



TOWING: HOW TO BE READY FOR THAT EMERGENCY SITUATION

R-R Silver Dawn, Silver Wraith, Bentley Mk VI and R type

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A PHYSICAL TOWING PROBLEM

Anyone who has needed to tow an early post war car such as a Bentley MkVI or R-R Silver Dawn will have experienced some problems. Do not be mistaken in believing that this means the car will have failed to proceed, on the contrary the car may be very reliable, but completely unable to pull itself out of the mud on a wet rally field. The possibility of needing to tow one of these cars even a short distance could face any owner, after all even accidents can happen and they may not even be the owners fault. The moral is therefore, be prepared.

The towing problems facing the owner could be at least threefold, depending on the circumstances. Initially, any attempt to tow one of these cars by merely attaching a rope to some front suspension part, or even the chassis, is most likely to result in front bumper and / or number plate damage. If the car needs towing down any depression or ground inclination, damage is almost certain. The reason, if it needs explanation, is that the line of any rope or chain, attached between the towed and towing vehicles fouls the front bumper arrangement.

The second problem to be faced is that the front bumper must be removed. No problem, providing you, or the towing 'service' will get down into the mud and undo those rusty bumper bolts and nuts, and remove the front bumper. Of course you might realise that gone are the days when commercial service operators carry BSF / Whitworth wrenches, so at the very least you may get your nuts and bolts rounded off free of charge, at POS (point of sale), so to speak!

If you are unfortunate enough to need the car towing, at least hope that it is only out of the mud and the bumper can then be refitted. Naturally using the full tool kit that you always have with you! If the car needs full recovery then having successfully removed your front bumper, you need somewhere to keep it safe, because it certainly will not fit in your car in one piece. That is, unless perhaps, you have a LWB Silver Wraith, without a division. At this point the decision will have been forced on you to split down the bumper into three sections, for stow ability. Another task that eventually needs reversing, and it is surprising how time consuming it can be to reassemble and realign a front bumper.

Luckily it is feasible to overcome the problems fairly cheaply and at the same time benefit from stiffening up that slack suspension.

THE OBJECTIVE AND TRYING TO MEET IT

It is necessary to lower the line of pull of any towrope or bar such that it sweeps well below the front bumper and number plate. Failure of the rope to clear the number plate and bumper when it sweeps from side to side under towing conditions may result in expensive and irreversible damage to the front end assemblies.

Any initial thoughts on meeting this objective may include the attachment of brackets to some suspension member but if any brackets are much lower than the existing suspension then they are likely to ground.

Indeed although it might appear that there is plenty of 'suspension metal' to which attachments could be made the practical options decrease rapidly as the objective is pursued.

I have found it necessary on two occasions to extract my R type from mud and on each occasion it would have been all but impossible to attach any brackets to the suspension at the scene. I have therefore ruled out attaching any towing bracket to the suspension after the car has become disabled. When towing a suitably modified car it does however remain mandatory for the towing vehicle to be fitted with a low tow attachment to keep the towline as low as possible to the ground.

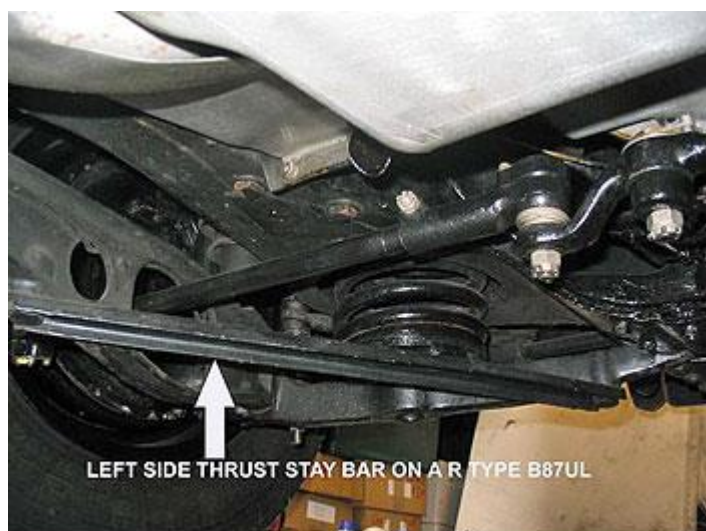
Even using the method suggested in this article it is wise to pull or put any car with a front end nose down attitude onto front wheel blocks to raise the front before permanently attaching a tow line. One instance when this low front end attitude or two rope departure angle may be severe is when the car is to be winch up the incline bed of a recovery truck. Another instance is when the front of the car has sunk in soft ground. When utilising the modification to the thrust stay bar as described here it is also possible to place a piece of timber between the chassis front centre cross bearer and the towrope. Timber positioned in this location will direct the rope downwards from the shackle attachment before the rope passes under the front bumper, but the timber will need stringing or some other assistance to hold it in place.

