April 2020

# Newsletter

The nightmare continues and there is no way that it will end anytime soon. My elder daughter has been tested positive for this dreaded virus. She's an Occupational Therapist so comes into contact with so many people. Yes, worrying times indeed.

Anyway, enough doom and gloom. Aero modelling is one of those hobbies which can still continue even with 'lockdown'. I see that in the evenings, you guys seem to be fighting one another in the digital skies and from the comments I've read, really enjoying yourselves. Talking of skies, I can't remember seeing such clear blue skies in years as we have now. We have day after day when we can honestly say that the weather is perfect for flying - except we can't.

Building continues and a couple of the members have very kindly offered to share their experiences, the first of which is included in this newsletter. The subject of this particular build is for the Veron Avro 504N which is being built by your hardworking Secretary, Steve Warburton.

Not for the faint hearted this kit - a lot of meticulous building in store to complete such a model. Covering it in a convincing way won't be so easy either. Should look gorgeous in the air and hopefully, considering that it was a trainer in real life, it should be nice to fly.

Steve photographed the model right through this build and has written up a really good build blog complete with pictures.

Just after I received Steve's write up, one of our newer members, Brian Wood contacted me to say that he is building a big P51 and is happy to share the build with us. I will hold this back to a later date when Steve has completed his model.

Enough chatter - let's get on with this newsletter and a very big thank you for all the valuable and interesting input I have received.

# Signs of the Times

April 2020

How are we all coping with the constraints imposed by The Plague? Have you got to the stage when, with all your winter projects completed, you are suffering withdrawal symptoms as all model flying is curtailed? Have you noticed that your fingerprints have disappeared from the ends of your digits because you have been using thinners as a substitute for unavailable hand sanitizer? Have you walked outside and marvelled at the beautiful flying weather with light winds, sunshine and clear, blue skies (now almost totally free of vapour trails)?

As I walk into my workshop, models seem to exude a mournful miasma, and that pile of old RCM&Es in the corner seems to quiver in fright every time mention is made of a shortage of toilet rolls. Lipos, snuggled together in the darkness of their travelling case, lie unused. One can imagine them complaining, as they rest in their storage state, of missed opportunities to expend their energy in powering a model through its natural element.

On the plus side, every scrap of domestic DIY has been done (I try to keep the list of domestic DIY as short as possible!), the garden is in a state of spring perfection and all the lawns have been edged. Our flying activities may have been put on hold and our beloved flying events culled, but nothing lasts forever: we committed modellers know that we will, eventually, get back to doing what we enjoy doing so much. Be of good cheer, the times will be a-changing…

John Higgins

# Veron Vintage Kit 56" Wing span Avro 504N Build Log

April 2020

*Article by Steve Warburton*

**INTRODUCTION**

Over a year ago I was given a Veron Vintage Scale Kit of the Avro 504N, a bi-plane training aircraft adopted by the RAF after the first World War. The kit had a post decimal sticker identifying a price of £49.75p. The friend who gave me the kit informed me that he had got it at an auction and that it had cost him quite a bit more than the price on the box, but then he lost interest in model Aircraft and took up model railways. He made me promise not to profiteer by selling the kit and I assured him that I would make the kit and invite him to see the first flight!


PIC 1:

Now they say you should never look a gift horse in the mouth but sometimes those old mules can pack a powerful kick, so you can imagine my disappointment when I got home and opened the box to discover there where no plans! I phoned my friend who insisted he didn't have the plans and had never realised they were missing so, disappointed I started thinking who might have the plans in our Club. I asked around to no avail but some clever person suggested posting a wanted AD in the BMFA Classifieds and sure enough, no sooner than I had posted the AD I was bombarded with offers of the plans, some were for free plus P&P others ranged in price up to £20! I was even directed to a website that sells the majority of Veron Kit Plans for quite reasonable money. Anyway from the replies I received I selected someone, sent him the P&P and a few days later the plans arrived.

PIC2:

The plan was laid out on the building board in the Bat Cave and work began. If you have ever built a Veron kit you will know that back in the day they had a reputation for good quality. The last one I built a Fokker DVIII (which took over 40 years), was of a very similar construction but this one was in a much bigger box and I have never seen so much balsa wood in a kit before. It was obvious that building this model within my remaining life span was going to take some doing so there being no time to waste the build started during the wet Autumn of 2019.

