SAE Aerospace
An SAE International Group

AEROSPACE STANDARD

SAE AS22598 REV. A

Issued 1999-07
Cancelled 2004-07

Interpretation Kit, Photographic, Pocket-Size BS-5( )

FSC 6675

CANCELLATION NOTICE

This document has been declared "CANCELLED" as of July 2004. By this action, this document will remain listed in the Numerical Section of the Aerospace Standards Index.

TO PLACE A DOCUMENT ORDER: **Tel: 877-606-7323 (inside USA and Canada)**
Tel: 724-776-4970 (outside USA)
Fax: 724-776-0790
Email: custsvc@sae.org
SAE WEB ADDRESS: **http://www.sae.org**

NOTICE

This document has been taken directly from U.S. Military Specification MIL-I-22598B(AS) and contains only minor editorial and format changes required to bring it into conformance with the publishing requirements of SAE technical standards. The initial release of this document is intended to replace MIL-I-22598B(AS). Any part numbers established by the original specification remain unchanged.

The original Military Specification was adopted as an SAE standard under the provisions of the SAE Technical Standards Board (TSB) Rules and Regulations (TSB 001) pertaining to accelerated adoption of government specifications and standards. TSB rules provide for (a) the publication of portions of unrevised government specifications and standards without consensus voting at the SAE Committee level, and (b) the use of the existing government specification or standard format.

Under Department of Defense policies and procedures, any qualification requirements and associated qualified products lists are mandatory for DOD contracts. Any requirement relating to qualified products lists (QPL's) has not been adopted by SAE and is not part of this SAE technical document.

1. SCOPE:

1.1 Scope:

This specification covers the requirements for one (1) type of pocket photographic interpretation kit, containing viewing and measuring instruments, for use in the field.

1.2 Classification:

The interpretation kit shall be of one (1) type, designated BS-5( ) (See 3.7).

2. APPLICABLE DOCUMENTS:

2.1 Government documents:

2.1.1 Specifications and standards: The following specifications and standards form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation (see 6.2).

SPECIFICATIONS

FEDERAL

GG-P-681	Protractor, Circular and Semicircular (Mils, Degrees)
GG-S-161/5	Scale, Drafting, Surveyor's
SS-P-186	Pencil, Mechanical (including Leads and Erasers)
TT-I-528	Ink, Drawing, Waterproof, Black
GGG-S-1808	Screwdriver, Jewelers' (Swivel Knob, Interchangeable Blades)
PPP-B-636	Box, Shipping, Fiberboard

MILITARY

MIL-P-116	Preservation, Methods of
MIL-N-634	Navigator's Plotting Instrument Set and Plotting Instruments
MIL-S-3629	Stereoscopes, Lens, Aerial Photograph Interpretation (Pocket)
MIL-C-4318	Computer, Aerial Photographic Data
MIL-M-21039	Magnifier, Measuring Tube Type, Seven Power AR-60( )

STANDARDS

FEDERAL

FED-STD-1	Standard for Laboratory Atmospheric Conditions for Testing

2.1.1 (Continued):

MILITARY

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-155	Joint Photographic Type Designation System

(Unless otherwise indicated, copies of federal and military specifications and standards are available from the Naval Publications and Forms Center, (ATTN: NPODS), 5801 Tabor Avenue, Philadelphia, PA 19120-5099.)

2.2 Non-Government publications:

The following document forms a part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents which are DOD adopted are those listed in the issue of the DODISS cited in the solicitation. Unless otherwise specified, the issues of documents not listed in the DODISS are the issues of the documents cited in the solicitation (see 6.2).

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A580 - Wire, Steel, Stainless & Heat Resisting (DOD adopted)

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

(Non-Government standards and other publications are normally available from the organizations that prepare or distribute the documents. These documents also may be available in or through libraries or other informational services.)

2.3 Order of preference:

In the event of a conflict between the text of this document and the references cited herein, the text of this specification takes precedence. Nothing in this specification, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS:

3.1 First article:

When specified (see 6.2), a sample interpretation kit shall be subjected to first article inspection in accordance with 4.4.

