

SAM 35, BMFA BUCKMINSTER AND TETHERED CARS.

This is intended to provide some brief history of how the Buckminster tethered car track came into being.

The links between aeromodelling and tethered car modelling activities in the UK date back to the early 1940s, though the car hobby was at a peak here in the late 1940s and early 1950s. It was only carried on in more recent times by a rather small group of diehard enthusiasts through the efforts of the Retro Racing Club run by Peter Hill and based on his own car tracks, self funded and constructed, until the BMFA Buckminster National Flying Centre started to come into reality as a project at the end of 2016. Several of the RRC members were also SAM 35 members. SAM 35 was involved with the BMFA National Centre's development from the very initial stages, and the late Dick Roberts and I met with a very positive response from



Manny Williamson from the outset to our proposal to include a tethered car track facility into plans for the site, and to include this discipline in the BMFA's modelling scope and insurance cover. My proposal to expand SAM 35's own charter was unanimously approved at the 2018 SAM AGM, together with the establishment of a Special Interest Group, now known as the SAM 35 Tethered Car Interest Group, or just TCIG, as we also welcome non-SAM members to all of our events. This followed a supporting campaign of preparatory promotion to prepare the way and enable positive reception and success for tethered car modelling into our predominantly flying model organisations.

These actions included an article penned for SAM Yearbook No. 18 entitled Ultra Low Flying – Tethered Cars, to lead into the super article which Hugh and Lynn Blowers kindly allowed us to reproduce from their onthewire web site, titled Diesel Domination – Tethered Cars and the Olivers, which reminded us all about JS and JA Oliver's beginnings in this field rather than in aeromodelling engines. Similar pieces were also published in SAM 35 Speaks magazine and the BMFA News, with sympathetic coverage also in the Aeromodeller magazine.

Of huge importance to developments was a conversation at Old Warden in 2018 between Kevin Richards, Alex Phin and myself regarding the possibility of making available a new twinshaft 2.5cc diesel engine like the original Oliver RVB, of high quality and at a reasonable price. When it was revealed by Alex that his supplier of Redfin engines in the Ukraine, A. Matushka, was the manufacturing source for most parts for the super Parra T3 Oliver Tiger-like, very high performance diesel engines, the plot for the Redfin twinshaft car engine was successfully hatched. It was also hoped to provide a kit for simple self assembly of a complete tethered car using this engine, similar to the superb 1950s Aeropiccola/Movosprint Ferrari Tipo 500 model, with all necessary parts, but this unfortunately proved impossible to achieve at any realistic cost, even with modern CAD/CAM design and manufacturing practices, for the small (100 to 200) expected run. Instead, a simple type of folded universal metal Redfin chassis was adopted, along the lines of the Cooper Climax car I had recently made with a Russian TEMP 2.5cc twinshaft engine (rather amazingly, the construction article (Come in Number 35) which I wrote for this is still on onthewire in the Builds and Restorations section). Redfin Oliver Raylite style wheels/tyres were also produced, with a fuel cut-out and a choice of rigid or sprung front axles with mounting, which made for a full kit of easy to assemble components for a car, with just a fuel tank and body to be made. The image here shows my Ferrari



Tipo 500 made from one of the 4 prototype sets of parts. It runs at 80+mph on the track, and is still going strong after almost 5 years.

Initially it was envisaged that a car track could be incorporated in the BMFA's designs for the proposed hard control line flying circles, though in May 2019 we were offered the opportunity to build our own dedicated car track adjacent to the Goldsmith Hanger, and by this time my various appeals had raised just over £5k for the building fund, all of this from SAM members.

A project team of myself, Alex Phin and Oliver Monk was established, working with Manny Williamson as chief factotum and digger driver (what a huge boon this skill has been to the



NFC site's development in total!), and with Richard Phillips coordinating the massive efforts of the Buckminster Volunteers. The image at the head of this article shows (L to R): Oliver Monk, Steve Betney and Alex Phin, with the circle's centre peg marker in place in July 2019, just before the excavation commenced a few weeks later, the laid concrete works being shown here in January 2020.

The track was designed to conform to standard FEMA dimensions, with a radius of 19.90m to give a timed distance of 500m over 8 laps. Over the extremely wet winter conditions for 2019/2020, the 50+ tonnes of the limestone foundations some 6 to nine inches deep for the annular track and the centre circle were laid and compacted level, then the 6+ inches of special concrete poured into prepared shuttering by our contractor, and some 20 tonnes of topsoil spread for landscaping the area. About 20 tonnes of recycled road planings were used to cover the levelled pits area alongside the hanger. The safety wire net fencing was installed in May/June 2020, all of the work apart from the major track concrete pour being done by the amazing Buckminster Volunteers.

Whilst the track was under construction, we compiled a set of guideline rules for its use when completed, using the existing and comprehensive FEMA regulations document, adapted for our 4 speed classes for 1.5cc, 2.5cc, 5cc and 10cc engines. Concurrently, I negotiated a supply source for high quality piano wire cables and connectors made to our safety specifications at reasonable cost from a very friendly and helpful tethered car expert in Latvia, Pavel Pirov, which was extremely helpful.



The first test runs on the track were made in June 2020, just 1 year and 1 week since work commenced. The long awaited initial race meeting was held under Covid 19-restricted conditions in August, and was very well attended and appreciated. The track has since been in active use for 7 or 8 weekend events per season, and quite often used by small parties of car enthusiasts at other times. This is what the track area looked like at that time, a wonderful new facility, just needing final finishing touches.