After much thought and indeed many aborted experiments I came to the conclusion that modification of the thrust stay bars was the most appropriate answer to the problem. This was because this fixture did not reduce ground clearance to any degree and the bolted attachments of the stay bars to both the torque arm and lower suspension arm are adequate. Attaching a single rope between extended front ends of the stay bars seemed the logical conclusion.

Replacement and modification of these bars is fairly straightforward. Many of these bars have been bent over the years by careless jacking and any distortion of the bars will cause suspension bottom arm misalignment. Replacing the bars could therefore be beneficial in many cases. Examination of the parts manual will show that a heavier thrust stay bar was fitted to the export models of these cars when they were built to 'Colonial' specification, and not without good reason. These bars stiffen the lower suspension and torque arms by forming a cross strut to produce an 'A' frame bottom arm arrangement. Once modified arms of thicker dimensions are fitted the extra benefit of controlling the standard suspension is at once obvious when the car is driven. Not a harder, but a more taut front suspension results. Anyone who attended the RREC Rally in June 2008 will realise the importance of being prepared for towing!

EXISTING ARRANGEMENT

Fig 1 shows the situation facing most owners, pictured here on an R type car. The stay bars are easily



LEFT SIDE THRUST STAY BAR ON A R TYPE B87UL

Standard front suspension thrust stay bar

detached by removing either the nuts or setscrews securing the ends of the bar to the lower suspension and torque arms. Either nuts or setscrews were used to attach the stay bars depending on whether the car was early or late production.

The stay bar of the standard cars is a pressed steel channel some 20 inches (510mm) long with two holes drilled equal distance from each end and having hole centres approximately 18.5 inches apart. On some cars these holes may be elongated a little to allow the nuts or setscrew centres to accommodate the fixing centres of the arms. These fixing centres may vary from side to side on the same car as the shims between the torque and lower arms may differ in thickness side to side. For

this reason when new stay bars are made they require marking to relate to either right or left side of the car. The material is 0.100 inch (2.54 mm) thick and the channel section 1.530 inch (38.86 mm) overall width with a return depth to form the channel of 0.500 inch (12.70 mm).

NEW THRUST STAY BARS



Fig 2. Comparison of the parts, new and old, shown here with shackle holes 3 inch forward

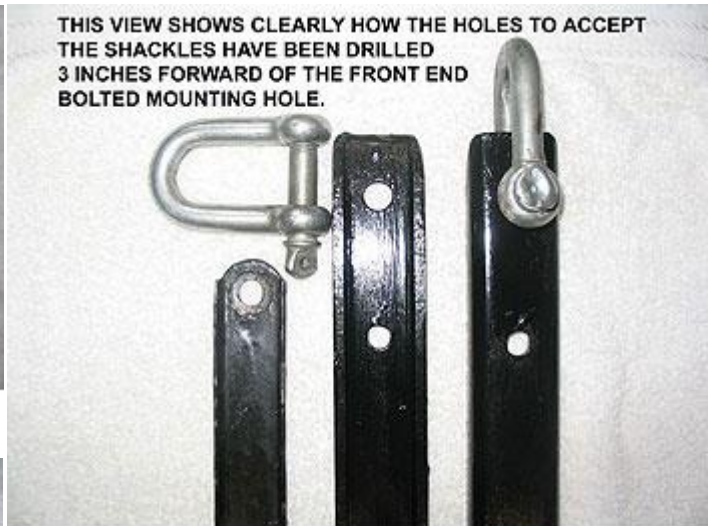


Fig 3. Comparison of the front end of the bars



Fig 4. Three quarter view that clearly shows the channel construction

Fig 2, 3 and 4 show the arrangement of the new stay bars. Extra holes were drilled some 3 inches (75mm) forward of the front nut or setscrew attachment points, although if desired it seems that holes only 2 inch forward may achieve the objective. On the other hand if the bars are made longer, it seems feasible to run the holes out to say 4 inch (100mm) forward of the front bolt holes.

