



FOUNDATION

Chairman's Notes

As I write this there are encouraging signs that lockdown will be eased and that some semblance of normality will return to Foundation activity. Nevertheless, 2021 has already commenced with positive undertones. Those of you who attended our last AGM will remember that in my opening remarks I referred to agitators on a bad-faith mission who sought to cause harm to the charity and its officers. In the last few weeks those activities were tested in court. Following impressive testimony by Mrs Pedler and Counsel, in the two cases both judgements and costs were found in favour of the Foundation. The judgements are public documents and I will not comment further other than to report that the words 'vexatious litigant' were used. It will be interesting to follow any next steps.



As I previously reported, the Foundation is developing a relationship with the UK heritage skills networks. In that respect we have loaned two V8 engines to Bicester Heritage for the purposes of apprentice training projects. Once work has commenced, candidates for a Royce Award will be considered. We are planning relevant member visits to Bicester, Brooklands and also to RAF Conningsby (the Battle of Britain Memorial Flight) to see at first hand their skills activities and facilities. In order to inform members of the ambitions at Bicester, their Chairman Francis Galashan has provided an informative article below. As some of you may be aware, a joint sub-committee of both the Club and Foundation is undertaking a root-and-branch review of archive management. Its brief is to clarify the current position and to provide an appropriate road map for the future that will be agreed and implemented. The outcome will be a long-term solution. I am confident that the team will, without any need for interference, deliver a positive and beneficial outcome.

The last Charity Commission Compliance Audit recommended an update of our Articles. A draft is now being submitted to the Commission prior to member sign-off. Furthermore the Trustees have agreed to strengthen Board Governance and appoint a financially qualified Trustee with charity knowledge later this year. Should members wish to see the job description in anticipation of an application, our recruitment advisor can be contacted through John Baker or Jo Hover at the Hunt House.

Finally, now that the UK can see light at the end of the Covid tunnel, let's try and generate positivity and fun into our mindsets. Life really is far too short to be consumed by negativity.

Bill McGawley OBE

AGM 2020 Q&A
To follow next time!

Heritage engineering apprenticeships



Coachbuilding apprentices at the new Brooklands Museum Skills Academy pose with the Napier-Railton

I am Chair of the Federation Skills Trust, a registered charity whose object is the advancement of education by promoting the training and teaching of engineering skills. We are extremely grateful that the SHRMF has actively supported the desire to reinvigorate 'old fashioned' apprenticeships from the very beginning of this programme in 2015.

'Young people don't want to get their hands dirty these days' or 'Further Education Colleges might be alright at teaching hairdressing, but not welding'. And so a generation of disillusioned restoration employers took what they could get from the modern motor industry and tried to cajole other skilled staff such as machinists to work on part-time well into their 70s. By not believing in apprenticeships, those employers have now sleepwalked over the last 20 years to where they have ended today.

Survey data now shows that 75 per cent of employers face problems recruiting staff – applicants have neither the knowledge or the hand skills necessary to do quality work on heritage vehicles. Light vehicle apprentice training has for the last 20 years been largely about diagnosis and component exchange. The very last apprentice to be shown a carburettor is now, believe it or not, 56 years old.

The scale of the problem is considerable. There are an

MATTERS

Hunt House treasures

As lockdown restrictions loosen we hope for this feature to resume in our next issue

estimated 23,800 employees in 4,000 small businesses in the heritage engineering sector according to the Centre for Economics and Business Research. 665 skilled technicians retire from these businesses every year and anecdotally the number of employers who report that light vehicle technicians 'haven't worked out' is considerable.

And so in 2015 a number of organisations, including the Federation of British Historic Vehicle Clubs, Bicester Heritage (where I was founding Chair), P&A Wood and the SHRMF started a specific apprenticeship programme in Classic Vehicle Restoration. This course at levels two and three is still being taught around the country but has since been superseded by a new 'employer-led' apprenticeship scheme.

In 2018 the Government introduced 'Trailblazer Standards' which were directed by industry consortia rather than by traditional training providers and awarding bodies. The aim was to ensure that what was taught truly reflected what employers were looking for.

