





THIS MONTH: INTRODUCING: JOHN MARTIN • MAKING THE FASTEST, FASTER... • CONTROLLED FLYING
• THE ARRIVAL OF OUR SEVEN 420R • THE POLICY MAKERS • THE ESSENTIAL UPGRADE FOR YOUR SEVEN
• A TALE OF TWO CATERHAMS • REMEMBERING: BRIAN HALL

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Lowflying



Martin Brazill - "Light trails"

Club administration and membership services including membership enquiries, changes of address, Event Support Vehicle (ESV) bookings, event diary entries and advertising in Lowflying Admin Team - adminteam@lotus7.club +44 (0)1873 777303

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Christine Abbott, Stu Forshaw

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Introduction...



I'll willingly admit that I was something of a computer geek. Technology was moving so fast; my father worked on mainframe computers and I remember being in awe at these temples of air-conditioned, high-tech processing power, yet these whole rooms of technology packed far less punch than the smartphone in our pocket does today. It was exciting, but all seemed so out of reach, until that is, home micros started to appear. ZX81, Commodore 64, Spectrum, Vic-20, Apple II, Amstrad CPC 464... Each burst onto the market offering something new and exciting to the aspiring computer nerd. The model that launched my interest in programming however was the BBC Model B. It may have been crude by today's standards, but the excitement of designing a programme and it actually getting it to work was a thrill I remember to this day.

In a pattern that I'd later repeat with my Seven, home computers encouraged "upgraditis" and I moved from tape drive to floppy drive to EEPROM chips, from monochrome monitor to colour... And greater excitement was to follow as games, including simulations became available to purchase, offering the user some semblance of access to otherwise unreachable environments. The racing simulator of the

time was called Revs, and it allowed you to "drive" Silverstone in a Formula Three car. The graphics were a rudimentary form of 3D, but the experience was sufficiently compelling that in my imagination, I was a racing driver, chasing lap times and podium finishes. Thirty years later, with my Seven still consigned to the garage awaiting the lifting of restrictions, I have had an equivalent breakthrough moment recently after buying a Virtual Reality headset. Whilst it in no way compensates for the lack of genuine Caterham seat time, "driving" in VR is simply a revelation; no longer are you looking at a computer screen, you are "inside" the experience. It's simply impossible to explain until you have tried it, and I had no idea what I was missing... So, once this Lowflying is finished, you'll find me happily pounding around Brands Hatch Grand Prix in "my" 620R. Immersive, convincing, impressive, but still not a patch on the real thing...

Michael Calvert, Editor

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LOTUS SEVEN CLUB CHARITY CHOICE — THE VOTES ARE IN

Alan Tough and Mo Steer of the Club's Charity Team provide the update:

The vote is closed, the results are in.
Thank you to all of you who took the trouble to vote, or simply to confirm that you did not mind which charity we supported. The Club can be justly proud of its tradition of supporting charities, doing our part to contribute to society. As Michael Calvert, Lowfying's editor put it to me, charity fundraising has been part of "The glue that held the Club together." Long may that be the case.

Some of you have told us that they have no preference between the two charities, Race Against Dementia (RAD) and Prostate Cancer Research (PCR) and are willing to support whichever cause the membership chooses. For others, the choice may have been far more emotive. There can be few of us who have not had a friend or relative for whom at least one of the charities has a particular relevance, some may even have been sufferers themselves. Within my own family, both of these illnesses have been all too present, and I would have been equally happy supporting either.

Of those who expressed a preference, the majority were in favour of the Club supporting Prostate Cancer Research (56%), with Race Against Dementia, who we've run with for the last four years, receiving 44% of the vote.

Clare Walker the Administrative Manager for Race Against Dementia said:

"Race Against Dementia are extremely grateful to have been given the opportunity for charity status for the Lotus Seven Club. As we have said previously, we have been most thankful for the support and donations received from your time with us, contributing towards critical research in the fight to beat dementia. Prostate Cancer Research is a hugely deserving charity funding much needed work and we wish you every success with your partnership together." RAD can be reached at info@raceagainstdementia.com or sign up to JustGiving

justgiving.com/race-against-dementia

Now the decision has been made, it's time to get creative with how the Club, area teams, groups and individuals can work with and alongside PCR. PCR themselves are very enthusiastic and are looking forward to helping us help them. Amy Russell, Events and Community Manager at Prostate Cancer research said:

"The whole team at Prostate Cancer Research are absolutely delighted to be chosen by Lotus Seven Club members as their new charity partner, and we are really looking forward to working with you over the next three years to support vital research into new treatments for and better understandings of prostate cancer. Your fundraising will have a real impact on the innovative and patientfocused research we are funding and on the lives of people affected by prostate cancer.



We would also like to commend Race Against Dementia for the excellent and necessary work they are doing to fund breakthrough dementia research, and their ethos of supporting new talent and funding innovative, targeted research to reach these breakthroughs quicker.

We promise to ensure that Club members have as much fun as possible fundraising for us and will be given plenty of opportunities to engage more with our work.

Thank you for choosing to join Team PCR and for choosing to be an essential part of achieving this goal. We are so grateful for this opportunity and cannot wait to get started!"

The Club's aim is to be a significant part of their team efforts, increasing their income in whatever way we can over the next three years to assist them in their work. Charity Lead Alan Tough added "Over time, we'll introduce you to the PCR team, bring news of their research and follow up on their advice and guidance to make our

RACE AGAINST 7EMENTIA

contributions as effective as possible.

Let me make it clear that the Club makes no donations automatically on your behalf out of membership subscriptions. Any fundraising is done by you, the members, which is why it is so important that you fully support the chosen charity.

The single most consistent channel for donations has been thanks to Guy Munday, who kindly does insurance valuations for members. Guy charges members nothing for this service, but only asks that you make a donation to the Club's charity.

Over the coming weeks, we will be in regular contact with Prostate Cancer Research. Through *Lowflying* and BlatChat we'll keep you posted about how things are going, who is doing what, when and how. But the one thing we already all know is WHY!

Thank you for participating thus far. Now please get your energy, imagination, and spirit of enterprise in gear and let's all make this a success."



Professor lain McEwan (University of Aberdeen) – is one oF PCRs scientists. He is working on new approaches to hormone therapy to keep the treatment working for longer.





TOURS - 2021 AND BEYOND!

Tours Lead Roger Needham is raring to go

am sure most of you will remember a pre-Covid time, when many of us would be planning the next blat or tour destination, maybe a run north to the wild beauty of Scotland, a blast over some distant continental pass, or an impromptu long weekend away with Seven-owning friends.

2020 was a tumultuous year in many respects, including the dramatic impact the pandemic had on our ability to drive our favourite local blat, never mind head for the far-flung corners of mainland Europe. As we enter 2021, the combination of the on-going lockdown restrictions and the rapid roll out of the vaccination programme gives some hope for venturing out, particularly during the second half of the year.

Following a recent change in employment circumstances, I volunteered to pick up the Club's Tours Lead role, and have spent the last few weeks working with the Leadership Team and third-party tour organisations to decide what may be possible and realistic from a tours perspective, not just for 2021, but looking ahead into 2022. Those who know me will appreciate that I do love a 'Grand Tour' and I am supported in my role by Dave Rothwell who has helped devise many domestic and international tours over

the years. Our Club has run many varied tours and that ethos remains at the heart of our plans, but we are also here to help other groups organise their own adventures, if that is what they are planning.

Along with many others no doubt, I have learned some useful touring lessons, both as a driver but also as an unofficial tour organiser for Seven enthusiasts and Club members. We have ventured across the Alps, northern Spain, the Pyrenees, on jaunts to the north of Scotland, the Scottish Borders and to various motorsport events across Europe. We therefore see an important part of the role being to help those with less experience organise events that meet their own needs.

At the same time, we will of course use the services of third-party specialists to offer not only bespoke tours for the Club, but also discounted offers for their more general tours covering multiple marques.

Enough waffle I hear you cry — "Where are we going in 2021?". Notwithstanding the challenges facing travel in these difficult times, we agreed to offer at least something by way of a taster. We have teamed up with lan Longden at Fasttracktours, a company that comes highly recommended and with extensive experience of serving the TVR

Club amongst others. We are also in active dialogue with Scenic Car Tours, a company we have partnered with in the past.

So to 2021 — we thought a sensible 'starter for ten', would be to offer a five night / six day tour and motor sport event to the Spa Six Hours, spanning a weekend at the end of September and early October. What could be better after a year of enforced hibernation than a spirited drive from Calais, through the beautiful Ardennes and on to Spa to take in some day/night racing. Spaces are limited as due to time and accommodation availability constraints, this is not a dedicated Seven Club tour. You can find further information with associated links covering how to book on the 'Blats/Tours' section of BlatChat, Anyone interested is also free to contact the team at tours@lotus7.club, or call me on 07990 865869.

Apologies again for the lack of a broader Tours programme at this stage, but we at least wanted to offer something for 2021 as we are certain there is pent up demand. Any surge in demand does need to be balanced with the practicalities of not wanting to organize too much, only to have to cancel plans due to changing Covid restrictions around Europe.

Fear not however — we will actively use this quieter time to devise an interesting and varied programme for next year.

Please do let us know what format of tours you like and some 'hidden gem' destinations you may want to share. As a team we can use our own and commercial partners' experiences to formulate the programme, but we really do appreciate input to ensure we build a calendar that covers as many preferences as possible.

Personally, I lean towards a more driving-focused structure with less emphasis on high end hotels and expensive meals — fuel in the car and the open road. But we are a Club of nearly 4,000 members with varying tastes and we fully intend to cater for the broadest church possible, so we would love to hear your ideas.

And please don't forget to get in touch if you would like us to provide some practical input to your more local ideas. We look forward to hearing from you soon.



WHEN THE CHAT WINDOW SAYS GO, THAT'S YOUR CUE'

Richard Nichol hosted the Club's exclusive online webinar with **Graham Macdonald**, **David Ridley** and **Simon Lambert** of Caterham Cars, attended by 322 members

had taken all the right precautions: coffee cup full — check, notes and pen to hand — check, spare headset — check! After six or seven dry runs, the team was ready and I was feeling the pressure. The webinar introduction video was playing tunefully on the screen, happily reminding me of the fact that in a few minutes, I would have a chance to make a complete idiot of myself in front of a large audience — and have it recorded for posterity. "This must be what it's like for Huw Edwards on the BBC News" I thought. Suddenly, his six figure salary seemed reasonable. Too soon, the word "GO" appeared and I launched into my opening remarks. And then the WhatsApp pinged — "Turn your mike on!" Oops, all that prep and I'd made the cardinal Zoom sin. My career was hanging by a thread.

The Club has not had the best of relationships of late with Caterham Cars, and it is one of the items that the new Leadership Team is particularly keen to address. We were therefore delighted when Club Treasurer Martin Phipps came to one of our meetings to say that Caterham had floated the idea that if we wanted them to attend a 'Meet Caterham Cars evening', then they would be up for it.

Out of these first thoughts, the idea of a webinar took off. We recognized it was a challenge, and there were so many details we needed to work on to do it right. The added pressure for the team was that we really wanted this to be something that spurred on future events, and given we were all under COVID lockdown, we were equally keen to make sure we were offering some content to our members.

One benefit of our diverse membership is that somewhere we have expertise in most fields, so under the guidance of Lowflying Editor Michael Calvert, we assembled a crack team of technical wizards who thought they knew how to do this. The first thing to fix was the Zoom licence, so we purchased a package that allowed us up to 500 people on line. But how many would come? The doom-mongers talked of single figures whilst the doom-doomers talked of meltdown as the webinar would be hacked by shadow organisations. Maybe we would cause the internet to collapse (as I write this today, I see the reports of hackers stopping the Williams F1 car launch, so maybe I should have paid more attention?)



When I had agreed (or was that volunteered?) to host the event, I was assured it would be a simple job. Introduction and a thank you. However as the technical talents of the team became more apparent, so the desire to 'push the envelope' grew. Let's have an intro video; let's have a live chat window for questions, let's have polls. As the complexity grew, my confidence withered but I was too cowardly at this point to drop out. I've done many challenging things in my life, surely I can hack this.

We were nervous that we might not have enough attendees or questions — oh how wrong we were, and many thanks to everyone who took the time to write in. From the moment we opened registration, bookings and questions came flooding in and before long, we had some 340 members registered to attend and 165 individual questions to ask. But would they all turn up?

To make sure we covered the ground, we took a lot of time grouping questions to allow us to cover all the wide range topics. For example, over 40% of the questions related to Electric Vehicles or the future of Caterham after 2030 and the ban on conventional engines in new cars. We also had a robust debate as to whether we 'steered clear' of any topics. The team rightly agreed this was a 'red card' issue for us — if Caterham wanted to veto a question, then that would not go down well with the members. I am pleased to report that Caterham themselves actually said 'bring it on, we have nothing to hide', and that spirit of openness bodes well for the future.

The final detail was — what to wear. I toyed with the idea of commissioning an ensemble from Saville Row (if they were open). In the end I decided to be non-contentious — a Lotus Seven Club polo shirt, proudly highlighting our famous logo. How could that possibly go wrong? Everything was ready; after all the additions and refinements, here I was, ready to introduce Graham Macdonald and his team. I was now surrounded by more technology than Elon Musk in his SpaceX HQ. The screen was ahead, the headphones primed. I had an Ipad to see the chat, and a mobile phone with WhatsApp, which was how the background technical team were talking to me. One pair of eyes and three screens to monitor.

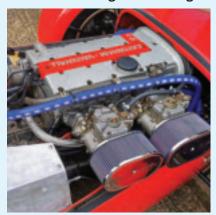
All I needed to do now was to look at the camera, read the chat, ask the questions coming through on WhatsApp, remember to introduce the polls, all whilst looking like I was having a fireside chat with a few people I had only just met virtually. I'll let you decide if I pulled it off, but when I dropped my coffee cup after 30 minutes, I really expected it all to come crashing down around me.

I would like to thank all the team that made this possible — Michael Calvert, Stephen Hubbard and John Martin. The key statistic for the evening was that we had 322 members on-line for an hour and a half of open and entertaining discussion. For those who were unable to attend, a video from the evening is available on YouTube at (youtube.com/watch?v=m-huS0gPZgE or search for "An Evening With Caterham Cars")

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We ran a number of polls of attendees during the evening.



Warm-up question — What engines do you have in your car(s)?

Options	% of Respondents
K-Series	36%
Sigma	26%
Duratec	22%
Other	11%
Crossflow	9%

When should Caterham make an EV?

Options	% of Respondents
Soon, it's coming	38%
When forced	37%
Over my dead body	15%
Now, the time is right	10%

What do you think a Caterham EV would be like?

Options	% OI	kesponae	ents
Ok, shame about the noi	ise		40%
A necessary evil			33%
Awesome			22%
Ruined			17%

What does the Caterham brand mean to you?

Options	% of Respondents
Fun	90%
British	76%
Unique	59%
Heritage	58%
Motorsport	46%
Other	4%
Nothing	1%

What would make you replace your existing Seven with a new one?

Options	% of Respo	ndents
Nothing, my car is perf	ect	52%
More power		22%
Improved quality of co	mponents	14%
New engine		13%
EV Seven		11%
Improved ride		9%
More practical		5%
More modern gadgets		5%

Would you buy a new Caterham solely online using the configurator to order?