The actual position required for the shackle attachment depends on a number of points. These encompass strength and resistant to bending under towing condition, the alignment under the bumper of any tow line, the possible foul of the sway bar ends under suspension rebound conditions and the clearance required for jacking up of the car. Two of these situations are shown below.

Fig 5 illustrates the approximate suspension position in a full rebound condition and the clearance at the front end of the new stay bar. Fig 6 shows a slightly better view of this condition but shows also more clearly that some thought needs to be given if you use wide timber blocks on your jack.



Fig 5. The new bar clears the front cross member on suspension rebound with shackle positions some 3 inch forward of the existing front setscrew attachment point



Fig 6. Clear of the chassis fixtures but a possible foul with your favourite jacking block

Fig 7 shows a new bar fitted and Fig 8 a close up view of the front end. The new bar is some 24 inch (610mm) long and in this instance made from 0.2 inch (5 mm) thick mild steel, 2 inch (52mm) wide with returns to form the channel of 0.6 inch (15mm). The sway bar in this example has been formed on a press bed. As not many owners will have such exotic equipment at their disposal a fabricated sway bar will suffice. This could be made up of say 50 mm mild steel straight steel strip along which 12 mm deep flanges could be welded, a material thickness of 4 mm should be adequate but 5mm or even 6mm even better. Once the new stay bar has been drilled using the old one as a pattern, re-attachment to the car is straightforward. I found that the existing setscrews retaining the bars on B87UL were quite adequate in thread depth to fix the



Fig 7. New bar fitted, note the increased thickness compared with Fig 1

newer and thicker 5 mm thick stay bars.



Fig 8. The extra sway bar hole, ready to accept one of the two shackles in an emergency

Fig 9 and 10 show the direct front view with new bars and shackles fitted. Once modified the tow line run is lowered generally enough to clear the bumper. The shackles can be purchased quite cheaply at hardware or ex-military stores and stored in the boot, it is not suggested that shackles are left attached, as normal ground clearance will be reduced. To be as kind as possible to the suspension the two front shackle points should be loosely joined together when towing is required in order to take the towing thrust directly along the stay bars and through the centre lines of the

attachments. Due to the independent front suspension movement requirement in normal use on no account be tempted to join the front of the sway bars together on a fixed or permanent basis.

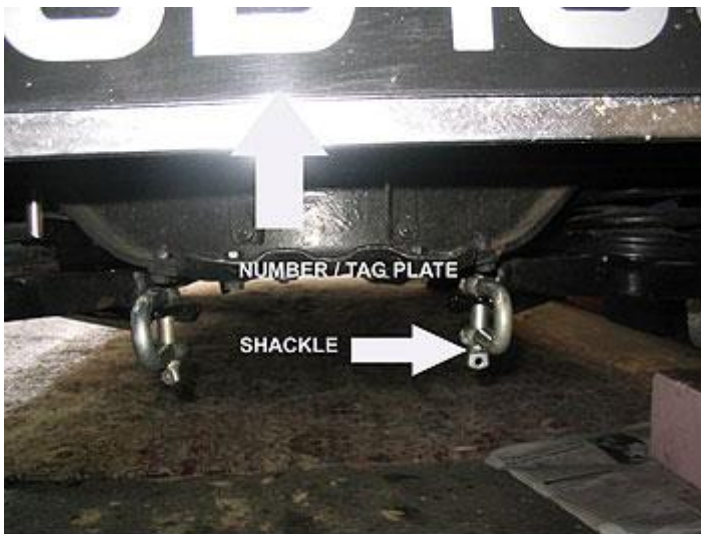


Fig 9. Note how the tow rope line will now come below the number plate



Fig 10. For towing integrity the shackles need loosely joining with a rope or another shackle