

SERIES 01 - ROAD MAINTENANCE

18 Modules Series price: US\$ 5,400. Single tapes: US\$ 300.

Maintenance engineers, superintendents and foremen can observe procedures performed in accordance with correct and efficient fundamentals. Road maintenance and repair work will last longer and available funds will go further. The tapes also discuss the appropriate materials, equipment and tools used in each maintenance activity.

Module 1 - 21 Minutes

Common Maintenance Problems and Causes

Common maintenance problems occurring on pavement surfaces, road bases and sub-bases, earth and gravel roads, shoulders, drainage facilities, bridges and roadside areas are presented clearly and easily understood. The tape identifies the main causes of most road maintenance problems, giving the trainee an understanding of the importance of doing maintenance task correctly. It is a necessary supplement to all others in the series.

Module 2 - 24 Minutes

Traffic Control During Maintenance

Protection of maintenance workers and equipment is the subject here. Basic principles for selection, placement, maintenance and removal of traffic control devices are shown and explained. Proper practice will also achieve efficient operation and keep traffic flowing smoothly during maintenance activities. Typical applications of traffic controls for maintenance works are shown step-by-step in real-life situations.

Version 1: Using European International Road Signs and is applicable to Europe, Africa and Asia.

Version 2: Using Inter-American International Road Signs and is applicable to Latin America.

Module 3 - 13 Minutes

Pothole Repair in Asphalt Concrete Pavement

Potholes must be repaired quickly because they are a safety hazard. They damage vehicles and quickly lead to further, more serious road damage. Done correctly, the repair will last a long time. Done poorly, it can soon become a growing expense. Through a detailed 9-step procedure using proper materials, tools and equipment, the tape shows and explains how to do each step correctly and efficiently, with the result of a long-lasting repair. Special emphasis is placed on the proper shaping of the repair and the compaction of the mix.

Module 4 - 14 Minutes

Pothole Repair in Surface Treatment Pavement

The correct procedures for use of granular material for filling the pothole are demonstrated and explained. They will provide a long-lasting repair. Proper equipment and materials used for repair are discussed. An 8-step procedure is demonstrated in detail. It includes placing the traffic control devices, marking the damage area, cutting out and removing all damaged material, compacting the granular material, sealing the surface with liquid asphalt and cover aggregate, cleaning the work site and removing the traffic control devices.

Module 5 - 12 Minutes

Crack Repair in Asphalt Pavement

Repair procedures are shown for linear and alligator cracks from three to twelve millimeters wide. The correct work steps are described in detail. Proper hand tools and equipment designed to do the job best are shown. Materials for filling and sealing the cracks are also presented. Actual repairs of linear cracks and area cracks are demonstrated.

Module 6 - 14 Minutes

Repair of Depressions, Rutting and Corrugations

The basic repair method for depressions, rutting and corrugations is to fill in the low areas with a leveling course of asphalt concrete and then to overlay the entire area with a wearing course. The proper procedures to perform this repair method with a motorgrader are described through eight work steps. Special considerations for placing and compacting each layer in a deep depression are illustrated. The tape also shows how to place and compact a thin overlay over the leveling course.

Module 7 - 16 Minutes

Base and Sub-base Repair

Details on correct procedures for the repair of base and subbase are demonstrated in this videotape. Nine work steps include placing the traffic control devices, marking the limits of repair and cutting the pavement, removing all unsuitable material, installing required subdrainage, restoring the subgrade, replacing the subbase and base, replacing the pavement surface, cleaning the work site and removing the traffic control devices. Quick on-site tests of the moisture content of the subgrade and base materials are also shown.

Module 8 - 15 Minutes

Single and Multiple Surface Treatments

This module gives the What, the Why, and the How in construction of successful surface treatments on unpaved and paved roads. It covers good construction practices in eight detailed work steps. The preparation of the surface to be treated, testing of the asphalt distributor, and checking the weather are discussed. Materials required for surface treatments are presented. Proper procedures for applying the asphalt, spreading the aggregate and compacting the aggregate are demonstrated. Construction of smooth transverse and longitudinal joints is also described.

