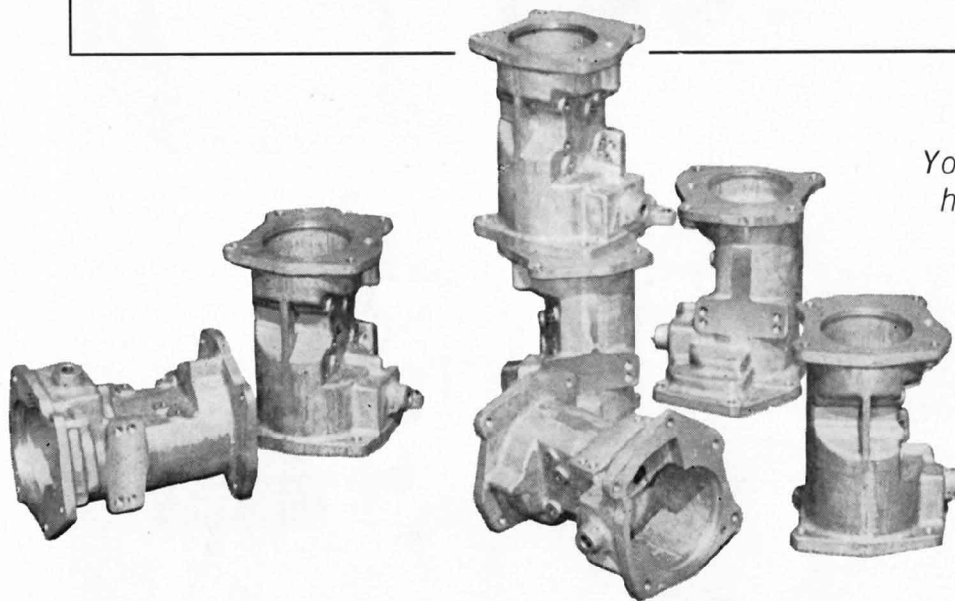
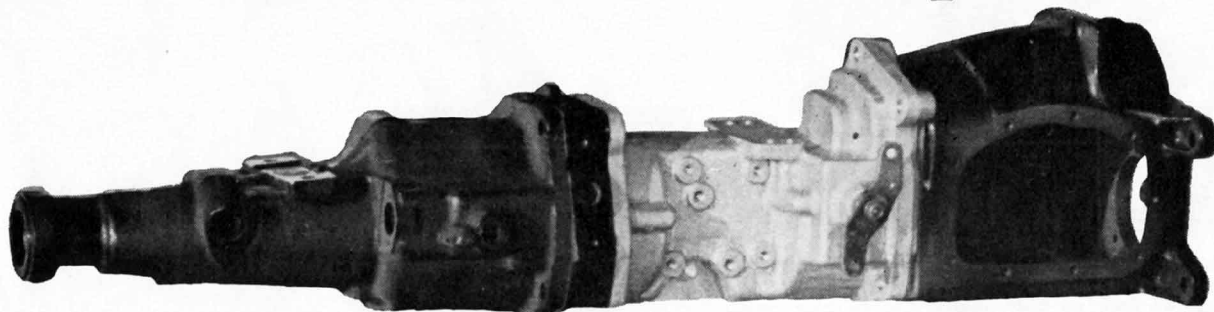


# Overdrive For 4-Speeds



At the top of the page is the assembled length of a 4-speed transmission complete with Tom Beatty overdrive. Heart of the unit is the special aluminum alloy casting.

*You no longer have to put up with a high-winding engine while cruising with "drag" gearing. A newly developed unit adds a batch of versatility for all around use.*

**BY TEX SMITH** □ Now, you can have your cake and eat it too! That is, if you're a drag racer, owner of a pickup-camper, trailer tower, or general automotive performance enthusiast. If you don't fit into one of these categories, you're reading the wrong book anyway.

Popularized by drag strip adaptation, the four-speed transmission is now considered a main-line option on the American automobile. Especially on the more popular models. But, the buyer generally has some specific use in mind when he orders such an option, even if it is just for better vehicle control around town. But, the car being a mass of compromises under any condition, the purchaser usually has to give up something desirable to gain something else equally desirable. Such is the case of the drag racer, trailer tower, around town driver, etc. In these

cases, a healthy rear end gear is wanted, ranging all the way from 3.75-1 clear into the 5's (the latter for drag racing).

