1.4.NL791-1

1963 250 GTE silver/grey with grey cloth interior. Rust free and clean $79,000.00.....20 other Ferraris in stock.....!!!

330 America S/N 5109 - 1964 Red with Tan leather. Borranis. Wonderful to perfect original condition. First owner the late John Bond, publisher of Road & Track. 31,000 miles original miles. Offered at $145,000.00, by Howard Leendertsen, 1-800-544-3781 or (206) 827-7005 days. Car is located in Bellevue, Washington.

250 GTE S/N 3761 - 1962 Series II - Owner wishes to sell a quality restored car that has been a California car since it's original owner. Price is open to reasonable negotiation based on current market factors. Call Peter R. Doster...(805) 642-4460.

250 GTE S/N S/N 3989 - 1962 Series II - Car has been described as one of the best, original cars in existence today. Pictures on file with the Register indicate this is indeed a rare, quality S/N and bears close attention if you are in the market, or are seeking one for a client. Offered by Mark Mueller, tel. (916) 797-0155 or FAX (916) 797-0181 for further details.

WANTED

Tie Rod Ends: by Mike Plechaty (S/N 2553), who seems to remember that `59 DKW were identical. Does anyone have a resource for these parts? Contact Mike at (408) 867-4722 (H), or (415) 783-0902 (O), or the Newsletter.

Front & Rear Window molding: by Charles De Heras, telephone days (213) 726-9721.

TECHNICAL - MECHANICAL

Frank Grimaldi...has an important message for those rebuilding their engines and who really drive their cars....."It is important to be sure that Valve Adjusting Screws are original equipment specifications. There are at least two styles of reproduction adjuster screws around which are too soft. These screws lose adjustment rapidly and if not replaced with proper screws will ultimately do considerable damage. I replaced the screws in the `red' car I used at Lime Rock as the valve lash became loose after only about 1200 total miles. When I examined the screws they were all scoring and wearing. Original screws never score or wear, they pit and crack when they're used up and they usually last tens of thousands of miles.

I had various styles of the screws hardness tested and the originals were considerably harder than the reproductions. The original specification screws have very bright and shiny faces. Also, it is important to note that there were two style backs on original screws. For a long time I was convinced that the original screws never had square backs (where they are adjusted) as one of the questionable reproductions had this style back. However, I have verified that original screws could have square backs as well. The more common (and later screws, I think) have the raised bar across the back. The bar

1.4.NL791-2

fits the special valve adjuster screw driver that you may have seen.

I did obtain a set of original specification screws from an intermediate source and these are the screws I have installed on the `red' car already. I don't know if they are still available directly but I will let you know how they work...if I can only get the time to get 1,200 miles on them.

In the meantime please caution Register members that they should be sure that only the`bright face' original screws are used in their engines....unless they plan never to drive their cars".

Glen Parker.....Way back in February Glen wanted to know about the correct "lift-points" for using a floor jack, "Since the third member is aluminum I am skeptical about its use even though I've seen it done many times." I have asked a number of people and they all use the differential housing in the back, and in the front, the cross member. However, most everyone used jack stands under the axle locating bar brackets in the back and/or the jacking points along the sides.

REGISTER UPDATE

2197 VPO From Mike Plechaty "S/N 2197 has been parted out. I have a note from Kyle Fleming dated Dec74 to this effect. The front clip of this car is on my S/N 2553 along with sundry other items. May91

2223 CO Charles De Heras Apr91
1605 Oak Grove Avenue
San Marino, CA 91108
1961 Series I
LHD "to be red"/ black int.
Ex Douglass Samuel Whittaker, 500 E. Imperial WAy, El Segundo, CA 90245, 12Nov78. Ex Steven Cotter, 5121 Palisade Circle, Riverside, CA 92506. Purchased by De Heras 3July86. " Car has been apart since Aug86, was full of Bondo and rust. Just finished going to paint shop this week. Hope to have it finished by year end".

