



**THE ROYAL AIR FORCES
ASSOCIATION**
Rutland Branch
THE FLYING HORSESHOE



Branch Newsletter

February 2012

Mr Tony Halliwell - January Meeting

Our February meeting venue was changed from Cottesmore to the Drill Hall in Oakham where we welcomed Mr Tony Halliwell Principal of Welbeck – The Defence Sixth Form College to speak to us. He explained how the college came to be situated at Woodhouse in Leicestershire by giving us the time line of the Welbeck existence.

The college opened in the 1950s taking in Army male students. In 1992 it became a Co Ed facility for the army. Then in the 2001 Defence Review it was decided that the college would welcome students for all the services and Welbeck became Tri Service.

It became clear that the current site wouldn't be large enough so in 2005 the DCFC moved to its current home at Woodhouse where students studying for an engineering career in the Civil Service joined them. All students study for four A levels in the first year dropping to three in the 2nd year. Two of the subjects studied must be physics and maths. Mr Halliwell explained that 90% of students achieved A & B grades and most would go on to selected Universities to complete their education prior to attending their relevant military college.

Young people who decide that they wish to become engineering officers in one of the four services have to go through rigorous selection process. To start the selection process as an RAF student they will be required to obtain at least GCSE maths grade A, at least Physics or a Science at grade B as well as a C grade in English. With these predictions the RAF candidates go off to Cranwell for a 4-day selection process. If this all goes well they become one of the 30 RAF students selected for that year. Welbeck provides 50% of RAF Engineering Officers.

The new college was purposely built on a site of a Second World War communications unit. I have over this last two years visited the college on many occasions and am always amazed by what it has to offer young people.

I hope many of you will have had a look at the website and perhaps wished a similar facility had been available when you had started your way in life. I remember during my RAF induction I was asked if I knew how to wire a 3 pin plug. I did. And was immediately selected for an Electronic career. How things have changed.

The Principal invited the Branch to visit the college to see for them selves what was on offer. Your Committee will discuss the invitation; so watch out for further information.

March Meeting

I'm sure that you are all aware that in March we hold our AGM so there is no speaker. In April we welcome Ray Hill who is going to tell us something we didn't know about RAF Cottesmore.

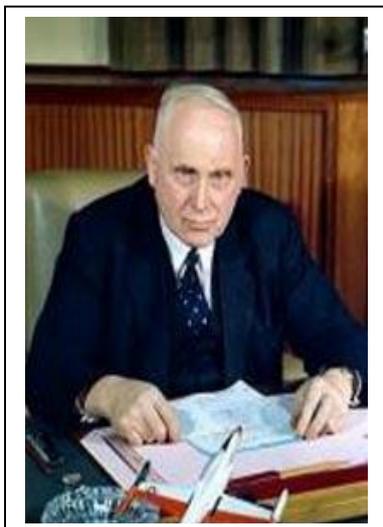
Peter Hart



Grandson William Goddard explains to HRH The Duke of Edinburgh how the Rocket he made will fly during his visit to Welbeck in April 2011

Aircraft Ejector Seats

In November 2011 a Red Arrows pilot was killed when his ejector seat fired him 200ft into the air as his plane stood on the ground. Flight Lieutenant Sean Cunningham died from multiple injuries as his parachute failed to open. The purpose of an ejection seat is survival and to date what happened has not been publicised. The following is a history of the development of the ejector seat.



James Martin, 1893 - 1981, was born in Crossgar, Co. Down. Jaime's father died when he was an infant and he grew up with his Mother on a farm. Unlike our students at Welbeck James scorned conventional education although his mother had encouraged him to go to university. She had recognised his exceptional powers of inventiveness. Indeed by his teens James had developed and sold a wide range of machines, becoming a distinguished engineer by the time he was 21 yrs of age.

In his twenties James decided to move to London to increase his chances of success and achieve more. He set up a small company which he gradually developed.

Cpl Valentine Baker, 1888 – 1942, was born in Llanfairfechan in North Wales. Valentine had joined up as a dispatch rider in WW1. He was soon promoted and after a 'checked' career eventually graduated in 1916 as a flying officer Royal Flying Corp. He then joined 41 Squadron and during this time with squadron he won the Military Cross and Air Force Cross

In 1934 James Martin and Valentine Baker met. They became firm friends and the Martin-Baker aircraft manufacturing company was formed.

In 1944 the firm was approached by the Ministry of Defence and asked to investigate ejection systems for high-speed fighter aircraft, a task made all the more poignant by Captain Baker's own death in a flying accident two years before.



