Hoffman Manufacturing Company

History of the Stonehouse Factory 2006

The Stonehouse factory has its origins as a subsidiary of the Hoffman Manufacturing Company which had its main facility at Chelmsford in Essex.

In the 1930s, because of the strategic importance of bearings, it was decided that a facility should be established out of the then range of the German Luftwaffe (with developments in aircraft technology this was rapidly overtaken and, after WWII, maps were found in the Luftwaffe headquarters in Berlin showing aerial photographs of the Stonehouse factory and identifying it as a major target when over-shooting Bristol). The Stonehouse site was also a strategic location from an industrial point of view. The site was near the junction of the then Great Western Railway, running east to west, and the Midland Railway running north to south, giving good connections to London and the parent factory in Chelmsford, and to the industrial centres of the Midlands. It was also conveniently placed between the two main Rolls Royce aero-engine factories at Bristol and Derby.

The Stonehouse factory produced a wide range of bearings, ranging from axle boxes for railway rolling stock to ultra miniature bearings for gyroscopes - critical for navigation systems in the days before satellite navigation. Hoffmann had always been closely associated with high-speed machines and, in particular, aero-engine development. The first non-stop flight across the Atlantic in 1919 by Sir John Alcock was in a Vickers Vimy powered by a Rolls Royce engine fitted with Hoffmann bearings. The relationship between Hoffmann and Rolls Royce continued through such projects as Sir Malcolm Campbell's water speed record in Bluebird, and John Cobb's land speed records in the Railton Mobil Special.

Bearings for the Merlin engine that powered various 2nd World War military aircraft, notably the Spitfire fighters and Lancaster bombers, were produced by Hoffmann, and the Stonehouse factory is still occasionally asked to make spares for historic flights. More recently, engines such as the Olympus that powered Concord, and the Pegasus that powers the Harrier were developed with bearings jointly designed by Rolls Royce and Stonehouse engineers, and manufactured at the Stonehouse factory. In 1969 the three major British bearing companies, Ransome & Marles, Hoffmann and Pollard were brought together by the Government to form RHP and as a consequence of subsequent rationalization, Stonehouse lost all commercial bearing manufacture and became the Aerospace division, concentrating on bearings for aircraft engines, gearboxes, and also Airframe bearings for various control systems and ancillary items.

In 1990 RHP was purchased by NSK and the Stonehouse factory remained the major Aerospace facility within the group, with only a small facility in Fujisawa in Japan manufacturing mainly for their own domestic market plus a limited number of bearings for the V2500 engine for Rolls Royce.

In 2002 the factory was acquired by SKF and joined MRC in New York State and Avio in Turin as the Aero-engine sub-group within SKF Aero & Steels division.

Rolls Royce continues to be the major customer of the Stonehouse factory, taking approximately 70% of business. Bearings manufactured at the factory are used in a wide range of gas turbine engines, powering both military and civil aircraft. Similar engines are also widely used to power naval and commercial shipping, for remote power generation systems, and in pumping stations for oil and gas pipelines. In particular the RB211 and more recently Trent range of highly successful commercial engines powering a wide range of civil aircraft run on Stonehouse manufactured bearings.

The factory has a fully approved bearing repair facility, and as well as repairing main-shaft bearings for Rolls Royce, also has a growing market for refurbishment of components for several engine overhaul facilities and power generation companies. Together with MRC and Avio, the group is offering 'The Strength of One' to the marketplace, - the ability to have bearings repaired in USA, Mainland Europe or the U.K. to the same standards with continuous, traceable history, vital in the critical safety environment of Aerospace.

Bringing the story right up to date, the factory has recently completed manufacture of the first complete set of main-shaft bearings for the Trent 1000, the latest engine being developed by Rolls Royce to power the next generation of large commercial aircraft.

Speed is seen by the Stonehouse facility as a significant weapon in developing the business over the coming years. Rolls Royce is actively pushing the concept of a 'Forty day engine' - offering the market the ability to order and receive a complete Gas Turbine within a forty day window. To support this, Stonehouse has the vision of a 'Thirty day bearing', offering Rolls Royce the ability to order and receive bearings within a thirty-day window. Average throughput time for main-shaft engine bearings was over seventy days in 2003 and this has been reduced to the mid thirties with activities over the last two years. Going forward, team targets and activities are in place to reduce this to below 30 days for engines and below 20 days for gearboxes during 2006.

In parallel we are also using speed and flexibility to widen our markets into non-Aerospace areas. Over the last six months we have been involved in projects for SKF Racing, most recently with a bearing for Ferrari, which was engineered, manufactured and delivered to customer in 23 working days - including a three day 'Design for Manufacture visit to Italy!

The team at Stonehouse completed a Value Stream Mapping exercise to identify a Future State vision of the factory. As a consequence of the identified need to 'simplify' the business, the channel concept, widely used in higher production volume factories, is being applied to the small volume specials type business of Aerospace. The channels will be based on an outside diameter size range, and the first channel, for bearings larger than 250 mm (known internally as the Trent channel because the Trent main-shaft bearings will constitute the major workload through this channel) is being trialled at present. The lessons learnt during this trial will be carried through to the rest of the business, and it is planned to have the whole business in channels by the end of 2007.

Paul Smith, 15th January 2006