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MIL-T-9076A (USAF)
20 January 1964

Superseding
MIL-T-9076 (USAF)
17 September 1953

MILITARY SPECIFICATION

TRAINING AID, AUTOMOTIVE, IGNITION SYSTEM TYPE MK-2

1. SCOPE

1.1 This specification covers one type of automotive ignition system demonstration training aid, designated Type MK-2.

2. APPLICABLE DOCUMENTS

2.1 The following documents, of the issue in effect on the date of invitation for bids, form a part of this specification to the extent specified herein:

SPECIFICATIONS

Federal

TT-E-527	Enamel, Alkyd, Lustreless
PPP-B-576	Box, Wood, Veneer Paper Overlaid
PPP-B-591	Box, Fiberboard, Wood Cleated
PPP-B-601	Boxes, Wood, Cleated-Plywood
PPP-B-621	Boxes, Wood, Nailed and Lock-Corner
PPP-B-636	Box, Fiberboard
PPP-T-60	Tape, Pressure Sensitive, Adhesive, Water-Proof for Packaging & Sealing

Military

MIL-P-116	Preservation, Methods Of
MIL-E-7729	Enamel, Gloss, Aircraft Application
MIL-P-8585	Primer Coating, Zinc Chromate, Low-Moisture Sensitivity
MIL-L-10547	Liner, Case
MIL-D-70327	Drawings, Engineering and Associated Lists

STANDARDS

MIL-STD-129	Marking of Shipments
MIL-STD-130	Identification Marking of US Military Property
MIL-STD-143	Specifications and Standards, Order of Precedence for the Selection Of

(Copies of specifications and standards required by contractors in connection with specific procurement functions should be obtained

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from the procuring agency or as directed by the contracting officer.)

3. REQUIREMENTS

3.1 Material:

3.1.1 Specifications and standards.- Specifications and standards for all materials, parts, and Government certifications and approval of processes and equipment, which are not specifically designated herein and which are necessary for the execution of this specification, shall be selected in accordance with MIL-STD-143, except as provided in the following paragraph:

3.1.1.1 Standard parts.- AN or MIL Standard parts shall be used wherever they are suitable for the purpose, and shall be identified by their part numbers. Commercial utility parts such as screws, bolts, nuts, cotter pins, et cetera, may be used, provided they have suitable properties and are replaceable by the AN or MIL Standard parts without alteration, and provided the corresponding AN or MIL part numbers are referenced on the drawings or in the parts lists. In applications for which no suitable corresponding AN or MIL part is in effect on date of invitation for bids, commercial parts may be used provided they conform to all requirements of this specification.

3.1.2 Protective treatment.- When materials are used in the construction of the training aid that are subject to deterioration when exposed to climatic and environmental conditions likely to occur during service usage, they shall be protected against such deterioration in a manner that will in no way prevent compliance with the performance requirements of this specification. The use of any protective coating that will crack, chip, or scale with age or extremes of climatic and environmental conditions shall be avoided.

3.2 Design and construction.- The training aid shall be designed and constructed so that no parts will work loose in service. It shall be built to withstand the strains, jars, vibrations, and other conditions incident to shipping, storage, installation, and service.

3.2.1 The training aid shall consist of a wood cabinet upon which is mounted an operational automotive ignition system fabricated approximately in accordance with Figure 1. The system shall be so operable as to simulate the actual ignition system of a 6 cylinder engine. In addition to the operable ignition system, suitable sectionalized models of the distributor and coil assemblies shall be provided.

3.2.2 The training aid shall be constructed of the parts specified herein and all other parts necessary to make it complete and operable.

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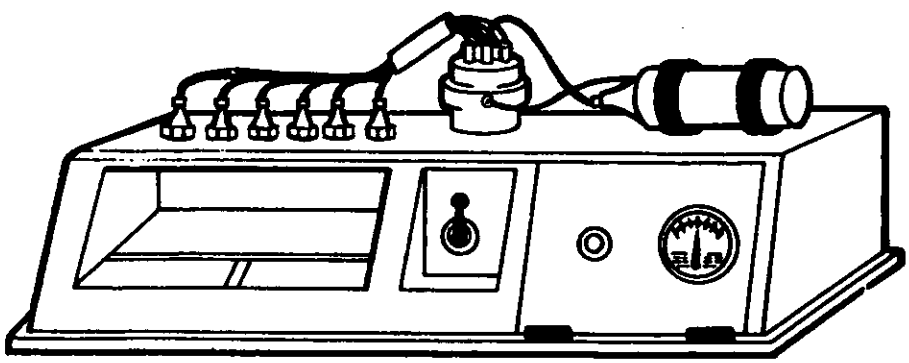

FIGURE 1. IGNITION SYSTEM DEMONSTRATOR

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3.2.3 Cabinet.- The cabinet shall be constructed of high grade commercial plywood or hardwood and in accordance with good cabinet making practices. Where the edges of the cabinet are subject to chipping they shall be trimmed with a suitable angle or channel as applicable. Suitable rubber pads or feet shall be attached to the bottom of the cabinet to prevent marring of surfaces upon which it may be placed. A trunk type handle shall be recessed in each end of the training aid to facilitate lifting.

