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1 November 1982
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MILITARY SPECIFICATION

DATA ON TRANSPORTATION ENVIRONMENTS: MONITORING CARGO SHIPMENTS FOR ACQUISITION OF

This specification is approved for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 Scope. This specification provides the general requirements for monitoring of shipments by rail, highway, air, and ocean transport modes to acquire data on transportation environments. The definition of monitoring and related technical terms can be found in section 6.

1.2 Classification. Monitoring method's shall be classified as follows: (NOTE: A particular monitoring project may involve more than one method.)

Type Ia: Shipment unaccompanied by monitoring personnel; no measuring and recording instruments other than cameras and measuring tapes required; principal source of data is from observations and interviews.

Type Ib: Shipment accompanied by monitoring personnel; no measuring and recording instruments other than cameras and measuring tapes required; principal source of data is from observations and interviews.

Type IIa: Shipment unaccompanied by monitoring personnel; event-type (threshold-sensitive) instruments without time base required for recording occurrence of events en route.

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be used in improving this document should be addressed to: Commander, Military Traffic Management Command Transportation Engineering Agency, ATTN: MTT-TRC, P.O. Box 6276, Newport News, VA 23606, by using the self addressed Standardization Document Improvement Proposal, (DD Form 1426) appearing at the end of the document or by letter.

AMSC No. A3163 FSC ENVR

Type IIb: Shipment accompanied by monitoring personnel; event-type (threshold-sensitive) instruments without time base required for recording occurrence of events en route.

Type IIIa: Shipment unaccompanied by monitoring personnel; event-type (threshold-sensitive) instruments with time base instruments required for recording occurrence of events en route.

Type IIIb: Shipment accompanied by monitoring personnel; event-type (threshold-sensitive) instruments with time base required for recording events en route.

Type IVa: Shipment unaccompanied by monitoring personnel; maximum/minimum indicating instruments without time base required for recording data en route.

Type IVb: Shipment accompanied by monitoring personnel; maximum/minimum indicating instruments without time base required for recording data en route.

Type Va: Shipment unaccompanied by monitoring personnel; maximum/minimum indicating instruments with time base required for recording data en route.

Type Vb: Shipment accompanied by monitoring personnel; maximum/minimum indicating instruments with time base required for recording data en route.

Type VIa: Shipment unaccompanied by monitoring personnel; analog-type instruments without time base required for recording data en route.

Type VIb: Shipment accompanied by monitoring personnel; analog-type instruments without time base required for recording data en route.

Type VIIa: Shipment unaccompanied by monitoring personnel; analog-type instruments with time base required for recording data en route.

Type VIIb: Shipment accompanied by monitoring personnel; analog-type instruments with time base required for recording data en route.

2. APPLICABLE DOCUMENTS

2.1 Government documents. Not applicable.

2.2 Other publications. The following documents form a part of this specification to the extent specified herein. Unless otherwise indicated, the issue in effect on the date of invitation for bids or request for proposal shall apply.

Association of American Railroads:

Rules Governing the Loading of Commodities on Open-Top Cars.
Loading Methods - Closed Cars.

(Application for copies should be addressed to the Association of American Railroads, 59 East Van Buren Street, Chicago, Illinois 60605.)

3. REQUIREMENTS

3.1 General. Type Ia monitoring requires collection of data by observations and interviews only at origin and destination. No monitoring personnel accompany the shipment, and no instruments are required. Types IIa, IIIa, IVa, Va, VIa, and VIIa monitoring require collection of data by observations and interviews at origin and destination and by instruments from origin to destination.

Type Ib monitoring requires collection of data by observations and interviews at origin, destination, and en route. No instruments are required for Type Ib monitoring. Types IIb, IIIb, IVb, Vb, VIb, and VIIb monitoring require collection of data by observations, interviews, and instruments, from origin to destination. Unless otherwise specified (see 6.2), data collection by instruments is also required during intransit storage for all types of monitoring except Type I. Cameras and measuring tapes are required for all types of monitoring.

