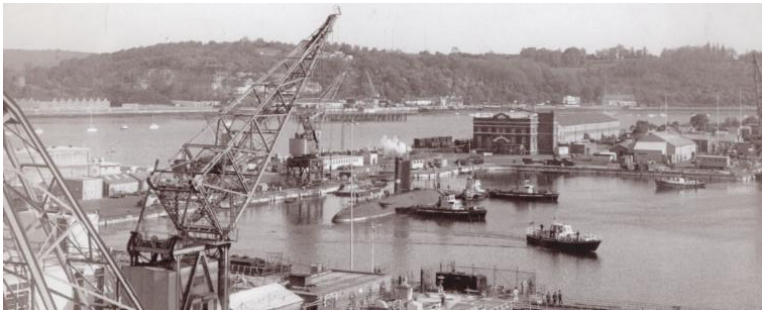
Nuclear Submarine Refitting 1970-1983 continued



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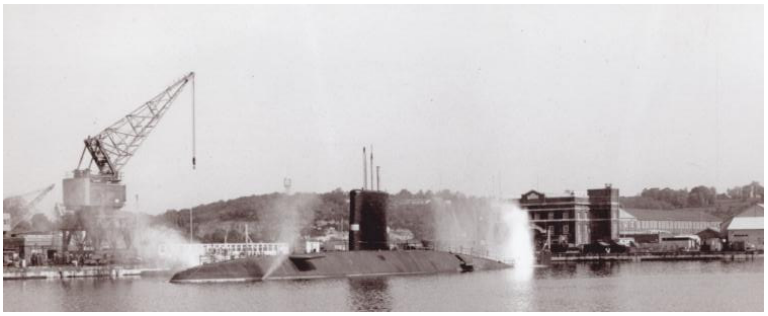
HMS *Conqueror* completed the fifth and, to that date, fastest major nuclear refit at Chatham in August 1977. Her refit took just 90 weeks to complete, 36 weeks faster than an earlier refit of HMS *Dreadnought*. HMS *Conqueror* being manoeuvred by dockyard tugs in No.1 Basin during her refit.



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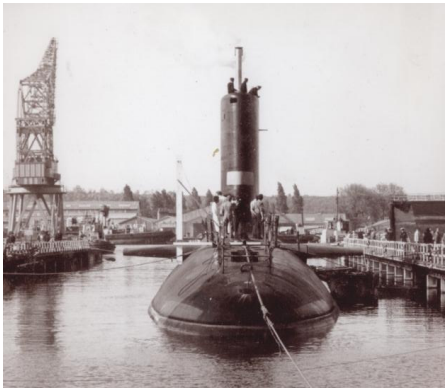
HMS *Conqueror* venting air from her main ballast tanks. This enabled the submarine to undertake a basin trial's dive.



She is also shown undergoing trials in dock during her refit.

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HMS *Dreadnought*, the Royal Navy's first nuclear fleet submarine, joined the Royal Navy in 1963. Chatham Dockyard undertook all her refits. *Dreadnought* is seen here arriving at Chatham for the final time in September 1981. In March 1982, it was announced that she was to be scrapped. Chatham Dockyard undertook the de-fuelling, de-equipping of sensitive items and the preparatory work for her to be towed away to the scrap yard. This work took 150 men nine months to complete and cost £9 million. The General Manager of Chatham Dockyard, Mr Alan Kettle said in April 1983:

> *"It has been a unique work project and completing it was a significant milestone for Chatham. A lot of people have done a lot of hard work."*

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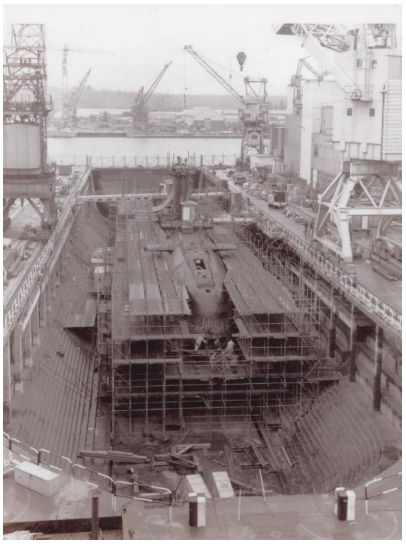
HMS *Churchill*'s first major refuelling refit began in December 1973. At times, during this refit, Chatham's workforce was employed around the clock seven days a week, and on shift work, to ensure that the refit was completed on time. HMS *Churchill* being manoeuvred by dockyard tugs in No.1 Basin during her refit.



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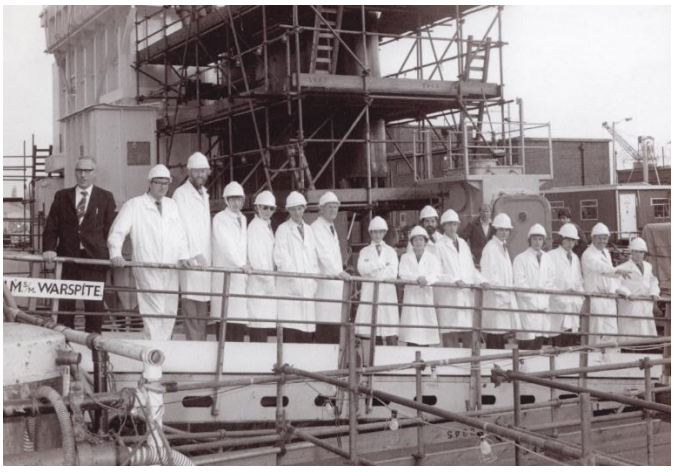
HMS *Churchill*'s second refit began in November 1980. She is shown here enclosed in over 80,000 feet (24,384m) of scaffolding poles stretching for 15 miles (24.13km). The scaffolding took two months to erect in the spring of 1981. It enabled a double skinned plastic canopy to be fitted, which allowed the temperature and humidity around the submarine to be carefully controlled, as a massive fit out of acoustic tiles took place. *Churchill*'s second refit was the final submarine refit to be undertaken at Chatham Dockyard. For 70% of the refit period, the axe of closure was hanging over Chatham Dockyard's workforce. This refit was described by the workforce as "Chatham's Test - our Last and Best". T-shirts were even printed carrying this slogan.



