

Document No: GSD-1647-ICA

Title: Instructions for Continued Airworthiness
Aeronca / American Champion 7 & 11 series Airplanes
Modified with GSD Systems landing gear.

Airframes Alaska
Palmer Alaska, 99645

Revisions

Initial Release, Initial Release, April 15, 2019 (*E. Broten, P. Pupator*)

Revision A, February 20, 2021, Airframes Alaska (*J. Earl*)

List of Effective Pages

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1	A	20.Feb.21
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Accepted by: _____

NOTE

A current copy of this document has been supplied with the landing gear STC purchase. For revision additions it is the owner's responsibility to contact Airframes Alaska and obtain the current ICA.

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Introduction

These Instructions for Continued Airworthiness (ICA), or Maintenance Manual Supplement, must be used for recurrent inspection and maintenance of the effective aircraft once it has been modified with installation of GSD landing gear. It is applicable to the aircraft as listed below. It contains information needed to properly conduct inspection, repair, and periodic maintenance of the landing gear as installed on the aircraft.

These instructions have been completed in accordance with FAA Order 8110.54 and has been reviewed by the FAA (Small) Aircraft Evaluations Group and accepted as a required condition of the associated STC.

References:

- 1) FAA Order 8110.54, Instructions for Continued Airworthiness

Effectivity

Make: American Champion (Bellanca)(Champion)(Aeronca). See STC AML for listing.

Occurrence Reporting Instructions

The objective of GSD systems is to implement safety improvements for in service aircraft. Accordingly, the owner/operator shall be responsible for notifying the modification manufacturer of any safety of flight issue or significant service difficulty upon discovery.

Please send all service difficulty reports associated with the GSD landing gear system to

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List of Special Tools

Standard mechanic tools are required.

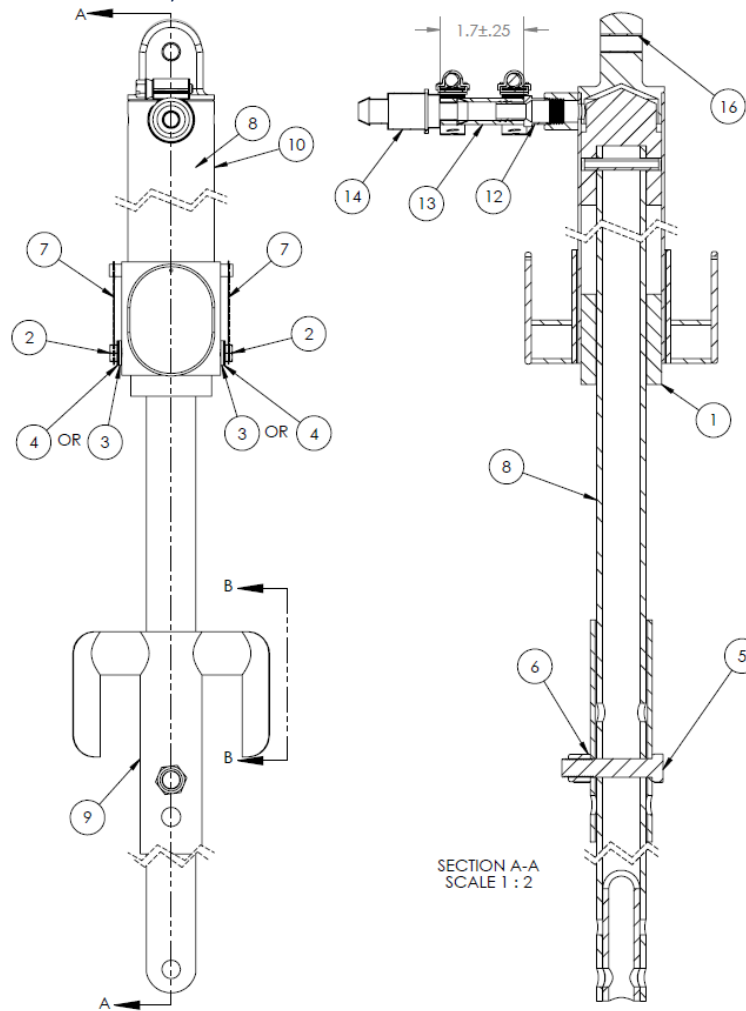
Tool No. 3242– Bungee Puller Tool

List of Installed Parts

The following table of parts are to be installed as part of this modification. Spare parts and tooling are available. Please contact Airframes Alaska for pricing and availability.

