

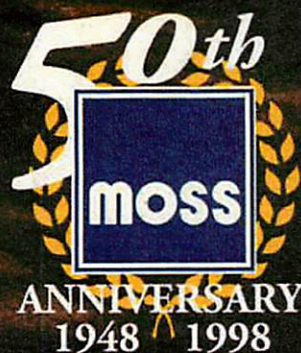
MOSS MOTORING

All the Big Name Scribes!

- Jay Lamm -*An Indy Story*
- Harry Hewton -*On Hybrids*
- Paul Chudecki -*Donald Healey Interview*
- Dennis Ortenburger -*The Amigo Story*
- John Sprinzel -*Rallys in Tasmania*
- Bill Piggott -*The Question of Originality*

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Vol. XVII, No. II

British Car Events Calendar 1998

We are proud to bring you one of the most comprehensive listings of British car events taking place during 1998. If you are connected with an event and wish it to be advertised FREE reaching 200,000 readers—send details of your event as soon as the dates are confirmed, and at least two months in advance to: Events Calendar, *Moss Motoring*, 440 Rutherford Street, Goleta, California 93117. Closing date for insertion in the next issue is July 1, 1998.

MAY, 1998

- 18-24 2nd Annual Nationwide British Car Week,
- 22-24 British Car Festival, Champagne-Urbana, IL, (309)662-3020
- 23 British Car Day, Braselton, GA, (770)491-7573
- 29-30 British Car Show, Oklahoma City, OK, (405)787-0589
- 30 MGs at Jack London, Oakland, CA, (415)333-9699
- 30 British Car Roundup, Indianapolis, IN, (317)357-4442

JUNE, 1998

- 6 British Marques on the Green, Louisville, KY, (502)491-1517
- 6 British Car Day, Charleston, SC, (803)849-9707
- 6-7 Houston All British Vehicle Expo, Houston, TX, (281)444-1679
- 7 British Car Display, Newburgh, NY, (914)744-2350
- 7 British Car Show, Finger Lakes Race Track, NY, (716)225-5939
- 7 British Cars by the Sea, Waterford, CT, (860)482-6464
- 7 Red Mill British Car Day, Clinton, NJ, (908)713-6251
- 7 Jags at Linden Hall, Dawson, PA, (724)437-9051
- 12-13 MG Heartland Regional, Independence, MO, (785)267-6033
- 13 Jaguar Concours, Ottawa, Canada, (613)833-3543
- 13-14 Glenwood Springs Rally, Denver, CO, (303)779-8739
- 14 British Car Show, Long Island, NY, (516)475-2889
- 14 British Car Gathering, Hellertown, PA, (610)865-3419
- 14 Euro Car Day, Williamsport, NY, (716)634-6079
- 17-21 NEMGTR GoF Mk 65, Plymouth, MA, (315)859-0962
- 18-21 Indoor British Car Display, Decatur, AL, (205)355-3089
- 20 All British Slatom, Victoria, BC, Canada, (250)655-4604
- 20 British Car Night, Medford, NJ, (609)859-4161
- 25-28 California Healey Meet, Oxnard, CA, (909)275-9545
- 27-28 All British Meet, Chico, CA, (916)872-7626
- 28 British Car Day, Bowie, MD, (703)323-1260
- 28 British Car Day, Sussex, WI, (414)321-5466
- 28 British Marquee Day, Avondale, PA, (302)239-6587
- 28 British Car Show, Hockessin, DE, (800)442-3279

JULY, 1998

- 3-5 Rally in the Valley, Kelowna, BC, Canada, (250)763-8931
- 4 British Car Meet, Broward, NC, (704)883-9791
- 5-9 GoF West, Monterey, CA, (510)881-1014
- 8-12 NAMGBR "MG '98", Hagerstown, MD, (410)461-5888
- 12 British Car Day, Cincinnati, OH, (513)232-5673
- 12 Mad Dogs & Englishmen VIII, Kalamazoo, MI, (616)344-5555
- 12-15 MG V8 '98, Annapolis, MD, (440)331-4205
- 13-17 Healey West Coast Meet, Warm Springs, OR, (541)895-5576
- 16-18 GoF Central, Lawrence, KS, (785)272-7987
- 16-19 Moss Motors 50th Anniversary Festival, Solvang, CA, (800)235-6954
- 17-21 NEMGTR GoF, Plymouth, MA, Drawer 220, Oneonta, NY 13820
- 18 London to Brighton Run, London, IN, (317)887-3867
- 18 Washington All British, Redmond, WA, (425)644-7874
- 18 British Car Day, Pittsburgh, PA, (412)929-8187
- 19 Tea at the Vicarage, Howe, IN, (219)562-2703
- 21-23 NAMGAR GT 23, Chattanooga, TN, (615)892-7247
- 21-24 American MGC Convention, Pensacola, FL, (704)274-2269
- 22-25 VTR Convention, Hudson, WI, (612)557-1949
- 26 British Motorfest, Schenectady, NY, (518)356-5244

AUGUST, 1998

- 1 British Car Day, Dayton, OH, (937)837-5510
- 2-7 Austin-Healey Conclave '98, Michigan, (616)891-3526
- 6-9 Club T MG Rendezvous, Port Townsend, WA, (509)645-8435
- 8 British Car Day, Buffalo, ND, (701)293-6882
- 12-16 Healey Encounter '98, Gettysburg, PA, (717)392-5380
- 13-15 U.M. Summer Party, Grand Rapids, MI, (616)682-0800
- 23 Taste of Britain, Lancaster, PA, (717)292-0579

please turn to page 19

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440 Rutherford Street
Goleta, California 93117

We can accept contributions that are printed, or on 3 1/2" disc, text files from Mac or PC in ASCII preferred; but double-spaced, typed information is also acceptable. We regret that we cannot return any material. We also reserve the right to accept or reject any material on whatever grounds we decide. We reserve the right to edit or change any material to suit the needs of our publication, without prior notification to the contributor. "Letters to the Editor" will be accepted for publication provided they are accompanied by a name, address and phone number.

Contributors whose material is selected for publication in *Moss Motoring* will receive Moss Motors Gift Certificates in the following amounts:

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\$30.00 GIFT CERTIFICATES
Technical Tips, Cartoons, Humorous Anecdotes, Puzzles and Photos (not photo contest contributions, however)

OUR COVER:
The spirit of our 50th Anniversary is depicted with the super 1948 MG TC of Larry Long as it poses at the site of our great July Festival in Buellton. The pretty driver is our very own Purchasing Associate Shelly, but we didn't get the horse's name (or the handler's)!



Typical phone calls received here at the *Moss Motoring* Editorial Offices in the course of a day...

"Hey, we sent you details of our event and we see you've not included it in the *Moss Motoring* Events Calendar."

"I sent a classified ad in to sell a car in December and here we are in January and it's not in *Moss Motoring* magazine."

"If you're not going to use my article I'll send it somewhere else!"

The answer to the above complaints of course, is that the submissions missed the deadlines (which are published in every issue). The Big Bad Editor sits and ponders, "Do these people have any idea what it takes to produce a publication of the quality of *Moss Motoring*? Have they any conception of lead times, and the gestation period, from a veritable pile of bits and pieces, to the finished product which finds its way to their mailboxes?" I sometimes give thanks that we are not committed to publishing on a monthly basis as we would probably go through Editors like a knife through butter!

Let me explain. Every day we get oodles of raw material into the Editorial Offices. Letters, articles, photographs, questions, technical tips—you name it we get it! As Editor it's my task to sort through all the material which arrives and separate it into three piles—"probables", "possibles" and "regrets"! Then I try to assemble what I think is a balanced mix of features and items of interest, which we hope will appeal to the majority of our quarter million readers. Then we have to translate written submissions and articles on disc, both PC and Mac, into readable form, and here I admit some hard editing on wordage takes place! Pictures are scanned and edited electronically, while if a cartoon is required our artist Jamie Pfeifer roughs it out and eventually produces a final color version.

Then we start to lay out the magazine. A wide variety of exotic twenty-first century computer equipment comes into play, but eventually, after many changes, we get a correction copy. This is circulated throughout the Moss staff for them to pick up any obvious errors such as incorrect grammar, pricing gaffes, or dates. A master correction copy is then made and polished, to finally send out to the graphics house where the whole thing is transferred to film, and a final dummy produced ready to send to the printer, who by the way, is located two thousand miles away!

The printer then produces lithographic plates to run on the massive web presses. Meanwhile we will have supplied them with the mailing labels for our domestic customers. All overseas mailings are handled here in Goleta. All this takes at least eight to ten weeks not including the two weeks in-house at the printers. That's why deadlines are important. We try our best to bring you the finest free British car magazine in the business, but it all takes time. I liken myself to getting pregnant every three months and producing another baby! Now you'll have to excuse me—I feel labor pains coming on!

Ken Smith

(For the next two issues the deadlines are—the Fall '98 issue, June 11 and the Winter '98 issue, September 1.)

Hybrids



Nash Healey

Usually, I take a fairly strong position about most topics...at least those I deem worthy of an opinion. For the past year or longer I have been working up a head of steam on several subjects. Allow me to share my thoughts on one of them with you...you might look upon yourselves as my pressure relief valves!

I'll start by stating that I firmly believe that the owner of an automobile has the right to do whatever he wishes with that property, including replacing its drive train to suit his fancy...and as long as he doesn't try to invest the result with any spurious legitimacy. Bill Frick, the creator of the Studillacs and the Fordillacs of the early 1950s, once told me that there was no such thing as an impossible engine transplant, "...as long as there's enough room and enough money!" Of course, I realize that many engine swaps have been done for a different reason than the latter half of Frick's rationale, 'because there wasn't enough money' to do the job right.

Nick Harley, a colorfully ribald Brit, showed up at Pebble Beach a couple of years ago with a Merlin-powered Phantom II cabriolet, a la Gurney Nutting. The word magnificent doesn't come close to doing justice to that particular effort. Jay Leno also has a Rolls Royce tourer that has been given a similar steroid injection. No unwieldy truck this—I've seen lantern-jawed Leno motoring along the Mulholland Highway in his blown 27 liter hybrid at some truly astonishing speeds.

For the past year or longer I have been working up a head of steam on several subjects.

I am confident that Bill Frick would have endorsed, even applauded, Gary Wales' latest achievement—the matting of a pair of 5.9 liter Rolls Royce straight-eights into an H-16 behemoth.

The subsequent installation of this powerplant in a pre-W.W.II Wraith chassis has led to the vehicle being dubbed the "Bentley Royale"! Gary's ultimate engine transplant made its debut last November at Essen, Germany, where it was a featured exhibit, enjoyed by the many thousands who attended during the ten day run of the show.

Moss Motoring readers will recall an earlier *At Full Chat* in which we highlighted another of Gary's toys, a spectacular recreation of an early 1930s Blower Bentley. That too might be termed a hybrid as it is powered by an engine other than its original, albeit a later one of about the same displacement from the same company, in this case a supercharged post-W.W.II Mark VI engine. For reliability and parts availability both these cars run on post-W.W.II powertrains for which parts are still available and which offer greater economy.

