

**MILITARY BULLETIN 147E**

14 APRIL 1989

**SUPERSEDING**

**MILITARY BULLETIN 147D**

**10 JUNE 1986**

# **MILITARY BULLETIN**

**SPECIFICATIONS AND STANDARDS OF  
NON-GOVERNMENT ORGANIZATIONS RELEASED  
FOR FLIGHT VEHICLE DESIGN AND CONSTRUCTION**



AMSC N/A

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**MISC**

DEPARTMENT OF DEFENSE  
Washington DC 20360-5110

Specifications and Standards of Non-Government Organizations Released for  
Flight Vehicle Design and Construction.

MILITARY BULLETIN 147D

1. This Military Bulletin is approved for use by all Departments and Agencies of the Department of Defense.
2. Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commanding Officer, Naval Air Engineering Center, ATTN: Systems Engineering and Standardization Department (SESD) Code 53, Lakehurst, NJ 08733-5100, by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter (see 4.2).

## FOREWORD

This document is published under the designation, Military Bulletin. The industry documents listed in the appendix to this document have been approved for the use listed in the scope by the Army, Air Force and Navy. Only those documents have been included for which there are no limitations or for which there is agreement on the limitations by all three military services.

## MILITARY BULLETIN 147E

## CONTENTS

Paragraph 1.	SCOPE -----	1
1.1	Purpose -----	1
1.2	Application -----	1
1.3	Limitations -----	1
2.	REFERENCED DOCUMENTS -----	2
2.1	Government Documents -----	2
2.1.1	Specifications, Standards, and Handbooks -----	2
3.	DEFINITIONS -----	3
3.1	Engineering Document -----	4
3.2	Substitute Engineering Document -----	4
3.3	Superseding Engineering Document -----	4
3.4	Acceptance Notice -----	4
3.5	Substitute Item -----	4
3.6	Replacement Item -----	4
4.	GENERAL STATEMENTS OF REQUIREMENTS -----	4
4.1	Document Issue Restriction -----	4
4.2	Procedure for Listing Additional Industry Documents -----	4
4.2.1	Engineering Documents -----	4
4.2.2	Revisions to Presently Listed Documents -----	4
5.	DETAILED STATEMENTS OF REQUIREMENTS (Not Applicable) -----	5

## CONTENTS (Continued)

6.	NOTES -----	5
6.1	Intended Use -----	5
6.2	Supersession -----	5

## APPENDIXES

Appendix	A.	List of NAS Standards - Numerical -----	6
	B.	List of AS Standards - Numerical -----	31
	C.	List of Inactive for Design and Cancelled Documents - Numerical -----	35
	D.	List of Active Documents - Alphabetical -----	42

MILITARY BULLETIN 147E

1. SCOPE

1.1 Purpose. This bulletin lists non-Government specifications and standards approved as indicated for use in new design of structure, airframe, and related fluid systems on aerospace vehicles.

1.2 Application. The specifications and standards listed in this bulletin are in the category of "special lists" as provided for in MIL-STD-970.

1.3 Limitations. The approval of the non-Government documents is subject to the limitations listed for each. The approval noted in 1.1 does not apply to the use of the listed documents for electrical, electronic, power plant, instrument, survival, or ground support systems, of aerospace vehicles.

1.3.1 This bulletin approves industry documents for use in new design only, in accordance with the scope as specified herein. It is not the purpose to list documents for only logistic or acquisition purposes.

MILITARY BULLETIN 147E

2. REFERENCED DOCUMENTS

2.1 Government documents.

2.1.1 Specifications, standards, and handbooks. Unless otherwise specified, the following specifications, standards, and handbooks of the issue listed in the current Department of Defense Index of Specifications and Standards (DODISS) and the supplement thereto (if applicable), form a part of this standard to the extent specified herein.

STANDARDS

MILITARY

MIL-STD-970 - Standards and Specifications, Order of Preference  
for the Selection of

(When requesting applicable documents, refer to both title and number. Copies of unclassified documents may be obtained from the Commanding Officer, Naval Publications and Forms Center, 5801 Tabor Avenue, Philadelphia, PA 19120-5099. Request for copies of classified documents should be addressed to the Naval Publications and Forms Center, via the cognizant Government representative.)

2.2 Other publications. The following documents form a part of this bulletin to the extent specified herein. The issues of the documents which are indicated as DOD adopted shall be the issues listed in the current DODISS and the supplement thereto, if applicable.

AEROSPACE INDUSTRIES ASSOCIATION OF AMERICA, INC.  
NATIONAL AEROSPACE STANDARDS - listed herein

SOCIETY OF AUTOMOTIVE ENGINEERS, INC.  
AEROSPACE STANDARDS - listed herein

(Copies of acceptance notices for the non-governmental documents listed herein may be obtained from the Commanding Officer, Naval Publications and Forms Center, 5801 Tabor Avenue, Philadelphia, PA 19120-5099.)

Industry association specifications and standards are generally available for reference from libraries. They are also distributed among technical groups and using federal agencies.

### 3. DEFINITIONS

3.1 Engineering document. An engineering document is a specification, standard, specification sheet, drawing, etc, that is used for a statement of requirement for system engineering, standardization, design, construction, maintenance, and logistic support of flight vehicle systems.

3.2 Substitute engineering document. A substitute engineering document is a document which can functionally perform in place of another engineering document in all possible applications. However, the other engineering document cannot be used in place of the substitute document in all possible applications because of quantitative and qualitative differences.

3.3 Superseding engineering document. A superseding engineering document is applicable to new and future design contracts. The superseded document is not applicable to new or future design contracts. A superseding document is not necessarily a substitute document. Its requirements are not necessarily substitutive as a statement of contractual requirements.

3.4 Acceptance notice. Acceptance notices, for the documents listed herein, are documents which indicate government approval of the industry documents for use by the Department of Defense, and for listing in the Department of Defense Index of Specifications and Standards (DODISS). Any specific exceptions to the acceptance are stated on the acceptance notice.

3.5 Substitute item. A substitute item has that functional performance capability and geometrical shape limits which enables it to be used in place of another item, functionally and dimensionally, in all possible applications. However, the other item cannot be used in place of the one item in all possible applications because of quantitative or qualitative differences in descriptive factors.

3.6 Replacement item. A replacement item has that functional capability which enables it to be used, without exception, functionally, in place of another item in all possible applications; but because of differences in geometrical shape limits from the original item, its use requires alterations of the item or of the items with which it is used in conjunction.

## MILITARY BULLETIN 147E

4. GENERAL STATEMENTS OF REQUIREMENTS

4.1 Document issue restriction. Revisions of documents listed herein, having a date later than the issue listed, are not to be used unless specifically approved through contract channels.

4.2 Procedure for listing additional industry documents. The present listing is not intended to be complete. Industry groups desiring to have engineering documents, or revisions to presently listed documents, added to the bulletin shall submit copies of the document, for approval to the Commanding Officer, Naval Air Engineering Center, ATTN: Systems Engineering and Standardization Department (SESD) Code 53, Lakehurst, NJ 08733-5100, with the following information:

- a. Engineering documents (see 4.2.1).
- b. Revisions to presently listed documents (see 4.2.2).

4.2.1 Engineering documents. For each engineering document requested or proposed to be listed in this bulletin, the following information, with a copy of the document, shall be provided.

4.2.1.1 What recurring engineering design, construction, or maintenance problem does the document solve?

4.2.1.2 Why can this recurring problem not be solved by documents listed herein or other approved documents?

4.2.1.3 How will recurring engineering or design problems pertain to new future design?

4.2.1.4 What presently approved or used documents could the proposed document supersede?

4.2.1.5 What presently approved or used documents could the proposed document be used as a substitute or replacement document for?

4.2.2 Revisions to presently listed documents. For each revision of the documents listed herein that are proposed for listing, the following information, with a copy of the document, shall be provided.

4.2.2.1 What is the specific difference between the revision proposed for listing and the accepted revision of the document presently listed?

4.2.2.2 What is the engineering, design, construction, or maintenance need that each difference between revisions will fulfill?

MILITARY BULLETIN 147E

5. DETAILED STATEMENTS OF REQUIREMENTS

Not applicable

6. NOTES

6.1 Intended use.

6.2 Supersession. This Military Bulletin supersedes Military Bulletin 147D. The NAS (National Aerospace Standard) documents and the AS (Aerospace Standard) documents presently acceptable for use in the systems listed in the Scope of this specification (1.) have been included in this Military Bulletin and are listed in the DODISS.

6.3 The margins of this standard are marked with vertical lines to indicate where significant changes 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.

Custodians:

Army - AV  
Navy - AS  
Air Force - 11

Preparing activity:

Navy - AS

(Project No. MISC - 0080)

Review activities:

Air Force - 10, 99  
Army - ME

User activities:

Army - AR

Agent:

DLA - IS

MILITARY BULLETIN 147E

APPENDIX A

LIST OF NAS STANDARDS - NUMERICAL

## MILITARY BULLETIN 147E

Number	Issue	Title	FSC	Limitations
NAS 42 REV 8	4/87	Spacer, Sleeve- Rivet	5365	Rivet spacers identified by part numbers with a suffix "A" (Spacers with no finish) are not approved.
NAS 43 REV 8	4/87	Spacers-Screw and Bolt	5365	Screw and bolt spacers identified by part numbers with a suffix "A" (Spacers with no finish) are not approved.
NAS 47	6/82	Spacer, Sleeve, Nonmetallic, Screw & Bolt	5365	None
NAS 72 REV 4	10/62	Bushing-Clamp-Up, Steel, Chrome Plated	3120	None
NAS 73 REV 6	10/80	Bushing-Clamp-Up, Steel, Cadmium Plated	3120	None
NAS 74 REV 5	2/83	Bushing-Clamp-Up, Bronze	3120	Unplated Aluminum Bronze bushings are not approved for use.
NAS 75 REV 5	10/80	Bushing-Plain, Press Fit, Steel	3120	None
NAS 76 REV 8	9/83	Bushing-Plain, Press Fit, Copper & Bronze	3120	Unplated Aluminum Bronze bushings are not approved for use.
NAS 77 REV 7	5/82	Bushing-Flanged, Press Fit, Steel, Bronze & Copper	3120	Unplated Aluminum Bronze bushings are not approved for use.
NAS 186	4/85	Spacer, Stepped, Swage Type	5365	None

## MILITARY BULLETIN 147E

Number	Issue	Title	FSC	Limitations
NAS 287 REV 3	5/79	Terminal-Chain to Cable (For Swaging)	4030	None
NAS 288 REV 1	12/61	Terminal-Chain to Turnbuckle	4030	None
NAS 302 thru 310 REV 4	11/80	Cable Assembly Swaged Type, Type I Terminals	4010	None
NAS 312 thru 320 REV 5	4/82	Cable Assembly Swaged Type, Type I and Type II Terminals	4010	None
NAS 322 thru 330 REV 5	11/80	Cable Assembly Swaged Type, Type II Terminals	4010	None
NAS 333 thru 340 REV 12	4/84	Bolt-100 <sup>o</sup> Close Tolerance, High Strength	5306	Bolts having hexagon sockets (no code letter to the part number) are not approved for use.
NAS 354 REV 4	10/73	Rod-Control Solid Steel	5307	None
NAS 355 REV 4	12/64	Tube Assembly-Control, Aluminum Alloy with Riveted Threaded Rod Ends	3040	None
NAS 356 REV 4	12/64	Tube Assembly-Control, Aluminum Alloy with Riveted Clevis and Threaded Rod Ends	3040	None
NAS 357 REV 3	3/75	Tube-Control Aluminum Alloy	3040	None
NAS 358 REV 5	6/73	Tube Assembly-Control, Steel with Welded Threaded Rod-Ends	3040	None

