

MIL-C-3956C(GL)

2 June 1970

SUPERSEDING

MIL-C-3956B

22 September 1964

MILITARY SPECIFICATION

CLOCK, MESSAGE CENTER, M2

1. SCOPE

1.1 This specification covers one type and size message center clock.

2. APPLICABLE DOCUMENTS

- * 2.1 The following documents, of the issue in effect on date of invitation for bids or request for proposal, form a part of this specification to the extent specified herein.

SPECIFICATIONS

FEDERAL

- KK-L-271 - Leather, Cattlehide, Strap Vegetable-Tanned
- QQ-C-320 - Chromium Plating (Electrodeposited).
- QQ-N-290 - Nickel Plating (Electrodeposited).
- PPP-B-636 - Box, Fiberboard.
- PPP-C-843 - Cushioning Material, Cellulosic.

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- MIL-M-14 - Molding Plastics and Molded Plastic Parts (Thermosetting).
- MIL-R-3065 - Rubber Fabricated Products
- MIL-L-3891 - Luminescent Material and Equipment (Non-Radio-Active).
- MIL-C-7769 - Cushioning Material, Uncompressed Bound Fiber for Packaging.
- MIL-F-13926 - Fire Control, Material; General Specification Governing the Manufacture and Inspection Of.

STANDARDS

FEDERAL

- FED-STD-595 - Colors.

FSC 6645

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- MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes.
- MIL-STD-129 - Marking for Shipment and Storage.
- MIL-STD-130 - Identification Marking of U. S. Military Property.
- MIL-STD-417 - Rubber Compositions, Vulcanized General Purpose, Solid (Symbols and Tests).

DRAWINGS

ARMY NATICK LABORATORIES

- 5-13-1762 - Clock, Message Center, M-2; Case, Carrying, Assembly and Details.
- 5-13-1763 - Clock, Message Center, M-2; Assembly and Details.

(Miniature copies of Drawings 5-13-1762 and 5-13-1763, identified as figures 1 and 2 respectively, are attached for information purposes only).

(Copies of specifications, standards, drawings, and publications required by suppliers in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.)

- * 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 date of invitation for bids or request for proposal shall apply:

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

D2016-65 - Standard Methods of Test for Moisture Content of Wood

(Application for copies should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia, Pa. 19103.)

NATIONAL MOTOR FREIGHT TRAFFIC ASSOCIATION, INC.

National Motor Freight Classification

(Application for copies should be addressed to American Trucking Associations, Attn: Tariff Order Section 1616 P Street, N.W., Washington, D.C. 20036.)

UNIFORM CLASSIFICATION COMMITTEE

Uniform Freight Classification

(Application for copies should be addressed to the Uniform Classification Committee, Room 202 Union Station, 516 W. Jackson Blvd., Chicago, Illinois 60606.)

(Technical society and technical association specifications and standards are generally available for reference from libraries. They are also distributed among technical groups and using Federal Agencies.)

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3. REQUIREMENTS

- * 3.1 First article.- This specification contains provisions for first article tests and approval (see 4.2, 6.2 and 6.3).

3.2 Materials.- The materials shall be as specified herein and on the drawings. Materials not definitely specified shall be of the quality normally used by the manufacturer for message center clocks, provided the completed item complies with all provisions of this specification.

3.2.1 Luminescent materials.- Luminescent coating materials shall conform to type P, form I of MIL-L-3891.

3.2.2 Phenolic material.- Phenolic material shall conform to type CFI-10 of MIL-M-14.

3.2.3 Rubber gasket.- The rubber gasket shall conform to class SB-515-ABE3F of MIL-STD-417 and MIL-R-3065.

- * 3.2.4 Lumber.- The lumber used for the carrying case shall have a moisture content of 5 to 9 percent at time of fabrication when tested as specified in 4.3.1.1. The wood shall be free from decay, knots, stain, holes, splits, shakes, checks, bark, gum pockets, larva channels, warp, twist, case-hardening and compression wood. Only one specie of wood shall be used on any one case liner, panel, mounting and case. The wood shall be of any one of the following species:

| | |
|--------------------------------|---------------|
| Alder, red | Cedar |
| Birch, Sweet or yellow | Walnut, black |
| Hickory | Beech |
| Magnolia | Hackberry |
| Pecan-sweet, green, red or sap | Holly |
| Ash, white | Oak |
| Elm-American, rock or winged | Sycamore |
| Maple - hard | |

- * 3.2.5 Leather.- The leather shall conform to russet, type I, class I, selection A, six-sixty-fourths (6/64) of an inch thick, of KK-L-271.
- * 3.3 Design and construction.- The design and construction shall be in accordance with Drawings 5-13-1762, 5-13-1763, and as specified herein.

