**7th Annual Aviation Education Conference**

**At Brooklands Museum**

**On Saturday 5th April 2014, the Youth and Education Branch (YES) of the Light Aircraft Association held their 7th Annual Aviation Education Conference at Brooklands Museum.** The event was supported by P&A Wood, Marshalls, and Boeing and opened by seasoned aviator Lord Trefgarne, the Chairman of the Brooklands Museum Trustees who spoke of the challenge but also the importance of getting and *keeping* young people in the aviation industry.

The delegates were a wide mix - from Scouts to degree students, display crew, pilots of every sort of aircraft imaginable, servicemen and women, engineers, apprentices, educators, curators, model flyers, enthusiasts and, this year, a much greater proportion of the young people themselves, bringing their own voice to the discussion.

The keynote speech was given by **Paul Beaver FRSA FRAeS** a Parliamentary Specialist Advisor, Seaplane and Vintage Aeroplane Pilot, Commentator, Writer and Aviation Historian, owner of Monty’s Messenger and Chairman of the Army Flying Association. Paul highlighted Brooklands as a perfect place for the conference with its history as a centre for aviation and industry. He addressed himself specifically to the young people and engaged their attention with a fascinating insight into his own life in aviation and what it has brought him - from early days as a child with measles looking longingly at the Air Pictorial through to working in counter terrorism ops and finding aviation friends and common cause across nations. To close, he reiterated the pleasures of aviation, whether as career or simply for fun.

Museums were well represented at the event and their role in preserving and opening access to the country’s aviation heritage formed the theme for several contributors, starting with **Virginia Smith**, and head of Brooklands Museum Education Department. Virginia opened with an evocative photograph of Amy Johnson and Jim Mollison at Brooklands which had recently been donated after being found in an attic. She outlined the recent developments and future plans for the museum including the Barnes Wallis and Stratosphere exhibition which many delegates enjoyed visiting in the lunch break. The Balloon hangar opening in August along with the “Aircraft Factory” and “Flight Shed” displays will mean the museum becomes about more than just history and instead becomes also a place to learn about manufacturing in the UK.

**Steve Bell** and **Pam Veale** of Norfolk & Suffolk Aviation Museum continued this theme, stressing that museums were much more than simply “a place to put things” and described a variety of their hands on exhibits which include working Link trainers, gun sights, and an Andersen shelter complete with simulated air raid. With World War Two currently in the National Curriculum many local school and youth group have benefited from the museums “loan boxes” and they've run Scout days for Beavers and Cubs linked to aviation skills badges – though did remark this has tended to lead to paper stomp rockets ending up on top of a number of their hanging exhibits as evidence!

With the Centenary Year of WW1 upon us, **Russell Savory** and **Ian Richmond** from Stow Maries WW1 aerodrome site opened with a moving video about this almost intact site. They spoke of their events and activities which include re enactment demonstrations, and making use of the 22 original buildings for preservation and education. They also spoke of the value of this heritage subject inspiring the next generation of the nation's engineers, and educating a public who think "engineer = car mechanic". To this end the site will act as a STEM centre as well as a base for traditional skills needed to maintain historic aircraft.

The venue's unique position as a base for the conference was highlighted over lunch when the delegates were treated to **Andrew Wood** will describing his experience of overhauling and operating the rotary engines such as fitted to the WW1 Sopwith Camel which was then fired up by Andrew Lewis so it could be seen, heard and, of course *smelled* in operation! Also running was the historic Napier Railton racing car.

A wide variety of different organisations took part and the British Women Pilots Association was represented by **Captain Caroline Gough-Cooper** who outlined their work to promote aviation to women as both a career and recreational pastime, and actively encourages young people to get involved. She opened by commenting on this year's more even gender balance among the delegates and also commented on the particular links with Brooklands, where in 1911, Hilda Hewett, the first British women to hold a pilot's license had her flying school and aircraft factory. Caroline also gave a brief history of some significant women in aviation history and closed with a reminder that with only 4% of commercial pilots and 6% of GA pilots being women there was still a real need for the organisation's work.

**John Cairns** spoke for the Royal Institute of Navigation. John and his fellow members are trying to introduce a youth element to the annual Top Nav competition. In a humour-filled talk he spoke about the role of the Top Nav in promoting better, safer navigation, tongue in cheek describing their job as “prevention of cruelty to mountains!" He outlined the format of the competition (a 90 course flown as accurately as possible) and the benefit in terms of teamwork skills, even in a crew of two. The plans for the youth competition featuring a 1 hour course were outlined. An important point of the need for some positive publicity for young people and their achievements, in a time when they are getting a bit of a hammering in the press.