## MILITARY BULLETIN 147E

Number	Issue	Title	FSC	Limitations
NAS 359 REV 5	6/73	Tube Assembly-Control, Steel with Welded Clevis and Threaded Rod Ends	3040	None
NAS 370 thru 373 REV 2	1/64	Control Rod and Tube Assembly, 5/16-24UNF-3A Thread	3040	None
NAS 428 REV 6	5/80	Bolt, Machine-Crowned Hexagon Head, Adjusting	5306	None
NAS 463 REV 6	2/86	Nut Spacer, Plate-Plain	5310	None
NAS 498 REV 10	1/80	Bolts-Shear, 95 KSI Fsu	5306	None
NAS 500 REV 7	5/73	Nut Spacer, Plate-Countersunk	5310	None
NAS 501 REV 3	2/68	Bolt-Stabilized-Non-Magnetic Corrosion Resistant Steel	5306	None
NAS 509 REV 5	9/72	Nut, Drilled Jam	5310	None
NAS 516 REV 5	6/80	Fitting, Lubrication-1/8 Inch Drive, Flush Type	4730	This fitting is approved for use only when space limitations make it impossible to use the fittings required by MIL-STD-838.
NAS 517 REV 3	11/73	Screw-100° Close Tolerance Flat Head, 160,000 PSI	5305	None

## MILITARY BULLETIN 147E

Number	Issue	Title	FSC	Limitations
NAS 537 REV 5	9/82	Bushing, Sleeve- Press Fit, Under- size Inside Diameter	3120	Bushings identified by part numbers with "no code" letter (Unplated Alloy Steel) and (Unplated Aluminum Bronze) following the size dash number are not approved.
NAS 538 REV 5	9/82	Bushing-Flanged, Press Fit-Under- size Inside Diameter	3120	Bushings identified by part numbers with "no code" letter (Unplated Alloy Steel) and (Unplated Aluminum Bronze) following the size dash number are not approved.
NAS 549 REV 3	9/69	Washer Non-Metallic	5310	None
NAS 557 REV 3	2/68	Grommet, Plastic- Split	5325	None
NAS 559 REV 3	11/79	Lock-Rod End (Key Type)	5340	None
NAS 563 thru 572 REV 4	6/72	Bolt-Full Threaded, 160 Ksi Steel, Drilled Head	5305	None
NAS 577 REV 12	5/83	Nut, Self-Locking, Barrel; Floating, 180 KSI $F_{tu}$	5310	Self-Locking nuts identified by part numbers with the code letter "X" (Without Lubricant) following the last dash number are not approved.

## MILITARY BULLETIN 147E

Number	Issue	Title	FSC	Limitations
NAS 578 REV 5	5/73	Retainer-Floating Barrel Nut	5310	None
NAS 583 thru 590 REV 11	12/84	Bolt, 100° Flush Head, Alloy Steel, 160,000 PSI	5306	None
NAS 591 REV 5	1/81	Coupling-Rigid Tube Connector, Alumi- num	4730	None
NAS 592 REV 5	1/81	Ring-Rigid Tube Connector, Alumi- num	4730	None
NAS 593 REV 5	1/81	Nut, Rigid Tube Connector, Alumi- num	4730	None
NAS 594 REV 5	1/81	Coupling-Rigid Tube Connector, Corro- sion Resistant Steel	4730	None
NAS 595 REV 5	1/81	Ring-Rigid Tube Connector, Corro- sion Resistant Steel	4730	None
NAS 596 REV 5	1/81	Nut-Rigid Tube Connector, Corro- sion Resistant Steel	4730	None
NAS 600 thru 606 REV 5	4/74	Screw, Machine- Aircraft, Pan Head, Phillips Recess, Full Threaded, Alloy, Steel	5305	The machine screws having no code letter (QQ-P-416, Type I, Cadmium Plating) following the last dash number are not approved.
NAS 617 REV 2	11/78	Packing, Preformed, Straight Thread Tube Fitting Boss, Synthetic Lubri- cant Resistant	5330	None

## MILITARY BULLETIN 147E

Number	Issue	Title	FSC	Limitations
NAS 618 REV 5	6/58	Fastener-Recommended Shank, Hole and Head-to-Shank Fillet Radius Limits For	5325	None
NAS 620 REV 3	6/81	Washer, Flat-Reduced Outside Diameter	5310	None
NAS 652 REV 3	1/81	Coupling-Rigid Tube Bulkhead Connector	4730	None
NAS 671 REV 3	6/81	Nut, Plain, Hexagon-Small Pattern, Nonstructural	5310	None
NAS 673 thru 678 REV 6	6/80	Bolt, Close Tolerance-Hexagon Head, Titanium, .190 to .500	5306	None
NAS 1003 thru 1020 REV 6	8/79	Bolt-Machine, Hexagon Head, Non-Magnetic and Heat Resistant	5306	NAS 1016A Inactive for design after 1 July 1979
NAS 1056 REV 4	6/82	Spacer, Sleeve-Rivet, High Temperature, Non-Magnetic	5365	None
NAS 1057 REV 6	6/82	Spacer, Sleeve-Screw and Bolt, High Temperature Non-Magnetic	5365	None
NAS 1080 REV 7	8/85	Collar, Swage Locking, For Full Type or Stump Type Lockbolts	5320	None

## MILITARY BULLETIN 147E

Number	Issue	Title	FSC	Limitations
NAS 1090 REV 2	1/80	Hook, Chain, S	4030	None
NAS 1096 REV 3	6/73	Screw-Hex Head, Recessed, Full Thread	5305	None
NAS 1097 REV 5	3/82	Rivet, Solid-100 <sup>o</sup> Flush Shear Head, Aluminum Alloy, Titanium Columbium Alloy	5320	Parts with code "DD" before first dash number (2024-T4 Aluminum Alloy) are not approved.
NAS 1099 REV 2	10/80	Washer, Bevel 9 1/2 <sup>o</sup>	5310	None
NAS 1101 REV 7	5/82	Screw, Machine- Flat Fillister Head, Full Thread, Torq-Set	5305	Code W not approved
NAS 1102 REV 8	5/86	Screw, Machine- Flat 100 <sup>o</sup> Head, Full Thread, Torq-Set	5305	Code W not approved
NAS 1161 thru 1168 REV 9	5/86	Screw, Self-Locking Flat 100 <sup>o</sup> Head, Shear Torq-Set	5305	NAS 1161 and NAS 1162 not approved for structural use
NAS 1169 REV 4	6/83	Washer, Dimpled, 100 <sup>o</sup>	5310	None
NAS 1171 thru 1178 REV 7	5/86	Screw, Self-Locking Pan Head, Shear, Torq-Set	5305	NAS 1171 and NAS 1172 not approved for structural use
NAS 1189 REV 10	5/85	Screw, Self-Lock- ing, Flat 100 <sup>o</sup> Head, Full Thread	5305	Parts with code letter "W" (QQ-P-416, Type I Cadmium Plated), after the second dash number are not ap- proved.

## MILITARY BULLETIN 147E

Number	Issue	Title	FSC	Limitations
NAS 1190 REV 11	11/83	Screw, Self-Lock- ing-Pan Head, Full Thread	5305	None
NAS 1191 REV 7	5/86	Screw, Self-Lock- ing-Flat Fillister Head, Full Thread	5305	None
NAS 1193 REV 7	3/78	Locking Device, Positive Index	5340	None
NAS 1195 REV 1	4/63	Shim-Miniature Anchor Nut	5365	None
NAS 1197 REV 2	11/78	Washer-5052 Aluminum Alloy	5310	None
NAS 1198 REV 3	9/67	Rivet-Solid Uni- versal Head, A286 Corrosion Resist- ant Steel	5320	None
NAS 1199 REV 3	9/67	Rivet-Solid-100 <sup>o</sup> Flush Head, A286 Corrosion Resist- ant Steel	5320	None
NAS 1200 REV 5	11/78	Rivet-Solid-100 <sup>o</sup> Flush Shear Head- A286 Corrosion Resistant Steel and Monel	5320	None
NAS 1201 REV 4	1/83	Chain-Bead, Compo- nents and Assembly	4010	None
NAS 1216 REV 8	5/86	Screw, Flat Pan Head "Hi-Torque" Recess, Full Thread	5305	None
NAS 1218 REV 8	1/85	Bolt, Pan Head, Self-Locking Optional	5306	None

## MILITARY BULLETIN 147E

Number	Issue	Title	FSC	Limitations
NAS 1221 REV 9	1/85	Bolt, 100° Flush Head, Self-Locking Optional	5306	(1) Bolts of alloy steel identified by part numbers having the code letter "P" (QQ-P-416, Type II, Class 3, Cadmium Plating) or no code letter (QQ-P-416, Type I, Class 3, Cadmium Plating) at all following the second dash number are not approved. (2) Bolts of A286 identified by part numbers having the code letter "P" (QQ-P-416, Type II, Class 3, Cadmium Plating) following the second dash number are not approved.
NAS 1223 thru 1235 REV 4	5/74	Bolt, Shear-Hexagon Head, Self-Locking	5306	Bolts identified by part numbers having the code letters "W" (QQ-P-416, Type I), following the last dash number are not approved
NAS 1252 REV 2	12/84	Washer-7075 Aluminum Alloy Flat	5310	None
NAS 1266 thru 1270 REV 3	6/80	Bolt, Hex Head, Close Tolerance, Titanium Alloy	5306	None
NAS 1271 thru 1280 REV 3	3/82	Bolt, Twelve Point, External Wrenching, Titanium Alloy	5306	None
NAS 1297 REV 2	9/75	Bolt, Shoulder-Hexagon Head	5306	None

## MILITARY BULLETIN 147E

Number	Issue	Title	FSC	Limitations
NAS 1299 REV 1	9/75	Screw- 100° Flat Head Shoulder	5305	None
NAS 1301 REV 1	9/75	Screw, Pan Head, Assembled Washers	5305	Parts covered by this specification are not approved for airframe structure use.
NAS 1321 REV 2	10/85	Rivet, Slug Sleeveless	5320	None
NAS 1329 REV 6	10/85	Nut, Blind Rivet- Flathead, Internal Thread, Non-Locking (Free Running) or Self-Locking, (Prevailing Torque)	5310	None
NAS 1330 REV 4	5/69	Nut, Blind Rivet- Countersunk Head, Internal Thread, Non-Locking, (Free Running) or Self- Locking (Prevailing Torque)	5310	None
NAS 1351 REV 7	1/83	Screw, Cap, Socket Head-Undrilled and Drilled, Plain and Self-Locking, Alloy Steel and Corrosion Resisting Steel, UNRF-3A	5305	Parts covered by this specification are not approved for airframe structure use.
NAS 1352 REV 7	1/83	Screw, Cap, Socket Head, Undrilled and Drilled, Plain and Self-Locking Alloy Steel and Corrosion-Resisting Steel, UNRC-3A	5305	Parts covered by this specification are not approved for airframe structure use.
NAS 1368 REV 3	1/83	Grommet-Plastic Flip Type	5325	None

