PUTTING IT BACK TOGETHER

pages 257 —

PART 7.

N.B * this mark means work still to do.

See p. 259, p. A/2. near shackle bolts. (tighten)

See p. 282 A/3 [all ~~front~~ near suspension + shackles
~~Lower will have all tightened~~) done. 15/5/07

See p. 170 A/5. [Bump stops for ~~[illegible]~~ reduced Torsion Arms
— stop light switch 12 pl.

A/7. [2 lower bolts on compensator unit
/ front cross member - tighten bolts

* [A/13. Tracking Steering to do later

A/16. [Drain p. from sump.
overflow tubing to be fixed

282 Cover to gear box.

Putting it Back Together

See working notes pages. 127-8. – Petrol pipes from tank to where end of pipe meets switch.

PETROL PIPES the dip p. in tank nearest filler p. is $4\frac{1}{2}$" long & this is the "normal" pipe.
" " " " " further " " " $5\frac{1}{2}$" long " " " " "reserve pipe"

the petrol sw. has 2 conns. for above pipes – the top conn. is the reserve. April 97

(see also p. 127-128)

FIXING REAR SPRINGS. N.B. Chassis is sep. from body & is supported on 3/6" nylon wheels.
Fixing is difficult due to energy in springs when they are assembled.

After trying various ways to fix the following was successful:–

N.S.R. Spring.

1. Fix front bracket to chassis & tighten.
2. " " end of spring to bash (do not tighten)
3. Put a clamp each side of bottom spring leaf & take out kempy. N.&B. fxd. thro' centre of spring.
4. Fix bolt on n/s. of axle to centre of spring (do not tighten) (In order to do this it is necessary to tilt the o/s. end of axle up. to avoid near end of N/s. spring catching on rear fxg.
5. With assistance, lift o/s. end of axle higher than N/s. end and "spring it" in under rear end of spring shackle fxg. point. (ignore fxg. shackle for present).
6. Fix pair of hoop bolts over centre of axle & fix plate & 4 nuts. (do not tighten)

O.S.R. Spring.

1. as above. 2. as above.
3. With assistance, pull spring down and outwards at rear end & spring same under near shackle fxg. (ignore fxg. shackle for present).

   N.B. the centre of the spring will now be some inches below the fixing point on the axle.
4. as 3 on N.S.R. Spring.
5. Support the spring near the centre on a trolley jack (or axle stand) & 12" clear below. With assistance of 2 people standing on o/s of chassis frame (adjacent to axle) "spring" the end of axle bolt into the centre of the spring & put on nut. (do not tighten)

N.B. Both springs are now trapped roughly in position.

6. Put the pair of hoop bolts over centre of axle & fix plate & 4 nuts (do not tighten)

BOTH AXLES.

1. Put an axle stand under each end of the axle. Get 2 people to stand on chassis, near spring, pushing down chassis frame from the ~~from the~~ axle & put in the bump stop w. rubbers under axle, dropping 2 bolts into the 2 holes in the chassis. A/1.

(Rear axles, cont'd.)

(2) Fix shackle at the rear end of chassis with top bolt only <do not tighten>

(3) Prise down rear end of spring (with a 5/8" ⌀ bar or similar) against chassis and put in the lower nut & bolt thro' shackle bkt. hole. <do not tighten>

(4) Fix bump-stop bkts, each with 2 nab. to chassis FIRMLY.

(5) Fix pair of hoop bolts, plate & 4 nuts under centre of frame FIRMLY.

(6) Tighten 1 nut & bolt at front end of spring & 2 at rear end of spring

GO AROUND & TIGHTEN ALL N. & BOLTS. (The rear lower shackle bolt is then made slack until the whole weight of the car is on chassis & then (at a later date) firmly fix this bolt)

* and finally fix identification tab to O.S.R. Spring at rear end over 3 leaf section

[Ref: Working notes pages 138, 139, 148, 142, & 167.]

Fixing Expander, Adjuster Unit & Drums for Rear Wheels.

<See dwg. p. 118 on notes>.

(1.) Assemble Expander ~~and Adjuster units and drum~~ having care to see the 2 small rollers are in correct position;

(2) /through hole in wheel backplate fit drawlink into expander/secure toggles with 2 small ~~screws~~ split pins/and loosely bolt expander to body of backplate.

(2.) Assemble Adjuster unit having care to see that the 2 links are fitted the correct way round/and fix adjuster body loosely to backplate.

(3.) Putting on 2 brake shoes.

a). Joint both shoes together with the 2 springs.

b). Put shoes & springs between backplate & plate with 4 wheel bolts.

c). Put bottom shoe on compensator. <Adjuster unit>

d). " top " " " <" >

e). " bottom " " expander unit.

& f. " top " " ".

(4) Put on brake drum. <without 2 fxg. screws.>

(5) From rear, tighten wedge on adjuster unit.

(6) Tap around brake drum with a wooden mallet to centre drum/shoes.

(7) Check to see if wedge on adjuster is still tight.

(8) Firmly & finally tighten 2 fxg. bolts on rear of adjuster to backplate.

(9) Bolt-up tight 2 bolts at rear of expander unit.

(10) Slacken-off wedge on adjuster one notch

(11) Turn back the 2 nuts at the rear of the expander unit one ½ turn (to allow this unit to move freely when brakes are operated.)

(12) Permanently fix the 2 set screws to secure the drum to the axle.

– then check to see that the drum still revolves freely.

Alternately. <per Jerry at Tech.> Don't tighten until shoes are centralized, then tighten adjuster fully; then slacken wedge off one click.

the expander unit must run freely so that the 2 nuts at the back of the backplate securing this, should both be backed-off ½ turn to allow the grip of the thackery washers to do their job so that the expander can move freely on the backplate to allow both shoes to expand & contract freely.

<see also Driving Member mag. Vol. 33. No. 11. April '97, page 20 for full details for refitting & setting-up both front & rear brakes from scratch.>.

FRONT SUSPENSION. <and all shock absorbers & front anti-roll bar>

the shock absorbers and front A/R bar was originally rusty & black & mucky. Many years ago (see notes) previously taken off & painted yellow. — Decided I didn't like this so rubbed them all down & painted them black Japlac.

The rubbers in the ends of the anti roll bar were baggy, this discussed with Jerry (at Tech.) back he said "no problem" they are only to hold bar in place.

