

MAGNIFICENT WOMEN:

Beatrice Shilling

Beatrice 'Tilly' Shilling was a celebrated aeronautical engineer and successful motorcycle racer. She was best known for her work on carburettors at the Royal Aircraft Establishment during the Second World War.



8 March 1909 – 18 November 1990

Aeronautical Career

Tilly Shilling was born in Waterlooville in 1909 and moved to Surrey with her family in 1914. After leaving school she became an apprentice electrical engineer with Margaret Partridge as her employer.

Partridge, herself forward thinking for the time, and involved with the Women's Engineering Society encouraged Shilling to take a degree in Electrical Engineering at Manchester University. She graduated in 1932, and then went on to complete an MSc in Mechanical Engineering in 1933. Shilling initially worked as a research assistant to Dr Mucklow who was investigating the behaviour of supercharged single cylinder engines.

She was recruited to The Royal Aircraft Establishment in 1936 where she became the leading specialist in aircraft carburettors. During the Second World War she worked on a serious problem affecting the Rolls Royce Merlin engines which would misfire or cut out during diving, designing the brilliant yet simple flow restricting device which became known as 'Miss Shilling's orifice'.

Motorcycling Career

Shilling had an early love of motorcycles which began at age 14. Soon after graduating she took up motorcycle racing at Brooklands, on a Norton that she modified herself. In August 1934 she became only the second woman to gain a Brooklands Gold Star for lapping the track at over 100mph.

Shilling married her husband, George Naylor, in September 1938. He also worked at the RAE. According to anecdote she refused to marry him

until he had also been awarded



the Brooklands Gold Star.

She and her husband continued to race motorbikes and then cars until their health made this impractical and then they took up target shooting.

Her idea of relaxation was to drive a car at full throttle, and if the car wasn't fast enough, her workbench was there in the back room to machine new parts to make it faster.

Further information

Useful Resources:

- [Negative Gravity, A Life of Beatrice Shilling by Matthew Freudenberg](#)
- www3.hants.gov.uk/biographies/shilling.htm
- www.thrustvector.wordpress.com/2010/03/24/beatrice-shilling
- geekfeminism.org/2011/02/23/Wednesday-geek-woman-beatrice-shilling/

After the war

Shilling continued to work in aircraft engineering and worked on a variety of projects including the effect of a wet runway on braking. She held a doctorate from the University of Surrey, a CEng, was a member of the Institution of Mechanical Engineers and the Women's Engineering Society and was awarded an OBE for her efforts during the war.