A dual-purpose street/strip stocker can get to be a very big headache in a very short time, though. Changing rear ends isn't exactly my idea of how to spend a Saturday afternoon. Fellows with three speed transmissions usually don't have to worry about the problem, since they can usually order an overdrive with their car. But, help for the four-speed.

And, as in the best Grade B movie where the cold-numbered rodder arrives with the serum (fuel) just in the nick of time (thanks to his faithful old deuce coupe), help is at hand. It's in the form of Tom Beatty, long time Bonneville and dry lake fan.

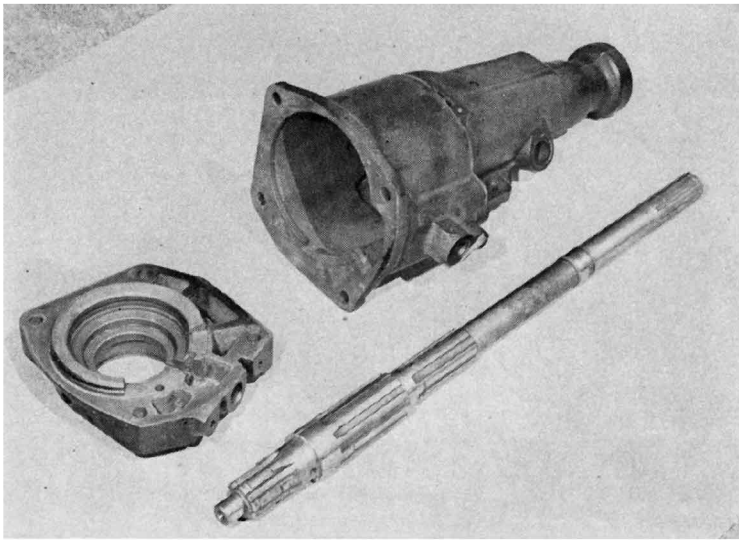
The whole thing started last year

when friend Doane Spencer needed an overdrive for his new Ford four-speed. Good luck! Man, no such thing was to be found. So off to Beatty's machine shop located at 9611 Glenoaks, Sun Valley, California, where plans were laid. The initial Beatty o.d. units were made for racing, with no provision for a standard floor shifter. Well, the resulting call for identical units was so overwhelming that Tom just had to redesign the unit slightly for ordinary use.

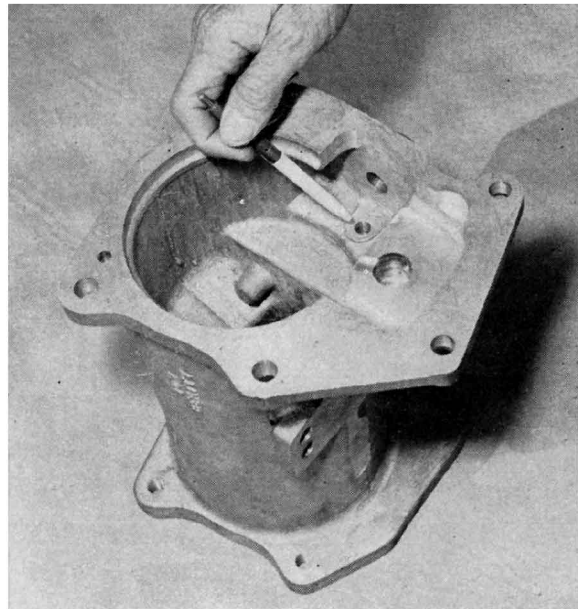
As it stands, the Beatty overdrive adapter will fit any Borg-Warner T-10 4-speed transmission. This means Ford, Chevrolet, Studebaker and some Chrysler products.

The new model adapter housing (which replaces the stock four-speed tailshaft housing) is 5 inches longer than before, to allow shifter mounting. Stock Chevy or Ford shifter linkage may be bolted directly to the housing. Hurst linkage, however, must be spaced slightly outward from the housing for clearance.