3.4. Interchangeability.- All similar parts shall be completely interchangeable with each other, excluding normal adjustment. Replacement parts of all clocks of one manufacturer's model number shall be interchangeable with corresponding parts of all other clocks of the same model number.

3.5 Movement.- The movement shall be eighty (80) size, plus or minus two sizes, and shall contain a minimum of 12 jewels. It shall have 11 jewel detached level nonmagnetic escapement with compensation balance, and Brequet hair-spring. The movement shall be designed to operate a sweep second hand, a

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minute hand or hands. The sweep second hand shall be so arranged with a slip clutch or spring friction device to permit manually setting it clockwise or counterclockwise without injuring the escapement or movement in any way. The movement shall be of rigid construction, with front and back plates of hard rolled sheet brass not less than 0.090 inch thick and with one or two bridge plates not less than 0.080 inch thick to permit bearing for pivots. The plates and bridges shall be free from butts, sharp edges, rough surfaces and other defects. All steel parts and screws not protected by lubricant shall be black oxide finished or rustproofed, except for parts whose proper functioning would be affected by such finishing. The power factor of the movement shall consist of a single mainspring completely enclosed in a one-piece barrel with cover. The main wheel shall be at least 0.125 inch thick. The construction of the movement shall provide for winding and regulating through the dial. Unless otherwise specified (see 6.2), the lubricant used in the movement shall be the lubricant recommended by the manufacturer.

3.5.1 Jewels.— The jewels shall be located as follows:

- Upper and lower jewels for the balance staff.
- Upper and lower endstones for the balance staff.
- Two pallet stones.
- One roller jewel.
- Upper and lower hole jewels for the pallet arbor.
- Upper and lower hole jewels for the escape pinion pivots.
- Lower hole jewel for the fourth-wheel pivot.

3.5.2 Mainspring.— The mainspring shall be at least 5 feet long and at least 17/32 inch wide, and shall drive the completed movement a minimum of 192 hours without rewinding.

3.5.3 Regulator.— The regulator device shall be of micrometer screw type having a total range of from 4 seconds to 4 minutes in 24 hours and readily operable from the front of the dial without removal of the movement from the case. The regulator device shall have a total range of 4 seconds to 4 minutes in 24 hours. The regulator device shall be at the center of its travel within plus or minus 20 percent at the time of final inspection for shipment.

3.5.4 Wheels, pinions, pivots, arbors, and pillars.—

3.5.4.1 Wheels, pinions, and pivots.— The train wheels, pinions, and pivots shall be free from burrs and other defects that may adversely affect the functioning of the movement. Pinions and pivots shall be of high carbon steel, hardened, ground and polished. No train bearings shall be made in the back plate of the movement.

3.5.4.2 Arbors and pillars.— The barrel arbor shall be made of corrosion-resisting steel. These two arbors need not be hardened but shall have burnished bearing surfaces. The sweep second hand arbor shall be made of high carbon steel, hardened, ground and polished, and shall be so arranged as to pass through

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the center arbor of the clock and it shall be the first arbor removed from the escape pinion so that positive action is insured and all backlash in the arbor is eliminated. The sweep second hand arbor shall be provided with a shoulder for seating the sweep second hand. The diameter of the clearance hole in the center arbor for the main body of the second hand arbor shall be not less than 0.086 inch and the wall thickness of the main body of the arbor shall be not less than 0.027 inch. Plate pillars and main train pillars shall be brass not less than 9/32 inch in diameter, and any auxiliary train pillars shall be brass of not less than 1/4 inch in diameter. All pillars shall be fitted by means of locating shoulder and held either by screws or nuts from both ends. Pillars screwed or staked directly into plates shall not be permitted.

3.6 Dials and hands.-

* 3.6.1 Dial.- The dial shall be 6 inches in diameter, plus or minus 1/32 inch, and shall be in accordance with Drawing 5-13-1763. It shall carry the following legend: "U.S." and "Clock, Message Center, M-2". The dial shall not be soiled, dirty, scratched or abraded. The dial shall be marked with luminescent dots located at 5 minute intervals to designate hours, with the exception that the quarter hour marks, "3", "6", and "9", shall be squares, and the 12 hour mark shall be a large triangle as shown on Drawing 5-13-1763. Luminescent coating material shall be as specified in 3.2.1.

* 3.6.2 Hands.- The Greenwich time hour hand and the minute hand shall be brass or steel. The sweep second hand shall be aluminum and finished in accordance with Drawing 5-13-1763. The local hour hand shall be aluminum, steel, or brass. The spade shaped end of the Greenwich time hour hand, the diamond shaped end of the minute hand, and pointer of the sweep second hand shall be coated with the luminescent coating specified in 3.2.1 on the upper surface, as shown on Drawing 5-13-1763. The luminescent portion of the hands shall be completely coated with a coat of clear lacquer and shall not be tacky or contain foreign inclusions. Clock hands shall be securely mounted and shall not rub against glass or dial nor obstruct movement of another hand. The double hour hands, as shown on Drawing 5-13-1763, shall have the spade shaped Greenwich time hour hand above the plain shaped local time hour hand, the latter to be 1/8 inch to 3/16 inch longer. The Greenwich time hour hand shall be firmly fixed to the hub. The local hour hand shall be provided with a spring friction device to permit setting independently of the Greenwich time hour hand. The top surface of the local time hour hand shall be anodized and dyed a semigloss orange, approximately Color Number 22246 of FED-STD-595.