## MILITARY BULLETIN 147E

Number	Issue	Title	FSC	Limitations
NAS 1382 REV 1	3/77	Fitting Tie Down Strap End (Light Duty)	5340	None
NAS 1384 REV 2	3/77	Strap Assembly, One Part	5340	None
NAS 1385 REV 3	3/77	Strap Assembly, Loop Type	5340	None
NAS 1398 REV 5	8/84	Rivet-Blind, Pro- truding Head, Locked Spindle	5320	None
NAS 1399 REV 5	8/84	Rivet-Blind, 100 <sup>o</sup> Flush Head, Locked Spindle	5320	None
NAS 1401 REV 1	11/80	Washer, Radius	5310	None
NAS 1410 REV 1	11/67	Nut, Universal Port Fitting	5310	None
NAS 1413 REV 5	8/85	Pins and Collars, Swage Locking	5320	None
NAS 1414 thru 1422 REV 3	12/81	Pin, Swage Locking, Steel 100 <sup>o</sup> Shear Head, Stump Type	5320	Swage pins identified by part numbers having a code letter "N" (Cadmium-Nickel Plating), "W" (QQ-P-416, Type I, Cadmium Plating) and not having a code let- ter "H" (Sealent Escape Groove) following the basic part number are not ap- proved.
NAS 1423 REV 1	9/72	Nut, Plain, Hexagon Drilled Jam, Thin	5310	None

## MILITARY BULLETIN 147E

Number	Issue	Title	FSC	Limitations
NAS 1424 thru 1432 REV 2	12/73	Pin, Swage Locking, Steel, Protruding Head, Shear, Stump Type	5320	Swage pins identified by part numbers having a Code Letter "N" (Cadmium-Nickel Plating), "W" (QQ-P-416, Type I, Cadmium Plating) and not having a code letter "H" (Sealant Escape Groove) following the basic part number are not approved.
NAS 1435 REV 1	7/80	Terminal-Strap, Cable Eye End and Fork End	4030	None
NAS 1443 REV 4	3/71	Lockwasher-Bearing Retaining	5310	None
NAS 1456 thru 1462 REV 2	12/73	Pin, Swage Locking, Steel, Standard and Oversize, 100 <sup>o</sup> Head (MS24694) Tension, Pull Type	5310	Swage pins identified by part numbers having a code letter "N" (Cadmium-Nickel Plating) and not having code letter "H" (Sealant Escape Groove) following the basic part number are not approved "without prior Navy approval." Pins coded "A" (Oversize Shank) following the basic part number are not approved for design call out but are to be used only for repair.
NAS 1464 REV 4	8/82	Clip, Spring Tension	5340	None
NAS 1465 thru 1472 REV 2	12/73	Pin, Swage Locking, Steel, Standard and Oversize, Protruding Head, Tension, Pull Type	5320	Swage pins identified by part numbers having a code letter "N" (Cadmium-Nickel Plating) and not having code letter "H" (Sealant Escape Groove) following the basic part number are not approved. Pins coded "A" (Oversize Shank) following the basic part number are not approved for design call out but are to be used only for repair.

## MILITARY BULLETIN 147E

Number	Issue	Title	FSC	Limitations
NAS 1473 REV 8	6/81	Nut, Self-Locking, Plate-Two Lug, Cap, Floating	5310	None
NAS 1474 REV 8	6/81	Nut, Self-Locking, Plate-Two Lug, Cap, Floating, Reduced Rivet Spacing	5310	None
NAS 1475 thru 1482 REV 2	12/73	Pin, Swage Locking, Steel, Standard and Oversize, 100 <sup>o</sup> Head (MS20426), Tension, Pull Type	5320	Swage pins identified by part numbers having a letter "N" (Cadmium-Nickel Plating) and not having coded letter "H" (Sealent Escape Groove) following the basic part number are not approved. Pins coded "A" (Oversize Shank) fol- lowing the basic part number are not approved for design call out but are to be used only for repair.
NAS 1486 thru 1492 REV 3	12/81	Pin, Swage Locking, Steel, 100 <sup>o</sup> Head (MS24694), Tension, Stump Type	5320	Swage pins identified by part numbers having a letter "N" (Cadmium-Nickel Plating) and not having a code letter "H" (Sealent Escape Groove) following the basic part number are not approved.
NAS 1493 REV 5	1/85	Locknut-Bearing Retaining	5310	None
NAS 1496 thru 1502 REV 3	12/81	Pin, Swage Locking, Steel Protruding Head, Tension, Stump Type	5320	Swage pins identified by part numbers having a code letter "N" (Cadmium-Nickel Plating) and not having a code letter "H" (Sealent Escape Groove) following the basic part number are not approved.
NAS 1515 REV 3	6/83	Washers-Plastic and Synthetic Rubber	5310	None

## MILITARY BULLETIN 147E

Number	Issue	Title	FSC	Limitations
NAS 1516 thru 1522 REV 2	12/73	Pin, Swage Locking, Aluminum Alloy, 100° Head (MS24694), Tension, Pull Type	5320	Swage pins identified by part numbers not having a code letter "H" (Sealent Escape Groove) following the basic part number are not approved.
NAS 1523 REV 2	9/77	Packing with Re- tainer	5330	None
NAS 1555 thru 1562 REV 3	12/81	Pin, Swage Locking, Aluminum Alloy, Protruding Head, Tension, Stump Type	5320	Swage pins identified by part numbers not having a code letter "H" (Sealent Escape Groove) following the basic part number are not approved.
NAS 1563 REV 6	12/84	Gages, Pins and Collar Inspection, Swage Locking	5320	None
NAS 1578 REV 9	1/85	Bolt, Flat Pan Head	5306	None
NAS 1580 REV 5	5/82	Bolt, 100° Flush Head	5306	None
NAS 1581 REV 5	5/82	Bolt, 100° Flush Reduced Head	5306	Sizes -3, -4, and -5 are not approved for use in access panels.
NAS 1635 REV 2	6/81	Screw, Pan Head, Cross Recessed, Full Thread	5305	Machine screws identified by part numbers having code letters "LL" (Strip Type Locking Element) and "LN" (Button Type Locking Ele- ment) between the first and second dash numbers are not approved.
NAS 1636 REV 1	6/81	Washer, Key, Dual Tab	5310	None

## MILITARY BULLETIN 147E

Number	Issue	Title	FSC	Limitations
NAS 1669 REV 3	6/87	Fastener-Blind, Internally Threaded, External Sleeve, General Purpose, Protruding Head, Self-Locking	5325	None
NAS 1670 REV 3	6/87	Fastener-Blind, Internally Threaded, External Sleeve, General Purpose, Flush Head, Self-Locking	5325	None
NAS 1671 REV 6	6/87	Fastener-Blind, Internally Threaded, External Sleeve, High Temperature, Protruding Head, Self-Locking	5325	None
NAS 1672 REV 4	6/87	Fastener-Blind, Internally Threaded, External Sleeve, High Temperature, Flush Head, Self-Locking	5325	None
NAS 1673 REV 3	6/87	Fastener-Blind, Internally Threaded, External Sleeve, Lightweight, Protruding Head, Self-Locking,	5325	None
NAS 1674 REV 3	6/87	Fastener-Blind, Internally Threaded, External Sleeve, Lightweight, Millable Head, Self-Locking	5325	None
NAS 1726 REV 1	11/82	Nut, Self-Locking, Captive Washer, Shear Type 450 <sup>o</sup> F and 800 <sup>o</sup> F	5310	None

## MILITARY BULLETIN 147E

Number	Issue	Title	FSC	Limitations
NAS 1727	9/73	Nut, Washer, Self-Aligning, 450 <sup>o</sup> F and 800 <sup>o</sup> F	5310	None
NAS 1731 REV 1	7/74	Nut, Blind, Ser-rated Head, Self-Locking, 450 <sup>o</sup> F	5310	This nut shall be used in accordance with the limitations of MS33588.
NAS 1738 REV 2	4/78	Rivet-Blind, Protruding Head, Mechanically Locked Spindle, Bulbed	5320	None
NAS 1739 REV 2	4/78	Rivet-Blind, 100 <sup>o</sup> Flush Head, Mechanically Locked Spindle, Bulbed	5320	None
NAS 1740 REV 3	8/83	Rivet-Blind, Self-Plugging, Mechanically Locked Spindle, Bulbed	5320	None
NAS 1765	1/82	Nut, Self-Aligning, Self-Locking, Plate - Two Lug, Floating, 125 KSI F <sub>tu</sub> , 450 <sup>o</sup> F and 800 <sup>o</sup> F	5310	Parts covered by this specification are not approved for use on access doors or panels of airframe structure.
NAS 1766	1/82	Nut, Self-Locking, Plate - Corner, Counterbored, Floating, 125 KSI F <sub>tu</sub> , 450 <sup>o</sup> F and 800 <sup>o</sup> F	5310	Parts covered by this specification are not approved for use on access doors or panels of airframe structure.
NAS 1767	3/77	Bolt, Close Tolerance 100 <sup>o</sup> Reduced Head, "Hi-Torque" Recess	5306	Code X oversize shall be used for repair only.
NAS 1768 REV 3	4/85	Rivet-Blind, Protruding Head, Mechanically Locked Spindle, Bulbed	5320	None

## MILITARY BULLETIN 147E

Number	Issue	Title	FSC	Limitations
NAS 1769 REV 3	4/85	Rivet-Blind, 100° Flush Head, Mech- anically Locked Spindle, Bulbed	5320	None
NAS 1789	3/75	Nut, Self-Locking, Plate, Side By Side, Floating, Low Height, Reduced Rivet Spacing, C-Bored, 160 KSI, 450°F, 800°F	5310	None
NAS 1791	11/78	Nut, Self-Locking, Plate-Two Lug, Floating, Variable Counterbore, Re- placeable Nut Ele- ment 125 KSI F <sub>tu</sub> , 450°F and 800°F	5310	None
NAS 1792	11/78	Nut, Self-Locking, Plate-One Lug, Floating, Variable Counterbore, Re- placeable Nut Ele- ment 125 KSI F <sub>tu</sub> , 450°F and 800°F	5310	None
NAS 1793	11/78	Nut, Self-Locking, Plate-Corner Float- ing, Variable Coun- terbore, Replace- able Nut Element 125 KSI F <sub>tu</sub> , 450°F and 800°F	5310	None
NAS 1794	11/78	Nut, Self-Locking, Counterbore Re- placeable Element	5310	None
NAS 1795	11/78	Retaining Clip-Re- placeable Nut Plate	5310	None
NAS 1801 REV 1	4/84	Screw, Hex Head, Phillips Recess, Full Thread, Alloy Steel, 160,000 PSI Tensile	5305	None

## MILITARY BULLETIN 147E

Number	Issue	Title	FSC	Limitations
NAS 1802	3/77	Screw, Hex Head, Phillips Recess, Full Thread A-286 CRES, 160,000 PSI Tensile	5305	None
NAS 1803	3/77	Nut, Plate, Self- Locking, Floating, Spring Loaded	5310	None
NAS 1832 REV 3	7/74	Insert, Molded in, Blind Threaded, Self-Locking, Non- Self-Locking, Sandwich Panel	5340	None
NAS 1833 REV 2	7/74	Insert, Molded in, Thru Threaded, Self-Locking, Non- Self-Locking, Sandwich Panel	5340	None
NAS 1834 REV 1	7/74	Insert-Molded in, Countersunk and Thru Clearance Hole, Sandwich Panel	5340	None
NAS 1835 REV 2	7/74	Insert, Molded in, Blind Threaded, Self-Locking, Non- Self-Locking, Floating, Sandwich Panel	5340	None
NAS 1836 REV 3	7/74	Insert, Molded in, Blind Threaded, Self-Locking, Non- Self-Locking, Lightweight, Sand- wich Panel	5340	None
NAS 1870 REV 1	6/71	Nut, Self-Locking, Plate, Two Lug, Deep Counterbore, Floating, 125 KSI F <sub>tu</sub> 450° and 800° F	5310	None

## MILITARY BULLETIN 147E

Number	Issue	Title	FSC	Limitations
NAS 1871 REV 1	11/71	Nut Assembly, Torque Limiting, 600 <sup>o</sup> F Application .2500-28UNJF-3B Thread	5310	None
NAS 1872	11/75	Nut, Torque Limiting, 900 <sup>o</sup> F Application 1/4-28UNJF-3B Thread	5310	None
NAS 1873	6/76	Insert, Self-Locking, Thermal Bonded Honeycomb Panel	5340	None
NAS 2005 thru 2012 REV 4	12/73	Bolt-Lock, Tension, Protruding Head, Standard and Over-size, Pull Type, Titanium Alloy	5320	(1) Lock bolts identified by part numbers not having a code letter "H" (Seal-ent Escape Groove) following the basic part number are not approved. (2) Code letter "A" (Over-size Shank) is not to be used for design call out (use for repair only).
NAS 2105 thru 2112 REV 4	12/73	Bolt-Lock, Tension, 100 <sup>o</sup> Head (MS24694), Pull Type, Titanium Alloy	5320	Lock bolts identified by numbers not having a code letter "H" (Seal-ent Escape Groove) following the basic part number are not approved.
NAS 2205 thru 2212 REV 3	12/81	Bolt-Lock, Tension, Protruding Head Stump, Type, Titanium Alloy	5320	Lock bolts identified by part numbers not having a code letter "H" (Seal-ent Escape Groove) following the basic part number are not approved.
NAS 2306 thru 2312 REV 3	12/81	Bolt-Lock, Tension, 100 <sup>o</sup> Head (MS24694) Stump Type, Titanium Alloy	5320	Lock bolts identified by part numbers not having a code letter "H" (Seal-ent Escape Groove) following the basic part number are not approved.

