

## **DID YOU KNOW..**

by : **BOB STEIN**

### **January/February 1983**

**AUTO TRANS, MAINTENANCE.** It is a good idea to change trans. oil and filter every 20,000 miles or less, whether you drive hard or if the car sits around a lot. Kits are cheap and it pays.

The only difficulty you will probably encounter is the new pan gasket. They are usually neoprene. The instructions say to set it in the sun and it will straighten out. It won't! Tie it to the pan with string, draw up the bolts, then cut and remove the string. If your old cork gasket is in good shape, you can use it again. Be sure to use FORD trans. oil only (type F). Automatic transmissions can be quite fussy and may not shift properly with the wrong fluid. Every 20,000 miles or so, or at the first hint of sluggish shifting, add a can of conditioner-sealer. This will help keep the seals in the valve body pliable and prolong trans. life.

**OVERDRIVE -** Sluggish shifting, popping in and out of OD. Heavier oil may help. I prefer non-detergent oil. Frank Page of Salt Lake City reports a "cure" by using synthetic oil, Amszoil. It's worth a try. Otherwise new seals in the pump are probably indicated. A good flushing and new oil may help.

**RUST PREVENTION-HEADLIGHT BUCKETS-** Remove the "works" and spray INSIDE of the bucket with undercoating, after cleaning and painting, if necessary. Moisture gets inside and rusts. This should extend bucket life considerably. I've often said that weep holes in critical frame areas would help let out moisture and retard rust. I'm now told that there are some, but they're plugged up with undercoating. Catch 22, if true, I'll have to look. Anyway, a few judicious holes drilled in the bottom of the frame rails would be wise, but don't undercoat them shut!

Technical advice. Call I'll try to help if I can.

### **March/April 1983**

**WHEELS,** Volvo lists the 70-71 Mag wheels as 4 1/2". Some people think they are 5 1/2". They are actually 5".

**TIRES.** The diameter of inflated tires on wheels in different sizes is quite small. I measured 8 different 165, 175, and 185 tires. The junkiest 165 (Cavallino) was 25". The largest 185 (snow tire) was 26 1/2". This translates into a maximum of 3/4" height difference on the car from the smallest 165 to the largest 185. The original Swedish Good-years are about 25 1/2". I like a narrower tire in snow. I also think the slightly smaller tires make the cars handle easier and feel lighter, but are not quite as comfortable on the highway.

**KEYS:** FS door keys, used on many years of coupes and ES's, can be replaced with CURTIS UN-18, or other equivalent.

**OIL LEAKS:** The rear main seal should be replaced when the clutch is done since it is behind the flywheel. An additional ten minutes when the transmission and clutch have been removed. Hours, if you have to remove everything just to get to the seal, a \$.50 felt ring that costs about \$6.00. The front seal is a ten minute job anytime. Remove the bolt that retains the fan pulley. Remove the pulley, the circlip, and old seal. Volvo talks about removing the timing gear cover and centering the new seal. At least nine times out of ten it is NOT necessary. The seal will usually last for 50,000 miles or more.

**BRAKE LINES.** Sometimes a brake line will fail due to damage or corrosion. If it's a long one, from the firewall to the rear proportioning valve, it can be a pain, not only to put in, but to obtain and/or make one up. A workable alternative is to splice a new piece in to replace the damaged segment.

You will need: a piece of 1/8" brake line, tubing cutter (compact preferred), flaring tool, 4 male ends, 2 couplings and open end or flare nut wrenches in 3/8", 7/16" and 1/2". Cut out the damaged segment. Place a male fitting on each of the ends, and flare. Cut a piece of tubing (new), put a male fitting on each end. Flare each end. Connect in place with couplings. I prefer to replace the line from the valve to the cut if at all possible. This eliminates one joint (1 male end and one coupling), and is a more secure repair.

### **May/June 1983**

**Front X-members, preventive maintenance;** In the best of all possible worlds it would be smart to try to loosen the lower control arms, even if the bushings don't need replacement, just to keep them free in their tubes (65-73). The arms rust fast and it is a nasty chore to free them. If you free them up and lubricate them, it will always be easy to remove them for rebushing when necessary.

Another area that should be watched if you drive on rough roads is the lower control arm mountings. There are tabs, front and back, of the X-member where the tubes for the lower control arms are mounted. They are spot welded and often fatigue and break away from the X-member. Disaster! The control arm leaves town and you will probably leave the road. Once broken they are hard to reposition and repair (if there is enough of your car left to bother fixing). Have a GOOD welder run a bead at the edges of the tabs. (Gas welding will probably fry your bushings). This will spread the stress and prevent fatigue at the spot welds. It could save your life.

### **COMMON FUEL INJECTION PROBLEMS:**

1. The engine won't idle fast enough (stalls) when you start it - or it races (2000+ RPM). Culprit: Coolant temperature sensor.