GSD Part No.	Nomenclature
51016 GSD	Shock Absorber Assembly
51035 GSD	Left Landing Gear Leg Assembly (mirrored)
51036 GSD	Right Landing Gear Leg Assembly (shown)
51019 GSD	Shock Cord Attach Assembly
51075 GSD	Shock Assembly Cover (Piper P/N 10566 or equivalent)
51080-01 GSD	Landing Gear Check Cable Assembly

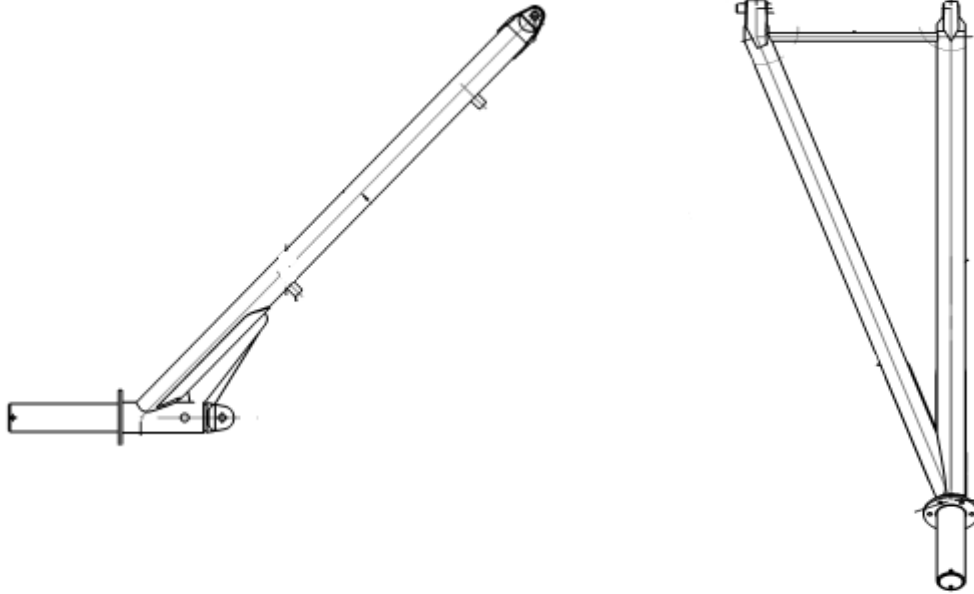
51016: Shock Absorber Assembly



51016: Shock Absorber Parts List

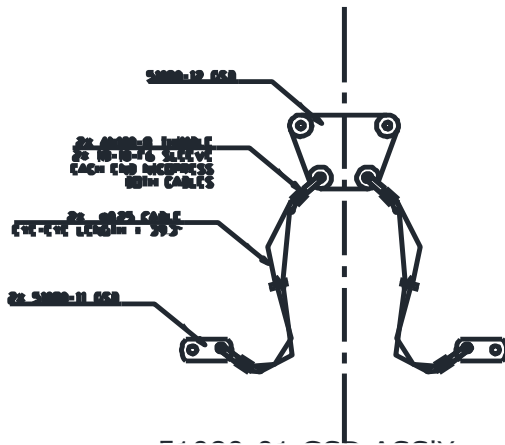
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	51021	CYLINDER END	1
2	AN4H3	BOLT	2
3	NAS1149 0463	WASHER	2
4	NAS1149 0432	WASHER	2
5	AN6-16A	BOLT	2
6	MS21044N-6	LOCKNUT	2
7	MS20995C32SS	SAFETY WIRE (NOT SHOWN)	AR
8	51018 OR 51018-1	PISTON ROD ASSEMBLY	1
9	51019	SHOCK CORD ATTACHMENT ASSEMBLY	1
10	51017	CYLINDER ASSEMBLY	1
11	1080HDCW OR 1280HDCW	SHOCK CORDS (NOT SHOWN)	2
12	NTH-90542	.25NPT - .375 BARB ADAPTER FITTING	1
13	193-6	STRATOFLEX HOSE	2"
14	FV179	AIR VALVE	1
15	91251A435	1/4-28 FULL THREAD SREW	2
16	51020	BUSHING (USED WITH 51018-1)	1
17	6504	HOSE CLAMP	2

51036:



51036 GSD

Right Landing Gear Leg Assembly (shown)



51080

Check Cable Assembly

Maintenance Practices

Inspection Program

This table shows the maintenance tasks performed at defined intervals to maintain the aircraft and GSD landing gear system in a condition for safe operation by inspection and maintenance. The inspection program consists of individual inspections performed at the indicated frequency.

