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TEST ON PROPOSED BRITISH STANDARD CARAVAN FLUE-PIPE - AIRING
CUPBOARD ASSEMBLY

by

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File No.

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Introduction

It has been proposed that a design of caravan airing cupboard based on the results of tests described in F.R. Note No. 125/1954 (1), be incorporated in a future British Standard on caravan heaters (solid fuel). This note describes an investigation of the fire hazard of the proposed assembly.

Proposed design and test results

The proposed design is illustrated in Figure 1 and consisted of a $4\frac{1}{2}$ in. diameter galvanized iron flue pipe surrounded by an 18 S.W.G. iron pipe of $5\frac{1}{2}$ in. internal diameter, a $\frac{3}{8}$ in. thick asbestos cement pipe of 7 in. internal diameter and an expanded metal shield of $9\frac{1}{4}$ in. diameter. The top and bottom of the cupboard, of $\frac{1}{4}$ in. asbestos wood, were fitted round the asbestos cement pipe and rags were wrapped round the expanded metal shield to represent clothing. Thermocouples were installed as shown in Figure 1 and the flue pipe was heated by a gas poker as described in the previous note to represent maximum possible working of the appliance. The temperature record of the test is given in Figure 2.

The temperature rise of the expanded metal shield in contact with the rags attained an equilibrium value of 130°C and at the end of the experiment the rags showed no signs of scorching.

Conclusion

Under conditions likely to arise from a maximum operation of the appliance the equilibrium value of the temperature attained by the shield in contact with clothes was not high enough to produce scorching. This design of caravan airing cupboard therefore appears to present a low fire risk.

References

- (1) LAW, M., MCGUIRE, J. H. and THEOBALD, C. R. The fire hazard of airing cupboards surrounding flue pipes in caravans. Department of Scientific and Industrial Research and Fire Offices' Committee F.R. Note No. 125/1954. Sept. 1954.