Cure: Spray heavily with carb cleaner (after removing hoses). If it doesn't free up in a day or two, spray again. If that doesn't do it, replace the sensor.

2. Car hesitates, bucks, and misses for an instant while driving.

Cause: Dirty throttle valve switch.

Cure: Remove cover and spray with contact spray (TV tuner cleaner). Replace if necessary.

### **September/October 1983**

Another metric bolt!

The '73 ES door glass mechanism is different from the coupes! (I haven't checked the '72E or ES yet), AND .. the glass is fastened with a bolt with a 10mm head. The glass is much more easily removed than on the coupes.

**WINDSHIELD RUBBER.** Volvo made at least three types. All will probably interchange, but I can't decide which one to make.

**HIGH RPM at IDLE.** Usually temp. sensor, but can occasionally be caused by a stiff gas pedal. The rubber loses elasticity and holds the throttle open slightly. Try flexing the pedal backwards few times. You could try a stiffer throttle return spring. or replace the pedal.

FUEL GAUGE SENDER REPAIRS. Be aware that the sender is grounded to the gas tank and the gas tank to the body by the mounting screws. Tighten the tank screws and work a few of them back and forth to assure contact.

1. Remove the sender. If stuck, spray with solvent or penetrating oil and work back and forth. If necessary, open it up.
2. Check with ohm meter. Readings of .25-.5 ohms are average. The important thing is to get readings through the entire range of travel.
3. If necessary, open up the case and spray the resistor wire with TV tuner contact spray. Check that wiper contact is clean and has tension. Check for good contact and no broken wires. Bend wiper contact slightly, if necessary. If resistor wire is broken, replace the unit.

### **November/December 1983**

#### TOWING 1800s

I have towed coupes and ES's hundreds and hundreds of miles. They generally tow well enough, BUT... each car is an individual case.

The most important thing to check is that the bumper brackets are solidly mounted to the frame. Broken or loose bolts or a rusted frame can be a disaster. Next, check to see that the steering mechanism is free, or you won't get around the first corner. The best way to check is to jack the car up under the X member to raise both wheels off the ground. Grasp a wheel and move it through the entire turning radius in each direction. It must not bind or be stiff. If a car has been sitting, ball joints on the steering arms and tie rods can be dry or rusted. Don't try to tow it unless you can free them up. A dry steering box is bad, too.

#### TOW BARS

I use a tow bar made by the Valley Mfg. Co. (no address available). It hooks to the frame (lower A frames on 1800s) with chains, and holds back on the bumper only when slowing or stopping. An alternative is a bumper type tow bar, not recommended. A fairly good fix is to replace the front bumper brackets, with a tow bar hinged to it, with the hinges fairly wide apart.

Bull horn bumpers are nice and solid, as are '73 ES bumpers. S and E types are not the best for towing. Some tow bars will slip unless placed inside of the end face bars. If placed this way they are a little too close together for good turning in many cases, but each car tows differently. Some tow like dream: some are a pain.

Try to drive straight for a half mile, if possible, then stop and check everything. Try to make wide turns if you can, slowly at first to see how the car follows. My experience shows that recovering from a turn is the hardest for a towed car. Straighten out cautiously. The wheels have to change direction on the towed car. U turns are a nightmare. Be careful straightening out. When in doubt, go slowly. Remember that your brakes have to stop two cars and that you're stopping the towed one with its bumper. It's best if you tow with a car heavier than an 1800. I've used a 145 and a truck, but you can tow with an 1800.

## TOWING WITH AN 1800

Volvo made a factory hitch for the P-1800. It was an early accessory, rarely seen. I don't know when it was discontinued. It's a good rugged rig that straddles the gas tank and mounts both in front of and behind the tank. It has a curved pipe that comes up behind the bumper from below with an integral 1 7/8" ball. (A few weld beads would change it to 2").

I have no specs on the rated load or tongue weight, but I would guess 200 pounds tongue weight and a 1200 lb. trailer, or 2800 lb. car would be okay. I've seen these mounted on S and E coupes, and I think they would fit the ES too.

Another type hitch can be made by substituting an angle iron for the rear bumper, with a ball mounted out on a plate. The rear bumper brackets are quite sturdily mounted and this type rig works well enough, especially for light trailers. Take it easy towing a car.

Remember, the times you stress any towing rig most are starting out and turning, and to a lesser extent, stopping and going up steep hills. Rolling on a flat road produces almost zero stress, but bumps can put ruinous stress on everything. Look out!

Most towed cars will drift back and forth a little at higher speeds, and most trailers will "fish tail" at some speed. It's probably smart to stay 5-10 mph below that speed.

### **January/February 1984**

WINDSHIELDS. ALL, repeat, ALL 1800 windshields will interchange. I finally got around to checking this out. I fitted an S windshield into a '73 ES to make sure.