When I came to fix the front shockers & A/R. bar, there was no weight on the chassis so the nuts on the arms (2 on each), the lower caught on the top of the curved top of the spring socket so it was not possible to get all the bolts properly into their holes or tight. (i.e. with weight on car proper.) [26.5.97]

IMPORTANT.

FOR:– All front & rear suspension

" " " " shock absorbers.

" " " " Brake Drums & complete. Done 12/11/98.

" " " " Rods & calipers.

& R wheel bearings. (2 of front – do not touch rear wheel bearings)

& for front anti-roll bar — All are fitted on chassis but not finally fitted. — many nuts are not tight.

When engine & body is on chassis. (i.e. the weight) fully tighten all the above bolts. to correct tension.

Shock absorbers need split pins putting in castellated nuts <& possibly plain washers inserting in some> & finally tightened.

* see p. 282 *

Front Suspension (cont'd) (See p. 109 et seq.)

It was decided that the best method of fixing was:—

1. Clear all holes where bolts go through, to remove paint.
2. Bolt o/s. end of horizontal lower "cross" link to horizontal longitudinal link at a spherical bearing.

   <This was found difficult using a 'G' cramp as one end of the cramp has a curved end & it was not possible to compress joint enough to get it into the I shaped cross link>.

   ∴ a) Bolt up 4 small nuts & bolts right.

   b) Hold both ends together with hands.

   c) Withdraw bolt, following it through by inserting a softwood ○ dowel < length just less than width of jaw on cross member

   d) With assistance, cramp right lower 3/4 of spherical bearing in a vice & push cross member end over it.

   e) Raise spherical bearing 1/3rd in vice & push cross member a further 1/3rd into jaw.

   f) Finally, complete by pushing into place.

   g) Push out temporary dowel with bolt <from front of vehicle end>

   h) Check that the metal cover after the rubber cover is central on housing (i.e. b/s. of spherical bearing)

   j) Fix castellated nut & new split pin (i.e. after tightening)

3. Fix brm. hori. cross link to centre of chassis with 1 nut & bolt. (bolt goes in from front ~~as rear the lower of metal is threaded~~, then put on nut.)
4. Fix longitudinal torque link to side member of chassis at rear end. (bolt goes in from o/s. to i/s of chassis)
5. Now comes the difficult bit.

   a) Make & fit 4 rings. <These were originally rubber, but perished. So were made out of good quality P.V.C. damp-proof course material & they fit into the recesses at the top. & bttm. of the spring (coil)

   The original had the centre cut out – new ones made keep centre in (so solid disc)

   b) With assistance using home-made spring compressor, slowly tighten 2 nuts on compressor, having first protected paintwork at top and bttm. (tying-up with rope as work proceeds in case compressor slips & main spring "flies")

   See note !! later.

see note later

c) When pedestal in line with longitudinal torque link put in 4 nuts & bolts.

d) With cramp still on assemble top link to give 7¾" between centres of bolts & bolt together (shoe on chassis & eye on top of pedestal.

(see p. 141 for details) & (bolts go in from front end)

N.B. the 7¾" dimension was measured "as existing". When all assembled check accuracy when "setting-up" suspension on special Tech. equipment at a much later date.

Note:- re: above.

On 25.5.97. Martin Julie, Joyce, Terry & Christian & myself fxd the front suspension arms, springs & upper link. — It did not go as planned in previous note re: Compressor made specially at Tech. — The problem was weight, or the lack of it. — With the jack under the lower ball joint & "bodies" on the chassis — the suspension was fixed in this manner.

Bump Stops on Longitudinal Torsion Arms. <see also facing page 170>

Only one found, & this in poor condition ∴ disgraded.

The 2 plates with welded-on bolts & nut each, re-used on an old solid piece of rubber which was adapted. — Glued w. 2pack araldite @ Tues Tech.

These cannot be fixed until engine in chassis & body on as no room due to susp. at front at its lowest level. FIX AT END OF JOB.

Brakes. Cont'd.

Main rods fixed together with brake pedal & gear change pedal (on same bkt.)

Pillar for handbrake bolted onto chassis, also {stop light switch & carrier for main brake rod. — switch adjustment to be checked & electrics connected LATER.

- Turn round chassis so that it is in same way facing as body & connect front brake cables and adjuster across front cross member.
- Fix front brake shoes and drums. — N.B. front wheel bearings still to be adjusted. done 28.7.05 See p. 282.

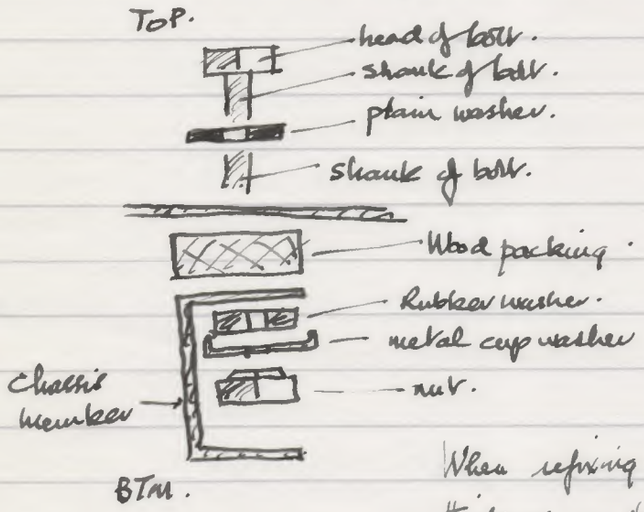
TO DO

Body to Chassis fixings. <see also p. 136.>

30 August 1997 — Body placed back on chassis — Martin, Joyce, Freda, Terry (+ Terry) + me.

31 August 1997. — 14 Body fixg. bolts + 12 packings <2 are double> fxd. back on to bolt floor of body to chassis. <Joyce + me>.

4am. 31/8/97 Princess Diana killed in car crash in Paris.



the packings were taken to Tech. cleaned w. L grinder — at home refining felt fxd. to top + btm. of packing. <this to "make-up" what was L grinded off cleaning them>

When refining 2 wood packings had to be reduced in thickness as they were too thick to go under floor.

