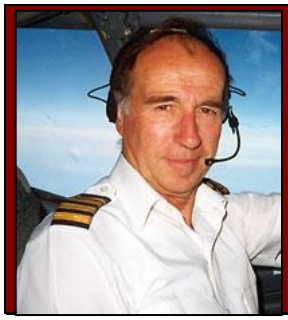


John Laming.

Do you believe in gremlins?

"Gremlins"..n.

1. a mischievous invisible being, said by airmen in World War II to cause engine trouble and mechanical difficulties.
2. any source of mischief. (orig. uncert.)

The Macquarie Dictionary, 2nd Edition.

I first heard about Gremlins when I was eight years old. That was in 1940 and the Battle of Britain was being fought over Kent. My old Uncle Alf told me about them. He picked up this info from an RAF pilot he met in our village pub - the pilot was recuperating from a crash caused by Gremlins in the fuel system of his Spitfire.

Gremlins were apparently a British manifestation, although as we shall see later, there is evidence that some may have migrated to Australia after the war. Interestingly, they seemed to be peculiar to only British designed aircraft as there were no reports of American gremlins causing problems.

They were first discovered by RAF pilots of the Photographic Reconnaissance Units who flew unarmed Spitfires and Mosquitoes at great heights on photographic missions over enemy territory. Their presence caused great concern, so much so that an alert order was sent to all RAF units. It was in the form of verse which was published in RAF bulletins and often sung to a familiar tune. It went like this:

This is the tale of the Gremlins
As told by the PRU
At Benson and Wick and St Eval-
And believe me, you slobs, it's true.

When you're seven miles up in the heavens,
(That's a hell of a lonely spot)
And it's fifty degrees below zero,
Which isn't exactly hot.

When you're frozen blue like your Spitfire,
And you're scared a Mosquito pink.
When you're thousands of miles from nowhere,
And there's nothing below but the drink.

It's then that you'll see the Gremlins,
Green and gamboge and gold,
Male and female and neuter,
Gremlins both young and old.

It's no good trying to dodge them,
The lessons you learnt on the Link
Won't help you evade a Gremlin,
Though you boost and you dive and you jink.

White one's will wiggle your wing tips,
Male one's will muddle your maps,
Green one's will guzzle your glycol,
Females will flutter your flaps.

Pink one's will perch on your perspex,
And dance pirouettes on your prop,
There's a spherical middle-aged Gremlin,
Who'll spin on your stick like a top.

They'll freeze up your camera shutters,
They'll bite through your aileron wires,
They'll bend and they'll break and they'll batter,
They'll insert toasting forks into your tyres.

And that is the tale of the Gremlins,
As told by the PRU,
(P)retty (R)uddy (U)nlikely to many,
But a fact, none the less, to the few.

As I grew up and became a man in the RAAF, I cast such childish beliefs behind me. That is until one day on the tarmac at Townsville. It was in 1960 and I was serving with No 10 Squadron as a Lincoln pilot and squadron qualified flying instructor (QFI). In airline parlance of 1997, the job would be called by the grand title of Check and Training Captain. The Lincoln was a larger and more powerful version of the wartime British Lancaster bomber. It was equipped with four Rolls Royce Merlin liquid cooled engines and the Lincolns we flew had a stretched nose section housing radio operators who listened out for foreign submarines.

In those days, it was a case of first find your pink submarine. Once you located it by spotting it's periscope, (our radar was useless over five miles) the next move was to drop listening devices called sonobuoys near the submarine and try to gauge his course under the sea. By this time of course, the sub had crashed dived, so we would then let fly with a very expensive acoustic homing torpedo in an attempt to ruin his day. The latest Russian submarines were even reputed to out run our torpedoes.

As with most multi-engined aircraft, the Lincoln had fully feathering propellers to minimize drag from a failed engine and there were four feathering buttons on the instrument panel, one for each engine. During the ground test before take-off, each button would be pressed momentarily to ensure the system was operating. Once the propeller began to slow down indicating correct feathering, the pilot would cancel the test by resetting the button. The propeller would increase

revs again and the test was then repeated for the remaining engines. The whole procedure took about 15 seconds.