Table of Inspections

It is recommended that the GSD landing gear system be inspected every 100 hours or every Annual inspection, which ever comes first. The following table provides inspection requirements.

The abnormal inspection requirement is applied to; hard landing, hard take-off roll, or other abnormal condition that the pilot has reported that may have resulted in the gear being overloaded.

Component	Inspection Requirements	Interval
Axle Strut	Inspect for deformation, cracking or corrosion on attachment fittings. Repair as required	<input type="checkbox"/> 100 hr <input type="checkbox"/> Annual <input type="checkbox"/> Abnormal
Shock Strut	Inspect for deformation, cracking or corrosion on attachment fittings. Repair as required	<input type="checkbox"/> 100 hr <input type="checkbox"/> Annual <input type="checkbox"/> Abnormal
Shock Strut	Disassembly shock strut including bungees, and piston assembly and inspect for deformation of components.	<input type="checkbox"/> Abnormal
Airframe Longeron attachment fittings	Inspect for deformation, cracking or corrosion on attachment fittings. Repair as required	<input type="checkbox"/> 100 hr <input type="checkbox"/> Annual <input type="checkbox"/> Abnormal
Cabane-V attachment	Inspect for deformation, cracking or corrosion on attachment fittings. Repair as required	<input type="checkbox"/> 100 hr <input type="checkbox"/> Annual <input type="checkbox"/> Abnormal
Attachment hardware	Inspect all attachment hardware for deformation and apply grease as required. Always install new cotter pins when reassembling.	<input type="checkbox"/> 100 hr <input type="checkbox"/> Annual <input type="checkbox"/> Abnormal

I have completed the required inspections for this STC modification.

_____ date _____

Landing Gear Component Installation & Removal

WARNING

Verify security of aircraft prior to removing landing gear.

Prior to conducting work on the landing gear, the aircraft should be placed in a secure and level position using suitable jacking points. The tires shall be free from ground interference and easily removable.

Initial Installation:

Use these for the removal of OEM landing gear and installation of the GSD gear. It is not required to complete on Left Hand (LH) or Right Hand (RH) side in any order. Both can be completed independently or in unison.

NOTE

This modification only accommodates aircraft that have disc brake assemblies installed. Conversion, from drum to disc brakes, is a modification that can be completed as a field approval.

Contact Airframes Alaska for further explanation including an installation kit for your aircraft.

Verify packing slip and parts provided by Airframes Alaska.

START

1. Remove main wheels. Disconnect and remove brake calipers - Retain for future installation
2. Remove oleo strut from fuselage and attachment at lower axle strut fitting -Tag oleo struts as required for storage.
3. Remove and landing gear-axle strut at cabane-V (AN5 bolts) at two locations each side. – Tag gear legs for storage.
4. Inspect the cabane-V attachment fittings and longeron attach fittings for damage, corrosion or cracking – Repair as required per applicable section of AC43.13-1B. Apply primer and or paint prior to reassembly.
5. Install GSD systems landing gear shock absorber strut to cabane-V with supplied hardware. The air valve is to be oriented on top (near cabane-V) and pointing aft. Coat all hardware with grease (anti-seize) and fill gaps with suitable washers. Install all new nuts - Do not tighten nuts to full torque.
6. Install GSD systems axle strut to longeron attach fittings. Stroke the gear leg through its full range of motion to ensure there is no binding or misalignment of longeron fittings.
7. Attach shock strut to lower fitting on axle strut with provided hardware. Grease all fittings prior to installation. Fill in any gaps with approved washers.
8. Once both RH and LH GSD gear components are installed check lateral and longitudinal alignment. Once satisfied with alignment tighten all nuts to proper torque.

NOTE

Proper installation will result in a 5 – 8 degree positive camber (top outboard) of the tire.

9. Install all cotter pins for all joints in rotation.
10. Reinstall brakes calipers. If required a new brake line may need to be fabricated. Use approved hydraulic line (or cable) as specified in AC43.13-1B.
11. Bleed hydraulic brakes as required to ensure no air is in the lines.
12. Make a log book entry and complete FAA Form 337 for the STC installation.

END

WARNING

Check Cables are recommended for off-field operations.

Safety cables are available from Airframes Alaska or other manufacturers.

Airframes Alaska can supply the Check Cable Assembly, P/N 51080-01.