Options	% of Respondents	
No	44%	
Yes	29%	
Mayhe	28%	

CATERHAM OPEN DAY

After the disappointment of having to cancel last year's Easter Open Day due to coronavirus, Caterham Cars recently announced the good news that the event will be run on Sunday 30th May 2021. "We'll be adhering to the latest COVID-19 guidelines, so although the event may be a little different to what you've experienced in the past, we'll still be making sure to give you a fantastic time." they told *Lowflying*. "Hosted at our Caterham Gatwick HQ, we'll bring together Caterham owners from around the world to catch up, connect, and check out some of the legendary vehicles we have on display. As well as being one of the largest gatherings of Sevens, it's also a fun (free) day out for all the family".

Running from 09:30 until 12:30, activities and facilities that are expected to be available include: free drinks and breakfast burgers, a parts sale offering Caterham parts at knock-down prices, access to Caterham's full-size simulator, reaction games and giant Scalextric, the chance to win a free Caterham hire, Caterham's motorsport zone and access to test drive sessions. Alongside Caterham's usual extensive display of cars, specific highlights will include the *Grand Tour* Seven driven by James May, the *Top Gear* R500 and the Caterham Formula One Car.



Parking around the Gatwick site will be exclusively for Caterham vehicles, and a majority of the event will be hosted outdoors to create the safest possible event for all. Additional and overflow parking will be available for non-Sevens, details to follow.

SPEED CHAMPIONSHIP UPDATE - APRIL 2021

A pril is the month when the lights go green on the 2021 Northampton Motorsport Lotus Seven Club Speed Championship. Imagine Goodwood in the spring sunshine, a fantastic venue for a return to competition.

There have been a few headaches on the way, but COVID permitting, a great season is in prospect — competitors surely will be keen to make up for the loss of the 2020 championship...

Eighty members are currently registered, more than for many years and it is encouraging to see many new faces and some novices alongside our more experienced drivers. The road-going classes 1 to 4 appear to be especially popular this season.

The calendar has had a few late changes, the most recent one being Gurston Down moving to a July date from its traditional May weekend. As usual, our calendar comprises a good mix of fast race circuits and tight hillclimb venues to give competitors a variety of challenges.

The Club is organising two sprints at Curborough in May and August, and we already have 50 entered for May. These events are also open to members who are not registered for the Championship, so if you are an occasional sprinter and cannot commit to a full season, why not come and join us?



At the time of writing, COVID restrictions sadly do not allow spectators at speed events. Curborough is often a popular blat destination for non competitors, but this is unlikely to be possible in May. Running a speed event requires many volunteer helpers and if you would like to be involved in some way, do please contact one of the CompSec team. It would be an opportunity to be at real Club event, remember those?

If you are tempted to try your hand at competition, the Club is running an Introduction to Sprinting Day at Curborough on 18th September. Details were in the March issue of *Lowflying*. Bookings are coming in fast.

After the season is all over, the awards ceremony and lunch will take place at the Silverstone Wing above the F1 pit lane, a fitting venue to celebrate the success of our 2021 champions.

CONTROLLED FLYING

Plotting your route, and keeping a safe distance is somewhat more involved in the air than it is when driving, as Club member and retired BA Captain **John Kelly** recalls.

sland in sight" came the call from the smart arse pilot to the approach controller on runway 34L at Sydney's Kingford Smith Airport. "OK sport, once around the Island and clear for approach" came the laconic reply. It's moments like these that spice up an otherwise dull day out as for most of the time the chatter on the airwaves, as in any job which uses R/T for its living, is business-like, brief and for obvious reasons expressed in standardised jargon. An old Bristol freighter was attempting a landing and with its conventional fixed undercarriage ("tail dragger") it was prone to bounced landings. The aerodynamics of a bounced landing for this type of aircraft are such that as the main wheels bounce, the tail wheel descends causing a steep increase in angle of attack to the airflow with a corresponding increase in lift. Inevitably, the next touchdown is another bounce and so on until the plane runs out of lift, whereupon it arrives on the runway like a grand piano dropped from a first floor window. The freighter pilot, finally having got the thing on the ground in one piece, in his plummy English voice called for his taxi instructions when from an observing



American crew there came, in a languid Texan drawl, "Mister, you could do that in one hop".

David Gunson, the retired air traffic controller who made a name for himself back in the nineties as an after dinner speaker, made the observation that in the early days when pilots just flew wherever they fancied, the chances of running into someone else were pretty slim, that was until someone thought it a good idea to cram the planes into the tubes

they called "airways" which rather increased the risk and thus needed someone to intervene to stop them from crashing into each other.
And so, Air Traffic Control (ATC) was born.

Ask an Air traffic Controller what the function of the job is and he or she is most likely to say "to ensure separation between aeroplanes and to promote a safe and orderly flow".

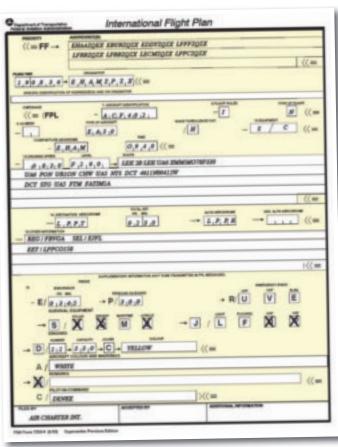
The tools available to the controllers to achieve their job description hinged around the fact that nobody (until recently that is) had a great desire to bump into any thing or anybody else, so it was in everyone's interest to play the game and that game was based on position reporting. Basically, you told everyone the time which you passed your last landmark, what particular height you were flying at and an estimate

of the time you expected to be at the next landmark. Pretty simple stuff and it didn't take a genius to work out when there was a conflict. As for the navigation, it was a case of looking out of the window for the obvious landmarks such as churches and rivers or following line features such as roads or railway lines when back in the day, the railway companies very thoughtfully painted the names of the stations on the roof to assist the intrepid airmen. As an added safety measure, it was decreed that you kept the feature on your left so that you could wave to anyone who was following it in the opposite direction. If you did get lost, you could put down on the drive of the nearest country manor to ask for directions, whereupon you were likely to be feted as something of a hero, and while your machine was being topped up with aviation spirit by an underling from the chauffeur's department, you were quite likely to be topped up with an entirely different kind of aviation spirit on the pretence of keeping out the cold.

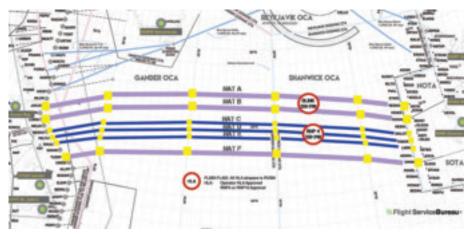
The chances of running into someone else were pretty slim until planes were crammed into "airways" which rather increased the risk and thus needed someone to stop planes from crashing into each other.

Air Traffic Control was born.

Filing a flight plan increased your chances of survival too, as it let everyone know what you were intending to get up to beforehand and the flight plan had the added bonus of containing details of endurance, survival equipment and the number of souls on board, so that if things took a turn for the worse, those nice Search and Rescue chaps had a bit of a clue as to where to start looking for what was left of you.



A typical flight plan, this one from Amsterdam (EHAM) to Lisbon (LPPT)



The North Atlantic Track system. The dark blue tracks are "Reduced Separation" (half tracks) for aircraft with specified navigation performance

Commercial aviation however, needed something a little more sophisticated that would cope at night or at other times when visual navigation and separation weren't an option and so the gentleman's club known as "controlled airspace" came into being. This controlled airspace is made up of a plethora of interlocking zones, areas and regions such as TMAs (Terminal Manoeuvring Areas), FIRs (Flight Information Regions) UIRs (Upper Information Regions), control zones, control areas and airways which, rather charmingly, were originally allocated colours with the red one shooting across the North Sea to Amsterdam, the green one heading down to Germany and good old Amber 1 which was the main trunk route up and down the UK but nowadays sadly, they've lapsed into the mundane alpha, bravo, golf etc. Membership of the club was restricted to pilots with an "instrument rating" (Faux Flying, LF September 2019) for which they had to demonstrate on a regular basis that they could navigate and carry out all the other tasks needed to enable them to keep their machines aloft and generally get to where they wanted to go without ever peeping out of the windows. Flight plans are compulsory for flights within controlled airspace and most commercial operators with a scheduled operation have "stored" flight plans which are activated on the initial call for start up clearance which also

happens to be the time at which the bad news about your slot time is received.

Radar coverage was the next rung on the safety ladder, but some extra mechanism was needed to make better sense of the mass of blips on the screen so enter "secondary radar", a system which by using transponders can identify which blip is which and superimpose all sorts of information about aircraft identification, height, destination, speed, crew birthdays etc and by suitable electronic trickery allows for TCAS — Traffic Collision Avoidance System. Each flight is allocated a four number code and as everyone knows it's called "squawking" but in the early days, in some quarters it was called "flashing your weapon" which was rather too raffish for American mores.

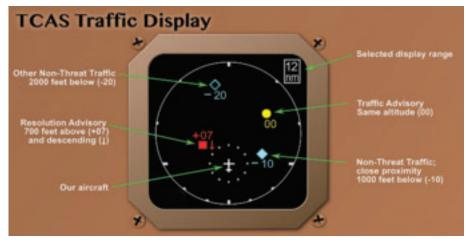
Although there's radar coverage on most routes these days, there are still places over oceans and sparsely-populated areas which depend on position reporting. Over certain parts of Africa, because of communication difficulties and the general lack of radar coverage, there is a compulsory DIY approach to ATC, all crews being obliged to monitor and broadcast a position report on a dedicated frequency (126.9MHz) and resolve any (of quite a few) conflicts themselves.

VHF (118 – 137MHz) is generally the medium of radio conversation but with its range being

limited to "line of sight", even at the lofty seven or eight miles up of normal cruise height, the horizon is still only a mere two hundred odd miles away, which across the oceans and deserts poses something of a problem. Satellite communication and CPDLC (Controller Pilot Data Link Communications) are steadily being rolled out to overcome this, but there are still large parts of the globe which rely on good old HF (a.k.a. short wave), the sound quality of which is often likened to a cocoa tin on the end of a length of string. The selection of frequency is something approaching witchcraft and depends on range and time of day as the signal is bounced off the various atmospheric layers (Appleton, Kennelly-Heaviside etc.) and times of sunspot and aurora borealis activity can really ruin your day. It's not helped either by the frequencies being shared by many agencies all trying to talk to different people as was heard over Asia "Shut up Delhi, shut up Karachi, this is Bombay radio".

One of the busiest routes around the globe is the one across the Atlantic and to accommodate the high volume of flights, in the early sixties the NATs — North Atlantic Tracks, a series of organised tracks was set up following the example of the 1898 North Atlantic Track Agreement for shipping. Originally, five tracks at 60nm spacing (1° of latitude) were published daily and moved north or south to take into consideration the position of the winds aloft so as to incorporate maximum tailwinds and minimum headwinds on the routes but over the years with the improved accuracy of navigation and satellite based surveillance systems the separation between some of the tracks has been drastically reduced (from 1° separation to ½°, the "half tracks") to cope with the ever increasing amount of traffic. Because navigation is now so accurate through the use of GPS and inertial systems, meaning that everyone is flying spot on the centre line, there's a recommendation to fly a random offset from the track centre line in case of cock ups. The direction of traffic flow on the tracks is predominantly westbound in the mornings and eastbound in the evenings and most radio conversations were on HF as above but nowadays communications are increasingly based on satellite or CPDLC, the advantage of the latter, apart from obviating the tedious business of getting a word in edgeways being the removal of the risk of crossed transmissions which can potentially obliterate urgent messages as in the case of the Tenerife disaster in 1977.

Before the reunification of Germany, flights into and out of West Berlin posed a whole set of different problems with Berlin being situated deep inside East Germany. Three twenty mile wide air corridors were established after WW2 for use by allied military aircraft and civil aircraft whose crews carried allied passports so that all internal German and external flights to and from

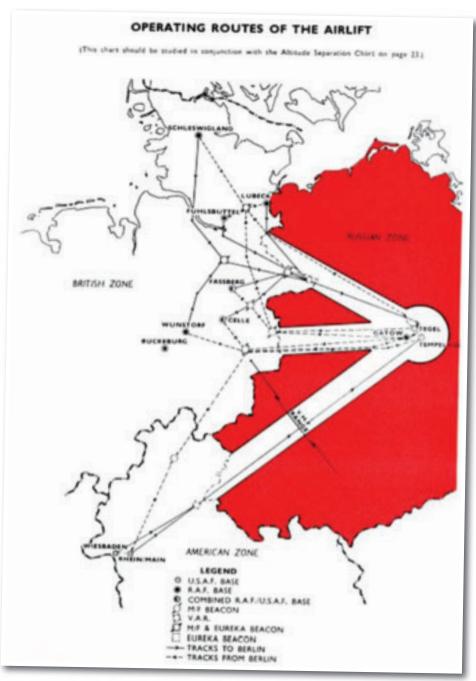


A typical TCAS display. Aircraft with "glass cockpits" (CRT displays) have the display integrated into the navigation screen

West Berlin were carried out by Air France, Pan Am and British Airways (originally British European Airways), the French packing it in in the mid '60s. The three corridors — north, centre and south ran at low level, 3,000' up to 10,000', from Uelzen, Helmstedt and Fulda (in the directions from Hamburg, Hannover and Frankfurt) to the Berlin Control Zone. Because of the low corridor ceiling, flights within the corridors could be badly affected by thunderstorms in the summer and icing conditions in the winter and with jets being extremely thirsty at low level, the centre corridor, as it was the shortest, was the preferred route even though it led to longer overall journeys. At 20 miles wide, the corridors allowed for two way traffic at the same altitude and the 40nm diameter control zone gave ample room for approach patterns into Tegel (French), Gatow (British) and Tempelhof (US) airports. The East Berliners' Fernsehturm — the TV Tower, "the onion" in crew jargon was the perfect marker for turning base leg on a visual approach into Tegel and interestingly, when the sunlight shines on the tower it makes the sign of a cross on the globe at the top which was always reputed to be a monument to those who died attempting to escape to the west. From 1960 until it closed in November last year, Tegel was the principal Berlin airport and Tempelhof airport, until it closed in 2008, originally laid out to represent the German eagle had a unique canopy attached to the terminal under which planes could load and unload without the customers getting wet. The airfield is now a public park and of course, the venue for Formula E racing.

Along the corridors it wasn't unusual to be accompanied by a couple of MIGs as you went about your business and strategically located below the centre corridor were several tank ranges and firing ranges so that often at night you'd be treated to a firework display of tracer shells as the Soviets showed off the contents of their toy boxes. On one occasion one of the guys was busy in the Tegel crew room filling out an incident report, "Just been zapped by a MIG, flew right across the bows" he said. "Close was it?" we asked. "Well, I knew he hadn't seen us 'cos I could see the back of his crash helmet".

From the crew's perspective, working from the Berlin base was quite intense, five or six days rattling up and down the corridors several times a day with quick turn arounds and often with grim winter weather for good measure, but it was time away from Heathrow and life in West Berlin always had an atmosphere of slight intrigue. To keep the pilots out of mischief, BA had kindly provided a couple of old Beetles which gave the opportunity in the down time to explore some of the more remote areas within the wall, places like Lubars and Fronau up to the north where the wall was pretty fragile and you could peep through the gaps to look at the horrors of no man's land, always under



The Allied air corridors to the Berlin control zone, as used in the Berlin Airlift in June 1948 and until reunification in 1990

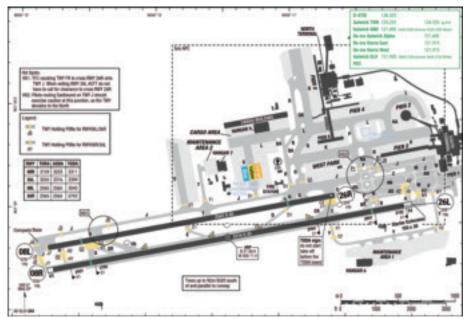
the watchful gaze of the guards in the towers. One of yours truly's duties was to look after the cars' roadworthy checks with the army at Gatow including the classic use of a 5 pfennig piece to replace a missing carburettor blanking plate.