3.7 Clock case.- The clock case shall be fabricated either from black phenolic material specified in 3.2.2, in natural black finish, or anodized aluminum, dyed a reflective black. The case shall be free from warpage and chipped or blistered surfaces. There shall be no burrs, projecting ridges at the dividing line of the mold, or any unsightly finishes caused by chipping, filing, or grinding without subsequent buffing or polishing to insure a smooth surface.

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3.7.1 Back.- The back of each case shall be provided with an integral flange drilled with three holes, uniformly spaced for mounting. On the mounting surface of the flange shall be three bosses of appropriate washer face size, concentrically located with the mounting holes, to insure three point surface contact. Integral hinge lugs shall be provided with the case to support the bezel.

3.7.2 Bezels.- The bezel shall be the same material and finish as the case and sufficiently thick to be rigid. It shall be provided with integral hinge lugs to mate with hinge lugs on the case. The hinges shall be designed to give maximum strength and to permit a free bezel swing to an angle of at least 195 degrees. The hinge pin shall be corrosion-resisting steel. A catch or lock of a suitable design shall be provided to insure holding the bezel gasket tight against the case. An annular recess, 5/32 inch minimum depth, shall be provided for holding a rubber gasket fabricated from material specified in 3.2.3. The gasket shall insure dustproof and rainproof conditions when the bezel is in a closed position and the catch is engaged.

* 3.7.3 Glass.- The glass shall be cemented to the bezel with waterproof cement. The glass and bezel joint shall exclude dust and rain. It shall be further secured to the bezel by a split snap ring. The glass shall not be broken and shall not contain smears of cement. The glass shall be clear from blemishes that may distort or impair vision.

3.8 Clock assembly.-

3.8.1 Exposure to extreme storage temperatures.- The clock shall show no indication of damage and shall meet the accuracy requirements specified in 3.8.5 when tested as specified in 4.4.5.

3.8.2 Weatherproofing.- The case shall show no leakage when subjected to the rain test specified in 4.4.2.

3.8.3 Vibration.- The clock shall show no evidence of damage and shall meet the accuracy requirements specified in 3.8.5 when tested as specified in 4.4.3.

3.8.4 Magnetism.- The clock accuracy specified in 3.8.5 shall not be affected when tested as specified in 4.4.4.

* 3.8.5 Accuracy.- When tested as specified in 4.4.1, each 24 hour running period shall be accurate to plus or minus 20 seconds and any two consecutive 24 hour running periods shall not vary more than 10 seconds. When tested as specified in 4.4.6, each 24 hour running period shall be accurate to plus or minus 30 seconds and any two consecutive 24 hour running periods shall not vary more than 15 seconds.

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3.9 Carrying case.- The assembled clock and case shall be mounted in the carrying case shown on Drawing 5-13-1762. The carrying case shall be constructed as shown on Drawing 5-13-1762, and shall be fabricated from wood specified in 3.2.4. The carrying strap shall be leather specified in 3.2.5. The adhesive used for joining wood surfaces shall be water-resistant. All joints shall be tight. The metal components shall be fabricated from brass or steel and shall be of the design and location shown on Drawing 5-13-1762. The suitcase bolt and the D-ring plate designs are illustrative only. Alternate designs for suitcase bolt and D-ring plate may be acceptable, subject to the approval of the contracting officer. The wood screws used to attach the metal components to the case shall be of sufficient size to secure the components to the case, but shall not protrude through the inner surfaces of the case.

3.9.1 Finish of wood surfaces.- All wood surfaces of the carrying case shall be sanded smooth. Glue size may be used before sanding. Surfaces shall be thoroughly cleaned and shall then be stained a dark walnut tone. Where wood is of a pore-containing species, pores shall be filled after staining. Surfaces shall then be coated with a minimum of two coats of lacquer or varnish. The final finish shall be rubbed to a uniform satin effect and a coat of wax shall then be applied.

* 3.9.2 Finish for brass components.- Components fabricated of brass shall be chromium plated in accordance with class 1, type I of QQ-C-320, or nickel plated in accordance with class 1, type VII of QQ-N-290.

* 3.9.3 Finish for steel components.- Components fabricated of steel shall be chromium plated in accordance with class 1, type I of QQ-C-320, or nickel plated in accordance with class 1, type IV of QQ-N-290.