Some forty years ago, I recall seeing Walt Hansgen compete at Westhampton Air Force Base at the wheel of an Offenhauser-powered Aston Martin DB2. He was quite quick, but was the car still an Aston? Bill Krueper, a regular member of our Marina Del Rey breakfast club, owned an Arnolt Bristol many years ago, into which he shoe-horned a small block Chevy V8. It is still a potent combination and he's pretty sure it was the same car I encountered last year at the Mt. Equinox Hillclimb.

Jensen Interceptors, Facel Vegas and Cunninghams (the ones Briggs built in West Palm Beach in the '50s) all shared Chrysler hemi-power. The Gordon Keeble used a small block Chevrolet engine as did its Italian "kissing cousin", the very similar Iso Rivolta. Allards were available with a variety of V8 power; Ford, Oldsmobile, Cadillac and Chrysler being the most popular, though several K-3s are known to have been powered by Jaguar XK engines. A Cunningham entry at the Watkins Glen Grand Prix was the famous Bu-Merc, a pre-war Mercedes with a Buick straight eight under its bonnet.

The Moss Motors Festival at Flag Is Up Farms draws a fairly eclectic mix of hybrids.

Bristol is another company that relied on outsider engine technology, first with the BMW-based Bristol engine, and later by the same Chrysler hemi V8 found in the aforementioned Jensens, Facel Vegas and Allards. On the flip side of the coin was the Nash Healey, featuring Donald Healey designed bodywork around an overhead valve straight eight from Kenosha, Wisconsin.

The Moss Motors Festival at Flag Is Up Farms draws a fairly eclectic mix of hybrids. I recall seeing MGs and Triumphs that boasted V8 steroid enhancements, if indeed these could be so termed. Also, there's usually a contingent of DeLoreans, built in Ireland with Renault V6 power from France. Before we forget, there was the Sunbeam Tiger, a V8 powered Alpine, that is still sought by collectors who admire the Alpine's styling, but who lament its non-sporting lethargy. It's too bad that America only saw the Austin-powered MGC, a less than brilliant match-up, as opposed to the MGB GT V8 which powered by a Rover-updated version of Buick's erstwhile 215cid aluminum block engine, was a much better proposition.

The first MG TC that I came to know intimately belonged to a neighbor...who had substituted a Lea Francis engine in his quest for greater performance! Since then, I've seen T-Series 3s, Morris Minors, too, with Ford and Volvo engines, all providing better than stock performance. But, is the Bill Frick philosophy justification for bastardization? An argument can be made either pro or con. Not so is the practice of installing Japanese drive trains in these British icons...at least that's how I see it. Worse still is a Jaguar XK120 look-alike seen recently



Jensen Interceptor

in an exotic car showroom. Under its fairly faithful fiberglass bodywork was a Datsun/Nissan Z car! I kept my distance, afraid that this misanthrope might somehow transmit some deadly disease. Also I have been told that somewhere out there is a Mazda rotary-powered MGB and the rumor is probably true despite my fervent prayers to the contrary!

The definitive hybrid has to be the Shelby AC Cobra that has become the most often imitated hybrid in automotive history. About 1,000 Cobras were produced by Carroll Shelby in the 1960s, but many times that number of replicas have appeared since, some of which may even pass the original in terms of engineering sophistication and production quality. The replicas have certainly racked up aggregate sales in multiples of the cars that Carroll built. In his "continuation" series, Shelby himself can be characterized as building his own replica series. Personally, I really would prefer an AC Ace or Aceca to a Cobra. Besides, weren't the AC Bristol and the Aceca Bristol themselves hybrids, powered by a British-made version of a pre-war BMW 328 hand-me-down engine? Also how should we label the four continuation "DB4 GT Zagatos" that Victor Gauntlett commissioned from Galbiati in the early 1990s?

Why then are my feelings about hybrids and their place in history so ambivalent? Why do I disdain the same treatment when performed by an individual? Is there something déclassé about the marriage of one brand name engine to another nameplate's chassis? Is my attitude evidence of sheer automotive bigotry? Perhaps!

I prefer to think that certain hybrids are acceptable because they were produced, or at least sanctioned, by the original manufacturers and the powertrains were usually supplied by their originators. Most often, the objective was greater performance, not the expediency of lower cost or greater operating economy. Certainly, economy in the form of reliability and durability was a consideration when opting for large displacement, relatively slow turning American engines. But, the primary reason was that these were a means to expand the chassis' final envelope.

One final point for you to ponder. I feel strongly that anything using a used engine should be a hot rod and disqualified from using the nameplate of either chassis, body or engine maker!

(I feel sure we'll hear more about this from our readers who I know, have strong opinions on spurious automobiles!—Ed.)



Reillon Tourer

At Full Chat

BY HARRY NEWTON

PHOTOS BY RICK FEIBUSCH



Sunbeam Tiger

Healey ON Healey



and smiling eyes hint at a mischievous past. "He let me do night schooling in Kingston and then I went to Sopwith's, famous for the Schneider Trophy. They made some wonderful airplanes."

Donald Healey was at Sopwith's when they designed the Camel, but it was a career in the motor industry that he was to pursue. Ironically it was his Aviator's Certificate that he obtained

Donald M. Healey at a party during the 1956 Nassau Speed Week. Healey, perhaps at the pinnacle of his career in late 1956, had just completed record-setting endurance and speed runs at the Bonneville Salt Flats, where he joined the exclusive 200 MPH Club.

(Photo © Tom Burnside Motorsport Archive, 1997)

first in 1916, his car driver's license did not follow until four years later! During the Great War, Healey was initially posted with the Royal Flying Corps on home and Zeppelin defense. In 1917, while flying over France in an FE2B, he crashed and was subsequently invalidated out of military service. He lightly recalled that there was "not much damage" to either himself or the plane!

From the RFC he moved to the Aeronautical Inspection Department covering the west of England where he remembered with affection Harry Hawker of Hawker Engineering and manufacturer of the famous Hurricane fighter. "Harry once flew under the bridge at Brooklands! He was a wonderful pilot and a great chap" added Healey, his eyes grinning at the memory.

Donald Healey moved back to Perranporth around 1920 where he started a small garage business under his own name, while also manufacturing radios under the name of "Perraphone", having studied wireless technology. He recalled "The first car I ever worked on was a one cylinder Rover and I soon got on to driving smaller cars in competition." Among these were ABC, Riley and Triumph, before a works 4½ liter Invicta arrived on the scene. Its supercharged engine took Healey to several successes including the Monte Carlo Rally of 1931. (This car, incidentally was courtesy of Sir Noel Macklin, whose son Lance was to make a name for himself in later years driving for Healey.)

"A few other successes followed", Healey added modestly, "a second overall in a small Triumph, then a third

which got me the Perpetual Trophy, one of the few I've kept, and awarded to the driver in the first three places."

In 1933, Healey was employed by Triumph as an Experimental Manager but within the year he was promoted Technical Director. It was while he was there that the fabulous straight-eight Triumph Dolomite was born, basically a crib of a famous Italian marque. "I

make no bones about it," continued Healey, "it was a copy of the Alfa Romeo. All those stories about the Italians suing us are rubbish, though we did discuss the Triumph/Alfa name. At the time there was a great cry for a new British sports car. Without the supercharged motor it was not so fast, but I went to the Gulf of Finland in it and it went alright."

Healey stayed with Triumph until the outbreak of World War II when the company went broke and the factory was sold. He however, stayed on at the factory making carburetors for the aircraft industry. "I worked with Pomeroy Senior and we invented a system of blowing petrol through at the same speed as suction, so that we could get exact measurement of fuel consumption without actually putting the carburetor on an engine!"

During W.W.II, Healey was with the Air Training Corps as a Squadron Leader, still finding time... "to fit in 'some armored car research work' at Humber's where I met those two young chaps (Sammy Sampietro and Ben Bowden) that did the design work on the first Healey in 1945. The tracing was done by the WAF girls at Honiley airport!"

I was a great friend of Victor Riley and I went to Riley's to prepare the team cars for the Alpine Rally in 1932. I knew Victor from the early days at Perranporth when I had a Red Winger Riley—so the first Healey had a Riley 2½ liter engine. One of my best successes was the FAHRT 10,000 kms, the longest rally held in Europe during 1931, in a six-cylinder Riley. The Riley was a damned fine car. I was sorry

when it was modernized by Morris and ruined," Healey looked thoughtful as he digressed for a moment, but the sparkle soon returned.

"I was extremely lucky to get those engines because those days you had to have a permit to make cars. Fortunately Riley had engines tucked away and we had time to ten a week."

The ordinary Healey was the first car we took to America, then we made up the Nash Healey when the Riley engine packed up. They nearly all went to America and Briggs Cunningham was one of the best customers. We put a Cadillac motor in it for him. It goes like a bomb and is highly dangerous," Healey laughed having sampled the beast on a recent visit to the States.

"We had a good run with the Nash Healey but at too high a price because we had to ship the engines and gearboxes over. It was really beautiful with the Farina body. The Nash Healey was very successful and at Le Mans driven by Wisdom and Johnson, it came third one year behind two Mercedes and fifth another year driven by Roll and Hamilton."

To most enthusiasts the Healey name is famous for the Big Healey revered by many as the last of the British muscle sports cars. Its history is that the design was quickly snapped up by Austin after the model debuted as the Healey 100 at the 1952 Motor Show in Earls Court, but Healey admits that at the time he wasn't very pleased with it.

"Gerry Coker (ex-Humber) designed the body and was not very happy with it so we put the nose against the pillar to hide the disappointing radiator shape. Then Len Lord brought Nuffield along, and there was also another chap from Hudson Motors interested. Subsequently over several dry Martinis at the Hyde Park Hotel with Len Lord, a deal was struck and a contract signed overnight. The Austin-Healey was born."

Len was very good, he'd just had a bad experience with a beautiful Graber prototype that was ruined into becoming the Atlantic. He let me have some units, taxi cab engines and gearboxes, and put an order out not to alter a single line drawing without our permission. He let us keep the design right so it wasn't ruined like the Graber and overnight we changed the badge too."

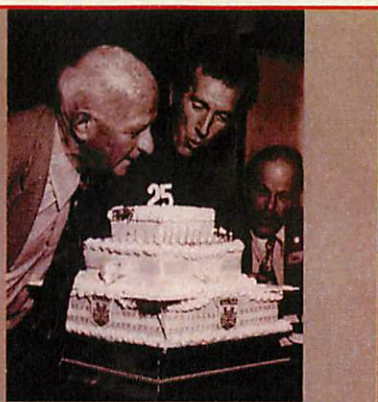
(There is no need to detail the ensuing history and development of the Austin-Healey, the model names say it all: 100, 100S, 100M, through to the six cylinder 100/6 and 3000 models not forgetting of course, the Froggie and later Sprites.)

"The 100/6 was my idea. U.S. sales were slowing up so we put in an imitation seat for the family, so that it would appeal to a wider market, and it did. We never could make enough sixes. After Austin decided to discontinue the Healeys, one Philadelphia dealer ordered 2000 and so they put them back on the production line!"

They must have made a lot of money out of Healeys," the remark being followed by a rueful smile. "They never broke or gave any trouble at all and I think that's why they're working so well today—they never work hard, stress is low. Rust was the killer. No matter how much protection there is on the frame it always rusts on the inside."