Working under a quasi-military aegis gave the crews access to the US PX, French Economat and the British NAAFI for cheap booze and allowed entry into the officer's "Marlborough Club" up at Theodor Heuss Platz with its snooker table, sumptuous lido, white waistcoated waiters making *crêpes Suzette* at the table and double gins for pence, the expensive ingredient being the tonic water. Over time, some of the guys had made "special friends" amongst the local population (in the best interests of Anglo - German relations you understand) so if you look carefully at the footage of the throngs of

happy Germans when the wall came down on 9th November 1989, you may be able to pick out one or two rather glum-faced BA pilots.

Finally, whilst on the subject of Berlin it's worth a mention here of the hamlet Steinstücken on the south western edge of the city, which in the early days of the Wall and until 1971, was a tiny western enclave within East Germany and had its own private wall. Interesting story and plenty of background on Wikipedia.

Despite the best intentions of everyone involved, cock ups do occur and crews are instructed to "maintain lookout" at times of low workload, but even so, it can be very difficult to spot conflicts. One of the few mid-air collisions involving a British aircraft was in 1976 in which a BEA Trident 3 G-AWZT was struck by a Yugoslavian DC9 over Zagreb following an error by the local ATC. All on board both

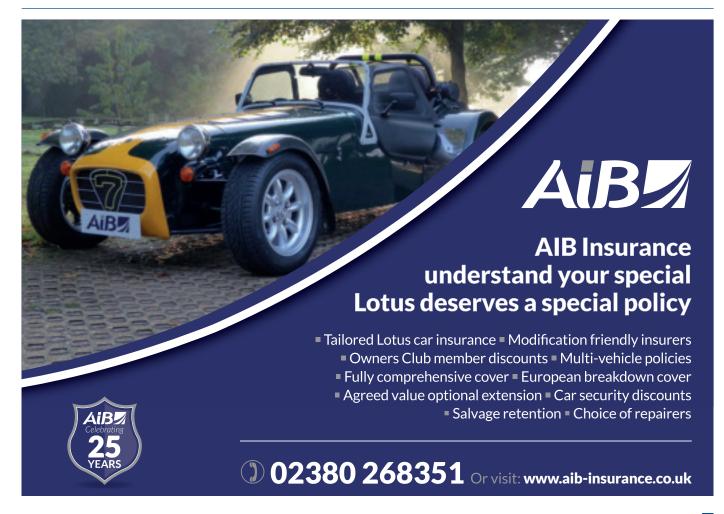


Gatwick airport, with the main and back up runways

aircraft perished, including Captain Dennis Tann who incidentally, gave me my first ever copy of The Good Beer Guide. Inevitably, the Yugoslav inquiry blamed the Trident crew for not maintaining an adequate lookout when in reality, all that could be said was that they simply didn't see each other. Quite obviously, the relative bearing of two colliding objects when viewed from the other remains constant and with the high speed of closure involved,

other aircraft on a collision course are hard to spot, even in clear air, hence the value of TCAS although here, one of the difficulties is getting crews to countermand ATC clearances and react. As in the case of GPWS (Ground Proximity Warning System) which emits a "pull up!" call when it spots a rapid terrain closure, the last words heard from a south American pilot as he blithely flew into a mountainside was "Shut up gringo".

Gatwick airport has two runways that are too close together to be used simultaneously, the northerly one is actually the old taxiway 1, which when work needs to be carried out on the southerly runway, gets converted to runway status. Back in 1988, the main runway was closed and a British Island 1-11 was lined up for landing on the emergency runway when they were asked by ATC to confirm that they had the correct runway in sight, not the taxiway. This sowed doubt into the crew's mind that was previously absent. The crew looked at what was ahead and thought hmm, we're supposed to be landing on a taxiway and what's ahead looks like a runway so they jinked left and lined up with what looked like a taxiway (because it was). Meanwhile, a BA 737 crew on the taxiway saw them coming and smartly darted on to the grass. No major damage was done, just a few red faces. It was about this time that an American pilot turned off the main runway, took a wrong turn and ended up nose-to-nose with another aircraft; this posed something of a problem, as planes don't come equipped with a reverse gear. The lady ground movement controller, narked at having one of her taxiways blocked, issued a rebuke which was perhaps rather longer and sterner than necessary, at the end of which there was a brief silence before the American pilot remarked "Were we married one time?" Probably apocryphal but nice to believe it were true. LF



INTRODUCING: JOHN MARTIN

Some of you may recognise John as "Purplemeanie", who has published a very popular 420 build blog, several YouTube videos and even a few *Lowflying* articles. John has agreed to become the Club's Social Video prime, tasked with improving its presence on streaming platforms such as YouTube, and his experience ensured that our recent webinar with Caterham Cars' directors went without a hitch. So, who is John and what makes him tick?

s I only built my Seven in 2017, I've not been a Club member that long. I don't yet have stories about trips to the Nürburgring or the NC500, but I do have anecdotes about previous motoring experiences, and about why video is something I can help the Club with...

Some of my first childhood memories in the '60s are of cine cameras, 35mm SLR photography, and old motor bikes and cars. We'll come back to the cameras later, so let's start with the vehicles... My earliest motoring memory is of my father and his two brothers' motorbikes. This would have been in the late '60s, but the bikes they were playing with were much older. I grew up with their stories of trips to the Isle of Man races and would go to race meetings on the back of my dad's Norton.

My first vehicle-related incident came when I was about four-and-a-half-years old. A bulldozer trailer that I and a dozen mates were playing on fell on my ankle, breaking it. It sounds like something a school safety video would be made about these days; it resulted in my wellie being cut off to be replaced with a plaster cast, and my being gifted a Matchbox toy VW Beetle — funny what you remember.

The next incident sees me at about 15 when a Land Rover Defender knocked me off my bike and turned it into a rather unrideable banana shape. My brakes failed as I came up to a junction and I shot across a main road. To my right, I was relieved to see a beige Talbot Princess was not going to hit me, but then, as I crossed the second half of the road, I felt the full force of the Land Rover into my side. I came to with a few broken ribs, spitting teeth and blood, and with a friend of mine from the CB club looking down at me — he was the Land Rover driver. The defender didn't notice either me or the bike bouncing off it and so I was bundled into the cab with the bike in the back and taken home. My entrance into the house with "I've had a bit of an accident" seemed to sum up the incident perfectly to me.

Whilst on the topic of CB radio, it still amazes me that nobody got hurt on the CB radio Sunday "fox hunts". Dozens of cars would converge on a pub in the middle of nowhere, then hurtle off into the countryside looking for someone (the fox), who was usually holed up in the corner of a field, transmitting every 30 seconds, so one of the cars could be the first to triangulate (actually trilaterate) their position and win a prize. I was too young to drive, but learnt



how to get thrown around country lanes in a car, operate a radio and navigate without being physically sick. Nearly 40 years on and in the age of radar guns and black boxes, it would be preposterous to think you could tear around the countryside with a bunch of other cars on a weeknight or weekend. Anyone fancy fish and chips?

We should probably skip over the next incident, when a friend's parents' prized Morris Traveller rolled several times in to a ditch. We should probably also not mention the teachers who fetched us from A&E, wanting to know what we were doing when we should have been at Irchester Country Park on a conservation project. *Agh-hum!*

Now for one of my favourites which happened on a winter's evening, heading home with a friend in a 1971 Hillman Avenger, circa 1983. There was a foot of snow on the ground as we headed up a steepish hill and the car got stuck. It was cold, the heater didn't work very well and there was no traction whatsoever. Now this is where the stroke of genius came in. Those Avengers were from a different era and had a choke. For those not as "mature" as some of us, a choke is designed to help start a car in the cold; you pull a lever and it increases the fuel-air mixture and advances the ignition which, critically for us in an Avenger, increased the revs. We executed the plan — I pulled the choke out, selected 1st, dropped the clutch and we exited the car with the rear wheels spinning. All was going to plan as we pushed from behind until the wheels gained traction and the car hared off up the road... minus any occupants. There followed a scramble



Hillman Avenger, not me in the shot.



The ambulance being fixed in south of France.

and a lot of swearing as we charged after the swerving car in the snow — its doors flailing as it pitched from side to side. We finally caught up and jumped in. 10/10 for ingenuity, though somewhat less for the risk assessment failure!

Next up we get to Birmingham University and being pulled over on the A38 Bristol Road. Sounds a fairly standard sort of event: three teenagers being stopped by the police on a dual carriageway. Except that we were in a shopping trolley. I couldn't see the problem — we were well under the speed limit and not one of us had had a drop to drink. The police officers thought differently and told us not to do it again. I thought we got off quite lightly.

With no car at university we have to wait for the end of studies for another story, during a final hurrah before starting new jobs. We bought an ambulance, or in other words, a three-ton Transit van, converted by Ford's special vehicles division, with a 150bhp V6 engine. That would have been quite something in a different vehicle, but with three tons to pull it was fine up to about 70mph but then hit an aerodynamic brick wall. Not totally different to a Caterham, although the handling was rather sluggish in

hippy students would and painted it red (the with flowers and "Don't Panic" in big friendly black letters on the side. We then proceeded to drive it around the south of England and France for the holidays. I still suffer from the broken finger I received trying to fix a universal joint in a car park in the south of the electrics gave up the ghost on the return journey, meaning we had to push it through Dieppe and onto the ferry. It was with some amusement that the English customs officials ignored our "nothing to declare" protestations as they pulled us in for a few questions and to rip the thing apart!

Moving on to the next incident, we find me driving a Vauxhall Viva called Big Vern (Viz readers will remember — he was never taken alive!) wheezing its way around the hills of Cornwall to Newquay's Fistral Beach. To cut a long story short, we lost its only set of keys in the sea and spent the next year using a 25-thou feeler gauge to unlock the driver's door, an Allen key araldited into the ignition barrel, and a screwdriver and hammer to open the boot. We also had to drill out the

comparison. We did what any self-respecting only colour our friend Tom could get cheaply), France. We should also probably mention that



The shed is where motorbike magic happened, and I grew up aspiring to. My grandfather's dark room was built behind the shed's back wall.

petrol cap lock so had no way of securing it from the occasional fuel thief. Big Vern was finally stolen, but was left only a few hundred feet away from where it was taken. Even the thieves decided BV couldn't be taken alive!

Where next? Ahh... the Fiat 131 Super Mirafiori. Now that really was a heap of junk. It was ten years old but looked way more. It had a great 2-litre twin overhead cam engine, an appalling gearbox that required Jedi mind skills to coax into gear, and non-existent paintwork. On the night in question, this superb specimen of Fiat's engineering and I were carrying my now wife and her boss home from the pub, both of them rather the worse for wear... as was the car after its nearside front wheel decided to detach itself at about 30mph. As the wheel bounded down the road, past Bristol University, the rest of the car took a nosedive and sparks started to issue from its underside. It was at this point that the detached wheel hit a wall, and ricocheted back towards us. I thought it was going to come through the windscreen, but it luckily hit the roof, leaving a skid mark from one of our own tyres! A very nice AA man took one look and decided there wasn't much he could do, so we found the wheel nuts, bolted the wheel back on and he towed us home. I took the car to the great scrapyard in the sky a couple of weeks later but then received a visit from Bristol's finest to tell me that the car had been in a hit-and-run and was I still the owner. Fortunately, nobody was hurt in the incident and I never heard from them again, although I did spot the car a week or so later, before losing it on the crowded Bristol streets.

We'll skip the story of the death of a 1.9 Peugeot 205 GTi, where a rag got onto the timing belt, dropping all the valves onto the pistons at high speed. Second favourite car behind the Caterham that one.

Since then, there have been a succession of new BMW 5 Series Tourings, a brand new E39 M5 (stolen and used in a ram-raid) a 911, a 330i Touring and now a VW ID.3. The combination of my love of software, electronics and cars is also now manifesting itself in Electric Vehicles, and hopefully there'll be some stories about that in the coming years too.

And so on to video... Some of my earliest memories are of televisions but also of cine and 35mm SLR cameras. My grandfather built a darkroom behind the motorbike shed and I have fond memories of being holed up with my dad in our bathroom, windows blacked out, with baths of chemicals to develop, fix and wash our photographic prints. But my real inspiration came from my immersion in televisions. My father and his two motorbiking brothers were TV repairmen they'd be called something like "field service technicians" today, but they would rove the countryside with a soldering iron to fix your TV at home. I spent my early years learning to fix mains plugs onto things, change electronic valves and components, read schematics

and to degauss a TV screen that had been exposed to a magnetic field. This progressed through access to cine cameras and electromechanical VHS video recorders and then into building my own computers. Building a computer in the early '80s was about taking a schematic and a bag of bits and soldering it together, only stopping to pull out an oscilloscope to figure out what you'd done wrong when it didn't work.

All that lead to a year working for GEC Plessey Telecommunications after my A-levels — the year of the runaway car in the snow. I worked in the Closed Circuit Television group (learning about analogue video cameras and new-fangled digital CCD systems) but my BTEC buddies were all in the telephoneswitch development teams. That mixture of telephones and video would come to haunt me again in my later career. From there, it was a degree in electronics, then a job working for Inmos, in Bristol, one of the few places in the UK where silicon chips were being designed and fabricated. I worked in the Image Processing Team where we made chips for the very earliest ISDN-based video conferencing systems, while other teams were making processors used to create the massively parallel processing farms which the likes of Pixar used for their early digital movies like Toy Story.

In 1993, a group of eight other engineers and I said "non" to a move to Grenoble and took voluntary redundancy to start up a business making what can be thought of as video communications devices — initially physical video phones but more recently, software running on mobile phones, PCs or servers. In the late 1990s, we became one of those dreaded dot-com companies and expanded the business, throwing R&D money around in the hope that something would stick. We had videophones in Downing Street, the White House and on top of Everest. We nearly had one on the International Space Station, but they couldn't get broadband installed! Even the BBC's John Simpson could be seen using our kit as he made his reports from the Middle East. And, in one of those crazy dot-com moments, we bought a motorway service station, complete with its own slip roads and roundabout off what was originally the M4. In the late 1990s, the M4 was being re-routed across the Second Severn Crossing which meant the Aust services didn't need to cope with as much traffic. We bought the services, pulled out over 50 urinals from the capacious toilet facilities and turned the whole thing into an office building. According to our MD, it was ideal for our expansion plans as it had parking for 250 cars and 17 coaches. It was the coaches though that often caused us problems, as unwitting drivers pulled up to our new offices and unloaded their payload of OAPs into our reception area looking for the toilets.

In 2005, the dot-com bubble had burst but we bumped into an American business that



helped deaf people make telephone calls — I know, let me explain. The service allows a deaf person to use sign language on a video phone, where the call is "relayed" through a sign language interpreter so they can, for instance, speak to their bank manager. To this day, that is what we do — we employ over 1,000 interpreters in dozens of calls centres across the US, providing a "Video Relay Service" for people who are deaf or hard of hearing. It is funded through a US federal fund and has paid our way for the past 16 years.