---

4 Nov. 97. — Went to Nottingham w. Brian + Terry from tech. to pick-up some bits to finish the Tech. Rover. Bought 2 pedal rubbers (grommets) <where leg part of pedal goes thro' metal floor> + 2 rubbers for windscreen wipers. Paid £15.00 each. N.B. the pedal grommets are not concertina pattern but have a sliding felt pad inside the rubber to allow for movement of pedal — Hope they will be ok. still to fix

BRAKES from Pedal to Front Cross Member.

1. The bell-crank lever bracket (15) fxd. w. 3 N.&B. within the chassis front member, on the offside + nearside.
2. The front vertical bell-crank lever, tube + bush assembly (14) + the pin (16) is free to move on oilite bushes within the bracket. ✓
3. Pin + bushes greased with graphite grease.
4. See p. 82 + 83 of my notes + p. 30 + 31 of parts. catalogue + p. 73 of handbook for ref: 26/10/98

References re: Brakes. see D.M. Vol. 33, No. 11. p. 20. April '97. (Best ref.)
" " " " 35, " 2.
" Handbook p. 73.
" My notes pages 80-83 and 109-127.
" D.M. Vol. 31, No. 11. p. . April '95.

A/6 262

Refixing Brake Rods, Cables, Compensators etc. from brake pedal to front of Vehicle.

- The 2 front brake cable abutments (7) are very difficult to fix due to the nuts being within the front chassis cross member. <for ease of fixing a socket wasp nut in a 1/4" x 1/4" Varnished piece of wood to be able to offer it up to bolt above>
- Thread both front brake cables through holes in front chassis member:
- Push in plunger (218 on Giling info. sheet. – my page 117) to expose hole for ⊓ which secures the end of the brake cable. – push in end of cable then fix ⊓ & then fix braces cover plate (inside face) <Take care!! – if you push in the plunger too far the nutlock can become dislodged within the expander housing. – use a string elastic band to keep the 2 tappets in position.>
- N.B. The 2 bolts fixing the expander unit to the wheel backplate should be * left loose until the brake shoes & drums are fxd. & centred. *

Compensator:

- Connect the ends of the 2 front cables to the tops of the levers. (which will eventually lie within the 2 main compensator plates.)
- Connect the cross rod to the N.S. large lever (in unit) top – this passes thro the front chassis cross member & later connect to the front bell crank small arm.
- The Compensator body consists of 2 plates. The front plate has a vertical bend & widening on the N.S. & a central bolt & tag which bolts in from front to back to the rear plate. – Bolt loosely.
- Assemble the large N.S compensator lever assy (11) <i.e. the one to which the cross rod is fixed>. – loosely, within the 2 plates, taking care to see that the sleeve through which the bolt goes, is in position.
- Assemble (10) on offside likewise – When the last 2 are in position bolt the 2 plates (w. the levers in inside) together w. 2 bolts all bolts & lat tops – The unit is now ready for fxg. to front chassis cross member with 4 bolts & spring washers.
- Grease inside all working parts with Graphite grease.
- The cross rod (17) can now be fxd. to the small lug on the front bell crank. (17)
- The longitudinal brake rod (20) now connects to large lug on last bell crank (17) & leave the other end (pedal) until all brakes are finally adjusted.

* N.B. the 2 lower bolts on the compensator (which bolt the 2 plates together) must be tightened later. – If tighten now. working parts are stiff. *

A/7. 2/63 28/10/98.

ASSEMBLY of Front BRAKE LININGS & DRUMS. + ADJUSTING BRAKES.

1. Fix 2 springs to shoes. <position between shoe & backplate.>
2. Place shoes with springs attached against backplate.
3. Insert one shoe <easy R.H. Top> into expander kapper and other end in adjuster link slot.
4. By means of a moveable spanner clamped to free end of shoe, prize other end into top kapper and bottom link on adjuster
5. Lubricate shoe ends so that they move freely in kappers (Top) and links (bottom)
6. Tap shoes to see that they move freely between kappers & links
7. See that wedge in adjuster is slackened. Off.
8. Fix drum w. 2 set bolts. <drum should run free>.

N.B. Present state is that compensator and adjuster are slightly fxd.

1. Tighten adjuster 2 bolts to backplate & slacken off, 1 turn.
2. Ditto, compensator.
3. Lock up brake shoes with wedge on near adjuster clockwise.

* 3A. ~~Centralising brake shoes.~~ *

4. Finally tighten the 2 nuts which fix adjuster to backplate

* → check if done later

5. Slacken off the wedge by 2 clicks <fast and hard>
6. Press brake pedal several times to centre brake shoes at expander end.
7. Check tightness of 2 fxg. bolts on compensator to see that they are slack enough to allow movement of compensator unit on backplate when brake is applied.
8. Check that the wheel rotates freely when brake is off. & is firmly fixed when brake is on.

Ref: for above:-

D.M. Vol. 33, No. 11. April 97, p. 20.
" " 35, " 2. July 98, p. 20.
Hy ukes. p. 111, 112, & facing p. 112
" p. 117 – 123.

N.B. From D.M. 21.9.245

- LD10 Brake linings same as Ford Zephyr 6, Mk. 1.
- Correct FMS No for LD10 linings are:-
  Front GG 36/1
  Rear GG. 56/1.
- Landrover use GG 56/1 on transmission handbrake.

SETTING-UP THE BRAKING SYSTEM <after the 4 wheels have been fully adjusted>

Descriptions:

Generally: the braking system is fully compensated from both side to side and front to rear, so that optimum braking does not depend upon precise adjustment nor does it change as shoes wear.

All operating rods are in tension

With any mechanical system, any levers should be at R.L.'s. to their operating rods with the brakes correctly adjusted & with the pedal applied.

Any compensators should be in the middle of their travel in these conditions

All wkg. parts should be clean, & greased.

Compression Tube. — connects the bkn. of the brake pedal to a reversing lever, which is telescopic, having a spring down the middle pushing the 2 halves apart.

<It's purpose is to allow the handbrake to be applied to the rear wheels without affecting the brake pedal or the front brakes>

Also, the spring maintains a slight tension throughout the system when the brakes are off which helps to prevent rattles in the joints.

A clearance of 1/16" is maintained <between the plunger part & the end of the tube in which it fits> when the pedal is off.

(cont'd.. being low down, this tube can easily become ceased thus causing the brake pedal to "dip" when the handbrake is applied or causing the brake lights to come on.

Front to Rear Compensator:

is situated at the base of the brake pedal.