**Phil Hall**, LAA CEO finished the General Aviation section session by sharing his thoughts on aircraft building, group ownership, affordable and fun flying, the LAA. Pilot Coaching Scheme, and how the Armstrong Isaacs scholarship does its little bit to help make dreams fly! He stressed that the LAA was all about making flying accessible to the ordinary person and that huge swathes of it ran largely on volunteers, not least the 370 inspectors crawling around on hangar floors... He touched on the main thing that non-flying friends have said about his "new job" which is to express amazement that you can simply go out and build your own aeroplane! He closed by expressing his hope that in all the networking from the day there would one day be a joined up structure which could take an air-minded youngster all the way from toddler through to pilot.

At last year's conference the Royal Air Forces Association spoke about their plans to launch “RAFA Youth”. This is now well underway and **Helen Gibson** gave an update on the programme which is available to all uniformed youth groups with an aviation interest, from Cadets to Scouts to the Girls Venture Corps and others. The group is based around a Facebook group, and some of the events they've made available include visits to the Red Arrows and activities which are not always available via the groups directly such as particular adventurous activities. Young people thrive on the opportunity to challenge themselves out of their comfort zone! Groups can also both donate and apply to the organisation for support.

A feature of the conference for many years has been the contribution from Scouting and this year was no exception. **Chris Jones** began by talking about the links between Scouts and the BGA Junior Gliding scheme, and the Scouts who’d come with him were able to talk about their own experiences in helping run the gliding competitions where, even at the age of only 13 and 14, they were key members of the team, moving and setting up gliders for the winch launch. An interesting further link was the use of gliding as a skill for the Duke of Edinburgh Award Skills section. The accompanying video really captured the joy of flight which the Scouts were able to experience through their involvement.

**Colin Knowles**, Specialist Adviser for Air Scouts was next up and talked about the need to continue to promote and expand the 96 Air Scout troops and develop the skills, knowhow and resources available to leaders. He outlined upcoming changes to the badge syllabus with the intention of making it more accessible and the importance of partnership working with other organisations to bring in expertise from outside.

**Pete White**, **John and Anthea Colgate** and **Kevin Riley** from “Feet Off the Ground” were able bring good news on that front with an update of the forming of the Kernow Air Scout troop based at Bodmin airfield which has grown from the very successful weekend AeroCamps run for Scouts in the Cornwall and Devon area where they complete Meteorology, Navigation, and Aeronautics badges and finish with a flight along a route they themselves have planned and calculated. Pete also talked about the wider activities bringing aviation to disadvantaged youngsters including CHICKS (Country Holidays for Inner City Kids) and local hostels and working with children with disabilities.

Another staple of the conference is an update on the various projects up and down the country which have young people involved in practical activities building aircraft! **Stewart Luck** gave some of the background to the starting of the UK Youth Build a Plane Project concept and **Jack Milnes** talked about The Spirit of Goole a private venture project which has been successfully fundraising and gaining sponsors and has now started their build. He discussed the vital real life experience and hand skills gained as well as more transferable skills such as health and safety awareness, the need for accuracy, industry standards and project management – vital employability skills in an area which is economically troubled with some families having three generations unemployed. Jack also discussed their wide variety of partnerships with visiting engineers, RAF personnel.

**Gordana Micic** gave an update on the RAeS/Boeing Schools Build a Plane Challenge which has seen six aircraft kits go into schools to be built as a whole school endeavour. (Yateley School in Hampshire, Marling School in Stroud, Bridge Learning Campus in Bristol, Ercall Wood Technology College in Telford, North East Wolverhampton Academy and Ernesford Grange Community School in Coventry). Two are now finished and flying. The focus with this project has been the cross cutting involvement of the business dimension – with students not directly involved in the workshop still taking part in organising events, marketing, even the catering for launch events! Again the focus was heavily on employability skills with some students already having managed to secure apprenticeships. **Mike Clews** from the Joystick Club at White Waltham who has been key to the Yateley build also brought along control simulator they built from a recovered Tomahawk as a ‘warm up’ for the kit!

The British Microlight Aircraft Association (BMAA.) sent their apologies as they were unable to attend with their “New Horizons” project to build a Sky Ranger in partnership with Kingshurst Academy.

