

## **A Talk on the Caterpillar Club by Keith Campbell**

During the 1914/18 war, aircrew did not wear parachutes as none had been devised which could be opened after the pilot or crew had left the aircraft. Tests had shown that chutes attached to the aircraft rather than the person, did not always open, usually fouling parts of the aircraft, leaving the unfortunate jumper still attached to the stricken aircraft by the rigging lines. The German Air Force, in 1918 did use a 'container type' chute which was only partially successful and was discontinued. Leslie Irvin, an American, was convinced that a suitable type of chute, independent of the aircraft was possible. After much experimental work he devised his first chute with a silk canopy 32 feet in diameter with 24 silk rigging lines each 16 feet long. The canopy had a small vent at the top to allow a certain amount of air to pass through it, to control oscillation. The chute was to be packed in a canvas container secured by heavy elastic bands and two metal pins attached to a handle which became known as the rip cord. When this ripcord was pulled, the pack opened, releasing the small pilot chute which opened and then drew out the main canopy.

The first Irvin chute was made by sewing the silk panels together using a commercial sewing machine. It was tested with a dummy with a rope fastened to the ripcord which was pulled when the dummy with chute attached was clear of the aircraft.

After extensive successful tests using a dummy, Irvin was convinced the time was ripe for him to do a live jump.

Before this happened he was invited to join a research team to develop a chute which permitted an airman to leave the plane and jump with complete safety. Irvin was convinced he had already achieved that but joined the team.

After a few modifications to his original design, Irvin finally on 28th April 1919 made a successful free fall jump and the chute worked perfectly. The old theory that a man would not be able to move his arms in a free fall was proved to be incorrect. So successful were the trials that the American Air Corps adopted the design and made wearing the chute compulsory for all aircrew. Some short time later the first pilot saved his life by using a parachute in an emergency situation.

Due to an error when the firm was registered, the 'g' was added to his name so since then it has been the Irving parachute. It was suggested to Irvin by his colleagues that as there was bound to be more bail outs, why not start a bail out club.

The idea was adopted and after many suggestions the relevance of the silkworm (which is not really a worm, but a member of the caterpillar (bombycidae) family) to the walk of the canopy and rigging lines of the chute, gave the idea a name and the Caterpillar Club was on its way.

Irvin volunteered to keep the records and also decided to present each member with a small gold caterpillar pin engraved with the members name and rank, which has continued to the present day. He also decided the club would be in name only, no premises, no entrance fee, no subscriptions. The only class of membership would be for life and the only privilege 'the continuous enjoyment of that life'. There would be no committee, no president, no patron, only a honorary secretary in which capacity for the present, Irvin, acted. The only rule governing acceptance into the Caterpillar Club is that the applicants shall have saved their life in a genuine emergency descent using an Irvin type parachute in circumstances where they had no intention of jumping at the commencement of the flight.

In 1925 the R.A.F. adopted the Irvin parachute as standard equipment. He then opened a factory at Letchworth in Hertfordshire! Very soon after, in June 1925 the first R.A.F. pilot saved his life using an Irving parachute, after his Avro 504K lost an aileron control at 2500 feet. When he was down to 500 feet he grabbed his ripcord and the opening chute pulled him out of his seat and ten seconds later he landed unhurt. The next three jumps followed soon after, one being a test pilot and the other two R.A.F. pilots, both from less than 500 feet.

When Flt/Lt. Pope bailed out at 300 feet and survived, his colleagues sent him a telegram, 'Sending you a clean pair of pants'. He survived to retire in 1946 as an Air Commodore.

In 1970 there were 40 more applicants including a R.A.F. Padre who bailed out in Egypt on returning to his squadron. Also a R.A.F. pilot who collided with another aircraft when practicing for the Hendon Air Display. Many of the early escapes from damaged aircraft were at very low altitudes.

There were many other applications from other Air Forces who also used Irving chutes but the majority were from the R.A.F. The aircraft of those days were not as reliable as those of today so opportunities to use a chute were frequent.

The first parachutes for the R.A.A.F. were purchased on 30 March 1925 on a recommendation by the then Wing Commander Williams at £70/0/0 each on his recommendation that 'not a single failure has been known with an Irving type chute'.

In 1917 an R.A.A.F. instructor was teaching a cadet in a Wapiti bomber near Pt. Cook when during manoeuvres he literally fell out of his aircraft. Fortunately he was wearing a seat type chute and came down safely. Interestingly his pupil landed the plane safely. The winter fogs in England were responsible for many new members. In the 30's there were no blind flying aids so often, when the pilot could not find his base through the fog, had to bail out when the fuel ran out.

There have also been cases where the airman bailed out and pulled the ripcord too soon and his chute caught in the tail plane and was badly damaged, but although he fell at a much faster rate than intended, the damaged chute saved his life.

In the USA the aircrew who had survived a jump-numbered about 3000 by the time the war broke out in 1939 and together with the 'European branch of the Club, brought the total membership to over 4000.

Up to 1919 the European branch of the Club averaged about two applications per week and Irvin's secretary who had taken over the Club's secretarial duties at Letchworth, ordered the gold pins from Mappins and Webb, London jewelers and also sent each new member a letter of welcome and a membership card together with the Caterpillar pin.