3.10 Winding key.- Each clock shall be furnished with a winding key to fit the winding arbor. The key shall be secured in an open-type spring clip located in a readily accessible area on the floor of the carrying case.

3.11 Marking for identification.- The unit shall be marked for identification in accordance with MIL-STD-130. In addition, the manufacturer's name, movement serial number, model number and the year of manufacture shall be permanently affixed into the movement back plate by indenting, embossing, or etching. If the movement is not manufactured by the prime contractor, the actual manufacturer's name, location, movement serial number, movement model number, and the year of manufacture shall be permanently affixed into the movement back plate by indenting, embossing, or etching. All characters shall be legible. The identification marks shall be incorporated in such a manner that the surfaces opposite those markings shall show no signs of penetration or unevenness, or cause distortion to the movement back plate.

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- * 3.12 Workmanship.- Metal surfaces shall be free of burrs, rough, or sharp edges. Lacquer shall not be tacky or contain foreign inclusions. Components shall not be broken, cracked, or malformed.

4. QUALITY ASSURANCE PROVISIONS

- * 4.1 Responsibility for inspection.- Unless otherwise specified in the contract or purchase order, the supplier is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or order the supplier may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by 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 First article inspection.- The preproduction sample shall be examined for defects in accordance with table II, dimensions specified, and shall be tested in accordance with 4.4.1 through 4.4.6. The presence of any visual defect, any dimension not within the specified requirements, or failure to pass the tests shall be cause for rejection of the preproduction sample.
- * 4.3 Inspection.- Sampling for inspection shall be performed in accordance with the provisions set forth in MIL-STD-105, except where otherwise indicated hereinafter.
- * 4.3.1 Component and material inspection and testing.- In accordance with 4.1 above, components and materials shall be inspected and tested in accordance with all the requirements of referenced specifications, drawings and standards unless otherwise excluded, amended, modified, or qualified in this specification or applicable purchase document.
- * 4.3.1.1 Moisture content.- Test shall be performed on each lot of lumber at time of fabrication for moisture content in accordance with ASTM-D2016-65 to determine compliance with 3.2.6. When testing is performed by the electric moisture meter method, three determinations shall be made on each sample unit. The average of the three determinations shall be the moisture content of the sample unit. The sample unit shall be one piece of lumber. The inspection level shall be S-1 with an acceptable quality level (AQL) of 4.0, expressed in terms of defects per hundred units.
- * 4.3.2 Testing of intermediate items.- Tests shall be performed on plated component in accordance with QQ-C-320 or QQ-N-290 as applicable.

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4.3.3 Inspection of the end item.- The lot shall be the number of clocks and carrying cases offered for inspection at one time. The sample unit for this inspection shall be one completely fabricated clock and carrying case.

4.3.3.1 Visual examination.- Examination of the clocks and carrying cases shall be made for the defects listed in table I. The inspection level shall be level II with an acceptable quality level (AQL) of 1.5 for major defects and 4.0 for total defects, expressed in terms of defects per hundred units.

TABLE I.- Classification of defects

| Examine | Defect | Classification | |
|--|--|-------------------------------------|-------|
| | | Major | Minor |
| Carrying case | More than one specie of wood in any case | X | |
| | Splinter or sharp projection. | X | |
| | Decay, bark or gum pockets. | X | |
| | Holes, checks, splits or shakes. | X | |
| | Knot holes or larvae channels. | X | |
| | Warped or twisted. | X | |
| | Any open joint or any joint not bonded. | X | |
| | Surface not smooth, i.e., skips, machine gouges, chipped or torn grain. | X | |
| | Any wood component missing. | X | |
| | Carrying case liner can be removed. | X | |
| | Carrying case hardware | Insecurely or improperly installed. | X |
| Any hardware component missing. | | X | |
| Wrong design. | | | X |
| Malformed, buckled, warped, bent out of shape, or damaged. | | X | |
| Carrying case spring clip and winding key | D-Ring binds (does not swing freely), when applicable. | | X |
| | Missing. | X | |
| | Spring clip bent, malformed, damaged, or not securely mounted (will not hold key). | X | |
| | Winding key not readily accessible. | | X |
| | Key does not fit winding arbor. | X | |
| | Sharp edge or projection. | X | |