3.2.3.1 Suitable spring clips shall be provided in the training aid for the storage of the sectionalized parts. The spring clips shall be so located that the sectionalized parts do not extend beyond the outer walls of the cabinet. Either by modification of the spring clips or by the installation of additional mechanism, there shall be provided a method whereby the sectionalized parts may be rigidly retained during shipping and storage.

3.2.3.2 Mirror.- A plate glass mirror, silvered on back, shall be mounted in the cabinet. The mirror shall be of such size as to give a wide angle of vision and so framed as to protect against possible damage. The mirror shall be aluminum coated with a siliac over-coating so processed that no pin holes or surface corrosion occur.

3.2.4 Ignition system.- The ignition system shall consist of 6 spark plugs, distributor, coil, transformer-rectifier, ammeter, ignition switch, connecting cables, and all other parts necessary to make it complete and operable. The system shall be operable from either a 6 or 115V source to simulate the actual system when the distributor is rotated. Any modification to the ignition system, including the installation of additional equipment, shall be made if necessary to make the sparking clearly visible to a group of nearby students.

3.2.4.1 Cranking mechanism.- A cranking mechanism shall be provided to rotate the distributor rotor in a positive manner in the proper direction only.

3.2.4.2 Suitable inlets for the 6 and 115V systems shall be located at the rear of the cabinet. The inlets shall be flush mounted and provided with a recessed toggle switch such that only one of the systems may be used at any one time.

3.2.4.3 The device shall be provided with approximately 15 feet of 2-conductor rubber covered wire for use with the 115V circuit, and approximately 4 feet of 2-conductor rubber covered wire for use with the 6V circuit. Both shall be of such size to safely carry the required current for operation. Of the 15 foot extension, one end shall terminate in a 2-prong male electrical plug for attachment to the power source, and the other end shall terminate in a female receptacle for attachment to the receptacle in the cabinet.

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The 6V connector shall have suitable jacks or plug at one end and 2 standard battery connections at the other. All ends of the connectors shall be strain relieved.

3.2.5 Sectionalized parts.- All sectionalized parts shall be cutaway as to best expose the internal mechanism and operation. The sectionalized parts shall consist of one distributor and one ignition coil.

3.3 Interchangeability.- All parts having the same manufacturer's part number shall be directly and completely interchangeable with each other with respect to installation and performance. Changes in manufacturer's part numbers shall be governed by the drawing number requirements of Specification MIL-D-70327.

3.4 Finishes and protective coatings:

3.4.1 The training aid shall be finished as specified herein. All enamel shall conform to Specifications MIL-E-7729 and TT-E-527, and zinc chromate primer shall be in accordance with Specification MIL-P-8585.

3.4.2 Machined surfaces.- All machined surfaces due to sectionalization as specified herein, shall be free from all burrs and marks of machining and shall be finished with not less than 2 coats of red enamel. Where the exposed surface is subject to deterioration it shall have an undercoat of zinc chromate primer.

3.4.3 Cabinet.- All corrosive metal parts on the cabinet shall be treated with one coat of zinc chromate primer. The exterior of the cabinet shall be sanded and sealed and finished with no less than 2 coats of engine gray enamel conforming to Specification MIL-E-7729.

3.4.4 Mirror chamber.- The mirror chamber shall be finished with not less than 2 coats of dull finish black enamel conforming to Specification TT-E-527.

3.5 Identification of product.- Equipment, assemblies, and parts shall be marked for identification in accordance with Standard MIL-STD-130.

3.5.1 Name plate.- A small plastic or metal name plate, permanently and legibly filled in with the following information, shall be securely attached to the training aid:

Training Aid, Automotive, Ignition System, Type MK-2
Specification MIL-T-9076 (USAF)
*FSN
Mfg's Part Nr
*Applicable data shall be entered by the contractor

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3.6 Workmanship.- The training aid including all parts and accessories shall be constructed and finished in a thoroughly workmanlike manner. Particular attention shall be given to neatness and thoroughness of soldering, wiring, impregnation of coils, marking of parts and assemblies, welding and brazing, painting, riveting, machine-screw assemblies, and freedom of parts from burrs and sharp edges.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for Inspection.- Unless otherwise specified in the contract of purchase order, the supplier is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified, the supplier may utilize his own facilities or any commercial laboratory acceptable to the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

4.2 Classification of Tests.- The inspection and testing of the training aid shall be classified as acceptance tests.

4.3 Acceptance Tests.- The inspection and testing of the training aid shall be classified as individual tests.

4.3.1 Individual tests.- Each training aid shall be subject to examination of product as described under 4.4 (Test Methods) of this specification.

4.4 Test Methods:

4.4.1 Examination of Product.- Each training aid shall be inspected and examined for conformance to the requirements of this specification.

4.4.2 Operation.- The training aid shall be operated through 50 complete cycles of operations, after which it shall be inspected for loose connections, binding, worn parts, or undue friction of moving parts.