## MILITARY BULLETIN 147E

Number	Issue	Title	FSC	Limitations
NAS 2406 thru 2412 REV 3	12/73	Bolt-Lock, Shear, Protruding Head, Standard and Over- size, Pull Type, Titanium Alloy	5320	(1) Lock bolts identified by part numbers not having code letter "H" (Sealant Escape Groove) following the basic part number are not approved. (2) Code letter "A" (Over-size Shank) is not to be used for design call out (use for repair only).
NAS 2506 thru 2512 REV 3	12/73	Bolt-Lock, Shear, 100° Head, Stand- ard and Oversize, Pull Type, Titanium Alloy	5320	(1) Lock bolts identified by part numbers not having a code letter "H" (Sealant Escape Groove) following the basic part number are not approved. (2) Code letter "A" (Over-size Shank) is not to be used for design call out (use for repair only).
NAS 2605 thru 2612 REV 4	12/81	Bolt-Lock, Shear, Protruding Head, Stump Type, Titanium Alloy	5320	Lock bolts identified by part numbers not having a code letter "H" (Sealant Escape Groove) following the basic part number are not approved.
NAS 2705 thru 2712 REV 4	12/81	Bolt-Lock, Shear, 100° Head, Stump Type, Titanium Alloy	5320	Lock bolts identified by part numbers not having a code letter "H" (Sealant Escape Groove) following the basic part number are not approved.
NAS 2852 thru 2860 REV 1	4/84	Bolt, 100° Crown Reduced Head, Torq-Set and Hi- Torque, 108 Ksi Shear	5306	Titanium Alloy (6AL-6V-2Sn) items are not approved for use.

## MILITARY BULLETIN 147E

Number	Issue	Title	FSC	Limitations
NAS 6203 thru 6220 REV 4	11/80	Bolt, Hex Head, Alloy Steel, Short Thread, Self-Lock- ing and Non-Lock- ing	5306	Bolts identified by part number having "no code letter" (Non-self-locking and undrilled), and code letter "P" (Patch Type Locking Element), "L" (Optional Locking Element), "C" (Chrome Plated) or "D" (Drilled Head) are not approved.
NAS 6403 thru 6420 REV 4	11/80	Bolt, Hex Head, Close Tolerance, 6AL-4V Titanium Alloy, Short Thread, Self-Lock- ing and Non-Lock- ing	5306	Bolts identified by part number having "no code letter" (Non-self-locking and undrilled), and code letter "P" (Patch Type Locking Element), "L" (Optional Locking Element), or "D" (Drilled Head), and Cadmium Plated Bolts are not approved.
NAS 6603 thru 6620 REV 4	4/87	Bolt, Hex Head, Close Tolerance, Alloy Steel, Long Thread, Self-Lock- ing and Non-Lock- ing	5306	Chrome Plated Bolts not approved. Rev "A" on Q-Q-P416 is not valid (typo).
NAS 6703 thru 6720 REV 4	4/87	Bolt, Hex Head, Close Tolerance, A286 CRES, Long Threads, Self- Locking and Non- Locking	5306	(1) Bolts identified by part number having "no code letter" (Non-self-locking and undrilled), and code letter "P" (Patch Type Locking Element), "L" (Optional Locking Element), or "D" (Drilled Head) are are not approved  (2) Chrome Plated Bolts (C, E, G) are not approved.  (3) Rev "A" on Q-Q-P416 is not valid (typo).

## MILITARY BULLETIN 147E

Number	Issue	Title	FSC	Limitations
NAS 6803 thru 6820 REV 3	3/77	Bolt, Hex Head, Close Tolerance, 6AL-4V Titanium Alloy, Long Thread, Self- Locking and Non- Locking	5306	(1) Bolts identified by part number having "no code letter" (Non-self-locking and undrilled), and code letter "P" (Patch Type Locking Element), "L" (Optional Locking Element), "C" (Chrome Plated) or "D" (Drilled Head) are not approved.  (2) Cadmium Plated Titanium Bolts are not approved.
NAS 7024 thru 7032 REV 1	4/84	Pin, Swage Locking, 180 KSI Steel, 100° Shear/Tension Head, Pull Type	5320	Nickel-Cad Plating is not acceptable.
NAS 7034 thru 7042	12/73	Pin, Swage Locking, 108 KSI Steel, Protruding Head, Shear/Tension, Pull Type	5320	None
NAS 7100 REV 1	6/82	Recess, Phillips, Dimensions of Recess and Gages	53GP	None
NAS 7103 thru 7116 REV 2	4/84	Bolt, 100° Head, Phillips Recess, Close Tolerance, Alloy Steel, Long Thread, Self-Locking and Non-Locking	5306	Codes "D", "L" and basic part number are acceptable for aircraft design and construction.
NAS 7203 thru 7216 REV 1	9/78	Bolt, 100° Head, Phillips Recess, Close Tolerance, A286 CRES, Long Thread, Self-Locking and Non-Locking	5306	Codes "D", "L" and basic part number are acceptable for aircraft design and construction.

## MILITARY BULLETIN 147E

Number	Issue	Title	FSC	Limitations
NAS 7303 thru 7316 REV 1	9/78	Bolt, 100 <sup>o</sup> Head, Phillips Recess, Close Tolerance, 6AL-4V Titanium Alloy, Long Thread, Self-Locking and Non-Locking	5306	Codes "D", "L" and basic part number are acceptable for aircraft design and construction.
NAS 8000 thru 8006 REV 2	11/83	Screw, Pan Head, Phillips Recess, Alloy Steel, Full Thread, Self-Lock- ing and Non-Lock- ing	5305	None
NAS 8100 thru 8106 REV 1	1/83	Screw, Pan Head, Phillips Recess, A286 CRES, Full Thread, Self-Lock- ing and Non-Lock- ing	5305	None
NAS 8200 thru 8206	9/77	Screw, Pan Head, Phillips Recess, Titanium Alloy 6AL- 4V, Full Thread, Self-Locking and Non-Locking	5305	None
NAS 8302 thru 8304 REV 1	5/84	Screw, Machine, Washer Head, Full Thread, Phillips Recess, Alloy Steel	5305	None
NAS 9001 thru 9006	8/84	Screw, Hex Head, ACR Ribbed Recess, Torq-Set, Full Thread, Alloy Steel, 160,000 psi Tensile	5306	None
NAS 9101 thru 9106	8/84	Screw, Hex Head, ACR Ribbed Recess, Torq-Set, Full Thread, A-286 CRES, 160,000 psi Tensile	5306	None

## MILITARY BULLETIN 147E

Number	Issue	Title	FSC	Limitations
NAS 9201 thru 9206	8/84	Screw, Hex Head, ACR Ribbed Recess, Torq-Set, Full Thread, Titanium Alloy 6AL-4V, 160,000 psi Tensile	5306	None
NAS 7101	9/77	Bit, Screwdriver, Phillips, Specifi- cation for	5120	For aircraft design and con- struction this supersedes MS9006.

APPENDIX B  
LIST OF AS STANDARDS - NUMERICAL

## MILITARY BULLETIN 147E

Number	Issue	Title	FSC	Limitations
AS 1001B	1/81	Tee, Reducer, Bulkhead on Run, Internal Port on Side, Flareless Tube	4730	None
AS 1002B	1/81	Tee, Reducer, Bulkhead and Internal Port on Run, Flareless Tube	4730	None
AS 1003B	1/81	Tee, Reducer, Bulkhead on Run, Flareless Tube	4730	None
AS 1004B	1/81	Elbow, 90°, Reducer Flareless Tube	4730	None
AS 1005B	1/81	Tee, Reducer, Flareless Tube	4730	None
AS 1006B	1/81	Cross, Reducer, Flareless Tube	4730	None
AS 1007B	1/81	Union, Reducer, Bulkhead, Flareless Tube	4730	None
AS 1008B	1/81	Elbow, 90°, Reducer, Bulkhead, Flareless Tube	4730	None
AS 1009C	11/82	Tee, Reducer, Bulkhead on Side, Flareless Tube	4730	None
AS 1010B	1/81	Elbow, 45°, Reducer, Flareless Tube	4730	None
AS 1031B	4/83	Reducer Tee - Bulkhead on Run, Internally Threaded Side Port, Flared Tube	4730	None

## MILITARY BULLETIN 147E

Number	Issue	Title	FSC	Limitations
AS 1032B	4/83	Tee, Reducer- Bulk-head and Internally Threaded Port on Run, Flared Tube	4730	None
AS 1033B	4/83	Reducer Tee - Bulk-head on Run, Flared Tube	4730	None
AS 1034B	4/83	Elbow, 90 <sup>o</sup> , Reducer, Flared Tube	4730	None
AS 1035B	4/83	Tee, Reducer, Flared Tube	4730	None
AS 1036B	4/83	Cross, Reducer, Flared Tube	4730	None
AS 1037B	4/83	Union, Reducer, Bulkhead, Flared Tube	4730	None
AS 1038B	4/83	Elbow, 90 <sup>o</sup> , Reducer, Bulkhead, Flared Tube	4730	None
AS 1039B	4/83	Tee, Reducer, Bulkhead on Side Flared Tube	4730	None
AS 1040B	4/83	Elbow, 45 <sup>o</sup> Reducer, Flared Tube	4730	None
AS 1073	6/68	Sleeve, Hose Assembly, Heat Shrinkable	4720	None
AS 1291	5/73	Sleeve, Hose Assembly, Chafe Guard, TFE or FEP	4720	None
AS 1292	5/73	Sleeve, Hose Assembly, Chafe Guard Butyrate Coil	4720	None

## MILITARY BULLETIN 147E

Number	Issue	Title	FSC	Limitations
AS 1293	5/73	Sleeve, Hose Assembly, Chafe Guard TFE Coil	4720	None
AS 1294	5/73	Sleeve, Hose Assembly, Chafe Guard, Nylon Coil	4720	None
AS 1295	5/73	Sleeve, Hose Assembly, Chafe Guard, Neoprene Rubber	4720	None
AS 1298	5/73	Sleeve, Heavy Wall, Hose Assembly, Chafe Guard, TFE	4720	None
AS 1299A	6/80	Adapter-Boss Connection Ring Locked to Flareless Tube	4730	This adapter shall be used in accordance with the limitations of AS 1300 and AS 1301.
AS 1300	8/75	Boss-Ring Locked Fluid Connection Type, Standard Dimensions For	4730	None
AS 1301	8/75	Adapter-Ring Locked to Flareless Tube, Boss Connection Design, Installation and Removal of	4730	None