So, my personal world has been 50 years of cars, photos and video, and my business world has 30 years of video, electronics and software. With my interests in cameras (now of course all mirrorless, digital) and video (the aforementioned cameras and lots and lots of GoPros), that all dovetails into my passion for cars and my Social Video role with the Club. My interests led

me to building my Seven in 2017, blogging the process at purplemeanie.co.uk and doing a few YouTube videos. As for the Club, we'll be planning more events like the recent "An Evening with Caterham Cars" and putting them onto YouTube. There will be videos about track days, hillclimbs, sprints, interviews, shop tours and anything else we think Club members will be interested in — suggestions welcome! Along with all that there will be a special series unimaginatively called "Blat Chats" coming soon too. We will also look for ways to promote members' videos through playlists and social media coverage. If things go well, we'll also be looking at ways of getting even more video onto the Club's channels. In the meantime, I won't be ignoring my Purplemeanie YouTube channel either, so hopefully there'll be some different content on there too over the coming months. LF

Email John at: Socialvideo@lotus7.club



Inside Aust during conversion to offices, this room was one of the two cafeterias. Inset: Shame we couldn't keep the Burger King



MAKING THE FASTEST, FASTER...

Andy Jupp of Partridge Green Motorsport (PGM) reports on the recent development of a paddleshift system for the 620R.

rior to the COVID-19 lockdown, PGM was approached by a customer who wanted us to fit a paddle shift system to his 620R. He mainly uses the car on trackdays, and openly admitted that he was struggling with the 'heal and toe' technique for down-changes. He was looking to develop the gearshift with paddles so he could keep his hands on the wheel, including adding a throttle "blipper". We fully understood the reasoning, but at the time, none of us appreciated the positive side effect this development would have on the rest of the car.

Although it was PGM who took this project on, we collaborated with SBD, Meteor Motorsport and Northampton Motorsport to create a complete package. From a technical point of view, controlling the engine and gear change system within a single ECU is a superior solution compared to having a standalone gear control unit; it allows a much better correlation for the engine torque reduction whilst the gear shift period is occurring, which results in a flat up-shift change, without using the clutch, which is almost seamless with respect to engine power.

Importantly, this system also needs to be neat and tidy with respect to installation, keeping in mind the price tag of a 620R. We set out to position all the components under the bonnet, reducing the length of pipes and

wiring to a minimum. After discussion with the customer, we also opted to retain the original gear lever. It would be possible to remove the lever completely, but leaving it in place provided a backup at any point in the future if needed.

In basic form, the gear system works by using a small compressor to charge up an accumulator. The output of this stored air cylinder is controlled by a micro switch on a steering wheel paddle. This operates a solenoid valve to allow air pressure to an actuator that is bolted to the gearbox gear change rocker.

Central to the 620R system is an MBE 9A9 ECU controller. This is an upgrade to the original MBE ECU that the car is fitted with as standard. The first task consisted of wiring the new ECU into the existing Caterham loom. This was achieved using a conversion harness, enabling the original ECU plug and vehicle harness to be retained, including providing additional sensor and gear control connections in the process. This is where the first development became apparent as the original Caterham fuel pump control seemed to be lacking feedback from a fuel pressure



Micro switches trigger an actuator bolted to the gearbox



sensor. On further investigation, the fuel system on a 620R regulates fuel pressure by changing the pump output. We fitted a fuel pressure sensor allowing closed loop control of the fuel pump pressure.

Next we fitted a wide band lambda sensor to make use of the closed loop control the new ECU provides for lambda control. This serves dual purposes — aiding engine mapping and ensuring that emissions are still within the MOT limits as this car is road legal.

Next, we moved on to the steering wheel paddle arrangement. This car already had an upgrade to the original quick release steering boss with a Rapfix unit fitted. In consultation with our customer, we opted to add a terminal ring to the boss to provide connections to the steering wheel that disconnect when the guick release is used. Caterham offer an alternative boss with a connector in the centre that would achieve the same connection features. Mounting the paddles to the boss required the next area of development to ensure they were ergonomically comfortable. We created a 3D model of a spacer to sit behind the steering wheel, allowing the paddle and neutral switch to be mounted. We then printed a few versions of this until we were happy with the end product, tested while sitting in the car with race gloves on. With this setup fitted, we additionally printed a quick release boss cover to keep the wiring tidy and protected from ingress of dust and water.

Once the hardware of the system was mounted and wired correctly, we moved on to the software side of the installation. Initially, we set up all the gear change voltages and a few other parameters for controlling the compressor / accumulator. For example, the accumulator has a pressure threshold which will trigger the compressor to start or stop running. However, this is also dependent

upon battery voltage, so when you turn on the ignition power, the compressor will not run if the battery voltage is low. This occurs even if the accumulator pressure is low and ensures that if you have a low battery, the compressor will not add a further load while you are cranking. Once the car is running and the alternator is charging, the compressor will then start up.

The calibration of a starting map and some of the sensors was not correct initially. With the aid of SBD and some remote laptop control, we managed to get the car running to check everything was working correctly in preparation for the rolling road session at Northampton Motorsport.

Northampton Motorsport spent time perfecting the map to ensure that the fuel pump control and lambda were stable throughout the rev / load range. At this point, we discovered the improvement in performance compared to a standard 620R. The peak power gain was about 45bhp and the peak torque gain was about 40lb/ft. However, although the headline figures are impressive, the graph shows a substantial gain throughout the whole rev range, suggesting a very usable

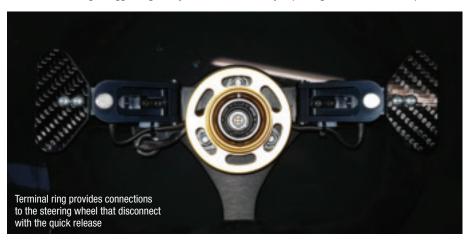
performance advantage. Northampton Motorsport additionally collaborated with SBD to develop the torque reduction system and perfect the gear change strategy. They tested the flat up shifts and the throttle blipper down shifts on the rollers to ensure everything worked correctly.

On return of the car back to PGM, we took it for its first MOT test. It passed an emissions test with ease, giving us further confidence in the mapping undertaken by Northampton Motorsport.

Finally, with the project complete and COVID-19 lockdown being lifted, we returned the car to our customer who had booked to test the new system at Castle Combe...

Jim Harrison reports his thoughts on the upgrade...

Having collected my car from PGM by trailer, I had not driven it with the paddle shift system until the Lotus Seven Club track day at Castle Combe. When I told Andy I was going to Castle Combe for the upgraded car's first outing, I detected a bit of a groan that I had chosen a circuit with no runoff, and I suspected he was secretly expecting to see it back for repairs.





Neat and tidy under-bonnet installation

Anyway, following the two initial sighting laps and the pace car pulling in, I continued on track for my first session of the day. Once I had got everything up to temperature, my first impression was that the car was much easier to drive and that the throttle response was noticeably sharper. It was so easy just pulling the left paddle for the downshifts while braking for the corners. After using the clutch to get the car moving initially, my left foot is now not required. I found it much easier to concentrate on my modulation of the brake pressure with my right foot, without having to heel and toe. I have to admit that I had never owned a car with paddle shift prior to this, so it was all a bit of a learning experience. The up shifts were also much smoother, and the acceleration feels even more relentless as the power builds towards the rev limit. If you keep your right foot planted, the gear change is smooth and fast with almost no noticeable loss of acceleration. On the cooling-down laps when driving

more slowly, the shift system continued to work smoothly, but at very slow speeds it downshifts with a bit of a clonk, so I reverted to dipping the clutch on these occasions.

As the day progressed and conditions appeared to be drying out, I bolted on my ZZR dry tyres. This of course immediately caused the heavens to open with a heavy shower, so I sat out the following session. By the end of the day I had got more familiar with the car and was able to push it a bit harder. It was simply a pleasure to drive as I could keep my hands on the wheel all the time.

At the end of the day, I noted that I had only used one full tank and a 20 litre can of fuel; previously, the car would have used a further 20 litres for this sort of event. I always thought that it had been running very rich previously.

The following week, I had the car out for the next track day at a very sunny Goodwood. I had only driven this car once previously at Goodwood, but it certainly felt much faster than before and was now pulling over 140mph

down the Lavant Straight. After a small-run in with the noise police, I had to short shift in a few places which was a bit of a shame, but it gave me the chance to enjoy listening to the engine note during the shifts and to marvel at how smooth everything was. This outing also confirmed the fuel consumption improvement I had noticed at Castle Combe. It's a bit ironic really, as I work in the oil industry and I'm trying to get the oil price back up! The next project that PGM are working on is a solution to reduce noise further as track day limits are becoming ever-stricter. They have a new side and rear system that looks promising, but because of lockdown, it has not been verified on track yet.

The second car to receive this conversion belongs to Terry Stubbington. This is his view of the kit on first use.

I previously owned a Caterham CSR 260 which I used almost exclusively on track and which has undergone a few upgrades over the years. However, on a trackday last year, I had the chance to try a friend's 620R and it opened my eyes to a step up in performance. I mulled over purchasing a 620R of my own, and discussed with Andy some of the upgrade options he had already completed for Jim Harrison. The opportunity to buy a secondhand SV 620R came up and given my history with the CSR, I preferred that chassis size so decided to go ahead with the purchase.

Before I even took it on track, I also committed to a list of upgrades including the addition of the paddle shift system. I must say a big thank you to the guys at PGM for a superb professional installation as in my opinion, the finished article looks factoryfitted. Upon collecting my car, I had a trackday booked at Goodwood the following week. The car was an absolute joy to drive on the first outing, with super-smooth up shifts and a down shift with auto blip — what's not to like?

So — what else does PGM have in the pipeline for 620R and 620S owners?

Working in collaboration with Mark Weatherby and Igor Fedor, who have documented the cooling system modifications they have made to their cars on BlatChat, PGM now offer an evolution of this kit to aid the overcooling problems that some owners experience. Lowflying will be covering this subject in a future edition. Additionally, PGM also offer an ECU and mapping upgrade that incorporates the testing and development gained from the paddle shift system to improve torque, power and fuel economy as a standalone kit. As touched on previously, another development is larger, re-packable side and rear silencers to adhere to lower trackday limits. As part of the exhaust system redesign, the pipe that occasionally touches the ground just in front of the rear wheel has been altered to provide greater ground clearance. LF



THE ARRIVAL OF OUR SEVEN 420R – A WIFE'S PERSPECTIVE

Dreaming about and then buying a Caterham can often be a man's domain, but as both passenger and driver, I too have enjoyed so many fantastic experiences through the world that Seven ownership has opened up, writes **Jane Board**.

hrough our car I have met some really interesting people and every time I go out in it, I get the biggest thrill. The Seven makes me feel alive and it makes me smile — far more in fact than I could ever have imagined...

When the man in your life gets to own one of these special cars, he reverts to being something of a boy racer, having a throw-back to his youth, only now rather older. That Ford Escort RS1600I, Hillman Imp or Ford Capri he once owned as a young man may have offered thrills and excitement, but certainly didn't perform or handle like a Caterham. I know I'll never forget the first time I got to experience our Seven 420R's 0-60mph dash in 3.8s — it was something else.

I do like cars, but I'm in no way a car nut — my day-to-day car is a Ford Fiesta. However, I was keen to learn to drive from a very young age, and my dear dad gave me my first lesson on my 17th birthday. I loved it, so much so that by my 18th birthday, I had passed my test and was driving my first car — also a Fiesta.

Over the years, I have been lucky enough to ride in some lovely vehicles; there was the Bentley Arnage on our wedding day and another memorable occasion when Clive and I looked after a friend's house while they were off skiing. They had a Maserati, and offered us the keys to drive it whenever we wanted. We took it out one crisp sunny day, but extremely



We've done it... Signing on the dotted line

cautiously as it wasn't our car and there was still a slight frost. Needless to say, we weren't able to explore its full potential... I should also add that Clive and I both have motorbike licenses and enjoy touring Europe on our BMW R1200 GS Adventure. Clive also holds a class 1 and 2 HGV license, and advanced motoring certificates for both cars and 'bikes.

But this is supposed to be a story about Caterhams, so where *did* our Seven journey start? Our good friends Chris and Joan Harris have owned a Caterham now for nearly 20 years, and they suggested we should rent one for some weekend fun. We hired our first Seven in October 2014, from two brothers based near the New Forest. Having been taken through the car's operations and ready to go, the rain started to fall. We battled to get the full hood on, and then once it was finally erected, we had to contort ourselves Houdini-like to get in. We were finally strapped up, with the engine running and ready to pull away when Clive went to switch the funny little windscreen wipers on, only to find that they didn't work. To cut a long story short, the brothers asked us to retire to the local pub while they sorted things out. We were back in the car before too long; even better, the rain had stopped and we set off for a fantastic weekend in Wales, to enjoy the stunning scenery and twisting roads. We both had a great time, and I could now fully understand owners' love for these cars. In fact, I was already beginning to wonder whether we were going to become owners ourselves one day?

The following June, we decided to hire a Seven again, this time from a guy near Chepstow. We were once again with our good friends Chris and Joan and heading to Wales. Why Wales? It's just perfect for Sevens — great roads, fantastic scenery and an adventure every time we set out. On our second-to-last night, Chris and Joan announced they had a surprise for us, and that our next night's accommodation was



It's here! Inset: Chris helps unload

already sorted. We eventually pulled up at a beautiful house in the middle of nowhere, with a stunning garden and a view to die for. Out to greet us came Simon and Mel Smith, Caterham owners that Joan and Chris had met several years earlier on one of the Swiss trips. Through the cars, we had so much in common and we enjoyed a fantastic evening with them and their daughter Abi as they regaled us with stories about Caterham trips and times shared with interesting people along the way. It was just a joy to listen to, and as so often, we found we had other shared hobbies including motorbikes and skiing; with great food and the alcohol flowing, we enjoyed a fantastic night.

After breakfast next morning, we prepared to leave. Simon had offered to lead us on a "gentle" drive, to get us out of the country roads towards the next leg of our trip to the stunning scenery of Somerset. Well, we hadn't even got out of their drive and he was off like a rocket if this was a slow start, what would fast be like? It was clear we were in for a fun day!

The sun was out and we were having a blast when Clive asked me if fancied a turn behind the wheel. I wasn't initially sure — we had been traveling pretty fast up to that point... However, I'm not normally shy about trying something new so I said "Why not?" At our next coffee stop, we informed the others that I was going to drive for a bit — "Brilliant", they all said. My legs aren't as long as Clive's so he adjusted the seat, put a cushion to support me and I was ready for the off. I have to say I didn't feel my normal confident self the bonnet felt too long, I couldn't see as well as I would like and felt restricted by the tight belt. Clive could tell I wasn't quite myself, but the drive was still going well — I managed to keep up the pace which I thought was quite fast and was really beginning to enjoy myself. Clive was helping me like a rally co-pilot (in my dreams, I just wish I could drive like one) — "Keep up the revs", "Don't change gear yet, I will tell you", Don't brake yet", "Brake now, change down..." Boy it was exhausting, and I could feel my adrenaline flowing. I was having

Have to have a coffee stop or two!



fun, but was rather out of my comfort zone as became apparent when I went to pull out at a roundabout... and stalled, with another car heading towards us at speed.