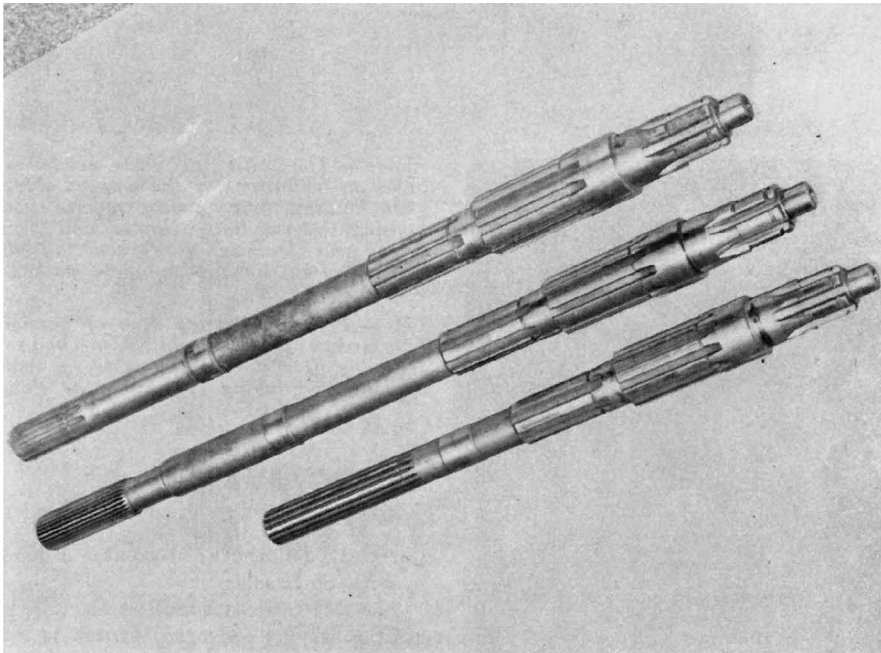
The adapter kit will allow use of any 1949-1952 Lincoln overdrive unit (OD model R11) or 1957 and later heavy-duty overdrive unit (also OD model R11). Availability of the overdrive will probably be the determining factor as to which one is selected. In 1957-59,



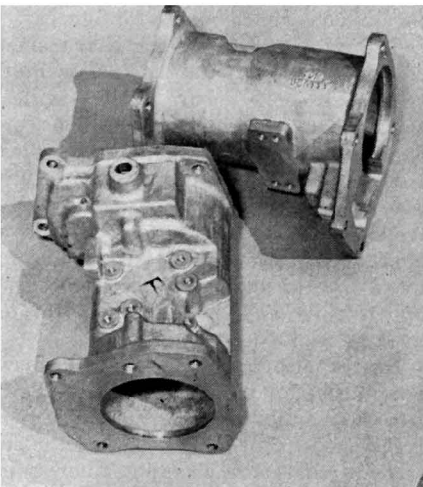
The R-11 overdrive unit uses a special adapter plate, at left, when used with most transmissions. The special tailshaft is about 25½ inches.



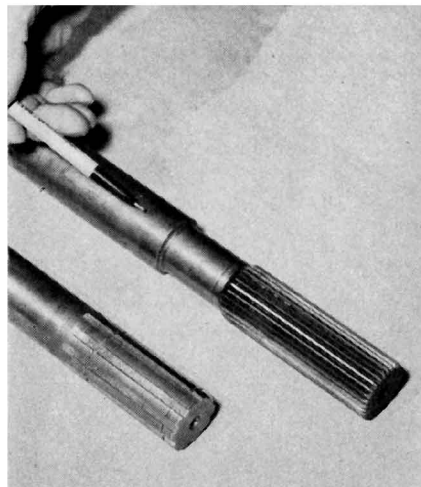
Above — Beatty housing replaces 4-speed tailshaft housing, makes provision for reverse gear. Pencil points to spring load recess for reverse shifting mechanism.



Left — Three tailshafts common to the 4-speed. At top is short Chevy unit, which cannot be used for overdrive application, center is Ford item. The stock Ford 4-speed tailshaft is reworked by Beatty to fit the Borg-Warner overdrive input shaft.



Special housings are cast to take stock Ford or Chevy floor linkages. If a Hurst shifter is to be used, the unit must be spaced away from housing for clearance.