APPENDIX C

LIST OF INACTIVE FOR DESIGN AND  
CANCELLED DOCUMENTS - NUMERICAL

## MILITARY BULLETIN 147E

Number	Date of Issue	Status	Title	FSC
NAS 5 REV 5	9/73	Inactive for New design after 16 Oct 1980	Rod end, threaded alloy steel, flush welding type	5340
NAS 360 REV 1	9/61	None	Tube-Control, Steel	3040
NAS 361 REV 3	5/80	None	Tube Assembly-Control, Steel, With Flash Welded and Threaded Rod Ends	3040
NAS 362 REV 3	5/80	None	Tube Assembly-Control Steel, With Flash Welded Clevis and Threaded Rod-Ends	3040
NAS 363 thru 369 REV 1	1/64	Inactive for New Design After 30 June 1981	Control Rod and Tube Assembly 1/4-28UNF-3A Thread	3040
NAS 464 NOTICE 1	1/75	Inactive for Design after 1 July 1976. Use superseding document NAS 6203 thru 6220	Bolt-Shear, Close Tolerance	5306
NAS 513 REV 4	12/61	None	Washer - Rod End Locking	5310
NAS 514 REV 6	11/73	None	Screw, Machine, 100°, Flat Head, Full Threaded, Alloy Steel	5305
NAS 518 REV 1	12/61	None	Gage - 100° Flat Head Flushness	5220
NAS 519 REV 1	8/83	None	Stylus, 100°, Flat Head Guage	5220
NAS 525 REV 5	11/73	Inactive for new design	Rivet-100° Countersunk Head Hi-Shear Close Tolerance Head and shank	5220

## MILITARY BULLETIN 147E

Number	Date of Issue	Status	Title	FSC
NAS 526 REV 3	3/62	None	Flushness Gage and stylus for 100° Countersunk Flush Fasteners	5220
NAS 527 REV 3	3/62	None	Inspection Procedure for Flush Fasteners	5220
NAS 528 REV 4	3/62	None	Collar (High Strength) High - Shear Rivet	5320
NAS 529 REV 4	11/73	Inactive for new design	Rivet Flathead Hi-Shear Close Tolerance Shank	5320
NAS 560 REV 5	6/80	None	Screw-Machine, Non-Magnetic, High Temperature, Structural 100° Flush Head	5305
NAS 621 REV 8	12/73	Removed because Document is a Procurement Specification	Fasteners, Titanium alloy, Procurement Specification	5306
NAS 662 REV 6	4/74	None	Screw, Machine, Flathead 100° Plain and Self-Locking	5305
NAS 663 thru 668 REV 7	3/77	None	Bolt, 100° Flush Tension Head, "Hi-Torque" Recess, Long Thread Titanium Alloy	5306
NAS 1055 REV 3	12/72	None	Rivet, Hi-Shear, 100° Flush Close Tolerance Head	5320
NAS 1219 REV 6	3/77	None	Screw, 100° Flush Head, "Hi-Torque" Recess, Full Thread, Self-Locking Optional	5305

## MILITARY BULLETIN 147E

Number	Date of Issue	Status	Title	FSC
NAS 1261 thru 1265 REV 1	4/63	None	Bolt, Hex Head, Close Tolerance, Short Thread, Titanium Alloy	5306
NAS 1303 thru 1320 REV 10 NOTICE 1	10/81	Inactive for Design after 30 Oct 1981; see NAS 6603 thru 6620.	Bolt, Shear-Hexagon Head	5306
NAS 1400 REV 3	12/72	Removed because document is a Procurement Specifi- cation	Rivet-Blind, Self Plugging Mechanically Locked Spindle	5320
NAS 1402 thru 1406 REV 4 NOTICE 1	12/81	Inactive for Design after 25 April 1979. Use NAS 7700 thru 7706.	Screw, Machine, Air- craft, Pan Head Phillips Recess, 160,000 PSI Tensile	5305
NAS 1436 thru 1442 NOTICE 1	10/63	1. Inactive for De- sign after 1 March 1979. Use substitute docu- ment NAS 7024 thru 7032 (Rev. 12/73).  2. Cancelled for Government Pro- curement after 1 March 1979. Select substitute items from NAS 7024 thru 7032.	Pin, Swage Locking, Steel, Standard and Oversize, 100° Shear Head, Pull Type	5320
NAS 1446 thru 1452 NOTICE 1	10/63	1. Inactive for De- sign after 1 March 1979. Use substitute docu- ment NAS 7034 thru 7042 (Rev. 12/73).	Pin, Swage Locking, Steel, Standard and Oversize, Pro- truding Head, Shear, Pull Type	5320

## MILITARY BULLETIN 147E

Number	Date of Issue	Status	Title	FSC
NAS 1446 thru 1452 Notice 1	10/63	2. Cancelled for Government Procurement after 1 March 1979. Select substitute items from NAS 7034 thru 7042.	Pin, Swage Locking, Steel, Standard and Oversize, Protruding Head, Shear, Pull Type.	5320
NAS 1525 thru 1532 REV 2	12/73	Removed-Heat treatment specified includes high stress corrosion potential in tension applications.	Pin, Swage, Locking, Aluminum Alloy, Protruding Head, Tension, Pull Type.	5320
NAS 1535 thru 1542 REV 2	12/73	Removed-Heat treatment specified includes high stress corrosion potential in tension application.	Pin, Swage, Locking, Aluminum Alloy, 100° Head (MS20426), Tension, Pull Type.	5320
NAS 1546 thru 1552 REV 2	12/73	Removed-Heat treatment specified includes high stress corrosion potential in tension applications.	Pin, Swage, Locking Aluminum Alloy, 100° Head (MS24694), Tension, Stump Type.	5320
NAS 1579 NOTICE 1	3/77	Inactive for Design after 31 December 1976 see NAS 1100 and NAS 1216.	Bolt, Flat Pan Head Full Thread	5306
NAS 1582 REV 4	3/77	None	Bolt, 100° Flush Tension Head, Full Thread	5306
NAS 1583	2/63	None	Pin, 100° Counter-sunk Head, Hi-Shear Rivet, Close Tolerance, 1200°F	5320
NAS 1584	2/63	None	Pin, Flat Head, Hi-Shear Rivet, Close Tolerance, 1200°F	5320

## MILITARY BULLETIN 147E

Number	Date of Issue	Status	Title	FSC
NAS 1585	2/63	None	Collar, High-Shear Rivet, 1200°F	5320
NAS 1587 REV 1	9/73	None	Washer, Plain and Countersunk, 1200°F	5310
NAS 1590 NOTICE 1	7/81	Inactive for New Design after 30 Jan 1981	Pin, Hi-Shear Rivet, 1200°F, Procurement Specification for	5320
NAS 1598 REV 2	4/77	None	Washer - Sealing	5310
NAS 1603 thru 1610 REV 6	3/77	None	Bolt, 100° Flush Head, .0312 oversize, Alloy Steel, 160,000 Psi	5306
AS 1675 REV 1	6/72	None	Fastener - Blind, Internally Threaded, External Sleeve	5325
NAS 1734 REV 1	7/74	None	Nut, Blind, Elliptical Head, Self-Locking, 450°F	5310
NAS 1735	4/68	None	Nut, Blind, Elliptical Head, Self-Locking, Closed End, 450°F	
NAS 1806 thru 1816 NOTICE 1	4/78	Inactive for Design	Rivet-Hi-Shear, Flat Head, Interference Fit, Titanium Alloy	5320
NAS 1906 thru 1916 NOTICE 1	4/78	Inactive for Design	Rivet-Hi-Shear, 100° Head Interference Fit, Titanium Alloy	5320
NAS 1919	11/77	None	Rivet, Blind - General Purpose, Bulbed, Protruding Head, Mechanically-Locked-Spindle	5320

## MILITARY BULLETIN 147E

Number	Date of Issue	Status	Title	FSC
NAS 4006 REV 1	6/76	None	Aluminum Coating	MFPP
Nas 6404 thru 6420 REV 2	2/72	None	Bolt, Hex Head Close Tolerance Alloy Steel, Long Thread Self-locking and Non-Selflocking	5306
NAS 7101	9/77	Removed	Bit, Screw Driver, Phillips, Specifica- tion for	5120

**MILITARY BULLETIN 147E**

**APPENDIX D**

**LIST OF ACTIVE DOCUMENTS - ALPHABETICAL**

## MILITARY BULLETIN 147E

Title	Number	Issue	FSC	Limitations
Adapter-Boss Connection Ring Locked to Flareless Tube	AS 1299A	6/80	4730	This adapter shall be used in accordance with the limitations of AS 1300 and AS 1301.
Adapter-Ring Locked to Flareless Tube, Boss Connection Design, Installation and Removal of	AS 1301	8/75	4730	None
Bolt, Close Tolerance - Hexagon Head Titanium .190 to .500	NAS 673 thru 678 REV 6	6/80	5306	None
Bolt, Close Tolerance, 100° Reduced Head, "Hi-Torque" Recess	NAS 1767	3/77	5306	Code X oversize shall be used for repair only.
Bolt, Flat Pan Head	NAS 1578 REV 9	1/85	5306	None
Bolt, Flat Pan Head "Hi-Torque" Recess, Full Thread	NAS 1216 REV 6	3/77	5306	None
Bolt-Full Threaded, 160 Ksi Steel, Drilled Head	NAS 563 thru 572 REV 4	6/72	5305	None

## MILITARY BULLETIN 147E

Title	Number	Issue	FSC	Limitations
Bolt, Hex Head, Close Tolerance, Alloy Steel, Long Thread, Self-Locking and Non-Locking	NAS 6603 thru 6620 REV 3	6/76	5306	Chrome Plated Bolts are not approved.
Bolt, Hex Head, Close Tolerance, Alloy Steel, Short Thread, Self-Locking and Non-Locking	NAS 6203 thru 6220 REV 4	11/80	5306	Bolts identified by part number having "no code letter" (Non-self-locking and undrilled), and code letter "P" (Patch Type Locking Element), "L" (Optional Locking Element), "C" (Chrome Plated) or "D" (Drilled Head) are not approved
Bolt, Hex Head, Close Tolerance, Titanium Alloy	NAS 1266 thru 1270 REV 3	6/80	5306	None
Bolt, Hex Head, Close Tolerance, A286, Cres, Long Threads, Self-Locking and Non-Locking	NAS 6703 thru 6720 REV 2	6/76	5306	(1) Bolts identified by part number having "no code letter" (Non-self-locking and undrilled), and code letter "P" (Patch Type Locking Element), "L" (Optional Locking Element), or "D" (Dilled Head) are not approved.  (2) Chrome Plated Bolts 'C,E,G) are not approved

## MILITARY BULLETIN 147E

Title	Number	Issue	FSC	Limitations
Bolt, Hex Head, Close Tolerance, 6AL-4V Titanium Alloy, Long Thread, Self-Locking and Non-Locking	NAS 6803 thru 6820 REV 2	3/77	5306	(1) Bolts identified by part number having "no code letter" (Non-self-locking and undrilled), and code letter "P" (Patch Type Locking Element), "L" (Optional Locking Element), "C" (Chrome Plated) or "D" (Drilled Head) are not approved.  (2) Cadmium plated titanium bolts are not approved
Bolt, Hex Head, Close Tolerance, 6AL-4V Titanium Alloy, Short Thread, Self-Locking and Non-Locking	NAS 6403 thru 6420 REV 2	2/72	5306	Bolts identified by part number having "no code letter" (Non-self-locking and undrilled), and code letter "P" (Patch Type Locking Element), "L" (Optional Locking Element), "C" (Chrome Plated) or "D" (Drilled Head) are not approved.
Bolt-Lock, Shear, Protruding Head, Standard and Oversize, Pull Type, Titanium Alloy	NAS 2406 thru 2412 REV 3	12/73	5320	(1) Lock bolts identified by part numbers not having a code letter "H" (Seal-ent Escape Groove) following the basic part number are not approved. (2) Code letter "A" (Oversize Shank) is not to be used for design call out (use for repair only).
Bolt-Lock, Shear Protruding Head, Stump Type, Titanium Alloy	NAS 2605 thru 2612 REV 4	12/81	5320	Lock bolts identified by part numbers not having a code letter "H" (Seal-ent Escape Groove) following the basic part number are not approved.