PIC3:

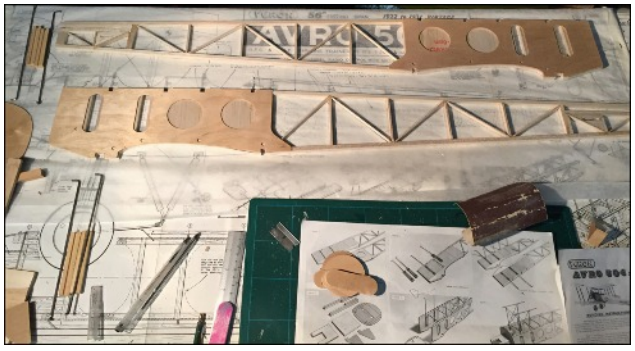
Using the build sequence given in the instructions (yes I have learnt the hard way), first job was to construct the fuselage sides. I covered the plans in grease-proof paper to avoid glue damage. Having

# Avro 504N Build Log

April 2020

*Article by Steve Warburton*

built the left-hand side of the fuselage the right -hand



side had to be built using the left hand view as the plans are a bit sparse in this area and only include one side view of the fuselage. This wasn't as difficult as I thought, once I had got my head round it!

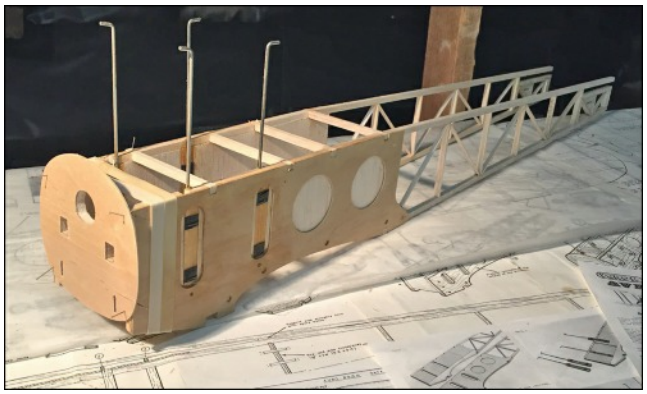
The Build then stopped for Christmas, Flu over New Year and that New Year Resolution - Decorating the Back Lounge & Conservatory, which included laying 30m² of Laminate Floor, wallpapering throughout during which I fell off my ladders, well they slipped out from under me; new laminate flooring is very slippery, or were they kicked?

PIC4:


10th January 2020. My first venture into the Bat Cave after putting the Christmas decorations away I realised I shouldn't of left the fuselage side pinned to the building board because due to the damp atmosphere the stainless steel pins(from China) had rusted in and were very difficult to remove many of them simply snapping as I tried to extract them without damaging the balsa.

Next stage was to make the cabane supports for the upper wing. These were made up from 4 pre bent 12SWG pre formed wire struts which were bound in the traditional way using carpet thread, glued and coated generously with epoxy to the hard wood supports which were then inserted and glued in the forward and aft positions in the fuselage sides. Next, the first of the five cross pieces to join the fuselage sides together were set in one fuselage side making sure that they were square.

PIC5:



The two fuselage sides were then joined together and glued, the front bulkhead was glued in place ensuring the cross pieces remained square. The fuselage halves were then drawn together at the rear and held in place with rubber bands until the glue had dried and then the remaining top and bottom cross pieces were cut to the correct length and angle using the plan and glued in place.

PIC6:

Next the hard wood motor mount beams were glued in place along with the angled plywood gussets to set the required down thrust, followed by the plywood

# Avro 504N Build Log

April 2020

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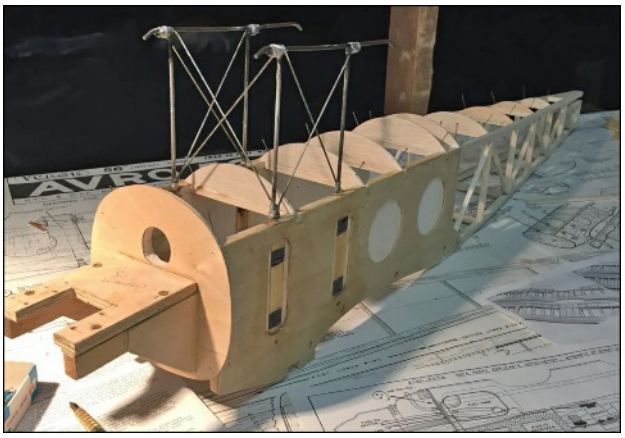