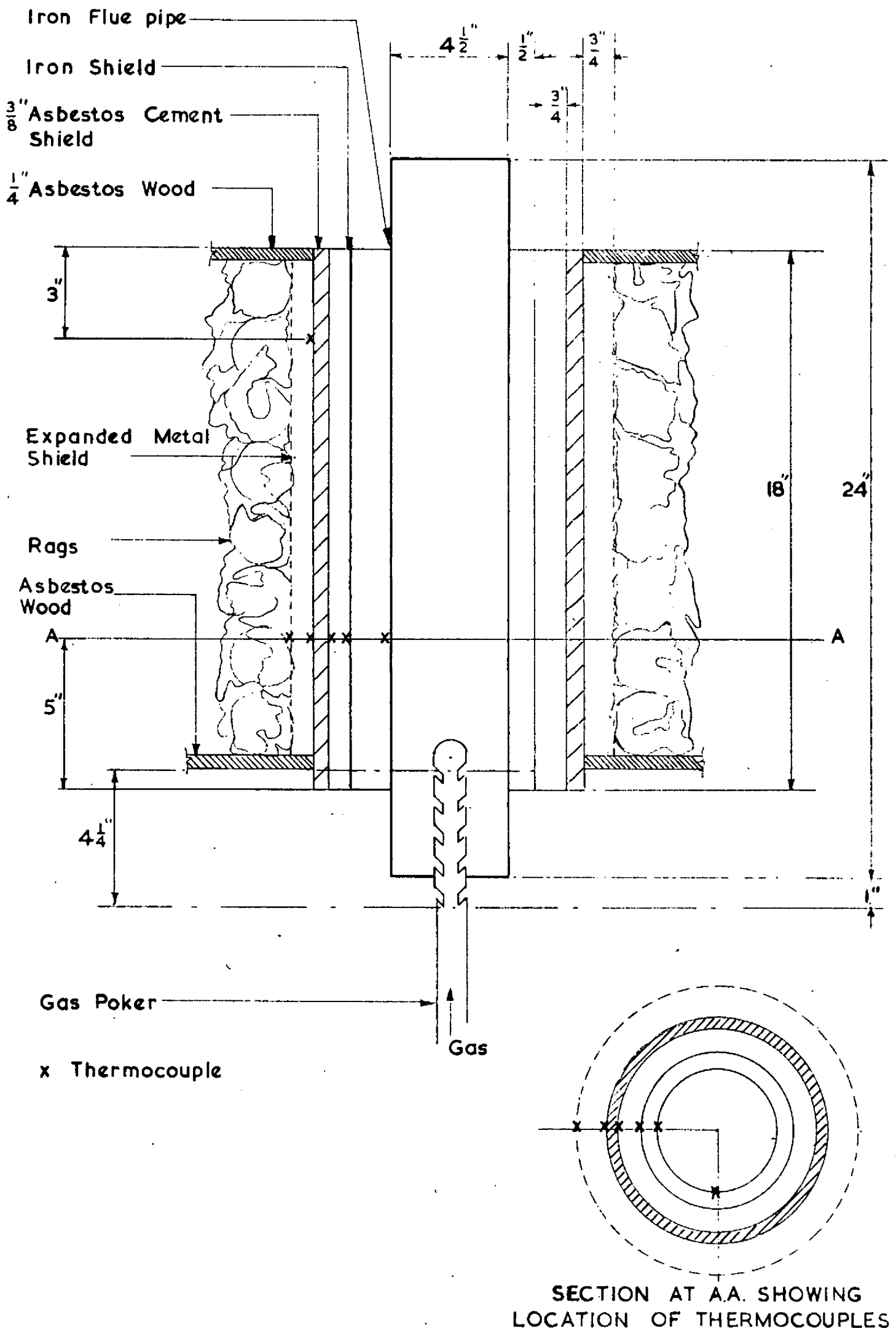
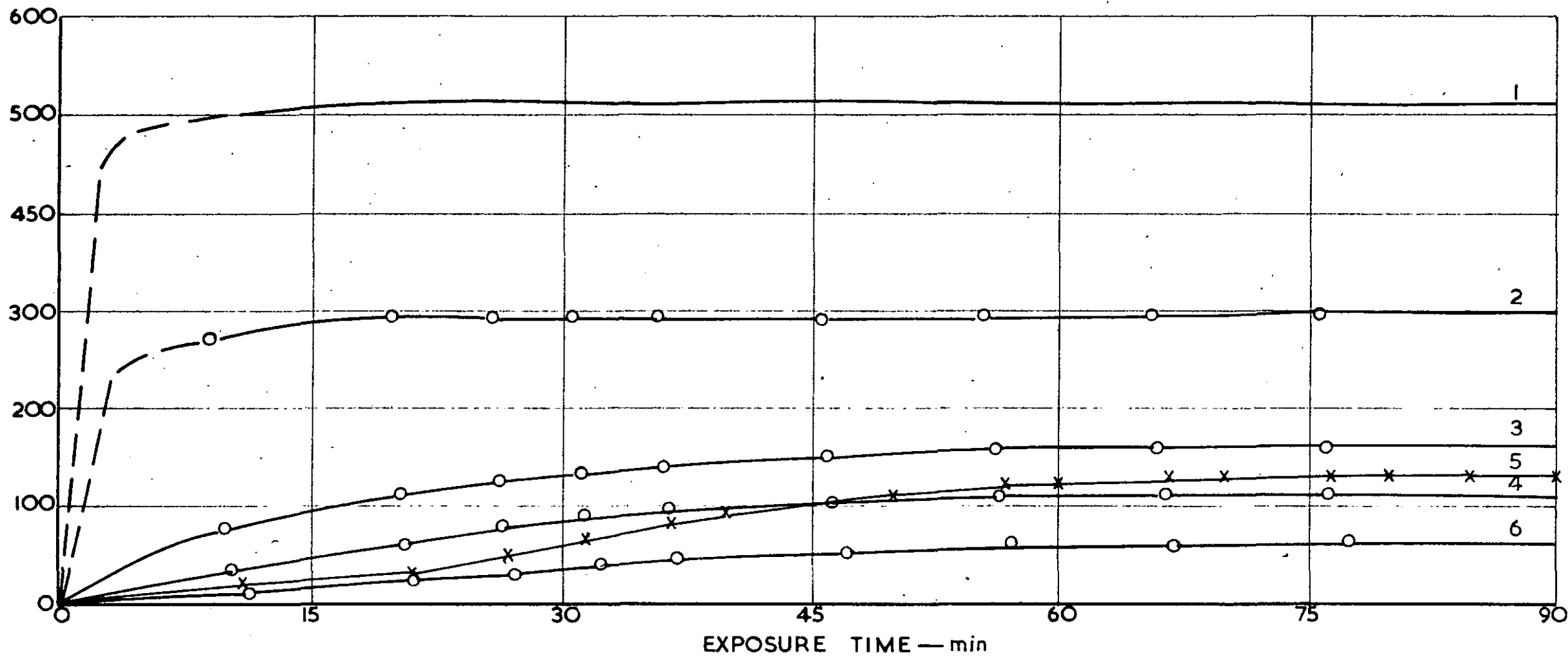


FIG. I. DESIGN TESTED

TEMPERATURE RISE — °C



- 1. Flue pipe (mean value)
- 2. Iron shield
- 3. Inner surface A.C. shield

- 4. Outer surface A.C. shield
- 5. Top of expanded metal
- 6. Bottom of expanded metal

FIG. 2. TEMPERATURE RECORD OF TEST

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