Issue No. 7 NASH Mar. - Apr. 1982

HEALEY

NEWS

COMMENTS FROM EDITOR

It's getting close to Spring and hopefully nice weather is on its way. In our part of Pennsylvania you never know what the weather has in store for you. The first of this month we thought Spring was here to stay but we had two surprise snow storms each averaging seven to eight inches of snow.

A couple of weeks ago Old Cars Weekly had an article explaining how to get your antique car ready for Spring. Well, Ray decided to start on our Nash-Healey. At this very minute he has the grille apart in the middle of our livingroom, on our coffee table, (he did put down newspaper) with a can of WD-40 to help loosen all those special little nuts and screws. I'm sure all the women envy me and wish they had a grille in the middle of their livingroom, don't they!We are going to have the grille rechromed and to take it apart in the garage is a No No! Dee Heisler warned me this would happen and I didn't believe her. Now I do! I wonder what Ray would do if I took my baking pans and stored them in his tool cabinet. I'll let you know what happened in the next newsletter!

Have you thought about what Ray suggested in the last newsletter about getting in touch with your district representative or other members to get some meets organized? Don't forget to notify me ahead of time regarding what meets you will be attending so I can publish the details in the newsletters. Other members in your area may be interested in attending the meets.

I would like to take this opportunity to tell all the members how much I have enjoyed doing the newsletters during the past ten months. I hope everyone has enjoyed reading them and the technical tips have helped. When I undertook this job as editor I honestly didn't know if I could do it and now I look forward to putting it together. Starting in May I will be publishing the newsletter monthly again. The schedule will be May, June, July, August, Sept.-Oct., Nov.-Dec., Jan.-Feb., and Mar.-Apr.

SUPPORTING MEMBERS WHO REPRODUCE PARTS

I have been meaning to write an article regarding the subject of supporting our members when they go to the expense of having parts for Nash-Healeys reproduced.

Several months ago Leonard McGrady had the center grille emblem reproduced and he had it advertised in Old Cars Weekly. Also, in that same issue the plastic company, who manufactured them, had their ad for the emblems.

The plastic company had the price listed a few dollars cheaper, but Leonard had to put his own money out to have the mould produced. I think it was poor taste for the company to place the ad at the same time and several other members have expressed the same opinion and if you do need this emblem we urge you to purchase it from Leonard McGrady.

In my opinion if anyone has gone to the expense of getting parts reproduced lets support them in anyway we can. If we support the members of our club it makes for a better club.

ADDITIONS FOR ROSTER

John A. Bissonnette - 2121 Dover Ave. - Ft. Myers, FL 33907; 1952 roadster; Motor. No NHA1169 (813) 936-0315.

Don Robertson - P.O. Box 1702 - Sackville N.B. E0A3C0 Canada; 1952 roadster; Body No. 11207; Chassis No. N-2397 (506) 536-3504.

MEMBERSHIP DUES

It is almost that time of the year. This is just a small reminder to put a note on your calendar that the 1982-83 membership dues will be due on or before June 1. Checks are to be made payable to the NASH-HEALEY CAR CLUB and mailed to Mary A. Soles, Secy.-Treasurer - R.D.#1 Box A161 - Addison, PA 15411.

TECHNICAL TIP by Steve Parsons

Suspension Bearings - Finding readily available American bearings that directly replace the ones that came in the Nash-Healeys front suspension is almost impossible. There are bearings that will fit, but they aren't completely satisfactory. I'm referring to the ball bearings here. The needle bearings are available but will probably have to be ordered by a bearing house.

To back track a bit, the Nash-Healeys front suspension is a trailing link type, with the trailing arm and spindle support pivoting on ball and needle bearings (one of each at each end of the trailing arm). The needle bearings take most of the weight load while the ball bearings are used to take some weight load plus all the thrust loads when cornering. The ball bearings should be of the split inner race variety (not all were, it seems). The split inner race allows the bearing to have greater thrust capacity because the inner race groove can be deeper. It also allows more balls to be used thereby increasing the radial capacity of the bearing.