Unless otherwise specified (see 6.2), the monitoring activity is responsible for furnishing and installing all instruments and for providing all personnel, equipment, and supplies needed to accomplish the monitoring. Unless otherwise specified (see 6.2), monitoring activity personnel must meet shipments en route (not applicable to Type I monitoring) to repair and service instruments, if required to keep them operational. Unless otherwise specified (see 6.2), the type or types of monitoring to be performed will be identified by the sponsor.

3.2 Monitoring objectives. This specification is limited to monitoring for acquired data that meets one or more of the following objectives:

a. To validate existing systems.

b. To correct known damage-incurring situations.

c. To provide shock and vibration data and other environmental data for the development of transportability guidance.

3.3 Observations. Conditions affecting movement of the monitored cargo shall be noted, and a record of these conditions shall be included in the report required by this specification (see 3.12). Observations shall include both physical and organizational environments affecting movement. Physical observations shall include, but not be limited to, conditions and circumstances of weather; cargo; conveyances loading and unloading procedures; blocking, bracing, and tiedowns; and route. In portraying the organizational environment, observations shall include pertinent characteristics of personnel and management controls directly impacting on cargo transportation. Unless otherwise specified (see 6.2), only those observations and interviews that can be accomplished at origin and destination are required for unaccompanied monitoring (Types Ia, IIa, IIIa, IVa, Va, VIa, and VIIa).

3.3.1 Cargo. Note identification and markings, weight, dimensions, observable factors affecting fragility, type and condition of containers, level of pack, state of repair, location of center of gravity, and other distinguishing features considered by the observer to affect transportability. Note separately all damage to cargo that occurred during handling and during transit.

3.3.2 Transportation medium. For all conveyances, note the type, identification, rated load capacity, empty weight, loaded weight, and overall and cargo space dimensions. For highway conveyances, note wheelbase, tire size and pressure, and type of suspension system. For rail conveyances, note mechanical designation, car type, draft and running gear, and special shock-mitigation features, where applicable. For water conveyances, note draft fore and aft and location of cargo and restraint system. For air conveyances, note restraint systems and type of propulsion. Also note any other pertinent information for analyzing the shock response characteristics of the transportation medium.

3.3.3 Blocking, bracing, and tiedowns. Provide a complete description of the blocking, bracing, and tiedown system(s), to include kinds of materials used, dimensions, and locations. Show the dimensions of tiedown projections in the horizontal, vertical, and lateral planes. Observe and note any apparent defects in materials or applications that may adversely affect cargo security and safety.

3.3.4 Route. Applicable only to Types Ib, IIb, IIIb, IVb, Vb, VIb, and VIIb, unless otherwise stated (see 6.2).

3.3.4.1 General. Observe and note the route location and condition as to how it affects smoothness of ride, transit time, and safe movement. Where applicable, describe the route condition in terms of a standard index or terminology.

3.3.4.2 Sea state. Sea state shall be described in terms of the Beaufort Scale and any other terms or scales deemed necessary to note sea condition adequately.

3.3.4.3 Highway. The condition of highways shall be described in terms of roughness measurement indexes in prevalent use.

3.3.4.4 Air. Air route condition shall be described in terms of wind speed and direction, cloud cover, precipitation, turbulence, type and condition of landing surface, and arresting devices, if applicable.

3.3.4.5 Rail. Gage, length of rails, condition of joints, and type and condition of ties shall be observed and noted, as well as the general condition of track alignment, surface level, and cross level along typical samples of the route.

3.4 Environmental characteristics. (Note applicable to Type I monitoring.) Unless otherwise specified (see 6.2), the following characteristics that occur during cargo movement and intransit storage shall be recorded and reported: vibration and shock in three mutually perpendicular planes (vertical, lateral, and longitudinal); ambient temperature; pressure; and relative humidity.