It is fair to say that Donald Healey does not have fond memories of the final days of the Healey/Austin union under Lord Stokes—very much a Triumph man. "I was so disgusted with Stokes and what he did to the British sports car. He told me, 'I'm not going to have any more extraneous names, I'm going to have a proper sports car made by MY engineers—no more Coopers, Healeys or Gs!' Triumph was a failure and so was he! I was so disgusted I sold all the Healey spares to a storekeeper for under £3000 and he's now retired to Italy!"

(This article first appeared in Sporting Cars International and is used with permission.—Ed.)



Twenty-five candles are extinguished by Donald Healey, each one representing one year in the life of the Austin-Healey sports car. John Sprinzel and Geoff Healey assist him in the Austin-Healey Club's Jubilee Forum ceremony in May, 1978. Just one tribute to a man and his magnificent machines.

Remembering Donald Healey

I went to work for Donald Healey at the beginning of 1960, just after Graham Hill bought out my share of Speedwell Conversions, the tuning firm we founded in 1957.

Donald's offer was certainly one I couldn't refuse, for not only would I have an office in London's Grosvenor Street in the heart of Mayfair, but I was also to drive the special bodied Sprite in the 12 hour race at Sebring and the 24 hours of Le Mans. Grosvenor Street is the base of many of the top fashion houses, hairdressers and boutiques, so a steady stream of model girls paraded past the showroom window. It didn't take much discussion for me to take the job!

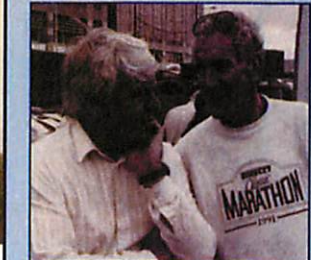
I found the Skipper—as everyone at Healey's called him—a very easy boss to work for, and yet the staff at Warwick seemed in awe of him. A quiet, almost shy man, with tremendous enthusiasm for the cars he built and for life in general. He had the most piercing eyes you could imagine and although already into his sixties, Donald was fitter than most thirty-year-olds with the lean and muscular body that came from his water-skiing. He was certainly very attractive to the ladies, and my wife, Caryl, who met him at the Jubilee Forum when she was 30, still comments on his attraction twenty years later!

The Skipper was a tremendous traveler with his life a perpetual voyage from the Bahamas, the U.S.A. and the South of France. He rarely missed an opportunity to attend a race meeting where his beloved cars were competing. I recall a fantastic party he gave at Cop d'Antibes for the entire BMC team after the success of the 1958 Alpine Rally. The long table was filled with food and wine, while Donald and his friend Tommy Wisdom sat quietly chatting among the crews and the mechanics. Long after I left and started my own tuning company again, I was always happy to meet up with Donald and enjoy his vitality. The last time we met he was busy planning a new project—wind generators I believe—and those bright blue eyes were still flashing with the enthusiasm of yet another challenge in his fertile mind.

It may sound trite to say there aren't many people around like the Skipper, but if you had ever met the man, and been swept up in the sheer energy of his ideas, you would know that it was indeed, very true! — John Sprinzel

Remembering a Friend at 100 Years in 1998





Rallying in Tasmania—1998

John Sprinzel

One of the first fortieth birthday parties for the Austin-Healey Sprite, took place in Tasmania, that large and beautiful island off the Southeast Coast of Australia. Oz has long been the home of some of the most devout Sprite enthusiasts in the world,



Pirelli Marathon in 1991, this certainly showed an optimistic and charitable approach. When his e-mail insisted that all he expected of me was to have fun and to talk the story with the other Sprite-Nuts, I was easily convinced to fly 'Down-Under'. Tony even loaned me his 19-year-old son Allan, who also owned the car I was to drive, to fill the co-driver's seat. Although he had never competed or read pace-notes, this partner turned in a very professional performance to keep car 109 on the right road at somewhere near competitive speeds.

and no less than fourteen of them prepared their beloved classics to compete in the Tasmanian Lactos Rally. As the name suggests, Lactos is a large cheese producer in "Tassie" who has been associated with the Classic half of the event for some years. Arch Frog-eye preparer and driver Tony Bennetto of Melbourne, not only managed to prepare his own immaculate Bug-Eye Barn entry, but also several others including an immaculate red car for your columnist. Considering that I haven't driven any kind of car at over 55 mph since the

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Roger Clark

In January, England lost one of her finest ever drivers, at the very young age of 58. Roger Albert Clark appeared on the scene in a Ford Anglia Van, and on the first Isle of Man Rally, he arrived at the finish of one of those frightening and very fast stages, which descend from the famous 'mountain'. His time was some twenty seconds faster than any of us "regulars" and this alone caused a sharp intake of breath. When we saw his front wing dented into a telegraph pole shape—the result of a spin, we were even more shaken. His record time for that stage lasted another six years!

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One of the first fortieth birthday parties for the Austin-Healey Sprite, took place in Tasmania, that large and beautiful island off the Southeast Coast of Australia. Oz has long been the home of some of the most devout Sprite enthusiasts in the world,



and no less than fourteen of them prepared their beloved classics to compete in the Tasmanian Lactos Rally. As the name suggests, Lactos is a large cheese producer in "Tassie" who has been associated with the Classic half of the event for some years. Arch Frog-eye preparer and driver Tony Bennetto of Melbourne, not only managed to prepare his own immaculate Bug-Eye Barn entry, but also several others including an immaculate red car for your columnist. Considering that I haven't driven any kind of car at over 55 mph since the



Rallying in Tasmania—1998

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ROUND and ROUND

with Andy



An American racing icon goes dancing with Brits

Jay Lamm

Big, emotional, bear-hugging, steak-eating, STP pajama-wearing Andy Granatelli was the last guy you'd expect to see plotting over a breakfast table with the natty Colin Chapman. Andy's STP dollars had brought the two together, but on this October '67 morning, only the brilliant Granatelli magnetism could have led Colin "I never eat breakfast; only black coffee" Chapman wrist-deep into rashes of bacon, a plate of greasy eggs, and a stack of muffins with marmalade. At the height of his fame in the middle 1960s, Andy Granatelli could convince anyone to do anything.

Granatelli's own agenda was simple: Build a car that could win the Indy 500, or at least generate plenty of headlines by losing. To accomplish that, Andy Granatelli—the self-made, self-promoting, self-proclaimed American icon—would spend the 1960s hip-deep in Brits.

Before Chapman et al. entered the Granatelli orbit, Andy had held the public's attention through the power of the Novi V8. Bud Winfield laid out this

supercharged, four-cam engine in 1938, and 23 years later it had gone down in history as a legendary, promise-filled failure. Novis had never won Indy; in fact, they hadn't even qualified since 1958. So why had Andy Granatelli spent \$110,000 for the Novis' battered, dusty remains in 1961? In *They Call Me Mister 500*, Andy's 1969 autobiography, Granatelli gives equal

credit to his own love of the legend and the guaranteed crowd appeal of resurrecting an obsolete jinx. What could bring Andy Granatelli—and therefore his STP merchandise—more media hubbub than that?

Andy spent the rest of the '60s trying to answer that question. One promising avenue came when he met Stirling Moss, who'd recently won a rainy race at Oulton Park with an all-wheel-drive showpiece called the Ferguson P99. All-wheel-drive, Moss told Andy, might be just the thing to tame the notoriously powerful Novi.

Andy paid the Harry Ferguson Research company \$5000 to bring the P99 to America. It arrived with stalwart Brit Jack Fairman in tow, and Granatelli was sold. Ferguson built essentially an upsized P99 for the Novi, which Bobby Unser drew for Indy '64. The car was sidelined in a melee just moments after the start, but Andy stuck with Ferguson until USAC outlawed all-wheel-drive in 1969.

Granatelli's second eye-opener came with Indy '61 and a car that didn't even make the field: the turbine-powered John Zink Trackburner. The car showed decent speed, but since engine-supplier Boeing would only charge Zink if the Trackburner made the Show, he withdrew the entry instead. Boeing happily took the engine back gratis, viewing it none the worse for wear. A zero-maintenance powerplant that still retained its value after serious trials at Indy? That was something else worth noticing.

In the meantime, Granatelli had other plans—and now Colin Chapman was swirling into orbit. But back to turbines

for a moment. Taken on balance, Indy was made for turbine power: Braking, acceleration, and torque spread (three key turbine weaknesses) are relatively unimportant, while reliability, power, and weight (three turbine strengths) are critical. John Zink knew it; Jack Adams, whose turbine-powered Watson was banned as unsafe in 1966, knew it; and Andy Granatelli knew it.

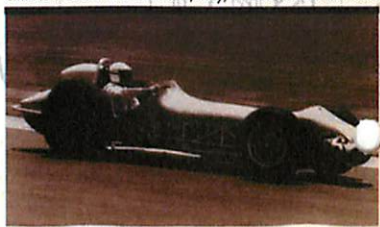
By 1966, Granatelli was ready to go for it: turbine power, all-wheel-drive, the works. The car would also use a stainless-steel backbone frame that slung the driver on one side, and a Pratt & Whitney ST6 turbine on the other, giving it a useful inside-corner weight bias. As it turned out, an outside contractor overcooked the '66 car's chassis during heat-treating and Andy had to put the plan off until 1967. When it finally did arrive, STP Turbocar #40 was technically legal but, just as Andy expected, it brought howls of protest from his rivals, most of whom had big money tied up in conventional cars. USAC slapped a seemingly impossible scattershield rule on Car 40, which Andy deftly sidestepped with an exotic titanium alloy. On the other hand, the Indy-ruling Hulman family loved the crowd-pleaser, and even gave it special dispensation to carry unprotected extra fuel tanks.

To make a very long story short and get along to Chapman, Parnelli Jones and Car 40 were 1967's odds favorites. "It's just flat-out the best damn car I've ever seen," Jones said. He went on to dominate the race—only to have an six-dollar transmission bearing fail three laps from the end.

Granatelli was crushed. A.J. Foyt—one of the Turbocar's most vicious detractors—inherited the win. And USAC suddenly became serious about hosing down the turbine, instituting rule after rule to Granatelli's disadvantage. Andy took the group to court, but by protecting the competitiveness of its series, USAC was merely performing its main function. The suit was doomed to failure, and Andy must have known it; one assumes the publicity of the trial more than justified his legal fees.

By this time Granatelli, who'd sponsored Lotus at Indy since 1966, was

Jim Hurtubise in the STP- Novi, Indy, 1963. Photo: Bob Tranelore



frequently turning to Colin Chapman for suspension and chassis advice. Now that Car 40 was being drummed out of contention, Andy asked Chapman to build him a new machine—one that might fit USAC's new restrictions, but still be advanced enough to capture the public's attention and maybe win the race. This was the topic of the breakfast meeting that started off this story.

By the time Chapman began work, USAC had reduced the key intake-annulus size on turbines from 154cc to 102.5cc. Granatelli cried foul, claiming that other major rule changes usually followed a three-year grace period. Maybe so; nevertheless, Andy had barely said "boo" when USAC laid down the original 154cc limit a year earlier, arbitrarily making Jack Adams' GE-powered Watson into a very costly paperweight. Andy's ST6 measured 135cc.