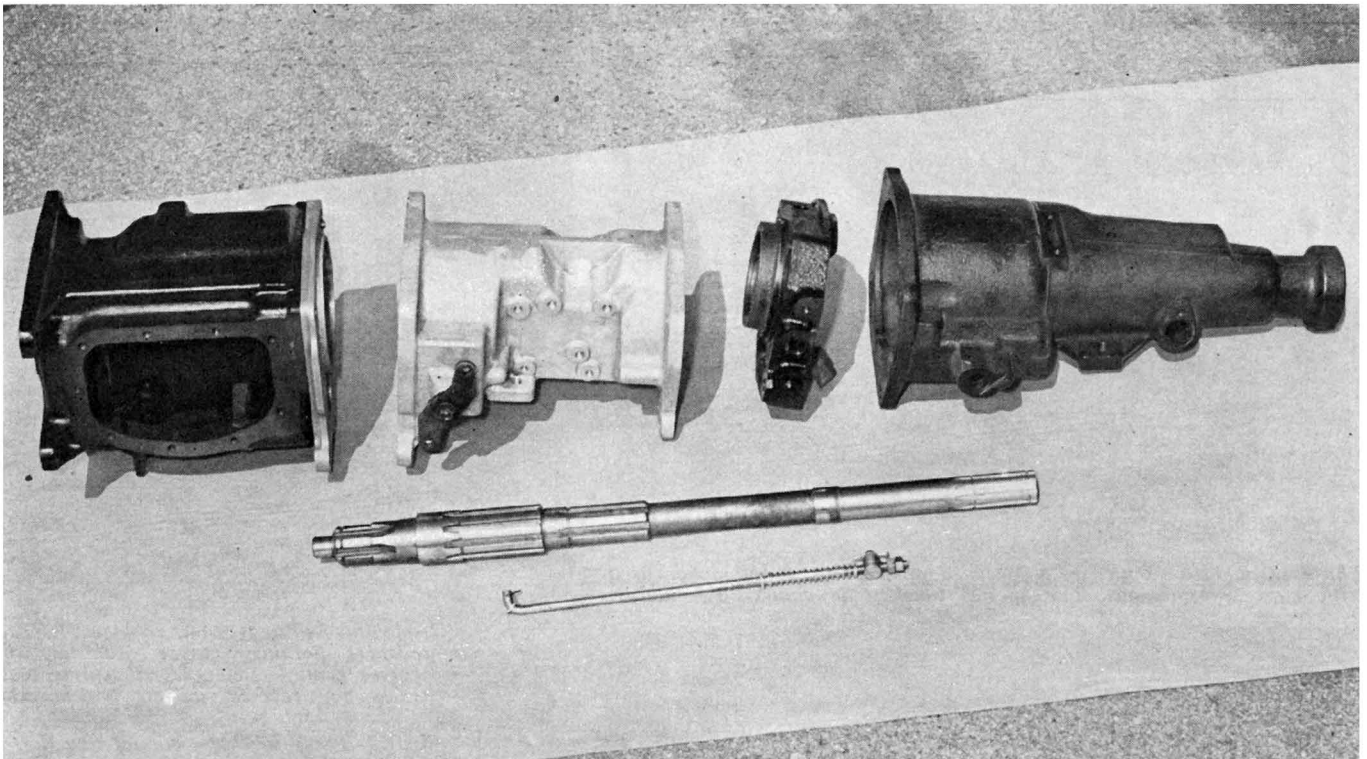
Stock Ford 4-speed tailshaft, top, has different splines than needed, is about 2 inches too long. Include Ford tailshaft when ordering to avoid core charge.

Mercury reversed the direction of the speedometer cable, so these particular cars must use the '57-'59 Mercury overdrive.

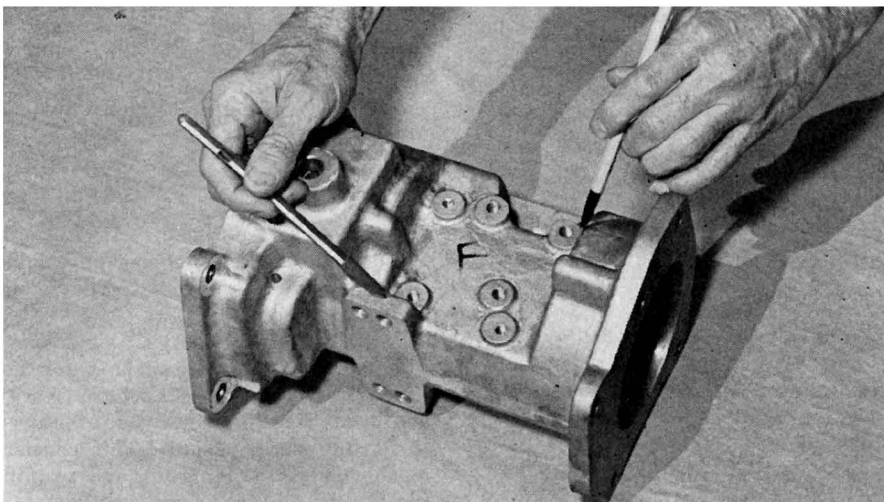
A great deal of Beatty's time is spent in making up a new tailshaft for the kit. A stock Ford T-10 tailshaft (Chevy shafts are too short) is remanufactured to fit the overdrive unit. This consists of shortening, building-up, and resplining the tailshaft. You can save yourself several dollars by sending along a Ford tailshaft core with your order, but keep in mind that it must be Ford. The Chevy, Fairlane and Cobra are all too short to be rebuilt.