3.5 Noninterference with shipment. Monitoring shall be accomplished to the maximum extent possible without interfering with normal cargo-handling and shipping routines or altering the environment being studied. Monitoring personnel are required to arrive at shipment origin and destination in time to accomplish their preshipment and postshipment tasks without interfering with normal shipping activities. The locations and schedule for installing transducers, recorders, and supporting equipment shall be preplanned to minimize conflict with loading plans and schedules. Transducers to be located inside unit containers during movement shall be installed prior to placement of the container on the vehicle. Unless otherwise authorized by the contracting officer, data recording systems shall be preassembled, calibrated, checked, and packaged, with all necessary mounting brackets and fasteners, for quick mounting. Data on recording equipment are not applicable to Type I monitoring.

3.6 Planning.

3.6.1 General. Unless otherwise specified (see 6.2), the monitoring activity shall prepare a tentative monitoring plan (see 3.6.3) and submit it to the sponsor, for approval, at least 15 working days before the estimated starting date of movement. The plan shall identify data collection techniques, number and type of instruments to be used, location of transducers, provisions for providing power to equipment, personnel assignments by skill, and arrangements for repairing and servicing recording equipment. A detailed plan shall be prepared and coordinated with the sponsor as soon as feasibility can be confirmed (see 3.6.4). The detailed plan shall be similar to the tentative plan, but shall update the tentative plan information and present it in more detail. It shall also address changes required after issuance of the tentative plan and all known potential problems affecting the planned monitoring activities. Data on recording equipment are not required for Type I monitoring.

3.6.2 Flexibility. In order to perform monitoring tasks without interfering with normal shipping activities, monitoring plans shall provide a reasonable degree of flexibility in the starting date of movement, period of performance, itinerary, model of vehicle, and location of instruments needed to meet the shipper's needs. Unless otherwise specified (see 6.2), provisions for the following possible deviations from the approved plans shall be deemed to meet the flexibility requirement and shall not necessitate a formal change in the agreement:

a. Starting date of movement: -2 days +7 days.

b. Period of performance: ±14 days.

c. Itinerary: ±10 percent of original mileage estimate.

d. Model of vehicle: Change from a covered to an uncovered cargo platform and vice versa and changes in style or dimensions of the vehicle, which do not necessitate procurement of additional transducers, recorders, or other powered equipment.

e. Location of instruments: (Not applicable to Type I monitoring.) Changes requiring onsite modification of fasteners and mounting brackets and extension of electrical cables up to 25 feet (63.5 cm), which do not necessitate procurement of additional transducers, recorders, or other powered equipment.

3.6.3 Coordination of tentative plan. It shall be the responsibility of the monitoring activity to prepare and coordinate the tentative monitoring plan with the shippers, receivers, carriers, and security personnel, when appropriate, before the plan is submitted to the sponsor for approval (see 3.6.1).

3.6.4 Coordination of detailed plan. It shall be the responsibility of the monitoring activity to prepare and coordinate the detailed monitoring plan with the shippers, receivers, carriers, and security personnel, when appropriate, to ascertain feasibility. Approval of the plan by the sponsor prior to coordination is not required unless conformance with the detailed plan will result in a claim for increased costs against the sponsor or will reduce the quantity or quality of data to be provided (see 3.6.1).

3.7 Transfer from one mode to another. Unless otherwise specified (see 6.2), only the mode of transport employed for movement from the shipper's premises, and intransit storage shall be monitored. It shall be the responsiblity of the monitoring activity to mark or terminate the record when the mode is changed, so that data from other modes are distinguishable. Termination of instrument records is not applicable to Type I monitoring.

3.8 Instrument systems. Not applicable to Type I monitoring.

3.8.1 General. Unless otherwise specified (see 6.2), the monitoring activity shall select, furnish, install, and maintain measuring and recording instruments that have amplitude and frequency ranges suitable for the type of monitoring and mode(s) indicated (see 6.2). Unless otherwise specified (see 6.2), instrument systems shall be energized for continuous data collection rather than data sampling.

3.8.2 Accuracy of event-type (threshold sensitive) and maximum/minimum instruments. The output of event-type (threshold sensitive) and maximum/minimum instruments used for Types II, III, IV, and V monitoring shall be accurate within ± 5 percent.

3.8.3 Linearity of response of analog-type instruments. The transducers and recorders used for Types VI and VII monitoring shall each have a linear response within ± 2 percent, and the combined system response shall be linear within ± 3 percent over the range of significant frequencies and amplitudes (see 3.8.4).