ES SEAT BELTS. LEFT and RIGHT will inter change, BUT, the belt threading is a half-turn different. If you use a driver's side on the passenger side, it will need a half-turn to fasten it. It won't lie flat.

TRANSMISSION MOUNTS. Auto and OD trans. mounts supports are the same.

WINTER DRIVING. I suggest 50-75 lbs. of weight, forward in the trunk of coupes, over the wheels in ES's. The cars need the extra weight for good traction in the snow. Strap-on type chains are good insurance. Don't forget that reducing rear tire pressure can help. Let out 5-8 lbs. in an emergency. Reduce front tire pressure too, if necessary to improve braking. Snow wiper blades are a big help. If you can't find anything to fit the wiper arms on your car, it pays to change arms for the winter.

## **March/April 1984**

### SEAT BELT RETRACTERS, 72-73

These can be repaired when they get stuck and won't pull out or won't retract.

#### BELT WON'T PULL OUT.

Remove large black end cap by prying near the bottom. It will pop off. You will see a coiled spring with one end straightened and bent down to engage the teeth in the top of the reel. There is also a loose fitting rectangular metal plate, tapered at two inside corners to lift the coil side of the spring so that the straight end (arm) engages the teeth. Apparently, this is supposed to be jarred and lock on impact.

Remove the spring and bend the arm AWAY from the teeth (decrease the angle of the arm) so that the end extends down less than 1/16" below the bottom of the coiled spring. Replace spring and test.

The mechanism will work properly only in the upright position. The belt should pull out easily and retract. The arm should only engage the teeth if the plate is shifted to tip the spring arm down. It should release easily by letting the belt retract an inch or two. If you want an easier way out, throw the spring away. The belt will still be fast at two points and will only give a little at the retractor.

#### BELT WON'T RETRACT

Remove the small plastic cap. See that the center of the coil spring is fastened in the center and at the outside end. Bend with pliers as necessary. Wind up spring, if necessary. These are a pain, but obvious to fix. Left and right belts will interchange with a half twist in the upper mounting fitting.

72 and 73 will NOT interchange. The 73 belt end has a slot in it and is shaped differently from the 72. Apparently some late 72's have the later 73 style belts.

Never force the mechanism if the belt won't pull out. Release it and try again, gently. Forcing is what bends the spring arm down into the ratchet. This may occur in a panic stop or on impact and needs to be corrected.

## **May/June 1984**

INSIDE REAR VIEW MIRRORS, E, ES: The heads will interchange with 140's, but the arms are different lengths.

HEADLINERS: 67 and 68 (69?) and 72 are the same. They have the same perforated pattern. Odd that they repeated a headliner after two years (70,71).

TRANSMISSIONS: ALL M410D transmissions will fit ALL 1800's, with flange changes in some cases. (I've written about this before.) 70E's ONLY, use an M410. This is a 164 transmission. It requires a unique bell housing which functions as the front cover for the transmission. The bell housing is bolted to the transmission from INSIDE the bell housing, therefore the transmission and bellhousing must be removed as a unit. This is a larger transmission BUT the top is the same as the M40, therefore ALL 122, 140, and 1800 covers will fit, and ALL extension shifters. The M410 will work on 70-73 1800's if you have the B-20 bell housing.

All M40 (non OD) transmissions will also fit all 1800's if used with the correct longer front drive shaft (probably from a comparable year 122S for S coupes). If you use a comparable 122S rear end (4.10), the combination will work, and reasonably approximate OD rpm in 4th gear. 68 122S sedan rear ends will physically fit all 1800's from 66 to 73 BUT will not accommodate disc brakes. The axle shafts are splined differently and are mounted differently to the housing.

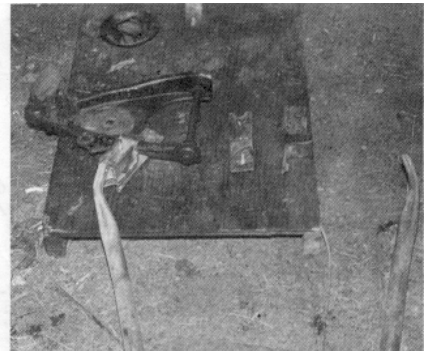
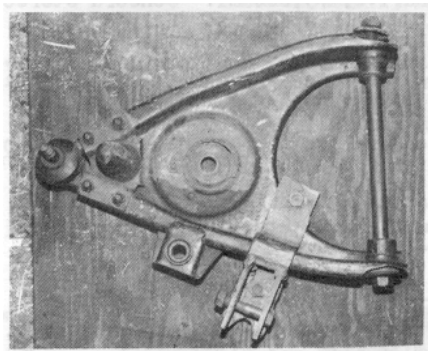
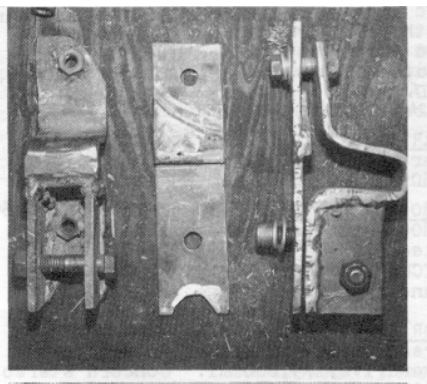
### July/August 1984