The ball bearings are the ones that usually fail in the suspension. Actually ball (and needle) bearings are really not ideally suited for the application we are using them in. They are generally meant to carry loads only while rotating, distributing the loads over the entire bearing race. In our suspension, however, the bearing moves thru an arc of maybe only 30-45°. This means that the loads are constantly carried by a very small portion of the race. This causes the race to become indented which eventually leads to bearing failure. This happens to both the needle and ball bearings, but the ball bearings suffer worse because their load carrying area is much smaller. The Healey suspension is particularily hard on these bearings because of the large amount of offset between the tire and suspension's ball bearings. In effect this causes the suspension to want to twist on the needle bearing, thereby "leaving" the weight, cornering,and shock loads into the ball bearings thus, the radial capacity of the ball bearings becomes important.

When I took my suspension apart a number of years ago I found some of the balls of the front end (of the trailing arm) ball bearings were actually cracked in two! The ball-bearings at the wheel end (of the trailing arm) were badly indented but the bearing wasn't. Here is what I've found out about replacement bearings for our suspension.

TECHNICAL TIP by Steve Parsons (continued)

Needle Bearings: The same needle bearing is used at the front end of the trailing arm and at the wheel end. These are "full compliment" (no bearing cage) bearings with grease retained needles and thru hardened races. The wheel end bearing is used with its inner race but the front end uses the main shaft as its inner race (if the shaft is badly indented it will need to be replaced - if it is not too bad, it can be turned 180° so the "good" side is on the bottom). These bearings should be orderable from bearing supply store. The Consolidated Bearing Co. makes some of the correct size, I believe. Consolidated is a foreign company, but they do sell bearings here. When you go to order them, take the old bearings for measurement or have them measured before hand. Measure bearing OD, width, inner race ID & OD. Measure to nearest .001".

Wheel End: This is the "easy" end. The ball bearing at this end is a "metric" bearing, that is, the basic dimensions are in even metric units - 30mm ID, 62mm OD. Almost all bearings today are made in metric dimensions. There are a number of bearings that should fit here they are:

1. Single row ball bearings - conrad or deep groove, type. This is the cheapest and most readily available. Many Healeys came with this type bearings. It'll take thrust loads. Unfortunately, it's not a very heavy duty bearing. It's the type that failed in, I believe,Dick Law's car. It was still intact but indented fairly heavily. However, it will work and is readily available. If used, it probably should be checked every year, or every few thousand miles.

2. Single row ball bearings, maximum type This type will directly replace the bearing in the Healey also. It has more balls in it than the Conrad, so it's radial load capacity is higher. However, to get these extra balls in, it is necessary to put a slot in one (or both)

TECHNICAL TIP by Steve Parsons (continued)

races. This slot reduces the thrust capacity of the bearing because of possible ball-slot interference as the bearing rotates. However, since the bearing would not rotate when in our suspension (it probably moves thru an arc of only 30° or so), maybe it would work fine. If so, it would be a better choice than the Conrad type. I believe Mike Feingold is using this type in his 1951.

3. Double row, angular contact ball bearing. This is the type I used for my wheel end ball bearing, and is also the type Dick Law used. It has higher capacity than either type of single row bearing. There are two types - one with a split inner race (has a higher thrust capacity) and one with feeling slots. There are also radial double row ball bearings that, I believe, will also take some thrust. The availability and design of these bearings has changed since I (& Dick Law) obtained ours. For example, the split center type wasn't available back then. Worse, tho, is that the narrow #5206 bearing we used is apparently no longer made. The narrow version was .75" wide; the standard version was .937" wide. The standard version is too wide - the bearing cap would stick out and interfer with the tie rod. Even with the narrow version I had to grind away a little of the bearing cap to clear the tie rods. One could also machine down the bearing retaining boss on the inside of the cap too, but if you machine to much away the retaining bolt will touch the cap before the cap "bottoms out" on the bearing. You could use some clay between the cap & retaining bolt to see how much clearance you have & how much you could have ground off the retaining boss. If you can get a narrow #5206 bearing still, this would be the best choice for the wheel end ball bearing.

4. Double row spherical roller bearing. This may be the best bet for the wheel end now It comes in the right ID & OD, it has higher radial load capacity than the double row ball bearing, can take thrust loads in either direction and can stand some misalignment between shaft and outer race (such as we have when the needle

TECHNICAL TIP by Steve Parsons (continued)

bearings become worn). The width is .787" - just .037" wider than the narrow #5206 double row ball bearing. It may require some more grinding on the bearing cap - either on the outside and/or on the inside on the retaining boss - but it should make a good, strong replacement bearing. It may, however, be expensive. Note: I believe Mike Feingold tried these but found them too wide, although he may not have tried to have the retaining boss ground down.

