

THE ASSOCIATED ETHYL COMPANY LIMITED

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CONFIDENTIAL

June 9th, 1939.

Memorandum to: Dr. R.A. Kehoe
Mr. J.H. Schaefer.

The British Air Ministry have approached us with a view to securing our co-operation in the design of an Ethyl mixing plant which can be so protected that it will resist concentrated air attacks. This is an entirely new departure, since, in the case of plants which have been built primarily for military purposes in England, the blending platforms are merely protected against the blast of a bomb and are thus situated in the open. In the case of the plants which are at present under review, it is absolutely essential that these should be able to withstand a direct hit, and in these circumstances the only solution is for them to be buried.

During a discussion, the engineers of the Air Ministry put forward a solution which they, themselves, had worked out which necessitated storing Fluid in a bulk tank, and for this to be actually pumped by means of a pump. The objections to this arrangement were, of course, pointed out, and an alternative on the lines of our standard bulk plant was suggested, but we stated that we could not recommend this alternative, owing to the fact that difficulties would be experienced in service. It must be appreciated that plants of this nature will be required in remote and strategic points overseas.

After a lengthy discussion, it was agreed mutually that considerable advantage would be offered by the continued use of drum mixing, and it was decided to proceed with the project along these lines.

I am enclosing herewith two very rough sketches showing my own proposals, which you will note consist essentially of a standard drum mixing plant totally enclosed in an excavation. A drum booth is provided in which a drum can be opened and evacuated, and a separate fan is proposed for this service which must be a suction fan discharging into the open air.

A major point which requires consideration is the ventilation of the enclosure, since the Air Ministry are insistent on storing under cover sufficient Ethyl Fluid to treat the total amount of gasoline which will

be held in storage. This amount will probably not exceed at any time 50 55-gallon drums. As a suggestion, I would just indicate a separate suction fan equipped with a duct surrounding the platform at ground level, - this again to discharge into the open air. Fresh air could either enter through the tunnel, or through elevated stack pipes, this, of course, being governed to some extent by military considerations, such as the prevention of the ingress of gas. Again, on this account, it might be suggested to ventilate the enclosure by drawing air from the outside by means of a fan, and maintaining slightly positive pressure inside the enclosure, allowing the air to leak out into the atmosphere. Such a system, of course, would definitely prevent the ingress of gas.

I would greatly appreciate receiving your comments on these suggestions, together with any concrete recommendations, - particularly as regards the capacity of the fan for the drum booth, and also specific recommendations for the general ventilation.

It should be appreciated that the Air Ministry regard this proposal in a very serious light, and are quite emphatic that it is impossible to protect such a building on the surface. In these circumstances, as it is certain that such installations will actually be built, it is therefore necessary for us to place the benefit of our experience at their disposal. As the matter is regarded as being urgent, I would greatly appreciate receiving your observations with the minimum of delay.

W. Russell