#### The ULTIMATE Tow Bar For 1800's

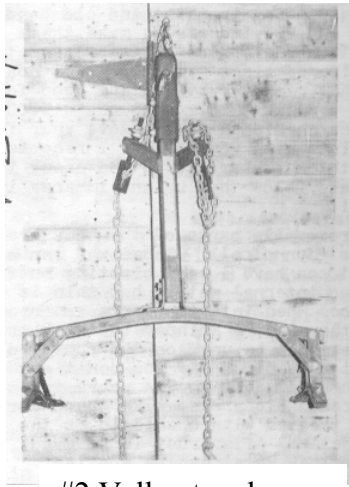
Having towed dozens of 1800's thousands of miles and having carefully studied the bumpers, brackets, frame, etc., I set out to make the best possible tow bar for 1800's.

The requirements for such a tow bar are obviously strength, safety, the ability to tow cars with weak or missing bumpers, brackets or front frame, one that would in no way damage the car, preferably one that would work on 122's and 140's as well, and could be easily mounted and removed. Friends, there's not much under there to hook to! I finally decided on modified U clamps mounted to the front of the lower A frames. As the photos indicate, they are U clamps with ears facing forward to receive the tow bar. 1/4" steel was used. Note the pad on the bottom plate to prevent putting stress on the curled lip of the A frame. Nuts were welded to the top of the U clamp to facilitate mounting to the car. Just 2 bolts to be fastened on each side. It is a rigid fix!

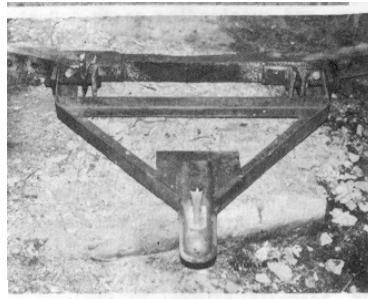
The tow bar itself was scrounged at a yard sale. I don't know what it was made for. Angle iron or pipe could be used to fabricate something similar. In a short test run it felt terrific! Solid, with no sloppiness and with that great feeling that I couldn't hurt anything on the towed car. The "shakedown" run was 100 miles, city streets and highway, towing a '68 coupe. I often forgot it was there. This rig would be the one I'd take coast to coast.



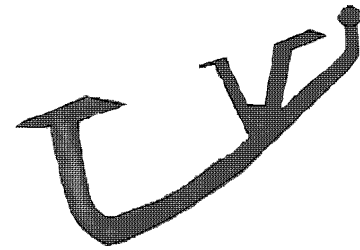
The other tow bars pictured work well, too. #2 is a Valley tow bar. Chains pull from the A frames, but it holds back from the bumper. It works fine and is fairly easy to attach.



#2 Valley tow bar



#3 Replaces bumper



#4 Volvo Hitch

#3 replaces the front bumper. It tows OK but is a little harder to attach. #2 would probably work better if the bumper was replaced by the bar from #3. Both of these need a sound and solid front frame and bumper brackets- not too common on rusted or front end damaged cars. #2 also needs a solid front bumper.

#4 is a factory made Volvo hitch, seldom seen, since I don't think it was offered after about 1964.

### **November/December 1984**

**FLOORS:** Floors almost always rust from inside the car, due to leaks, rain, or moisture of some kind. The carpets hold the moisture. Prevention: Remove carpets, clean any surface rust, prime, then spray with undercoating. Allow to dry thoroughly. At periodic intervals, remove and dry the carpets.

**FRAME MEMBERS:** Most often rust from INSIDE, from condensation.

Prevention: Drill weep holes (3/8" or so). I suggest two in each, including the bottom of rockers or inner plating. Spray oil or rustproofing in if you like. DO NOT PLUG!

**FRONT FENDER SEAM RUST:** Buy new headlight and signal light mounting rings. These are spot welded to the original fender and are separate parts. Braze the new plates in. These will give you a shape to which you can add metal and filler.

**EI FUEL PUMPS:** Impellers can be cleaned. Remove screws and head. Polish rollers and clean lead deposits. The CIS pumps (which deliver higher pressure) will work on the EI systems, I am told. They have a different part number, but are identical externally. Good to know in an emergency. They are somewhat more plentiful.