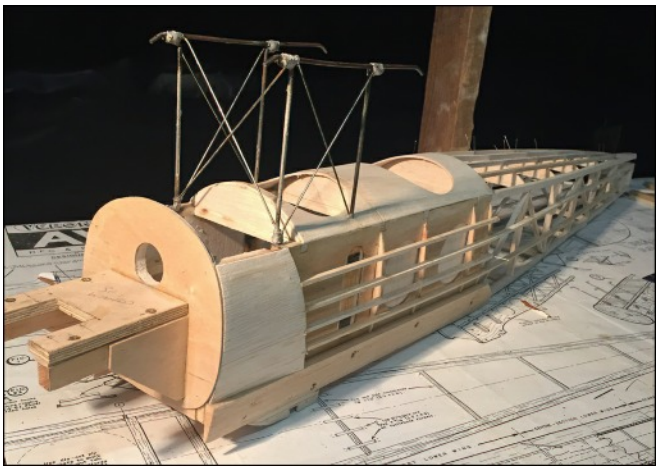
motor mount which was first cut and drilled to suit the motor mount holes. As I was using a slightly larger engine .396 cu ins (OS40) rather than the specified .23 - .36 cu ins,I decided to add four countersunk screws to secure the plywood motor mount to the hardwood beams for additional security.

The next stage according to the instructions was to decide what tank to fit. The plan recommends either a 4oz or 6oz Veron Rectangular Clunk Tank however, these appear to be no longer available and so far I have been unable to source a suitable size cylindrical or rectangular clunk tank from the stock sizes available that will fit in the space available, so **if any readers have a Veron 6oz Rectangular Clunk Tank hidden away or any other suitable solutions please let me know**.

The next stage was to bend and solder the 18SWG wire cross-braces at the sides and forward positions followed by bending and soldering the two top wing supports to the cabane struts using 15 amp fuse wire binding to secure and strengthen the joints. Achieving the correct geometry of the assembly prior to soldering was very fiddly and in the end I resorted to doing this in stages rather than touch soldering all the joints together prior to binding with fuse wire then soldering according to the instructions.

I had a plentiful stock of plumbing solder however; I could no longer obtain the gas cylinders for my 40+ year-old Ronson gas soldering iron so a new gas torch was purchased along with some decent flux. Unfortunately although I adapted my original soldering attachment to fit, the new gas torch refused to remain lit with the soldering attachment in place, so I had to resort to melting the solder onto the joints using the torch flame which was very hit and miss and although I used heat shielding, there was a degree of scorching of the fuselage balsa in places however, this was only slight and was sanded out.

PIC7:



Having previously fitted the semi circular top formers the sheeting was then fitted. This was made by joining edge to edge two 12" lengths of 1/16 " sheeting which when the glue had dried was dampened with water to aid forming, then trimmed, glued and pinned in place to form the cowling. This was done in two pieces in the section between the cabane struts to ease the fitting and the profiles for the two cockpit openings were drawn on using the

# Avro 504N Build Log

April 2020

*Article by Steve Warburton*

supplied template. Once dry the holes for the cockpit opening were carefully cut and trimmed using various Dremel attachments.The fuselage side formers and forward cowling side sheet were then fitted. I decided not to sheet over the front section immediately behind the forward bulkhead to allow access to fit the fuel tank.

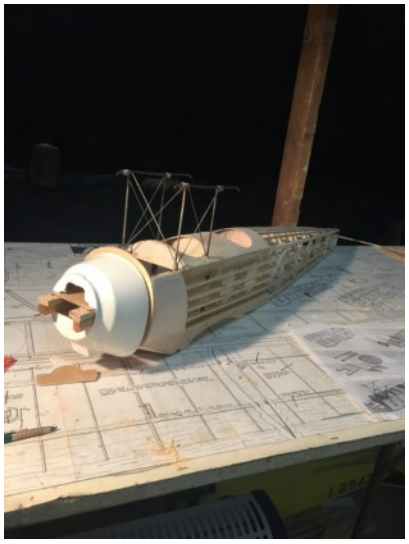
PIC8:

All the remaining side and top deck stringers were then fitted and sanded to taper in at the rear. The lower wing profile was then cut out and sanded to shape and wing dowelling holes drilled.

