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		Compiled : N.Townsend
		Approved : J.Tempest

TITLE : Cook Aluminium Undercarriage

APPLICABILITY : CFM Streak Shadow

Mod Type : Retro-fit

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Installation Worksheet – Cook Aluminium Undercarriage for Shadow Aircraft

Aircraft type: _____

Registration: _____

Owner/Operator: _____

Undercarriage fitter: _____ Work Date: _____

Introduction

The fitment of a DC Cook aluminium undercarriage is a modification approved by the Light Aircraft Association, reference number MOD SM11337, and satisfies the requirements of Mandatory Permit Directive CAA MPD 2004-007 R1. This modification is only applicable to CFM Streak Shadow aircraft.

The undercarriage is supplied with the axles fitted and the tie rod assembly fitted and adjusted. It is therefore only necessary to fit the main gear to the fuselage, attach the drag struts, fit new tyres to the original wheels and re-fit the wheels to complete the job. None of the original fuselage attachments are altered.

This document should be read in conjunction with drawing A101.


Removal of existing Undercarriage

1. Drain all fuel from fuel tanks.
2. Remove slipper tank – if fitted.
3. Place weight in front cockpit and chock nose-wheel.
4. Raise airframe by lifting main wheels until they are clear – ensure stability. It is recommended that the wings are removed. (Hint – alternatively build a timber stool that fits snugly under the fuselage behind the main gear and let the tyres down.)
5. Disconnect brake cables from wheel connections.
6. Remove wheels.
7. Unbolt Drag Struts from U/C – at the leg end only.
8. Unbolt U-bolts by removing nuts inside rear cockpit.
9. Remove U/C from airframe.

Installation of Aluminium Type Undercarriage

Note – Axle axis is biased forwards.

1. Attach U/C with 4 x AN4-17A bolts. Fit washers beneath nuts.
2. Attach # 578 Plates to Drag Strut with AN3-15A bolt.
3. Line up # 578 Plate on U/C leg & drill 2 x 3/16" dia holes through U/C leg using # 578 Plate as a guide. The drag struts should just touch the main gear. Note; do not "stretch" holes in drag struts. In the event of an unsatisfactory fit being possible (due to assembly tolerances during the construction) new drag struts should be fitted and drilled accurately to suit. Both drag struts should be the same distance up the leg.
4. Secure Drag Strut to U/C leg with 2 x AN3-13A bolts.
5. Repeat procedure for other U/C leg.
6. Position brake assembly to locate on its Stop Bolt.
7. Install Aluminium Sleeve between brake & wheel.
8. Re-fit wheels using a new split pin through the castle nut.
9. Connect brake cables and adjust if necessary.

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To Fit New Tyres

1. Deflate tyre and unbolt wheel halves.
2. Fit new Tyre & tube – avoid pinching tube between wheel halves.
3. Inflate to 24psi.
4. Fit wheels to U/C. Use new split pin through axle to secure.
5. Lower the airframe.

Complete installation by replacing Slipper Tank if fitted.

Mandatory Post-Fitting Inspections.

The following activities must be performed after installation of the new undercarriage assembly.

1. The aircraft must be re-weighed and a new weight schedule raised following installation of the new undercarriage assembly. Calculations must be carried out to establish that the aircraft has adequate payload to allow two 86 kg occupants and sufficient fuel for a one-hour flight at maximum continuous power. This must be checked by the inspector prior to flight. Note that the weight increase over the original Shadow undercarriage is 3.2kgs.
2. Refer to CAA MPD 2004-007 R1 for various closing actions with regard to the aircraft fuel system, in particular the cancellation of CAA MPD 2003-019 R1.
3. Check that the MPD compliance status of the aircraft is up-to-date (See in particular MPD 2004-008 R1 Nosewheel Undercarriage Bungee Condition).
4. All the above work and procedures should be carried out with the Approval of your LAA inspector and signed off by him/her using the enclosed checklist/Permit Maintenance Release and **appropriate log book entries.**
5. An entry must be made in the pink pages of the airframe logbook recording that CAA MPD 2004-007 R1 has been satisfied by incorporation of MOD SM11337.
6. Normal Permit Renewal procedures apply. Please contact your LAA inspector and see Guidance Notes on the back page of the Permit Renewal Application Form.

Contact details for advice:

Undercarriage manufacturer:

DC Cook
Hillcrest
Aldringham
Suffolk IP16 4QL Tel 01728 453209

Permit renewal paperwork:

LAA Engineering
Turweston Aerodrome
Nr Brackley
Northamptonshire NN13 5YD 01280 846786

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Checklist

Aircraft Registration: _____

Date: _____

Item	Detail	Builders check (initial)	Inspectors check (initial)
1.	Presence and tightness of AN4-17A bolts, nuts and washers fixing main gear to fuselage		
2.	Correct fitting of drag strut to main gear i.e. no oval holes in drag struts or main gear.		
3.	Brakes and cables correctly fitted and adjusted.		
4.	Trelleborg tyres fitted and pressurised to 24psi.		
5.	Wheel nut secured with new split pin.		
6.	5/16" cap screws attaching tie rod assembly to main gear tight (20 ft.lb torque)		
7.	Tie rod clearance present at ends of cylinder and tie rod not slack. (This is set before the uc is delivered but can be checked by grasping tie rod and attempting to push and pull it along its axis).		
8.	AN4 clevis bolts not overtightened and thereby pinching clevis joint. (This is set before the uc is delivered but can be checked by applying light pressure to the centre of the tie rod and observing slight up or down movement of the cylinder).		
9.	Check all fuel lines, tank fittings, wiring etc as appropriate from dismantling		
10.	Inspectors independent overall check for condition, alignment, good workmanship, fuel tank/fuel line refitting etc and any other factor related to the undercarriage work.		

Permit Maintenance Release

The work recorded above has been completed to my satisfaction and in that respect the aircraft is considered fit for flight.

Signed: Authorisation Ref: Date:
 (inspector number)

All worksheets should be attached or referenced in the logbooks of the aircraft to which they refer and are considered to be part of the aircraft's legal maintenance record.

MOD SM11337 is approved by the Light Aircraft Association as an alternative undercarriage for the CFM Streak Shadow aircraft only. Installation of this undercarriage satisfies the requirements of CAA MPD No: 2004-007 R1.