3.8.4 Range of response of analog-type instrument systems.

See Table I.

TABLE I
MINIMUM OPERATING RANGES FOR INSTRUMENT SYSTEMS
USED IN ANALOG-TYPE MONITORING 1/

Mode	Characteristic 2/						
	Temperature		Air Pressure		Acceleration		Relative Humidity
	Range (°F)(°C)	Maximum Time Constant (sec) 3/	Range (absolute) (psi)(kPa)	Max Full-Scale Response Time (sec) 4/	Range (g)	Freq (Hz) 5/	Range (%)
Rail	-40 -40 to to +125 52	10	0 0 to to 15 104	2.0	0-50 Vert 0-10 Lat 0-50 Long	0-350 0-350 0-350	20-100
Highway	-30 -35 to to +125 52	10	0 0 to to 15 104	2.0	0-15 Vert 0-10 Lat 0-10 Long	0-50 0-50 0-50	20-100
Air	-60 -52 to to +125 52	10	0 0 to to 15 104	0.2	0-15 Vert 0-15 Lat 0-15 Long	0-1,000 0-1,000 0-1,000	20-100
Ocean	-40 -40 to to +125 52	15	0 0 to to 15 104	10.0	0-2 Vert 0-2 Lat 0-2 Long	0-50 0-50 0-50	20-100
Terminals Handling	-40 -40 to to +125 52	15	0 0 to to 15 104	10.0	0-50 Vert 0-50 Lat 0-50 Long	0-350 0-350 0-350	20-100

1/ If it is known from previous experience that because of season, geography, or other conditions, the range of an environmental characteristic will be less than shown in the table; the required range of response of the instrument system may be reduced accordingly to obtain better resolution and accuracy of data.
2/ See 6.2 (measurement of other characteristics may be required).
3/ Maximum time constant is the maximum allowable time to reach 63.2 percent of an instantaneous temperature change.
4/ Maximum full-scale response time is the maximum allowable time to record a change extending over the full scale of the instrument.
5/ Acceleration recording instruments having a narrower frequency range may be used if adequate for project objectives.

3.8.5 Recording Environment. (Not applicable to Type I monitoring.) To prevent degradation of data measurements, all signal-conditional equipment and recording equipment shall be designed to function in the environment being monitored or shall be adequately isolated from the monitored environment.

3.8.6 Instrumentation packages shipped by rail. Instrument systems and system components shipped as rail cargo shall meet all loading requirements specified in Rules Governing the Loading of Commodities in Open-Top Cars or Loading Methods-Closed Cars as appropriate.

3.9 Location and Orientation of Sensors. (Not applicable to Type I monitoring.) Sensors for measurement of environments shall be placed on or near the cargo for optimal exposure to the ambient environment of the cargo. Acceleration sensors shall be located, when practicable and not otherwise specified (see 6.2), in one or more of the planes coinciding with the vertical, lateral, and longitudinal planes passing through the center of gravity of the cargo. When mounting of the acceleration sensors on the cargo is not practicable and not otherwise specified (see 6.2), the acceleration sensors shall be mounted on the vehicle and oriented in the vertical, lateral, and longitudinal planes of the vehicle. In all cases, the exact location of the acceleration sensors with respect to the center of gravity or center of volume of the cargo shall be noted and reported to facilitate analysis of data. All sensors and associated cables shall be installed in a workmanlike manner. To prevent damage caused by accidental impacts and adverse weather, they shall be protected by location and mechanical shielding.

3.10 Calibration.

3.10.1 Calibration of instruments. (Not applicable to Type I monitoring.) Transducers and measuring instruments used in monitoring shall be calibrated to conform to standards traceable to the National Bureau of Standards, with a tolerance of not more than ± 5 percent. On request, the most recent calibration certificate for each transducer used shall be made available for inspection by the sponsor or his representative.

