



Piper Aircraft, Inc.
2926 Piper Drive
Vero Beach, Florida, U.S.A. 32960

SERVICE NO. 1200 BULLETIN

**PIPER CONSIDERS
COMPLIANCE MANDATORY**

Date: May 29, 2009 (S)

SUBJECT: LANDING GEAR MODIFICATION AND HARDWARE REPLACEMENT

MODELS AFFECTED: **SERIAL NUMBERS AFFECTED:**

PA-38-112 Tomahawk

38-78A0001 through 38-82A0122

COMPLIANCE TIME: **PART I – LANDING GEAR MODIFICATION:** To take place at the first occurrence of any one of the following events:

1. The next regularly scheduled maintenance event but not to exceed one hundred (100) hours time in service.
2. Immediately after a known hard landing is made.
3. Immediately after a landing is made while the aircraft is known to exceed the design landing weight.

Compliance with PART 1 is a one time only requirement.

PART II – LANDING GEAR HARDWARE INSPECTION: To occur periodically after completion of **PART I**, at a maintenance interval frequency not to exceed one hundred (100) hours time in service.

PART III – LANDING GEAR HARDWARE REPLACEMENT: To occur periodically after completion of **PART I**, at a maintenance interval frequency not to exceed one thousand (1000) hours time in service, or after a known hard landing is made, or after a landing is made while the aircraft is known to exceed the design landing weight.

APPROVAL: The technical content of this Service Bulletin has been shown to comply with the applicable Federal Aviation Regulations and is FAA approved.

PURPOSE: An examination of the Tomahawk aircraft service history reveals that the bolts securing the main landing gear to the airframe can bend or break when subjected to repeated high loading conditions, resulting in landing gear failure.

This service bulletin mandates a one-time modification to allow installation of higher strength bolts, and establishes maintenance schedules for recurring inspection and replacement of the landing gear attach bolts.

(OVER)

ATA: 3207

INSTRUCTIONS:**PART I – LANDING GEAR MODIFICATION:**

1. Order and install “KIT – PA38 LANDING GEAR HARDWARE REPLACEMENT”, Piper part number 88455-002, one per aircraft. This kit provides parts and instructions for installing replacement hardware that fasten the main landing gear to the airframe.

NOTE: Verify compliance with Piper Service Bulletin 673 (latest revision) prior to installing 88455-002.

2. Make an appropriate logbook entry indicating compliance with **Part I** of this Service Bulletin.

PART II – LANDING GEAR HARDWARE INSPECTION:

1. Place aircraft on jacks. Refer to Piper Maintenance Manual “TOMAHAWK MAINTENANCE MANUAL – PA-38-112, Piper part number 761-660, Chapter 7, “LIFTING AND SHORING”.
2. Remove main landing gear fairings to gain access to the landing gear attach bolts, and retain fairings and fairing mounting hardware for reinstallation.
3. Remove safety wire from the landing gear attach bolts (quantity 3 per side, total 6 per aircraft) and discard. Check bolts for proper torque as shown in Figure 1.
4. Install new safety wire (MS20995C41), reinstall fairings, and remove aircraft from jacks.
5. Make an appropriate logbook entry indicating compliance with **Part II** of this Service Bulletin.

PART III – LANDING GEAR HARDWARE REPLACEMENT:

1. Place aircraft on jacks. Refer to Piper Maintenance Manual “TOMAHAWK MAINTENANCE MANUAL – PA-38-112, Piper part number 761-660, Chapter 7, “LIFTING AND SHORING”.
2. Remove main landing gear fairings to gain access to the landing gear attach bolts, and retain fairings and fairing mounting hardware for reinstallation.
3. Remove safety wire from the landing gear attach bolts and discard. Remove the bolts from the aircraft and discard (quantity 3 per side, total 6 per aircraft), taking care to note and record the existing stack-up of shims and washers. Remove and discard existing NAS577B7A barrel nuts (quantity 1 per side, total 2 per aircraft).
4. Install new replacement hardware, as shown in Figure 1 and as listed in Materials Required - **Table 4**. All other components that are free of damage or corrosion may be re-used at their original locations. Torque bolts according to the following procedure:
 - a) Draw up pairs of NAS6606HL15 bolts evenly, 1 or 2 turns maximum per bolt, alternating back and forth until bolts are snug. Install (1 each side) NAS6607H22 bolt, and tighten until snug. Torque should build up gradually for all bolts. An abrupt buildup indicates threads are bottoming in the barrel nut.
 - b) With all bolts installed and snug, torque the (2 each side) NAS6606HL15 bolts 160 to 200 inch-pounds, and torque the (1 each side) NAS6607H22 bolts 270 to 300 inch-pounds. Examine bolt thread penetration during and after torquing.
 - For the (2 each side) NAS6606HL15 bolts, the end of bolt must be at least flush with barrel nut after torquing. If bolt extends into clearance hole, or threads bottom out as described above, add additional AN960-616 or AN960-616L washer under bolt head to achieve proper bolt grip. The saddle clamp and shim should fit snugly against the wing. See **Table 1** for interchangeability with NAS1149 washers.
 - For the (1 each side) NAS6607H22 bolts, at least one complete bolt thread must protrude visibly through the barrel nut after torquing. If bolt extends into clearance hole, or threads bottom out as described above, add additional AN960-716 or AN960-716L washer under bolt head to achieve proper bolt grip. See **Table 1** for interchangeability with NAS1149 washers.