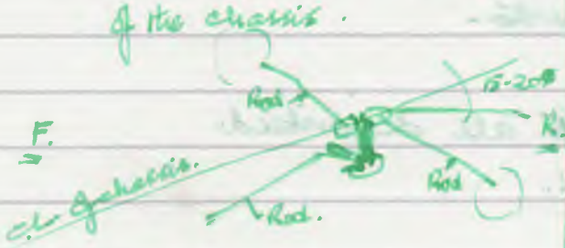
The compensator has limited movement, so that in the event of a failure (of say, the front brake linkage) further travel of the brake pedal will cause the compensator to reach the limit of its travel & the rear brakes will then be applied (or vice versa)

Because of this limited movement, it is important that the compensator is checked ~~base of the brake pedal & the compensating lever itself~~. For this purpose the base of the brake pedal & the compensating lever itself are provided with "BEARS" which are machined on their upper surfaces.

The Linkages should be adjusted so that the machined upper surfaces of the "BEARS" are in line when the brake pedal is applied.

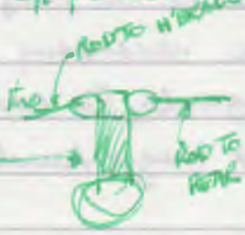
"SETTING-UP" BRAKE RODS, COMPENSATORS, etc. <i.e. everything after wheels "set-up">

1. Remove clevis pins from jaw ends of the front and rear longitudinal brake rods at the brake pedal.
2. Lock up the shoes on all 4 brake drums. <by adjuster on backplate of hub.>
3. Set the rear compensator. <on back axle> in a vertical position, the jaws set at 15-20° parallel to the ℄/L. of the chassis.



4. With foot pedal in the OFF position, set the balance bar vertical making sure the hand brake control is also in its off position.

presumably this is the balance bar



under brake pedal

5. Adjust the front cable evenly by using the nuts provided on the 2 front flexible brake cable covers over chassis front cross member. <1 ea. side> making sure that there is the same amount of thread on each abutment
6. The front compensator should be set evenly by the equal alteration of the cables.
7. Set the centre compensator <under brake pedal> to allow a small amount of free play on the foot pedal.
8. Make sure all moving parts work freely, release all 4 brakes off 2 clicks, the vehicle should now be ready for the road.

N.B. See DM 33/11/APRIL 97. page 23.
At the base of the brake pedal arm is a pin, this engages between the jaws of the compensator unit (see my notes p. 126)

When setting up the brake rods it is very important to see that the pin is set midway between the "jaws" <the 2 steps> This is so the front brakes come on just before the rear brakes.
It is set by correctly adjusting front and rear brake rod lengths

When this done, the front longitudinal brake cable was shortened about 3/16" to allow front brakes to come on earlier especially to get the pin in the middle of the jaws

P.T.O.

A10.

FRONT HUBS. <see my index p. 113>. HOW TO ADJUST "PLAY".

When hubs were re-assembled the bearings were left slack.

To complete:

Remove. • cup-nut (47) & (46)

• nut (45) <also called a tab washer>

• Lock washer. (44) < " " swivel axle nut>

• Nut adjusting outer bearing with peg (43) < " " thick disc with peg>

To Adjust.

• Refix 43, 44 & 45 (but do not bend over tab on 45) Do this when wheel is on & play can be more accurately measured.

• " next 46 tight.

• check to see if adjustment satisfactory — IF NOT

Then: • take off 46, 45 & 44.

• adjust 43.

• refix 44 45 & 46 as before. — IF CORRECT.

See p. 282 This now done

Then: • Back off nut 60° (i.e. one flat.)

• Turn down tab on 45.

• Check adjustment again. & complete greasing & fit cup 47.

Ar 12/11/98 • Front wheel bearings — adjusted as above (without wheel on) for purpose of setting up brake rods only

done ✓ Tab washer not bent over. ✓

Final adjustment to be made when wheels on and weight is back on chassis. ✓ done

done see 282

Shoe adjuster (studs) tightened ready to adjust rods, and linings centred by using foot pedal.

All now ready for linkage to be set-up. Done.

• Rear wheels. — Drums taken-off, linings &c., checked, drum replaced, linings centred (w. footbrake).

(See p. A 10 & reverse. This done.)

Shoe adjuster (studs) tightened ready to adj. rods.

ready for linkage to be set-up.

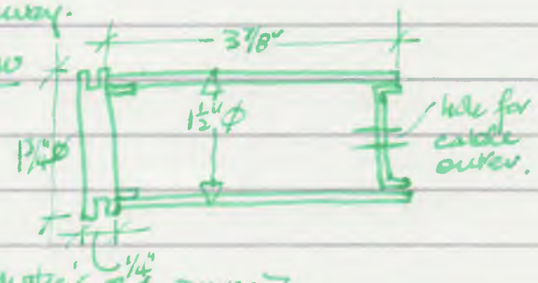
A./11. 2/67

HANDBRAKE: Ref: my notes p.79 & 80
Handbook p. 72 & 73
Parts book p. 28 & 29.

- The rubber cover which fits over the end of the handbrake where it projects from the bulkhead has almost melted away.

EXTG:

NEW



- New cover made in leather (from my Mother's old purse)
- Extg grommet cut, together with 1/4" of tube. — remainder disguarded.
- New leather cover glued w. superglue to extg. rubber grommet & sleeve tube.
  - " grommet stitched along seam (at bottom) & at end piece to tube.
  - Handbrake fixed to bulkhead (4 x) & to footwell side panel (2 x)
  - Cable disconnect at end of handbrake, new cover threaded on cable and cable refixed to end of handbrake w. the attachment.

NB. Should a new cable (in some future date) be needed. —
Remove this cover to get at cable fixg. in end of handbrake.
The cable is not adjustable, it simply fits in end of handbrake & in end of pillar on longitudinal front chassis member

STEERING: — References: • My notes p. 105, 6, 7 & 8.
• Trader Sheet 6. — Odhams Manual 273 —
• Handbook p. 68 & 69 — Wallace p. 91-96.

N.B. Spare seals, (part set); some home made, + old pivot lever PIN & BUSHES <Kept for ref: only.> + New bush extractor in la. coffee jar in Rog Rm.