3.10.2 Calibration of analog records. (Applicable only to Types VI and VII monitoring.) Permanent calibration references produced by known inputs to the analog measurement and recording system shall be recorded on each data channel of the output record (magnetic tape, oscillogram, or other). To provide optimal resolution for data reduction, the reference signal shall be of the same order of magnitude as the anticipated maximum data signal. These references shall be recorded during premovement and postmovement operational tests (see 4.3 and 4.4) and, at such other times, as required for optimal data resolution.

3.11 Still photographs. Unless otherwise specified (see 6.2), the monitoring activity shall provide glossy photographic prints and black and white negatives of the subjects and sizes identified in the Contract Data Requirements List (CDRL) and shall conform to the requirements of Data Item Description DI-A-5019.

3.12 Reporting of data.

3.12.1 General. Unless otherwise specified (see 6.2) the monitoring activity shall provide to the sponsor a report containing summaries of recorded data amplitudes and frequencies, observations in accordance with paragraph 3.3, correlation of observations with data, a description of instruments used, photographs, and all additional data specified in block 16 of the Contract Data Requirements List (CDRL). Unless otherwise specified (see 6.2) the report shall be arranged in the format specified in the CDRL and delivered to the sponsor within 45 days after termination of the monitoring.

3.12.2 Dispositon of raw data, photographic film, and prints not included in report. Unless otherwise specified (see 6.2), the monitoring activity shall maintain on file all raw data, photographic film, and photographic prints and sketches not furnished with the report. On request, these materials shall be furnished at no cost to the sponsor. Six months after delivery of the report, the monitoring activity may, at its discretion, dispose of the materials subject to any restrictions imposed by military security requirements.

3.12.3 Accuracy of data reduction. Throughout the data reduction process, whether accomplished manually or by automated electronic systems, the system accuracies specified in 3.8.2 and 3.8.3 shall be maintained with minimum resolutions reported as follows:

Environmental Characteristic	Resolution of Data to be Reported
Shock	3 significant figures
Vibration	3 significant figures
Temperature	2 significant figures
Pressure	3 significant figures
Relative humidity	2 significant figures

3.13 Safety. During performance of work covered by this specification, the monitoring activity shall comply with all applicable safety codes, regulations, and special safety rules, and shall take all other precautions necessary to assure the safety of personnel and property.

4. QUALITY ASSURANCE PROVISIONS (Not applicable to Type I monitoring)

4.1 Responsibility for inspection. Unless otherwise specified (see 6.2), the monitoring activity is responsible for the performance of all inspection, examination, and test requirements as specified herein. Except as otherwise specified (see 6.2), the monitoring activity may use its own facilities or any others suitable for the inspection. The sponsor reserves the right to perform any of the inspections, examinations and tests specified herein, where such inspections, examinations and tests are deemed necessary to assure that supplies and services conform to prescribed requirements.

4.2 Quality conformance inspection. Unless otherwise specified (see 6.2), each instrument system installed for monitoring shall have a quality conformance inspection, consisting of the following:

a. Premovement safety examination.

b. Premovement operational test.

c. Postmovement examination and operational test.

4.3 Premovement safety examination. Before being energized, each instrument system installed for monitoring shall be inspected to assure that it meets applicable regulations, codes, rules, and industry safety practices.

4.4 Premovement operational test. Before a monitored movement is begun, each instrument system installed for monitoring shall be energized, and a recorder readout shall be obtained from an oscillograph chart, oscilloscope, meter, or mechanical indicator, as appropriate, to assure that the system functions and responds properly to input signals. Calibration references shall also be recorded at this time for analog instruments (see 3.10.2).

4.5 Postmovement examination and operational test. After completion of a monitored movement, each instrument system installed for monitoring shall be examined for mechanical defects affecting system reliability or safety of operation. Prior to shutdown or disassembly of the instrument system, a short period of operation shall be observed, and a recorder readout shall be obtained from oscillograph, oscilloscope, meter, or mechanical indicator, as appropriate, to assure that the system functions and responds to input signals. Calibration references shall also be recorded at this time for analog instruments (see 3.10.2).