One morning I was approached by an engine fitter who claimed that, during an engine run after a periodic inspection, he had pressed the feathering button on one of the four Rolls Royce Merlins to test the serviceability of its feathering system and that the propellers on all engines had immediately feathered.

If this was true, the ramifications were frightening. It meant that if an engine failed in flight and the pilot had to feather the propeller, there was a possibility that a latent electrical fault could cause all four engines to stop - from the push of one button. This gremlin was indeed a dangerous creature of which we had no previous knowledge in Australia.

I thought the engine fitter was having me on - until he bet me 10 quid he could reproduce the fault. We walked to the flight lines where the Lincoln was waiting and I could hear slight clicking noises coming from under the engine cowls as the engines cooled down from their previous test runs. There was the usual smell of hot glycol and heat waves shimmered from the top of the silver engine cowls.

It was over the century on the tarmac and even hotter in the glass covered cockpit. The chocks were in place and we climbed up the ladder leading to the nose escape hatch - the main crew entrance. The huge diesel external power cart belched black smoke as the engine fitter started first the starboard inner engine (called No 3), then the starboard outer, followed by the two engines on the port side. With the four Merlins now idling at 1500 rpm, we received the all clear behind to increase power for the feathering check.

The engine fitter then tested the feathering system of each engine in turn by momentarily pressing its feathering button, noting the rpm drop, then resetting the button. So far there was nothing abnormal. He then told me to select any feather button and press it - but with the proviso that once feathering had started, the button should be reset to within three millimetres of the normal position. I selected the feathering button for the port outboard engine and pushed it in.

The propeller started to feather normally. After the reset, with the propeller now returning to unfeather, I gently depressed the button again just a fraction - as the fitter had said. Nothing happened and I looked at him and said, "what next?". He told me then to feather any one of the other engines. I closed my eyes and pressed a button.

To my astonishment, the propellers on all four engines rapidly went to feather. "That's 10 quid please" said the fitter....We then tried various combinations of button pushing to try and reproduce the fault - and occasionally succeeded.

The feathering buttons were protected from inadvertent bumping by a metal cage surrounding the feathering panel. Each button had an integral fire warning light which could be dimmed at night by a small metal sliding bar situated on the top of the button. Experimenting, we found that if the dimmer bar could be positioned to make contact with the protective cage, it was sometimes possible to feather all four engines with one button. We could not reproduce the fault on any of the other Lincolns. Clearly there was a gremlin at large in the feathering system of the first Lincoln. Or were there others lying dormant, only to wreak havoc on a dark night?

Meanwhile, I was down 10 quid, so I visited the Commanding Officer and suggested that for 20 sterling I could kill four engines with a single blow. He was about to call for those nice young men in clean white suits to come and take me away, until he realised I was serious.

After I had explained what I had seen, he accompanied me to the Lincoln for a demonstration. To our chagrin, neither the engine fitter or myself could reproduce the fault. We did manage, however, a lovely conflagration from the 12 open exhaust stubs of the port inner, due to my over-priming the already hot engine. As the CO was standing in the cockpit only 10 feet from the flames, he got quite jumpy and was about to abandon ship via the nose hatch when the engine finally started and blew out the fire.

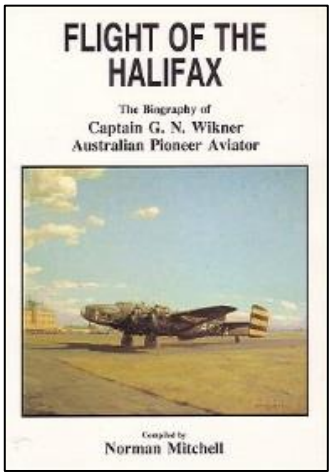
The engine fitter was having one final fiddle with the feathering buttons, when a rapid noise decrease from the engines revealed all rpm decreasing rapidly. I hurriedly pocketed the 20 notes and the CO disappeared into his castle to call a hasty conference with his Engineering Officer.

Weeks later, while the investigation into the mysterious featherings was still being carried out, serious corrosion was discovered in the main wing spars of the RAAF Lincoln fleet. The decision was made to ground them all. Most were eventually sold for scrap metal, while others were destined for fire-crew practice. The investigation was cancelled and as far as I was concerned that was the end of the story. Or was it?