Indy, 1968 Joe Leonard in the pits. Photo: Indianapolis Motor Speedway

Besides the 102.5cc annulus, Chapman's other design restrictions were 9-inch rear wheels for the all-wheel-drive chassis (two-wheel drives got to use 14s) and the elimination of Car 40's active airbrake. Plus, since Granatelli still hadn't found a 102.5cc turbine when construction began, Chapman and designer Maurice Phillippe had to make the new Lotus Type S6 flexible enough for either turbine or Cosworth power. Complicating things even more, the thrifty Chapman pictured the S6 doing double duty: He'd let Andy fund its development for Indy, but use the same design for his own GP efforts. Thus, side-saddle construction was out.

In January, United Aircraft of Canada informed Granatelli that its new, smaller Series 70 turbine would comply with the 1968 annulus limits after removal of the first two compressor stages. This lowered output by about 700 bhp (to roughly 450), but Chapman's new GP-style design was already much lighter than Car 40. Four-fifty was enough; a turbine it would be. The Type S6 had a new wedge-shaped,

downforce-inducing body (which Chapman later adapted to the world-beating Indy-spec Type 72); extra-tall Firestone rubber for the narrow Indy-spec rims; and the front/rear torque split was changed from 50/50 to 45/55 in an effort to reduce understeer. Most critically, Granatelli wanted to drop Car 40's kerosene fuel in favor of unleaded gasoline to decrease throttle lag and increase mileage.

Popular newcomer Mike Spence was killed testing one of the Lotus S6s at Indy and Chapman, still smarting from Jimmy Clark's recent death, told team manager Andrew Ferguson to roll up the tents and sell off Team Lotus. Ferguson, knowing better, did nothing of the sort, and when Colin returned, nothing was ever said of the incident again.

For Granatelli, Indy '68 was a replay of '67. The race started with Joe Leonard on the pole, Graham Hill next to him, and Art Pollard on Row 4, all in STP-Lotus S6 Turbocars. Last year's Car 40—substantially lightened (at great cost) and fit with a smaller engine—had been written off by Leonard in practice, and would never race again.

In the 500, Hill's suspension failed on Lap 111. The remaining two Turbocars didn't dominate as Car 40 had, but Leonard's was strong enough to find him for in the lead when, after the 180th lap, the yellow light came on and the field bunched up. As the green signaled the start of racing again on Lap 192, Leonard and Pollard both floored their throttles and...nothing. The two remaining Lotuses coasted to a stop with identical fuel pump-drive failures. Neither Granatelli nor Pratt & Whitney had remembered that replacing the oily kerosene fuel with unleaded gas meant the shafts would be slightly under-lubricated.

For 1969 USAC cut the inlet-annulus size so far that turbines were effectively banned. That was the end of the turbine Indy car, but not quite the end of the turbine Lotus. Four Type S6s had been built; the third,

The first STP turbocar at speed, with Parnelli Jones driving, came within three laps of winning the 1967 500 when a S6 bearing let go. Photo: Indianapolis Motor Speedway



Spence's, was returned to England and slowly converted into the 56B Grand Prix car. Little more than minor bodywork, aero, and engine mods were needed, but Lotus' all-wheel-drive Type 63 and rear-drive Type 72 were deemed more important, so progress was slow. The Formula One 56B didn't debut until the 1971 season.

Perhaps not surprisingly, the now-aging Turbocar never took to F1 the way it had to Indy. The combination of throttle lag, brake heat, high fuel loads, and heavy Ferguson AWD all worked against it, and the 56B's most notable finishes were an eighth in the Italian GP and second in a minor non-points race at Hockenheim. With the more traditional Type 72 now showing its true mettle, the 56B program was abandoned. Even so, the FIA would go on to outlaw all-wheel drive and turbines.

Both Chapman and Granatelli had good years ahead. Andy got his longed-for 500 win in 1969; the Cosworth-powered Type 72 would earn Lotus the Manufacturer's Championship in 1970, '72, and '73. Neither Chapman, Ferguson, nor Granatelli would ever work closely together again, but their joint efforts in the turbine era still stand as one of the most interesting experiments in Indy history—and one of the most unlikely joinings of forces seen in recent times.

Two Lotus-built Turbocars made the front row of the 1968 race, with Joe Leonard driving #60 and Graham Hill in #70. Neither finished. Photo: Indianapolis Motor Speedway



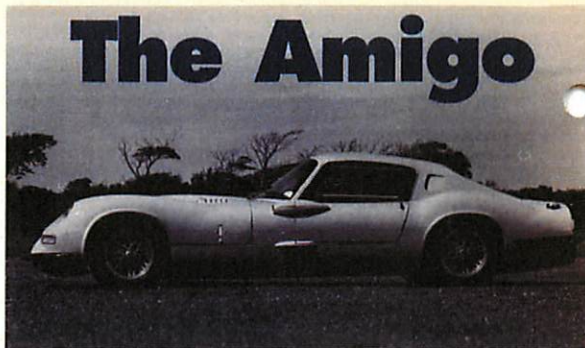
Dennis Ortenburger

From 1954 until the early 1980s the title of Automobile Aerodynamicist was personified by one man—Frank Costin. His ability to make racing cars slice through the air better than their competitors became almost legendary, and efforts to copy his techniques took on, sometimes, humorous results. For instance, at one particular race meeting, one of Costin's designs, a coupe, had developed a problem with exhaust fumes leaking into the cabin. In order to protect the driver, Costin had his men tape up the body seams forward of the firewall. By the time the race began, half the field had their body seams taped over in what they thought had to be the latest Costin 'demon tweak'!

The competition paid this kind of attention because Costin's designs often incorporated minute details which contributed their own critical element to the reduction of aerodynamic drag. Some of the most successful racers of modern times owed their slippery shapes to Costin's hand. The Lotus Marks 8, 9, and 11 had body shapes designed entirely by Costin and the Elite's beautiful contours were refined by his pen as well.

The World Champion Vanwall Formula 1 and the Landspeed Record breaking Speedwell Sprites (*Moss Motoring*, Spring 1977) were also Costin shapes. Unlike many of his predecessors Costin endowed his automobile bodies with an attribute essential to their success—aerodynamically induced high speed stability. Unaided by "tacked-on" devices, his cars were known for both their remarkably high top speeds compared to automobiles with similar engine displacement, and their indifference to cross winds or ground effects.

Less appreciated was Costin's brilliance in the realm of structural design,



The Amigo

particularly his timber monocoque chassis for automobiles. Wood had long been used for semi-structural purposes in forming car bodies, but he was the first to use the material to enclose both the occupants and to handle drive train, engine and suspension loads.

As with his aerodynamic techniques, the technology for high-strength wooden structures was nothing new and, like Costin himself, had come from the aircraft industry. What made his work so extraordinary was that no one in the automotive world had approached either in a systematic way. It was left to Frank Costin to develop them to their logical conclusions.

In 1968, after a decade and a half designing primarily racing cars, Costin decided to lay out plans for his ultimate Gran Turismo. He reckoned there should be some interest in a GT which incorporated the most advanced engineering principles and luckily he had the financial backing to build a small number of these cars to test the market.

Costin called his car the Amigo and the most startling aspect of its specifica-

tion was the timber monocoque chassis. He designed the "tub" around six torsion boxes. Three ran for and aft and consisted of deep boxes (or sills) on either side of the cockpit and the transmission tunnel. The sills were strengthened by internal bulkheads, or ribs, placed at 12" intervals. Three more torsion boxes ran transverse to the structure, one forming the engine bay, the next the cockpit and the last the trunk and rear suspension housing. A fully enclosed, stressed undertray tied all of the boxes together.

The "skin" consisted of marine plywood and spruce. Internal bulkheads and local reinforcement for suspension pickups and the like were constructed of non-marine plywood and parana pine. All bonds were made with a synthetic resin adhesive called 'Aerolite' which, because of excellent gap filling properties required minimal clamping pressure to set. Thus, the production jigs were maintained by simple spring pressure or "C" clamps.

The chassis featured built-in seats which were multi-curved sheets of plywood. They were internally boxed as well and were glued to the primary structure which contributed to the overall chassis rigidity. The steering wheel and pedal group (including a left foot rest) slid forward and back on a carriage that was spring loaded towards the rear. Operation was by means of a pull knob on the dash.

The front-hinged bonnet and coupe top were constructed of fiberglass. A thin fiberglass veneer was also applied to all of the exterior wood surfaces of the body and doors in order to produce a smooth enough surface for accepting a top quality paint job.

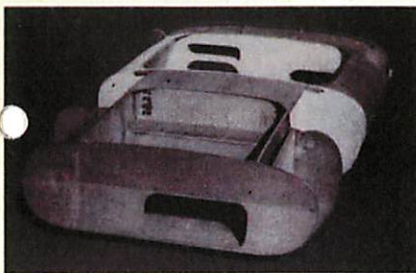
Door hinges on a wooden monocoque presented all manner of problems to Costin, but the most reliable, easily maintained and adjusted proved to be a pair of exterior mounts. These were faired with low drag covers, the top ones incorporating cockpit air

intakes that fed air to eyeball vents above the door sills.

The Amigo's body shape was designed with all of the usual Costin aerodynamic elements. The frontal aspect was elliptical in shape, as was the familiar small radiator opening. Efficient cooling was accomplished by fully ducting the airflow, both into and out of, the radiator. For fast warmups or to keep the water temperature up in very cold climates, Costin fitted an air-fall inside the air intake which could be adjusted open or closed.

The rear of the Amigo was cut off Kamm tail fashion but was creased to provide both visual relief for what would have been a large flat expanse, and to impart its own measure of rigidity. The roofline was tapered to facilitate airflow to the rear, and the windscreen was bonded in place flush with the bodywork.

The undertray was fully enclosed save for the opening for the differential, gearbox and sump drains. The exhaust system ran inside the structure and exited through holes in the lower bodywork, just forward of the rear wheels. An air



duct aft of the right front wheel fed air to a plenum in the scuttle which provided additional air to the cockpit. Ventilation was by means of sliding windows, light aircraft style, in the plexiglass side windows.

When Costin laid out the design parameters for the Amigo he wanted the car to have the ability to cruise at 100 mph with the engine turning less than 5000 rpm, all the while returning about 30 miles per gallon! For this task he chose a remarkably unsporing powerplant, the 2.3 liter four cylinder overhead cam engine from the Vauxhall Victor! Interestingly, the power output was less than 100bhp at the engine's redline of 5800 rpm. What Costin knew, however, was that the engine was dead reliable; it had excellent torque characteristics and slid very smoothly into the bargain.

The Amigo's gearbox, also Vauxhall Victor, utilized an overdrive on third and top gear which gave 22 mph per 1000 rpm in fourth overdrive. With the 3.9 Victor differential and lim-

ited slip as standard Amigo equipment, Costin's GT could do 0-60 mph in 7.5 seconds and had a top speed of 137 miles an hour. And yes, fuel consumption worked out at 30 miles per gallon! Of course, performance was helped by the car's 1450 pound weight and superb aerodynamics.