I didn't feel in control and it had shaken me. "I don't want to drive any more" I told Clive. He said I was being silly, but I didn't want to show myself up and preferred to stop. This is why some of us women can feel pressurised — some may not wish to drive for one reason or another and that's fine. There are some who enjoy driving Sevens and many who are damned good at it — but it should all be about having fun and enjoying being in a group of like-minded people. And fun our weekend was; by the end of it, we knew we were both hooked, and knew it wouldn't take too much before we were signing on that dotted line... The conversations started about how we might fund a purchase.

Discussions continued over the coming months, but it was actually during the 110 mile drive to my sister's house in Bristol on Christmas Day 2015 that we had the eureka moment: "That garage we're building — we could fit a lift, and our storage problems would be sorted." We both cheered excitedly as this really was going to happen... It's good to be the sort of people who make things happen rather than just talk about it. But with a lot of time, money and effort going into the purchase, would it all be worth it?

After the blood, sweat (and a few tears) of building a garage, we eventually got the finance sorted, and headed to Caterham Gatwick to sign on the dotted line to order our very first brand new car, a Seven 420R kit. Then the long wait began...

Delivery took place on 9th January 2018. Clive was immediately like a kid in a toy shop and couldn't wait to get the boxes into the new garage and unpack them. The following weeks, he was in that garage every night until late. He even ate his dinner out there some evenings, just loving the whole experience. He was most meticulous in the way he laid everything out, reading and re-reading the instruction manual which wasn't always the clearest, but he

figured everything out. I too would spend time out there with him and even helped install the wishbones and differential. I learnt a lot about the car's mechanics helping and watching Clive, but this was his baby and his attention was all on the Caterham — it was like a love affair! I knew when I wasn't needed, but I knew where he was and as long as cups of tea kept coming, he was a very happy boy and the build was completed without any major hitches.

Since getting our Caterham on the road, we have enjoyed so many days and evenings out and have met such a variety of wonderful people. It's the diverse group of Caterham owners that makes this hobby such an interesting one; you get to learn so much from people with fascinating stories to tell about their adventures and how and why they got to own their Seven. The variety of professions is amazing too — these cars for sure bring the most unlikely of people together.

Ownership highlights so far:

In May 2018, we had our first experience of the Fish & Chip run from Chepstow. We stayed with our news friends Mel and Simon in Somerset, then drove up to Chepstow for the day's fun. Boy it was a long day (and — surprise, surprise a fast-driving one) but it was worth the wait for Fish and Chips on Aberdovey sea front.

In August 2018, we had a fantastic evening at the Selsey Lifeboat, an opportunity I'm sure we would never have had without the Caterham. And later again that August, we had another weekend in Wales, like I've said before, it's all about the roads... I now really enjoy being 4" off the floor and seeing tarmac in the corner of my eye although, like getting in and out of the car, it did take a little getting used to!

Some of our most memorable adventures have been in Scotland; Scotland has a very special place in our hearts and we just love it there, whether on our motorbike or in the Caterham. Come rain or shine, we go out regardless. We took the Caterham north in May 2019; our plan had been to explore Scotland with Chris and Joan Harris, John and Mary Puddifoot and our new friends Mel and Simon Smith from Somerset — but Simon unfortunately broke his elbow in an accident just before we were due to leave, so they had to pull out. We were so gutted, as were they, but there will be another time I'm sure.

Clive and I were the organisers this time, and we wanted to show our friends some of the roads we know and love. We'd booked two cottages a few miles from Fort William, which is a great base to radiate out from. We had ready-printed route maps, souvenir keyrings and tour T-shirts, customised with individual names; it was just the fun week we'd been hoping for, with lots of G&T, food and laughter.

Come September 2020 and we took the opportunity for another cheeky week in Scotland to escape the lockdown madness. This time we stayed near Invergarry; the



On the banks of Loch Ness, with not a monster in sight

weather may have been changeable, but we still managed to venture out every day, and this trip was to provide the big day when I decided to get behind the wheel of a Seven again. I told Clive I would like to drive down the A82 to Fort William, then onto the A380 to Mallaig. It's a route we have driven and ridden so many times and it's one of my favourites — fast, but very scenic. I got comfortable and off we went; I was a little kangaroo'y to start with, but within just a few miles, I was feeling at ease. It was just what I needed; my confidence was growing and by the end of the day, having clocked up over a hundred miles, I finally felt like this beast and I had bonded. Clive was happy too. "It was such a change to be a passenger, a chance to have a really good look around and soak up the stunning scenery, a real joy", he said.

I don't think I ever doubted how much a Seven would bring to our lives. Every time I'd seen one on TV shows like Wheeler Dealers. Top Gear and Car S.O.S. their owners did nothing but rave about the joy and fun they had behind the wheel, and we were now part of that exclusive club. So a big "thank you" to our great friends Chris and Joan for having introduced us the world of Caterhams. Since owning our Seven, it has brought one continuous time of fun, filled with much laughter. The past year may have been tough for all of us, but there now seems to be a light at the end of this long dark tunnel we've been in. With spring in the air, let's now hope it won't be too long before we are all able to meet again for a blat, burn some rubber and get back to making more memories, Fingers crossed, with the hope of being able to meet plenty of other members soon. And to my gorgeous husband who was so keen to encourage me to get behind the wheel happy birthday Mr B... LF



Beautiful Tobermory, Isle of Mull



MAIDEN FLIGHTS: WELCOME TO OUR NEW MEMBERS

NEW MEMBERS

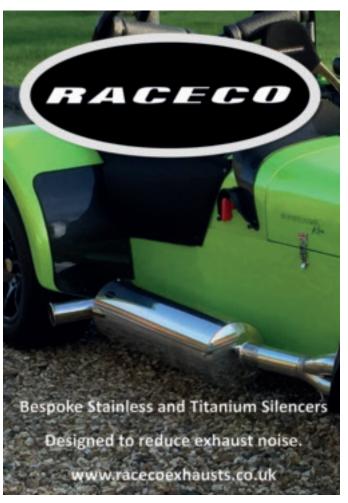
Alastair Ferguson, Leominster Kevin Iocovozzi, Savannah, Georgia Paul Smith, Sandbach John Howard-Smith, Godalming Marshall Heyworth, Monona, Wisconsin Steven Lancaster, Kettleshulme Julian Roebuck, Chorley Chris Powell, Haslemere Lucas Boucher, Utrecht, Netherlands Phil Whittaker, Gunnerside Robert Hadaway, Clitheroe Dean Holloway, Colchester Simon Phelan, Norwich David White, The Woodlands, Texas

Graham Crofts, Nantwich Christian Joway, Aywaille, Belgium Roger Lipman, Portsmouth Mark Steele, Worksop Toby Beaumont, Baldock Graham Hutton, Exeter

RETURNING MEMBERS

Ross Carmichael, Sevenoaks Graeme Wilding, Surbiton Andrew Bowles, Wokingham Andrew Macswan, Wokingham Alex Rae, Durham Mick Torgersen, County Durham Terry Momber, Bristol Ian Cook, Uxbridge Ian Jones, Sutton Coldfield





-FRIDGE DOOR



Andy O'Hara's Seven shines next to an abandoned factory unit.



SAMPEl Masatoshi's Seven at the Kussharo caldera in eastern Japan. Snetterton Super Sprint — Adrian Swift's Seven coordinates with MSV's paddock flags. >



and joy featured on the Fridge Door, please send your Seven photos (general photos of Seven



Chalk and cheese: Gordon Hind's Sevens are all dressed up and ready for action. A7 00H is a six-speed 2005 1.81 K-Series that he has owned for three years, whereas 833 VME is a 1994 Classic SE with which had sat uncompleted until first registered in 2007. With its 1600 XFlow engine and five speed box, Gordon describes the car as "old school" and easy to maintain, but also a joy to drive, and reports that the roar from the Webers is something special!



Speed matters: Nigel Holt's Seven 310R remained on the driveway last season when he really hoped to contend the Gurston Hillclimb Championship, complete his ARDS course and start racing, so plenty to catch up with as restrictions hopefully lift. The bike is a 1980 Yamaha TZ125G Nigel rides at Classic Motorcycle Racing Club and British Historic Racing events.



"Welsh mud" - Richard Drydale.



"Just filling up" - Rob Grigsby.

THE POLICY MAKERS

With our unique Sevens, owners may find that off-the-peg insurance doesn't fit quite like it should. **Malcolm Anderson** tackles a few common hurdles to sourcing and maintaining the right cover.

nsurance is not a glamorous subject, but if you are the proud owner of a Seven you will want to take steps to protect your car and yourself against any unforeseen incident. Whether a Lotus or a Caterham, the Seven is not a mainstream car, and therefore it is worth looking for specialist insurance. Unless you are using it every day, your annual mileage is likely to be well below that of your daily driver, so you should be able to tailor your Seven insurance to match this. The lower the mileage allowance, the lower the perceived risk, so the annual premium should reflect this. You may be able to include your Seven on an existing multi-car or multi-policy agreement, however don't be too surprised if the large insurance corporation that sells travel, life, home and car insurance doesn't feature a Seven on its website drop-down menus many don't.

For specialist insurance, you are probably going to have to make a few calls. How very '80s. There are a selection of specialists advertising here in <code>Lowflying</code> — and if this is your first Seven, it's definitely worth calling them all for a chat. This early interaction over the 'phone will help you gauge how the insurer (or broker) is likely to respond in a situation where you need to make a claim. Quotes will vary, and you will be able to select options and 'add-ons' like trackday



Ouch - reduce the impact of accidental damage with a policy tailored to match your Seven. Credit: Alex Gurr

cover to match your planned usage. Shopping around for a good package is no bad thing.

New owners may be asked about, or have been recommended, a policy that incudes 'Agreed Valuation'. An agreed value means that the insurance company accepts a value submitted by the insured and the maximum pay out, in the event of total loss or theft, is the agreed-upon amount. Owners may be asked to submit photographs to help the insurance company confirm the value, or the Club recommends contacting Guy Munday (details at the front of *Lowflying*) who can provide this service for members. Guy very kindly provides this service free to members,

CASE STUDY

Insurance is the one product you hope you'll never need to call upon, but it's only when you do that the quality of the cover and service you've purchased becomes apparent.

Chris and Maggie Alston were touring Switzerland when they rounded a sharp bend to find a Subaru Forester on their side of the road, coming the other way. In the collision, the Subaru came to rest against the FIA rollbar above the Maggie's head. Miraculously, there were no serious injuries and having been flown by air ambulance for a check up, both were discharged later that day. The costs for such medical care, and to recover a totalled car stranded abroad, will have been significant, but Chris reports that the specialist broker they were insured through quickly swung into action. "We informed them on day of the accident and the Seven was repatriated from Switzerland 17 days later to a repairer of my choice (Andy Belcher of Tech 7). The repair claim (well over £10k) was assessed and approved within two weeks (the 22-year-old Seven would have been written off had it not been insured for an agreed value) and the car was back on the road 15 weeks after the accident. The legal services also took care of all uninsured losses and compensation. Throughout the claim, I couldn't fault our insurers and their legal advisors. You only find out how good your insurance is when you put them to the test".



redit: lan Bruce



Small chips can easily become big cracks

and only asks that it return, they consider making a donation to the Club's charity.

If you are building your Seven from a Caterham Cars kit, or restoring a barnfind classic from a pile of bits and dust, then you will probably want to consider insurance cover during the build process. This is another area where talking to a specialist which understands kit cars makes good sense. Many insurers will then be able transfer the same policy to full driving cover, so you don't need to begin the whole process again.

With your car on the road, the insurance journey may be at an end for the year. Hopefully, you will have 12 months of incident-free Sevening, and the renewal process will be very similar to any other car. However, just as the Seven is not like any other car, running a Seven is not quite the

same either. As your relationship with the car grows, you may find that your collection of parts, wheels and tyres also grows. Because of its kit car origins, whether factory-built or home assembled, the Seven positively encourages 'upgradeitis' among owners. While mostly harmless, this obsession to change and alter your car can have an impact on your insurance cover. Although switching to a half-hood may not be something you need to share with your policy provider, that 60bhp upgrade and new lightweight flywheel is definitely worth a phone call to ensure that you're still covered.

Small things can also have unforeseen impacts. Upgrading halogen bulbs to LED versions is a quick and cheap way of enhancing your night vison on the road, and helps other drivers spot these diminutive sports cars

during the daytime. However, recent changes in the MOT legislation for LED bulbs mean that the legality of such a switch has been questioned. When asked to clarify this, Carlie Norwell at specialist insurer A-Plan said, "We know that with kit car type vehicles, you're unlikely to get two exactly the same. When it comes to parts, if anything has deviated from the factory kit spec, you need to let your insurers know. LED lights will fall under the same rules, and as with all parts and modifications, we are happy to cover them as long as they are road legal within the MOT guidelines. On our specialist policies, we will make sure we are insuring the overall value of the vehicle including the parts disclosed to ensure you are covered properly."

THE VIEW AHEAD

Driving a Seven on the road or track is a truly pleasurable experience. Being open to the elements makes for an invigorating drive. It also exposes your car to the by-products of other road users, one of which is stone chips. Chipped paint can be mitigated slightly with paint-protection film, but the near-vertical nature of the Seven's windscreen attracts stone chips almost as much as it does dead insects. Chips and cracks are not easily repaired in such a steeply raked screen, so when damaged, a complete replacement may be needed. As with other aspects of Seven ownership though, this is not quite as simple as it sounds. Replacement heated glass can be ordered direct from Caterham Cars and other specialist suppliers, but at over £100 for plain (non-heated) glass and over £500 for a complete windscreen assembly, it is very likely that any replacement will involve a call to your insurance company at some point. This is where is gets complicated. For mainstream cars, there are many glazing



LED headlight upgrades can cause issues with new MOT legislation

specialists that offer roadside or home-based replacement windscreens. They will also deal with your insurance company directly and the whole experience should be painless and only cost you a small excess fee. Just as with larger insurance companies, you may find that the Seven is not listed on mainstream glazers' websites — or is covered with so little detail and is so vague that any confidence in them soon evaporates.

Tim Camm, Technical Training Manager, Autoglass® explains why this is the case. "Autoglass® has comprehensive stock that provides a list of options for windscreen repair work on Caterham vehicles, however this is dependent on the age of the vehicle and size of the body. Confirmation around this would therefore need to be discussed on a case-by-case basis at the time of booking a windscreen repair or replacement."

But what about the heated elements? "A common request from owners is to upgrade to a heated windscreen", adds Tim, "Autoglass® supplies a wiring conversion kit which is sourced from an appropriate supplier that meets the Belron® quality standard. As well as considering the age and condition of the vehicle, the removal and refitting is dependent on the condition of the frame and also the fixings and any wiring. If a customer had conducted the retro fit themselves, or had it conducted by a third party, they would need to agree

the betterment with their own insurance provider, unless paying in full outside of an insurance claim." So it seems that with Autoglass at least, Seven owners will need to take care to ensure the correct size and style of glass is selected prior to ordering. With such a bespoke vehicle, perhaps a specialist approach would be better? Andy Noble, Director at Sevens and Classics, offers his own solutions to the cracked glass problem. "We keep heated glass for both the SV and the S3 cars. We can supply just the glass, (although I'm always reluctant to post it) from just £300. The whole screen assembly with refurbished surround and new rubbers, and everything in between can also be replaced from £468 (fitted). We do a lot of insurance jobs too, meaning the customer only pays a windscreen excess (or nothing in some cases, depending on their insurance policy)." For owners who want to retain the patina-look on their car. Sevens and Classics also offer options to exchange screen surrounds and stanchions for refurbished versions.