GSD Landing Gear Removal:

Use these for the removal of and installation of the GSD gear. It is not required to complete on Left Hand (LH) or Right Hand (RH) side in any order. Both can be completed independently or in unison.

START

1. Remove main wheels. Disconnect and remove brake calipers - Retain for future installation
2. Remove shock strut (51016) from Gear Leg attachment at lower axle strut fitting -Retain for future installation.
3. Remove shock strut upper fitting from cabane V. Retain hardware for future installation.
4. Remove Check Cable if installed.
5. Remove and landing Gear Leg at fuselage (AN5 bolts) at two locations each side. – Tag gear legs for storage.

END

GSD Landing Gear Installation:

START

1. Install GSD systems landing gear shock absorber strut to cabane-V with new AN hardware. The air valve is to be oriented on top (near cabane-V) and pointing aft.
2. Install Check Cable if desired.
3. Coat all hardware with grease (anti-seize) and fill gaps with suitable washers. Install all new nuts - Do not tighten nuts to full torque.
4. Install GSD systems axle strut to longeron attach fittings. Stroke the gear leg through its full range of motion to ensure there is no binding or misalignment of longeron fittings.
5. Attach shock strut to lower fitting on Gear Leg axle strut with new AN hardware.
6. Install Check Cables if desired.
7. Grease all fittings prior to installation. Fill in any gaps with approved washers.
8. Once both RH and LH GSD gear components are installed check lateral and longitudinal alignment. Once satisfied with alignment tighten all nuts to proper torque.
9. Install all cotter pins for all joints in rotation.
10. Reinstall brakes calipers and associate brake lines.
11. Bleed hydraulic brakes as required to ensure no air is in the lines

END

Bungee Replacement Instructions:

Shock strut assembly is removed from aircraft using above instructions.

START

1. Remove suspension component and protective cover from bungee assembly.
2. Mark bungee setting. Bungees are set to the 3rd setting from the factory.
3. Clamp top fitting in vise so that the shock is a horizontal position.
4. Support cylinder of shock with blocks and remove plastic plugs and install puller arm (Tool # 3242) in attach assembly (51019). Install puller arm in lower bungee retainer sleeve. Install puller support on the end of piston rod. Install puller and attach to puller arms. Engage arms with threaded nut to take a tension for removal of retaining bolt.
5. Once bolt is removed, all tension from bungees may be lowered.
6. Remove bungees and replace as required with serviceable bungees. See table below for bungee combinations for your specific aircraft.
7. Reinstall bungees per installation instructions above.

END

Reassemble in Reverse Order.

Bungee Combination Table

Aircraft Gross Weight	Proper Bungee Combination
1250	2x 1080 or 1x 1080 & 1x 1280
1450 & 1650	1x 1080, 1x 1280 or 2x 1280
1750	2x 1280

Shock Strut Disassembly Instructions:

Shock strut assembly (51016) is removed from aircraft using above instructions.

START

1. Remove bungees as directed above, Bungee Replacement Instructions.
2. Remove safety wire and bushing retaining bolts.
3. Pull piston rod, lower bushing and piston out of the bottom of piston cylinder.
4. Remove piston pin and remove piston from piston rod. Inspect piston and piston rod for wear, cracks, deformation. – Repair or Replace with serviceable parts as required.
5. Remove check valve, inspect valve for damage and proper function. – Replace with serviceable part as required.
6. Inspect piston cylinder for wear, cracks, metal burrs near bushing bolt holes, and corrosion. – Repair or Replace with serviceable parts as required.
7. Inspect piston pins as required for straightness and wear. – Replace with serviceable part as required.
8. Inspect piston for wear and deformation. Light scratches are normal. – Replace with serviceable part as required.
9. Inspect lower plastic bushing wear and deformation. – Replace with serviceable part as required. When reinstalling the lower plastic wear bushing make sure that the bushing bolts are just snug. Over torquing will cause the bushing thread to strip out.
10. Prior to reassemble – spray a small amount of Corrosion X on piston and cylinder.

END

Reassemble in reverse order.

Airworthiness Limitations Section

There are no new (or additional) airworthiness limitations associated with this equipment and/or installation.

The Airworthiness Limitations Section (ALS) is FAA approved and specifies maintenance required under 14 CFR §§ 43.16 and 91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved.

THIS SECTION HAS BEEN REVIEWED BY
SMALL AIRCRAFT AEG & AIR-770

END DOCUMENT