INSTRUCTIONS: (Continued)

- c) Safety all six bolts with MS20995C41 safety wire as follows: Safety wire each (2 per side) NAS6606HL15 bolt head to the adjacent hole in the saddle clamp web (as previously safety wired), and safety wire the (1 per side) NAS6607H22 bolt head to the adjacent hole in the outboard flange of the 106801-002 RETAINER (as previously safety wired).
5. Reinstall fairings, and remove aircraft from jacks.
6. Make an appropriate logbook entry indicating compliance with **Part III** of this Service Bulletin.

Inactive Part Number	Replacement Part Number
AN960-616L	NAS1149F0632P
AN960-616	NAS1149F0663P
AN960-716L	NAS1149F0732P
AN960-716	NAS1149F0763P

Table I
Interchangeability

The AN960 series washers were installed at the factory, and remain acceptable for continued use. However, AN960 washers are inactive for new design, so service spares replacements may not be readily available. The table above specifies the replacement NAS1149 washers that can be used interchangeably with the AN960 washers.

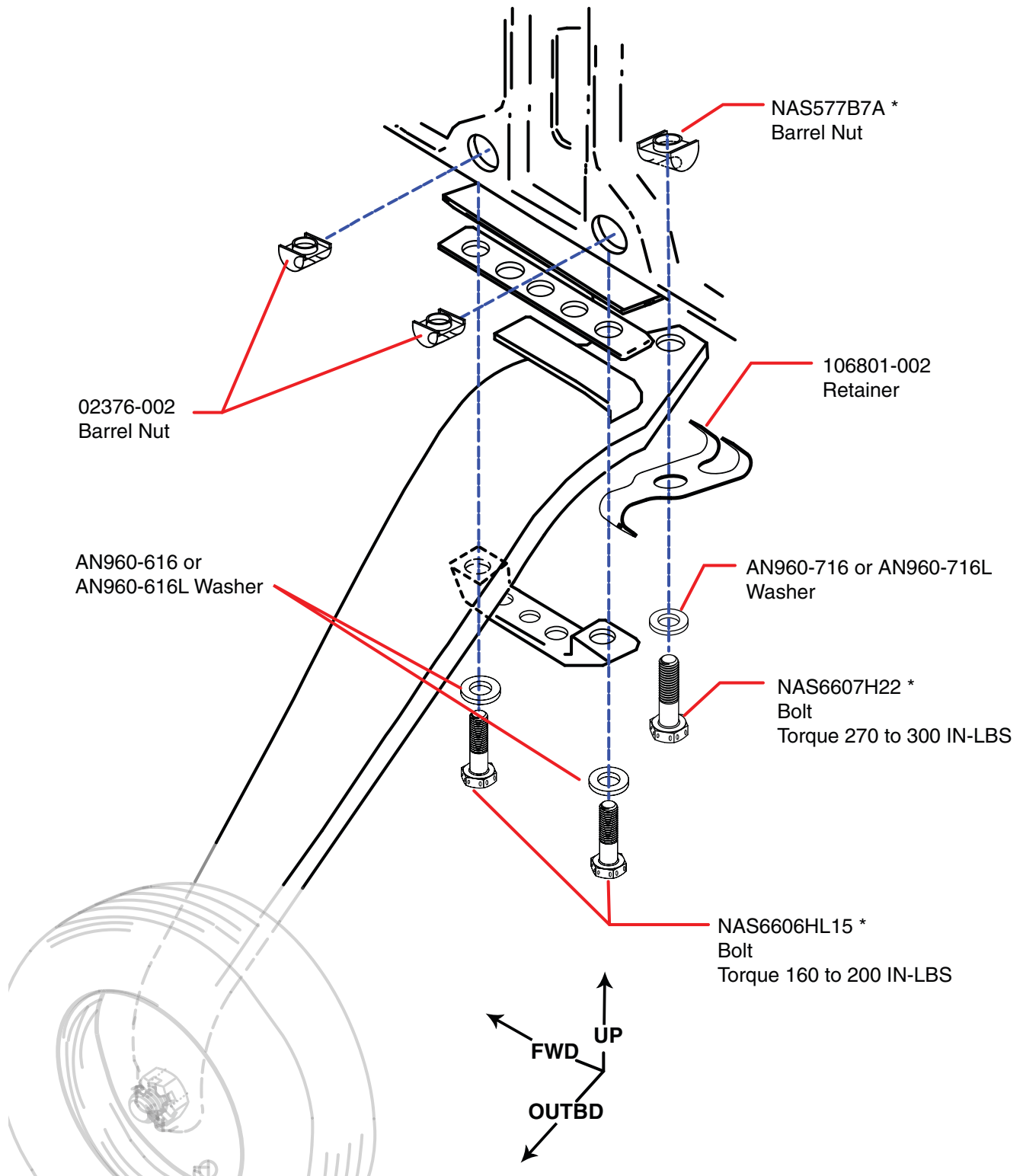


Figure 1
Main Landing Gear
LH shown, RH opposite
Main Landing Gear Fairing Omitted For Clarity

* See **Part III** for replacement of Life-Limited Parts.
For parts not identified refer to the latest revision of the Illustrated Parts Catalog (P/N 761-659).