Front End of Trailing Arm. This is the problem end because the ball bearing here is made in inch dimensions (that is, the nominal dimensions are in "even" inch dimensions). The only readily available bearing that is still made in inch dimensions is the single row ball bearing, Conrad type. And, I'm afraid it doesn't have the load capacity we need. The best solution is probably to obtain the original split center ball bearing and then be sure to periodically check to see if the retaining plate is remaining tight. The Conrad ball bearing could probably be used, but a frequent check of the bearings condition would have to be made because of the bearings low load carrying capacity. It's life would be short and would depend on how hard the car is driven and the condition of the roads. If they are bad, the shock loading could be quite high and the bearing life relatively short. Just how short, I don't know.

The next alternative is to remachine the front shaft and housing like Dick Law did (incidently I wrote him to see how his rework has held up, but haven't heard anything back. Of course, the address I had was over 8 years old). If this is done, you could use a double row ball bearing, double row spherical roller bearing, or a metric size 4-point contact ball bearing (2 split center single row ball bearing. unfortunately, it doesn't come in sizes small enough to fit the wheel end). Based on Dick Laws article, the size to use would have a 35mm ID and 72mm OD. Of the above 3 types the spherical roller would probably give the best life, although the 4-point contact bearing would require a little less machining because it is the narrowest.

TECHNICAL TIP by Steve Parsons (continued)

(The 4-point contact bearing is suppose to be used where the thrust loads predominate - I don't believe we have got that situation here, so it may not be a good choice.

I have heard that some Nash-Healeys have two single row ball bearings at this location. They are Italian made bearings but I don't have any details on them. I'd guess they are a matched pair of single row angular contact bearings. Can someone give me details on these bearings? OD, ID, width, number and size of balls, manufacturer and part number? Also, can the bearing be disassembled? Single row angular contact bearings must be used in pairs, since they will take thrust in only one direction.

I had hoped to come up with a "scientific" selection of which bearing would be the best choice for replacing the front end ball bearing. I obtained a copy of SKF's catalog on selecting the proper bearing. It has a lot of formula's and tables on choosing the proper bearing. Unfortunately the more I looked the more complicated it got. The big problem is knowing what the radial & thrust loads actually are on the bearings - and that comes close to being impossible. To do it would require a model of the suspension (or an actual car) that you could instrument and directly measure the forces, or some kind of computer program! Also, the fact that the bearings don't rotate but only oscillate back & forth tends to complicate

TECHNICAL TIP by Steve Parsons (continued)

the formulas. Nevertheless, I assumed a few things and came up with the following loads:

1. Radial load on front ball bearings - 5400 lbs. based on (a) 900 lbs. load on tire (60% wt. on front wheels of 3000 lb. car ÷ 2) (b) lever action of trailing arm; assumed trailing arm pivots on needle bearing. If so, the leverage would be about 3 to 1, or 3 x 900 lbs. on ball bearing = 2700 lbs. (c) Shock load factor of 2; 2 x 2700 lbs. = 5400 lbs.

2. Thrust load is 1800. Based on cornering at 1G (only race cars approach that, actually). This would mean outside wheel would be absorbing total weight of front of car, or 1600 lbs. I assumed the front ball bearing would then have to resist all this. Actually they most likely don't, since a lot of that force would be "levered" into a radial force. But, I used 1800 lbs. anyway, just to be safe.

Based on the above assumed loads and the formulas, the double row spherical roller bearing would give the longest life, then the double row ball, then the 4-point contact, then a single row ball bearing.

Another way to select the bearing would be to compare the static and dynamic load ratings of the bearings. Here are the ratings I found:

	Dynamic Load Rating	Static Load Rating	FAG Part #
Double Row Spherical Roller	12500 lbs.	9150 lbs.	22207HL
Double Row Ball - Filling Slot	7650 "	7200 "	3207
Double Row Ball - Split Center	6550 "	5850 "	3207DA
4-point - Contact - Ball Bearing	7650 "	7600 "	QJ207
Single Row Ball - Conrad Type	4400 "	3100 "	6207
Original Healey DLJT 1 1/4J	??	??	

Note: All above bearings (except original Healey) have 35mm ID, 72mm OD. Dynamic Load Rating: The radial load that will give a "life" of one million revolutions. Static Load Rating: The pure radial load which will permanently deform the race or ball or roller diameter. The bearing can withstand higher loads, but more deformation will occur. They supposedly can take up to 8 times the static load before they fracture.