"As a broker, we use a panel of different insurers and these insurers will have their own approved repairers for windscreen replacements," adds Carlie Norwell at A-Plan. "As our insurers are specialists, they do understand that these vehicles are not 'the norm' and therefore they do take a flexible approach when it comes to sourcing and fitting glass — including if you'd prefer to do



the work yourself." So as an owner you do should have a choice on how and where to source your replacement screen — but speak to your insurance provider first if you are planning to claim on your policy.

It is worth noting that new build cars — both factory and home constructed — require a heated screen to pass the Individual Vehicle Approval (IVA) test to ensure the windscreen will demist safely. Although not currently required for the MOT test in the UK, meaning owners are able to replace the glass with non-heated, or even the race-friendly Plexiglas, the recommendation to retain the heated element for a road car remains...

As you tailor your Seven to maximise your enjoyment, just don't forget to include modifying the insurance on your upgrade path.

LOTUS SEVEN CLUB

SPEED CHAMPIONSHI

THE ESSENTIAL UPGRADE FOR YOUR SEVEN

Graham Howard recently took his Seven to Northampton Motorsport to have the suspension set up, ready for a season of speed events.

hen we think of upgrades, the things that immediately come to mind are engine modifications, dampers, tyres, wheels, brakes... things you can touch and feel and see where your money has been spent. However, something every owner should do is spend time, money (or both) setting up the suspension properly. Unlike more normal production cars, the suspension on a Caterham is highly adjustable, the downside of which is that it is possible to have a car whose suspension is set up badly, making the driving experience nowhere near as good as it should be. Of course, it also provides the potential to adjust the setup to make the car into the fine-handling machine that it was designed to be.

There are some members who have the knowledge and equipment to do this in their garage, but there are also many companies with Caterham knowledge that will do this work for you. Northampton Motorsport, who sponsor the Club's Speed Championship, are probably best known for their rolling road engine set up work, but they are also particularly well equipped for suspension work with all the necessary knowledge and



equipment. I recently took my car there for a pre-season alignment check, having had my dampers serviced, and replaced the top wishbone ball joints and track rod ends.

Normally, a customer would first be asked if he wanted a road or a track-focused set up, but as a repeat customer, James, who was working on my car, already knew what I wanted.

The first job was to check the tyre pressures, as even a small error can throw out the corner weighting. With me sitting in the car, the ride heights were checked, setting





the rake angle front to rear. In general, raising the rear will give more oversteer.

After this, the corner weights were measured using scales under each wheel, linked to a computer where the measurements were displayed. In an ideal world, the weight of the car would be even from side to side, but this is clearly only possible in a single-seater. In a Caterham, there is always going to be more weight on the driver's side, so the objective is to get the sum of the diagonals equal by making small adjustments to the spring platforms. This will ensure that the handling balance is similar on right and left hand turns. After some small adjustments to the spring platforms, this was achieved to within 1 Kg or 49.92% and 50.08%.

The next job was to check that the wheels are all pointing in the right direction... more technically known as the camber, castor and toe. At Northampton Motorsport, this

is done using a very clever Hunter Hawkeye machine which measures all aspects of wheel alignment. Plates are attached to each wheel, aligned with some HD imaging cameras pointing at the front of the car. The various angles are then displayed on a computer screen in graphic form.

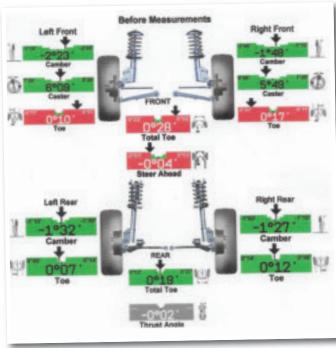
It was a quick job to collect all the current measurements and see where adjustment was needed. Unsurprisingly, the front camber and toe angle needed some adjustment after the recent work on my car. This was set for being track focused with perhaps more camber than many cars, and some toe out.

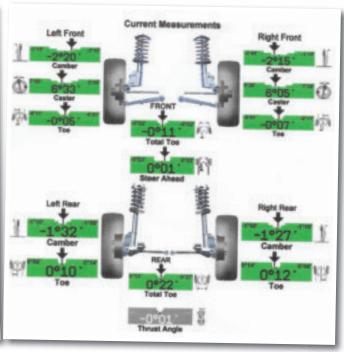
At my last visit, the rear had also been adjusted, so this time no changes were needed. But the rear suspension camber and toe can be a surprisingly long way out, with tolerances on the de Dion tube and rear suspension mountings. This can be corrected by placing shims between the ear and the flange on the end of the tube.

Also checked is the castor angle. This is the angle the swivel axis on the front uprights lean backwards and is adjusted on a Caterham with washers that pack out the lower wishbone mounts. Because of tolerances on the chassis, to get the castor angles equal on both sides does not always mean the equal placement of packing washers — my car has four behind the wishbone on one side and two on the other.

Not requiring adjustment this time was the bump steer. This is the tendency for toe angle to change as the front suspension moves up and down, meaning that on a bumpy road, the car can feel as though it wants to change direction. This can be adjusted by using shims to change the height of the steering rack.

So, a couple of hours' work at Northampton Motorsport gave me the confidence that my car will be ready for a season of speed events, and respond as it should. As for the driver, that may be another matter! LF





CLUB DIARY

APRIL

Saturday 17th

Northampton Motorsport Lotus Seven Club Speed Championship Round 1

Goodwood sprint

Sunday 18th

Seaton To Beer Blat And Walk. Meet at 9am at Seaton Hole (EX12 2PX) - Park on the Old Beer Road. We will walk over to Beer Beach (and have a coffee!) It's less than one mile, but involves an uphill walk over the cliffs. Contact Simon somersetwessex@lotus7.club for more details. Or just turn up.

Sunday 25th

Northampton Motorsport Lotus Seven Club Speed Championship Round 2

Hethel sprint

MAY

Saturday 1st - Sunday 2nd

Donington Historic

50% off weekend or day tickets with pass to infield Club parking. Ticket purchase & event info in Exclusive Members Deals & Discounts

Tuesday 4th

Castle Combe Club novice trackday,

including a session for experienced drivers.

SORRY SOLD OUT

Sunday 9th

Northampton Motorsport Lotus Seven Club Speed Championship Round 3

Curborough sprint (Double lap format)

Monday 24th

Cadwell Park trackday

We are back at this fabulous circuit for a Club exclusive trackday.

JUNE

Saturday 12th & Sunday 13th

Thruxton Historic

50% off weekend or day tickets with pass to outfield club parking. Ticket purchase and event info in Exclusive Members Deals & Discounts – 'Special Offers'.

Sunday 20th

Northampton Motorsport Lotus Seven Club Speed Championship Round 4

Epynt hillclimb

Tuesday 22nd

Brands Hatch Grand Prix Circuit trackday — Club exclusive

sessions. This is a fabulous and fast circuit. If you are an experienced trackday driver, Brands GP is a "must do".

Saturday 26th

Lynton Layby Evening Blat. Early Evening Blat to Lynton (The Clifftop Layby just before Countisbury - What3Words location:pegs.club.angers). Aim to arrive around 8pm. Contact Simon: somersetwessex@lotus7.club for more details.

Saturday 26th

Northampton Motorsport Lotus Seven Club Speed Championship Round 5

Aintree sprint

JULY

Saturday 3rd

Northampton Motorsport Lotus Seven Club Speed Championship Round 6

Barbon hillclimb

Sunday 4th

Lulworth — Durdle Door Blat

Meet at Lulworth Cove Car Park at 10:00 for a walk to Durdle Door. Contact Simon: somersetwessex@lotus7.club

Sunday 11th

Northampton Motorsport Lotus Seven Club Speed Championship Round 7

Loton Park hillclimb

Monday 12th

Mike Scott and Barbara Swift Memorial Trackday. Club Exclusive Day at Castle Combe including opportunity for a 20 minute session every hour for members to run their non-Seven cars.

Sunday 18th

Northampton Motorsport Lotus Seven Club Speed Championship Round 8

Gurston Down hillclimb



Sunday 25th

Northampton Motorsport Lotus Seven Club Speed Championship Round 9

Three Sisters sprint

Tuesday 27th

 ${\bf Snetter ton\ trackday-Club\ exclusive\ sessions.}$

Friday 30th - Sunday 1st August

Silverstone Classic

The Classic this summer is eagerly anticipated, serving up a double dose of automotive anniversaries with all of 2021's major marque and model milestones added to those rolled over from last year's postponed staging of the world's biggest classic motor racing festival. Access ticket discount code by clicking on "Exclusive Member Deals & Discounts" on the homepage.

AUGUST

Sunday 8th

Northampton Motorsport Lotus Seven Club Speed Championship Round 10

Harewood hillclimb

Monday 9th

Anglesey trackday — Club exclusive sessions

One of our most popular trackdays — great circuit, great views and great people. Members travel from all over the country to this event.

Friday 27th

Croft trackday — Club exclusive sessions

This event grows in popularity every year with its friendly atmosphere and quick and exciting circuit.

Sunday 29th

Northampton Motorsport Lotus Seven Club Speed Championship Round 11

Curborough sprint (Figure of 8 format)

SEPTEMBER

Saturday 11th

Northampton Motorsport Lotus Seven Club Speed Championship Round 12

Wiscombe Park hillclimb

Monday 13th

Mallory Park trackday — Club exclusive sessions

This is the first time we have been to this circuit in years, so it is bound to be a popular day.

Saturday 18th

Taffia Fish and Chip Run — more details to follow

Saturday 18th

Introduction to Sprinting

Curborough Sprint Circuit

Saturday 25th

Northampton Motorsport Lotus Seven Club Speed Championship Round 13

Blyton sprint (Eastern Circuit)

Sunday 26th

Northampton Motorsport Lotus Seven Club Speed Championship Round 14

Blyton sprint (Outer Circuit)

OCTOBER

Saturday 2nd

Castle Combe Autumn Classic Historic Racing Festival

Club parking adjacent to the Armco at Westway with ESV. Event & ticket info in 'Exclusive Members' Deals & Discounts'

Sunday 3rd

Northampton Motorsport Lotus Seven Club Speed Championship Round 15

Anglesey sprint (National Circuit)

Monday 4th

Northampton Motorsport Lotus Seven Club Speed Championship Round 16

Anglesey sprint (International Circuit)

Monday 4th

Donington Park trackday — Club exclusive sessions

A great circuit and very popular.

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Area Meetings

to current
restrictions, as we go
to press Club area meetings
are currently on-hold. Please
keep an eye on the Club
website or contact your
AR for the latest
updates.

Please refer to www.lotus7.club/area-meetings for most recent changes. The envelope symbol signifies that an email mailing list is available, to which those interested in receiving information on the area's activities can subscribe (see sidebar for details)

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Bristol & Bath

Venue: Boars Head, Aust, BS35 4AX. 3rd Tuesday of the month, 7.30pm Contact: Brian Hall 07751 816149 bristolandbath@lotus7.club

Buckinghamshire ('Penn Sevens')

The Squirrel, Penn Street, Penn,Bucks, HP7 0PX last Saturday, 12 noon Contact: Mark Williams 01908 521382(h) or 07798 766696(m) pennsevens@lotus7.club http://penn.lowflying.co.uk

Cambridgeshire

The Red Lion 47 High St, Stretham, Ely CB6 3JQ On the 3rd Sunday of each month. Contact: Andrew Gilbert 07968 591485 Cambridgeshire@lotus7.club

Cheshire and Staffordshire, North

The Swan Inn,
Main Rd, Wybunbury,
Cheshire, CW5 7NA
2nd Wednesday, 8pm
Contact: Nick Chan
01782 621818 or 07590 841674
Or: Richard Price
01782 616493 or 07770 617127
email for both:
cheshirestaffs@lotus7.club

Cornwall

AR Position vacant cornwall@lotus7.club

Devon

We meet on the third Sunday of the month, normally for coffee/ breakfast, with a blat to follow. We have social evenings, and impromptu blats as well! (for the latest information visit these pages regularly or contact Terence McCarthy or Graham Wallis 07773 484845 devon@lotus7.club

Dorset

The Red Lion Hotel, Winfrith Newburgh, Dorchester, DT2 8LE. 3rd Tuesday, 7.30pm Contact: Richard Skeets 01202 247710 dorset@lotus7.club

Essex

The Great Baddow Barn, Galleywood Road, Chelmsford, Essex, CM2 8NB. 3rd Tuesday, 7pm and blat the following Sunday at 10am from same venue Contact: Andrew Fielding 07884 318371 or AAR Lynn Hills

Gloucestershire

The Bathurst Arms,
North Cerney GL7 7BZ, on the A435
between Cheltenham
and Cirencester
3rd Thursday, 7.30pm
Contact: Andy Couchman
01451 821982
gloucestershire@lotus7.club

Hampshire, South ('Solent Se7ens')

The George and Falcon, Warnford (on the A32), Hampshire, SO32 3LB Last Friday 20.00 hrs Contact: Steve Biggs 07799 600318 solent7s@lotus7.club

Hampshire, West ('New Forest Sevens')

Venue: Foresters Arms, Abbots Well Road, Frogham, Fordingbridge, SP6 2JA. 1st Tuesday, 7.15-7.30pm Contact: Nick Westbrook 07711 640105 westhants@lotus7.club

Heritage Sevens Group

Meetings are random. Contact: Rod Thonger 07836 271429 heritage@lotus7.club

Hertfordshire

1st Wednesday, 8pm John Bunyan Pub, Coleman Green, Wheathampstead, Herts, AL4 8ES 2nd Sunday, 12pm. The Moon & Stars, Mill End, Rushden, Hertfordshire, SG9 0TA. See BlatChat or contact AR for info on pre-meeting blats. Contact: Dick Dixon 01920 871153 herts@lotus7.club Or: Paul Kennedy 07778 738428

Isle of Man GBM

The Crosby Hotel, Isle of Man, IM4 2DQ 1st Tuesday, 8.30pm AR position vacant IOM@lotus7.club

Jersey, Channel Islands GBJ

Roving venue, please contact for details
4th Sunday
Contact: Mark Le Lay
01534 867743 or 07797 728939
jersey@lotus7.club

Kent, East

The Ringlestone Inn, Ringlestone Road, Nr Harrietsham, Kent, ME17 1NX. 2nd Thursday, 7pm Contact: Garry Hooton. 07778 382239 eastkent@lotus7.club

Kent, North

The Fox and Hounds, Toy's Hill Road, Brasted Chart, Westerham TN16 1QG. 4th Tuesday, 7 pm Contact: Richard Brunero 07974 927618 NorthKent@lotus7.club

Kentish Weald

The Spotted Dog, Smarts Hill, nr. Penshurst, TN11 8EP 3rd Tuesday, 7.30pm AR – Position Vacant kentishweald@lotus7.club

Lancashire and District ('LADS')

The Blundell Arms, Chorley Old Rd, Horwich, near Bolton, BL6 6PY 1st Wednesday, 8pm Contact: Peter Haslam 0161 724 6481 or 07719 541550 Contact: Paul Richards 0161 763 5410 or 07721 564742 Email for both: LADS@lotus7.club www.lads7.co.uk

Leics, Notts, Derbyshire

The King's Arms,
Hathern, LE12 5LD.
2nd Thursday 8pm.
Edward Nettleship 07743 973318
leicsnottsandderby@lotus7.club
Refer to area webpage for directions

Lincolnshire

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The Three Kings, Saltersway, Threekingham, nr. Sleaford, NG34 0AU 1st Thursday, 7.30pm Contact: David Pattrick 07966 171947 Or: Liz Lukeman 07881 912827 lincs@lotus7.club

London, Central

Anokha St Paul's Indian Restaurant & Bar, 4 Burgon St, London, EC4V 5DR last Wednesday, 6.30pm Contact: Fred Gustafsson 07740 944470 centrallondon@lotus7.club

London, South

The Goat, 66 Battersea Rise, Clapham, London, Greater London, SW11 1EQ. 7pm, 1st Wednesday of the month. Contact: Adil Patel 07763 477673 southlondon@lotus7.club

London, West and Middlesex

Ace Café London, Old North Circular Road, Stonebridge, NW10 7UD 2nd Tuesday, 6.30pm
The Hare and Hounds, Wyke Green, Osterley, Isleworth, TW7 5PR
Every Third Saturday, 12.30pm
Reservation at the Hare and Hounds may be required – please let the AR know if you are coming so that a block booking can be made
Contact: Geoff Varrall 07710 020 040 londonmiddlesex@lotus7.club

Merseyside & District Sevens ('MADS')

Thorn Inn, Grappenhall Lane, Appleton, Warrington, Cheshire WA4 4QX Last Wednesday, 7.30pm Contact: Stuart Forshaw 07980 225642 mads@lotus7.club

Norfolk & Suffolk ("Carrotland")

1st Monday, 7pm The Scole Inn, Scole, near Diss, IP21 4DR Contacts: Steve Wright 07789 907646 and Kingsley Young 07774 135220 Email for both:

carrotland@lotus7.club Northants, Beds and Bucks

The Old Swan, Astwood, Newport Pagnell, Bucks MK16 9JS 3rd Wednesday, 7.30pm Paul Cannon, AAR Ivan Pullen northantsbedsbucks@lotus7.club

North Fast

The Old Mill, Metal Bridge, Thinford Road, Coxhoe, County Durham DH6 5NX 2nd Wednesday 7.00pm AR position vacant northeast@lotus7.club

Northern Ireland

David McCrea Contact: 07787 863748 or 02893 350324 northernireland@lotus7.club Please ring for details of meetings.