4.5 Inspection of the Preservation, Packaging, Packing, and Marking for Shipment and Storage.- Preparation for delivery shall be inspected in accordance with the requirements of Section 5 or the documents specified therein.

4.6 Rejection and Retest.- Any training aid failing to conform to this specification shall be rejected. The contractor shall explain fully to the Government representative the cause of failure and the action to preclude recurrence. After correction, inspection and testing shall be repeated.

5. PREPARATION FOR DELIVERY

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5.1 Application.- The requirements specified herein apply only to direct purchases by, or direct shipments to the Government.

5.1.1 Preservation & Packaging.

5.1.2 LEVEL A.- Unless otherwise specified, Training Aids shall be preserved and packaged in accordance with Specification MIL-P-116, Method II.

5.1.3 LEVEL C.- Training Aids shall be preserved, packaged, and cushioned in accordance with manufacturer's commercial practice.

5.2 Packing:

5.2.1 LEVEL A.- Training Aids preserved and packaged in accordance with 5.1.2 shall be packed into exterior type shipping containers conforming to PPP-B-636, PPP-B-576, PPP-B-591, PPP-B-601, or PPP-B-621. The gross weight shall not exceed weight limitations of the shipping container. For export shipment, containers shall be provided with a case liner conforming to MIL-L-10547 and shall be sealed in accordance with appendix thereto. Case liners shall not be required when the unit, intermediate or exterior containers conform to PPP-B-636 and is sealed at all joints, seams, including manufacturer's joint with tape conforming to PPP-T-60.

5.2.2 LEVEL C.- Training Aids packaged in accordance with 5.1.3 will be packed as follows: Packages which require over packaging for acceptance by a carrier shall be packed in exterior shipping containers in a manner that will assure safe transportation at the lowest rate to the point of delivery. Containers shall meet consolidated Freight Classification Rules or Regulations of other carriers as applicable to the mode of transportation utilized.

5.3 Marking of shipments.- Interior packages and exterior shipping containers shall be marked in accordance with Standard MIL-STD-129. The nomenclature shall be as follows:

Training Aid, Automotive, Ignition System, Classroom
Type MK-2
Specification MIL-T-9076 (USAF)
*FSN
Mfg's Nr ___*_____
*Applicable data shall be entered by the contractor

6. NOTES

6.1 Use.- The Type MK-2 training aid, covered by this specifi-

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cation is intended for use in classrooms to demonstrate the theory and function as well as operation and maintenance of one type of automotive ignition system.

6.2 Ordering data.- Invitation for bids, contracts, and purchase orders should state the conditions for the following:

6.2.1 Preproduction tests.- It is expected that the contract or purchase order will specify that one training aid will be required as a preproduction sample and that the preproduction sample will be subjected to the preproduction tests to determine compliance with the requirements of the specification. The invitation for bids and the contract should specify the point of inspection for these tests.

NOTICE: When Government drawings, specifications, or other data are used for any purpose other than in connection with a definitely related Government procurement operation, the United States Government thereby incurs no responsibility nor any obligation whatsoever; and the fact that the Government may have formulated, furnished, or in any way supplied the said drawings, specifications, or other data, is not to be regarded by implication or otherwise as in any manner licensing the holder or any other person or corporation, or conveying any rights or permission to manufacture, use, or sell any patented invention that may in any way be related thereto.

Preparing Activity
Air Force - 00A

Custodians:
Air Force - 00A

Review Activity:
Air Force - 00A

Review/user information is current as of the date of this document. For future coordination of changes to this document, draft circulation should be based on the information in the current DODISS.

GPO 807-912

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SPECIFICATION ANALYSIS SHEET

Form Approved
Budget Bureau No. 119-R004

INSTRUCTIONS

This sheet is to be filled out by personnel either Government or contractor, involved in the use of the specification in procurement of products for ultimate use by the Department of Defense. This sheet is provided for obtaining information on the use of this specification which will insure that suitable products can be procured with a minimum amount of delay and at the least cost. Comments and the return of this form will be appreciated. Fold on lines on reverse side, staple in corner, and send to preparing activity *(as indicated on reverse hereof)*.

SPECIFICATION

ORGANIZATION *(Of submitter)* | CITY AND STATE

CONTRACT NO. | QUANTITY OF ITEMS PROCURED | DOLLAR AMOUNT $

MATERIAL PROCURED UNDER A

☐ DIRECT GOVERNMENT CONTRACT ☐ SUBCONTRACT

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

A. GIVE PARAGRAPH NUMBER AND WORDING.

B. RECOMMENDATIONS FOR CORRECTING THE DEFICIENCIES.

2. COMMENTS ON ANY SPECIFICATION REQUIREMENT CONSIDERED TOO RIGID

3. *IS THE SPECIFICATION RESTRICTIVE?*

☐ YES ☐ NO IF "YES", IN WHAT WAY?

4. REMARKS *(Attach any pertinent data which may be of use in improving this specification. If there are additional papers, attach to form and place both in an envelope addressed to preparing activity)*

SUBMITTED BY *(Printed or typed name and activity)* | DATE

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