

# गठकथा

Part 4 of 9





**Welcome to Get To Know Your 7. This is a download copy of a series of articles looking at the essentials of routine maintenance for your Seven. These first appeared in the Lotus 7 Club magazine 'Lowflying' between August 2010 and May 2011.**

**Each article will be a separate download and below is a table of contents as to which articles are in this series. The article you are currently looking at will appear in bold in the table of contents.**

#### **Contents**

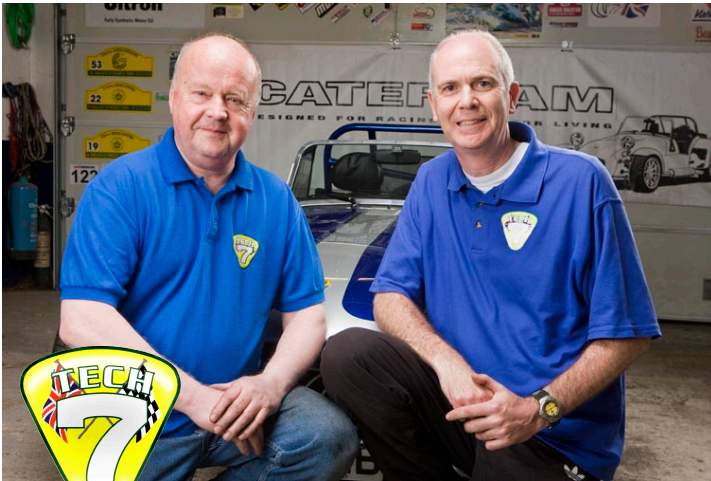
- 1 Introduction; Working safely with the car raised off the ground**
- 2 Oil and filter changes; plus a few words about wet and dry sump systems**
- 3 Transmission lubricants**
- 4 Front wheel bearings**
- 5 Brake pads and discs, tyres and wheel nuts**
- 6 Spark plugs and distributor; steering and driveshaft gaiters; steering column clamp; exhaust condition**
- 7 Suspension; prop shaft; air filter; fluid levels; fuel system; carburettors**
- 8 Auxiliary drive belt; bulbs and switches; battery condition; seat belts; general security of fasteners and mountings**
- 9 Windscreen wipers, and washers; headlamp alignment**

**The Lotus 7 Club would like to thank the following people who all helped to produce this series of articles for the clubs membership.**

- Andy Belcher (Tech 7) for his technical advice and loan of his workshop**
- Authors Rob Davis and Michael Calvert**
- Martin Bushaway for co-ordinating the whole project**
- Tony Pashley for his subediting for the Lowflying articles.**
- Jamie Jones for the Photography and PDF production**
- Barry Sweeney for arrange website hosting and access facilities**
- ©Copyright belongs the Lotus 7 Club and the original Authors and Photographers. All Rights reserved and not for reproduction without permission of the copyright owners.**

In This issue we begin a major series looking at the essentials of maintaining your Seven. Even if you don't want to become a home mechanic, we hope this will encourage you to learn a little more about your car.

The notes for this series are prepared by **Andy Belcher, Rob Davis** and **Michael Calvert**, and the photographs are by **Jamie Jones**. *So, let us begin...*



Road & Track  
Engineering Solutions

*Andy Belcher (left) and Rob Davis*

## Introduction

**Owning a Seven** can bring you a wide range of experiences; one of these is the opportunity to carry out the servicing of the car yourself. Although many prefer to entrust the maintenance of their 'pride and joy' to one of the many specialist garages available, carrying out your own servicing can save you money, provide immense satisfaction and bring you a step closer to understanding the running of your car.

Over the coming months, this series of articles will build upon the theme of the Get to Know Your Seven (GTKY7) experience days which have been regularly organised through the Club, and extend into providing an overview of the basic tasks and procedures required to maintain your Seven.

*The GTKY7 series of articles are the ©  
Copyright of the Lotus 7 Club*

### **During this series, we'll be looking at the following:**

Raising and lowering the car

- including front and rear axle stand positions and trolley jack lifting points

Engine and transmission oil

- oil change for dry sump and wet sumps,
- oil filter removal and re-fitting,
- checking and topping-up gearbox oil,
- changing gearbox oil (specific models),
- checking and topping-up differential oil,

Front wheel bearings

- checking bearings for excessive play

Wheel and tyres

- checking tyre condition and tread depth,
- wheel nut re-tightening torques

Brakes

- checking condition of discs,
- checking brake pad thickness,
- changing brake pads,
- handbrake operation

Suspension

- general suspension security checks,
- lubricating trunnions (where appropriate),
- A-frame bush

Prop-shaft

- greasing universal joints on prop shaft (Series 3 and SV)

Fuel system

- checking fuel lines for security and leaks
- changing fuel filter
- carburettor balance and idle settings

Fluids

- checking coolant, brake and clutch fluid

Air filter

- checking and changing air filters

General inspection items

- exhaust condition, lights and bulbs, CV gaiters, hose condition and security, drive belts, headlight alignment, battery condition, engine mounts, wiper condition, seatbelts

Steering

- steering wheel alignment and play in steering rack

Vehicle underside condition

We begin the series, with something straight forward but fundamental: Checking the front wheel bearings for excessive play.