5. PREPARATION FOR DELIVERY (This section is not applicable to this specification.)

6. NOTES

6.1 Intended use. This specification is intended for use by program managers, integrated logistics support managers, and other military personnel to procure data for minimizing materiel losses during transport and maximizing the delivery of usable materiel to operational forces. This specification may also be used by transportability agents and other personnel at military activities to develop criteria for assisting integrated logistics support managers during study, concept formulation, and concept definition. This specification may be incorporated in a contract to obtain monitoring services from private enterprises or may be used to specify requirements through an Interservices Support Agreement (ISSA).

6.2 Ordering data. Procurement documents should specify the following:

a. Title, number, and date of this specification.

b. Type(s) of monitoring required (see 1.2 and 3.1).

c. List of sponsor-furnished equipment (3.1 and 3.8.1).

d. Monitoring objective(s) (see 3.2).

e. Description of cargo to be monitored.

f. Name and address of shipper.

g. Point(s) of origin and destination of shipment.

h. Observations (see 3.3).

i. Route (see 3.3.4).

j. Flexibility (see 3.6.2).

k. Mode(s) of shipment to be monitored (see 3.1 and 3.7).

l. Date of shipment.

m. Environmental characteristic(s) to be monitored (see 3.4).

n. Requirements for submittal of tentative plan (see 3.6.1 and 3.6.3).

o. Requirements for submittal of detailed plan (see 3.6.1 and 3.6.4).

p. Requirements for collection data with instruments (see 3.8.1).

q. Location of instruments (see 3.9).

r. Requirements for repair and servicing instruments en route (see 3.1 and 6.6.2).

s. Photographic requirements, (see 3.11 and 6.5).

t. Report requirements, (see 3.12.1 and 6.5).

u. Disposition of raw data, photographic film, prints, and sketches not included in the report (see 3.12.2).

v. Responsibility for inspections (see 4.1).

w. Location of inspection facilities (see 4.1).

x. Characteristics to be monitored, recorded, and reported not otherwise covered by this specification.

y. Special quality conformance inspection requirements (see 4.2).

z. Characteristics required for instruments used to measure parameters not otherwise covered by this specification.

6.3 Data requirements. When this specification is used in an acquisition which incorporates a DD Form 1423, Contract Data Requirements List (CDRL), the data requirements identified below shall be developed as specificed by an approved Data Item Descriptions (DD Form 1664) and delivered in accordance with the approved CDRL

incorporated into the contract. When the provisions of DAR 7-104.9(n)(2) are invoked and the DD Form 1423 is not used, the data specificed below shall be delivered by the contractor in accordance with the contract or purchase order requirements. Deliverable data required by this specification are cited in the following paragraphs.

Paragraph No.	Data requirement title	Applicable DID no.
3.6.1	Tentative monitoring plan	UDI-A-20412B
3.6.1	Detailed monitoring plan	UDI-A-20412B
3.6.3	Tentative monitoring plan	UDI-A-20412B
3.6.4	Detailed monitoring plan	UDI-A-20412B
3.11	Photographs	DI-A-5019
3.12.1	Report	UDI-A-26199

(Data item descriptions related to this specification, and identified in section 6 will be approved and listed as such in DOD 5000, 19L., Vol. II, AMSDL. Copies of data item descriptions required by the contractors in connection with specific acquisition functions should be obtained from the Naval Publications and Forms Center or as directed by the contracting officer.)

6.4 Data Item Descriptions (DID's). As written, the DID's listed in this specification may not be appropriate for all monitoring projects. Therefore, they should be carefully reviewed each time the specification is used.

6.5 Contract Data Requirements List (CDRL). DI-A-5019 and UDI-A-26199, listed above, specify that some contract requirements will be incorporated in the CDRL. Unless this is done, contract requirements will be incomplete.

6.6 Definitions.

6.6.1 Monitoring. For purpose of this specification, monitoring is defined as the surveillance of transportation environmental conditions that affect specific items of cargo during movement between specific points, as well as the recording of observations and measurements, to meet one or more of the objectives stated in 3.2.