The suspension and brakes were also taken from the Vauxhall parts bins. These included upper and lower front wishbones, with a Costin-designed adjustable trailing arm. Brakes were stock Victor discs and at the rear the Amigo was suspended by means of a rigid axle located by parallel leading links and a Panhard rod. The brakes in the back were drums. Coil springs were fitted front and rear along with very expensive Koni, self-leveling shock absorbers. All this provided excellent handling with neutral cornering characteristics.

As might be expected, because of Costin's engineering background, the Amigo featured several very novel design elements. For example, the lower rear body panel had a lidded hatch which housed a spare tire. Another hatch on the right side of the hind quarters stored a jack and wheel stay. These

spaces were in addition to a normal trunk which could carry a set of golf clubs. The boot lid, incidentally, incorporated a drop down tray which held a set of hand tools!

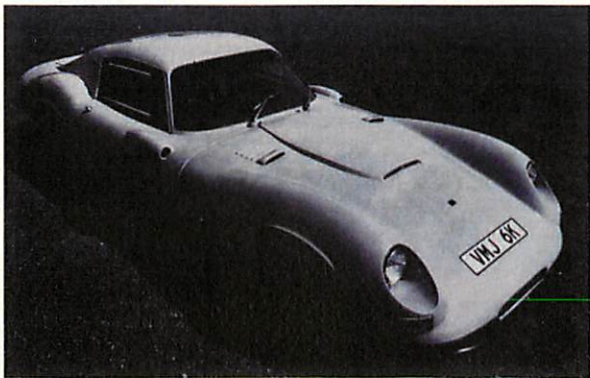
The Amigo had two roll bars, one over the windscreen and another under the rear roof structure. Both were embedded in the fiberglass bodywork and were anchored to local reinforcements in the chassis. The gas tank was an aluminum container housed in its own chamber and was designed to eject on impact! The tank was positioned low in the chassis and offset to balance the driver's weight.



The Amigo's extremely low profile of 3 feet 6 inches resulted in an extraordinary optional accessory—the visual warning indicator! This was a roof mounted, streamlined, fiberglass pylon with a flashing light mounted at the top. The light enabled other traffic to sight the Amigo over hedgerows and walls, and the pylon was a clever place to conceal the radio antenna.

At 13 feet 7 inches, Costin's Amigo was quite long for a pure two-seater (it was five feet five inches in width) but the really startling aspect was its price—\$8000! By the time production began in 1972 the price put the Amigo in Jaguar and Porsche company. As it happened, a little too dear for all but seven of the most rabid enthusiasts. Two more cars were built, but were sold off unfinished. Interestingly enough, today, one of them belongs to Ron Costin, Frank's son.

Clockwise from top left: The Amigo's profile accentuates the extremely low overall height, notice the fairings over the door hinges; The interior provided no clues that the car was constructed of wood; A rear view of the timber monocoque chassis; The spare tire compartment and Kamm-style tail treatment; The Amigo had the look of a car capable of high top speeds. Photos: Chris Turner





A FINAL CALL... Are You Coming to Our FREE Party?

There's not much time left to get your registration form in to us to attend the fabulous Moss Motors 50th Anniversary Sports Car Festival to be held July 16-19 at the beautiful Flag Is Up Farms Ranch in the Santa Ynez Valley. Entries are rolling in daily to our office, and plans are being made for everyone in the family to have a really wonderful time. In this latest update, we have some really exciting news!

We are delighted to announce that John Sprinzel, well known rallyist and race driver, will be our guest at the Festival. John, who is a regular columnist for *Moss Motoring*, founded the original Speedwell Company and had a wide variety of racing and rally successes including drives at the Le Mans 24 Hours, Sebring, and Rome-Liege-Rome, during the sixties and early '70s. Various steeds were under his command including MG, Triumph (where he was Works Team Manager), Austin-Healey,

Jaguar and Rover to name but a few of the marques he was associated with.

Perhaps his most epic drive however, was the London to Sydney Marathon of 1968 in an MG Midget. Who can forget his stirring adventures in the little Bugeye Sprites? Apart from answering the myriad of questions expected from enthusiasts at the Festival, John will sign copies of his book *Spritely Years*. So, if you are coming and already have a copy, bring it along—if not, copies will be available for sale and book signing sessions are planned. Apart from speaking, he will also be taking part in the



rallies and the slalom, so you may see a master of his craft in close-up action! (Don't worry we'll make sure he doesn't win!) A friend (and former employee) of Donald Healey, and big buddy of Stirling Moss, Jim Clark, Graham Hill and other world class competitors we urge you to come along and meet the man himself at this wonderful party for all the family.



Several other attractions are in the works including the opportunity to take a flight over the valley in a vintage British Tiger Moth biplane! For a modest sum you can play Snoopy and the Red Baron in this open-cockpit flying legend! The fabulous Sunday Car Show will have several new features including a rolling awards ceremony for the winners. Also at this time the draw-



ing will be made for the round-trip airline tickets to London kindly donated by our major sponsor British Airways. (What was to them an inhospitable climate, so they hung up bushes instead.

Bearing in mind entry to the Moss 50th Anniversary Festival is FREE, we may eventually have to close off registrations—so don't be disappointed—get yours in today! For further information call Moss Motors at (800) 472-9445.



WHAT'S YOUR PUB CALLED? by Elaine Saunders

English people rarely consider the signs outside pubs, mainly due to their rush to get inside! Yet, collectively, they provide an illustrated history of Britain. Few pubs were named by accident, and many names are almost as old as the pleasures of drinking itself.

Wine bars in ancient Rome hung bunches of grape leaves outside as trading signs. When the Romans invaded Britain they found very few vines in what was to them an inhospitable climate, so they hung up bushes instead.

These were the earliest signs and the names *Bush* and *Bull & Bush* still survive. Subsequently landlords began to display pictorial signs as distinctive advertisements to the largely illiterate population of the day.

The first "proper" inns were opened by religious houses to cater for pilgrims, or knights on their way to the Crusades in the Holy Land. *Ye Olde Trip to Jerusalem*, whose cellars are carved into the rocks beneath Nottingham Castle is such an example. Established in 1189, it claims the title of the oldest pub in England and was a stopover point for forces on their way to meet with Richard the Lionheart. Other signs on this theme are the *Turk's Head*, the *Saracen's Head* and the *Lamb & Flag*, the lamb being Christ and the flag the sign of the Crusaders.

Even after the dissolution of the Monasteries in the 16th Century, some of the names with religious connotations survived, such as the *Mitre*, the *Ship* (symbolizing the Ark) and the *Anchor* (the Christian faith). However many landlords thought it politic to show allegiances to the monarch and hastily adopted titles like *The King's Head* or *The Crown*. Henry VIII who ordered the dissolution is (surprisingly) the most popularly depicted monarch.

Heraldry has also been a recurrent theme. The *Black, White, Red and Golden*

Lions of ale-house fame have formed parts of the royal coats of arms since the time of the Norman Conquest. *The Unicorn* was found in the Scottish arms, the *Red Dragon* in the Welsh and the *White Horse* in the Hanoverian. *The Rising Sun* was the badge of Edward III and local gentry often had pubs on their land named after them in tribute.

Not only royalty have been honored and anyone who caught the public's imagination was likely to be immortalized. *Admiral Nelson* and the *Duke of Wellington* are commemorated along with their famous victories, and lovable rogues like *Dick Turpin*, the highwayman also get a mention. One of the most affectionate tributes is reserved for the *Marquis of Granby*, commander-in-chief of the British army who was beloved by his men. After the battle of Warburg he bought pubs for all of his disabled non-commissioned officers. However, his generosity ruined him and when he died in 1770 he left crushing debts of £37,000!

Signs were important to advertise the entertainment on offer at the inn. Any pub called the *Cock Inn* or the *Cockpit* would be a venue for cockfighting. *Ye Olde Fighting Cocks* in St. Albans which also claims to be the oldest pub in Britain, was originally the dovecote for St. Albans Abbey. After the dissolution it became an inn called the *Roundhouse*. Its shape made it ideal for cockfighting, hence its present name.

Just to confuse things, any pub called the *Cock & Bottle* had nothing to do with sport—it simply denotes that draught and bottled beer are available on the premises! As to other entertainments, the *Bear* recalls bearbaiting, the *Dog & Duck* hunting, the *Bull & Dog* bull-baiting, and the *Bird in Hand* denoted falconry. Nowadays the more modern sports are represented by the *Cricketer's Arms*, the *Angler's Rest* or the *Huntsman's*.

Often the predominant trade of the

area would give the pub its name. *The Golden Fleece* is not just a reference to the legend but a reflection of the local wool trade. *The Coopers', Bricklayers', Saddlers' and Masons' Arms* are commonplace signs. Legend has it that the *Smiths' Arms* in Dorset was once a blacksmith's forge where Charles II stopped to have his horse shod. While he was waiting the King demanded a beer but was told the smithy was not licensed to serve him. Exercising his royal prerogative he granted a license on the spot and was duly served!

In the 18th Century the population became more mobile and a need for coaching inns grew with names like *The Coach & Horses* and the *Groom*. The advent of steam gave every town the obligatory *Railway Tavern* or *Station Arms*. In Stony Stratford, Buckinghamshire, the London stagecoach changed horses at *The Bull* and the Birmingham coach at *The Cock Inn*. The passengers from the respective coaches would swap stories while waiting for the change, and it is from this that the phrase "A cock-and-bull story" is said to have originated.

Plenty of cock-and-bull stories and local legends have found their way into pub signs. Take for example, the *Drunken Duck* at Bargates. The landlady is said to have found all of her ducks dead in the yard one morning. Unaccustomed to waste, she plucked them ready for cooking. As she finished, the ducks began to revive and a search of the yard revealed a leaking barrel surrounded by webbed footprints. It is said the lady was so contrite she knitted all the ducks little jackets until their feathers grew back!

Alternatively there was the *Flying Monk* of Malmesbury who claimed his faith was so strong it would enable him to fly. He jumped off the top of the local Abbey and...well, the pub sign was a nice memorial!

Almost every pub name has a story behind it and together they chart the social history of England. However one thing is most puzzling. Not even painstaking research has unearthed the reason why our local pub is called the *Frog & Rhubarb*!

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Healeys have established comprehensive rules for concours classes.

Originality — A Vexing Question

Bill Piggott

This issue, I would like to address a few words on the thorny subject of originality as it affects old cars, and particularly the 'showing' of old cars. I tend to suspect that this subject has caused more arguments and heated debate than any other since the dawn of the historic car movement, but when one considers the difficulties involved in defining and establishing true originality, then I suppose that this is not so surprising.

Are there any truly original cars? Well yes, just a few, cars which through some accident of history or eccentricity of the owner have remained unused, or virtually unused, for the majority, or even all of their lives. We know the stories of the last 50 E-Type Jaguars, sold in early 1975. Apparently, a good few of these cars were purchased by wealthy collectors who cocooned them from day one, and in some cases, they are still as new in 1998. Likewise with some of the last MGs and Midgets. Occasionally, such cars appear on the open market, maybe on the death of the owner, or when some acute financial crank sets in! But leaving aside the difficulty of valuing such freak vehicles, in truth, what good are they as cars?