All the detail reqd. for refitting is on my notes p. 105, 6, 7 & 8.
Track Rods, Pivot Lever & Drag Link fwd. <but drag link not connected to steering box as this is not in position>. — All has been reasonably tightened but it will be necy. at a later date to "SET-UP" the steering when wheels on & engine in chassis. * 20/11/98

from Wallace p. 92.
"B". Steering joints <i.e. track rod ends> — nut must be absolutely right when the holes line-up. There should be a plain washer under the nut, ~~set~~ so if the hole in the pin & the slots in the nut do not line-up when the nut is right, file the washer slightly till it does. Never back-off the nut to line-up the hole.

from my notes 107 & Trader sheet 6. — Tighten bolts of pin <where pivot lever fixes to chassis> until there is no play but thrust washers can be turned.
"A."

N.B. On pivot lever assembly <i.e. at junction to 2 track rods> — there are six shims <one brass & 5 steel>
These 5 have been put back on as presumed all were on when fitd. in factory. — Once all steering on & weight on car, also wheels, it may be necessary ~~to remove tie rods~~ * adjust this. N.B. One thin shim put in Jam Jar in Rog room.

"A". from above: order actually fitted is (from top) BRASS WASHER / PIN / BRASS WASHER (2) / steel washer / nut.
The Brass Washer (2) <i.e. thrust washer> was much filed before fitting as the 5 steel shims + the brass washer was too much / & the 5 shims on their own not enough.
The 5 steel shims put in Jam Jar no. 1 do. ⊂⊃ for pivot.

"B". from above: Steel washers added under castellated nut (filed to fit in some cases) & new split pins used. All tightened fully. BUT check when wheels & all weight on car.
All nipples have been greased.

To Do *
• Check all cotts.
• Make sure all nuts at correct tightness
• " " " " split pins are in

A/B. 269

INSULATION.

HARDBOARD/<& some felt backed> insulation to bulkhead (2), under rear window sill (2) & at sides of boot. (2).

Bulkhead. — These were found to be very dirty, felt insulation was worn & not adhering to same in some places & some small areas felt was missing. Also several of the rivets had bent or were broken. These T.O. & replaced with small nuts & bolts & washers. Also additional fixings put in to straighten the joints.

Low areas of felt cut out in patches and new felt glued in place with waterproof adhesive.

All 6 Pieces. Hardboard face cleaned & given one thin coat of black gloss paint to freshen-up surface.

<see also p. A/16.>

SPARE WHEEL <2No.> BRACKETS.

Refixed to Lower boot floor w. 2 ea. ~~[illegible]~~ & serrated washers. The nuts are captive under metal floor. N.B. The brackets are handed to allow for the slope in the metal floor over the petrol tank. Wed 8/1/99.

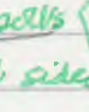
---

4. SMALL BKTS. TO SIDES OF BULKHEAD. N.B. The stay bkts. <on bulkhead> are "handed".

See p. 45 & reverse of my notes.

The stay bkts. have 2 N.B.'s each, & one for the rods from the radiator. <See long rods for other pieces which connect here>.

The smaller of the 2 bkts. are for securing the rear ends of the (over front wing) vertical panels to the bulkhead.

There are 2 flat-topped bolts  in a separate package, these are for fixing the vertical side (over wing panels) to these bkts.

8/1/99

SELECTOR CONTROL BELL CRANK LEVER ARM <ON BULKHEAD>

This removed from packet of 3 rods, greased & put in place on bulkhead.

Refer. to Handbook page 54

" " My notes. page 57

" " Parts book page 19. items 42 & 43. 8/1/99

WINDSCREEN WIPER MOTOR & LINKAGE. <See my notes p. 75-78 inclusive>.

1. Motor gears looked at. – mole greased & all in order.
2. Ditto; commutator & brushes. – wiring checked — NB. The red wire out of commutator end goes to the negative side. // " black " " " "
" " " " earth <i.e. body side> which being positive to earth.
The 2 wires out have been tested for continuity & are "OK".
Centre metal "Y" part To. & paint cleaned off where run on inside.
Interesting to note that the LUCAS name on last piece is upside down when compared to the wiring on the gearbox end.

(New gasket for wire/bulkhead)
(All felts oiled after fixing.)

3. The Switch <R.H. control knob> contacts cleaned and tested. Also continuity tested & "O.K."
4. The rubber backing pad on the motor is a bit baty but enough spring so kept.
5. Grommets for 2 wiper spindles through body under windscreen. — are new see below
6. Martin tested motor on spare battery & all OK. – 2 Amp. showed on meter but when load is on allow at 5 Amp. for wire size. 16.1.99

NB 2 New rubber grommets fixed under windscreen. <2 Photos 24.1.99>

HEATER FAN. <see my notes p. 50>

1. tested by Martin & all 'OK' – Fan uses 3 amps. for blower.
   NB. The motor only runs the 2 fans <1 for windscreen & 1 for pass. & driver feet>
   The heat source is purely from H. Water from radiator.
   <∴ No electric coils to be served.> 16.1.99
2. 2 triangular ducts – linen glued to O/S face & duct scr. to dash.
3. L.H. Plain bkt. & R.H. bkt. with steering col. support scr. to dash. <Brass screws>
4. 2 Rubber hoses bet. heater & dash vents. – O/S. one has a kink in it so a jubilee clip permanently fxd. around kink to make ~~straighten~~ circular pipe.
   <for ducts see my notes p. 78>
   Jubilee clips fxd. only at Kop. <i.e. triangular wdo. vent ends>

2 HORNS. See my notes p. 12 & p. 30.

Tested by Martin & found 'O.K.' – left in clean painted / fix later when engine is in chassis. ~~Make new bracket to fix in original position under side, bottom of radiator.~~ done. USE THICKER CABLE — tested at 7½ AMP. BUT use 10 AMP CABLE. 16.1.99

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2 TRAFFICATORS. See my notes p. 12 & p. 30 – 31 & reverse of 31.

Tested by Martin & found 'O.K.' – uses 3 amps. each. but as only 1 on at a time ∴ 3 AMPS. maximum. Insul. put between rubber buffer strip holder and copper ring which takes supply.

The 2 bolts to each. T. are already fxd. to centre door column.