MATERIAL REQUIRED:

Materials Required for Compliance with Part I		
QTY	PIPER PART NUMBER	ITEM NAME
1	88455-002	KIT – PA38 LANDING GEAR HARDWARE REPLACEMENT

TABLE 2

Materials Required for Compliance with Part II		
QTY	PIPER PART NUMBER	ITEM NAME
A/R	Procure locally	MS20995C41 SAFETY WIRE

TABLE 3

Materials Required for Compliance with Part III		
QTY	PIPER PART NUMBER	ITEM NAME
A/R	Procure locally	MS20995C41 SAFETY WIRE
4	693-245	NAS6606HL15 BOLT
2	693-246	NAS6607H22 BOLT
2	506-561	NAS577B7A BARREL NUT

TABLE 4

AVAILABILITY OF PARTS: Your Piper Service Facility.

EFFECTIVITY DATE: This Service Bulletin is effective upon receipt.

SUMMARY: Please contact your Factory Authorized Piper Service Facility to make arrangements for compliance with this Service Bulletin in accordance with the compliance time indicated.

NOTE: Please notify the factory of address/ownership corrections. Changes should include aircraft model, serial number, current owner's name and address.

Corrections and/or changes should be directed to:

PIPER AIRCRAFT, INC.
 Attn: Customer Service
 2926 Piper Drive
 Vero Beach, FL 32960

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U.S. Department
of Transportation
**Federal Aviation
Administration**

Small Airplane Directorate
Atlanta Aircraft Certification Office
1701 Columbia Ave.
College Park, Georgia 30337

June 3, 2011

Jack Mill, ODA administrator
Piper Aircraft, Inc.
2926 Piper Drive
Vero Beach, Florida 32960

Dear Mr. Mill:

The Federal Aviation Administration (FAA) received your letter dated May 23, 2011, proposing an alternative method of compliance (AMOC) to paragraph (a) of Airworthiness Directive (AD) 90-19-03 for all Piper Model PA-38-112 aircraft. This AD requires owners/operators to modify the main landing gear system in accordance with Piper Service Bulletin (SB) 673B dated October 2, 1986, by incorporating kit 765-171 or 765-172.

Part I of Piper SB 1200 dated May 29, 2009, provides an alternate configuration via kit 88455-002 to those shown in SB 673B as shown in the table below.

Item	SB 673B	SB 1200
Bolt	AN6H-14A	NAS6606HL15
Washer	AN960-616	AN960-616, -616L or NAS1149F
Torque (in-lb)	240-270	160-200

Your letter proposed SB 1200 as an AMOC to AD 90-19-03. We have reviewed SB 1200 (which verifies compliance with SB 673 latest revision, along with the specifications for the bolts and washers listed above.

The Atlanta Aircraft Certification Office (ACO) approves your AMOC proposal to paragraph (a) of AD 90-19-03 using the alternate configuration from Part I of SB 1200 listed in the table above in lieu of the configuration required by SB 673B. All provisions of AD 90-19-03 that are not specifically referenced above remain fully applicable and must be complied with accordingly. This AMOC does not incorporate any additional requirements of SB 1200 into the AD. Please include a copy of this AMOC when distributing SB 1200.

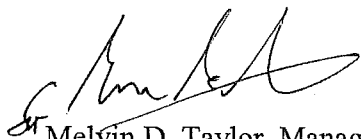
Before using this AMOC, owners/operators should notify their appropriate principal inspector (PI) in the FAA Flight Standards District Office (FSDO), or lacking a PI, their local FSDO. When complying or verifying compliance with AD 90-19-03 using this AMOC, a copy of this letter shall be inserted into the maintenance records of the airplane.

The AMOC approval applies to all Piper PA-38-112 aircraft. This FAA AMOC is transferable with the aircraft to an owner/operator who operates the aircraft under U.S. registry. The ACO will revoke

this AMOC if the ACO later determines that this AMOC does not provide an acceptable level of safety.

If you have any questions or need additional information, please contact Gregory K. (Keith) Noles at (404) 474-5551, (404) 474-5606, or electronic mail at gregory.noles@faa.gov.

Sincerely,

A handwritten signature in black ink, appearing to read 'Melvin D. Taylor', written in a cursive style.

Melvin D. Taylor, Manager,
Atlanta Aircraft Certification Office

cc: ACE-100
ACE-113 (Showers/Wessley)
ACE-MKC-AEG-11 (Alquist)