The moment they are subjected to regular use, the uniqueness as a 'new' old car is lost, and in any event, after 20 or more years in storage, however careful, certain perishable items will have to be renewed even though they have never performed their original designed work. I, for one, would not care to drive at 100 mph a recently acquired 20 year old 'new' MGB on tires that had supported its weight in the same position for those 20 years!

As an example, on one of my trips to the USA, I was shown a 1955 TR2 with only 8000 miles on the clock—almost nothing had been replaced on this car, yet it did not look like new, for one presumes that its storage conditions were not all they might have been. Certainly it would have won no prizes in the state it was in when I saw it. It had original tires, hoses, brake lines and seals plus an original cotton-covered wiring loom with some excitingly perished insulation. A fire waiting to happen, maybe? Having covered 8000 miles, albeit many years ago, the car was not quite in the same condition as the stored E-types referred to above, but like them, it was truly original. What it was not however, was capable as use as a car!

Those 40-year-old hoses would have split within a few miles when subject to boiling water heat, those brake cylinders would have leaked when applied hard, or more possibly have seized up from lack of use, and the wiring loom could have self-destructed at any time, taking the rest of the museum piece with it. In short it was not capable for use as a without wholesale replacement of the great bulk of perishable items. However, following such replacement it would no longer be original—an insoluble conundrum! All that one could do with such a vehicle, interesting though it might be, would be to put it on a transporter and take it to club events to be exhibited as a curiosity—or else used as a yardstick to settle heated originality debates. Now there's an idea—maybe every club should have one! So we are now at the stage where the truly original car is also the unusable car, unless that is, one is prepared to compromise that very originality by replacing the perishables at the very least.

However, every serious car show which I attend in the U.K., and I suspect the same is true in the U.S.A., offers concours prizes for originality. The cars that win such events are almost never cars with histories such as those described above; rather they are pristine, newly rebuilt cars finished as far as possible to original specifications. They are NOT original cars by their very nature! Indeed, thanks to companies such as our own Moss Motors, it is now possible in the case of several British sports cars, to create a new car virtually from scratch—the true "chassis plate rebuild"! For example, one could set out to build a sidescreen TR from new parts, and about the only major component that could not be purchased new, from one source or another, would be the engine block and head, and I am given to understand that even these will soon be available—what price originality?

...after 20 or more years in storage,
however careful, certain perishable items
will have to be renewed...

The same is true of the MGs, Midgets, E-Types—what we call the "Queen Anne's Axe" syndrome. You know, it's had four new heads and five new handles—but it's still Queen Anne's Axe! I should stress that I am not seeking to decry the well-executed concours rebuilds, done as far as possible to original specification, merely to point out that however well done they are they are NOT and never can be, original in the truest sense of the word. What surely one should have, therefore, is two separate classes at shows, one for cars "rebuilt to original specification" and one for "truly original cars". These latter cars would be judged without regard to condition, but with regard only to the actual originality of the components



Originality plays big at GoF Meets.



Concours line up in California.

that make up the car. I accept that this class would be sparsely attended, but it would provide a forum for showing those few truly original 'new old stock' vehicles, even if, as in the case of the 8000 mile TR2, their condition would preclude them from prizes at normal concours events.

Recently, we had a 19,000 mile from new TR3A turn up in England...as far as could be ascertained, this car was virtually exactly as built, but it had suffered the indignity of 20 years of outside storage, and to look at it one would think it had been to the moon and back! Even the rust was rusty...now it would be nice if the lucky finder of this rarity could take it to a show one year, win a prize for the most truly original car, then take it away to rebuild it using as many original pieces as possible, and then in again the following year in the "cars rebuilt to original specification" class. At least that way the public would have a rare opportunity to see true originality before it was destroyed forever, necessary though that destruction was. After all, a seriously rusty car is not really any good to anyone long term.

The introduction of a "truly original" class might also settle the 'what was original' argument. As I know myself, having written on the subject, it is horrendously difficult to be categorical to the original specification of a particular model—the factory itself could be guilty of so many inconsistencies that what chance do rebuilders and judges stand 40 years later?

A further idea in the "cars built to original specification class", could some way be found of giving credit for the use of original rather than reproduction items? I suspect this would be a nightmare for the judges, but it might be a way of separating two otherwise well rebuilt and overtly similar cars. For instance maybe one contains say 67% of original parts (albeit refurbished) whereas the other contains only 33%—on second thought count me out as a judge on this one—it would probably take a week to do each car! Due allowance can be made for those safety items where deviation from originality is allowed on safety grounds. For instance, the use of clips on fuel lines that were originally just sh-fit items.

Maybe the foregoing will just add more fuel to the fire of the great originality debate, but I do feel that we should strive to find a formula that does not penalize genuinely original cars which are not in top condition as compared with the

British Car Events Calendar • (Continued from page 2)

SEPTEMBER, 1998

- 9-13 NEMGTR GoF, Watkins Glen, NY, (315)859-0962
- 10-13 TR6 Six-Pack Trials, Whippany, NJ, (201)843-2867
- 12-13 British Car Meet, Palo Alto, CA, (310)392-6605
- 12 Fallfest, Moss Motors, Dover, NJ, (973)361-9358
- 13 Battle of the Brits, Sterling Heights, MI, (810)979-4875
- 13 British Car Festival, Des Plaines, IL, (708)442-7380
- 17-20 British Invasion, Stowe, VT, (508)497-9655
- 17-20 A-Healey Classic, Little Switzerland, NC, (901)282-2675
- 19-20 English Motoring Conclave, Denver, CO, (303)755-1399
- 20 All British Gathering, Waterford, PA, (814)899-7061
- 25-27 Indy British Motor Show, Indianapolis, IN, (317)887-3867
- 25-27 Tri-Healey Meet, Wagoner, OK, (405)722-0457
- 25-28 Lotus Gathering, Road Atlanta, GA, (770)949-3672
- 26 MGs On The Rocks, Bel Air, MD, (410)847-6862
- 26 British Car Day, Montgomery, AL, (334)244-6671
- 26 AMGBA Convention, Charlotte, NC, (800)723-MGMG
- 26 Wings & Wheels, Hummel Airport, Topping, VA, (804)758-2753
- 26-27 British Car Meet—Woodley Park, Los Angeles, CA, (310)392-6605
- 27 British Car Toy Run, Burlington, Ontario, (905)336-0251
- 27 British Car Show, Lincoln, NE, (402)435-4905

OCTOBER, 1998

- 2-4 British Car Festival, Waynesboro, VA, (540)943-1236
- 3 British Car Festival, Mobile, AL, (334)434-1070
- 10 Triangle British Car Show, Louisburg, NC, (919)851-3030
- 10 MGs at Mercer, Doylestown, PA, (610)446-2073
- 17 All British Meet, Tampa, FL, (813)867-7129
- 22-25 Triumphfest '98, San Luis Obispo, CA, (310)322-2546
- 22-25 VTR Regional Meet, Ocala, FL, (561)367-9735
- 24 Brits at Renaissance Fair, Florence, AL, (888)356-8687
- 29-11/7 Heritage UK Tour, England, (908)713-6251
- 30-11/1 MG Roundup '98, Laughlin, NV, (602)937-1203

NOVEMBER, 1998

- 6-8 MG Jamboree X, Homosassa, FL, (813)576-9474

superb condition, but rebuilt vehicles. It seems to me that the regular inclusion of separate classes would be the way to do this—but what do our readers think?

(Bill is the author of Original Triumph TR and Triumph by Name—Triumph by Nature both of which are available from Moss Motors. We feel this gives him some stature to address the above subject!—Ed.)



Early Triumphs vie for concours honors.

Technical Tips

Have you got a great time-saving idea or tool that can help out other British car owners? Send it to us! If we publish your idea in *Moss Motoring* you'll be eligible for a \$35.00 Moss Motors Gift Certificate! Send your ideas to Technical Editor, *Moss Motoring*, 440 Rutherford Street, Goleta, California, 93117.

Here's a time-saving and cheap idea that is sure to help out any British car owner when working in his/her garage. Simply save an egg carton and use it as a separator/part holder to hold small parts and keep them organized. There is no cheaper container with as many compartments! Also I use a soft-bristled toothbrush to clean wax from the chrome strips and emblems on my car. Using a towel never got into all the grooves, but I've found an old toothbrush does the job just fine.

—Amanda Kurkowski, Plainfield, IN

Can I offer a tip which might be useful to your readers relating to the task of removing and replacing the starter motor on a 1967 MGB?

After removing the oil filter, distributor, and loosening the engine mount on the right hand side, I was confronted with the task of taking off the starter. The bottom securing bolt was OK but the top bolt was a real problem.

It is located so close to the starter body that the use of a socket or ring spanner is impossible, leaving the use of an open-ended spanner as the only alternative. Unfortunately I discovered the previous owner of the car had a similar problem, and had burred over the bolt head with (apparently) the use of a sloppy-sized open-ended spanner. This made removal of the bolt a lengthy and frustrating job, to say the least!

When I replaced the starter I managed to obtain a replacement bolt which had a round head, but which had an Allen key recess in its head. Make sure you select a bolt that takes a robust key and future problems in this area will be avoided.

—Barry Eisenhauer, Mermald Beach, Australia

A fairly recent technical tip published in *Moss Motoring* outlined a procedure for the front spring replacement on an MG. This was a good idea but it doesn't work for a Triumph because of the differences in parts. I'd like to suggest a modified version that works well for a TR, specifically for a TR4A but I'm sure it applies to other TRs as well.

1. Lift front end of car and place on jacksstands.
2. Remove both road wheels. (Springs should always be replaced in pairs.)
3. Loosen the two inner spring pan nuts on their studs until the bottom of the nuts are even with the bottom of their respective studs.
4. Place jack under spring pan so as to barely support the load, paying attention to its positioning, so that the other spring pan bolts can be removed.
5. Remove the bolt from the bottom trunnion assembly and swing vertical link out of the way.

6. Remove the four remaining outside nuts and bolts from the spring pan.
7. Lower jack.
8. Pry out spring and remove rubber washers.
9. Replace with new spring, and new spring rubber washers, top and bottom.
10. For reassembly, reverse procedure 6 through 1.
11. Repeat on opposite side.

This method I have found safe and requiring no special tools. I have recently replaced springs and shocks, front and rear and can't believe the difference. It feels like a new car!

—J. Clark Jones, MD, Everett, WA

I always enjoy reading the technical tips in *Moss Motoring* as I undertake most of my own repairs on my 1952 TD and 1977 MGB. I read in your Winter issue the tip on using 'Easy Off' oven cleaner to clean aluminum brightwork and I thought I would pass on another tip that might be of some interest to your readers.

Since we have all experienced problems with those wonderful Lucas electrical connectors in our cars, I think I have found a way to solve some problems. Purchase from your hardware store a product available to clean calcium lime and rust from your showers or sinks. Usually this is sold under the brand name CLR (Calcium Lime & Rust Cleaner). Place a small amount of CLR in a small cup, then carefully disconnect each electrical connector and soak it in the CLR for a few minutes, followed by a rinse in clean water and then wiped until dry. The connectors will come out looking new with all traces of grease, acid corrosion and build up gone, improving the connection. Coat the contact with a contact lubricant when the operation is completed to protect the connections. The above process can be done one connection at a time to eliminate possible wiring problems since it cleans very fast. Handle the CLR with care making sure none gets on painted surfaces or other components.