Module 9 - 24 Minutes

Slurry Seal

The module describes an increasingly useful and cost-effective method of maintaining paved surfaces. It covers the resources needed to perform a slurry seal job including materials, equipment and manpower. It also shows in detail the slurry seal operation in 7 steps: storage and loading of materials, traffic control, surface preparation, slurry application, curing, rolling and clean-up. Applying these procedures, the pavement will be protected with a uniform skid resistant and waterproof surface.

Module 10 - 12 Minutes

Patching Unpaved Roads

This is a manual method of maintenance for repairing surface defects such as potholes, ruts, gullies and soft spots on unpaved roads. The Module describes an eight-step maintenance procedure to provide a long-lasting repair. Proper maintenance practices for preparing the hole, filling it with granular material and compacting the material are shown in detail. A quick test for moisture content of the material at the site is also described.

Module 11 - 21 Minutes

Smoothing and Reshaping of Earth and Gravel Roads

Regularly scheduled smoothing and reshaping will keep earth and gravel roads in good condition and reduce the need for major high cost repairs. This videotape has two parts: (1) Smoothing, and (2) Reshaping. Each part has an equipment requirement, and overview of

work steps, the work steps in detail, and a work step summary. Considerations for planning and preparing for the work are treated. Procedures for checking the road cross slope at straight and curved road sections are also presented.

Module 12 - 18 Minutes

Regraveling

A major maintenance operation to restore the wearing course of gravel roads is presented in detail. Necessary repairs of the road and drainage system before regraveling are discussed. Equipment, materials, and procedures for regraveling are clearly described. The procedures include: traffic control, reshaping and compacting the subgrade, hauling and placing the granular material, and compacting the granular material. Methods for checking the road cross slope and quick testing of the material's moisture content are also shown.

Module 13 - 16 Minutes

Reshaping Earth and Gravel Shoulders

This videotape shows the proper procedures for reshaping earth and gravel shoulders (without adding material) to correct shoulder drop-off, rutting, buildup of material and excessive weed growth and to maintain a safe shoulder with proper cross slope. A nine-step maintenance procedure is clearly presented step-by-step and the equipment and hand tools required are also discussed.

Module 14 - 19 Minutes

Replenishing Earth and Gravel Shoulders

Nine maintenance work steps to restore the unpaved shoulder by adding new material are shown in the Module. Proper procedures are fully presented for preparing the existing shoulder surface before adding additional material, placing and spreading additional material, and compacting the material. Equipment and material required to do the job best are discussed, as well as proper use of equipment.

Module 15 - 19 Minutes

Mechanical Cleaning of Unlined Ditches

Mechanical cleaning procedures with a motorgrader and with an excavator are presented. The tape reviews ditch structure and function, and selection of the appropriate type of equipment to be used depending on ditch design and condition. Proper work step details include planning the job, traffic control, cleaning the ditch, cleaning adjacent culvert inlets and outlets and outfall ditches, disposing of unwanted material, cleaning up the job site, inspecting the finished job.

Module 16 - 16 Minutes

Cleaning of Lined Ditches, Culverts and Catch Basins

Proper procedures for manual cleaning of lined ditches, culverts and catch basins are demonstrated. The seven-step procedure includes traffic control, assigning the work, removing and disposing of all debris and obstructions, inspecting for damage, making minor repairs, cleaning up the work site. The tape also shows how to schedule the cleaning work.

Module 17 - 14 Minutes

Cleaning and Clearing of Bridges

This module describes why and how to clean all types of bridges and their components. It includes procedures for cleaning bridge decks, drainholes, downspouts, expansion joints, all signs and reflectors, removing unauthorized writing or painting, cleaning bearing assemblies,

pier caps and abutments, and removing debris and waterway obstructions. Proper equipment and hand tools required to do the job are also presented.

Module 18 - 18 Minutes

Concrete Bridge Deck Repair

Procedures for permanent repair of partial and full)depth bridge deck holes with cement concrete are detailed. Proper procedures and proper use of equipment and tools for cutting the concrete, cleaning out the hole and the reinforcing steel, building the form, preparing the concrete, and placing and finishing the concrete are shown and described. The correct curing method of the concrete is also presented.