FAA
Aircraft Certification Service

SPECIAL AIRWORTHINESS INFORMATION BULLETIN

SAIB: NM-07-39R1
SUBJ: Powerplant System: Forward bearing fitting attach bolts **Date:** October 10, 2008

This is information only. Recommendations aren't mandatory.

Introduction

This Special Airworthiness Information Bulletin (SAIB) alerts you, an owner or operator of **Gulfstream Model G-1159 (G-II), G-1159A (G-III), and G-1159B (G-IIB) series airplanes equipped with Quiet Technology Aerospace (QTA) supplemental type certificate (STC) ST02618AT Stage 3 Hushkits**, that several forward bearing fitting attach bolts have been found failed, cracked, or yielded. This situation was reported originally in SAIB NM-07-39, dated June 28, 2007. This revised SAIB provides revised service recommendations.

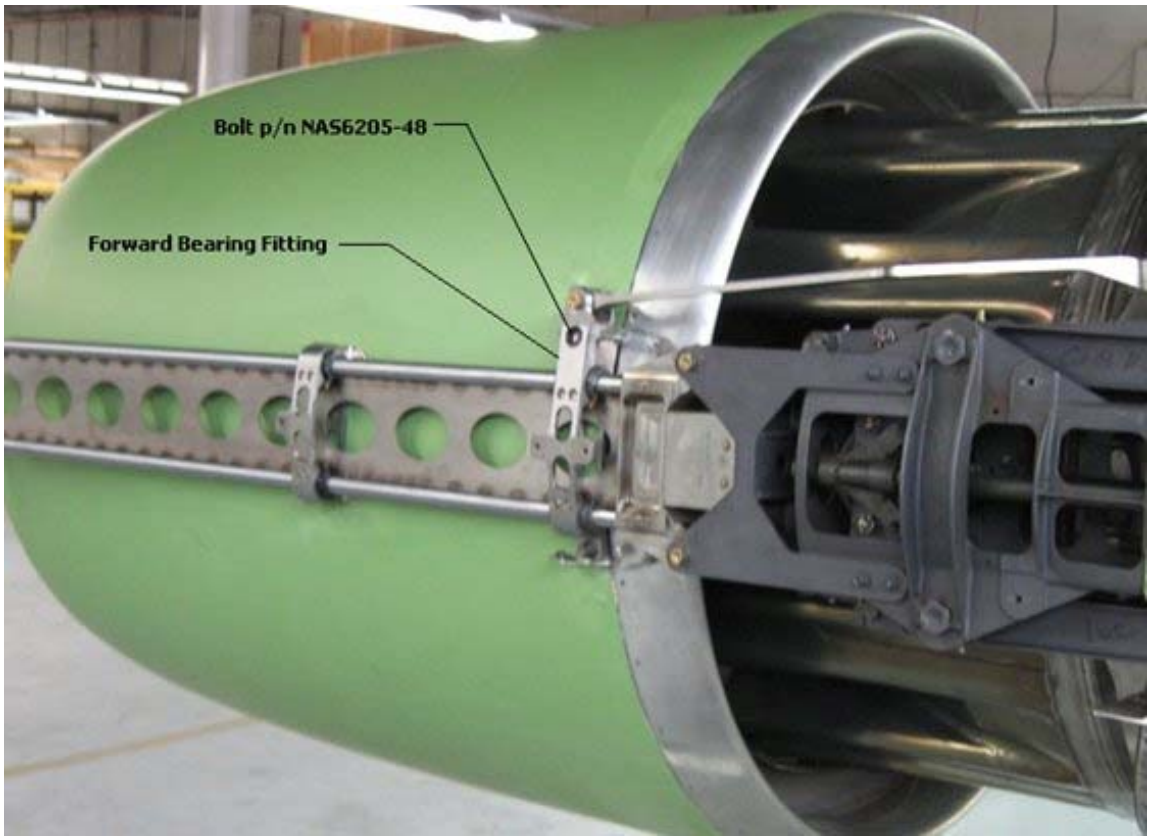

Figure 1 – View of QTA Hushkit Ejector Assembly Forward Bearing Fitting (Shown on engine removed from aircraft; fairings removed)

Background

SAIB NM-07-39 was a result of findings of several failed, cracked, or yielded forward bearing fitting attach bolts on QTA Stage 3 Hushkits installed in accordance with STC ST02618AT. The bolts are located adjacent to the thrust reverser translating link attach point and connect the forward bearing fitting to the ejector. Note that the subject bolt is installed on both the inboard and outboard side of each engine; however, it is located on the top of the forward bearing fitting on one side, and on the lower side of the forward bearing fitting on the other side of the engine.

Failure of these bolts can lead to overload on the opposite side forward bearing fitting attach bolt and allow binding on the ejector rails. In one case, a bent translating link was found. QTA released Service Bulletin QTA-002 to specify replacing NAS6205-48 bolts with NAS6705-48 bolts.

Since the issuance of SAIB NM-07-39, QTA and the FAA worked to determine the cause of the cracking and the aircraft level effect of such failures. Fatigue testing and analysis were accomplished on several configurations of bolt installations. The conclusion of that investigation is that if the subject bolts are replaced every 400 flight cycles, in-service cracking and failure will be prevented. The examined failures result in a configuration that does not endanger the flight crew, passengers, or the public, and thus is not an unsafe condition that would warrant airworthiness directive (AD) action under Title 14 of the Code of Federal Regulations (14 CFR) part 39.

Recommendations

We recommend that aircraft owners or operators replace the subject forward bearing fitting bolts every 400 flight cycles with an approved replacement. Currently, the approved replacement bolts are NAS6705-48 and QTA part number G23-EJ-4024. We do not recommend re-installation of the NAS6205-48 bolts.

QTA is revising its Instructions for Continued Airworthiness to reflect the replacement time limit and the approved bolt part numbers. We recommend compliance with this information to prevent in-service bolt cracking and failures.

The 400-flight-cycle limit is the same for any of the approved QTA configurations. This includes several bushing configurations (manufacturer's part numbers G23-EJ-4012-15/-25/-27) matched with either NAS6705 bolts or QTA part number G23-EJ-4024 bolts.

For aircraft with bolt installations already exceeding 400 flight cycles, we recommend replacing the bolts within 6 months to minimize the risk of an in-service bolt failure.

For Further Information Contact

Michael Cann, Aerospace Engineer, FAA, Central Region, Atlanta Aircraft Certification Office, One Crown Center, 1895 Phoenix Boulevard, Suite 450, Atlanta, GA 30349; phone (770) 703-6038; fax (770) 703-6097; email: michael.cann@faa.gov

Ron Wissing, Aerospace Engineer, FAA, Central Region, Atlanta Aircraft Certification Office, One Crown Center, 1895 Phoenix Boulevard, Suite 450, Atlanta, GA 30349; phone (770) 703-5978; fax (770) 703-6097; email: Ronald.wissing@faa.gov