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SERVICE MEETING - NEW YORK
September 8 and 9, 1932
SPECIAL NEW YORK SERVICE MEETING
MECHANICAL DISCUSSION
C. R. Paton, Chief Engineer
T. A. Stalker, Tech. Service Mgr.

Spark Plugs: Loss of top speed. New plugs with improved electrode are alright. Started production with warm plug - K-10, then went to K-9. K-7 is still cooler. Do not change makes. AC and Champion are best. C-4 for older cars. The use of adapters and 14 Mil. plugs gives good results. Gap widens true only of old plugs. Corrected on new type spark plugs altho heat widen gaps. High compression is the cause. Should resistance units be used, or special plugs for radio? C. H. Vincent is studying, but no recommendations. Randall says special plugs better in Los Angeles and can obtain AC 7 and 10 coils and plugs. The Factory is working on wiring and new distributor cap. Will also eliminate metal conduit.

Overheating: Normal driving on Twin is O.K. Slow speed on warm day is what produces overheating.

Radiator: All rods are now checked. First run not O.K. Shrouds for fan in service stock. Use six blade fan. Chicago suggested change size of radiator shroud (too close to fan) O.K. now.

Connecting rod failure: Ninth Series rods available for early cars (on exchange basis) Pittsburgh reports connecting rod babbitt cracking early in life. Pittsburgh suggests a larger labor allowance for connecting rod bolt replacement on early cars. Make labor allowance greater for dealer assistance. Factory feels allowance covers cost.

Cylinder blocks cracked: Cylinder bore to valve seat. Core not right, which affects cooling. Factory wants later series blocks for study. Chicago wants longer adjustment period - 25,000 miles not enough. Factory contends customer should pay for wear. Adjustment will be handled on age. Any block will crack - cause is heat - two hours with hot plug on dynamometer will do it. Carbon and hot plug will cause cracks. Engineering has found that chamfering 1/2 the bore eliminates cracking. Are considering for service. 45° half way around about 1/8" wide or grind out to remove sharp edge.

High tension wires: Breakdown - Twins - too hot. Wire changed and corrects this. 900 gaskets and studs # 8 Ex. break off. The early gasket not right - thickness of gasket changed. Steel gasket approved and in production. Twin gaskets changed - separated and changed from copper to steel.

Run down battery: Cold weather condition - step up charging rate for winter. Do not use dash ampmeter for setting rate. Set at generator 20 to 22 cold 7.4 to 8 volt. Slot 3rd brush if necessary. Sticking brushes on generator - this condition found on one lot. Dyneto took care of this. National battery has O.K'd, but not used yet in production. Muffler on Ninth Series short life and rust thru. Are handling with manufacturer. Steel shell on first run. Now using copper iron and results are O.K. Battery box rust due to car washing. Check hold down straps. 300 installation is O.K. and will be used in future. Flange on exhaust side of manifold breaks. Cleveland will send sample. Seems to be poor welding.

Vapor lock: 840 - 904-5 and Twin - gas vapor pressure is high. Condition is found with low tank on hot days. Octane rating should be about 76. Vapor pressure should be 7.5 to 8 max. Winter gas carried over into Spring causes vapor lock.

Heat in front compartment of Twin: This is caused by holes in front seat pan. These should be closed - pedal opening closed also. Accelerator pedal sticking - linking seems to be free. Control valve may be dirty. Side keyway and tongue not smooth enough. Send sample of warped control valve from Boston. Gum in gas on stored cars. Clean with Duco Solvent. Detonation on Twin not necessarily caused by carbon. Fuel is important. Timing and synchronizing should be checked. Oil noise at pump on Twin. Chicago one car. See Swanson.

Sticky valves: Reported by Cleveland, New York and Los Angeles. Use penetrating oil in gas. Seems to be gum. Stored cars should have tanks drained or gum will form. Use thinner in gas.

Removal of rear spring: 900 best method is to burn rubber. Steering geometry changed, improves 900 handling. (7" drop arm and change in steering rod covered in Service Letter) Use 30 lbs. air in 7" tire. Will make tenth series changes fit 900. Compare 900 with same price class and not with heavier 901-2 cars.

Springs: 1. Capacity or arch - affects height but not ride. Will not strike thru as readily.
2. Rate or stiffness - changes ride, but not height.

Motor vibration: On 900 - low speed roughness - no cure - remove rattles and noises which cause complaint. Fender bracket clearance not uniform. C. R. Paton will check.

Clutch: Chatter can be corrected by brace on motor on 900 and on Twin. Chatter on Hyco but not installed or adjusted correctly.