2255 LKA Lyle Tanner May91
Los Angeles area, Southern California
A letter from Germany from Gary D. Schmidt added this information. "I bought this car in Switzerland from Rob Box (Ed note: circa 1970?) and traded it to Lyle Tanner in LA for a 212 he had."

2451 LKA (7618) 816-0446. NY May91
"Complete Ferrari interior, Ford 289 Cobra drive train, w/Holley carbs and Hurst transmission linked to Ferrari rear, conversion done by Basil Shadlum of New Jersey. asking $15,500.00". Hemmings May91.

Talbot Mirrors and Marschal Foglamps. Wanted by Rick Myllenback, (703) 860-3655. Needs above to complete ground up restoration.

TECHNICAL - MECHANICAL

Thanks to Frank Grimaldi here is information he has provided about contacting Pininfarina and Ferrari: "My letter to pininfarina was in 1988. How time flies! I simply asked for any finish details for my GTE and included the serial number. I wrote in English and they answered in English. I sent my letter to:

s.p.a. Carrozziera pininfarina
Casella Postala N.295
10108 Torino, Italia

I think any letter sent directly to the Ferrari factory today gets a response that directs the writer to send all inquiries to Ferrari North America, my most recent address is:

Ferrari North America
220 Turner Industrial Way
Aston, PA 19014

About GTE Spring Rate data from Assembly Sheets. You may remember that some years ago I needed front springs for my S/N 2525. I have attached a description of this `episode' which may be usable as a technical note for the Newsletter" Ed. note: Frank's information is attached.

More from Frank, "Valve Adjusting Screws: I described my latest problems in our telephone conversation and I include this description with more details and as a reminder for you to include in an update in the next Newsletter.....I have just removed the original specification valve adjusting screws as the valve lash became excessive (noisy) after about 1,200 miles. Upon examination I found severe damage in these screws. They appear too hard and most of these screws broke up at the contact surface (fortunately the valve stems still appear ok. The reproduction screws I described previously (NL Vol VIII-No.3, July 1991) had failed at about the same mileage, but they appeared too soft. A few (very few) of the screws appear fine. I am beginning to think that there is a very narrow range of hardness value and hardness depth which survive, and there may be too much variation in the screws being produced today. I am attempting to gather a full set of good `used' screws to determine if they last any longer. I have noticed that some screws, from high mileage engines, are in fact in excellent shape and there are always some that show no evidence of pitting or cracking (though the surfaces are always visibly worn).

If anyone has any of these I would love to try them to see if they live longer than 1,200 miles in this engine!

I can only emphasize my previous cautions about problems with Valve Adjusting Screws and suggest that people listen for changes in the valve noise and check the valve lash as soon as they think the sounds are different or louder. The individual adjuster screw for any valve

found to have excessive clearance should be removed and the face closely examined. Don't reuse any screw with pitting or cracking or erosion of the face."..... Frank Grimaldi.

Tom Meadows' first article under his byline "Fine Tuning" appears as an enclosure to this Newsletter. Tom has included a bio as an introduction and as background..

REGISTER UPDATE

2183 * LKO Claude Miller Dec91
Lusanne, Switzerland
Silver Grey
Owned by the above in 1985 on Swiss registration VD 214 039. See also S/N 3003 may be the same person. This was an NCIA car. Information provided by Marcel Massini.

2189 * LKO Rudolf Wenger Dec91
Basel, Switzerland
Dark red
Car was owned by above Swiss in 1984 and used on dealer plates BS 226-U. Information provided by Marcel Massini.

2191 * LKO Poulain-Le-Fur Auctioneers Dec91
Dark Blue/tan int.
To be auctioned at Paris, France 16Dec91. Car is registered in France. Information provided by Marcel Massini.