PIC9:

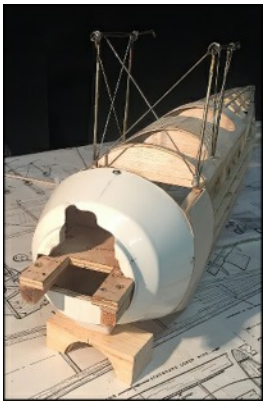
The underside nose block was then fitted and glued in position and the whole forward cowling sanded to blend in with the profile of the nose cowling/forward bulkhead.

PIC10:



After gluing the plywood reinforcing on the inside of the cowl for the forward cowl attachment screws, the Rear ABS Cowling was cut out for the engine mount using the supplied template and holes drilled for cowl attachment screws into hardwood blocks fitted on forward bulkhead.

PIC11:



The Forward Engine ABS cowling was then cut for the engine profile, much trimming required!

PIC12:
The OS40 insitu after lots of trial fits.

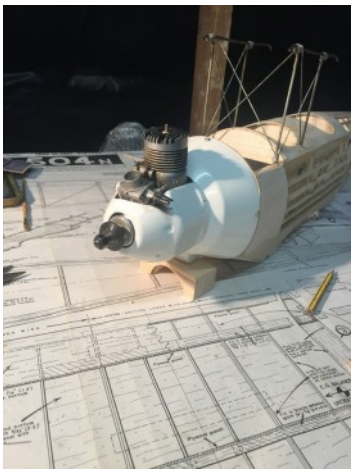
# Avro 504N Build Log

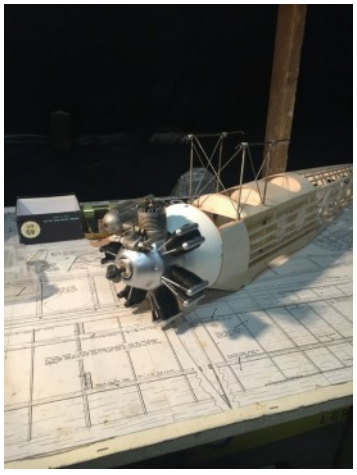
April 2020

*Article by Steve Warburton*

PIC13:

The forward Engine ABS Cowl trimmed to fit round engine, very scary!



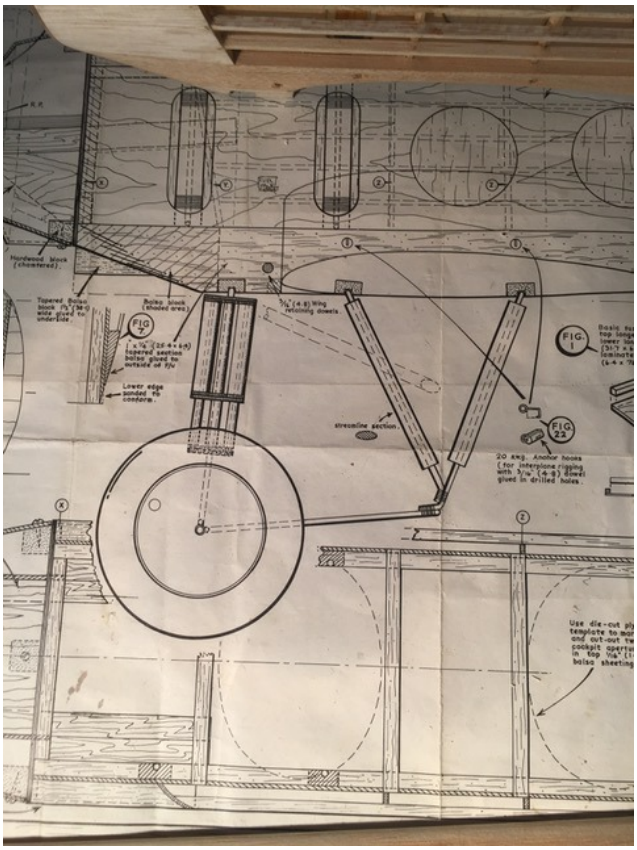


PIC14:

After spraying the forward engine cowl silver, the dummy radial engine cylinder blocks were assembled and glued to the forward cowl – looks like the real thing!

