



# THE QUEEN OF BEES

The de Havilland DH.82B Queen Bee, a WWII remote-controlled target drone with an interesting history

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Main picture: the sole flying Queen Bee operated today as a piloted aircraft but shown (left) in its wartime guise being flown remotely by RAF operatives

## > QUEEN BEE



There's an old saying, 'If it looks like a duck and quacks like a duck then it must be a duck.' Generally, that's sound advice.

**But in the case of the de Havilland Queen Bee, this is not strictly true. It looks like a Tiger Moth and it has that fantastic atmospheric smell (pong?) of old leather and oil. However, despite the remarkable similarity (its wings are from a Tiger Moth), its fuselage is actually derived from the de Havilland Moth Major. It is often said that the Queen Bee is a modified Tiger Moth but given the origins of the fuselage (the most significant component), I personally think it is more accurate to describe it as a modified Moth Major.**

The de Havilland DH.82B Queen Bee was a remote-controlled target drone. Today, we might call it an unmanned aerial vehicle (UAV). They were first produced in 1935, in response to an Air Ministry request for an inexpensive, expendable (but reusable) radio-controlled target drone for anti-aircraft gunnery practice. They were built in their hundreds and production continued throughout the second world war. The most common variant was the ship-launched floatplane – I assume the float variant was more common because it was easier to land on a large unobstructed expanse of water.

The world's only surviving airworthy Queen Bee, LF858 (construction No. 1435), is now on the civil register as G-BLUZ and is based at RAF Henlow. Since 1995 it has been owned and operated by a six-man syndicate known as 'The Beekeepers' flying group. LF858 is no hangar queen and can regularly be seen out and about. She is operated on a LAA Permit to Fly, which enables all her maintenance to be carried out by her owners. For the past five years, all airworthiness inspections have been carried out by a local LAA inspector who, incidentally, has not yet had a go in it (that's a hint, guys)!

School visits are a common event at the Henlow aircraft hangar and, quite deliberately, the Queen Bee is often made one of the centrepieces of the visit. The children invariably identify with radio-controlled models and many of them have already heard of the Predator and Global Hawk UAVs.

Part of the schools' learning experience involves a game called 'Count the Tiger Moths'. It's a pretty unfair exercise. Even from a few feet, it is quite difficult to distinguish LF858 from what is quite possibly the finest collection of airworthy Tiger Moths anywhere. Visually, a main identifying feature is the Queen Bee fuel tank, which has a bigger belly than that fitted to the Tiger Moth. And, of course, as a Queen Bee, it is also hard to identify as the radio and ancillary equipment has long since been removed when LF858 was converted into a two-seat aircraft during its restoration to flying condition.

Although intended to operate pilotless, the Queen Bee had a cockpit and a full set of manual flying controls for ferry and test purposes but like many very simple remote-controlled model aircraft, under radio control the Queen Bee's flying controls were restricted to the rudder and elevator only (the ailerons were physically locked in a neutral position). Additional radio controls were fitted to operate

the ignition and throttle. Radio control was affected through a simple rotary telephone dial – each number representing a specific function – left, right, close/open throttle, etc. A similar dial was also mounted in the cockpit to enable the test pilot to test the pilotless function. The ground transmitter was about the size of a truck! After launch (by a steam catapult for the float version), radio signals from the launching site would operate pneumatic servos in a compartment behind the cockpit (the compartment is now the rear cockpit on LF858). The servos received compressed air from a small ram air (wind) turbine (also known as a RAT) powered pump mounted on the left side of the fuselage just behind the engine. The original RAT mounting brackets are still fitted to LF858.

### AUTOMATIC LANDING

When operated remotely, a clever automatic landing system would sense when the aircraft was near the surface and allow the craft to touch down without any human intervention. If radio control was lost, and the aircraft was still airworthy, it would continue to fly until it ran out of fuel. Without power it would glide towards the surface and, at the critical moment, the automatic landing system would take over.

In its heyday, it was not uncommon to discover an orphaned Queen Bee, devoid of fuel but otherwise serviceable, quietly bobbing about at sea. Appropriately equipped ships would simply haul the craft aboard, refuel it and send it off on its next and possibly final mission.



It is claimed that the Queen Bee was the first full-size aircraft originally designed to fly unmanned and under radio control. It has also been suggested that the term 'drone' (as in aircraft drone) was related to the development of the de Havilland Queen Bee. Personally, I'm not sure that the latter is true as the queen bee, in relation to honeybees, is not a drone and rarely leaves the hive. I digress.