2285 * LKO Coys of Kensington Dec91
London, England
Blue/grey int.
This car was offered at Coys Auction, 11Dec91. The following information was offered in the auction brochure. "RHD first registered 17Mar61, since then covered just 50,000 miles. Third in class award, Pomeroy Trophy, Silverstone 1982. Featured in "Classic & Sportscar" (cover picture and leading article) Sep83. Full service June91, full history available, with original handbook and wallet". Brochure and information provided by Marcel Massini.

2427 * CO Additional information for this S/N Dec91
"This car was owned by Arno Flach, a German living in Switzerland. Car was red at the time and on plates SG 27329" information provided by Marcel Massini. Register form received 18Mar85 was from then owner Otto Bussinger, Munich, Germany who purchased the car in Aug80.

your mother. I got desperate and went to work for a Ferrari agency again. I gave up after spending 160 hours building aDaytona motor and finding out the car was worth so much more than I was that they never let me start it up or even zip the throttle a little. It fired in three seconds and idled perfectly. I don't work there anymore.

I live in San Luis Obispo, California with my 250 GT/E, my 1300 Alfa Veloce Coupe, my pair of 250 Ducati vintage racers, my Desmodromic 450 Ducati single,the bicycle I silver soldered together for myself, and a whole lot of good friends I have made over the years. Len Miller is one of those friends. I think the day will come when Ferraristi will bid highly for old copies of his newsletter and talk about the golden years of its publication. Count your blessings: These <u>are</u> the good old days.

I teach martial arts now, and when nobody is looking I speak my mind on how I think cars really work. Sometimes I'm wrong, mostly I'm right but Hey, we all have a lot to learn,

AND SO..

Frank Grimaldi wrote to Len asking him for help with his problem of rapidly deteriorating valve adjustment screws. Frank found his adjustment screw tips both mushrooming and cracking at the contact surface in less than 1200 miles of use. There are a lot of complex issues involved in the area of the valve stem/adjuster contact point. A little metallurgical background is in order to understand the issues. There are alot of different methods of hardening . They all ultimately do the same thing: trap molecules of a given element or compound in between the molecules of the metal thus creating a denser surface which we perceive as being harder. The process of embedding or trapping these molecules is fairly straightforward. The metal is heated to a predetermined temperature which opens up its molecular latticework or pores . The heated metal is exposed to a given atmosphere containing the elements desired for embedding and cooled at another predetermined rate which shrinks the latticework and locks the hardening agents into the metal. The cooling rate seems to be the governing factor in the actual depth of the hardening. Typical hardening methods are Nitriding which pulls nitrogen from Ammonia for the hardening agent and can go as deep as .020" , and Tuftriding which is common method for German parts and is a very shallow hardening at about .003" . The reason for hardening to a small depth is it allows the substrate metal to retain its flexibility and also prevents any cracks originating in the hardened surface from migrating into the substrate.

Now that you have a hard piece of metal the question then arises of " Just how hard is it anyway? ". There are several scales to measure hardness by and several different types of hardness testers. The most common type is the Rockwell hardness scale. There are several ranges in this system Rockwell C being in widespread use. The tester itself is a machine which forces a metal ball into the surface being measured which results in a reading on a a dial scale. This reading is then referred to as tne Rockwell C hardness number.

1.4.NL192-4

The key here is to realize that the Rockwell number is a relative number only: that is a number to be used in evaluating one hard surface against another, in our case the valve adjuster versus the valve stem.

Valve stem technology has made tremendous leaps in the last 20 years which now offers us one, two and three piece valves. Valves can be forged and then lathe cut, lathed from billet, have a seperate head and stem or have seperate stem,head and adjuster contact surface. All of this is in the interests of long life. The process for assembling the parts involves a lathe and a tremendous amount of rotating pressure. This results in a valve that is metallurgically classed as being of one material.

We now have a valve that has a tip end that is of the correct hardness (as determined by the manufacturer) for the adjuster screw to ride on. If the adjuster screw is correctly hardened to the proper degree of relative hardness then the two surfaces will continue to function for a long time.