It all begun in 1910 when a bungee-assisted escape from an aircraft took place. In 1916 Everard Calthrop, an early inventor of parachutes patented his version of the ejector seat using compressed air. The modern layout for an ejector seat was first proposed by Romanian inventor Anastase Dragomir in the late 1920s. This design, featuring a *parachuted cell* (a dischargeable chair from an aircraft or other vehicle), was successfully tested on August 25, 1929 at the Paris-Orly Airport near Paris and in October 1929 at Băneasa, near Bucharest. Dragomir patented his "catapult-able cockpit" at the French Patent Office (patent no. 678566), on April 2, 1930.

Despite these trials, still the only reliable means of escape from an incapacitated aircraft was to jump ("bail-out"), even though in many cases this was difficult due to injury, the confined space and the g forces. The design was eventually perfected during World War II.

The first ejection seats were developed independently during World War II by Heinkel and SAAB. Early models were powered by compressed air and the first aircraft to be fitted with such a system was the Heinkel He 280 prototype jet fighter in 1940. One of the He 280 test pilots, Helmut Schenk, became the first person to escape from a stricken aircraft with an ejection seat on 13 January 1942 after his control surfaces iced up and became inoperable.

In Sweden a version using compressed air was tested in 1941. A gunpowder ejection seat was developed by Bofors and tested in 1943 for the Saab 21. The first test in the air was on a Saab 17 on 27 February 1944, and the first real use occurred by Lt. Bengt Johansson (who later changes it to Järkenstedt) on 29 July 1946 after a mid-air collision between a J 21 and a J 22.

In late 1944, the Heinkel He 162 featured a new type of ejection seat, this time fired by an explosive cartridge. In this system the seat rode on wheels set between two pipes running up the back of the cockpit. When lowered into position, caps at the top of the seat fitted over the pipes to close them. Cartridges, basically identical to shotgun shells, were placed in the bottom of the pipes, facing upward. When fired, the gases would fill the pipes, "popping" the caps off the end, and thereby forcing the seat to ride up the pipes on its wheels and out of the aircraft. By the end of the war, the Do-335 *Pfeil* and a few prototype aircraft were also fitted with ejection seats.

At the end of World War II, the need for such systems became pressing, as aircraft speeds were getting ever higher, and it was not long before the sound barrier was broken. Manual escape at such speeds would be impossible. The United States Army Air Forces experimented with downward-ejecting systems operated by a spring, but it was the work of Sir James Martin and his company Martin-Baker that was to prove crucial.

James Martin discovered that the most effective means of ejection was by an explosive charge that forced the pilot's seat up into the air. Following an intensive period of testing and following research his ejection seat went into production in the late 1940s. The first live flight test of the Martin-Baker system took place on 24 July 1946, when Bernard Lynch ejected from a Gloster Meteor Mk III. Shortly afterward, on 17 August 1946, 1st Sgt. Larry Lambert was the first live U.S. ejectee. Martin-Baker ejector seats were fitted to prototype and production aircraft from the late 1940s, and the first emergency use of such a seat occurred in 1949 during testing of the jet powered Armstrong-Whitworth AW.52 experimental flying wing.

The first life saved was that of test pilot John Lancaster, in 1949. Since then over 70,000 seats have been supplied and over 7,000 lives saved.

Martin-Baker is still in existence and continues to supply the ejection seats that save so many.

Kathryn Manderson

taken from www.martin-baker.com 10.02.12

Forthcoming events

If any member is interested in attending one of the following events please contact me by email or at a branch meeting as the number of places on the proposed transport will be limited.

1. Sunday 27th May 2012

Duxford Jubilee air show celebrating the Queen's Diamond Jubilee in style, **The Jubilee Air Show** brings together historic and contemporary aircraft from the past 60 years and beyond.

Special price if a booking made by the end of February (just a few seats on the coach left).

2. Sunday 1st July.

RAF Waddington International Air show - Flying display including the red arrows and Battle of Britain memorial flight.

3. The Diamond Jubilee Concert Oakham 12th October – Band of the Parachute Regiment and the Minden Band of the Queens Division – Ticket Cost £15.00

4. Sunday (Afternoon Matinee) 25th November

Birmingham International Tattoo.

Please note there will be an additional cost to cover transport.

Tel: 01572 755969 or email rafarutland923@yahoo.co.uk

DATES for Your DIARY

7th Mar 2012	AGM	
4 th April 2012	Ray Hill	DVD on RAF Cottesmore

Meetings are 1st Wed every month

Venue: Cottesmore Sports & Social Club – 7.00 for 7.30pm

Branch Contact Numbers

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Peter Hart, Speaker coordinator, Tel 01572756750 peterivy42@btinternet.com

Wings Appeal Organiser Jim Tibbott

Membership

We would like to welcome a new member, Clare Dunderdale, who has transferred to our branch and we look forward to seeing her at our meetings.

[Angie Humphrey](#)