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Chris Wallis CEng, MICE,
1935 – 2006

An appreciation of a remarkable engineer

Chris was an engineer through and through, and his enormous talents fulfilled the old meaning of the word, 'ingenious one'. He provided imaginative solutions to practical problems that others had not seen. Perhaps he inherited some of these abilities from his famous father, Barnes Wallis the aerodynamicist and inventor of the bouncing bomb.

But Chris was more than an innovative technical expert. He found ways to sustain things which he believed in, whose economic value was under question but whose value to society was high. A man of drive and determination, he was brave enough to fight his corner hard with the intention of ensuring the right result.

A prominent example concerns the rural railway. It is well known that while working for British Railways as a bridge expert, he took time to inspect the largely timber Barmouth Viaduct on the Dovey Junction to Pwllheli line. This railway was threatened because of the high cost of repairs proposed for the viaduct. Chris was already an expert in timber engineering, and had a background of earlier work at the Timber Research and Development Association. He proposed an innovative and economical civil engineering method of repair[1]. This was eventually adopted, and the railway is still used by regular service trains.

Chris soon left the railway, which paradoxically gave him the opportunity to make one more major contribution to maintaining rail services. The Settle to Carlisle route was threatened, and the state of the stone built Ribblehead viaduct was likely to be the last straw. Taking advantage of opportunity: the viaduct was scaffolded for inspection, Chris duly inspected unofficially, and as a result of his careful observations, was able to propose a level of repair which was durable but much cheaper. His intervention was successful, and gave time for a change of mind by the railway and politicians.

The decline of the corn grinding windmill matched that of the rural railway in many ways, though mostly occurring in the later 19th and earlier 20th centuries. Both railway and mill suffered from improvement in road transport, and by the 1970's the number of traditional windmills still working at all was very small indeed. Lacey Green Mill high on the Chilterns was an important case. Thought to be the oldest surviving smock or wooden tower windmill in the UK, it had been out of use and falling apart for 50 years. No effective attempt had been made to preserve this unique piece of Britain's engineering past, and the mill tower was approaching final failure. The principal framework of the tower consists of eight 'upright' wooden corner posts. These take the weight of the upper works of the mill, particularly the sails. The corner posts in fact slope inwards so that they define the cone of the windmill tower. Weakness in the decayed framing of the tower had allowed the tops of the corner posts to spiral downwards so that the mill was not only shorter than it should be but also in serious danger of collapse. At this point anyone restoring the mill would have been forgiven for totally dismantling it and rebuilding it from the ground up, replacing most of the original timber. Chris made an imaginative leap and realised that in principle the Lacey Green failure process could be reversed, and the tower could be unwound back to its original height. As an engineer I would have said much more easily said than done! But Chris worked up the idea with thoroughness and determination. Ultimately, a spiral of wire rope around the mill, a winch on the ground, and Chris had succeeded. Chris proceeded to devote his limited spare time over many years to the full repair of Lacey Green Mill, which is one memorial to his brilliance and effort.

Chris Wallis developed a career as a millwright and timber engineer. He made a highly praised restoration of the ancient Bourn Post Mill in Cambridgeshire, receiving a Europa Nostra award. He made major contributions to the preservation of the large post mill at Icklesham, Sussex, and was still doing major work on Wheatley Windmill, Oxfordshire at the time of his death. At Wheatley he carried forward earlier work which had gone over many years, and built the replacement cap and associated curb etc. I hope that this important windmill will now be completed. In parallel with his professional

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[1] *Do we have details of the Barmouth and Ribblehead schemes?*

mill work he played a leading role in the rebuild of the unique post mill at Chinnor, dismantled years before.

Chris made many other contributions each of which would give us cause to remember his engineering and millwrighting prowess: the Medmenham flash lock capstan, his work on ice houses, his wooden bridges.

Engineering seems to have fallen from grace in the UK of the 20th century: somehow we seem to prefer our greats to be lost in the rosy glow of 19th century history. Chris Wallis did as much as anyone I can think of in recent years to maintain and strengthen engineering's good name. It would not have occurred to him that engineering was no longer fundamentally important to us, or that Britain was no longer an engineering nation. To him engineering served a purpose that went beyond money making: it should be uniquely able to contribute to the public good. Fortunately for us, Chris has left solid memorials in the form of railways and mills which would have disappeared but for his unique work and imagination. Farewell, Chris. I'm glad knew you.

Dave Pearce
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