Pilot Bearings: Lubrication changed and retainer Ninth Series seem to be O.K. Will study design for quick removal (C. R. Paton.)

Transmissions: Jumps out in high - third speed. New and is being studied. Alignment of shafts or loose fit of gears. Loosen housing, jack up and retighten will sometimes help. Jump out in second can not be fixed. Tension on detent springs is not permanent. Flywheel housing alignment eight thousandths out will cause trouble. Coasting rattle is in free wheel device and there is no cure.

Rear Axle: Differential case and side gears wear casing. End play taken out of side gears caused wear and did not affect back lash. Check cars in your territory and clean up - dealers 1/2" or less is O.K. on jacked up wheel if more, remove plate and examine.

Factory would prefer simple oil problem. No brand recommendation is simpler and desirable. Axle lubrication - important for first 500 miles but should be changed in Fall. Gear wear developed and change recommended. This was necessary - we had no choice. Hypoid and Whitmore "O" went together seven years ago - Oil companies tried to duplicate Whitmore. Lapping from lead soap grease on Hypoid was not serious. E. P. lubricants were developed but out of 35 only 2 passed tests with

Whitmore. Whitmore lubricant changed and thickened with use and frothed. Enterprise passed tests and was O.K'd. We have attempted to find other sources. Whitmore's "O" is now O.K., it has passed all tests. Are testing all oils used for Hypoid. Sturaco is O.K. by Gleason. For sticking steerings we carry this in service stock.

Tires: Noise is caused by tread and resonant quality of core. We must have a non-skid tread and there is no cure for resonance. Treads have been improved. Firestone first to correct, U. S. Goodyear and Goodrich now supply special tread, but improvement is required and is in process. Cupping is due to low pressure and toe in and camber must be right. Toe in $1/8$ to 0. Camber $1\ 1/2^\circ$ to 0 under load ($1/4^\circ$ measurement by Super-Stations not accurate) U. S. good on noise, next Goodyear, Goodrich and Firestone. 30 lbs. on 7" tire, 6 ply, tube bulging is covered by Service Letter. Small cups on tubes used with wire wheels are a new condition and will be studied. New York will send samples.

Body: Snaps in upper corner-brace loose. Runway moulding snap - separate ends - wood screws loosen due to workmanship. Door hinges out of line due to metal pillars (900) checked fixtures and are considering two hinges which will eliminate this.

Roof leaks: Material glued and moulding set in dum-dum. Add sealer in moulding trough then turn lip and add sealer cement at edge of joint. Opening lip on moulding and resealing will often cure.

Coupe Roadster: Center rail hinge strenghtened and new hinge in stock. 900 poor contour on cushion. Changed on Tenth Series.

Heat in body: (900 rear seat) Fill up holes under seat. Mat in pan under seat not in place and should be cemented. Carpet Front - 900. Factory has specified new carpet for production, but not in yet.

Coupe Roadster - 900: Door roadster deck cracks. Filed to thin. Testing on special test racks. Reinforced underneath. Better inspection and additional study for future design.

Windshield Leak: Rubber impregnated with paraffin will be used which allows better closing. Top cross rail springs in when closing shield. Hinge not attached to frame and top cross rail not anchored securely. Mr. Knapp will give additional study. Leak at hinge. Twin 901 and 902 gasket under hinge looped between screws. Windshield wiper leaks at shaft (Knapp) One report from Washington. Dove tail screws loose due to workmanship. This has been covered in inspection. Water leak under seat in Phaeton from gas tank cover. This is a new report and will be checked at Factory.

Brakes: Twin O.K. - 900 O.K. and snap now O.K. Care for first 500 miles should be emphasized.

Speedometer: Waltham service not good on Twin - report if not right. N. E. service is best.

Steering on Twin: Sturaco for summer, Cities' Service for winter. Kickback helped by Sturaco. The movement of the front end of the car is materially affected through the correct operation of the stabilizers. The use of the proper quantity of oil is important. These items should be checked.

Shock Absorber Noises: Shock absorber noises are divided into several classes, and the condition must be identified before it can be corrected. Both compression and rebound valves are now of the double area type in order to correct the dull knock which formerly occurred at slow speeds. The sharp high pitched squeak is in the rebound valves, and this also has been corrected by the double area type.

The noises in the compression and rebound valves are more noticeable with the ride control in the stiff or the medium position, but there has also been a "swish" in the ride control valve itself which is most noticeable in the soft position. The new ride control valves correct this condition.

Lack of oil in the shock absorbers will also make them very noisy, and the noise caused by low oil will be the same, regardless of the position of the ride control valve. In filling the shock absorbers the arms should be disconnected so that they can be rotated through their full travel while they are being filled.