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TABLE I.- Classification of defects (cont'd)

| Examine | Defect | Classification | |
|-----------------------------|---|----------------|-------|
| | | Major | Minor |
| Carrying case leather strap | Not 7 stitches per inch (see Drawing 5-13-1762). | | X |
| | Stitching not straight or is irregular. | | X |
| | Cuts or tears in the leather. | X | |
| | Scraf joint on top instead of the underside. | | X |
| | Broken stitches, needle chews, or run-offs. | | X |
| Movement | Jewels not as specified. | X | |
| | Spring friction device missing. | X | |
| | Plates, bridges contain butts, sharp edges. | X | |
| | Steel parts not protected by lubricant, not black oxide finished, or rustproof. | X | |
| | Construction does not provide for winding and regulating through dial. | X | |
| | Wheels, pinions, arbors, and pivots not as specified. | X | |
| | Arbors and pillars not as specified. | X | |
| Clock case | Not design specified. | X | |
| | Case not fabricated from material specified. | X | |
| | Case surface chipped or blistered. | X | |
| | Exterior surfaces not smooth (i.e., deep scratches, filing or grinding marks). | | X |
| | Case or bezel warped. | X | |
| | Burrs or projecting ridges at the dividing line of mold. | X | |
| | Component cracked, fractured, broken, or damaged. | X | |
| | Not securely mounted in carrying case, i.e., screw missing, any screw not drawn up tight, or loose screw. | X | |
| | Not mounted in carrying case so that the 12th hour is at top and center. | X | |
| | Components not as specified. | X | |
| | Clock will not run, winds hard, or will not wind tight. | X | |

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TABLE I.- Classification of defects (cont'd)

| Examine | Defect | Classification | |
|---|---|-------------------------------------|-------|
| | | Major | Minor |
| Clock bezel | Not same material and finish as case. | | X |
| | Not sufficiently thick to be rigid. | | X |
| | Does not swing freely or binds on the hinge. | | X |
| | Catch or lock does not hold bezel gasket, against the case. | | X |
| | Bezel does not swing open to an angle of at least 195 degrees. | | X |
| | Not provided with rubber gasket. | X | |
| | Rubber gasket defective, i.e., damaged, deteriorated, blistered, cracked, malformed, or not full size affecting seal. | X | |
| | Rubber gasket not secure in bezel. | | X |
| | Bezel not snug fit to case. | | X |
| | Hinge pin missing or not secure. | X | |
| | Clock glass | Not securely cemented to the bezel. | |
| Cement smeared on glass. | | | X |
| Split snap ring not secure. | | X | |
| Glass broken. | | X | |
| Glass poor quality, i.e., not clear or has blisters, bubbles, scratch, or scratches, coarse or open seed, or other defects which distort, or impair the vision. | | | X |
| Clock dial | Soiled or dirty. | | X |
| | Any dial marking missing, illegible, incomplete, incorrect, or wrong material used to apply. | X | |
| | Dial surface scratched or abraded. | | X |
| | Grommet missing, loose, or falls out. | | X |
| Clock regulator device | Regulator not of a type capable of being operated through dial. | X | |
| | Regulator device not at center of its travel (within plus or minus 20 percent). | | X |
| | Total range of regulator device not 4 seconds to 4 minutes in 24 hours. | | X |
| | Loose, will not maintain position at which set. | | X |

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TABLE I.- Classification of defects (cont'd)

| Examine | Defect | Classification | |
|-------------|--|---|-------|
| | | Major | Minor |
| Clock hands | Missing. | X | |
| | Luminescent coating on hands not protected by lacquer. | | X |
| | Local time hour hand not anodized as specified. | | X |
| | Not securely mounted. | X | |
| | Bent, malformed, or otherwise damaged. | | X |
| | Hand rubs against glass or dial, or a hand obstructs movement of another hand. | X | |
| | Markings | Omitted, wrong location, incorrect, incomplete, or illegible. | |

4.3.3.2 Dimensional examination.- Examination shall be made of the end item to determine compliance with dimensions specified. Any deviation therefrom shall constitute a defect. The inspection level shall be S-2 with an AQL of 4.0, expressed in terms of defects per hundred units.

4.3.3.3 End item testing.- The end item shall be tested as specified in 4.4.1 through 4.4.6. The inspection level shall be S-1 with an AQL of 1.5, expressed in terms of defects per hundred units.

4.3.4 Examination of preparation for delivery.- An examination shall be made to determine compliance with the packaging, packing and marking requirements of section 5. Defects shall be as indicated in table II. The sample unit shall be one shipping container fully prepared for delivery. The lot shall be all of the containers offered for inspection at one time. The inspection level shall be S-2 and the acceptable quality level shall be 4.0, expressed in terms of defects per hundred units.

TABLE II.- Examination of preparation for delivery

| Examine | Defect |
|---------------------------------|--|
| Markings, exterior and interior | Omitted; incorrect; illegible; of improper size, location, sequence, or method of application. |

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TABLE II.- Examination of preparation for delivery (cont'd)

| <u>Examine</u> | <u>Defect</u> |
|----------------|--|
| Materials | Component missing or damaged. |
| Workmanship | Inadequate application of components, such as clock not secured with cushioning, or bulging or distortion of containers. |
| Contents | Number per container is more or less than required. |

4.3.4.1 Examination of shipping container.- When shipping containers are required to be in accordance with PPP-B-636, examination for defects in closure and strapping shall be in accordance with the appendix of that specification.