In April 1996, 35 years after the Lincolns were grounded, I was browsing through the Sydney Bulletin while waiting to get a haircut. In it was a story of the sole survivor of a wartime Lancaster crash in 1942. Recounting his experience, he said:

"It was a low level night flight into Germany, but a problem developed over northern France. For some reason one engine stopped. The pilot told the engineer to feather it. He pressed the button to feather this particular motor and all four engines feathered off the one button. It left us with nothing but a full bomb load and plenty of petrol, so we just went down. I bailed out through the front hatch...the plane went over a small hill and blew up".

Later I contacted the survivor, a Mr Chris Jarrett, who lives in a NSW country town. He told me that the magazine story was true. Four days before the fatal flight, the Lancaster had belly landed and had sustained some damage to the bomb bay. After repairs, the Lancaster went on a bombing raid, but several bombs failed to release. Obviously there was an electrical fault and Jarrett thought that the feathering of all four engines on his flight may have been due to a wiring fault caused during the repair work in the bomb bay area.



A few months after talking to the Lancaster survivor, I read a book called "Flight of the Halifax" (the Halifax was another RAF wartime bomber) by a Captain Geoff Wikner who flew 67 types of aircraft as a ferry pilot during the war. On page 144 I was stunned to read this description of a ferry flight that Captain Wikner did in a Lancaster:

"On 3rd of August 1944, I had a chit to deliver Lancaster No.13/455/c (a number I have never forgotten) from Strathaven to Scampton, with first engineer Gillespie. His duties entailed instrument checks, changing petrol tanks and ensuring the airscrews would feather and unfeather when required to do so. On occasions the switch controlling the feathering of each engine would stick, allowing the particular engine to overrun its maximum revs. To correct the problem the engineer would have to place two fingers under the feathering button and pull it out at the right revolutions. He also had to be ready to feather a propeller on any engine that cut on take-off.

Everything went smoothly during the early part of the flight. With a clear sky and good visibility, I thought it was a good time to test the engineer on the feathering routine.

We were cruising at 3000 feet and nearing our destination. No.4 starboard airscrew was feathered according to procedure. No.1 and 2 motor revs were then increased to 2600 rpm and plus seven pounds boost. No.3 airscrew was feathered correctly with the aircraft trimmed with maximum bias to port. We were now flying on two engines.

In one minute I gave Gillespie instructions to unfeather No.3 airscrew and watched him carefully. He turned on the fuel master cocks and placed his thumb on the No.3 button and

pressed. I was watching the revolution counter when I felt a sudden swing to port. I looked out to see both airscrews feather and stop. No.3 unfeathered but the motor didn't fire. Gillespie then unfeathered No.4, the motor ran for a short period and finally cut out with a loud explosion as though short of fuel. While this was happening No.3 feathered itself with the result there were no engines functioning and I had control of an overgrown glider of about 30 tons. The wind was whistling around the aircraft and then the rudders were inefficient.

I unfeathered No.1 and 2 airscrews then instructed Gillespie to put on the fuel booster pumps and change tanks. While this was happening I think Gillespie was endeavouring to get No.3 unfeathered again and then No.1 feathered itself. During all the motor juggling I had difficulty in maintaining a straight course, having to spin the rudder bias to one side or the other to meet the altering directions. I finally got No.1 unfeathered and running - this gave me two motors operating on the port side and two dead windmilling motors on the starboard.

RAF Skellingthorpe aerodrome was within approach distance. I decided to leave the airscrews as they were fearing they might all feather again and went in for a landing. I approached a little high and fast and swish tailed the aircraft in an attempt to reduce speed and finally made a three point landing without over shooting. When I finished my landing run, all four engines were ticking over. I taxied to the Watch office where I tested each engine with perfect results. Later the ground staff carried out the same feathering procedure as we had in the air but found no defect. The aircraft was placed under armed guard and a test pilot from A.V.Roe, the manufacturer, was sent to finish the delivery. On hearing that good piece of news I said that I didn't care if JC himself wants to fly the plane, but I'm not.

I never heard what caused the trouble so I guessed it was hushed up. After my episode, I learnt that four Lancasters had crashed at different times and all the crews killed. Investigators found the airscrews in the feathered position."