The gears from the four-speed stock tailshaft housing are placed in the Beatty aluminum housing, new tailshaft installed, and then the overdrive bolted to the rear. Completely assembled, the unit measures 39 inches overall, which is quite a bit longer than the stock transmission. Some frame modifications are necessary for final assembly if the car has a box X-frame (like the '58 and later Chevys). In such a case a small bit of the X-frame "tunnel" may be trimmed away for clearance and the overdrive housing shoved back in the opening. Sting Rays need some slight modification to the floor tunnel for clearance, also. The Avanti needs sim-

(continued on following page)



Above — These are the parts needed to build an overdrive for the 4-speed. Main gear housing, left, Beatty reverse gear housing, intermediate adapter and overdrive gear housing. Reworked tailshaft and overdrive linkage complete package.



Left — Pointers indicate area of possible interference on Ford shifter mechanism. If the shifter does touch here, a small amount of grinding can safely be done.

## OVERDRIVE

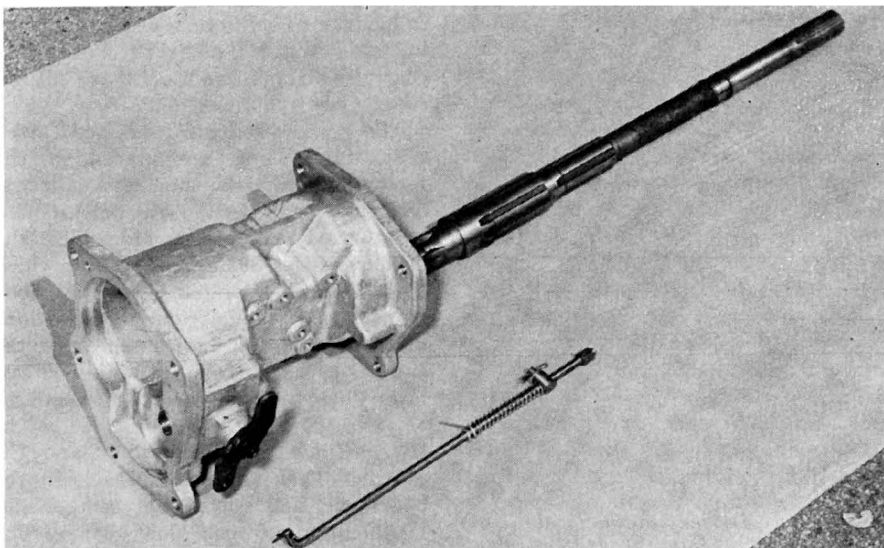
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ilar work, but the Ford creates a drop-in with no hassles.

The R11 overdrive unit is electric, so location of the operation switch is left up to the builder. Usual practice is to put the switch somewhere on the shifting linkage, much like a foreign car.

The advantages of such a transmission are obvious, and the cost is quite reasonable. The entire kit costs less than \$200 outright, with a \$35 core charge for the Ford tailshaft. A typical Lincoln overdrive unit goes from \$10 to \$50, depending upon how good a horse trader you are. The automobile drive-shaft must be modified to use the overdrive U-joint flange, which can be done by virtually any machine shop for an average of \$10.

Beatty also has a special overdrive adaptation for truck four-speeds. Price for these units varies depending upon truck model, but provides an excellent second wind for pickup-camper combinations, etc. For information on an overdrive unit for any particular car, Tom Beatty is the man who should know.



Reverse gear engagement overdrive lockout is accomplished by spring loaded rod connected to reverse gear bell crank. This bell crank must be made up by the user.