

THE WADDINGTON "SUDSIOBILE"

With the "deterrent" policy in mind, (viz. if you have it you hope you'll never use it, but if you haven't got it, you are sure to want it), R.A.F. Waddington decided to experiment with a method of laying a foam carpet on the runway for use should one of its own or any visiting aircraft arrive hurriedly and in an unorthodox manner without the normal assistance of wheels.

Whilst no credit can be claimed for the principle of foam laying, it was considered that methods previously employed, both in this country and "in another place" whilst eventually effective, took too long, and that the problem should be studied with complete disregard to the standard equipment, which by reason of its limited capacities was the fly in the ointment (or foam) for rapid production. For example use of the current Mk. 6 Tender would require 45 refills taking 3 hours to produce an equivalent carpet.

As a criteria, the Station Commander (Group Captain D. Iveson D.S.O., D.F.C.) gave a requirement for a carpet to be laid, 1,000 yards \pm 30 yards in a time limit of 30 minutes from the word to go, available at all hours for seven days a week (to fit in with the M.D.A. commitment) and the apparatus to be capable of operation by the R.A.F. Regiment and M.T. Flights with the least number of men and without advanced Technical Supervision.

With the above requirements as a basis, it was decided after several tests, that the only practical method of achieving this task was to construct a piece of specialist equipment which could lay the required carpet in one operation, and that this would require some 12,000 gallons of water.

A suitable tank of 12,000 gallons capacity, measuring 30 ft. long with a diameter of 9 feet was "obtained on loan" and mounted in suitable cradles on a standard Tasker 50 ton Crash Recovery Trailer. It was then found that the use of a separate tank for the foam compound would involve complications in towing and overload the trailer. Consequently 1/5 of the tank was sealed off by an internal bulkhead, and this gave maximum holdings of approximately 10,400 galls. of water and 1,600 galls. foam compound on the one vehicle. Outlet pipes from each compartment were led to a pre mixing box through separate control valves thus giving an infinitely variable mixture.

The pumping equipment required is provided by a standard Coventry Climax trailer (16A/1796) to which the mixture is fed from the mixing box, and a lightweight tubular carrier, mounted on rubber tyred wheels, with a span of 90 ft. was constructed and carries the 4 delivery hoses and nozzles. The whole "train" is towed by a "Tugmaster" Tractor at a speed (which was found by experiment to be from 3 to 5 m.p.h.) suitable for the required depth of foam. Obviously the thickness of the foam is a function of the speed, and since the control valves are operable whilst the train is in motion, the resultant carpet is infinitely variable to suit all conditions.

During test runs it was found that a foam carpet of 2 to 3 inches thick of good constituency, 30 yards wide by 1000 yards long could be laid in 17 minutes.

The engineering of this project was carried out by the Ground Engineering Flight, R.A.F. Waddington. Some idea of the problems which had to be overcome can be imagined when one realises that the internal bulkhead of the main tank had to be "jig sawed" together from pieces of metal small enough to pass through 2 ft. diameter manhole.


This entailed some 600 ft. of welding in a confined space. Additionally it has since been discovered that even new hoses have a tendency to split whilst being used on the dispenser bar and "Mark 2" Dispenser is now in the design stage.

Demonstrations have been given to the local County and City Chief Fire Officers, the A.O.C. No. 1 Group and the A.O.C. in C. Bomber Command. It has been suggested that this equipment be standard for at least all Master Diversion Airfields, but until that time all Bomber Command Stations are being advised

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that Waddington have this rapid foam laying facility and that aircraft can be diverted if necessary for a wheels up landing.

Meanwhile the "Sudsmobile" for such as it has been christened, stands, pristine in its coat of yellow paint, ready for a task which we hope it will never be called upon to perform.


(P.F. BELLAIR)
Wing Commander
Officer Commanding
Technical Wing
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Waddington