TECHNICAL TIP by Steve Parsons (continued)

Well, I hope this material will help and not confuse you to much. I'm glad I looked up all this stuff - it has been interesting and informative. Unfortunately, we're still back on "square one" - there are no easily obtainable replacements that are completely satisfactory. The nice thing is that it's given me confidence that the suspension can be rebuilt even if we completely run out of the original type ball bearings. Remachining would also probably allow the use of some non-original bearings.

I should emphasis here that I'm not a bearing expert. If there is a bearing expert out there, how about commenting on the above material. For those interested in obtaining original equipment bearings, one good way is to join the Association of Healey Owners , which is a British Club for all pre-Austin Healeys. The membership Secretary is: Mrs. R.A.E. Coates - 'Mayfield' - Cricket Hill Lane - Yateley - Camberly - Surrey - England

LETTERS FROM MEMBERS

Dear Joanne,

Just love all the newsletters. I am one of the Nash-Healey owners who hasn't bought a car cover but I have decided to get one I'll see if I can find a 58 corvette car cover to fit my coupe.

I am sending a check for a size large tee shirt in blue and navy ink. My grandson loves his shirt.

After parking in the market parking lot a fellow approached me and said that he always admires my Nash-Healey. He said that he saw Rudi Gernreich's car at an auction but said that it wasn't in nearly as good condition as mine---however, he didn't know what his car sold for. Guess you know that Rudi Gernreich is a famous fashion designer.

My son sent me a clipping from his paper in Moraga, Calif---a 1952 Nash-Healey was one of more than 200 vintage cars at the Original Antique and Collectors Revival at San Mateo Fairgrounds. It is a sharp looking 1952 coupe. I am enclosing a bean dip recipe which all my friends enjoy so much!

Sincerely,
Margaret Logan

LETTERS FROM MEMBERS (continued)

Margaret:

I am glad you enjoy reading the newsletters. I have already mailed the tee shirt you ordered and you should have gotten it by the time this newsletter is mailed. I know just how you feel when you have your Healey out for a drive. Everytime we take ours out we get quite a few compliments on it. We enjoy driving it, expecially me. Last year Ray let me drive it to almost every show (the only reason was because he was driving his 1940 Hudson). I hope you have luck in finding a '58 Corvette cover. Thank you for the bean dip recipe and as you can see it is in this issue of the newsletter.

Dear Ray & Joanne:

Hope you had a pleasant holiday season and are surviving this rough winter weather.

We have very much enjoyed reading the Nash-Healey newsletters. I have enclosed some photocopies of articles that I've collected on the Nash-Healey. These are some of the more unusual pieces. Perhaps you may want to use some in the newsletter.

I've also enclosed a parts list of some currently available mechanical parts. Most part stores can interchange these numbers if necessary with other brand names they carry.

Recently I came across a company that is reproducing the side Pinin Farina scripts and badge for certain older Ferraris. They look just like the ones the Farina bodied Nash-Healey uses. However, they are expensive! $45 each. Company is LTE - 20850 Leapwood Ave - Suite #JKL - Carson, CA 90746

Take care. We'll write again shortly.

Sincerely,
Jim Paradiso

Jim:

Thank you for the material you sent me and I will be using the articles (including the parts list) in the future issues of the newsletter. I am glad you enjoy reading the newsletters. With the articles you have sent and articles from other members I hope to continue publishing an informative newsletter. Hope to hear from you again.

LETTERS FROM MEMBERS (continued)

Dear Ray,

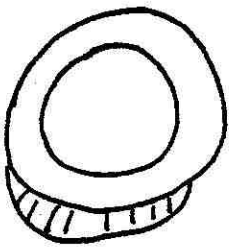
From the phone calls and looking at many Nash-Healeys I've found a couple things that should be corrected to be original.

Restoration Tips:

First, concerning Serial Number Plates - location: All 51's had the plate on inside center hood. All 52-54's plate located right side engine compartment. The "MADE IN ITALY" plate on most 52-53's were below center of the plates.

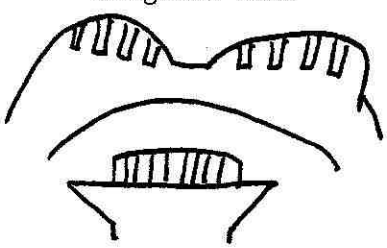
On all 54's "MADE IN ITALY" plate goes right center of body plate, all held on by standard head screws.

