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13. ABSTRACT Describes a method for evaluation of conveyor equipment operational and functional performance characteristics. Identifies supporting tests, facilities, and equipment required. Provides procedures for assembly, disassembly, functional performance, and mobility characteristics. <u>Not applicable</u> to peripheral equipment external to and used in conjunction with conveyor equipment.			

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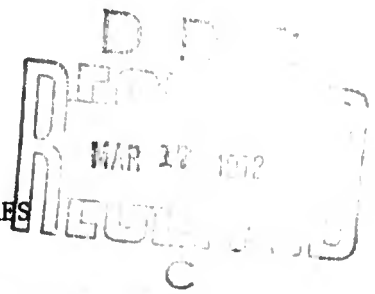
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Belt conveyor						
Conveyor equipment						
Materials handling equipment						

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U.S. ARMY TEST AND EVALUATION COMMAND
SYSTEM SERVICE TEST OPERATIONS PROCEDURES



AMSTE-RP-702-108

*Test Operations Procedure 9-3-045

8 February 1972

CONVEYOR EQUIPMENT

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SECTION I
GENERAL

1. Purpose and Scope. This Test Operation Procedure (TOP) describes test procedures for evaluating the operational, performance and maintenance characteristics of conveyor equipment to determine the degree to which this equipment meets the requirements of Materiel Needs (MN) and whether it is suitable for Army use. Testing is conducted using personnel representative of those who will operate and maintain the equipment in the field and under all climatic and environmental conditions representative of those areas where the equipment will be used. These procedures are not intended to service test peripheral equipment external to and used in conjunction with the conveyor equipment.

2. Background. Conveyor equipment, in general, provides a fast and efficient method of transferring materials (loose bulk or packaged) from a receiving point to a warehouse storage bay, to a vehicle for transport to another destination, to a mixing machine for producing concrete, asphalt or other similar products and from vehicle or railroad cars to dock or warehouse facilities. Equipment in current use normally consists of feeders which control the rate at which loose bulk or packaged material is transferred to a conveyor; gravity operated

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*This TOP supersedes MTPs 9-3-046 (30 Jan 70) and 9-3-047 (26 Mar 70), including all changes.

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roller conveyor for transporting materials at horizontal or slightly declined levels and motorized belt conveyors which can be adjusted in height to load materials into receiving units at higher levels than the source location. Types of conveyors available are: self-complete, sectionalized, portable towed and vehicle-mounted units. The addition of new or modernized conveyor equipment to the military inventory must be preceded by service testing to determine its merits relative to similar equipment and to evaluate its suitability for Army use.

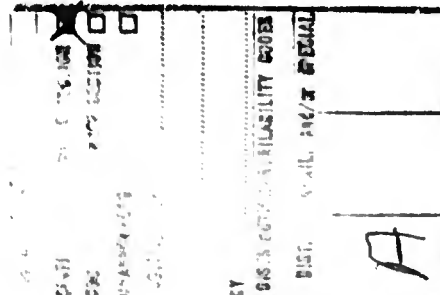
3. Equipment and Facilities. In addition to the equipment and facilities defined in the documents listed in Section II the following are required:

- a. Assembly and disassembly tools and equipment (para 5).
- b. Test loads (para 6).
- c. Towing and transport vehicles (para 7).

SECTION II TEST PROCEDURES

4. Supporting Tests. Common Service TOPs, the tests defined in Section III, and other published documents to be considered in formulating a service test plan are as follows:

<u>TEST SUBJECT TITLE</u>	<u>PUBLICATION NO.</u>
a. Operator Training and Familiarization	10-3-501
b. Photographic Coverage	7-3-519
c. Technical Inspection	9-3-508
d. Physical Characteristics	9-3-500
e. Safety	10-3-507
f. Assembly and Disassembly (Refer to para 5)	
g. Performance Tests	
(1) Operation (Refer to para 6)	
(2) Mobility (Refer to para 7)	
h. Desert Environmental Test of Construction, Support and Service Equipment	9-4-001



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TOP 9-3-045

<u>TEST SUBJECT TITLE</u>	<u>PUBLICATION NO.</u>
i. Tropic Environmental Test of Construction, Support and Service Equipment	9-4-003
j. Arctic Environmental Test of Wheeled and Tracked Vehicles	2-4-002
k. Maintenance Evaluation	10-3-504
l. Reliability	2-3-507
m. Human Factors Evaluation	10-3-505
n. Transportability	2-3-519
o. Durability	10-3-502
p. Value Analysis	USAMC SUPPL 1 to AR 11-26

SECTION III
SUPPLEMENTARY INSTRUCTIONS

5. Assembly and Disassembly.

a. Objective. To determine the ease of assembly and disassembly of the test item and interchangeability of common components or sections.

b. Method. The test item is assembled using the personnel, procedures and tools described in the applicable technical manual or manufacturers' book of instructions. Comments are recorded indicating time to assemble, number of erection personnel used and any deficiencies observed. The test item is operated and performance information recorded. The test item is then disassembled and pertinent time and comments are recorded. Assembly and disassembly operations are repeated as often as required, installing interchangeable components in different positions and varying the number of erection personnel used.

c. Data Required.

(1) Nomenclature of test item and interchangeable components.

(2) Recorded times to assemble and disassemble.

- (3) Difficulties encountered in assembly and disassembly operations.
- (4) Number of erection personnel used for each operation.
- (5) Interchangeability data.
- (6) General comments by test personnel.

d. Analytical Plan. The average times are computed for each team of erection personnel to assemble and disassemble the test item. Comments are summarized on the difficulties observed and interchangeability data obtained. This information is compared with the requirements of the MN and specifications and then used to prepare recommendations relative to the suitability of the test item for Army use.

6. Operation.

a. Objective. To evaluate the ease of operation of the test item and to determine that its rate of delivery meets the requirements of the MN.

b. Method. The test item is prepared for normal operation and initially adjusted for minimum elevation and optimum speed of operation designated for minimum elevation. Test loads are fed to the test item at the maximum level for this mode. The volume output of the test item is determined relative to time, and the results recorded for each test run. These procedures are repeated for all settings of elevation and speeds of operation provided by the test item.

c. Data Required.

- (1) Nomenclature of test item.
- (2) Comments on ease of operation of the test item and all operating controls.
- (3) Volume of test load delivered and corresponding times for each angle of elevation and operating speed provided.

d. Analytical Plan. The above data are summarized and compared with the requirements of the MN. This analysis is used to prepare recommendations relative to the suitability of the test item for Army use.

7. Mobility.

a. Objective. To determine the ease and effect of towing self-complete test items and the ease and effect of stowing and transporting sectionalized test items.

b. Method. The self-complete test item is attached to a tug or other specialized vehicle or the sectionalized test item is disassembled and stowed on applicable transport vehicle. The test item is then towed or transported over the types of terrain for distances and at speeds specified in the MN. Upon completion of road trials the test item is operated and comments are recorded on any degradation of performance resulting from mobility tests. These procedures are repeated for all types of towing or transporting vehicles specified in the MN.

c. Data Required.

(1) Nomenclature of test item and type of towing vehicle or transport used.

(2) Type of terrain, distances and speeds used in road test.

(3) Comments on ease of towing or stowing and transporting the test item.

(4) Comments on the operational effects on the test item caused by towing or transporting.

d. Analytical Plan. Comments are summarized on the ease of towing or transporting the test item and the impact on the operation of the test item correlated to the type of vehicle, type of terrain, distances and vehicular speeds. These data are compared to the requirements of the MN and the analysis is used to prepare recommendations on the suitability of the test item for Army use.

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