From the outbreak of war in 1939 the applications to the Club increased dramatically and letters arrived daily from grateful aircrew who had saved their life with an Irving Chute. By 1943 there were 6000 members and by July 1944, 10,000 and 17,000 by February 1945. About 8,000 of the applications came from POWs. One of them from a RAF pilot who wrote 'I would like to thank you for the sweetest moment of my life when my parachute opened and I realised that I was not going to die. If and when I have a son his name will surely be Irvin'. Many aircrew saved their life on more than one occasion by parachute but no additional pins were given for extra jumps. The Club which had started in 1926 as a novelty

now became a full time organisation in its own right still looked after by Mary Lofts who had been Irvin's secretary since 1938.

It is often asked what is a safe minimum height for the successful use of a parachute. To allow clearance from the aircraft it is desirable no lower than 300/400 feet although there have been many cases where exceptional circumstances have resulted in successful jumps from as low as 50 feet. When fully opened the airmen and the chute fall at 20 feet per second, a very big difference from the 175 feet per second without a chute. It only takes a second or two from the time of pulling the ripcord until the small chute is released and it is the longest second of your life, then it pulls the main chute from its pack to the fully opened position.

There were two types of chute used by aircrew, the seat type usually used by pilots where the chute forms a cushion and was worn all the time and the chest type where the chute was stowed in a convenient position near the aircrew station and was clipped onto the harness worn by the airman, in an emergency. This type of chute gave the wearer some freedom of movement in the aircraft.

Sometimes the airman has not opened the chute himself and other times the chute has only partially opened or has been torn but it still has saved a life.

In one case, a Ventura bomber was set on fire after being attacked by an FW 190. The navigator was trapped by the flames and grabbed his chute from its stowage but before he had time to put it on the flames forced him to jump or be burnt. He had hold of the carrying straps and after clearing the stricken aircraft he clipped the ring of the chute into the snap hook of the harness. When trying to attach the second hook he found he had clipped the left ring of the chute into the right side of the harness. Rather than unclipping the ring and trying to re-attach it correctly and running the risk of dropping it he decided to risk the descent on one strap of the harness. Fortunately the margin of safety in the design was enough for him to make a safe landing.

During the Battle of Britain a Hurricane was hit by a cannon shell and the aircraft exploded. The next thing the pilot recalled was floating down with his chute fully opened above him. He had been wearing a seat type chute and the force of the explosion must have blown him out of the aircraft and also caused his chute to open so another life was saved by an Irving chute.

On other occasions the chute had been damaged by the explosion or torn when opened too soon by hitting the tailplane and the wearer descended on a damaged chute rather faster than intended, but safely. On another occasion the Club gained two members from the one chute. It was a million to one chance that saved the pilot who did not have a chute. Two men were blown out of a burning aircraft at 17,000 feet, one wearing a chute and one was not. The one with the chute was unconscious and he revived at what he estimates was 3000 feet and pulled the ripcord. As the chute opened he began to swing like a pendulum which was normal when the chute opened. As the two men had been falling at the same speed they were at the same height above the ground when the chute opened. By some miracle the pilot collided with the other mans legs in the split second before the chute had fully opened and he instinctively held on and they continued the journey to earth together on the one chute.

Later when they reconstructed the amazing coincidence they recalled the events at the time.

John. Is anyone there?  
Joe. Yes, I'm down here, F/Lt Herman.  
John. Where are you Joe?  
Joe. I'm hanging onto your legs.  
John. Be careful of my right leg, Joe, I think it's broken. (both legs had been hit by shrapnel and were numb, which was why he could not feel Joe hanging on)  
When we are near the ground could you drop off

Before Joe could answer they hit the tree tops and landed with John on top of Joe, breaking two ribs. A small price to pay, he thought, for coming down safely although for the last few minutes his arms were aching so much that he wondered if he could hang on long enough. Fortunately, John's leg had not been broken and they both were able to evade capture for 8 days before being caught and taken to a POW camp, where they spent the rest of the war.

The crew of a badly damaged Stirling bomber on 3 engines were wondering if they could make it to base. They were over the North Sea and 10,10 cloud obscured everything. Fortunately a short break in the cloud showed -they had just crossed the coast and the skipper gave the order to bail out and very soon only the two pilots were left. As the co-pilot prepared to go the ripcord of his chute caught on some projection in the aircraft and the chute opened inside the aircraft and the draught from the open escape hatch caused the silk to billow out. He frantically tried to gather the shroud lines together but realised his only hope was to try to push enough of the opened chute through the escape hatch and hope it would pull him out. He sat on the edge of the hatch and pushed the silk out. He could hear it flapping against the aircraft. Soon the slipstream took charge of the portion of the chute already outside and with a great thump he was pulled through the escape hatch. In spite of the rough treatment the chute had received it functioned perfectly and he landed in a pond, wet but unhurt apart from a few cuts and bruises. Happily, the skipper also landed unhurt. Six months later he was the skipper of a "bomber returning from enemy territory when his aircraft was attacked by an ME109 and set on fire. He gave the order to bail out and when the crew had all gone he also jumped. After falling for a few minutes he felt the chute open and he was slowly swinging in the air. He had no recollection of pulling the rip cord. Whether it opened automatically or he forgot he pulled the ripcord, he never found out. He landed safely and buried his chute and gathered his belongings together, including his emergency rations and compass and set out for Spain in the hope of getting home He bailed out over Belgium and with the help of French Underground he made it to Gibraltar and home in 8 weeks. In spite of two jumps he only received one caterpillar!

