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# PROBLEM: THE MAXIMUM RATE OF DELIVERY*

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**ction.** The jeep logistics problem occurs when the destination r the jeep to transport itself without refueling. The problem rises in air transport operations, and may have application to itions and interplanetary travel. Phipps [4] mentions the jeep having application to a space rocket with a multiple charge. em can be stated as follows. A jeep can carry a maximum load of gas and can travel $m$ miles per gallon. The jeep is required sert $x$ miles wide, where $x$ is greater than $cm$. Thus, it is neces-blish intermediate depots of gas. The problem, then, is to cate these depots so as to minimize the total amount of gas

] initially considers the problem where the objective is to trav-al distance. He then generalizes the problem to require that ible to return to the origin, and also considers the requirement ; a specific amount of fuel at the destination. In a second report ders the problem of delivering the maximum amount of fuel, triction that at most one intermediate depot can be used. Fine the same basic problem as does Helmer [1], using a somewhat proach, and obtains similar results. Phipps [4] generalizes the onsider that more than one jeep may be used. Several cases are namely, all jeeps will not return, all jeeps will return, and all return. The equivalence between the "one jeep" problem and of jeeps" problem is established. Also considered is the require-vering a specific amount of fuel to the destination. Franklin [5] e case where the vehicles have different fuel capacities and is. The jeep problem is also described by Bellman [6]. per, a modified version of the jeep problem is considered, where e is to establish an optimal rate of cargo delivery at the final ral cases are described. In the first case, the cargo is entirely second case, the cargo is only partially fuel. In the third case, s assessed for the use of a depot. The technique of dynamic ig is used to establish the results.

**um rate of fuel delivery.** In this first problem, the cargo is en-The fuel load either may be used to propel the jeep or may be a depot.

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