Despite the initial glut of parts to build the original Queen Bees, cannibalisation of parts in later years was commonplace in order to keep each aircraft going long enough to complete its final mission. RAF Henlow was actively involved in repairing the drones, only to dispatch them to gunnery ranges where they invariably met a violent if not spectacular end. After WWII, virtually all of the remaining airframes were broken up as scrap and burned at Redhill Aerodrome (just north of Gatwick). It was an ignominious end to something that played such an important part in the war. Ironically, RAF Henlow now hosts the sole surviving airworthy example of a Queen Bee; LF858 was built in the latter part of the war,

which might help to explain how it survived gunnery practice.

LF858 was one of a batch of around 70 machines manufactured in the City of Glasgow. Scottish Aviation (later responsible for the Bulldog primary trainer and assembly of some Jetstream turboprop aircraft) used H Morris & Co Ltd, a furniture manufacturer, as a subcontractor to build Queen Bees. They were built at 39 West Campbell Street in what were the premises of Scottish Motor Traction. H Morris and Co were actively engaged in the war effort and were also responsible for manufacturing Enfield Rifle butts, de Havilland Mosquito jettisonable fuel tanks, ammunition boxes, stabilisers for barrage balloons and Queen Bee floats. The Morris Furniture Group still exists to this day.

### A GREAT SURVIVOR

LF858 saw service in WWII at RAF Manorbier, Pembrokeshire (today known as the Air Defence Range, Manorbier), and mostly engaged in High Velocity Missile firings. Having miraculously survived the war (perhaps they were bad shots in Wales), LF858 changed hands several times before being involved in a landing accident at Old Warden.

Following the accident, it was stored by the Shuttleworth Trust until, in 1983, it was sold as just a bare fuselage to Barrie Bayes of Cranfield. Over the next four years he undertook a full restoration to flying condition.

During the restoration, the rear bay – where the radio equipment used to be – was fitted out with a second set of flying controls, giving



a cockpit configuration similar to that of the dual-control Tiger Moth. What was originally the only cockpit is now the front cockpit where the second pilot sits.

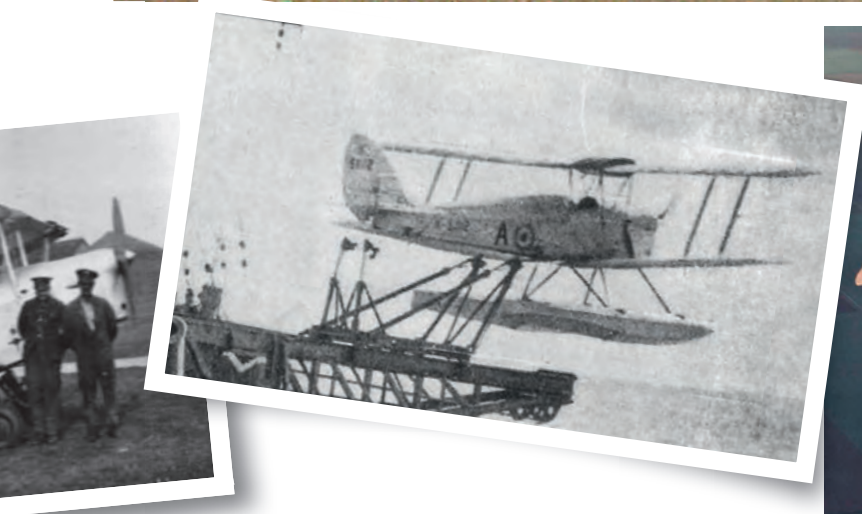
LF858 is unique because it was never built to last. It somehow escaped almost certain destruction during and after the war, it was resurrected many years after a crash and in recent years it has attained fame and notoriety by participating at RAF Families Days, airshows and events with Captain Neville's Flying Circus.

It is now used to entertain and educate. In an odd way, its role has also been reversed – instead of being a target, LF858 has become a bomber – McDougal's finest flour, that is! Google Captain Neville or go to [www.captainnevillesflyingcircus.org.uk](http://www.captainnevillesflyingcircus.org.uk) to see some splendid photos and video of flour bombing, balloon bursting and limbo flying.

LF858 has become a popular attraction for enthusiasts and people who are curious about the sole surviving airworthy de Havilland DH.82B Queen Bee and its fascinating story. ■



The converted Queen Bee is very difficult to differentiate from a Tiger Moth



Wartime photos of the Queen Bee drone



Pure vintage charm!



Flour bombing with Cpt Neville's Flying Circus



The rear cockpit of G-BLUZ