

AIR MINISTRY & THE MANUFACTURE OF ANTI KNOCK COMPOUND IN GREAT BRITAIN

Air Ministry policy relating to the manufacture of anti knock additives for war time aviation fuel was influenced by political, economic and technical issues.

Political and economic factors relate to the re-armament controversies within the National Government and the Chancellors reluctance or inability to increase the armaments budget. Developments in aero engine design and in refinery processing, which made the production of 100 Octane fuel possible, were the major technical factors.

The decision to proceed with UK manufacture is best considered in three phases:-

- Initial approach and technical investigations
- Authority to proceed.
- Estimates of production requirements.

The accompanying time-lines provide a summary of events in sequence. UK was eventually 2 years behind France, 3 behind Italy and 4 behind Germany in having independent AKC manufacturing facilities.

Military Chiefs of Staff took almost two years to make their defence requirements known to Government only to face delaying tactics from Ministers. Technical preparations were initiated following a meeting between Ethyl Export personnel and Air Chief Marshall Dowding in late 1935. An appropriate infrastructure was put in place promptly, with the incorporation of British Ethyl Corporation, and the acquisition of technical information from USA. Throughout 1936-7 technical work continued apace.

In Westminster the rearmament controversies raged throughout 1934-5 and it was not until Nov 1935 that the situation was resolved. There were continuing budget constraints due to the prevailing UK economic situation. Momentum gathered in 1938 when a UK Plant was sanctioned. Authority for construction to begin was only given in Aug 1939, when Government increased aircraft production to the highest level possible.

UK plants were owned by the Air Ministry and built by British Ethyl under contract. Budgetary control systems could have caused delays but authority to proceed depended on all technical and contractual details being in place.

Changes in production requirements were governed by:-

- Services Strategy.
- Decision to use 100 Octane fuel.
- Increase in aircraft population.

The increasing requirements impacted on the scavenger (bromine) requirements. ICI Alkali recognised early on that there would be severe restrictions if the bromine from brine process was followed. They took the initiative and investigated the sea water process in spring 1938. Increased AKC requirements in 1938 rang alarm bells in the Air Ministry hence the late search for suitable sites for a "sea water" bromine plant.

In summary the delay in the UK, compared with the Continent, was due to government policy (Westminster) and the control mechanisms imposed by and operated by Whitehall. Once authorised the plants were built and commissioned at a pace greater than on the Continent.

References

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