As an industry group we insisted on a standard that was not just about motor vehicles, but which had at its core good, old, transferable engineering skills. Apprentices needed to learn everything from how to use a file properly to how to read drawings and how to problem-solve. This common engineering core of the Standard then splits into six 'pathways': Vehicle mechanical; Vehicle coachbuilding; Heritage Steam – boiler smithing; Heritage Marine; Heritage Aviation; Heritage Steam – mechanical.

Both your Chairman, Bill McGawley OBE, and I sat on the boards to help write the new standards. We negotiated a £26,000 funding band for a level three apprenticeship over 42 months – one of the highest funding bands awarded by government, reflecting its value as a true engineering apprenticeship. This contrasts with modern light vehicle training at only £15,000 for 36 months.

The net result has been that the apprenticeship programme has since gone from strength to strength. There are now over 100 apprentices on the vehicle mechanical pathway and coachbuilding courses have been boosted recently by the opening of a third skills centre at the Brooklands Museum, in addition to the original ones at Bicester Heritage and Bridgnorth. Work continues on getting the other pathways up and running with boiler-smithing just started and heritage marine due soon.

So why this change from the disillusioned past? Firstly the quality and motivation of specialist training providers:

'Our apprentices tell us ... they find the learning facilities and quality of the training to be excellent. The programme is extremely well organised in comparison to our experience with other training providers...'

'[The] Heritage Skills Academy has made the difference between giving up on apprenticeships altogether and making them the backbone of my staff skills programme.'

We have found specialist training providers such as the Heritage Skills Academy to be extremely employer-led. Private apprentice providers only get funding for every employer they recruit and, importantly, retain. They also value any repeat business from restorers so go the extra mile in both apprentice selection and quality delivery.

Secondly the quality of apprentice candidates. Rather than not wanting to get their hands dirty, the opposite is true. Many applicants would have, in the past, gone to



An apprentice career-changer learns English wheeling skills at the Brooklands Heritage Skills Academy

university as good calibre entrants. The 'earn as you learn' message is getting through – that a quality apprenticeship brings a great career start without the £30,000 debt that a degree brings. We also have a number of career-changers, for whom the appeal of doing something tangible instead of a virtual working life is a strong motivator to switch career. Modern apprenticeships are not age limited. Craft skills make satisfying work and increased value in these trades reflects a changing societal view around repair culture etc.

After nearly four years and passing a rigorous end-point assessment, many of these level three engineering technicians will then go on to enjoy a productive career as fully-skilled mechanics or coachbuilders. But for some others this may be only the beginning of their journey in an engineering career.

I frequently tell of a young man I met. Neither of his parents had an education, but as he was bright at school, they encouraged him to become an accountant. However, he volunteered on his local steam railway and after a time they offered him an apprenticeship. When I first met him he had just received his Chartered Engineer qualification at what was then Westland-Augusta helicopters, on the blade test programme.

Heritage Engineering Apprenticeships can be a gateway drug for bright young people. Who would have believed that an obscure designer of cranes who studied engineering at night-school would end up making the finest motor cars in the world or the aero engines that arguably won the war for the Allies?

We thank everyone at SHRMF for your continued and invaluable support of these talented young people who will become the future keepers of the internal combustion flame. If you would like to be added to our quarterly newsletter, then please e-mail me at fg@federationskillstrust.org

Francis Galashan, Chair of Trustees, Federation Skills Trust

LECTURE LIST 2021

Please contact the office to reserve your place on any of the following:

WEDNESDAY JULY 7th 2021.

“The Gloster Meteor and its Development” - Rod Dean

THURSDAY SEPTEMBER 2nd 2021.

“The RAF ‘Battle of Britain’ Flight”
– Sqn Ldr Mandy Singleton

WEDNESDAY OCTOBER 6th 2021.

“The Fall and Rise of Rolls Royce Ltd” - Alan Edge
Unfortunately this lecture is cancelled. We hope to follow-up with a rescheduled date in the future.

WEDNESDAY OCTOBER 13th 2021.

“A History of the RB211 Engine” – Phil Ruffles

COVID-19 regulations are still fluid and an unknown quantity so please keep an eye on our website for up to date details.