Oxfordshire

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The Flowing Well, Sunningwell, Abingdon, Oxfordshire, OX13 6RB 1st Tuesday, from 7.30pm Contact: Robert Jacobs 01865285026 oxford@lotus7.club

Reading, North Hants & Berks ('ReHab')

2nd Wednesday and
last Thursday, 7.30pm
The Barley Mow, The Hurst,
Winchfield, RG27 8DE
Contact: Andy Webber 07721 722111
rehab@lotus7.club
3rd Sunday, 1pm
The 'AWESOME' Meet
The Old Hatchet, Hatchet Lane,
Cranbourne,
Windsor SL4 2EE
Contact: Tony Whitley
www.7rehab.co.uk

essex@lotus7.club

Scotland, North

Roving venue – please contact for details Contact: Nigel Simpson 01561 362153 northscotland@lotus7.club

Scotland, Central

Bothwell Bridge Hotel, 89 Main Street, Bothwell, G71 8EU 3rd Thursday in the month Darren Smith 07933 362221 Contact: centralscotland@lotus7.club

Shropshire

The Fox and Hounds, Shawbury SY4 4JG www.foxandhoundsshawbury.co.uk Last Wednesday of the month from 19:00 AR Martyn Edwards Contact: shropshire@lotus7.club / 07565 975513

Somerset and Wessex

The Worlds End Pub, Bradford on Tone, Taunton, Somerset, TA4 1ET (on the A38 between Taunton and Wellington).1st Thursday, 8pm Contact: Simon Houghton 01458 445503 Somersetwessex@lotus7.club

The Swan with Two Necks, Longdon, WS15 4PN (off the A51, between Rugeley/Lichfield) 3rd Thursday, 7.30pm Contact: Roger Needham midstaffs@lotus7.club

1st Monday, from 7pm The Plough, Orestan Lane, Effingham, KT24 5SW 3rd Tuesday, 7pm The Woodman, Woodmansterne Street, Banstead, SM7 3NL Contact: Mark Lawrence: 07894 464900 Email: surrey@lotus7.club

Sussex, East

The Yew Tree Inn, Chalvington Road, Chalvington, East Sussex, BN27 3TB. 2nd Tuesday, 7.30pm Contact: Ian Bruce 07973 291144 eastsussex@lotus7.club

Meets on the last Tuesday of each month at 19:00 for 19:30 at The Red Lion, Chelwood Gate RH17 7DE. Currently without AR, enquires to RCSouth@Lotus7.club

Sussex, West

Contact AR for details of venue as currently roving 2nd Wednesday, 7.45pm Contact: Les Shepherd, 01243 376457 westsussex@lotus7.club

The Pelican, Froxfield (on the A4, 2 miles W of Hungerford), SN8 3JY 1st Thursday, 8pm Contact: Nick Bassett 07768 051428 thamesvalley@lotus7.club

Wales, North

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Roving Venue, please contact AR 1st Tuesday Contact: Chris Proudlove 01492 544514 northwales@lotus7.club

Wales, South ('Taffia')

Steel Horse Cafe Llanvihangel Gobion, Abergavenny NP7 9AY which is located between Usk and Abergavenny. First Saturday of the month and 3rd

Friday of the month, both at 10am

Wales, West ('Nomads')

AR position vacant

The Plough (on the A40 between Llandovery and Llandeilo) Rhosmaen, Llandeilo SA19 6NP, 1st Wednesday of the month at 7pm Contact: Pete Wileen 07739 714565 westwales@lotus7.club

Warwickshire, North ('Bear 7s')

The Red Lion, Main Street, Hunningham, Warwickshire, CV33 9DY 1st Thursday, 7.30pm Contact: Giles Hudson 07976 769022 Contact: Simon Cutler 07732 615204 bear7s@lotus7.club

Warwickshire, South ('Warwickshire7s') 📖

The Falcon. Warmington, OX17 1JJ www.brunningandprice.co.uk/falcon 2nd Wednesday, from 7.30pm. Contact: Philip Ambrose 01608 810269 warwickshiresouth@lotus7.club

Wiltshire, North

040 The Jolly Tar, Queens Road, Hannington SN6 7RP, 1 mile off B4019 (take junction at the Freke Arms) 2nd Wednesday, 8pm Daylight saving & weather prevailing, meeting starts with pre-meet Blat from Jolly Tar car park at 7:30pm Contact: Geoff Brown 01793 876465 wiltshirenorth@lotus7.club

Wiltshire, South

Every third Wednesday of the month, at The Royal Oak, Corsley, BA12 7PR from between 19:00 and 19:30 Contact: Paul Manning 07989 600950 or 01380 828655 wiltshiresouth@lotus7.club

Worcestershire

0-0 The Vernon, Hanbury, B60 4DB Meet on the 2nd Wednesday of every month at 7.30pm Contact: Russell Gill 07549 953262 worcestershire@lotus7.club

Yorkshire, North and East

The Gold Cup Inn, Low Catton, near Stamford Bridge, York YO41 1EA. 3rd Wednesday, 7pm Contact: AR Adrian Oates 07507 760567 neyorks@lotus7.club www.york7.org.uk

Yorkshire, South and Derbyshire, North

The 7th of each month, 7pm (ish) Ladybower Inn, Bamford, Hope Valley, Derbyshire, S33 0AX (on the A57 at Ladybower Reservoir). Contact: Philip and Chris Scown 07718 393492 syorks@lotus7.club

Yorkshire, West and Pennines

March to November at The Fox pub, Menston (LS29 6EB). Email: wvorks@lotus7.club for more information.

Meetings outside the UK

Belgium (B)

Venue to be confirmed Please contact AR for more details Contact: Jean-Marc Bikx +32.(0) 495.249.239 belgium@lotus7.club

Finland (FIN)

Venue and dates variable, contact AR for details Contact: Jouko Paloranta +35850 587 2823 (mobile) Finland@lotus7.club

France, South (FR)

Contact: Peter Dunn, +33 (0)7 86 52 50 29, francesouth@lotus7.club

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France, North (FR)

Contact: Nicolas Callewaert, +33 (0)6 20 45 95 47 francenorth@lotus7.club

Germany (D)

Venue and dates variable, but mostly last Sunday please contact for latest details Contact:Florian Schlüter +49 171 5842375 germany@lotus7.club

Italy

Paolo Granelli amministrazione@lotus7club.it Netherlands

Edward Westenberg secretaris@sevenclub.nl

New Zealand (NZ)

Meeting place and times currently variable; please contact for latest details. Contact: Nigel Riches 00 64 3318 1440 nigel.stephanie@xtra.co.nz

Portugal

Andre Araujo +351962352924 andredmaraujo@icloud.com

Tomas Bengtsson secretary@lotusseven.se

Switzerland (CH)

Lotus Seven Owners Switzerland meet every 2nd Thursday of the month at 19:00 Rest Chommle, Chommle 1, 6222 Gunzwil. Contact: Ruedi Traffelet +41 79 520 52 00 and every last Friday of the month at 19:00 Rest Tobel, Tobelstrasse 17, 8632 Tann. Contact: Steff Jappert +41 79 746 03 47 www.LSOS.ch

ISA, Michigan (USA)

Meeting place and times currently variable; please contact for latest details. Contact: John Donohoe 00 1 517-655-5125 (h) johnd@simplesevens.org www.simplesevens.org

In order to facilitate email communication with members, mailing list facilities are available for the majority of the Club's local areas and special interest groups. The idea is that Area Representatives and Event Organisers will be able to send out details of local events, special offers, ad hoc meetings, blats, etc to any member who has registered to receive undates for those specific areas(s). As a Club member, we strongly recommend that you subscribe to at least your local geographic area so you get to hear about events local to vou. However, if you wish to be kept informed of events and activities in other areas (perhaps other adjacent areas or close to work or to where friends and family are located) then you are free to subscribe to as many other area lists as you wish. To subscribe to any area(s), simply login to your "My LoveAdmin Account" link through our website, go to the "payment" menu (don't worry, it's all free!) and add any of the areas to your account. If you want to check which areas you have joined, click the dropdown option at the top of your "Personal Details" Page.

You may of course unsubscribe from any/all lists at any time, and your email address will not be revealed to any other parties (apart from the AR or EO sending the messages to the list). They aren't "discussion lists" but are intended for announcements, and any reply to an email received will only be sent to the originator. The address to which you will receive the emails will be the one that you have provided to the Club's membership secretary. If you change your email address, please update it in your "My LoveAdmin Account".

PROTECTING YOUR DATA

The Lotus Seven Club takes the protection of its Members' data seriously and it should therefore be noted that individuals may withdraw consent at any time for AR contact and/or Club event/marketing emails.

Similarly, individuals may also request a copy of the information that the Club holds on them.

An individual's information may be deleted from Club records upon request; however, certain information may be retained in order for the Club to meet its legislative requirements. For any of the above, please contact the Club Office: adminteam@lotus7.club/ +44 (0)1873 777303



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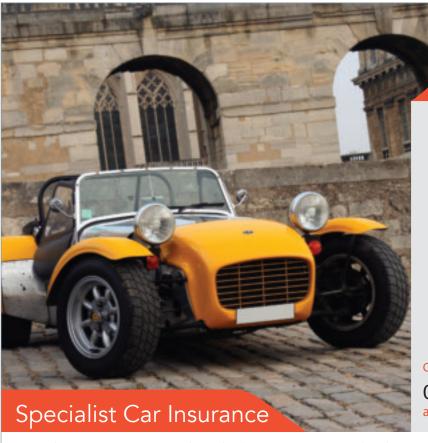
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A TALE OF TWO CATERHAMS

"Just what is it about Sevens?" asks **Peter Bullen** — with support from his son Joe

ockdown and winter weather mean that Caterham driving is out, but it does give time for a little reflection on the joys of Caterham ownership. I guess that a good starting place for this reflection would be back in the early '60s; I would have been about 15 years old, so that puts it at 1963. I had a passion for bicycles, but was also developing an interest in cars and had recently read about, and been impressed by, the Lotus 7. And then I saw one. In fact, one of my brother's friends had bought one second hand. I don't remember the details, but I do remember a crowd of older lads gathered around it outside my local youth club and distinctly remember the thought "I would like one of those!"

It didn't quite work out that way, my first car being a 'sit up and beg' Ford Popular, purchased for the princely sum of £30.00 and complete with a three-speed gearbox (which jumped out of second gear), inlet manifold vacuum-driven wiper, semaphore indicators that only worked when you thumped the 'B' post very hard and rod brakes. All of these features made for an interesting drive across the Alps in the late '60s, an unforgettable experience, when I chose to go driving around Europe after finishing my engineering degree. I never achieved a good balance on the front brakes, so driving down mountain passes could be a bit 'hairy' as the car slewed towards the edge of the road!

The Caterham story resumes many, many years later after numerous cars, some good and some not so good. Digressing, my favourites to drive were an MG Magnette ZA



The Supersport completed – it works!

(unfortunately more rust than body) and a Convertible Triumph Vitesse (not ideal for a young family, but that's all another story). A Rover 110 was also fun as it was fitted with overdrive, operated by a switch under the accelerator pedal.

We need to move on a good 35 to 40 years, to the '90s when I was parking up at work one morning to see a couple of my younger colleagues standing next to two gleaming Caterhams. If my memory is correct, one was a Vauxhall-powered HPC with windscreen and classic swept wings, the other a Cosworth BDR-powered Caterham with aero screens and cycle wings. The memories from years earlier swept

back into my mind, and I had to find out more. A ride in the Cosworth, preceded by advice on how to get into the car, soon followed. The words of my work colleague stick in my mind: "Peter, you don't get into a Caterham, you wear it". Once these thoughts about owning a Caterham have been implanted, there is no turning back, all you do is try to justify why you must get one! For example, I was also looking for a project that I could do with my youngest son Joe, who was just turning 19 and who (in my opinion) needed 'something to get his teeth into' — a car build would be ideal... So a trip down to Caterham Cars ensued, complete with a test drive for Joe. His smiling face on



My first car, somewhere in Europe. Well it was the "Swinging '60s"!



1997 Caterham Supersport badge

returning from the test drive confirmed that this 'project' would appeal. So with, a little help from my work colleagues, a Caterham Supersport was specified with a 6-speed gearbox, thought to be the best match to the 1600 K-Series engine characteristics.

I had most of the tools I needed, and could borrow those that I didn't, and I was fortunate to have a access to larger, although rather basic, garage up in Suffolk for the build (the one at my North London home was only just large enough to store the completed car). So the project was 'go' and the order went in. Delivery was in May 1997, and the car was finished in August. It was mostly a very smooth process, the toughest part being getting the engine in... it's a tight fit! I only remember calling Caterham once for advice... But the engine fired up easily and a tentative drive down the un-made private lane to check that everything worked went fine. That euphoric feeling still sticks in my mind...

Now to get it out on the road. In those days there was no IVA test, so once taxed and insured, you could drive it on the road. After a visit to the DVLA offices in Ipswich, followed by a return visit by the DVLA to our Suffolk garage to check we were indeed amateur builders, the paperwork was complete and we were ready to go. Off we went around the Suffolk lanes — I remember it well. The first drive of a Caterham is something you don't forget; it felt as though it was part of you, responding rapidly to the slightest movement of the steering wheel and that distinctive surge of power once you were in the right rev range. First impressions were 'hairy' and 'twitchy' but it soon settled down and felt as though the car and driver were as one. So we had some fun, Joe and I. The first trip was to drive it down to Dartford for its post-build check. Looking back, I wonder if this was sensible or maybe we were over-confident? Would it have been more sensible to trailer it down? Anyway we got there in one piece and the car was declared safe.

