# Modifications and Upgrades

## Choices and Issues

**Scope**

This discussion is about the choices that must be made during a restoration project which impact the durability and maintainability of the completed project. These choices must be made within the context of the owner's chosen standards of authenticity, quality, and long-term considerations of intended use of the automobile.

**Restoration Project Dilemmas**

Some elements of a restoration project present dilemmas where the pursuit of originality conflict with more modern practices or materials that could be considered advantageous. The owner's eventual use of the car and value of the asset must be considered before the best decisions can be made.

**Paint.** Clear coat over color coat — advantages are easier maintenance (e.g., no waxing just glazing compound), greater UV shielding, and greatly reduced color fading and oxidation over time. A disadvantage is the potential unauthentic level of high luster.

**Interior upholstery.** Leather vs. vinyl, or a higher grade of vinyl, or better grade of cloth. Carpeting vs. original rubber mats. Sound deadening and heat shielding.

**Exterior upholstery.** Roadster or convertible tops, single layer canvas, vulcanized double layer canvas, duck canvas, Stayfast canvas, Hartz canvas, vinyl.

**Ignition.** Points vs. electronic switches in distributor. Standard vs. up-rated ignition coil. Spark plugs, standard OEM (original equipment manufacturer — if still available) vs. resistor, copper or platinum core, or different gap styles. Wires, Packard 440 or equivalent, resistor/carbon core, heavier insulation than OEM, silicon sheath and boots.

**Fuel Pump.** Mechanical vs. electrical. Are rebuild kits still available and reliable? Electrical pump types (e.g., piston vs. vane), pressure output, pressure regulator required?

**Carburetor.** Are rebuild kits available? What were the problems associated with this model? Did the OEM make changes to later and similar carburetors in the interest of safety or reliability? Could there be heat shielding problems associated with the fuel lines or float bowl locations that could lead to vapor lock with modern, more highly volatile fuel blends? Was a fuel filter part of the OEM's design? Could one be installed and hidden while retaining reasonable access?

**Camshaft(s), valves, and pistons.** Are newer designs and/or metallurgy available? Selections should be made on the basis of durability, drivability, and performance.

**Bearings.** Engine — babbit vs. thin-shell type (discuss line boring, heat transfer). Ball bearings vs. roller bearings and tapered roller bearings for transmissions, differentials, and axles.

  

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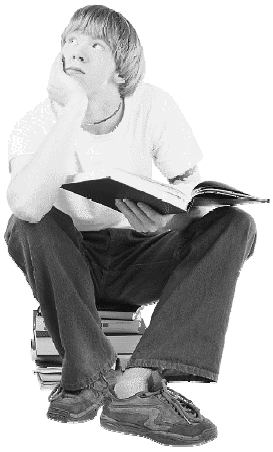
## (Continued)



**Seals.** Oil and grease seals — from slinger, to leather, to rubber, to neoprene, to Viton. Hydraulic and fuel lines, from solid copper to crushable copper, fiber and nylon, to rubber o-rings, to metal with integrated rubber.

**Brakes.** Drums vs. disks. Single circuit vs. dual circuit. Rebuild and sleeve if necessary or replace with new components. Fluid — DOT specs, silicone; and flexible lines rubber to braided stainless steel, rigid lines, heavy-wall copper, steel, Kunifer, and stainless steel. Flare styles, simple, double, bubble, ISO.

**Axle ratios.** Typically several choices were offered by the OEM. Which is best for you? Are speedometer change-over components available or can the speedometer be re-calibrated?

**Exhaust system.** Steel vs. stainless steel. Cost, rusting, frequent starting engine and storage without warm-up. Weld/fit oxygen sensor boss with plug in collector close to head to aid tuning of carburetor(s) with temporary installation of sensor and use of suitable modern instrument.

**Tires.** OEM style vs. modern. Bias ply vs. radials. Tube vs. tubeless. What fits and clears the sheet metal? Does the outside circumference change? Do they fit your wheel rim width?

**Radiator.** When the cooling system and ignition timing are as new, is the engine prone to overheating on hot days when the car is not driven at speed? Then a modern core with an additional row of tubes could be fitted. An electric auxiliary cooling fan may also alleviate this shortcoming.

**Wiring.** Were the OEM wires covered in braided and color coded cloth, or with color coded PVC? If the former, you have three choices: OEM style (not recommended for durability); PVC coated then cloth covered (preferred); or simply PVC coated to save expense. Were the OEM wires loomed? With braided cloth, or PVC tape wrapped?

**Electrical.** Generator vs. alternator. 6 volt vs. 12 volt. Tar top battery vs. sealed battery. Positive vs. negative ground. Radio and antenna. Discuss reversing polarity from positive to negative ground on generator systems.

**Lights.** Sealed beam vs. modular. Tungsten vs. halogen. Tail light size, location and third stop light. Turn signals. Four-way flashers. Back-up lights.

**Air-conditioning.** New vs. old. Conversion of freon based systems. As an accessory.