## Part 4: Checking the front wheel bearings



In this installment we explain the procedure for checking the front wheel bearings for excessive play.

The procedure for checking for excessive play at the front wheel bearings is generic to all of the Seven variants. A symptom of excessive play in these front bearings may have been noticeable when driving, in the form of vibration or low-frequency rumbling through the steering column.

Alternatively, with the car supported securely on axle stands, it is a simple procedure to check for this. Firmly hold one front wheel at the 9- and 3-o'clock positions and rock the wheel back and forth to see if there is any significant movement.

Note, the steering will also allow the wheel to move, so don't get confused by that. Repeat with your hands holding the wheel at the 6- and 12-o'clock wheel positions. The amount of play should be hardly noticeable, any more than this would indicate the need for adjustment.

All the Seven variants have both outer and inner wheel bearings. Maintenance of these entails their disassembly, cleaning, repacking with grease and re-assembly. The procedure outlined here covers the s3, but the majority of cars will be covered by this. Later models, including the csr, have a slightly different design to that shown here however, albeit still with inner, outer bearings held in place by a castellated nut and washer.

If you have significant movement at the wheel bearings, then you will need to remove the wheel and then remove the protective cap from the centre of the hub by tapping gently with a chisel and hammer

### Safety Points:

**This operation is undertaken with the car raised and secured on axle stands; safe procedures for this were covered in Part 1. Take care!**

### Equipment required:

#### Tools:

- Pliers
- 10" adjustable spanner or socket set
- Small chisel
- Hammer

#### Parts:

- Castrol LM grease
- New split-pin (one for each side of car)

**Note: See Issue 1 for instructions on how to raise the car off the ground safely.**





**Figs 1 (Above) and 2 (Next Page):** Removing the dust cap from the hub.





**Figs 1 (Previous Page) and 2 (Above):** Removing the dust cap from the hub.





**Figs 3:** Visible amid the grease of this well-packed bearing are the end of the stub axle with the castellated nut and split pin through them.

at 90 degree rotational positions, as shown in Figs 1 and 2.

Once the cap has been removed, the thrust washer, retaining castellated nut and split pin can be seen, shown in Fig 3. The split pin is removed—having used pliers to straighten the pin legs it can then be pulled out through the hole; see Fig 4.

The castellated nut is removed by simply unscrewing it from the threaded shaft or stub axle. This is shown in Fig 5. Don't be alarmed that this nut was not very tight, as it is not supposed to be – the 'tightness' adjusts the bearing and the split pin then stops the nut from turning.

Once the nut has been removed the large washer behind it can be removed exposing the tapered outer bearing. This can easily be removed from the shaft, but take care not to damage the bearing surfaces. Clean this with a clean soft cloth to remove any traces of grease or debris.

Note, the procedure described here does not cover removal of the inner wheel bearing: to do this, the brake caliper has to be removed— that allows the disc / rotor and hub to be removed, which in turns allows access to the inner bearing.

Returning to the outer bearing: prior to reassembly, apply grease to the inner and outer surfaces of the bearing and onto the bearing shaft. Be careful not to overdo this or get any





**Fig 4:** With its 'legs' straightened, the split pin can be pulled from the nut and stub axle. Replace the split pin, don't re-use the old one.





**Figs 5:** The castellated nut can be turned, with a large spanner or socket, to remove it or to adjust the bearing (see text).

grease onto the disc or pads surfaces. Re-insert the bearing, slide on the washer and thread on the castellated nut.

The nut is then done up by hand until it backs up against the washer/bearing assembly, then using a spanner in the orientation shown in Fig 5. Apply hand pressure only to tighten the nut, then back it off slightly to allow for the nearest split pin alignment (that is, aligning the hole in the shaft with the castellations in the nut, allowing the pin to be passed through both).

It is important to back this off to achieve alignment rather than tighten further, to avoid bearing overheating and premature wear.

Insert a new split pin through the nut and shaft and using pliers bend each leg in alternative directions around the shaft to anchor the nut in place.

Re-fit the hub's protective cap by tapping it gently into position with a hammer (it is not necessary to fill this cap with grease).

Now, repeat the procedure for the other front wheel and you're done.

In issue 5, We'll take a look at brakes.

In issue 5, We'll take a look at  
brakes.