4.4 Tests.-

4.4.1 Room temperature accuracy test (70 F. plus or minus 5 F.).- Clocks for this accuracy test shall be rated daily for a period of 7 days to establish compliance with 3.8.5. Prior to this test, the clock shall be fully wound and run for 24 hours in its normal operating position. Following the initial 24 hour run, each succeeding 24 hour run shall be checked against an approved accurate timing device. During this test, no winding or adjustments shall be made. Any nonconformance to requirements of 3.8.5 shall constitute failure of this test.

4.4.2 Weatherproof test.- The test shall be conducted in accordance with the rain test specified in MIL-F-13926. Upon completion, a visual check shall be made to determine compliance with the requirements specified in 3.8.2. Any nonconformance shall constitute failure of this test.

4.4.3 Vibration test.- The clock shall be vibrated vertically for not less than 2 minutes while in the normal operating position. Vibrations shall have single amplitude of not less than .016 inch and a frequency of not less than 60 vibrations per second. Upon completion, a visual examination shall be made for damage. Tests specified in 4.4.4, 4.4.5 and 4.4.6 shall be conducted to determine accuracy requirements specified in 3.8.3. Any nonconformance shall constitute failure of this test.

4.4.4 Magnetic test.- Following the vibration test, the clock shall be subjected to a 70 gauss magnetic field for not less than 5 seconds. Upon completion, the tests specified in 4.4.5 and 4.4.6 shall be conducted to determine compliance with the requirement specified in 3.8.4. Nonconformance shall constitute failure of this test.

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- * 4.4.5 Storage temperature test.- Following the magnetic test, the clock shall be exposed to an extreme ambient storage temperature of minus 80°F., plus or minus 5°F., for 5 hours and then exposed to storage at an extreme temperature of plus 160°F. for 5 hours. Following storage at the specified temperatures, the clocks shall be tested for accuracy in accordance with 4.4.1 to establish compliance with 3.8.1. Nonconformance shall constitute failure of this test.
- * 4.4.6 Extreme temperature accuracy test.- Following the storage temperature test, the clock shall be operated in an ambient temperature of 0°F. and 105°F., both plus or minus 3°F. The method of test shall be as specified in 4.4.1 except for temperature and length of test. The first test shall be 0°F. for 3 consecutive days followed by the 105°F. for 3 consecutive days to determine compliance with 3.8.5. Nonconformance shall constitute failure of this test.

5. PREPARATION FOR DELIVERY

- 5.1 Packaging.- Packaging shall be level A or C, as specified (see 6.2).
 - * 5.1.1 Level A.- Each clock shall be packaged in a corrugated fiberboard box conforming to type CF (variety SW) or SF, class domestic, style RSC of PPP-B-636. Each clock shall then be cushioned a minimum of 1-1/2 inches on all six sides with cushioning material conforming to type III or IV class A or B of MIL-C-7769, or type I or II, class A of PPP-C-843. When the clock is placed within the fiberboard box, the cushioning material shall be compressed sufficiently to secure it in a fixed position. Closure shall be in accordance with method II of the appendix of PPP-B-636.
 - * 5.1.2 Level C.- Clocks shall be packaged to afford adequate protection against damage during shipment from the supply source to the first receiving activity. The supplier may use his standard practice when it meets this requirement.
- 5.2 Packing.- Packing shall be level A, B, or C, as specified (see 6.2).
 - * 5.2.1 Level A.- Four clocks, packaged as specified in 5.1, shall be packed in a snug-fitting fiberboard shipping container conforming to grade V2s, Style RSC of PPP-B-636. Each shipping container shall be closed, waterproofed by means of tape, and reinforced in accordance with the appendix of PPP-B-636.
 - * 5.2.2 Level B.- Four clocks, packaged as specified in 5.1, shall be packed in a snug-fitting fiberboard shipping container conforming to type CF (variety SW) or SF, class domestic, style RSC of PPP-B-636. Closure shall be in accordance with method II of the appendix of PPP-B-636.