Another suggestion that has eliminated electrical problems for me is, after the cleaning process described above, to drill a small hole in the spade connectors of both the male and female ends if needed, especially those on the starter, and insert a small cotter pin through the connector. Some spade connectors come with a small hole already drilled in them. The cotter pin tips are then cut off to make certain they do not short across to other connections or grounding surfaces. It's also a good idea to install a new insulation cap over each connector when this task has been carried out.

Once completed, you can rest assured that no matter what road conditions you drive on, the connectors are tight and secure. I learned this trick by making numerous attempts to tighten the connectors by clamping them down with pliers, only to have them come loose again from movement of the wires on rough roads or by air flex over the wires. Thanks Moss for keeping our cars on road and keep those tech tips coming!

—Denny Elimon, Mahomet, IL

(I seem to recall seeing MG and Austin-Healey works cars having their connectors secured in a similar manner, especially on the long Continental rallies.—Ed.)

the nut behind the wheel



ron phillips

...who tackles more leaks than the White House!

I'd like to share with you some of the other fixes I've made over the years in my '100' to prevent it from leaking precious fluids. In previous articles I concentrated on the engine. This time I want to talk about everything else that can leak that refined Cretaceous crude.

The BN1 three-speed gearboxes all tend to leak oil much more so than later boxes due to the additional "holes" in the bottom. Here are the usual suspects. The adapter assembly for the overdrive gear switch is a potential source. The oil seal in the case under the interlocking shaft is another. Also, over-tightening of the cast iron drain plug in the alloy case can crack the case, and even if not cracked, the threads tend to leak anyway! There is a "scroll" seal in the front cover that "urges" oil to go back into the transmission instead of into the bellhousing. It's not very effective as gearbox oil seems to have a mind of its own and is always looking for a way out!

What are some of the fixes for these potential leaks? Glad you asked.

The adapter assembly gaskets are available in the gearbox gasket set. Make sure you have the right ones and install them correctly. Sometimes, it's the gear switch itself that leaks and only replacing it will solve this problem. Fortunately, it's the same type of gear switch used on later Healey gearboxes and is available.

The oil seal under the interlocking shaft is another problem. To get to it, you will need to drive the retaining pin out and remove the shaft. To remove

the shaft, you will need to gain access to the side cover and remove the interlock mechanism that attaches to it. Now you can extract the shaft and get to the seal. If you can't locate a new one, why not use the O-ring technique like I described in an earlier article regarding the tachometer drive. A proper size O-ring can be fitted together with the seal, and that should eliminate this leaker.

As for a cracked case, only heliarc welding or another case will fix this problem. If the threads on the drain plug are stripped, sometimes you can tap to a larger size. However, the drain plug on the BN1 transmission is a standard pipe thread and a larger size is just too large! Best to weld it up and have it re-tapped to a standard size. If the threads are just worn, try Teflon thread tape. But don't get any of it inside the transmission as it possibly could clog up the works in the overdrive. One problem I solved here was trying several different drain plugs, both new and used, until I found one that fit tightly and didn't leak. Maybe you can be so lucky!

Ahhh! the transmission front cover! That scroll seal is present here on the BN1 transmission and on the 100/6 transmission. All the others have a modern neoprene spring-loaded lip-type seal to keep oil from the transmission from leaking around the first motion shaft. That's "input shaft" in American. You know that leak that occurs right under the low spot on the transmission? Well, it's probably transmission oil if it's clean. If it's dirty, it's probably engine oil leaking past the rear main bearing.

The fix for a 100/6 is to use a later bellhousing. The fix for a BN1 is to machine an O-ring groove into the front cover and use an O-ring to staunch the flow. The front cover is small enough that it can be chucked up in a lathe and then a groove machined in the cover's

first motion shaft inner diameter. I know of only a few of us who have done this. One member did it back in the '50s, I did it in 1982. My transmission doesn't leak from this area at all and, you don't need to totally disassemble the entire transmission to do this! Just remove the front cover and take it and a spare first motion shaft to your local machinist and tell him/her to FIX!

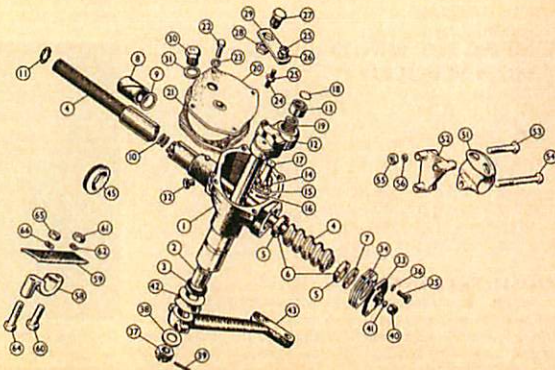
Steering boxes tend to leak due to a perished oil seal (3) or a worn rocker shaft (12) where the seal bears on it. (See diagram below.) Two seals sometimes can be inserted to maximize sealing. Another source of leaks is in the

...a modern spring-loaded lip-type seal to keep oil from the transmission from leaking around the first motion shaft.

That's "input shaft" in American.

front cover shims and gaskets as well as the "olive" or compression fitting that seals the stator tube to the front cover. All original "olives" are split so that they will then compress to seal when the securing nut is tightened. However, a regular un-split "olive" or compression fitting of 3/8 inch diameter works just fine. Don't over-tighten the nut as removal of the olive in the future becomes difficult as you may squash the stator tube.

That about wraps it up for my tips on oil leaks for this time. I really hope you have found my tips useful and possibly interesting. If you have any questions, drop me a line care of the Editor. The only item we haven't covered is the rear axle and I'll mention it briefly in the future.



through the windscreen

Ken Smith

ON THE ROAD AGAIN!

We will soon be setting out on our long-distance travels one more time with the *Massmobile* after attending several events here on the West Coast this past spring. It's amazing traveling around to see how green everything around here has become after the drenching California received from El Niño—quite a change from the 'Brown Season' we normally experience! We hope to meet up with many of our customers at events such as the North American MGB Register's "MG '98" in Hagerstown, Maryland where the special guest will be Syd Beer, a lifetime MG enthusiast. We will also be there to celebrate seventy-five years of Triumph at the *Vintage Triumph Register Convention* in Hudson, Wisconsin during July, while the *Austin-Healeys in Conclave* at Boyne Falls, Michigan will more than acknowledge the 100th Anniversary of the founder, Donald Healey. These and many other great meetings are listed in our comprehensive Events Calendar which you can find on page two of this magazine. If you see us out there do come along and say hello!

UNDER NEW OWNERSHIP

I am fortunate enough to possess a full set of *MG Magazine* which was founded by John Dugdale in the late seventies, and they are among the most treasured MG publications in my library. If ever you see a set offered for sale, then buy them, as some of the feature articles and the colorful inserts have become real collector's items. However, there has been a recent change of ownership for the magazine, MG enthusiast Greg Perigo of Fort Wayne, Indiana, having purchased the title. We are confident that the high standard and quality of *MG Magazine* will be maintained under the new regime, and we wish them every success. Call (800)706-4636 for further information.

FIGHTING THE WINTER BLAHS AT MOSS NEW JERSEY!

During early February, Moss Motors hosted their Second Annual Technical Seminar where the subject was the replacement of MG T-series rear oil seals, wheel bearings and seals, expertly demonstrated by Nick O'Donohoe. Apart from the information gained, attendees were also able to partake of coffee and donuts. Members of the Eastern New York MGA Club, New Jersey Triumphs, MG Car Club Long Island, MG T Club of New York and the New Jersey MG T Register, were present in a very well attended event. One more way in which Moss helps the clubs who support us!

ADDITIONAL BITS TO CARRY!

Reader Jim Cubbison from Germantown, Maryland (who says we have kept his 1952 TD running for decades—he bought it new!) kindly wrote to add to our list of things to carry on long trips (Spring, '98 *Moss Motoring*). Jim rightly claims that since the advent of tubeless tires, patches have



become almost extinct, and most tire places don't even know what a patch is, let alone how to fit one! If you have an older car, say a T-Series MG, carry an extra inner tube on your journeys. Also Jim claims an extra set of car keys proved a blessing some years ago near the Grand Canyon. We wonder wh-

HAPPY ANNIVERSARY!

Our congratulations go to the San Diego MG Club who celebrate their Fortieth Anniversary this year. Also Lotus celebrate their Fiftieth Anniversary with a big 'do' at Road Atlanta in September. Details in our calendar! Other anniversaries include Land Rover 50, and Austin-Healey Sprite 40.

AND FINALLY...

Should you be lucky enough to win a pair of the free round trip tickets to London kindly provided by *British Airways* at our Moss Sports Car Festival in July you might just wish to stay at the Victoria Lodge Guest House near Gatwick in Surrey, where Nikki and Paul Robson will attend to your every need! Further details by calling 011-44-1293-432-040.



Tackling T-Series rear oil seals at Moss New Jersey Second Annual Technical Seminar.

Repairing the Starting System

Louis C. Belby

Our resident technical guru Eric Wilhelm will return to these pages in the Fall Issue of *Moss Motoring*, as he is very busy creating some exciting new catalogs for you! To tide you over until Eric's next pearls of wisdom we offer part one of a two part feature by Louis C. Belby...

One of the most commonly asked questions on the Internet MGB Technical Bulletin Board deals with lack of starter motor function in 1968-'80 MGBs. In this situation, when the ignition key is turned to the start position the driver typically hears nothing, or perhaps a click, but the starter motor is not activated. The present article addresses this type of problem; if your engine cranks but will not start, the cause could be in the ignition system rather than the starting system, or it could be fuel related. Another possibility is worn teeth on the flywheel and/or starter pinion gear, but this condition can be verified by manually rotating the engine or pushing the car in gear and then trying to start it again. An engine with a fault-free starting system will also fail to crank at all if the starter pinion gear is hung up on the flywheel, a condition which can also be remedied by pushing the car backwards while in fourth forward gear. This article assumes that you have already investigated and ruled out all these possibilities, and that the starting system itself is defective.

Problems in the starting system can almost always be traced to one of five sources: the battery, the starter switch, the starter relay, the starter solenoid, or the starter motor itself. Each of these components is easy to isolate, and thus diagnosis is relatively simple. However, an understanding of how the starting system works is necessary before proceeding to a diagnosis of defects.