Now let's get into the real world where the problems occur. The first problem that comes up is that at regrind time for the valves it is a normal practice to grind material off the tip end to clean up the working surface. This is a nice idea except that is very easy remove the surface hardness at the tip which causes the valve end to mushroom or gall which then causes damage to the adjuster. The adjuster is ground to a particular radius and the valve is ground flat. Any damage to the flat surface of the valve causes damage to the radius on the adjuster. The contact point on the adjuster actually moves across the face of the adjuster as the valve goes up and down. The radius ground on to the adjuster compensates for the change of contact point. The radius is very hard to measure as a test because it can be in the range of 4 feet or better. The tip of the adjuster representing only a degree or two of that four foot circle.

Now that we are looking at the adjuster itself we really need to test its hardness to determine if it is correct for what we hope is an unground and properly hardened valve stem. This is easy because any U.S. University will have a Rockwell tester in its engineering department and will usually be glad to help on a small project like this. Since we don't know what the correct Rockwell figures are and we do know that Ferrari definitely does not play games with metallurgy, we can safely find an unground valve, and an adjuster and use their measurements as our standards. The key here is to use original Ferrari equipment for our standards. Check the wrapper, Ferrari parts say Ferrari right on them. Or we can use parts that have clearly stood the test of time.The Rockwell test leaves a tiny ding in the surface tested which on the valve should be meaningless but which on the adjuster renders it a piece of mechanical history. Once you have a correct Rockwell figure for your valve and adjuster you can then use this for a standard to test replacement parts.

Since we know that the test on the adjusters is a destructive test, we must purchase several extra adjusters to sacrifice in order to know how the given batch the samples came from will perform. Buy 26, use 24. Generally we have to assume that the batch of adjusters came from the same lot and that the tested units are representative.You can't practically test the depth of hardening but if the figures you get are too low or high I suspect any decent vendor will accept their return. And then sell them to someone else.

1.4. NL192-5

This is a general overview of the issues involved in Frank Grimaldis's problem. If Frank brought me his car this is the first material I would have to sort through to address the issue. Here's more material I would be considering: Are his rocker arms properly centered? This has a strong effect on valve rotation(another paper in itself) and adjuster wear. As soon as Frank started mentioning 10mm lift cams I would start pulling out my hair and screaming things about coil bind and cam ramps. Coil bind occurs when valve lift exceeds adjustment clearance. I.E. the rocker pushes down on the valve and the coils of the spring touch each other and lock up the valve train placing significant loads on the adjuster and valve end. We call that an interference fit, similar to two cars occupying the same point in space and time (an accident). The ramp of the cam is that portion of its curvature which takes up the shock of the valve opening and gently lowers the rocker onto the valve. If the ramp for some reason is incorrect: poor design, poor pattern or poor manufacture , then it is not unreasonable for the adjusters to collapse in some agony of defeat.

Cam ramps and coil bind are measurable but only with the heads off the car (ideally) and with difficulty otherwise. The geometric changes that occur at valve grind time and cam replacement time are covered in one of the American Society of Mechanical Engineers Papers. It takes about twenty five pages and makes the material I have have been slinging here look like English.

Tech Tip #1: You can tell if the valve or adjuster is trashed by the scratches on your feeler gauge when you check the valve clearance. If you get a smooth feel and no scratches the adjuster is probably good. If you are doing the check properly you probably won't get the feeler gauge back in for a recheck. A go/no-go feeler gauge is an excellent purchase for a typical owner. Snap-On and Mac sell these gauges. One part of the gauge is slightly thicker than the rest.

Well, that's the best I can do. Simple problems often have remarkably complex solutions as is the case here. Don't be discouraged: your problem may have a much simpler answer. Send your problems to Len Miller and he will send them to me

21 years in the trade have now taught me the answer to the immortal question: " How much is a tune up? "." How should I know, its your car!."

Many thanks to Gary Rogers M.S. M.E. for his tutoring on Metallurgical realities.

Tom Monroe