

My Own Personal Statement in Support of FAST (Farnborough Air Science Trust)

Introductory Thank You

On Saturday 10th April 2010 I visited FAST and became an instant fan and felt humble and thankful as well as sad, angry, disgusted and amazed. FAST is only now in place due to a few dedicated people who were in the wrong place at the right time and had a vision that has to be congratulated. In the 1990's it was decided by ignorant people who looked at the bottom line and not at the national interest that RAE (Royal Aircraft Establishment) Farnborough was destined to the scrap heap and the vultures would pick at the bones and take away all the good scraps. Those that now are the FAST organisation looked on in horror as the UK most prestigious repository of aeronautic knowledge, people, research, facts and history was destined to be destroyed without any proper consideration of the consequences.

A disparate group of people quickly came together and salvaged as many artefacts and documents as they could find from skips and on their way to skips before they were destroyed and never to be seen again. The size of the task was immense, there is now two whole buildings displaying a fraction of the items salvaged and the rest are in multiple containers waiting to be properly recognised, catalogued and made available for future generations.

Thus this “**group of people**” as now lead by Dr. Graham Rood of FAST the Museum and Derek Bracknell of the FAST Association (both ex-apprentices of RAE) should be properly recognised by all of us and future generations for their achievements in having the vision and putting in the effort at such a critical time. I personally thank them and am in the process of becoming a life member of FASTA to show that gratitude and support.

FAST

FAST is so many things it is difficult to put your finger on anything specific, so lets start at the beginning and work our way through.

MUSEUM Building – Trenchard House

What is Trenchard House is it just a pile of bricks to be knocked down and forgotten? Trenchard House was the location for the start of the RAF (Royal Air Force) it was built in 1908 as the headquarters of the Balloon School (They did not have Aircraft then) when Cody was selling Kites and other contraptions to the then Ministry. It has had a succession of uses as the Headquarters including the RFC (Royal Flying Corps) where Hugh Montague Trenchard, 1st Viscount Trenchard GCB OM GCVO DSO became the first chief of staff and the founder of what is now the RAF. It has been in use since that time as an office block for important personnel until the demise of the RAE when the FASTA group of people had it listed, negotiated its' use as the Headquarters of FAST and hopefully properly saved for many generations to learn to understand its significance.

Exhibits

There are so many exhibits and yet so few it is difficult to properly give any of them credit. There is a simple display case where the history of gyro (gyroscope) systems is displayed. It

looks inconsequential, but we would not be flying the right way up necessary on our airliners, gone into space and have all sorts of navigation systems if the work had not been undertaken. There are displays of the different combination of wing shapes, there is a simple display of clothing that fails to properly show how important it was in the research that was undertaken at the RAE. The NASA men in space wore heated clothing developed at Farnborough how important was that? There are models of aircraft some produced in quantity and others just models of something that had promise. There is a display including a sewing machine without simple tools such as a sewing machine there would not have been kites, balloons and then the first real flying machines.

I walked around the building remembering my days at the RAE first as an Apprentice then as a Craftsman before moving onto other disciplines and grades in other ministry establishments and then industry. Then I stopped, I found on prominent display a Rotor Head used for Helicopter Rotor Blade Research. I had left the Aero Department and the 24 foot wind tunnel and my laboratory over the Sea Plane Tank in the early 1970's having spent several years producing the instrumentation and setting up the electronic part of this exhibit. On looking and closer inspection I am sure I was the one who wired up the head and made the brackets for the Plessey Plugs and all those things connected by wires. I remember making around 50 tiny amplifiers that were part of the head for signal conditioning and amplification before being sent through the slip rings for display on CRTs, recording and other actions. Each of these amplifiers were a collection of components soldered together and then encapsulated so the centrifugal forces would not shake them to bits. I remember flexures that were the blade root fixings made in the workshops of the RAE and passed to me to have strain gauges attached to measure the lift and drag of the different blades attached to them. I remember calibrating the strain gauges with weights, I remember thermocouples being put into the high power electric motor assembly and having a Thermos flask of iced water for the differential to be undertaken. Many thoughts of my years came to me at that particular exhibit. Thoughts of Solar Cell research, and the huge Valve Computer (I believe it was called Atlas) that was in Maths Department before the ICL and other machines made from transistors started to appear. I suspect in the containers that hold all of the stuff as it is not yet properly known or understood and may have many of the things that I remember as well as those most important things that have been researched and developed since I left.

Cody Flyer

In a new building is the fabulous work undertaken by a whole host of people and local companies. It is the replica of the flying machine that was the real reason that RAE became so important and should be so important even today. Around 1907 this machine was made out of bits that Cody used in his kite making and scavenged from different places. It was the first heavier than air self powering flying machine seen in this country and Cody demonstrated it and different versions until he like many pioneers was killed by his creation. The model will not get a flight worthy certificate which shows how flimsy it was, but it is a direct replica, as best as can be defined, showing all the warts and everything of what Cody achieved as the Pioneer at Farnborough.

RAE Apprentices

I like many thousands of others was nurtured and educated by the system at RAE Farnborough. I could not have been given the breadth of experience and knowledge in any other place as the RAE was such a diverse engineering organisation and leader in the field of aviation technology, you name it and there was a department adding to the worlds'

knowledge as well as used through the world as consultants in many aviation, space and other related and even at first sight non related fields. All around the world the Apprentices became captains of industry, skilled engineers leading projects and teams or moved into self employment and created business that would not be there if not for the RAE. In the museum there are displays of many things created by or associated with the apprentices and are a significant part of why the RAE was so important.

Records

Not on display but probably as or more important as the physical items are the collection of RAE Reports and Photographs. For anyone who wants to create something or to understand the parts that are used in anything aeronautic they should seek access to the records within FAST. They are probably so important they should be considered with all the other items collected a "National Treasure". Kew is the central archive for Government Documents but they cannot possibly understand or take on the same knowledge of librarians and researchers at Kew unlike the FASTA people who run FAST. These FASTA people include the actual people who created these items that are stored and displayed and can add value through personal knowledge in their heads. Kew is nationally funded FAST is not, how wrong is that!

I hope I have shown a glimpse of my gratitude and enthusiasm to all those individual people who have contributed so much to FAST and what they have achieved and hopefully will achieve in the future. For those that read this google the specifics and see how important to our modern world the RAE has been. Wikipedia has so many pages on people and things related to the RAE I have made no attempt to try and reference them here and hope you will go and find them yourselves.

In the rush to dispose of the RAE the bricks and mortar are a shadow of the past, the RAE Hostel so important to so many Apprentices is becoming a housing estate, the Sea Plane tank is now a garden feature and P68 the apprentice department as well as so many of the departments including the old Air Traffic Control Tower is either an empty plot or new and unconnected building. Most of the "Gems" such as the 24 foot wind tunnel and the centrifuge at IAM have been listed, so hopefully they will be used and cherished for and by generations to come. I hope if anyone of influence reads this homage to the RAE they will find ways to help to fund and support those most important people who are maintaining and displaying the Treasures that are the real RAE.

Michael James

Apprentice of starting year 1966

11 April 2010