THIS ICA IS TRANSPORT CANADA ACCEPTED

RECORD OF REVISIONS

Revision	Effective Date for New Revision	Date of withdrawal of Previous Revision	Person making revision	Organization
A	Sept 17, 2003	N/A	Ron Newburg	CAM
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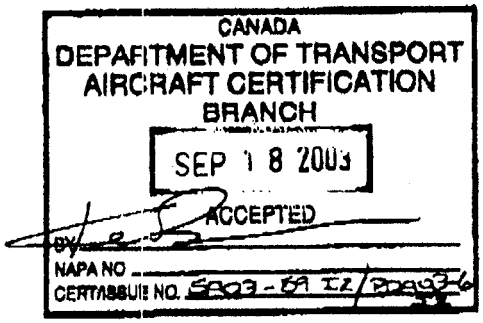

1.0 INTRODUCTION:

1.1 The CAM556-643 Cub Oil Cooler is approved for installation under both TCCA-PDA and STC.

1.2 The TCCA-PDA approval applies for installation of CAM556-643 oil cooler as a direct replacement for the Piper oil cooler P/N 556-643 (NDM P/N 20377A) on PA-18 and PA-19 series aircrafts. *INFORMATION NOTE: The original Harrison Oil Coolers, AP12CU03-01 or AP13SJ03-01, installed on PA-18 and PA-19 series aircraft, are eligible for direct replacement with the CAM556-643.*
The STC approval applies for installation of the CAM556-643 oil cooler on Piper PA-20 and PA-22 series aircrafts.

1.3 With the exception of paragraphs 2.1 and 2.2, all sections of this ICA apply to both the TCCA-PDA and the STC installation.

1.4 This ICA supplements the original ICA issued by Piper for the aircraft involved.

1.5 Distribution of this ICA is accomplished at the time of sale of a CAM Cub Oil Cooler. This ICA is also available via the CAM website. Should there be a revision, the latest version will be available on the CAM website.

1.6 Revisions of this ICA are done by entire replacement only. All pages are at the same revision status, and are in effect as shown in the header.

1.7 This ICA describes the installation and required maintenance elements as well as providing an eligibility list. This ICA also provides information on the fabrication of replacement oil lines to the cooler (see 3.5).

1.8 There is no special terminology associated with the installation or maintenance of this product.

1.9 Precautions to be taken during installation and maintenance of this oil cooler are: Allow the oil to cool prior to disconnecting oil lines, hot oil can cause personal injury. Dispose of used oil properly.

1.10 There are no special tools associated with the installation or maintenance of this product
The uninstalled CAM556-643 oil cooler may be stored indefinitely in a dry place.

1.11 Refer to prevailing airframe manuals and AC34-13-1B as necessary while installing this product. Piper drawings 13724 and 14368 also show the oil cooler installation.

2. ELIGIBILITY:

2.1 This paragraph applies to the TCCA-PDA installation of the CAM556-643 oil cooler as a direct replacement for the Piper oil cooler P/N 556-643 (NDM P/N 20377A). The CAM556-643 oil cooler is eligible on all Piper PA-18 and PA-19 series aircraft having the Lycoming 0-290-D, 0-290-D2, 0-320, 0-320-A2A or 0-320-A2B engines installed, as follows: PA-18, PA-18S, PA-18 “105” Special, PA-18S “105” Special, PA-18A, PA-18 “125” (Army L-21A), PA-18S ”125”, PA-18AS “125”, PA-18 “135” (Army L-21B), PA-18A “135”, PA-18S “135”, PA-18 AS “135”, PA-18 “150”, PA-18A “150”, PA-18S “150”, PA-18AS “150”, PA-19 Army L18C), PA-19S.

2.2 This paragraph applies only to the STC installation of the CAM556-643 oil cooler on PA-20 and PA-22 series aircraft. The CAM556-643 Cub Cooler is STC approved to replace the Harrison AP06CJ04-02, AP06CU04-02, AP09CJ04, AP09AU04, AP12CU03-01 and AP13SJ03-01 oil coolers found on Piper PA-20 and PA-22 series aircrafts as follows: PA-20, PA-20S, PA-20 “135”, PA-20S “135”, PA-22, PA-22-135, PA-22S-135, PA-22-150, PA-22-160, PA-22S-160.
It is installed as a modification to the aircraft.