I returned the book to the library from which I had borrowed it and while there picked up a copy of "Flight International". There was an article about the only flyable Lancaster in the world operated by the RAF Battle of Britain Memorial Flight at Coningsby in Lincolnshire. I began to wonder about the gremlins who once lived in the feathering systems of the Avro Lincolns and Avro Lancasters. I knew both types came from the same manufacturer in England, with the Lincolns I once flew built under licence in Melbourne. Surely these gremlins were long since dead and buried - after all, it was more than half a century since these deadly creatures first surfaced in England and 35 years since my own encounter with one at Townsville.

I decided to write to the Commanding Officer of the Battle of Britain Flight about my experience with the feathering of all four engines in the Lincoln back in 1960. I felt I should warn him that, to my knowledge, the mystery was never solved. As his machine was the last surviving Lancaster, perhaps he should look closely behind the dashboard. I enclosed the story of the sole survivor of the wartime Lancaster crash, plus the extract from Captain Wikner's book on his experience in Lancaster No. 13/455/c. I decided not to mention my suspicions about gremlins. He wouldn't believe me anyway, because he was too young to know about such things. Anyway, I feared he too might call for the nice young men in the clean white coats to take me away.

On the 7th August 1996, I received the following letter addressed to Squadron Leader John Laming AFC RAAF (Retd):-

"Dear Squadron Leader,

Thank you for your letter of 24 July about feathering of the Lancaster engines. Sqn Ldr Paul Day, OC BBMF has passed the letter to me for response. I thought I would let you know that we had received your letter because it will take some time to get together comments from my engine and electrical trade managers as well as our aircrew, some of whom are from other units.

In the meantime I am sending you a copy of our 1996 brochure. Thank you for your interest and I will write again in a week or so".

Yours faithfully..L.Sutton (Warrant Officer).”

Then in 1999 I ran into a QANTAS engineer who was visiting Melbourne to inspect a light aircraft at Essendon Airport where I worked as a flying instructor. To my surprise he recognised my name from forty years earlier when he had been a RAAF engine fitter on Lincolns at Townsville. It turned out he was the airman who had discovered the mysterious feathering faults described in this story. I asked him if would consider writing to the RAF Battle of Britain Flight to explain the history of the feathered propellers. This is what he wrote:

“To: Warrant Officer L. Sutton – Engineer Officer – Royal Air Force – Coningsby, Lincolnshire.

Dear Sir,

I recently had a conversation with a Mr John Laming of Mercury Air Services in Tullamarine, Victoria, Australia. My association with John is that he was the QFI of No. 10 Squadron Royal Australian Air Force based at Townsville Airbase in late 50's to early 60's. I was based at Townsville as a Leading Aircraftman Engine Fitter during that period.

While reminiscing with John about our times and mutual acquaintances during that time, John mentioned the problems with the uncommanded multiple propeller feathering on the 10 Squadron Lincoln aircraft. I was familiar with the problem, but after talking and reading the articles that John had written about Lancasters and Lincolns I realised the problem with uncommanded feathering was related to an incident preceding John's description of events at Townsville.

I had been tasked by Sgt Mal Winson along with others to change the No 2 propeller on the Lincoln undergoing a "C" check servicing. The propeller is required to be feathered prior to commencing the removal procedure. I pressed the No 2 feathering button and No 1 and No 2 propellers commenced to feather at the same time. At no time had I touched the No 1 feathering button. I cut the electrical power to stop the feathering actions.

Examination of the feathering buttons showed that a Day/Night Slide was in the Night position and trapped under the feathering button's protective cage. My recollection is that investigations by the electricians indicated that electrical power on No 2 was linked to the circuitry related to No 1 when the feathering button was in this trapped position. The subsequent fix to prevent similar uncommanded feathering action was to place spacers under the feathering button protective cage, so as to allow the buttons to fully extend when pulled out regardless of the position of the Day/Night slide.

I do not know if the modification was formally approved as a short time later the Lincolns were grounded and taken out of service and scrapped. I hope this information will be of

assistance in going some way to solve the problem noted in John's description in his articles.

Yours sincerely,
John R. Griffin.
Senior Quality Surveyor,
QANTAS Airways.

I don't know what happened after that!!

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