See interior light & wiring to same & to traffickers for + earth conns. 16.1.99

AIR CLEANER. See my notes p. 32. When taken out from stock – I didn't like the (silk over carburettor) colour red, so rubbed down w. wet & dry wet., did a little filling around the bkt. inlet pipes. & 1 brush coat black japlac. — Rubbed down wet & dry, wet again & final coat of black japlac. — Fxd. jubilee clip + 2 BOLTS & SPRING WASHER. – Put back into store. 16.1.99.

HARDBOARD INSULATION. <upper piece under dash> see also p. A/14.

Fixed in position permanently but lower bolts left slack for joining to lower pan. Lower piece fixed into place 21.1.99 <NB. which have to take part off for fog. 20.1.99 door steering column>

SCUTTLE. Martin provided self adhesive rubber strip – this put round recessed groove – a good fit. <See page 91 & 92 of my notes.>

NB. the 2 pivots where the frame fixes to the rain projections I think were originally rivets, these must have been cut off. Replaced w. 2 nuts & bolts. <nuts have "material" infil>. Washer nozzles refixed. 21.1.99

- The drain from scuttle requires a new pipe.
- Washer tubing still to be fixed.

DASHBOARD FITTINGS. See p. 91 of my notes. – these refixed as orig. 21.1.99.

BATTERY BOX. <see also my notes p.53>

Due to rusting of box when re-welding joints and fixing new sheet steel, - hard to secure back in place. All fixed permanently with new nuts & bolts. a few c/s. screw headed bolts.

<S.S. tray dropped in base to avoid battery acid corrosion.> 25.1.99

O/S. & N/S. REAR WING BAFFELS. <described as inner splash guard on p. 54 et. seq. my notes>.

These 2 splash guards have been drilled & permanently fixed to the wheel arches. after first fixing each wing temporarily to make sure that when the wings are eventually permanently fixed they will not foul-up each other. It was necessary to cut off a ½" x 4" to 0" triangle off the top outer edge of the N/S. guard before fixing as when this guard was made it had to have a piece welded-in so that the petrol supply pipe to the tank would fit. I think the original piece may have been used.

NB. The purpose of fixing these guards now is so that the body floor & back boards & wheel arches can be recovered with felt & vinyl.

20/2/99.

NB. Prior to above all electric wiring redesigned <bet. 25.1.99 - 20.2.99>

TOOL BAG STRAPS. <in boot>.

The original was rotty. — disgraded, but buckle kept, cleaned, etch primed and 1 coat black gloss. — New <but thinner> webbing rivetted to webbing & both ends fixed to boot floor in original position with 4 new nuts & bolts.

23/2/99.

Boot Latch Keep. fixed in position. 13/4/99

Spare Wheel Retaining Bracket. ditto. "

ELECTRICS.

From Belbroughtons, Clerkeley.

6 metres	28/·030	Black.	Rev Belbroughtons + Earth.	
"	"	Blue.	Headlights	
"	"	Blue/Red.	Dip. beam.	
"	"	Blue/White.	Main beam.	
"	14/·030	Green.	Power Supply.	
"	"	Green/Purple.	Brake lts.	
"	"	Green/White.		
"	"	Red.		

6 Each of 3 sizes of small grommets.

1 No. Durakie 8 Way fuse board w. clear cover. 8 Amp. fuses Part No. 0-234-08 (Gordons Equipments Ltd. Eng.)

4 No. Red 16 Amp. ceramic fuses
4 No. Yellow 5 " " "

£28.00

(+ Further wire bought at a later date + Ind. lights.)

From Martin (via. Maplin, Liverpool.)

2 No. 12 Way. White Terminal block. (H.L.54)

X 1 No. 10A. Toggle DPDT. E. JK29 switch (on/on) (for Flashers — Semaphore).

1 No. Plastic box. H2851 BZ 74.

1 No. " " ABS. MB 5 YN 40.

£9.00.

From Brisham Elects for Cars.

2. Electronic flasher units £20.

From B & Q.

1 No 500 m.l. Instant Evostick / 1 No White adhesive 500 ml.

2 No. 250 m.l. Adjustable " / 1 No. Pkt. ½" cu.p. clips (10) / 1 No Pkt. ¾" cu.p. clips (8)

1 No. Pkt. 14. Small nuts & bolts.

Terry: 8 Way fuse bd. - solid top

From Grinfad Road. — 1½ metres x 54" wide black plastic imitation leather for boot.

BOOT AREA: Edge to floor & Upper part of back. — used black, linen backed, sheeting (from stock — originally meant for body jointing strips.) & glued using the white adhesive. Lower part done w. the new plastic sheeting.

The 2 small shaped, side panels glued w. impact adhesive (not very satisfactory as 1 piece stuck wrongly but put back on. new plastic sheeting used.)

The 2 panels which go under the rear window shelf were painted black thinly, then decided to cover them in new sheeting (plastic backed) but decided later to clean them up at screw holes & paint them a further coat black (thin). These were then fxd. in position using extra cups & screws. N.B. O/S. edge of O/S. panel cut back to allow fxg. of (previously) hose pipe Elect. Sleeve & white circ. cable to boot lns. plate light.

Boot ply. back & floor put back in using (prepared previously) extg. screws & cups. Trap door in floor refixed using ditto. & felt glued along edges of rears for door to sit on. (white adhesive used).

2 Hinges for boot lid refixed. <NB. 1 on O/S. has slight crack> – [consider replacing later]

2 Stays for boot lid " over new side panels. fxd. on N/S. on one of the fixings to the inner wing a nut & bolt had to be used as the captive nut was broken off when dismantling.

At same time. the 2 BONNET hinges were refixed using extg. screws to the captive nuts in the bulkhead.

the wheel arches in the boot were covered in new carpet felt & glued to the painted metal w. white adhesive.

The plastic covers were cut out, secure rog. w. nylon thread & taken to shoe repairer for him to stitch rog. (£3.50) These glued in position with "removable" Evostick.

Electrics cont'd. 2 Sheathing cables (hosepipe) down O/S chassis) fxd. w. 6 cu. clips (B&Q.)

1 Sheathing cable (" ") across back of boot fxd w. 6 cu. clips. (5 B&Q) & last one from stock.

<See electrical rewiring details for cable colours and what they serve>

ALSO see p A/21.