3. INSTALLATION AND REMOVAL INSTRUCTIONS:

3.1 Remove cowlings and baffling as necessary to gain access to the installed oil cooler.

3.2 Disconnect two oil lines, and remove fittings from old cooler.

3.3 Bend back nut lock plates, and remove two nuts securing cooler. Remove cooler form mounting brackets.

3.4 Install the CAM556-643 cooler by reversing the preceding steps. Apply a small amount of oil to mounting boss threads to prevent galling. The desired torque for the two mounting nuts is 350 to 400 inch pounds. It may not be possible to use a regular socket and torque wrench, due to the position of the mounting bracket. If this is the case, the nut(s) may be torqued by hand tightening the nut, and then turning the nut no more than 1/12 more revolution (one half of a nut flat). Use only a 1 ¼" open end wrench for this task, the use of pliers, locking or otherwise, or adjustable wrenches will likely result in damage. Either aluminum or brass oil line fittings may be used in this installation. Torque fittings to appropriate values.

3.5 Replacement oil lines may be fabricated as specified in AC34-13-1B.

3.6 Amend aircraft weight and balance to reflect the 3.6 pounds reduction in weight at that arm.

3.7 Check for correct oil quantity and for leaks after installation, and before flight.

4.0 MAINTENANCE REQUIREMENTS:

4.1 Inspect the oil cooler and lines as a part of regularly scheduled maintenance. This should be accomplished at least annually.

4.2 If the oil cooler should become damaged so as to leak oil at all, be distorted, have the oil passages contaminated at all, or have more than 5% of the area of the air passages permanently blocked, it is no longer airworthy, and must be permanently removed from service.

4.3 Service this oil cooler by ensuring that the air passages are free from blockages.

4.4 Check for correct oil quantity and for leaks after maintenance, and before flight.

5.0 OPERATIONAL INFORMATION:

5.1 The CAM556-643 Cub Cooler is more efficient than the oil cooler it replaces. It may, therefore, be necessary to partially restrict the airflow through the oil cooler for flight in low air temperatures. Refer to prevailing instructions for the aircraft for baffling instructions.

5.2 Install a placard in plain view of the pilot which says:

For operation in low air temperatures, baffle the oil cooler air inlet as necessary to ensure that the oil temperature remains in the normal operating range.

6. TROUBLE SHOOTING CHART:

	Malfunction	Probable cause	Suggested action
6.1	High Oil Temperature	Low oil quantity	Replenish oil as required
		Unsuitable oil viscosity*	Change oil to correct viscosity as recommended by engine manufacturer
		Type of aircraft operation not providing adequate airflow for cooling	Change flying technique to allow more airspeed for power setting
		Blocked or poor airflow through oil cooler	Inspect oil cooler for blocked air passages or ineffective baffling. Repair or clean as needed.
		Blocked or poor oil flow through oil cooler	Remove oil lines and inspect. Flush with solvent if necessary. Assure full oil flow before re-installing oil cooler.
		Failed or improperly functioning vernatherm or viscosity valve	Repair or replace component as needed.
		Failed temperature indicator	Repair or replace component as needed.
6.2	Low Oil Temperature	Operation of aircraft with too much airflow, or very low air temperatures	Confirm proper operation of temperature indicator. Install oil cooler baffle as necessary. Monitor temperature in flight regularly to prevent over temp.
		Failed or improperly functioning vernatherm or viscosity valve	Repair or replace component as needed.
		Failed temperature indicator	Repair or replace component as needed.
6.3	Oil leaking from oil cooler	Failed oil cooler	Replace oil cooler.
6.4	Oil leaking from oil line or fittings	Fitting damaged or not correctly installed Oil line damaged	Repair or replace as necessary

***** Some multi grade aircraft engine oils may experience viscosity reduction beyond specification after prolonged use, particularly use at high temperatures. This will become obvious as abnormally low oil pressure. If this is experienced, the oil should be changed prior to further flight. Use of straight grade oil of suitable viscosity may be appropriate. Do not use oil grades not approved by engine manufacturer.

Note: Any questions regarding this oil cooler should be addressed to Canadian Aero Manufacturing, 2648 Ego Sideroad, Orillia, Ontario, Canada L3V 6H3; Tel # (705) 326 1368.

Residents of USA may return the oil cooler for service to Niagara Air Parts, Inc., 9900 Porter Road, Niagara Falls, New York, USA 14304; Tel. # (800) 565 4268.

The preceding constitutes the entire ICA for Canadian Aero Manufacturing Cub Oil Coolers.

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