WEDNESDAY NOVEMBER 3RD 2021.

“Sixty years at the sharp end” – a pilot’s retrospective on 60 years of change
- John Hutchinson

SATURDAY 20th AND SUNDAY 21st NOVEMBER

Royce Heritage Weekend and Foundation AGM

Experimental Rolls-Royce 20hp, chassis number 4-G-II



4-G-II during Henry Royce’s use of it



Arriving at James Black’s workshop...



...with its unsuitable cabriolet coachwork



Stripped of its body work



The Foundation has asked me to provide a series of articles on one of my restoration projects and I have decided to narrate the story of an important 20hp car. The restoration of this historic small horsepower Rolls-Royce is a departure from the usual for me, being more often involved with early 40/50hp cars.

One of the main reasons for choosing this project as a topic is that it was Henry Royce’s personal car for a number of years. Being a prototype and one of the earliest produced, it remains the oldest survivor. I have been asked to complete this article in a number of sections; the first detailing the acquisition of the car, the initial research and assessment and the action plan for restoration. I hope dear readers you enjoy the following.

20hp for the Riviera

The decision by Rolls-Royce to complement the Rolls-Royce 40/50hp with a lighter, smaller car was probably made during or just after World War I. It was clear to all that the long-term market for the big car would not return for some time and a smaller, lighter and cheaper car would be desirable to post-war motorists. This car would primarily be an owner-driver car and was designed to carry bodywork as light as possible, preferably the open touring type so prevalent in the late Edwardian and early post-war period.

Henry Royce did not envisage his new baby would replace his masterpiece, the side-valve 40/50, rather it would complement it until the times of austerity had passed. Several experiments were undertaken, one of which was named ‘1 Goshawk I’ (using the name of a bird of prey for a new project was by this stage company practice). 1-G-I was very much a factory-based prototype using a twin overhead camshaft engine and a torque tube type rear axle. The engine was complex and complicated to make and it was decided it would be too expensive for a production car within the price range envisaged by the company.

The next experimental chassis was given the chassis number 2-G-II, starting the series code named Goshawk 2. This car had an overhead valve push-rod engine, an open prop-shaft and a very conventional three-speed centre change gearbox. The gear change position being a departure from established Rolls-Royce practice, this car became the template for all future 20hps. A series of cars were built and used by the experimental team to assess the viability of the design, with arduous road trials being the order of the day. Cars number one, two and three have disappeared and the oldest surviving experimental 20hp is chassis number four.

4-G-II was built at Derby and was completed on December 10 1921 (making it the only 1921 20hp surviving). It was allocated the registration number CH 2892 and Henry Royce was heavily involved in instructing the coachbuilding house of Hooper regarding its body construction. Surviving documents state the order specifies ‘a polished instrument board and wings, valances and running boards to be exactly to Mr Royce’s design’. He also specified ‘a sloping foot rest to the rear compartment forming a toolbox and the front floorboards to be covered in rubber’. All these features survive on the car except the toolbox. In March 1922 the car was driven by Royce, accompanied by Ernest Hives, down to Royce’s winter home at La Canadel on the Cote D’Azur. It was used extensively over the next three years by Royce and he clearly liked the car. In March 1922 he reported, ‘The ignition is now going well on 4-G-II and I am very pleased with the car which I am now driving myself. The roads are so rough here that it takes time to sort out what is a bad road and a good car’.

The previous March when the car arrived at La Canadel a memo was issued by A G Elliott, the head of Royce’s design team, to Basil Johnson who was the General Manager at Rolls-Royce, stating, ‘Mr Royce has no objection to being photographed in the Goshawk, he would prefer to be in number 4- Goshawk II’. Several photographs exist of Royce in or with this important experimental car.

FOUNDATION MATTERS



In 1925 after Royce had the use of the car both in the south of France during the winter and in the summer at his residence at West Wittering, it was finally returned to the factory, where it was to be made good for sale. It was fitted with a replacement engine from another experimental car and then in October 1925 it was sold, initially to Sir Frederick Hewitt, who was physician to the King. It then went through several other owners and at some stage, possibly in the mid to late 1940s, the Hooper touring body was removed and a Gill of Paddington, all-weather cabriolet body was fitted.