3.2 Materials:

Materials shall be as specified herein. Materials not specified shall be of the best commercial quality and entirely suitable for the purpose. Materials shall be free from all defects and imperfections that might affect serviceability or appearance of the finished product.

3.3 Construction:

The interpretation kit shall be a compact, pocket-size unit consisting of a case equipped with viewing and measuring instruments for use by a photographic interpreter. All instruments furnished in the kit shall conform to the requirements of this specification.

3.4 Components:

The interpretation kit shall consist of a pocket-size carrying case with the following eleven (11) photographic interpretation instruments (see 3.4.2 through 3.4.11):

1 - Stereoscope, Lens, Aerial Photographic Interpretation
1 - Divider, Drafting
1 - Computer, Aerial Photographic (Slide Rule)
1 - Scale, Drafting
1 - Magnifier, Measuring, Tube Type, Seven (7) Power
1 - Protractor, 180 degrees
1 - Pen, Drafting
1 - Pencil, Glass Marking (grease)
1 - Tube, Metal (for leads and needle points)
1 - Screwdriver (for computer and divider screws)
1 - Table of Equivalents

3.4.1 Carrying case: The carrying case shall be of one-piece, folding construction with closure by means of a zipper. The zipper shall be attached in a manner to permit the case to open flat. The case shall be fabricated of high-grade leather having a minimum thickness of 0.063 inch and a maximum thickness of 0.094 inch. Fabric shall form a part of the case where necessary to provide support for the zipper. Overall dimension of the case shall not exceed nine (9) inches long by five (5) inches wide by two (2) inches thick.

3.4.1.1 Fittings: The interior of the case shall be provided with fittings to hold the instruments in place in a manner to provide adequate protection for fragile elements. The fittings shall provide firm retention yet permit easy removal of the instruments.

3.4.1.2 Stereoscope fitting: The fitting for the stereoscope shall accommodate the instrument at the maximum interpupillary setting.

3.4.1.3 Additional cases: Individual carrying cases, such as the cases furnished with the stereoscope and the computer, shall not be furnished with the interpretation kit.

3.4.2 Stereoscope: The stereoscope shall conform to the requirements of MIL-S-3629, except as specified herein.

3.4.2.1 Lenses: The lenses shall be Type II, two-element achromats or three-element apochromats, at the contractor's option. Each lens shall magnify by a factor of four (4) diameters, plus or minus five (5) percent.

3.4.2.1.1 Lens mount: The lenses shall be mounted in metal barrels and threaded into the stereoscope frame in accordance with the best commercial practice for precision optical instruments.

3.4.2.1.2 Resolution: The lenses shall be capable of resolving a minimum of thirty-two (32) lines per millimeter at the center of the field and a minimum of twenty (20) lines per millimeter at any edge of the field.

3.4.2.2 Frame: The frame shall be adjustable for any interpupillary distance from fifty (50) through seventy-five (75) millimeters by means of a simple adjusting screw. The interpupillary adjustment shall be provided with index marks at one-millimeter intervals to facilitate presetting the instrument at any distance within the specified range.

3.4.2.2.1 Leg inserts: When castings of aluminum, zinc alloy or other soft metal are used for the stereoscope frame, corrosion-resistant steel inserts shall be used at friction points, such as leg locking points, to minimize wear. The inserts shall be suitably notched to hold the legs in place to prevent collapse when the stereoscope is in use.

3.4.2.3 Legs: The legs shall be fabricated of corrosion-resistant steel wire conforming to ASTM A580. The legs shall support the stereoscope at the maximum viewing distance and shall be capable of folding flat, when not in use.

3.4.3 Dividers: The dividers shall conform to the applicable requirements of MIL-N-634. An additional set of needle points shall be provided for the dividers.

3.4.4 Computer: The computer shall conform to the requirements of MIL-C-4318 except as specified herein. The computer shall have maximum dimensions of 7.25x2.1x0.4 - inches. The length of scales specified in MIL-C-4318 shall be proportionally reduced to provide an accurate six (6) inch slide rule.

3.4.4.1 Table of equivalents: A plastic laminated table of equivalents (Figure 1) shall be furnished with the kit. The table shall be fitted into the interpretation kit carrying case in a manner to permit the reading of the table without removal from the carrying case.