Inspired by last year’s conference, the North Suffolk Skills Academy has its BTEC First in Engineering Level 2 and BTEC Aeronautical Engineering Level 3 students aged 14-19yrs planning to build a Sherwood Ranger with STEM mentors provided from RAF Marham, BAE Systems staff and Flixton Air Museum. **Andrew Stanley**, **Baz Reed**, **John Self** and **Lewis Bunn** described the start of the project, which has kit an engine on site. They also stressed the value of learners working in an industry standard fashion following tool control, process control and so forth. The plan is to work with the local flying club to operate the aircraft and deliver groundschool. They also stressed the value of engineering apprenticeships to business and pointed out that, while they’re very competitive to get onto, nothing could possibly look better on the CV of an applicant than “Built an aircraft!”

**Martin Jones**, chairman of the PNZ Druine Turbulent charity, assisted by **Elizabeth Morrow**, informed delegates about what is happening near Derby to restore a historic aircraft once flown by H.R.H. The Duke of Edinburgh, in another exciting independent project. The aircraft harks back to the early days of the PFA and they hope to use the historic link and Duke of Edinburgh link to get young people involved as part of the skills element of the DoE Award – it’s too good a link to pass up after all!

On a smaller scale, but just as exciting, if the shouts of delighted surprise from the audience were anything to go by, **Dr Ed Hui** demonstrated some distinctly non-traditional paper aeroplanes, including a miniature hanglider, the 'paperang' and indoor slope soaring using nothing more than his hands or a piece of cardboard to fly a little foam glider around the room more or less indefinitely to claps and cheers. He sees no reason why the same aerodynamic principles should not be applied thoughtfully to paper aircraft as 'real' ones! Folding to precise tolerances and ignoring artificial 'origami' rules like “no cutting” make for an altogether more flyable construction to allow sustained, controlled indoor flight.

Also on the modelling front and also stressing that it's an airsport in its own right (and a large one at that) with a long history – its roots are in a 1909 kite flying organisation. The British Model Flying Association Development officer **Manny Williamson** discussed the excellent BMFA Education Pack which has been a staple in schools for some time and is now available on CD complete with videos. The extensive and well practised competitions programme was also outlined including international events. The activities can be curriculum linked or pure fun as after school activities. It gets young people out in the sunshine, flying and creating something with their hands. The basic model, the Dart, has been distrusted 100,000 darts in the UK alone and, 7 million around the world and a major advantage for youngsters building it is that it will pretty much always fly to some degree however inexpert the construction!

In the afternoon the focus moved on to industry and **Simon Witts** and **Emma Doherty** opened for the Aviation Skills Partnership, a hub for employers, educators, government and individuals to network and work together to ensure a pipeline of the right talent getting to the right places. They have been key members in the development of the new Apprenticeship programme for pilots which runs right to degree level and pointed out that this programme is the first time government have supported pilot training for 40 years. They closed by stressing it's time to put the UK back on the map for aviation skills!

Still on apprenticeships – this time engineering ones, **Pam Lord** from Marshalls Aerospace had brought along four of their current learners to talk about their training and future plans. There were a diverse group. **Jessica Gibbs** had transferred into engineering from, of all things, psychology after seeing her farther at work in the RAF and deciding “I could do that”. **Imogen Robinson** had decided that Uni was of less use than some hands on experience, current industry standard qualifications and a wage so had approached Marshalls with a CV and was now an apprentice in the design office. **Alana Green**, an older learner, is working in design, specialising in stress and strain, endurance and environment and spoke about the value of learning the business”from the bottom up” before being "unleashed" once safe and qualified. **Haydn Jakes** at the younger end is working on airframe, structures and engines, and enjoys the variety of working on both military and civil projects and also recognised the value of getting Part66 certification as an integral part of the course.

The last and one of the liveliest speakers, **Richard Allen**, is Head of Airside Operations Training at London Heathrow airport. He was able to share some of the variety in his 25 year career in aviation, from RAF logistics in 1988, to the challenges of dealing with 1400 flight movements a day – including the detail that if departures should stop for any reason when arrivals continue it takes just 45 minutes to run out of space on the ground! He also highlighted the huge range of other jobs that go on at an airport and the need for positive career guidance rather than expecting people to just stumble into it. Apprenticeships were again mentioned as a key route – Heathrow is one of the “trailblazer” employers for the newly revamped apprenticeship programme in England which includes Airside Operations as one of the roles on offer.

Finally the summing up brought the key theme of the day “working together” back to the fore, reminding all delegates to use the contacts made today. The opportunities are there for everyone who loves aviation, loves the sky, and loves passing it on.

**The 2015 event is on Saturday 18th April at Brooklands Museum**.