This was a most unsatisfactory decision, the body fitted was from a 40/50hp, much too heavy and big for a 20hp. The body had been altered and shortened at the scuttle and overhung the rear cross-member by five inches.

I have known of the car for many years and on July 1 2020 I was fortunate enough to be able to acquire it. On bringing it to my workshop, my initial feeling was, although the body was wrong, the chassis was in first class condition. Chassis records indicate various modifications completed in the early 1930s; improved exhaust manifold etc. However, more importantly the original Hooper wings, valances and running boards have survived and also the front floor boards, which were originally fitted to the Hooper tourer, are present and in good order.

Having stripped off the beautifully built but thoroughly inappropriate cabriolet body, and after considerable and exhaustive research including a trawl of the Hooper archives held in the Science Museum (and with close reference to all surviving photographs of the original car), I have commissioned a new, open touring body to the design of the original. This brings the car back closer to the style and weight of the original envisaged by Sir Henry Royce.

It is vitally important when one is working on an historically important car such as this to not only be mindful of historical accuracy but to ascertain what is original and what has been added in the period. With this being an experimental car, obviously pieces were added or taken away as detailed by the late Ian Rimmer in his excellent book *Rolls-Royce and Bentley Experimental Cars*. 4-G-II was the third chassis, painted grey, however in late 1922 it was repainted in burnt umber. Royce was impressed with the colour change and commented it was a most suitable colour for an open car in the sunny climate of the south. Following a 40-mile trip at the end of January 1923 he reported that he was very pleased with its power, speed, silence and the body seemed the best type for an open touring car. He demonstrated this by climbing La Turbie, a severe hill, in top gear with three occupants (this is the notorious road in the south of France which claimed the life of Princess Grace of Monaco years afterwards). The car was back and forth to Derby to have modifications added and taken away, and the results can be

seen on the scarred face of the firewall which has many holes – some beautifully repaired with aluminium plugs and others having bolts or screws fitted to blank them off. I intend to leave this all in-situ to bear testimony to the experiments that were carried out on this chassis.

As should be expected, detailed examination of the chassis throws up many technical questions as yet unanswered. For example, we are told in John Fasal's research that the handbrake on the early three-speed cars was initially on the passenger side of the gear lever and in 1924 at chassis number GAK32 it was moved to the driver's side. However, chassis number 4-G-II has the handbrake lever on the driver's side, which would lead you to believe that the gearbox was changed in 1925. This was when the engine was changed to make the car ready for sale, however the gearbox in the car very clearly carries the chassis number 2-G-II, which was the first push-rod 20hp and a sister experimental car to 4-G-II. The first experimental cars may have been fitted with the handbrake at the driver's side with it moved to the passenger side for the production cars and then moved back to the original design in 1924. All this will need further research, which I will carry out and I would welcome any information which would assist this.

Again, general opinion dictates that all early 20hps carried the distinctive round edged radiator, although close examination of the existing photographs of the experimental 20s shows that this was not the case. The first cars carried what was essentially a scaled down version of the pre-war Silver Ghost radiator, fitted with bolted on black enamelled, horizontal shutters. The original early type radiator is still fitted to this chassis.

This experimental chassis is in remarkable condition given its 99-year history, pleasingly now that the body has been removed. The chassis is sitting square and level and with the exception of some extraneous modern wiring (now removed). The chassis and its fittings are in good, original condition, with the exception of the need for some minor service work, ie wheel bearings, an overhaul of the steering arms, king pins and shock absorbers. I am of the opinion that the chassis needs little more than this.

In part two I propose to elucidate on the processes and procedures one should adopt to remain historically accurate. Also, most importantly, to execute a sympathetic restoration and attempt at all costs not to remove historical data pertaining to the history of the car, however unsightly this appears to our modern eyes. I will explain the processes involved in building the replica body, being as faithful to the original as possible. I will try to identify the pitfalls for the unwary (I have many times myself fallen into this pit).

James Black

The Sir Henry Royce Memorial Foundation

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