Boot lid Sealing Rubber. When this was removed from where stored in Rog room it was found to be in a poor condition, <holed for steel racks, paint, dirt and Bostic adhesive covered>. From list of rubber sections available this section was not shown. Therefore cleaned the rubber & decided it could now be refixed. As it was originally fxd. w. steel racks <& these through holes in the aluminium> & these were badly rusted when taken out – although a few broke off in doing so. were punched-in — Decided as I had a good supply of small brass wood screws, I temporarily fixed these through the aluminium to the cells frame (67 in all) so that I knew where they would go in when the rubber strip was glued to the opening of the boot. – Used a tube of bostik type sealing adhesive <clear> onto the frame before screwing on the rubber strip & then sealed between rubber & metal with same adhesive. <also top of boot side panels to boot side>.

A/19. 276

2 leather rear wheel arch covers. – cleaned, together w. their backing felt already glued on. & polished ready for refixing. *

2 over side panels. – cleaned, re-glued using "slow" evostick. & polished ready for refixing – Bagged. *

2 Side panels to front footwell. – these were re made by G. Birkett & done at Hollis Trimmings before I got the car. Cleaned & taken to cobbler & the colour cannot be darkened. * ? new to make to be bought Bagged. *

1. leatherette roll to front windscreen. – cleaned & glued back in position w. fast Evostick – but put back upside down as leatherette is better on original underside.

2. Centre Pillar leatherette & cotton fabric covered. – looked at only & bagged. *

NB. 26.5.99 sent letter to Woolies Trimmings for quote for Tuflex & kernel vapex.

invoiced 7.6.99 –	13 metres @	3.62	42.06
	1.5 "	2.98	4.47
			51.33
		postage	5.70
		VAT.	10.03
			67.31

very expensive

Also cleaned extg. tool bag.

A/20. 276

Wiring from front Bulkhead to offside corner of Lower Boot floor.

Refer to the Lucas Electrical Equipment Wiring Diagram No. W709U. issued July, 1947. This was for the Briggs bodied L.D.10 & had no amendments for the Barker Body which did not allow the trafficator lights & Interior light to be served without firstly going to the o/s rear boot area & then back to the centre of the car via the roof.

No handbook was produced for the Barker bodied LD10.

The original wiring was in a black p.v.c tube which contained 3 wires only for tail & stop lamps & petrol Tank, plus a further three wires for trafficators & interior light in a separate tube. - Later someone installed a reversing light under the O.S.R. bumper & a wire from the front. All these wires were easily accommodated in the O.S. chassis frame.

When re-wiring I decided to also incorporate a fog lamp and flashing indicator lights. This would make a total of 10 wires. These would not fit in one P.V.C. trunk in the chassis frame due to cross bolts for spring suspension fixing at the rear so 2 hosepipes were used, 5 wires in each. After much trial & error the only way was to insert the cables in the hosepipe & put the lot into the chassis. Where these come out of the chassis at the rear they had to come out of the 2 chassis circular holes & go up into 2 sq. holes in the lower boot floor which were enlarged to take the 2 hosepipes & their wires.

It was found that it was impossible to fix the rear ends of the hosepipes down to the top of the chassis at the rear as the body was already on the chassis & holes for fixing could not be drilled due to the body proximity.

A pair of 'U' shaped aluminium brackets were made up, placed over the 2 hosepipes, 2 × holed at their bottom ends & fastened with a nut & bolt with a short length of ¼" cu. pipe between the bracket legs & over the bolt, this was then covered with a piece of hosepipe so that the 2 pipes carrying the wires could be squashed tightly to secure them in position.

31/10/2000

STEERING COLUMN, BOX & WHEEL COMPLETE. <see my 1st. notes on this
Electrics and trafficator cancelling switch. pages 67-73>

1. When all fxd. in vehicle. — In order to get to the electrics, slacken the brass nut at the bttm. of the steering box, withdraw the brass olive & very gently pull out the 4 wires towards the steering wheel. – This exposes the whole of the centre of the steering wheel unit for working on.
2. Remove the three set screws which hold the backing plate <which is welded to the main inner tube> to the main body which holds the wires and traff. cancelling mechanism. Also slide back the ring which swivels to operate the cancelling of the trafficators, having care to remember not to miss refixing this before later threading traff. wires through same.
3. From the opposite end remove the horn push, spring & button. the 2 screws which hold the two copper flanges on the insulated backing can then be un-done. – 1 fixes a block which connects to the horn earth at the side of the main body <wire 1> & the other connects to the live wire to the horn. <yellow 5>. N.B. This is the one with the damaged screw. Both these screws <they are actually bolts & nuts> also fix the halves together, but the real fixing for the 2 halves is the nut & bolt under the insulation backing. <6>.
4. Whilst unfastening the latter take care to hold these 2 main parts tightly together as if you do not they will spring apart rapidly & all the bits & pieces will scatter.
5. With the 2 main parts separated:- Disconnect:
   (2) Blue wire, o/s. trafficator.
   (3) Mauve wire, main feed to trafficators.
   (4) Green wire, n/s. trafficator.

Reassembling.

The main body, which holds the cancelling mechanism, is refixed as follows:-

(i) Brass shoe with small spring underneath same is fixed under the lever arm. <This is the contact for the n/s & o/s trafficator>.

(ii) Brass block, wheel & spring fixes inside the end of the arm. <This operates the trafficator cancelling mechanism>

(iii) The latter <i & ii> and the arm is then placed on the forward part of the main body.

(iv) The grey metal 'A' piece is then added to the latter & the two brass latches with their springs & pegs are placed at each side of the 'A' piece.

NB. Take care to ensure that the curved ends of the latches are fixed nearest to the 'A' piece.

- the brass curved rod, 2 springs & 2 brass washers is then placed on the rearward bakelite part of the unit <ie. the one nearest the rear of the car when fixed> & fastened down temporarily w. Sellotape — <otherwise it is difficult to put the 2 main halves together>.
- The felt washer, which goes around the metal trafficator ring (which covers the two parts of the unit) is put in its groove with a little grease, to hold it in position.

THEN. (i) Fasten the 3 traff. wires (2, 3 & 4) on the front part of unit.

(ii) Assemble traff. gear to rear & front bodies <as (i) (ii) (iii) (iv) above.

(iii) Fix 2 halves of unit together with bolt (6).