Second, concerning front emblems: All 51's had front plastic emblem in grill using Nash bezel upside down:

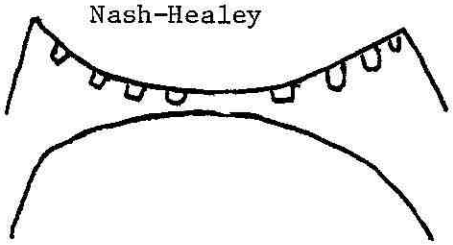


All 52-54's Pinin Farina bodies used front plastic emblem in center of grill right side up and ground to match grill bars.

Original Nash



Nash-Healey



Side View
grill Bar

G. Bar

When you look at front emblem the bezel fits perfectly to top grill bar, 2 small pieces of steel were welded on inside plastic retainer.

Sincerely,
Mac (Leonard N. McGrady)

LETTERS FROM MEMBERS (continued)

Dear Ray,

Working on side lower strips - not long. You may like to put the following in club magazine.

New this month - Special.

1. Stainless polished steering wheel spline Hider, goes below steering wheel $12 postage paid.

2. Nash script $25; Healey script $25.

3. Serial plates $6 each.
Made In Italy plates $3 each.

4. Front emblems, plastic $45 each.

Working on engine decals and steering wheels and all parts postage paid.

Leonard N. McGrady
209 Walnut Lane
Aberdeen, MD 21001
(301) 272-5985

Mac,

I would like to thank you again for all the help and for all the parts you have been reproducing. You are one of the members who makes our club a success and we are proud to have you as a member. Thanks for the information on the lower stripts.

SOMETHING FOR THE LADIES

Port Lavaca Five Layer Bean Dip
by Margaret Logan

1st Layer --- 2 large cans jalepena bean dip spread over bottom of 13 x 11 dish.

2nd Layer --- 3 mashed avocados mixed with 2 tablespoons lemon juice, salt & pepper.

3rd Layer --- 8 oz. sour cream mixed with a package of taco dressing mix and 1/2 cup mayonnaise.

4th Layer --- 2 3-oz. cans chopped black olives, drained with 1 bunch chopped grean onions with tops, and 3 medium tomatoes, chopped (I left out tomatoes.)

5th Layer --- 8 oz. grated cheddar cheese spread over the top.

Recommend tostados (round tortilla chips) for dipping. Keep refrigerated until ready to use.

LETTER FROM FORMER MEMBER

Dear Ray,

I was just wondering if you would run another ad in the Nash-Healey News for me. I would appreciate it. Thank you.

Ruth A. Stewart

This 1951 Nash-Healey has been completely restored by the late Francis Stewart. It is in mint condition. It can be seen and driven at 744 - 12th St. - Charleston, IL 61920. Asking price $10,000. (217) 345-2982.

CLASSIFIED

WANTED: Front suspension pieces for Nash-Healey; trailing arm, spindle, spindle bracket, shock absorber, etc. Want them (one of each) for spares. Does anyone have any at reasonable prices ($20-$30 each). Or want to trade for wire wheel hubcaps, starter, generator? Steve Parsons - 119 Stahl - Washington, IL 61571 (209) 694-6588.

WANTED: Bumbers and grill for 1952 roadster: John A. Bissonnette - 2121 Dover Ave. - Ft. Myers, FL 33907 (813) 936-0315.

WANTED: Information on interior patterns and exterior colors for 1953 coupe: Roger J. Williams - 700 W. Union - Modesto, CA 95356

WANTED: 2 horizontal grille bars, front and rear bumbers, trunk lid, tach drive, wheel discs: Don Robertson - P. O. Box 1702 - Sackville N.B. E0A3C0 Canada (506) 536-3504.

FOR SALE: Grill Bars, brass just like orig. $200 pair; stainless steel air deflectors for carbs. 52-'54 $30; Pinin Farina scripts at platers $45 each; windshields for roadster $500: Leonard N. McGrady - 209 Walnut Lane - Aberdeen, MD 21001 (301) 272-5985.

FOR SALE: 1952 Nash Service Manual: Don Robertson - P.O. Box 1702 - Sackville N.B. E0A3C0 - Canada (506) 536-3504.