3.4.5 Scale: The scale shall be Type V, Shape 2, Composition A, Grade 2, Size F, Scale graduations 1, Numbering A, and Style A in accordance with GG-S-161/5.

Equivalents	Settings	Equivalents	Settings	Equivalents	Settings	Equivalents	Settings	
1 in.=2.54cm	100 opp 254	1 sq.yd.=.8361 m^2	61 opp 51	1 in.mercury=1.133 lbs. water	15 opp 17	1 ft.lb=.1383 Kg-m	159 opp 22	Area Circle= πr^2
1 ft.=.3048 m	82 opp 25	1 sq.mi.=2.590 Km^2	22 opp 57	1 in mercury=.4912 lbs./sq in	59 opp 29	1 atmos.=14.7 lbs/sq in	1 opp 14.7	Area Sphere= πd^2
1 yd.=.9144 m	82 opp 75	1 sq mi.= 640 acres	1 opp 640	1 U.S.gal. = 3.785 liters	14 opp 53	1 B.T.U. = 778 ft.lbs	455 opp 354	Vol.Sphere= $.5236d^3$
1 m =39.37 in	95 opp 3740	1 cu in=16.39 cm^3	5 opp 82	1 U.S.gal.=231 cu.in	1 opp 231	1 H.P.=.707BTU/ sec	232 opp 164	e=2.71828
1 mi.=1.609 Km	87 opp 140	1 cu.ft.=.02832 m^3	600 opp 17	1 U.S.gal.=8.345 lbs. water	27.8 opp 232	1 H.P.=.746 K.W.	252 opp 189	$\sqrt{2g}$ = 8.02
1 Knot=1.152 N.P.H.	33 opp 38	1 cu.yd.=.7646 m^3	85 opp 65	1 Kg = 2.205 lbs	176 opp 388	1 M.P.H.=1.467 ft./sec	15 opp 221	1 Radian= 57.3°
		1 cu.ft.=62.43 lbs water	1.73 opp 108					
1 sq.in.=6.452 cm^2	31 opp 200			1 gram=15.43 gr	7 opp 108	Side of sq=.707 diag. of sq	90 opp 70	1 deg.=.01745 Rad.
1 sq.ft.=.0929 m^2	140 opp 13	1 cu.ft=28.32 liters	6 opp 170	1 ft. water=.4335 lbs/ sq.in	316 opp 137	$\log_e x$= 2.3036log x	205 opp 472	Sine 1°= .0002909

FIGURE 1. Table of Equivalents.

3.4.6 Magnifier: The magnifier shall conform to the requirements of MIL-M-21039, except as specified herein. The magnifier shall be capable of resolving a minimum of fifty-six (56) lines per millimeter at the center of the field and a minimum of thirty-five (35) lines per millimeter at any edge of the field, when tested as specified in 4.7.3.

3.4.6.1 Reticle: Unless otherwise specified in the contract or purchase order, a single reticle, incorporating the type B and F scales specified in MIL-M-21039, shall be furnished with each magnifier.

3.4.7 Protractor: The protractor shall be Type I, Class A, Style 1, Plastic in accordance with GG-P-681. The size (diameter) of the protractor shall be 4 inches.

3.4.8 Pen: The pen shall be a non-clogging technical fountain pen, Rapidograph Number 1 or equal. The pen shall have a tungsten carbide point or a synthetic jewel point. The tip of the pen shall permit free flow of ink to produce a continuous line 0.016 ± 0.004 inch.

3.4.9 Pencil: The pencil shall be a Type IC, Class 1 glass and china marking pencil in accordance with SS-P-186. The pencil shall be furnished with black glass marking lead 2.750 inch long by 0.120-inch in diameter. Six (6) additional leads, two (2) each black, red, and blue, shall be provided and stored in the metal tube.

3.4.10 Metal tube: The tube shall be a thin-wall, two compartment metal capsule capable of holding the extra set of needle points for the divider specified in 3.4.3 an the six (6) glass marking leads for the pencil specified in 3.4.9.

