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30th October, 1951

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Conservator (East)

H.Q. Mechanical Development Committee Report
No.10

I enclose herewith, for your information,
copy of the above report.

M.H.L.

for Director (Scotland)

Mr. Woolridge ~~*24*~~
Cans & Enquiries ~~*13*~~
to see file.

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1.11.51

H. Q. MECHANICAL DEVELOPMENT COMMITTEE

MR 1/4

REPORT NO. 10

on

A SELF PRESSURISING KNAPSACK FIRE EXTINGUISHER.

ORIGIN.

It was suggested that a knapsack fire extinguisher which did not require hand pumping would be an asset for fighting forest fires. As weight would obviously be of primary importance the use of an engine was out of the question and slow burning cordite or C.O.₂ were considered as alternatives. Information obtained from the Fire Research Station D.I.S.R. showed that the development of slow burning cordite charges had not yet reached a stage where they could be considered for generation of pressure in an extinguisher. The problem was, therefore, discussed with the Pyrene Co., Ltd., who are large manufacturers of C.O.₂ equipment.

DESCRIPTION.

It was decided to modify a Type C.55 Pyrene extinguisher in order that it could be carried in a knapsack harness and operated without removal from the operator's back. Pressure is provided by replaceable C.O.₂ cartridges. The price of the standard C.55 extinguisher is £5 and the cartridges can be recharged for 4/6d each. Photographs of the equipment are attached to this report.

OBSERVATIONS.

During a field trial of the prototype in N.E. England the following observations have been made :-

1. The need to replace the C.O.₂ cartridge with every refill of water offsets the advantage of having both hands free during operation.
2. The extinguisher only holds $2\frac{1}{4}$ gallons of water.
3. When the cartridge is "fired" it is not possible to stop the spray until all the water is discharged.
4. Data in comparison with the standard hand operated knapsack extinguisher is as follows :-

	Pyrene C.O. ₂ .	Standard.
Weight empty	18½ lbs	8½ lbs
Weight full	41 "	48 "
Capacity	2½ galls.	4 galls.
Time to empty	1½ mins.	4 mins.

CONCLUSIONS.

This self pressurising extinguisher fails to meet the particular forest requirement mainly due to the unfavourable weight/capacity ratio..

R. G. Shaw.
R. G. SHAW,
MACHINERY RESEARCH OFFICER.
October 1951.