## MILITARY BULLETIN 147E

Title	Number	Issue	FSC	Limitations
Bolt-Lock, Shear, 100° Head, Standard and Oversize, Pull-Type, Titanium Alloy	NAS 2506 thru 2512 REV 3	12/73	5320	(1) Lock bolts identified by part numbers not having a code letter "H" (Seal-ent Escape Groove) following the basic part number are not approved. (2) Code letter "A" (Over-size Shank) is not to be used for design call out (use for repair only).
Bolt-Lock, Shear, 100° Head, Stump- Type, Tita- nium Alloy	NAS 2705 thru 2712 REV 4	12/81	5320	Lock bolts identified by part numbers not having a code letter "H" (Seal-ent Escape Groove) following the basic part number are not approved.
Bolt-Lock, Tension, Pro- truding Head, Standard and Oversize Pull Type, Tita- nium Alloy	NAS 2005 thru 2012 REV 4	12/73	5320	(1) Lock bolts identified by part numbers not having a code letter "H" (Seal-ent Escape Groove) following the basic part number are not approved. (2) Code letter "A" (Over-size Shank) is not to be used for design call out (use for repair only).
Bolt-Lock, Ten- sion Protruding Head, Stump Type, Titanium Alloy	NAS 2205 thru 2212 REV 3	12/81	5320	Lock bolts identified by part numbers not having a code letter "H" (Seal-ent Escape Groove) following the basic part number are not approved.
Bolt-Lock, Ten- sion, 100° Head (MS24694), Pull Type, Ti- tanium Alloy	NAS 2105 thru 2112 REV 4	12/73	5320	Lock bolts identified by part numbers not having a code letter "H" (Seal-ent Escape Groove) following the basic part number are not approved.
Bolt-Lock, Ten- sion, 100° Head (MS24694), Stump Type, Ti- tanium Alloy	NAS 2306 thru 2312 REV 3	12/81	5320	Lock bolts identified by part numbers not having a code letter "H" (Seal-ent Escape Groove) following the basic part number are not approved.

## MILITARY BULLETIN 147E

Title	Number	Issue	FSC	Limitations
Bolt, Machine - Crowned Hex- agon Head, Adjusting	NAS 428 REV 6	5/80	5306	None
Bolt, Machine - Hexagon Head, Non-Magnetic and Heat Re- sistant	NAS 1003 thru 1020 REV 6	8/79	5306	NAS 1016A Inactive For Design after 1 July 1979
Bolt, Pan Head, Self-Locking, Optional	NAS 1218 REV 8	1/85	5306	None
Bolts-Shear	NAS 498 REV 9	5/69	5306	None
Bolt, Shear- Hexagon Head, Self-Locking	NAS 1223 thru 1235 REV 4	5/74	5306	Bolts identified by part numbers having the code letters "W" (QQ-P-416, Type I), following the last dash number are not approved.
Bolt, Shoulder- Hexagon Head	NAS 1297 REV 2	9/75	5306	None
Bolt, Stabilized- Non-Magnetic Corrosion Re- sistant Steel	NAS 501 REV 3	2/68	5306	None
Bolt, Twelve Point, External Wrenching, Ti- tanium Alloy	NAS 1271 thru 1280 REV 3	3/82	5306	None
Bolt-100° Close Toler- ance, High- Strength	NAS 333 thru 340 REV 12	4/84	5305	Bolts having hexagon sockets (no code letter to the part number) are not approved for use.
Bolt, 100° Crown Reduced Head, Torq-Set and Hi-Torque, 108 Ksi Shear	NAS 2852 thru 2860 Rev 1	4/84	5306	Titanium Alloy (6AL-6V-25n) items are not approved for use.

## MILITARY BULLETIN 147E

Title	Number	Issue	FSC	Limitations
Bolt, 100° Flush Head	NAS 1580 REV 5	5/82	5306	None
Bolt, 100° Flush Reduced Head	NAS 1581 REV 5	5/82	5306	Sizes -3, -4 and -5 are not approved for use in access panels.
Bolt, 100° Flush Head, Alloy Steel, 160,000 PSI	NAS 583 thru 590 REV 11	12/84	5306	None
Bolt, 100° Flush Head, Self-Locking Optional	NAS 1221 REV 9	1/85	5306	(1) Bolts of alloy steel identified by part numbers having the code letter "P" (QQ-P-416, Type II, Class 3, Cadmium Plating) or no code letter (QQ-P-416, Type I, Class 3, Cadmium Plating) at all following the second dash number not approved. (2) Bolts of A286 identified by part number having the code letter "P" (QQ-P-416, Type II, Class 3, Cadmium Plating) following the second dash number are not approved.
Bolt, 100° Head, Phillips Recess, Close Tolerance, Alloy Steel, Long Thread, Self- Locking and Non-Locking	NAS 7103 thru 7116 REV 2	4/84	5306	Codes "D", "L", and basic part number are acceptable for aircraft design and construction.
Bolt, 100° Head, Phillips Recess, Close Tolerance, A286 CRES, Long Thread, Self- Locking and Non- Locking	NAS 7203 thru 7216 REV 1	9/78	5306	Codes "D", "L", and basic part number are acceptable for aircraft design and construction.

## MILITARY BULLETIN 147E

Title	Number	Issue	FSC	Limitations
Bolt, 100° Head, Phillips Recess, Close Tolerance, 6AL- 4V Titanium Al- loy, Long Thread, Self- Locking and Non-Locking	NAS 7303 thru 7316 REV 1	9/78	5306	Codes "D", "L", and basic part number are acceptable for aircraft design and construction.
Bolts - Shear, 95 KSI Fsu	NAS 498 REV 10	1/80	5306	None
Boss-Ring Locked Fluid Connec- tion Type, Standard Di- mensions For	AS 1300	8/75	4730	None
Bushing-Clamp- Up, Bronze	NAS 74 REV 5	2/83	3120	Unplated Aluminum Bronze bushings are not approved for use.
Bushing-Clamp- Up, Steel, Cadmium Plated	NAS 73 REV 6	10/80	3120	None
Bushing-Clamp- Up, Steel, Chrome Plated	NAS 72 REV 4	10/62	3120	None
Bushing-Flanged, Press Fit, Steel, Bronze & Copper	NAS 77 REV 7	5/82	3120	Unplated Aluminum Bronze bushings are not approved for use.
Bushing-Flanged, Press Fit- Undersize In- side Diameter	NAS 538 REV 5	9/82	3120	Bushings identified by part numbers with "no code" (Un- plated Alloy Steel) and (Unplated Aluminum Bronze) following the size dash numbers are not approved.
Bushing-Plain, Press Fit, Copper & Bronze	NAS 76 REV 8	9/83	3120	Unplated Aluminum Bronze bushings are not approved for use.

## MILITARY BULLETIN 147E

Title	Number	Issue	FSC	Limitations
Bushing-Plain, Press Fit, Steel	NAS 75 REV 5	10/80	3120	None
Bushing Sleeve- Press Fit, Un- dersize Inside Diameter	NAS 537 REV 5	9/82	3120	Bushings identified by part numbers with "no code" letter (Unplated Alloy Steel) and (Unplated Aluminum Bronze) following the size dash number are not approved.
Cable Assembly Swaged Type, Type I and Type II Termi- nals	NAS 312 thru 320 REV 5	4/82	4010	None
Cable Assembly Swaged Type, Type I Termi- nals	NAS 302 thru 310 REV 4	11/80	4010	None
Cable Assembly Swaged Type, Type II Termi- nals	NAS 322 thru 330 REV 5	11/80	4010	None
Chain-Bead, Com- ponents and As- sembly	NAS 1201 REV 4	1/83	4010	None
Clip, Spring Tension	NAS 1464 REV 4	8/82	5340	None
Control Rod and Tube Assembly, 5/16-24UNF-3A Thread	NAS 370 thru 373 REV 2	1/64	3040	None
Coupling-Rigid Tube Bulkhead Connector	NAS 652 REV 3	1/81	4730	None
Coupling-Rigid Tube Connector, Aluminum	NAS 591 REV 5	1/81	4730	None

## MILITARY BULLETIN 147E

Title	Number	Issue	FSC	Limitations
Coupling-Rigid Tube Connector, Corrosion Re- sistant Steel	NAS 594 REV 5	1/81	4730	None
Collar, Swage Locking, For Full-Type or Stump-Type Lockbolts	NAS 1080 REV 7	8/85	5320	None
Cross, Reducer Flared Tube	AS 1036B	4/83	4730	None
Cross, Reducer, Flareless Tube	AS 1006B	1/81	4730	None
Elbow, 45° Re- ducer, Flared Tube	AS 1040B	4/83	4730	None
Elbow, 45° Re- ducer, Flare- less Tube	AS 1010B	1/81	4730	None
Elbow, 90° Re- ducer, Flare- less Tube	AS 1004B	1/81	4730	None
Elbow, 90°, Reducer, Flared Tube	AS 1034B	4/83	4730	None
Elbow, 90°, Re- ducer, Bulk- head, Flareless Tube	AS 1008B	1/81	4730	None
Elbow, 90°, Reducer, Bulkhead, Flared Tube	AS 1038B	4/83	4730	None

## MILITARY BULLETIN 147E

Title	Number	Issue	FSC	Limitations
Fastener-Blind, Internally Threaded, External Sleeve, General Purpose, Flush Head Self-Locking	NAS 1670 REV 2	9/83	5325	None
Fastener-Blind, Internally Threaded, External Sleeve, General Purpose, Protruding Head, Self-Locking	NAS 1669 REV 2	9/83	5325	None
Fastener-Blind, Internally Threaded, External Sleeve, High Temperature, Flush Head, Self-Locking	NAS 1672 REV 2	9/83	5325	None
Fastener-Blind, Internally Threaded, External Sleeve, High Temperature Protruding Head, Self-Locking	NAS 1671 REV 4	9/83	5325	None
Fastener-Blind, Internally Threaded, External Sleeve, Lightweight, Millable Head, Self-Locking	NAS 1674 REV 2	9/83	5325	None

## MILITARY BULLETIN 147E

Title	Number	Issue	FSC	Limitations
Fastener-Blind, Internally Threaded, External Sleeve, Lightweight, Protruding Head, Self-Locking	NAS 1673 REV 2	9/83	5325	None
Fastener-Recommended Shank, Hole and Head-to-Shank Fillet Radius, Limits for	NAS 618 REV 5	6/58	5325	None
Fitting, Lubrication-1/8 Inch Drive, Flush Type	NAS 516 REV 5	6/80	4730	This fitting is approved for use only when space limitations make it impossible to use the fittings required by MIL-STD-838.
Fitting Tie Down Strap End (Light Duty)	NAS 1382 REV 1	3/77	5340	None
Gages, Pins and Collar Inspection, Swage Locking	NAS 1563 REV 6	12/84	5320	None
Grommet, Plastic Flip Type	NAS 1368 REV 3	1/83	5325	None
Grommet, Plastic - Split	NAS 557 REV 3	2/68	5325	None
Hook, Chain, S	NAS 1090 REV 2	1/80	4030	None

