PART VI - RESEARCH

Strategic Highway Research Program
Contract H-105

`INNOVATIVE MATERIALS AND EQUIPMENT FOR PAVEMENT SURFACE REPAIRS'

Brian E. Cox, Strategic Highway Research Program

This contract has been let to ERES Consultants, Michael Darter is the principal investigator. It has a duration of two years and a budget of between $500,000 and $600,000.

'Pavement Surface Repairs' are defined as Pothole Patching and crack and joint sealing. These short duration operations cannot justify extensive work zone protection measures and consequently the exposure of maintenance personnel to traffic is a major problem. This is graphically emphasized by the National Safety Council accident statistics of 500 Highway Maintenance Workers killed each year. It may be assumed that many more will suffer varying degrees of personal injury.

Consequently equipment is needed that will:

- allow the control of pothole patching and crack filling operations from a position off the roadway.
- execute pothole patching or crack filling at a more rapid rate.
- reduce personnel requirements.
- create more durable repairs and filled/sealed cracks.
- be compatible with improved materials.

The objectives of Contract H-105 are:

- identify materials, procedures and equipment for patching localized holes more effectively than existing systems.
- identify materials, procedures and equipment for filling/sealing cracks and joints more effectively than existing systems.
- develop a prototype evaluation test plan for modified or new equipment, and for labor and field testing of materials.

Tasks

(a) Materials

1- Compile Database
2- Performance Synthesis
3- List of materials properties and tests
4- List of materials for testing and evaluation

(b) Equipment

5- Synthesis of Deficiencies in Equipment
6- Definition of Equipment Performance Characteristics
7- Survey of On-Going Research on Equipment
8- Evaluate and Rank Equipment for each Activity
9- Equipment Development Plan

Contract H-105 will be succeeded by Contract H-107 'Innovative Equipment Development Testing'.

This contract will be for the design and production of prototypes based on the specifications produced by Contract H-105.

Contract H-107 has a budget of $2.5 million and is anticipated to commence in February 1990 and be completed by January 1993.

The end product will be:

- equipment specifications
- operational guides
- training manuals

There must be compatibility between Contract H-107 and H-106 which is for the development of the new materials arising from Contract H-105.

In conclusion it is anticipated that the effort comprised by these contracts H-105, 106, and 107 has the potential to drastically improve the performance and productivity of pavement surface repair operations.

However, these goals can only be achieved with the active cooperation of the experts in the field. No one can be more aware of the deficiencies of existing equipment and the improvements that are required than the Equipment Managers.

Furthermore, it is known that many Equipment Managers have modified equipment to improve its performance.

The H-105 Research Contractor will be formally contacting states in order to compile the synthesis of deficiencies in equipment.

However, Equipment Managers are encouraged to play an active role by directly forwarding their views and ideas to SHRP or, following the award of the contract, the H-105 Research Contractor.