

THE BRITISH COAL UTILISATION RESEARCH ASSOCIATION.

OBSERVATIONS ON THE EJECTION OF ASH & CLINKER
FROM MOBILE GAS PRODUCERS.

- by -

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1. PURPOSE OF EJECTION.

The purpose of an ejector is two-fold; firstly to remove ash and non-adhering clinker either continuously or intermittently during operation; and secondly, to permit of easy and rapid cleaning-out when the producer is cold. The geometry of ejectors was studied by means of the model experiments described in this report, but the final test of the suggestions made from this work lies in experiments done under practical operating conditions.

The experiments were deficient in two respects; firstly they were done with cold fuel which has markedly different surface characteristics from hot fuel, the latter being more 'sticky'; and secondly, it was not possible to simulate the local diminution in volume due to combustion. An attempt to rectify the difference in surface properties was made by wetting the coal to be ejected with water and oil, but markedly different results were not obtained. Practical running tests indicate that this defect is not important. The second defect is also not important, because the natural flow of the coal, as is caused by the burning of carbon, is sufficient in a gravity feed appliance. The purpose of the ejector is to deal with the few percent of incombustibles that remain and from this point of view the material removed by the ejector can be regarded as ash and small pieces of clinker. In the producer itself, the position of the ejector relative to the air-inlet and gas-outlet will determine whether ash and clinker are lowered to a point lying within the radius of action of the ejector.

In Sections 2 and 3, reference is made to the relevant properties of coal and coke. Section 4 contains a discussion of several methods of ejection, whilst model experiments on the type of ejector that was considered to be suitable for the B.C.U.R.A. producer are described in