## MILITARY BULLETIN 147E

Title	Number	Issue	FSC	Limitations
Insert, Molded in, Blind Threaded, Self- Locking, Non Self-Locking, Floating, Sandwich Panel	NAS 1835 REV 2	7/74	5340	None
Insert, Molded in, Blind Threaded, Self- Locking, Non Self-Locking, Lightweight, Sandwich Panel	NAS 1836 REV 3	7/74	5340	None
Insert, Molded in, Blind Threaded, Self- Locking, Non Self-Locking, Sandwich Panel	NAS 1832 REV 3	7/74	5340	None
Insert-Molded in, Counter- sunk and Thru Clearance Hole, Sandwich Panel	NAS 1834 REV 1	7/74	5340	None
Insert, Molded in, Thru Threaded, Self- Locking, Non Self-Locking, Sandwich Panel	NAS 1833 REV 2	7/74	5340	None
Insert, Self- Locking, Ther- mal Bonded Honeycomb Panel	NAS 1873	6/76	5340	None
Lock-Rod End (Key Type)	NAS 559 REV 3	11/79	5340	None
Locking Device, Positive Index	NAS 1193 REV 7	3/78	5340	None

## MILITARY BULLETIN 147E

Title	Number	Issue	FSC	Limitations
Locknut-Bearing Retaining	NAS 1493 REV 5	1/85	5310	None
Lockwasher-Bearing Retaining	NAS 1443 REV 4	3/71	5310	None
Nut Assembly, Torque Limiting, 600°F Application, .2500-28 UNJF-3B Thread	NAS 1871 REV 1	11/71	5310	None
Nut, Blind Rivet-Counter-sunk Head, Internal Thread, Non-Locking (Free Running) or Self-Locking (Prevailing Torque)	NAS 1330 REV 6	10/85	5310	None
Nut, Blind Rivet-Flathead, Internal Thread, Non-Locking (Free-Running) or Self-Locking (Prevailing Torque)	NAS 1329 REV 6	10/85	5310	None
Nut, Blind, Ser-rated Head, Self-Locking, 450°F	NAS 1731 REV 1	7/74	5310	This nut shall be used in accordance with the limitations of MS33588.
Nut, Drilled Jam	NAS 509 REV 5	9/72	5310	None
Nut, Plain, Hexagon, Drilled Jam, Thin	NAS 1423 REV 1	9/72	5310	None

## MILITARY BULLETIN 147E

Title	Number	Issue	FSC	Limitations
Nut, Plain, Hexagon, Small Pattern, Non-structural	NAS 671 REV 3	6/81	5310	None
Nut, Rigid Tube Connector, Aluminum	NAS 593 REV 5	1/81	4730	None
Nut, Rigid Tube Connector, Corrosion Resistant Steel	NAS 596 REV 5	1/81	4730	None
Nut, Self-Locking, Barrel, Floating, 180 KSI $F_{tu}$	NAS 577 REV 12	5/83	5310	Self-Locking nuts identified by part numbers with the code letter "X" (Without Lubricant) following the last dash number are not approved.
Nut, Self-Locking, Captive Washer, Shear Type, 450°F and 800°F	NAS 1726 REV 1	11/82	5310	None
Nut, Self-Locking, Plate-Corner, Counterbored, Floating, 125 KSI $F_{tu}$ , 450°F and 800°F	NAS 1766	1/82	5310	Parts covered by this specification are not approved for use on access doors or panels of airframe structure.
Nut, Self-Locking, Plate-Corner Floating, Variable Counterbore, Replacement Nut Element, 125 KSI $F_{tu}$ , 450°F and 800°F	NAS 1793	11/78	5310	None

## MILITARY BULLETIN 147E

Title	Number	Issue	FSC	Limitations
Nut, Self-Locking, Counterbore Replaceable Element	NAS 1794	11/78	5310	None
Nut, Self-Locking, Plate, Floating, Spring Loaded	NAS 1803	3/77	5310	None
Nut, Self-Locking, Plate-One Lug, Floating, Variable Counterbore, Replaceable Nut Element, 125 KSI F <sub>tu</sub> , 450°F and 800°F	NAS 1792	11/78	5310	None
Nut, Self-Locking, Plate, Side by Side, Floating, Low Height, Reduced Rivet Spacing, C'Bored, 160 KSI, 450°F, 800°F	NAS 1789	3/75	5310	None
Nut, Self-Locking, Plate-Two Lug, Cap, Floating	NAS 1473 REV 8	6/81	5310	None
Nut, Self-Locking, Plate-Two Lug, Floating, Variable Counterbore, Replaceable Nut Element, 125 KSI F <sub>tu</sub> , 450°F and 800°F	NAS 1791	11/78	5310	None

## MILITARY BULLETIN 147E

Title	Number	Issue	FSC	Limitations
Nut, Self-Locking, Plate-Two Lug, Cap, Floating, Reduced Rivet Spacing	NAS 1474 REV 8	6/81	5310	None
Nut, Self-Locking, Plate-Two Lug, Deep Counterbore, Floating, 125 KSI $F_{tu}$ 450°F and 800°F	NAS 1870 REV 1	6/71	5310	None
Nut, Self-Aligning, Self-Locking, Plate-Two Lug, Floating, 125 KSI $F_{tu}$ 450°F and 800°F	NAS 1765	1/82	5310	Parts covered by this specification are not approved for use on access doors or panels of airframe structure.
Nut Spacer, Plate-Counter-sunk	NAS 500 REV 7	5/73	5310	None
Nut, Spacer, Plate-Plain	NAS 463 REV 6	2/86	5310	None
Nut, Torque Limiting, 900°F Application, 1/4-28 UNJF-3B Thread	NAS 1872	11/75	5310	None
Nut, Universal Port Fitting	NAS 1410 REV 1	11/67	5310	None
Nut, Washer, Self-Aligning, 450°F and 800°F	NAS 1727	9/73	5310	None

## MILITARY BULLETIN 147E

Title	Number	Issue	FSC	Limitations
Packing, Pre-formed, Straight Thread Tube Fitting Boss, Synthetic Lubricant Resistant	NAS 617 REV 2	11/78	5330	None
Packing with Retainer	NAS 1523 REV 2	9/77	5330	None
Pin, Swage Locking, Aluminum Alloy, Protruding Head, Tension, Stump Type	NAS 1555 thru 1562 REV 3	12/81	5320	Swage pins identified by part numbers not having a code letter "H" (Sealant Escape Groove) following the basic part number are not approved.
Pin, Swage Locking, Aluminum Alloy, 100° Head (MS24694), Tension, Pull Type	NAS 1516 thru 1522 REV 2	12/73	5320	Swage pins identified by part numbers not having a code letter "H" (Sealant Escape Groove) following the basic part number are not approved.
Pin, Swage Locking, Steel, Protruding Head, Shear, Stump Type	NAS 1424 thru 1432 REV 2	12/73	5320	Swage pins identified by part numbers having a code letter "N" (Cadmium-Nickel Plating), "W" (QQ-P-416, Type I, Cadmium Plating) and not having a code letter "H" (Sealant Escape Groove) following the basic part number are not approved.
Pin, Swage Locking, Steel, Protruding Head, Tension, Stump Type	NAS 1496 thru 1502 REV 3	12/81	5320	Swage pins identified by part numbers having a code letter "N" (Cadmium-Nickel Plating) and not having a code letter "H" (Sealant Escape Groove) following the basic part number are not approved.

## MILITARY BULLETIN 147E

Title	Number	Issue	FSC	Limitations
Pin, Swage Locking, Steel, Standard and Oversize, Protruding Head, Tension, Pull Type	NAS 1465 thru 1472 REV 2	12/73	5320	Swage pins identified by part numbers having a code letter "N" (Cadmium-Nickel Plating) and not having code letter "H" (Sealent Escape Groove) following the basic part number are not approved. Pins coded "A" (Oversize Shank) following the basic part number are not approved for design call out but are to be used for repair only.
Pin, Swage Locking, Steel, Standard and Oversize, 100° Head (MS20426), Tension, Pull Type	NAS 1475 thru 1482 REV 2	12/73	5320	Swage pins identified by part numbers having a code letter "N" (Cadmium-Nickel Plating) and not having code letter "H" (Sealent Escape Groove) following the basic part number are not approved. Pins coded "A" (Oversize Shank) following the basic part number are not approved for design call out but are to be used only for repair.
Pin, Swage Locking, Steel, Standard and Oversize, 100° Head (MS24694), Tension, Pull Type	NAS 1456 thru 1462 REV 2	12/73	5320	Swage pins identified by part numbers having a code letter "N" (Cadmium-Nickel Plating) and not having code letter "H" (Sealent Escape Groove) following the basic part number are not approved. Pins coded "A" (Oversize Shank) following the basic part number are not approved for design call out but are to be used only for repair.
Pin, Swage Locking, Steel, 100° Head (MS24694) Tension, Stump Type	NAS 1486 thru 1492 REV 3	12/81	5320	Swage pins identified by part numbers having a code letter "N" (Cadmium-Nickel Plating) and not having a code letter "H" (Sealent Escape Groove) following the basic part number are not approved.

## MILITARY BULLETIN 147E

Title	Number	Issue	FSC	Limitations
Pin, Swage Locking, Steel, 100 <sup>o</sup> Shear Head, Stump Type	NAS 1414 thru 1422 REV 3	12/81	5320	Swage pins identified by part numbers having a code letter "N" (Cadmium-Nickel Plating), "W" (QQ-P-416, Type I, Cadmium Plating) and not having a code letter "H" (Sealant Escape Groove) following the basic part number are not approved.
Pin, Swage Locking, 108 KSI Steel, Protruding Head, Shear/Tension, Pull Type	NAS 7034 thru 7042	12/73	5320	None
Pin, Swage Locking, 108 KSI Steel, 100 <sup>o</sup> Shear/Tension Head, Pull Type	NAS 7024 thru 7032	12/73	5320	None
Pins and Collars, Swage Locking	NAS 1413 REV 5	8/85	5320	None
Recess, Phillips, Dimensions of Recess and Gages	NAS 7100 REV 1	6/82	53GP	None
Reducer Tee - Bulkhead on Run, Flared Tube	NAS 1033B	4/83	4730	None
Reducer Tee - Bulkhead on Run, Internally Threaded Side Port, Flared Tube	NAS 1031B	4/83	4730	None
Retainer - Floating Barrel Nut	NAS 578 REV 5	5/73	5310	None

## MILITARY BULLETIN 147E

Title	Number	Issue	FSC	Limitations
Retaining Clip- Replaceable Nut Plate	NAS 1795	11/78	5310	None
Ring, Rigid Tube Con- nector, Aluminum	NAS 592 REV 5	1/81	4730	None
Ring, Rigid Tube Con- nector, Cor- rosion Resist- ant Steel	NAS 595 REV 5	1/81	4730	None
Rivet - Blind, Protruding Head, Locked Spindle	NAS 1398 REV 5	8/84	5320	None
Rivet - Blind, Protruding Head, Mechan- ically Locked Spindle, Bulbed	NAS 1738 REV 2	4/78	5320	None
Rivet - Blind, Protruding Head, Mechan- ically Locked Spindle, Bulbed	NAS 1768 REV 3	4/85	5320	None
Rivet - Blind, Self-Plug- ging, Mechan- ically Locked Spindle, Bulbed	NAS 1740 REV 3	8/83	5320	None
Rivet - Blind, 100° Flush Head, Locked Spindle	NAS 1399 REV 5	8/84	5320	None