6.6.2 Shipment unaccompanied by monitoring personnel. These are monitored shipments in which monitoring personnel do not accompany the shipment, but meet the shipment at origin and destination. Unaccompanied monitoring includes Type Ia, IIa, IIIa, IVa, Va, VIa, and VIIa monitoring. All types of unaccompanied monitoring, except Type Ia, require instruments (see 1.2 and 6.6.7 through 6.6.12). Unless otherwise specified (see 6.2.), monitoring personnel must meet shipments en route (not applicable to Type I monitoring) to repair and service instrument systems, if required to keep them operational.

6.6.3 Shipment accompanied by monitoring personnel. These are monitored shipments in which monitoring personnel accompany the shipment. Accompanied monitoring includes Types Ib, IIb, IIIb, IVb, Vb, VIb, and VII monitoring. All types of accompanied monitoring, except Type IB, require instruments (see 1.2 and 6.6.7 through 6.6.12). Unless otherwise specified (see 6.2), monitoring personnel must meet shipments en route (not applicable to Type I monitoring) to repair and service instrument systems, if required to keep them operational.

6.6.4 Sponsor. The sponsor is defined as the Government agency or activity initiating a requirement for monitoring. The sponsor is not necessarily the shipping activity, but may be a separate agency acting on behalf of the shipping activity.

6.6.5 Monitoring activity. The monitoring activity is defined as the Government agency or activity or civilian contractor required to perform monitoring services in accordance with this specification.

6.6.6 Agreement. An agreement may be either an Interservice Support Agreement or a commercial contract setting forth the terms and conditions under which one party, identified as the monitoring activity, will perform monitoring services for the benefit of the other party, identified as the sponsor.

6.6.7 Event-type (threshold sensitive) instruments without time base. These instruments sense and record the occurrence of an event, such as a shock of 10g's, but do not record the time or date of occurrence. These instruments are used for Type II monitoring.

6.6.8 Event-type (threshold sensitive) instruments with time base. These instruments sense and record the occurrence of an event, such as a shock of 10g's, and the time and date of the occurrence. These instruments are used for Type III monitoring.

6.6.9 Maximum/minimum instruments without time base. These instruments sense and record only the maximum and minimum values of a varying parameter that occurred during a given period, such as maximum and minimum temperatures. They do not record the time or date the maximum and minimum values occurred. The instruments are used for Type IV monitoring.

6.6.10 Maximum/minimum instruments with time base. These instruments sense and record the maximum and minimum values of a varying parameter that occurred during a given period, such as maximum and minimum temperatures, and the time and date the maximum and minimum values occurred. The instruments are used for Type V monitoring.

6.6.11 Analog instruments without time base. These instruments sense and record variations of a given parameter with time, such as the time history of a shock pulse. They do not record the time or date the events were recorded. These instruments are used for Type VI monitoring.

6.6.12 Analog instruments with time base. These instruments sense and record variations of a given parameter with time, such as the time history of a shock pulse, and the time and date these variations occurred. These instruments are used for Type VII monitoring.

6.6.13 Alignment. The horizontal location of a railroad as described by curves and tangents.

6.6.14 Surface level. The condition of the track as to vertical evenness or smoothness for short distances.

6.6.15 Cross-level. The vertical distance between the higher rail and the lower rail.

CUSTODIANS:

Army - MT
Navy - SA
Air Force - 69
DLA - DH

REVIEW ACTIVITIES:

Army - MT, TE
Navy - SA
Air Force - 69

USER ACTIVITIES:

Navy - YD

PREPARING ACTIVITY:

Army - MT

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

OMB Approval
No. 22-R255

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DOCUMENT IDENTIFIER AND TITLE DATA ON TRANSPORTATION ENVIRONMENTS MIL D 45217A MONITORING CARGO SHIPMENTS FOR ACQUISITION OF

NAME OF ORGANIZATION AND ADDRESS

CONTRACT NUMBER

MATERIAL PROCURED UNDER A

☐ DIRECT GOVERNMENT CONTRACT ☐ SUBCONTRACT

1. HAS ANY PART OF THE DOCUMENT CREATED PROBLEMS OR REQUIRED INTERPRETATION IN PROCUREMENT USE?

A. GIVE PARAGRAPH NUMBER AND WORDING.

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