

## CONVERSION OF PACKARD COLUMN CHANGE R6 and R9 OVERDRIVE TO FLOOR CHANGE USING THE 35 -38 PACKARD GEARBOX TOP.

THERE ARE THREE DISTINCY ASPECTS OF THIS MODIFICATION

PART A: MODIFICATION OF THE GEARBOX FROM COLUMN TO FLOOR

PART B: MODIFICATION OF THE ELECTRICAL SYSTEM TO ALLOW KICKDOWN (R6), ENGAGEMENT AND DISENGAGEMENT ( R9)

PART C; MODIFICATION OF THE CHASSIS TO ACCOMMODATE THE OVERDRIVE.

PART A – MODIFICATION OF THE GEARBOX This is what it should look like at the end of the modification.



PREAMBLE: The procedure essentially entails: The modification of the first/reverse gear lever operating legs from two and five-sixteenths inches to three inches distance apart at the operating pads. The selector must also be modified ( approx .375 inch removed around the Internal Diameter of the selector ) to take into account that the OD box selector collar is approx 1 and one-thirty second inch from the top of the box (without operating cover), compared to one and three eighth inch for the non OD box. The second/ third operating selector fork must be opened from three and nine –sixteenth to three and thirteenth sixteenth inch.

The external housings of the selector and gearbox must also be altered to allow the floor change top to sit on the column change overdrive box.



### **STEP ONE – SELECT A GOOD DONOR 35 - 38 GEARBOX TOP**

The two gearbox tops above represent the modified and unmodified versions of the floor change top . I modified the top on the left in 1976, stripping the selectors out, casting up stainless wider selectors and cutting out sections where they fouled the overdrive top, after all the overdrive box cost me ONE Australian dollar. Times have changes and the R6 and R9 overdrive boxes are getting very expensive now. I have modified 6 gearboxes and no longer strip the tops as the original selectors modify with minimal heat and in the case of the low/reverse fork, this is a reasonable s-t-r-e-t-c-h.

The gearboxes tops above give an idea of the degree of bending and modification required and it will take about 20 hours of Saturday afternoons, shrimps on the BBQ's and a few beers to get the job done. The gearbox top on the right was NOT suitable for modification as the Second/ Top selector shaft ball detents/ springs were inoperative and there was excessive wear on the low/reverse shaft opposite the second/top selector shaft detent Wear in this area WILL result in jamming between two gears, where one selector shaft is not in neutral when the other selector grabs another gear. This situation is regardless of the intended use of the top.

**STEP TWO – TAKE A GOOD DEEP BREATH .** The Gearboxes below show a 39 Super 8, R6 overdrive column change box and a 35-38 120 – Six – Eight floor change box . You will note that there is quite a degree of similarity in the location and diameter of the gear selector channels . The top bolt pattern is identical. The throw of the selector is identical. This is what started me on the modification process.



### **MODIFICATION OF THE SELECTORS – SECOND- THIRD**

This is very straight forward and involves the opening of the second/third gear selector to 3 and three sixteenth dia. You should locate a can or jar of this diameter and use as a template. You may have to grind some contour from the original pads to achieve a good result but the second/ third selector is a cinch. You will see at the picture below that I have already ground out the first/reverse selector ready for bending to the required width.





#### MODIFICATION OF FIRST/REVERSE SELECTOR

This selector requires quite a bit of grinding and alteration to assume a shape which will readily suit the overdrive selector channel. The preamble discusses that the od selector is wider and closer to the gear changing collar. At least 0.375 should be ground off the upper portion of the selector before it is bent. Once it is bent to a 3 inch template it should be offered to the selector ring . **BUT BEFORE YOU DO THAT YOU MUST MODIFY THE REAR OF THE GEARBOX TOP AND OD GEARBOX TO ELEMIMATE INTERFERENCE POINTS** . The illustration below shows how the three inches requirement has been met ( a coffee cup seemed to be ideal!) but the shoes and other areas must still be altered to match with the new first/reverse selector collar.



## MODIFICATION OF GEARBOX TOP AND OD GEARBOX IN MATING AREAS

Yes, we all have to make sacrifices nowadays and the humble ( to no man!) Packard gearbox is no exception. Notwithstanding that it had a reputation of “unbreakable” in the dragsters of the Fifties. We have to modify the externals. When you eyeball the fit at the rear of the box it is reasonably close, in my first conversion, you will see that I simply cut 0.75 inch from the rear of the 35-38 top . In later conversions I have ground about 0.1875 from the gearbox top and taken the rest from the top of the adapter plate of the OD box. There is a very finite level of material available for removal from the 35-38 selector top it is usually about 0.1875 but may be less. If you are CAREFUL, you will get close to the break-in point but not breach this. The gearbox adaptor plate is similar but has a much thicker skin.





GRINDING OUTSIDE THE GEARBOX.. The gearbox internals have asked me to include a note asking that operators try to exclude as much grinding crap as possible during their workings .....THANK YOU ..... DELORES ON THE FLIGHT LINE . The level of material available for removal is discussed earlier , however remember that you should always apply a bit of Bearing Blue or some ladies warpaint to see where the riding spots are.



#### FITTING THE REVERSE DETENT OPERATING EAR

The reverse indent plunger is located one inch below the top of the gearbox, slightly to the left in the above picture.. The requirement is to fit a selector which will operate the plunger but not go behind it. A one inch square piece of one eighth steel, welded with general purpose rod is more than adequate. The detent was missing from the above gearbox when I got the box. The detent has entered the main gearbox and broken a number of teeth from one of the constant mesh gears .



Well you can see above that I have welded on some Australian hearing aids to the 1976 and latest modified gearchanges. The addition is good as I don't get any grinding when locking out of overdrive, but it has removed one of my "dares" and winning bets, when I would bet anyone that I could engage reverse gear without the clutch at 20 mph without disastrous results. I collected quite a few bets with the Packard box

**CLEAN-UP** Ensure that you give both the top and gearbox a thorough cleanout with unleaded or some other spirit before putting the box into service.

**THIS IS A PRELUDE TO THE CHASSIS ALTERATION BUT I NEED TO GET TRE 120 ONTO A HOIST FIRST . Best regards Peter Toet**