## MILITARY BULLETIN 147E

Title	Number	Issue	FSC	Limitations
Rivet - Blind, 100° Flush Head, Mechan- ically Locked Spindle, Bulbed	NAS 1739 REV 2	4/78	5320	None
Rivet - Blind, 100° Flush Head, Mechan- ically Locked Spindle, Bulbed	NAS 1769 REV 3	4/85	5320	None
Rivet, Slug Sleeveless	NAS 1321 REV 2	10/85	5320	None
Rivet - Solid Universal Head, A286 Corrosion Resistant Steel	NAS 1198 REV 3	9/67	5320	None
Rivet - Solid - 100° Flush Head, A286 Corro- sion Resist- ant Steel	NAS 1199 REV 3	9/67	5320	None
Rivet, Solid, - 100° Flush Shear Head, Alumi- num Alloy, Titanium Columbium Al- loy	NAS 1097 REV 5	3/82	5320	Parts with code "DD" before first dash number (2024-T4 aluminum alloy) are not approved.
Rivet - Solid - 100° Flush Shear Head, A286 Corro- sion Re- sistant Steel and Monel	NAS 1200 REV 5	11/78	5320	None

## MILITARY BULLETIN 147E

Title	Number	Issue	FSC	Limitations
Rod-Control, Solid Steel	NAS 354 REV 4	10/73	5307	None
Screw, Cap, Socket Head- Undrilled and Drilled, Plain and Self-Lock- ing, Alloy Steel and Corrosion-Re- sisting Steel, UNRF-3A	NAS 1351 REV 7	1/83	5305	Parts covered by this speci- fication are not approved for airframe structure use.
Screw, Cap, Socket Head- Undrilled and Drilled, Plain and Self-Lock- ing, Alloy Steel and Cor- rosion-Re- sisting Steel, UNRC-3A	NAS 1352 REV 7	1/83	5305	Parts covered by this speci- fication are not approved for airframe structure use.
Screw, Flat Pan Head "Hi-Torque" Recess Full Thread	NAS 1216 REV 8	5/86	5306	None
Screw, Hex Head, ACR Ribbed Recess, Torq- Set, Full Thread, Alloy Steel, 160,000 psi Tensile	NAS 9001 thru 9006	8/84	5306	None
Screw, Hex Head, ACR Ribbed Recess, Torq- Set, Full Thread, A-286 CRES, 160,000 psi Tensile	NAS 9101 thru 9106	8/84	5306	None

## MILITARY BULLETIN 147E

Title	Number	Issue	FSC	Limitations
Screw, Hex Head, ACR Ribbed Recess, Torq-Set, Full Thread, Titanium Alloy 6AL-4V, 160,000 psi, Tensile	NAS 9201 thru 9206	8/84	5306	None
Screw, Hex Head, Phillips Recess, Full Thread, Alloy Steel, 160,000 PSI Tensile	NAS 1801 REV 1	4/84	5305	None
Screw, Hex Head, Phillips, Recess, Full Thread, A-286 CRES, 160,000 PSI Tensile	NAS 1802	3/77	5305	None
Screw - Hex Head, Recessed, Full Thread	NAS 1096 REV 3	6/73	5305	None
Screw, Machine-Air-craft, Pan Head, Phillips Recess, Full Threaded, Alloy Steel	NAS 600 thru 606 REV 5	4/74	5305	The machine screws having no code letter (QQ-P-416, Type I, Cadmium Plating) following the last dash number are not approved.
Screw, Machine-Flat Fillister Head, Full Thread, Torque-Set	NAS 1101 REV 7	5/82	5305	Code W not approved.

## MILITARY BULLETIN 147E

Title	Number	Issue	FSC	Limitations
Screw, Machine-Flat 100° Head, Full Thread, Torque-Set	NAS 1102 REV 7	5/82	5305	Code W not approved.
Screw, Machine, Washer Head, Full Thread, Phillips Recess Alloy Steel	NAS 8302 thru 8304 REV 1	5/84	5305	None
Screw, Pan Head, Assembled Washers	NAS 1301 REV 1	9/75	5305	Parts covered by this specification are not approved for airframe structure use.
Screw, Pan Head, Cross Recessed, Full Thread	NAS 1635 REV 2	6/81	5305	Machine screws identified by part numbers having code letters "LL" (Strip Type Locking Element), and "LN" (Button Type Locking Element) between the first and second dash numbers are not approved.
Screw, Pan Head, Phillips Recess, Alloy Steel, Full Thread, Self-Locking and Non-Locking	NAS 8000 thru 8006 REV 2	11/83	5305	None
Screw, Pan Head, Phillips Recess, A286 CRES, Full Thread, Self-Locking and Non-Locking	NAS 8100 thru 8106 REV 1	1/83	5305	None

## MILITARY BULLETIN 147E

Title	Number	Issue	FSC	Limitations
Screw, Pan Head, Phillips Recess, Titanium Alloy 6AL-4V, Full Thread, Self-Locking and Non-Locking	NAS 8200 thru 8206	9/77	5305	None
Screw, Self-Locking-Flat Fillister Head, Full Thread	NAS 1191 REV 8	5/86	5305	None
Screw, Self-Locking-Flat 100° Head, Full Thread	NAS 1189 REV 10	5/85	5305	Parts with code letter "W" (QQ-P-416, Type I Cadmium Plated) after the second dash number are not approved.
Screw, Self-Locking, Flat 100° Head Shear Torq-set	NAS 1161 thru 1168 REV 9	5/86	5305	NAS 1161 and NAS 1162 not approved for structural use.

## MILITARY BULLETIN 147E

Title	Number	Issue	FSC	Limitations
Screw, Self-Locking-Pan Head, Full Thread	NAS 1190 REV 11	11/83	5305	None
Screw, Self Locking-Pan Head, Shear, Torq-set	NAS 1171 thru 1178 REV 7	5/86	5305	NAS 1171 and NAS 1172 not approved for structural use.
Screw-100° Close Tolerance Flat Head, 160,000 PSI	NAS 517 REV 3	11/73	5305	None
Screw-100° Flat Head, Shoulder	NAS 1299 REV 1	9/75	5305	None
Shim-Miniature Anchor Nut	NAS 1195 REV 1	4/63	5365	None
Sleeve, Heavy Wall, Hose Assembly, Chafe Guard, TFE	AS 1298	5/73	4720	None
Sleeve, Hose Assembly, Chafe Guard, Butyrate Coil	AS 1292	5/73	4720	None

## MILITARY BULLETIN 147E

Title	Number	Issue	FSC	Limitations
Sleeve, Hose Assembly, Chafe Guard, Neoprene Rubber	AS 1295	5/73	4720	None
Sleeve, Hose Assembly, Chafe Guard, Nylon Coil	AS 1294	5/73	4720	None
Sleeve, Hose Assembly, Chafe Guard, TFE or FEP	AS 1291	5/73	4720	None
Sleeve, Hose Assembly, Chafe Guard, TFE Coil	AS 1293	5/73	4720	None
Sleeve, Hose Assembly, Heat Shrinkable	AS 1073	6/68	4720	None
Spacer, Sleeve, Non-metallic, Screw and Bolt	NAS 47	6/82	5365	None
Spacer, Sleeve-Rivet	NAS 42 REV 6	6/82	5365	Rivet spacers identified by part numbers with a suffix "A" (Spacers with no finish) are not approved.
Spacer, Stepped, Swage Type	NAS 186	4/85	5365	None
Spacers - Screw and Bolt	NAS 43 REV 7	8/85	5365	Screw and bolt spacers identified by part numbers with a suffix "A" (Spacers with no finish) are not approved.

## MILITARY BULLETIN 147E

Title	Number	Issue	FSC	Limitations
Spacers, Sleeve- Rivet, High Temperature, Non-Magnetic	NAS 1056 REV 4	6/82	5365	None
Spacer, Sleeve-Screw and Bolt, High Tem- perature, Non-Magnetic	NAS 1057 REV 6	6/82	5365	None
Strap Assem- bly, Loop Type	NAS 1385 REV 3	3/77	5340	None
Strap Assem- bly, One Part	NAS 1384 REV 2	3/77	5340	None
Tee, Reducer, Bulkhead and Internal Port on Run, Flareless Tube	AS 1002B	1/81	4730	None
Tee, Reducer, Bulkhead & Internally Threaded Part on Run, Flared Tube	AS 1032B	4/83	4730	None
Tee, Reducer, Bulkhead on Run, Flare- less Tube	AS 1003B	1/81	4730	None
Tee, Reducer, Bulkhead on Run, Intern- al Port on Side, Flare- less Tube	AS 1001B	1/81	4730	None

## MILITARY BULLETIN 147E

Title	Number	Issue	FSC	Limitations
Tee Reducer Bulkhead on Side, Flared Tube	AS 1039B	4/83	4730	None
Tee, Reducer, Bulkhead on Side, Flare- less Tube	AS1009C	11/82	4730	None
Tee Reducer, Flared Tube	AS 1035B	4/83	4730	None
Tee, Reducer, Flareless Tube	AS 1005B	1/81	4730	None
Terminal - Chain to Cable (For Swaging)	NAS 287 REV 3	5/79	4030	None
Terminal - Chain to Turnbuckle	NAS 288 REV 1	12/61	4030	None
Terminal - Strap, Cable Eye End and Fork End	NAS 1435 REV 1	7/80	4030	None
Tube Assembly - Control, Aluminum Al- loy with Riveted Clevis and Threaded Rod Ends	NAS 356 REV 4	12/64	3040	None

## MILITARY BULLETIN 147E

Title	Number	Issue	FSC	Limitations
Tube Assembly - Control, Aluminum Al- loy with Riveted Threaded Rod Ends	NAS 355 REV 4	12/64	3040	None
Tube Assembly - Control, Steel with Welded Clevis and Threaded Rod Ends	NAS 359 REV 5	6/73	3040	None
Tube Assembly - Control, Steel with Welded Threaded Rod Ends	NAS 358 REV 5	6/73	3040	None
Tube-Control Aluminum Al- loy	NAS 357 REV 3	3/75	3040	None
Union Reducer, Bulkhead, Flared Tube	AS 1037B	4/83	4730	None
Union, Re- ducer, Bulk- head, Flare- less Tube	AS1007B	1/81	4730	None
Washer, Bevel 9 1/2 <sup>o</sup>	NAS 1099 REV 2	10/80	5310	None
Washer, Dim- pled, 100 <sup>o</sup>	NAS 1169 REV 4	6/83	5310	None

## MILITARY BULLETIN 147E

Title	Number	Issue	FSC	Limitations
Washer, Flat- Reduced Out- side Diam- eter	NAS 620 REV 3	6/81	5310	None
Washer, Key Dual Tab	NAS 1636 REV 1	6/81	5310	None
Washer, Non- Metallic	NAS 549 REV 3	9/69	5310	None
Washer, Ra- dius	NAS 1401 REV 1	11/80	5310	None
Washer-5052 Aluminum Al- loy	NAS 1197 REV 2	11/78	5310	None
Washer-7075 Aluminum Alloy Flat	NAS 1252 REV 2	12/84	5310	None
Washers-Plas- tic and Syn- thetic Rub- ber	NAS 1515 REV 3	6/83	5310	None

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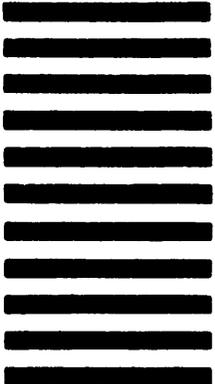
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MIL-BUL-147E

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