FAA
Aviation Safety

SPECIAL AIRWORTHINESS INFORMATION BULLETIN

SAIB: HQ-14-16R2
Date: June 2, 2026

SUBJ: Standard Hardware, AN, MS and NAS Fasteners

This is information only. Recommendations aren't mandatory.

Introduction

This revised Special Airworthiness Information Bulletin (SAIB) informs the aviation industry of potential non-conforming Military Specifications (MS), Army-Navy Standards (AN), and National Aerospace Standards (NAS) fasteners. The SAIB applies to manufacturers, owners, operators, and maintenance personnel of **airplanes, rotorcraft, engines, and appliances.** This SAIB also asks the aviation industry to report fastener failures and other non-conformities. This bulletin focuses on MS 21042 nuts due to their wide usage in aviation but is relevant to all other standard fasteners.

The FAA is revising this SAIB to correct an error in the title and to correct a bolt reference from NAS 625 to NAS 626.

At this time, the airworthiness concern is not an unsafe condition and does not warrant an airworthiness directive (AD) action under Title 14 of the Code of Federal Regulations (14 CFR) part 39. However, a significant number of past ADs noted possible unsafe conditions caused by non-conforming fasteners.

Background

EASA SIB 2012-06R2 referenced reports of non-conforming standard fasteners, notably MS 21042 and NAS 1291 nuts and NAS 626 bolts. Various manufacturers have produced sporadic lots of fasteners with non-conformities since 2008. The MS 21042 nuts had the preponderance of these non-conformances. Specifically, the -3 through -6 sizes of MS 21042 nuts cracked in service and were found during inspections or were noted in accident and incident investigation reports. These nonconforming nuts had evidence of hydrogen embrittlement or other latent manufacturing defects. However, the defects in these nuts are emblematic of potential flaws in other standard hardware, as seen in similarly cracked NAS 1291 nuts and NAS 626 bolts.

The management of many MS, AN and NAS standards migrated from U.S military and government to various civil standards organizations since the mid-1990s. Unlike the military, these civil standards organizations do not certify, monitor compliance or perform surveillance of MS, AN, and NAS fasteners or their respective manufacturers. Conformance with these standards and specifications lies with their respective manufacturers.

Recommendations

Take appropriate measures to find and remove any non-conforming MS 21042 nuts from service and stores. Various aircraft, engines, and appliances have MS 21042 nuts throughout their approved designs. The significance of these nuts to aviation safety varies according to their installed applications. These applications range from joining structures to connecting mechanical linkages and flight controls. The FAA recommends a visual inspection of nuts installed in safety significant applications at the next opportunity. Look for surface irregularities such as gouges, cracks, etc. Use a 10X magnification when possible.

In addition, the FAA recommends that you subject all incoming lots of new self-locking nuts to a torque check per Table 1 below to verify minimum strength conformance. Inspect for cracks in the wrenching surfaces. Consider other inspection enhancement aids like a 10X magnification and dry penetrant of comparable sample sizes for new lots of these nuts.

Table 1, Torque Procedures

Install the nuts on the appropriate bolts, with spacers as required. Torque them to the appropriate values outlined below. Let them remain torqued for 1 week. For statistical reasons, test a quantity of 1% (round up) or 20 nuts of one manufactured batch/ lot – whichever is less. After the test period, visually inspect the nuts for cracks on the bearing and wrenching surfaces.					
Size Dash No.	**Thread**	**Wrenching Torque Test Value**		**Wrenching Torque Test Value for steel A286 (NAS1291C)**	
		In-lb	**Nm**	**In-lb**	**Nm**
-02	.0860-56 UNJC-3B	5	0.6	3	0.4
-04	.1120-40 UNJC-3B	10	1.1	7	0.8
-06	.1380-32 UNJC-3B	20	2.3	15	1.6
-08	.1640-32 UNJC-3B	30	3.4	20	2.4
-3	.1900-32 UNJF-3B	60	6.8	40	4.7
-4	.2500-28 UNJF-3B	150	17	105	12
-5	.3125-24 UNJF-3B	330	37	230	26
-6	.3750-24 UNJF-3B	530	60	370	42
-7	.4375-20 UNJF-3B	825	95	575	65
-8	.5000-20 UNJF-3B	1125	125	780	85
-9	.5625-18 UNJF-3B	1550	175	1075	120
-10	.6250-18 UNJF-3B	2000	225	1390	155

*Use a calibrated torque wrench

Recommend aircraft and appliance manufacturers, aircraft owners, operators, and maintenance personnel review the rigor of their incoming inspection procedures and overall quality control processes to capture non-conforming fasteners before their introduction into the quality system.

Report MS21042 nuts and other standard fasteners found cracked or deficient during these recommended inspections via email to operationalsafety@faa.gov with "Standard Fasteners" in the subject line. Include the hardware part number, manufacturer, and/or a description of markings (picture will be helpful), lot number, location on the product, and time since installation. If possible, attach jpg photographs of the fastener markings and its flaws. Under the provisions of the Paperwork Reduction Act (44 U.S.C. 3501 et seq.), the Office of Management and Budget (OMB) has approved the information collection contained in this SAIB and assigned OMB Control Number 2120-0731.

For Further Information Contact

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