PIC15:

Finally I decided top access to the fuel tank was the only sensible option, therefore I decided to make the forward cowling a removable access panel.



PIC16:

According to the instructions the next stage was to construct the undercarriage using the 5 piece pre-formed wire struts using the fuze wire and soldering method as illustrated on the plan. The assembly being secured using 3 attachment points; one cross wise at the forward fuselage position bound to a hardwood cross beam with the 2nd& 3rd attachments being located in slotted hardwood cross beams in the centre section of the lower wing. I decided soldering together the complex undercarriage assembly using just the plan was not a sensible option, soon to be building the wings – see next month's edition.

# Adhesives

*Article by Brian Holdsworth*

A dictionary definition of a glue is "Cement consisting of a sticky substance that is used as an adhesive". The same dictionary unhelpfully defines sticky as "Having the sticky properties of an adhesive" or "Covered with an adhesive material"! In general usage, it could be described as a separate material used to provide adhesion between surfaces.

The first glues were derived by boiling down animal remains, particularly bones, to produce a viscous liquid applied hot (near boiling) to join shaped wooden pieces. They were only moderately effective and quite difficult to use due to the high temperature, short shelf life and limited performance - they also stank! Early in the twentieth century, synthetic compounds began to appear and became widespread by the start of the second World War. This was fortunate for applications such as the De Haviland Mosquito which gained much of its high performance from the smooth surface finish which could be achieved by its use of moulded plywood made practicable by these new glues which were more tolerant of temperature and humidity effects with resistance to attack by insects, mould etc. After initial concerns, the aircraft was extensively used in the tropics - helped by the practicalities of the inevitably short operational life against enemy opposition.

There are several types of glue with very different application and performance attributes, so that many choices are now available allowing careful selection to optimise usage. Most are hybrids of the major types intended to have desirable attributes for particular applications.

As above, some glues are applied hot and, while the original animal glues are obsolete, especially with the risk of diseases such as BSE, there are some available in the form of synthetic glue sticks applied using a special heat gun which is more convenient, especially for small quantities. Some are sold for modelling usage, though their working time is too short for use over significant areas and the glue characteristics are not very suitable for woods such as balsa.

Most glues became as hard as the materials being joined, but there is a group which remain soft or even sticky to the touch with uses in low-strength applications.

# Adhesives

*Article by Brian Holdsworth*

Some of these are available in the form of "Contact" or "Impact" adhesives such as "Evo-Stik" where a viscous liquid is applied to both surfaces from a tube or via a brush or spatula from a tin for larger areas. Some are available in aerosol cans for uses such as mounting photographic prints etc. onto display mounts. After drying for a few minutes, the glue becomes only slightly tacky to the touch. The surfaces are then brought together and pressed to improve the bond. Since they start to stick as soon as the surfaces come into contact, accuracy during this initial contact is vital. The original formulations contained solvents which became popular for "glue-sniffing", so that replacements had to be found which are generally inferior in performance and usage. One of their first DIY applications was sticking Formica work surfaces onto kitchen cabinets which would be very difficult with any other type of glue; however, the edges were prone to lifting so that manufactured items soon replaced them with specialised glues activated by heat under considerable pressure to ensure flatness.

Some products are available in the form of thin flexible plastic strips with glue pre-applied to one side to produce self-adhesive tapes such as "Sellotape", insulating tape etc. Some are pressure-sensitive where the glue is activated by the application of light pressure, with applications such as medical plasters where easy removal is advantageous to reduce resultant damage to the covered wound.

This type is only suitable for relatively short duration usages since the glue tends to deteriorate within a few months from exposure to light etc. softening to become almost liquid or drying out so that the tape peels off.

Some glues have been discovered accidentally, with a spectacular example coming out of experiments by the 3M corporation in the US to produce a high-strength pressure-sensitive glue. This was a seemingly useless product with negligible adhesive strength. Almost in desperation, some was applied to the side of a sheet of paper when it was found that it could be used to temporarily attach the paper to a hard smooth surface, but allow it to be easily peeled off without leaving a sticky residue. It could be re-applied several times before the adhesive became too contaminated by dirt. Inspiration dawned, and it was

# Adhesives

*Article by Brian Holdsworth*

marketed in the form of "Post-It" notes with a narrow strip of adhesive down one side allowing easy removal. The rest is history, with vast quantities sold every year, generating a significant part of company profits.

