

Air Research Technology Inc.
Maintenance Manual Supplement
No. MMS18025
Issue 2, November 15, 2007

Cessna 180, 182 and 185 models modified by installation of Wing Extensions in
accordance with Transport Canada STC Approval Number SA93-136 and
FAA . STC Approval Number SA00276NY

The information and data contained in this document supersede or supplement that
contained in the basic Maintenance Manual in those areas listed herein. For
procedures not contained in this document refer to the Approved Maintenance Manual
or any other Approved Maintenance Manual Supplements.

This Supplement is to be attached to the Approved Maintenance Manual for the aircraft
with the subject design change incorporated.

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REVISION AND DISTRIBUTION

When this document requires revision it will be reissued in whole and the issue number will be increased. Air Research Technology Inc. will provide copies of this document to all registered operators of the equipment, and will provide revision service to all registered users of the equipment.

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1. DESCRIPTION

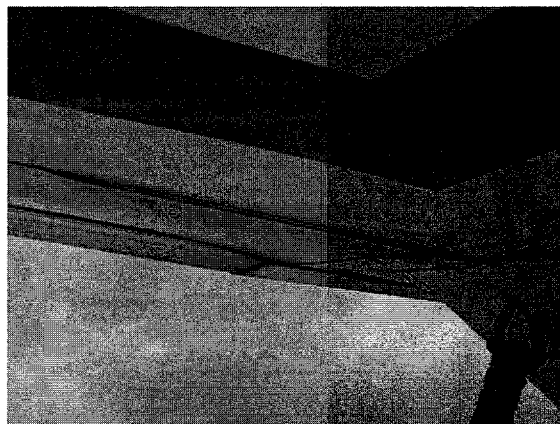
The A.R.T. Wing Extensions increase the wing span by 36 inches and provide additional lift. The Wing Extensions are conventional sheet metal construction, and they attach to the wing tip with machine screws. In addition, the main wing spar (upper spar cap) is reinforced from wing station 128 to 160 .

For aircraft with authorized gross weights in excess of 3,000 lbs. that do not incorporate the Cessna angle stiffener centered at wing station 100.50 a reinforcement strap along the lower spar cap may be required. Refer to SB1-96 for inspection procedures in order to determine if this reinforcement strap is required. See <http://www.wingxstol.com/images/support/SB-1-96.pdf>



View of Cessna angle stiffener centered at wing station 100.50

The stainless steel reinforcement strap when installed is visible under the leading edge skin along the lower spar cap extending from wing station 91 to 109. This strap is not required for aircraft with integral fuel cells (wet wings)



View of stainless steel strap wing station 91 to 109

2. INSTALLATION PROCEDURES

INITIAL INSTALLATION: The initial installation of the Wing Extensions is addressed in installation drawing R1582-180-182-185 and SB1-96. During the initial installation of Wing Extensions on a specific aircraft the weight and balance report must be amended to show the installation as an optional configuration. Initial installation requires permanent reinforcements to be installed in the wing in accordance with the above mentioned drawings.

SUBSEQUENT REMOVAL: Subsequent removal of the Wing Extensions for maintenance or other purposes requires only hand tools. The wing spar reinforcements are permanent and should never be removed.

SUBSEQUENT INSTALLATION: Subsequent installation of the Wing Extensions requires only hand tools. When installing the Wing Extensions use only p/n AN525-832R8 machine screws. Ensure that the navigational lights and strobes (if installed) function correctly before releasing the aircraft.

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3. PERIODIC INSPECTION

The following items must be inspected at the annual inspection:

Item	Area to be Inspected	Inspection Action	Initial
1	If applicable , Main Spar lower surface reinforcement at Wing Station 1	Visual inspection for loose or missing fasteners, cracks, and corrosion. Treat any corrosion per AC43.13-1B. Loose rivets must be replaced with CR-3243-6-6 or -7 as applicable.	
2	Main Spar upper surface reinforcement at Wing Station 128 to 160.	Remove inspection panels and visually inspect all structural elements for loose or missing fasteners, cracks, and corrosion. Treat any corrosion per AC43.13-1B. Replace fasteners if required.	
3	Wing Extensions	Visual inspection for missing or loose fasteners and physical damage and corrosion.	
4	Placards	Visually inspect to ensure that the required cockpit placards are installed in full view of the pilotsection 6 for required placards)	

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4. WEIGHT AND BALANCE

The following typical weights are provided for reference only. USE ACTUAL MEASURED WEIGHTS

Item	Total Weight (lbs)	Arm (in. aft of datum)	Moment (in.lbs.)
Wing Extensions	16	52	832
Straps at wing Station 128-160	1.30	36.0	46.8
Straps at wing Station 100.50	0.55	35.3	19.4

5. REQUIRED PLACARDS

The following placards must be installed adjacent to the airspeed indicator when the Wing Extensions are installed:

“Cessna 182 models with Wing Extensions
VNE 180 MPH IAS (157 KIAS)”

Or

“Cessna 185 models with Wing Extensions
VNE 189 MPH IAS (165 KIAS)”

6. REPAIRS

Repairs to the sheet metal structure may be accomplished in accordance with AC 43.13-1B.

For parts, placards, or information contact Air Research Technology Inc. at (888) 325 2588 or at www.wingxstol.com.