREX, now featured with other Du Pont Auto Products in "The Wonderful World of Values," at stores near you.



**BETTER THINGS FOR BETTER LIVING**  
... through Chemistry

**Cool it. Enjoy the pause  
that refreshes. Ice-cold Coca-Cola  
has the taste you never get tired of.  
That's why things go better with  
Coke after Coke after Coke.**

TRADE-MARK ®

TRADE-MARK ®

TRADE-MARK ®