The first commercial covering film Monokote used a sticky coloured glue and was expensive, though no further finishing was required. The general characteristic of plastic films to shrink when heated was increased by pre-stretching the film during manufacture. Heating using a small domestic iron would shrink the covering film over the structure to give a smooth finish. For protection until needed, a separate thin plastic film was applied to the sticky side which had to be peeled off before application. In practice, separating this backing sheet and application over the structure was very difficult, not helped by the considerable static charge generated when the films were eventually separated, meaning that the adhesive surfaces had a considerable tendency to stick together ruining the piece.

Fortunately, materials reasonably dry to the touch at normal temperatures, but becoming sticky when warmed, were identified and became widespread with products such as Solarfilm (now defunct) becoming available as covering film. They were cheaper and supplied as a transparent film with a temperature-sensitive coloured glue pre-applied, or in some cases, a coloured translucent film with a clear glue layer. Application uses heat from a domestic iron at a low setting to activate the adhesive at the same time as shrinking the film over the structure. Normally a gloss finish is produced, but some films are available with a semi-matt finish which can look better for some applications. As above, there is a separate backing plastic film, using the residual stickiness of the glue for retention, which must be peeled off before use. This is considerably easier than the original Monokote, with only a small static charge generated on separation, but it can be difficult to distinguish between film and backing.

These films have the same limitations as insulating tape etc. where the edges tend to lift after a period when the adhesive layer separates from the film and/or the structure. Also, fuel residue on power models tends to seep under the film edges to soften the adhesive - a little varnish brushed over the edges can help

# Adhesives

*Article by Brian Holdsworth*

to delay this process. Film over open areas tends to slacken and this can be a problem since much of the required structural stiffness is provided by the film. Bubbling over sheeted areas is another common problem. ARTF's often need their covering film to be tightened and the edges sealed before use by running a warm iron over it - the temperature variations in a shipping container during the long voyage from China etc. can be considerable.

For those building their own models, some protection is needed to avoid parts of the structure sticking to the plan when being glued together. Most backing films are transparent making them ideal for this purpose, with no glue seeming able to stick to them while allowing full visibility of the plan. There is, of course, a practical problem for anyone building their first model since the backing film only becomes available during the covering process after the model has been built...!

ARTF's often use patterned covering films in the form of a tube, with little or no adhesive, shrunk over the structure using a hot-air gun. Considerable detail in the form of panel lines and other markings can be incorporated, so the results can be quite effective. However, the films used are often somewhat brittle and consequently easily damaged with repair difficult due to the unavailability of replacement film for patching. The colouring can be sensitive to heat so that it may fade when slack covering is tightened with an iron.

# Attacked by a Drone

On Thursday, 16th April, (a beautiful flying day, by the way) I decided to do yet more work in the garden. At the bottom of my garden I have a large, plastic compost bin which accumulates material throughout the year. At this time of year I empty out the compost from the bin and use it to mulch the flower beds – so far so mundane.

As I forked through the compost I heard a sound that I have heard before: a loud buzzing from overhead. Suddenly, the buzzing became louder and I felt a sharp stab of pain in my right ankle.

It would seem that a colony of bees had made a nest in a layer of the compost and had become upset at having their home attacked by the four steel tangs of my fork… a drone had struck in self-defence!

Headlines are not always what they seem at first glance…

John Higgins

# Club Instructors

Jason Reid, John Higgins, Chris Vernon, Mark Conlin, Brian Holdsworth, Jim Sheldon, Paul Cusworth, Andy Harrison, Justin Goldstone , John Prothero

# In Conclusion

Well, I guess that's it for this newsletter. Let us all hope that 'the powers that be' are able to lift some of these restrictions. I think we can all live with 'social distancing', something which none of us had ever heard of a very few weeks ago.

Economy wise, they have to open up businesses again as soon as responsibly possible - money just has to start flowing again. I thank all of you guys who have contributed to this newsletter for this month. I look forward to the day when I can get back to the field with my camera to take more pictures of your models. In the meantime I leave you with a picture taken at the field. This was taken back in March 2016. Happy Days!

Keep well guys - I'm pleased to say that my daughter is now improving - may she continue to do so.