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- * 5.2.2.1 When specified (see 6.2), the shipping container shall be a grade V3c, V3s, or V4s fiberboard box fabricated in accordance with PPP-B-636 and closed in accordance with the appendix thereto.
 - * 5.2.3 Level C.- Clocks, packaged as specified in 5.1, shall be packed in a manner to insure carrier acceptance and safe delivery at destination at the lowest transportation rate for such supplies. Containers shall be in accordance with Uniform Freight Classification Rules or National Motor Freight Classification Rules, as applicable.
- 5.3 Marking.- In addition to any special marking required by the contract or order, interior packages and shipping containers shall be marked in accordance with MIL-STD-129.
6. NOTES
- 6.1 Intended use.- The clock covered by this specification is used for timing messages at field message centers.
- 6.2 Ordering data.- Procurement documents should specify the following:
- (a) Title, number, and date of this specification.
 - (b) First article (see 3.1, 4.2 and 6.3).
 - (c) Lubricant required, if other than manufacturer's recommended lubricant (see 3.2.5).
 - (d) Selection of applicable levels of packaging and packing (see 5.1 and 5.2).
 - (e) When weather-resistant grade fiberboard shipping containers are required for level B packing (see 5.2.2.1).
- * 6.3 First article.- The item covered by this specification requires first article tests and approval under the appropriate provisions of paragraph 7-104.55 of the Armed Services Procurement Regulations. The first article should be a preproduction sample described under the definition of a first article in the ASPR. The first article should consist of one unit. The contracting officer should include specific instructions in all procurement instruments, regarding arrangements for examination, test, and approval of the first article.
 - * 6.4 The margins of this specification are marked with an asterisk to indicate where changes (additions, modifications, corrections, deletions) from the previous issue were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and suppliers are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the last previous issue.

MIL-C-3956C(GL)

Custodian:

Army - GL

Review activity:

Army - MD

User activities:

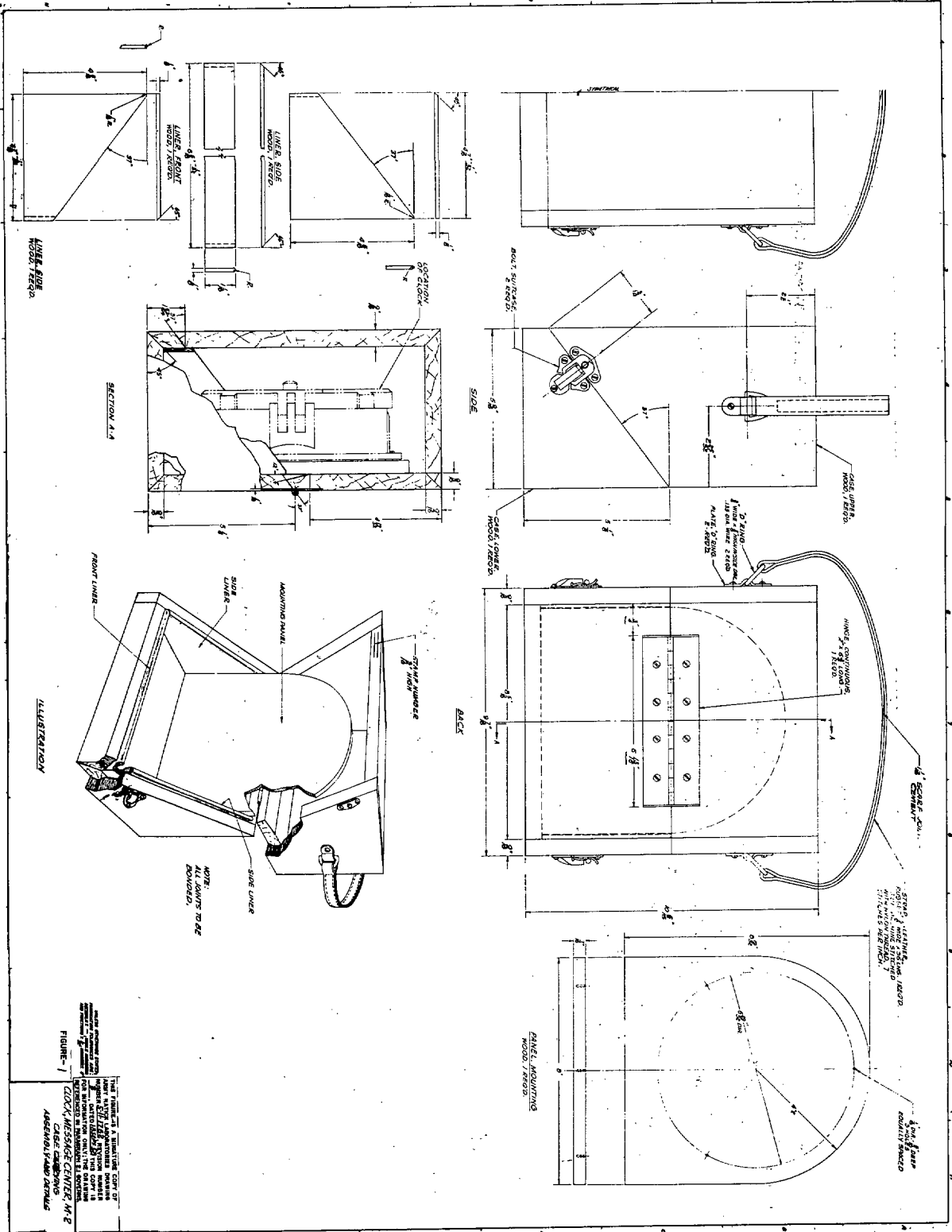
Army - EL, ME, SM

Preparing activity:

Army - GL

Project No. 6645-A258

MIL-C-3956C(GL)



MIL-C-3956C(GL)

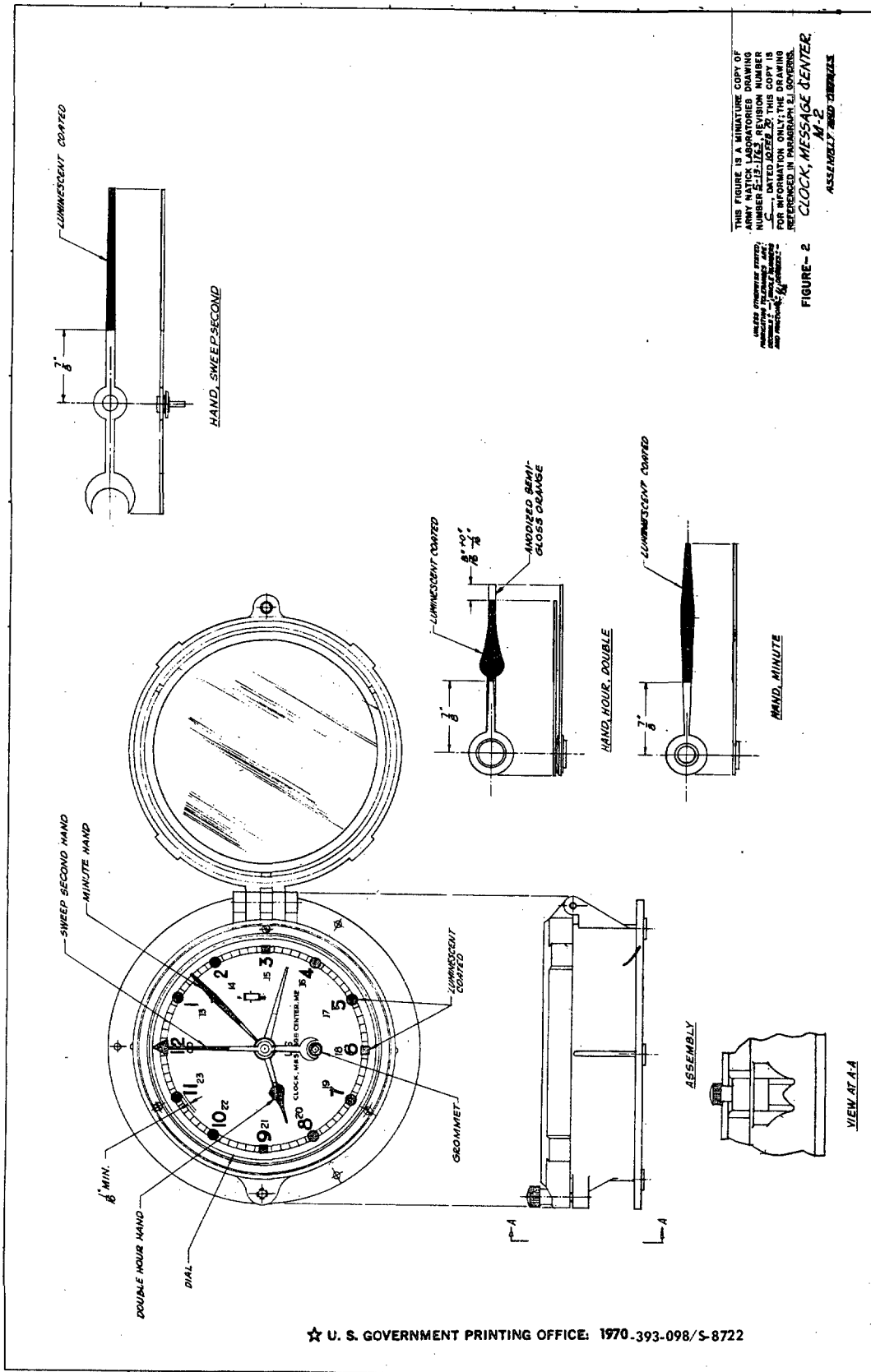


FIGURE - 2
CLOCK, MESSAGE CENTER,
M-2
ASSEMBLY AND DRAWINGS

SPECIFICATION ANALYSIS SHEET

Form Approved
Budget Bureau No. 22-R255

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. Comments and suggestions submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or serve to amend contractual requirements.

SPECIFICATION

MIL-C-3956C(GL) Clock, Message Center, M2

ORGANIZATION

CITY AND STATE

CONTRACT NUMBER

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 - Optional)

DATE

DD FORM 1426
1 JAN 66

REPLACES EDITION OF 1 OCT 64 WHICH MAY BE USED.