A pilot in the Photo Reconnaissance Unit flying an unarmed Spitfire at 30 thousand feet over Engand, gaining height before proceeding on his photographic mission, unexpectedly encountered 2 ME109s who promptly opened fire, setting the Spitfire alight. The cannon shells burst the petrol tanks and sprayed him with high octane fuel and blinded him. He managed to bail out and realizing that at 30 thousand feet he could not stay conscious for more than a minute, he pulled his ripcord and lost consciousness. On coming to at 10 thousand feet where there was enough oxygen in the air, he smelled burning. Looking down he realised it was his flying suit that was on fire, the petrol from the exploding tank having soaked into his clothing and was burning and some of the rigging lines of his chute were also

on fire. He had no means of stopping the fire which was rapidly covering his body. Deciding that a quick death was preferable to being burnt to death, he hit the quick release of the harness which should have sent him plummeting to the ground. As it happened only the shoulder straps of the harness fell away leaving him hanging upside down by the thigh straps of the harness which had tangled around his ankles. The flames of the burning flying suit now played in the opposite direction and died out when they reached his flying boots, but before they died out they had burnt through one of the straps around his ankle and he was left hanging upside down by one foot. Due to the severe burns on his face he could not see when the ground approached so was unable to prepare for landing. He landed heavily breaking his arm. Fortunately his descent had been observed and he was taken to hospital where, after a lot of care he recovered and insisted on being sent back to his old squadron where he completed a tour of operations and survived the war.

The caterpillars, despite their considerable numbers, are an exclusive brotherhood and few could envy them the process of initiation. Their exploits however, pale into insignificance in comparison with those who jumped or were blown out of their aircraft without a chute. Here are a few examples.

The rear gunner of a Lancaster which had been hit by cannon fire at 20 thousand feet and was burning from front to tail, was unable to get to his chute where it was stowed due to the intense heat and flames. Faced with the alternative of being burnt to death or jumping out without a chute, he chose the latter. Owing to some very favourable circumstances his body, falling at the terminal velocity speed of 120 mph. hit the top springy branches of pine trees and the subsequent branches broke his fall sufficiently, so when he dropped from the trees and landed in a snow drift it was enough to cushion his fall. Miraculously. apart from bruises and scratches he was unhurt. A short while after his descent he was captured by the German Home Guard and taken to the police. During interrogation he was asked what had happened to his chute and initially was not believed when he told them of his escape. The truth was established when the Germans found his harness which still had the lift webs clipped down and later, when the burnt out remains of his aircraft were found, it was established that the burnt frame of his chute was still in its stowage. The Luftwaffe gave him a document certifying his story was correct.

Another fortunate flyer was also a gunner whose Ventura bomber was burning and he was unable to reach his chute. The aircraft exploded while he was still in the rear section of the tail unit. For aerodynamic reasons, when the tail assembly broke off, the tail plane gave the unit sufficient lift and the rudder gave it some stability, the result being that it descended to the ground complete with the gunner, at a slow spiral. Again the pine trees with their springy branches, broke the fall and as the gunner was inside, he was not hurt. As this airman did not wear a chute he was not eligible to join the Club.

In spite of a myth to the contrary, all caterpillar badges have red eyes not only the members who claim that their caterpillars red eyes are for escaping from a burning aircraft.

In conclusion, the original idea of membership of the club is still very much appreciated by its members 'The only membership is for life and the only privilege 'the continuous enjoyment of that life''.

References 'Into the Silk' by Ian Mackersley  
'Jump for It' by Gerald Bowman

### **Keith's own story**

I became eligible for membership of the Caterpillar Club at 2 am on 25<sup>th</sup> July 1944.

In those crowded skies, another aircraft collided with 'P' Peter at 20,000 feet just after we had finished our bombing run and dropped our load, hopefully on the M.A.N. factory at Stuttgart. At the time I was in the front of our aircraft having just dropped the bombs and doing the panel drill to check bombs gone. Fortunately, I still had my parachute on.

When the plane exploded I was blown out through the front of the plane ,,,, my next memory regaining consciousness at about 7-8,000 feet and thankfully saw a silk canopy above me. I have no recollection of pulling the ripcord. The blast must have activated the pilot chute which causes the main chute to open and there I was slowly descending towards the ground.

I landed in a field, a soft landing and apart from a few cuts and bruises I was alive and well. I landed near the village of Bonlanden, south west of Stuttgart, removed my parachute harness and chute and started walking westward. I managed to avoid the Germans for two days but was finally caught and spent the remainder of the war as a P.O.W.