3.4.11 Screwdriver: The screwdriver shall be Type 1 in accordance with GGG-S-1808. The screwdriver shall be supplied with one blade. The blade shall be sized to properly engage the screwhead slots of the computer and the divider.

3.5 Weight:

The weight of the interpretation kit, with all of the components in place, shall not exceed two (2) pounds.

3.6 Finish:

The finish of all components of the kit shall conform to the highest grade specified. The finish of the carrying case shall conform to the best commercial practice for high-grade drafting instrument cases.

3.7 Type designator:

The parenthesis in the type designator will be replaced by a suffix letter and, when appropriate a production issue number, in accordance with the provisions of MIL-STD-155. This complete type designator shall then be used on nameplates, shipping records, in instruction books, and wherever reference is made to the specific equipment defined by the designator. As soon as possible, after award of the contract, the contractor should apply to the contracting officer for such information.

3.8 Identification marking:

The identification marking of the interpretation kit shall be hot stamped in gold on the top or lid of the carrying-case. The marking shall conform to the requirements of MIL-STD-130.

3.9 Workmanship:

The workmanship shall be of the highest grade in accordance with the best commercial practice for precision drafting instruments.

4. QUALITY ASSURANCE PROVISIONS:

4.1 Responsibility for inspection:

Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements (examinations and tests) as specified herein. Except as otherwise specified in the contract or purchase order, the contractor 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.

4.1.1 Responsibility for compliance: All items shall meet all requirements of sections 3 and 5. The inspection set forth in this specification shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in the specification shall not relieve the contractor of the responsibility of ensuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling inspection, as part of manufacturing operations, is an acceptable practice to ascertain conformance to requirements, however, this does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to accept defective material.

4.2 Classification of inspections:

The inspection requirements specified herein are classified as follows:

a. First article inspection (see 4.4)
b. Quality conformance inspection (see 4.5)
c. Individual inspection (see 4.6)

4.3 Test conditions:

The interpretation kit shall be inspected under conditions of temperature and humidity as specified in FED-STD-1.

4.4 First article inspection:

The first article inspection shall consist of the individual examinations of 4.6 and all examinations and tests of 4.6, 4.7, and 4.8. Failure of the sample to pass any examination or test shall constitute failure of the first article inspection.

4.5 Quality conformance inspection:

The quality conformance inspection shall consist of all examinations and tests specified in 4.6 and 4.8. For inspections of 4.8, one sample pack shall be selected at random from each lot and inspected.

4.5.1 Sampling: Sampling for the quality conformance inspections shall be in accordance with MIL-STD-105, using the Single Sampling Plan (see 6.3), Inspection Level II.

4.5.2 Lot: The lot shall consist of all of the interpretation kits offered for delivery at one time on any one contract or order.

4.6 Individual inspection:

Each interpretation kit shall be examined to determine conformance to the requirements of 3.4, 3.4.1.1, 3.4.1.3, 3.4.5, and 3.8. The contractor shall furnish certification to the Government for approval, prior to shipment of any material, that the components furnished in the interpretation kit have been inspected in accordance with the documents specified herein and conform to all of the requirements of this specification.

4.7 Examinations and tests:

4.7.1 Visual and dimensional examinations: Examine the kit and each individual item in the kit visually and with gauges to determine conformance to the requirements of this specification with respect to materials, construction, dimensions, weight, contents of the kit, finish, identification marking, and workmanship. Determine that the components of the kit are easily removable from the case compartments. Determine that the table of equivalents can be read without removal from the case. Examine the lens mounts and leg terminal inserts of the stereoscope for proper fit and function. Determine that the screwdriver blade properly engages the screwhead slots of the computer and divider. Determine that the carrying case lies flat with and without the components in place.

4.7.1.1 Drawing examinations: With the pen fitted with India ink conforming to TT-I-528, and using a straight edge, draw ten lines on photographic film. Each line shall be approximately eight inches long. Allow the ink to dry. Examine the inked lines, visually and with gauges, to determine conformance with the requirements of 3.4.8.

4.7.2 Stereoscope: The stereoscope shall be inspected in accordance with Section 4 of MIL-S-3629 to determine conformance to the requirements of 3.4.2.