The starting system is designed to deliver current to the starter motor, turn it while it is engaged with the ring gear of the flywheel, and to remove this current after the engine has started. Have you ever turned your key to start with the engine running? If so, you understand the necessity of having an inoperative starter after the engine comes to life. In order to achieve the above, current flows from the battery to the steering column-mounted starter switch on a brown wire. When turned to start, the ignition switch sends this current on a white/red wire to the W1 terminal on the starter relay located above the coil on the fender under the hood. The starter relay has four terminals, labeled W1, W2, C1, and C2, and is held to the fender by two screws. If you remove the

relay and turn it upside down you will see that the four terminal designations are embossed on the bottom. The W2 terminal of this relay is permanently grounded, so by turning the ignition switch to start, positive current is sent to the starter relay, which closes its contacts. These closed contacts join two wires. One of them is a permanently positive (unswitched) brown wire from the battery terminal on the starter solenoid (the big bolt with several wires attached coming out of the solenoid end cap away from the starter motor) to the C1 terminal on the starter relay. The other wire is a brown/white one running from the C2 terminal on the starter relay to a spade terminal on the starter solenoid. By the way, if your car is equipped with factory electronic ignition you will also see another spade ter-

Problems in the starting system can almost always be traced to one of five sources: the battery, the starter switch, the starter relay, the starter solenoid, or the starter motor itself.

terminal on the solenoid attached to a white/light green wire. This wire goes to the ignition coil and has nothing to do with the starting system. So, by turning the ignition switch to start, you are sending current from the battery via the starter relay to the starter solenoid. This current does not pass through the starter switch; rather, the ignition switch merely closes a relay which then connects the starter solenoid to the battery.

Now, let's talk about the function of the starter solenoid. A solenoid is a switch which consists of two or more contacts that are closed electromagnetically. The starter isn't the only component equipped with a solenoid; if you have overdrive, this unit also is activated by a solenoid. The purpose of the starter solenoid is to permit current flow to the starter motor when the ignition key is turned to start, but to withdraw it when the key is in the run position. As shown above, when the key is turned to start, current is supplied via the starter relay to the positive side of the solenoid coil. Negative, of course, is always present since the solenoid is bolted to the metal starter motor. When activated, the solenoid coil draws in a spring-loaded plunger. This plunger pushes against a shaft inside the solenoid that

in turn pushes against a bar that bridges the battery/starter motor terminals. The battery terminal is the one referred to above (the big bolt with all the brown wires of varying thicknesses). The starter motor terminal is the other big bolt through the solenoid end cap attached to a metal strap that comes out of the side of the starter motor. Note that this terminal has no other wires attached to it! Inside the solenoid, these bolts are attached to individual contacts that are isolated one from the other. The solenoid, when activated, bridges these contacts, thus connecting the starter motor directly to the battery and making the starter run. When the key is turned to start the plunger, as it is drawn into the solenoid, simultaneously pulls a lever that makes the starter pinion gear thrust out and engage the ring gear on the flywheel, turning the engine and starting the car. When the ignition key is released, the ignition switch returns to the run position, which allows the car to run but which cuts current to the starter solenoid, resulting in the withdrawal of the pinion gear from the flywheel and deactivating the starter motor. So, the current that actually runs the starter motor comes directly from the positive terminal on the battery to the big terminal on the solenoid end cap away from the starter. The ignition switch merely activates the starter relay that allows current to flow to the starter solenoid. The starter solenoid then bridges the two big terminals, activating the starter motor and at the same time transferring the motion of the starter motor to the engine via the flywheel. When you release the ignition key, the starting system, but not the ignition system, is deactivated.

With this basic understanding, it's now turn to diagnosing an inoperative starting system. First of all, check your battery. If it is low take it out, charge it if possible, and have it tested; most auto stores do this for free. If your battery is bad, don't assume that this is your only problem; have your charging system checked before installing a new one or you might be in the same boat in a few days. If your battery and charging system are good but the engine won't crank, proceed to check the starting system. If you hear a sharp click when you turn the key to start, you're probably hearing your starter solenoid pulling in the plunger. The starter relay also makes a slight click, but not enough to confuse it with the louder sound of the starter solenoid. A loud click is no guarantee that the

please turn to page 30

MOSS MARKETPLACE



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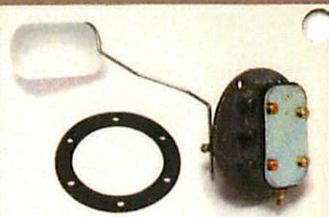
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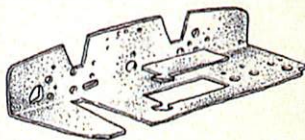


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More Classic-fieds on page 30...

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1982 Austin-Healey Sprite AN6. Body shell on rolling chassis. Late brakes. Parts or project? \$250 (909) 798-3415 CA.

1954 Austin-Healey 100-4. With 55 Chevy V8 and power glide trans., solid frame, wire wheels, runs great, not butchered up. Stock body, interior, suspension. Needs restoration. \$3,000 obo (800) 820-1061 NJ.

1960 Austin-Healey Bugeye. Roller with no mechanicals or interior. Very sound and a great project. Don't spend a bunch for a Bugeye that you have to strip down anyway! \$900 with repairable bonnet. (816) 246-4350 MO.

1964 Austin-Healey BJ7. Second owner. All original - excellent condition. Red w/bk int. and new Moss black top. Wire wheels. Garaged all its life. Only 39,500 original miles. Complete set of manuals. \$19,500 (937) 435-1176 OH.

1961 Austin Mini Woody Wagon. Needs complete restoration \$1,200 (207) 625-4581 ME.

JAGUAR



1959 Jaguar XK150. Navy blue w/matching int. Good driving condition. Body in good shape. 97% restored. Everything original. Asking \$20,000. (802)928-3112, VT or (514)935-1599, (514)938-2422 fax, Canada.



1971 XKE Coupe. Black w/black int. V12 engine - 3 speed automatic trans. 70k original miles. Very good condition. \$12,000 (513) 732-1768 OH.



1976 Jaguar XJ12C. Original California car offered by second owner, 83k miles. One of only 1000 made by Jaguar. Sunroof, Kenwood stereo, XJS wheels. Runs excellent. Looks sharp-like new! \$13,500 (562) 861-8411. CA.

1948 Jaguar Mark V. Four door saloon. Has large 3.5 ltr. engine. Needs ground up restoration, but is complete. Stored 20 years in a garage. It may run! \$3,750 (860) 739-1923 CT.

OTHER BRITISH



1965 Lotus Super Seven. Road Registered Vintage racer. Fresh engine and c/ratio g/box. Big valves, Webers, Quaife, Tilton. All the best gear! Call for details. \$32,500 (805) 563-9215. CA

1950 Mark VI James Young Bentley Salon Coupe. RHD, 2-door hand formed aluminum body. One of 20 built. Rebuilt motor, but needs restoration. All there except for bumpers and traffickers. Northern Calif. \$5,000 obo (530) 283-1367 CA.

1956 Morris Oxford. Gray. Straight & original except Lexan windshield, front seat and bondo on left fender. Ran 8 years ago \$2000 obo. (707) 599-1057 CA

Background Noise

Robert Goldman



Project Midget: Can't Leave Well Enough Alone.

I was searching the ole storage shed and found an unused 1275 Gold Seal motor. Now I'm sure the factory invested their best effort rebuilding that mill, but its been sitting for a long time. It had the desirable thick web block, and my pocketbook was crying out to be lightened, so off went the motor to Tom Colby at Speedwell Engineering. Tom makes the fastest Spridgets on the west coast. He may make the fastest Spridgets on the east coast too, but I'm not here to start a shootin' war.

Having been offered a contract by the local mosquito abatement district, I figured it was about time to do something with the gray beast's motor. It makes plenty of power, but the external oil storage has elicited a few choice comments from the environmental community. Not to mention my co-workers and their helpful involvement. "Shall I call the Hazmat team to clean up after you leave?"

The car, built by Joe Baba of Original Duplicates in Fresno, CA has been a wonder-

ful source of relaxation. It gets plenty of looks, and has proven fast enough to anger many a fellow motorist. Unfortunately, the aforementioned leakage will require an environmentalist to remove to fix. As it is an otherwise healthy low miles motor, it will find a home in my Bugeye - if I ever get around to assembling it.

Joe used lighting and trim pieces appropriate to the tub. However, I like the MkI grille and lighting. There's a certain "I've just done something mischievous" grin about that toothy grille.

Don't tell anyone, but the car is getting a Japanese five speed tranny. Yeah, I know. I'm giving in to temptation. Last summer, Don Racine of Mini Mania let me drive one of his highly modified Bugeyes. The car was transformed by that box. No permanent modifications are required, so its not as though the car is being destroyed in the process. With an original MG shift knob in the cockpit, the general public will never know the difference, and I'll be able to travel the long California point to point distances at something less than a zillion rpm.

I'll be employing a couple other modern day improvements as well. A local fuel

power from his A-series head due to a combination of improved porting and heat dissipation. The alloy head allows higher compression without detonation.

You have to be careful about making changes. They tend to snowball. Another item from the shed was a set of 60s vintage Paddy Hopkirk wheels. With more tread on the pavement, the car will hold on a little longer. The increased grip also increases rear wheel steering as the axle moves around. I'll be adding a panhard bar. The front is getting a tube shock conversion which eliminates the lever arm shocks.

Like I said. Can't leave well enough alone. The one

real beauty of all this is most of the work can be done with the help of a Craftsman 68 piece tool set, a drill and a hammer. Watching a co-worker chase a half volt of electricity around a Miata with his \$350

multitester reminds me how much fun the old stuff really is. While I don't have access to a skid pad and all the cool monitoring equipment required to document handling improvements, I do have access to a dyno. We'll do some before and after testing to see if all the money is worth it.

The other cool deal in this package will



Left: The flaming Midget, as built by Original Duplicates in Fresno, CA. Above: Cheshire grin and wider tires. The MG medallion is mirror imaged so folks can tell what's behind them. Right: Bugeye intake manifold leaves no room for an air cleaner. Caution - birds and small children stand clear of the Weber.



injection wizard is supplying a throttle body fuel injection system. Fuel injection really does wonders, both in terms of drivability and emissions. In our current environment, if I can have all the power and cleaner emissions, why not? Besides, the stuff looks really cool. I can tell folks those alcohol flames on the hood are the result of tissue rejection as my fine old English car is being force fed transplanted technology.

Considering the Midget's parts bin origins, I'm not too flustered about mixed generations of components. When he built it,

the other cool deal in this package will



the other cool deal in this package will

Under the Bonnet

(Continued from page 23)

starter solenoid is working properly, though, so I would check it and the starter motor first. Jack up your car and support it on jack stands or pull it onto ramps. Chock your rear wheels, put the transmission into neutral, shut off the engine, and remove the ignition key (all of this so that your car doesn't run away with you underneath it). Find the starter motor and solenoid on the right rear of the engine and locate the two big bolt terminals on the solenoid referred to above. Take a heavy wire (like a jumper cable) and bridge these two terminals. By doing this you are totally bypassing

the solenoid, which, as we have seen, normally makes this connection. Since you bypassed the solenoid, the starter

The starter motor itself, though, should give a healthy "whirr", indicating that it is operative.

pinion gear will not engage the flywheel, so the engine will not crank. The starter motor itself, though, should give a healthy "whirr", indicating that it is

operative. If not, you have a bad starter motor that needs to be replaced: an easy bolt off/bolt on job if you reinstall the wires properly. Be sure to disconnect the negative battery cable before removing your starter! Also note all connections before removal and reattach them correctly! Most rebuilt starters also come with a solenoid, you get two for the price of one. Install a new starter and solenoid, and your problems should be over. But if your starter motor checks out OK, proceed to check the solenoid mounted on it.

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