The image below from a 2022 SAM meeting shows lively interest from spectators in the pits area, as is usual for our track events, which is enormously useful for attracting new converts to this great sport, who would otherwise never be

exposed to it; great for both SAM 35 and BMFA membership.

Final funds raised by the end of 2022 were around £14k, over 80% of this being from SAM and TCIG members, and this covered the construction of the track and perimeter safety fencing, the timing hut (named the Dick Roberts' Memorial Timing Hut in his memory after he sadly died before seeing the track completed), safety kick boards around the perimeter, and also items such as the centre pylon, the cable test rig, the specially constructed digital speed timing system with large display, and the track grinding system, all built by volunteers. The cost would certainly have been at least 2 or 3 times greater if contractors had been used for the works.

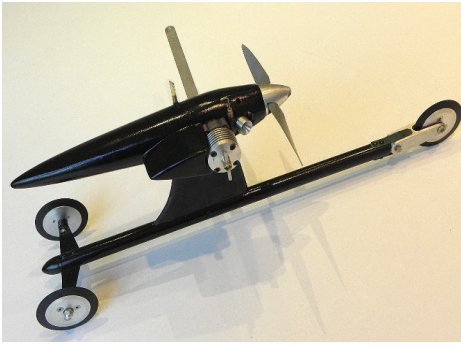
Track events are busy, friendly and well attended, and the pits area always has many interested spectators as well as runners of cars, and the sheltered nature of the location by the hanger is often very much appreciated. These sheltered conditions are heaven sent in inclement weather conditions, and the sound of cars running attracts many general site visitors to the pits and the raised viewing areas.

A very comprehensive pictorial record of the birth of the car track can be seen on Hugh and Lynn Blowers' really excellent website at www.onthewire.co.uk (this covers both tethered cars and hydroplanes). Go to the Cars/Modern Scene/Buckminster First Season section for this, and also see the Guidelines for running tethered cars, which contains much useful general information (also available at sam35.org.uk, where you can also find the Rules for the SAM car events). Further, the Builds and Restorations section on OTW covers articles on the construction of many types of tethered cars, a number of which will be helpful for beginners.

There are now two tethered car groups catering for all aspects of tethered car modelling operating at Buckminster: our SAM 35 TCIG covering vintage, sports, scale and aircars (propeller driven cars), and Ian Harper is our Tethered Car Secretary on the Committee, and there is the separate BTCCG, established by Oliver Monk and now organised by Hugh and Lynn Blowers, which caters for the generally faster FEMA types of



gear driven racing cars (no aircars), and a calendar of all upcoming events for both is covered on the onthewire website.



There are two annual SAM events for cars, the Dick Roberts Memorial Aircar Trophy held at the June Retrofest weekend just for 2.5cc diesel powered propeller driven cars (like my Parra T3 own design, skeleton type car shown here, and a Cleveland vintage style car below), and the Redfin Trophies for 2.5cc twinshaft powered cars.

Prop driven aircars are a natural way for aeromodellers to enter the world of running tethered cars, as they use standard aero engines and are open to many

design approaches, and these typically run at 70 to 90+mph track speeds. Some basic model engineering workshop skills are needed, but they are generally less demanding in this regard than other types of car, particularly those which are gear driven.

The Redfin Trophy events are run over the three SAM Buckminster weekends each year, one trophy being for Concours, Design and Innovation and Speed aspects, and the other for outright Speed, with rules for both of these events to be found on the SAM website. As Alex Phin (Redfin Engines) has been the sponsor and the supplier to date of about 120 of the very competitive Redfin twinshaft engines and rolling chassis parts for suitable cars, many have taken this simple entry route to building such cars, and a wide variety of body types and innovations are seen. Unfortunately this hugely helpful source ended at least for the time being with Alex's retirement to his native Australia in 2024, but there is now some



very good news on this important aspect. The ancestors of these twinshaft cars were the original 1940/50s Oliver range of semi-scale cars, made from aluminium top and pan body castings, which are still also common, and examples of both are shown here on Alex "Redfin" Phin's table, with the non-speed trophy. Track speeds for these twinshaft cars are now in much the same order as for Aircars, up to 80 and 90+mph or so, even with scale type bodies. During the latter part of 2024, a lively new TCIG member and now Secretary Ian Harper, has reintroduced the full range of Oliver casting sets for all to buy, all made from the original Oliver moulds, plus a new Vanwall and possibly others tbd. Contact him at ianharper1961@gmail.com for info.

There are also some very competent, skilled and innovative individuals dabbling with these cars, and some are even entirely scratch built, with home made body castings, suspension parts and even in some cases the twinshaft engines and tyres, and these are an inspiration to us all.

There is a happy community of builders from both aircar and wheel driven car camps, all eager to encourage newcomers and beginners into getting involved with our sport, so do turn up at one of our TCIG car events soon and just chat to those of us fettling our cars in the pits, you will be most welcome. You will need this sort of support to start, not least for advice on the sources of the (now cottage industry-only) parts' and components' suppliers for building these cars. Similarly, those who are more attracted to the more modern type of fast, gear driven car will receive such guidance if they attend the separate BTCG weekend events. Get circulating around the track, clockwise or anti-clockwise (as both directions have their adherents), and join in the fun of building and running these cars. We can even manage to keep doing this even when we can't run after f/f aircraft models or handle control liners any more, there are many very active octogenarian TCIG members. Young 'uns also most welcome of course, to make sure the sport carries on to give the track a long and useful future life.

STEVE BETNEY April 2025.