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Members of HMS *Warspite*'s refit team seen next to the submarine during her second refit at Chatham between 1979-1982. The Reactor Access House, which was used as a portable workshop for the 'refuelling' of uranium reactor cores, can be seen attached to *Warspite*'s hull behind her fin. HMS *Warpsite*'s first refit at Chatham was completed in November 1973. At the time, it was the most extensive refit completed on a Royal Navy nuclear submarine. The proving and testing works to the reactor and propulsion plant were undertaken in record time.

Image © Chatham Dockyard Historical Society

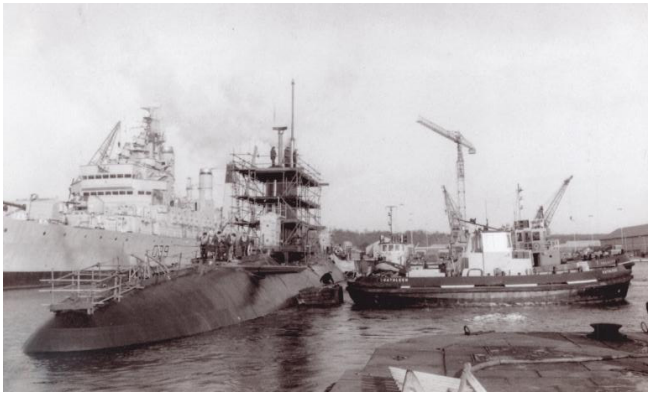
HMS *Dreadnought* and HMS *Warspite* at the Nuclear Refitting Complex in 1979. *Dreadnought* is alongside in the Basin, while *Warspite* can be seen in No. 7 Dock where she is running trials on her diesel electric generators. The Refuelling Crane, more popularly known as the 'hammer head crane', can be seen in the background. The crane was used to lift heavy loads and to service the two nuclear submarine docks. It had cost £280,000 and took nine months to erect. It weighed 1,500 tons (1,524 tonnes) and stood 160 feet (48.76m) high.

Image © Royal Navy Submarine Museum

HMS *Churchill* leaving Chatham after one of her two refits. When *Churchill* first arrived at Chatham in April 1973, for a nine week docking period, the River Medway had to be dredged specially to allow the submarine to gain access to the Dockyard. *Churchill*'s propulsion system was new to Chatham's workforce of fitters and turners. They had to undergo specialist training regarding their own cleanliness and the cleanliness of their work before they able to work in the reactor compartment of the submarine. Chatham Dockyard's welders also had to be specially trained to undertake work on nuclear boats pressure hulls and reactor heads. They, along with other specialist workers, had to periodically re-qualify to undertake such work.

Image © Chatham Dockyard Historical Society

Members of the Procedure Authorisation Group (PAG) for HMS *Valiant*'s refit meeting during the refit. The 'PAG' dealt with all nuclear work as covered by working procedures. The 'PAG' was comprised of professional officers from the Dockyard's Nuclear Power Department and Production Department (or Yard Services Department) and from the submarine. The members of the team shown in the photograph are, from left to right: Mr D.G. Dore, Cdr D.A. Renny, Lt R.J. Milward, Cdr P.A. Munday and Lt J.R. Ashworth.



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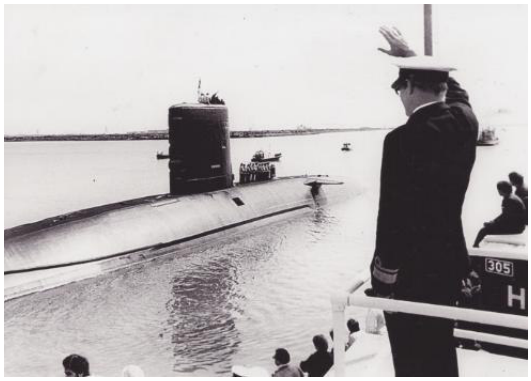
HMS *Warspite* being manoeuvred out of dock into No.1 Basin during her second refit at Chatham in February 1982. HMS *Warspite* was nearing the end of her nuclear refit and was about to undergo the important final stage of Power Range Testing. This was undertaken in the Basin. It was the only time during her refit that *Warspite*'s nuclear reactor would be taken up to its full power. *Warspite* is being manoeuvred by the Dockyard tugs *Brenda*, *Felicity* and *Kathleen*. HMS *Blake*, the *Tiger* class cruiser, can be seen in the background. She had been laid up at Chatham in January 1980 but was not sold for breaking up until 1982.



HMS *Churchill* leaving Chatham after the final Nuclear Submarine refit ever undertaken at the Dockyard in 1983.