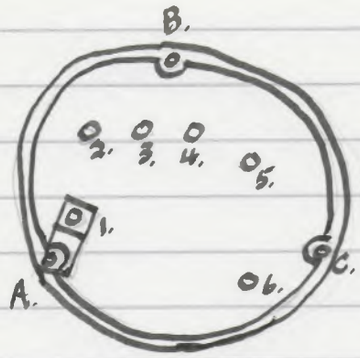
(iv) The 2 ex. flanges & their insulating plate can then be fixed with the 2 bolts (1) & (5), taking care to connect the Yellow horn line wire to conn. (5) & bolt (1) to the earth block.

(v) Pull the 4 wires, w. bakelite unit attached & metal trafficator ring, down towards the steering box so as to join the metal cover plate at the top of the tube.

(vi) Fix unit & metal cover plate together with the 3 ~~sel~~ screws (1 is to the horn E. block).

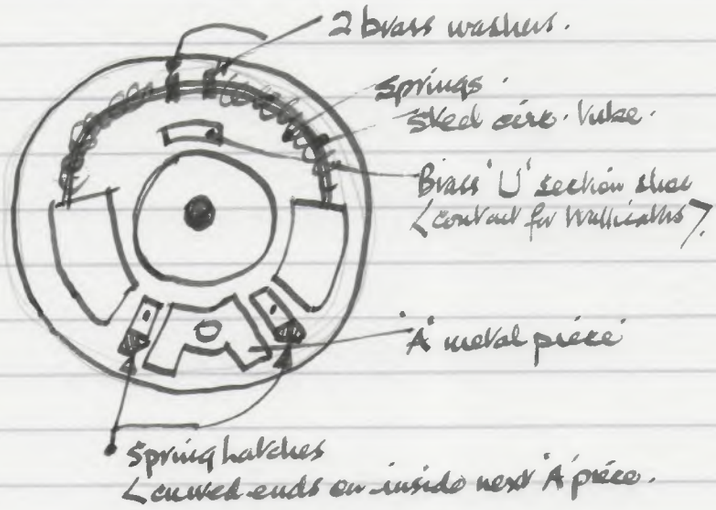
(vii) Locate the slot in the trafficator ring to the peg washer fixed inside the steering wheel hub <firstly ensuring that it is central when the road wheels are parallel & the drop arm properly connected centrally>.

do (viii) Fix shim and brass nut at steering box end to secure tube & unit in permanent position.



1. is horn Earth comm. also freq. for valve top plate
2. is O/S. Wall. wire comm. BLUE.
3. is Wall. main feed wire comm. MAUVE.
4. is N/S. Wall. wire comm. GREEN.
5. is Horn. feed comm. wire YELLOW.
6. is Null & bell freq. for 2 halves.

A. is for freq. plate at top of valve to unit. <& horn earth>
B. " " " " " " " "
C. " " " " " " " "



Oil Filter.

- Replaced oil filter unit — (without the filter). — filled unit with oil before screwing up all bolts tight.
  2 new homemaid gaskets used.

- Took off rocker cover & oiled valve gear — replaced cover —

- Bought from B&Q. 1 gallon multi-grade 20-50 oil (for use in older engines) & put all in engine via rocker cover.
  — N.B. ½ way up on dip stick. £5.49

- Previously T.O. 2 brass plugs from sump & refixed using P.T.F.E — tape just as a precaution — & put engine on 3" wood blocks in order to be able to fix oil filter.

- N.B. Initially a slight leak through new cork rocker box cover gasket over exhaust manifold, but I think this because oil level in head part over cork when freq.
  Otherwise now no leaks at all.

26.7.05 Started again with "Putting it back together."

Jacked up car & refixed 4 wheels. – One wheel had a very slow puncture so the 5th. innertube was put in & all 4 wheels and tyres put on car. Rpd £2. for tyre shop to change innertube over.

28.7.05 Drew car to main part of garage & adjusted wheel bearings at front in accordance with parts book p. 20/ my previous notes A.11/ Trader sheet p.3/ and my notes p. 113 & on page 267

* N.B. Still further bolts to tighten, checkers, etc, when engine put in. * see also p ~~260~~ 259.

N.B. As V.W. sold & new Honda Civic due – scraped back end of garage walls & 2cts white emulsion paint to all walls.

6.8.05. Fixings for 'A' frame to chassis cross member. — 4 bolts & 3+1 washers. These frame had the bolt threads & the cross member threads cleaned & the bolts temporarily put in place. done 11/5/07.

Gearbox mounting plate to chassis → Fixings for gear box operating plate to chassis. – 8 nuts & bolts threads cleaned & holes cleaned of paint. The gearcase mounting plate distance piece 2/19. – (see parts book p. 32 & 33) & the gearcase mounting plate assembly (1). – All above assembled and fixed to chassis. – This is now complete. ~~done 8/8/05~~

done 13/5/07. * N.B. The torque reaction pair of buffers are ready to be fixed. (Do this when engine in chassis. done 13/5/07. after engine put in on 11/5/07.

7.8.05. Gear change arm & 2 rods. p.47 my notes / p.18 parts catalogue / p.54 Handbook. } 1. Vertical 16½" rod (50, 51 & 52) 1. Horizontal 6½" rod (53, 54 & 55) 1. Selector control back crank lever arm & bush & washer & new split pin. (45 & 46)

* N.B. The connection of the 6½" rod end to be made to gearbox when fitted. done 12/5/07. fitted. to chassis frame near torque reaction buffers

* N.B. The connector rod from gearchange pedal to gearbox to be fitted to gearbox & end of pedal rod when engine & gearbox fitted

Timing to re-do.
The dynamo T.O./ fanbelt T.O. } Starter dog & ~~the~~ KNORE & T.O./ but I could not get the pulley wheel off – (Martin's puller too small). Must go looking * for a bigger puller tomorrow, Monday.

N.B. All timing re-done complete and checked by Arthur. 9/8/05. Only minor adjustments to be made at distributor when first starting-up engine.

Lanchester LD 10.

Notes

TO DO LATER

1) Shackle bolts at rear to be tightened (after stabilising) when car is fully loaded (see also p. 139)

2). p. 58 - Accelerator pedal gaiter/met. ring + 4 screws missing

3) Spacers under radiator (62)

4) Bump stops for longitudinal front susp. arms (p. 172)

5) p. 173 Stops (from chassis?) for gear brake pedals (what is this) SEE (Parts catalogue p. 280 & 297)

Whilst great care has been taken in compiling the information in this diary the Publishers cannot accept responsibility for any errors
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