Then a drive back home to the smaller garage...it fits! One thing we were keen to do was tidy up the wiring around the engine. A chat with my work colleagues introduced me

to Demon Tweeks, which led to the purchase of cable clips and ties, and all was soon looking much more professional. We used the car for 'blats' (were they called that then?), mainly between North London and Suffolk and I also found the car to be a good source for final year undergraduate projects on trying to reduce driver/passenger buffeting. I was lucky in having access to wind tunnels and later to CFD, and supervised many a student project, in particular evaluating the effectiveness of a mesh behind the seats in reducing buffeting. I don't think 'Soft Bits' had started marketing their screen then, but could be wrong. I had one enterprising student who had spent his year in industry at Gaydon. He managed to persuade Caterham to loan him

a car to drive around the

Gaydon test track to evaluate various screens, and I was lucky to be invited to join the fun. I imagine he will have gone on to great things and I wish I had kept his final report and remained in touch!

Joe had moved up to Manchester by now, and some years later we decided to add an extension to the house. This meant temporarily emptying the garage and driving the Caterham back to its birthplace in Suffolk. For various reasons it remained there, taxed only for six months of the year and driven infrequently. I started to fret about this, especially in 2012 when it covered the sum total of 25 miles for the year. What a waste! I started to think, very rationally, that I would rather see it used by someone than sit unused in my garage in Suffolk. So after sending some photos, Caterham agreed to a purchase it, and the car

POST BUILD INSPECTION CERTIFICATE Caterham Cars hereby declares that the vehicle detailed below has undergone a complete safety inspection by the manufacturer or approved agent and has been deemed fit for general road use. NAME MR PETER BULLEN DETAILS 1600 K SERIES SUPERSPORT ANNIVERSARY GREEN/YELLOW STRIP DATE 6 ADDEST 1997 COMPANY STAM TO ON BEHALF OF CATERHAM CARS LTD

> was collected in September 2013 after 16 years of proud ownership. As I said, all very rational. A few days later, confirmation of the purchase came from Caterham, together with the words "It's a beauty" and that's when the "gnawing feeling" really started. What have I done? Why did I sell it? By this time, Joe was back in London and he was mortified. I tried to explain that it was all very logical, but deep inside there was this emotional emptiness that's hard to explain. I find it hard to understand how an inanimate object can generate such emotion. What is it with Caterhams?

> The next 21/2 years were "Caterham-less", but the thought that "maybe I could buy our old car back?" started to germinate. Eventually, the thought gave way to action and in early 2016, I put in an enquiry to Caterham to see if I could contact the purchaser of my old car. The kind folk of Caterham Cars did this for me but... it was not for sale. Maybe, just maybe, I could build another one? About this time, the Seven 310 had been conceived and the spec showed that although it used a different engine, it had a similar performance to my old Supersport. The Sigma engine has flatter torque and power curves which to my mind better matched the (also cheaper) five-speed gearbox. I had retired from full-time work by now, so a project was ideal and in late 2016 (after a chat with Joe which confirmed that yes, he was up for another build) a budget was set and a trip to Caterham arranged. After a drive in a Seven 310R and a detailed discussion on specification, the deposit was paid in December 2016, for a planned delivery next June. It took a couple more trips



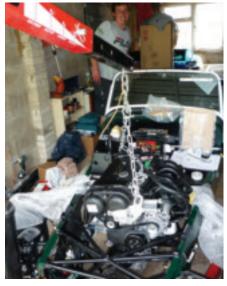
Saying goodbye to the Supersport, September 2013

to Caterham Cars to finalise the details, and I ended up deciding on a replica (almost) of my previous car — a Seven 310S painted very similarly to the Supersport, but with a few extras such as uprated brake master cylinder and sequential shift lights. Then guess what happened in early 2017? The owner of my old Caterham contacted me to ask if I was still interested in buying it back! Too late, I was now set on building a new car. Delivery was as scheduled and our second build commenced in June 2017.

Front steering rack in and front suspension arms on, but hang on a minute, these bushes don't fit properly. First phone call made to Derek and new bushes are in the post. We need to head back to London, "Oh well, there's no rush". However, this proved to be something of a pattern, why is the build so much harder this time? Numerous telephone calls to Derek were to follow as various parts were missing and we kept finding that "the manual says this, but it doesn't look right". Derek was a superstar — he certainly knows his stuff and is extremely helpful and responsive. Then there were the mistakes we made. We decided we needed an extended period in Suffolk to fit the engine and as I no longer had access to an engine hoist, I'd need to hire one locally. So on one of our shorter trips, we decided to do things outside of the recommended build order and to fit the differential and rear suspension before putting the engine in.

It all started well, including balancing the differential on a jack whilst we guided it into place to get the long bolt in remarkably smoothly. All bolted up, we could stand back an admire it, with the plan that next time, we would get the drive shaft in, ready for the engine installation. At least that was the plan. As it turned out, next time involved removing the rear suspension and differential so we could slide the drive shaft into the narrow gap in the chassis, the only way to get it in. We should have stuck to the order suggested, or at least have read the build manual properly before starting! Anyway, we became well practised with the rear suspension assembly. The engine went in relatively smoothly and seemed easier than our first build, probably because we used a chain (purchased from the local chandlers) attached to the engine brackets rather than straps around the engine as we had the first time.

The aim was to finish the build by October, as I had to go to Australia for a couple of weeks on family business and we hoped to have Caterham do the post build check and IVA while I was away. It didn't work out like that — the build was certainly harder this time around. It was partly due to missing parts and partly due to inconsistencies in the build manual which required interpretation, sometimes correctly. There were also some annoyances such as rear wings we discovered were scratched when we unwrapped them, which were thankfully repaired by the good



Ford Sigma engine going in.

folk at Caterham South during the post build check. The additional work for IVA preparation was also very time consuming, and only completed after my return from Australia. Starting the engine didn't go smoothly either. The ignition switch appeared faulty, but a tenacious Joe discovered that if you held the switch on in a very special way and pushed the starter button at the same time, the engine would fire. Something was obviously wrong, but at least we knew that the engine ran. We also weren't happy with the feel of the clutch. After spending a long time filling and bleeding the system it worked, but just didn't feel right. Another unexpected issue was rodent damage. Mice had got into the garage when I was away and had eaten their way through a rubber 'bung' on the engine inlet, and chewed some cable insulation — what a pain! By early November however, the car was finished, although this time I wouldn't have wanted to drive it down to Caterham, even if I could have, so collection was arranged and the car was duly taken away for its post-build check and IVA.

Some annoying rectifications had to be done



The exhaust system in reflected glory

before the IVA, such as removing the gearbox mounting washers we had put in (I'm sure the build manual said otherwise!) correcting the front brake fittings (how can we have got this wrong?) and replacing some defective parts that had been factory installed e.g. the ignition switch and clutch master cylinder. The good news was that once this was all done, it passed IVA first time and was ready for collection in mid-December 2017. Caterham South had done a good job on the marked wings with no sign of any damage and the car ran well on its first drive back from Crawley. Not the best time of year for a Caterham trip, but we were determined to use it. The first proper blat was up to Suffolk in January 2018, and some drives around the locale to Orford.

This was followed by an interesting drive back home when snow started falling around Bury St Edmunds. Driving a Caterham past a gritting lorry is an interesting experience, and not one to be repeated. Early impressions were that the car was good, but the clutch still didn't seem right. It would be fine some days and then suddenly the clutch pedal would go 'floppy' but then immediately recover.



I'll just sit here and pretend, while Joe finishes it



Leaving for its post-build check and IVA

Having covered around 800 miles, it was back to Caterham for the first service when the clutch fluid was replaced and clutch operation declared OK. Determined to use the new car more than the previous Supersport, we arranged a major trip to Devon in June 2019, including a drive across Dartmoor.

Sevens make great 'father and son' projects

We were definitely using it more throughout 2019, but then some other problems hit. Driving back from Suffolk in torrential rain (it was dry when I set off!) in the outside lane of the A505 near Baldock, the ignition suddenly cut out — scary! I managed to get it on to the grass verge, just! What to do in torrential rain with no ignition? Fortunately, I hadn't cancelled my Green Flag cover and managed to call a truck to take me and the car, rather ignominiously, back home. Now to find the fault. As the problem happened in pouring rain, it was bound to be a blown fuse, wasn't it? No such luck. A look on the Club web site

suggested a problem with the speed sensor. A visual check indicated that this was all OK with the wires intact, so a telephone call to Rob at Ratrace, followed. Rob is a great guy, really helpful. As it turns out, he lives fairly near me so he called in on the way home from work, way beyond the 'call of duty'. But even though we got some signs of life, we couldn't get the car started. Then an email to Caterham, explaining the issue. Again, they were really helpful, suggesting I try to swap the relays around to see if the ignition relay had blown. Hey presto it worked, so they then sent me a couple of replacement relays. Now it was up and running — or so it seemed — but then on the first drive I found that the speedometer was showing zero. So, straight back onto the drive to get the car up on axle stands to inspect the speed sensor and wiring. Whilst the wiring looked OK, I found that one wire from the sensor at the harness plug end was actually loose inside the socket and had come away from the connector, so the reason for the relay failure was this, and nothing to do with the rain. Never jump to conclusions! I'm still not sure



Driving across Dartmoor, June 2018

why it didn't blow a fuse before taking the relay out? Caterham very helpfully sent me a new speed sensor/plug assembly and although the sensor was slightly bigger than the previous one, we were soon back 'in business'. The next problem was a reappearance of the clutch issues. Caterham took the car back, bled and refilled the system again and declared it was OK. It did seem fine, but why should this be happening I wondered?

We stared 2020 by getting the car checked over by Rob at Ratrace and then COVID-19 struck and the car remained in the garage during lockdown. As restrictions eased, the car was readied, battery checked and half hood purchased ready to go. First trip out, having covered 60 miles or so and suddenly the clutch pedal went 'floppy'. This had to be properly fixed, so after a discussion with Rob, we decided that the clutch slave cylinder needed changing. As I mentioned, my North London garage is not big enough to work on the car, and what with Covid restrictions, I decided the best course of action was to ask Rob to do the work. The next issue was getting the required part; it eventually came into stock at Caterham and was duly fitted in July, so we were back up and running, the clutch feeling much more secure. Unfortunately, the next stroke of misfortune was somebody driving into the back of the car while it was stationary at a pedestrian crossing! It was an insurance job, and by the time we had obtained approval for the work and got hold of the panel, it was getting into autumn. We did however manage to get to a West London Area gathering, all appropriately socially distanced, thanks Geoff for arranging it. I hate to admit it, but this was the first Club event I had actually attended, but it was good to meet fellow members. Then, Tier 4 restrictions meant the car was back in the garage waiting for 2021 — let's hope for a better year for everyone! Our Caterham plans for 2021, once restrictions are eased. are to attend more Club events and to do some road trips. I'm particularly interested in seeing Hadrian's Wall, so the idea of driving up to Northumberland in the Caterham is beginning to form in my mind.

So, in summary, what is it about Caterhams? From my first Caterham I learned: You wear it, you don't get into it. It becomes "part of you", responding to the slightest command. It forms an emotional attachment to you; and from the second one I learned: It satisfies "a need", but can be both challenging and rewarding when you overcome the challenges.

But both confirmed that Sevens make great 'father and son' projects, and that there's nothing like a Caterham when it comes to driving fun. I should also mention the tremendous help and support that's available through the Caterham owners and supporters "family". LF

REMEMBERING BRIAN HALL

Our Club mourns an enthusiastic and popular AR

he Lotus Seven Club suffered an immense loss in early February with the death of Brian Hall. AR for the Bristol and Bath Area since early 2018, Brian was always amazingly generous with his time, equally happy spending hours on the phone with local Club members as he was visiting novices to offer advice or assisting others with their upgrade and maintenance plans. Brian's generosity extended to helping arrange and run Club events too, and he willingly jumped in to help organise the Club's Dunsfold Handling Day and to marshal at Castle Combe.

Brian was highly passionate about his Caterham and caught the trackday bug after attending the first novices' event that the Club ran at Castle Combe circuit, after which he participated in quite a few more events. In fact, a photo of Brian turning in to Castle Combe's Camp Corner graces this year's Club calendar, and that image of him at the wheel of his Seven is a great way to remember his infectious enthusiasm. Brian was always willing to get involved and help, and when the call went out to the AR community for volunteers to step forward to form a new interim management team (AR9), Brian was amongst the first to volunteer. This led to him being appointed a Director of the Club and Company Secretary, roles that he maintained right through to his passing.

Prior to his retirement, Brian lived in France for 20 years years with his wife Julie and son Oliver, where he held a number of senior positions supporting Airbus in Toulouse. As CEO of Testia Ltd, a UK-based wholly-owned subsidiary of Airbus specialising in non-destructive testing, Brian was immensely proud of his team's achievements across a range of high-profile projects. His career included time on the A380 programme, and Brian always had plenty of anecdotes to share about avionics test flights and safety testing.



Trackday Lead Simon Maitland recalls "I first talked to Brian a couple of years ago when I was planning a Club trackday at Castle Combe. As the local AR. Brian offered help and when I asked about where we should have a pre-event meal, he willingly said he would sort it out. It was organised in a matter of days — Brian certainly got things done!". Membership Secretary Simon Houghton echoes the sentiments "I got to know Brian when we started to work on the AR9. He was a thoroughly decent fellow and keen to get the Club back on its feet. He was busy in the background solving the various Club issues and problems that inevitably crop up, but were unknown to the most of the wider membership. He loved engineering, and would talk passionately about aircraft and cars. His common sense, humour and organisation skills will be much missed."

Area member John Martin remembers: "Brian was always a great ambassador for the Club and seemed to have talked to everyone in the local community. He was also passionate about making the Club a friendly and relevant place to be. He was eager to take ideas from Club members and was always looking for events to hold. One thread started at a monthly meet where I suggested a summer BBQ; before I knew it, we were meeting with the landlord to discuss getting the field behind the Boars Head in Aust mowed and a burger van sorted for the summer Club meeting".

Former Gen. Sec. Roger Needham told Lowflying: "As has so often been the case over the past year, I first 'met' Brian on a Zoom call when he stepped up to join the group. With him living in Avonmouth and me up in Derbyshire, we sadly never met in person, but even on that first call, Brian's commitment and enthusiasm were self-evident. As usual, we probably spent as much time chatting about Sevens and other cars as we did about the Club matters we were meant to be discussing, but eventually the conversation turned to some of the practicalities of being Company Secretary of the Club, a role which he took very seriously. Our conversations continued off and on throughout 2020, and Brian's passion for the Club, along with his practical, down-to-earth experience meant that he was successfully able to push matters forward from within the AR9. Sadly, during the latter part of October, it became clear that Brian was experiencing some serious health challenges, but being the ever-positive soul he was, our conversations remained focused on the Club and cars. It was therefore with great sadness that we learned Brian had passed away in February this year. The Club has lost some absolute stalwarts over the last year, but of course, our primary thoughts and condolences must be with Brian's family and close friends. May he rest in peace." LF



Brian always offered his advice freely







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