

INSTRUCTIONS FOR CONTINUED AIRWORTHINESS ICA 943.90

SKID TUBE RUB STRIP

Bell 205A, 205A-1, 205B, 212, 214B, 214B-1, 412, 412EP, 412CF

Preface

These Instructions for Continued Airworthiness shall be included in the Bell 205/212/214/412 Maintenance Manual when the Skid Tube Rub Strip is installed in accordance with Alpine Aerotech LP Document Control List DCL943, Revision 2, or later approved revision.

The information contained herein supplements the information in the basic Maintenance Manual. For Maintenance practices and procedures not contained in these Instructions for Continued Airworthiness refer to the basic Maintenance Manual and its approved supplements.

Revision 3
Date: 2019-01-28

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RECORD OF REVISIONS

Revision Number	Issue Date	Date Inserted	By
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LIST OF EFFECTIVE PAGES

List of Revisions	Revision 0 (Original Issue)	17 August 2011
	Revision 1	04 November 2011
	Revision 2	17 April
	Revision 3	2019-01-28

List of Effective Pages

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CHAPTER 0 – INTRODUCTION

0-1 SCOPE

The following Instructions for Continued Airworthiness (ICA) satisfy the requirements of 14 CFR 29.1529, and provide the information necessary to complete the on-going maintenance and inspections required for rotorcraft embodying the Skid Tube Rub Strip as described herein.

0-2 DEFINITIONS AND ABBREVIATIONS

IB -	Inboard
ICA -	Instructions for Continued Airworthiness
LH -	Left Hand
OB -	Outboard
RH -	Right Hand

0-3 DISTRIBUTION

Copies of this ICA and amendments shall be distributed to all known purchasers of the Skid Tube Rub Strip. Requests for a copy may be made to:

Alpine Aerotech LP
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Any changes will be sent to Transport Canada. All changes will be recorded in the Record of Revisions page at the front of this document.

0-4 COMPATIBILITY

Prior to incorporating this modification, the installer shall establish that the inter-relationship between this change and any other modification(s) incorporated will not adversely affect the airworthiness of the helicopter.

This installation can only be applied to helicopters equipped with DART skid tubes, part number D-205-634-041 (skid tube only) or D205-634-011 (skid tube with saddles). Ground handling provisions must be removed if installed.

0-5 GENERAL DESCRIPTION

During rappel, cargo deployment, and similar operations, ropes run over the outside edge of the skid tube. Government contracts require an abrasion guard to protect the ropes from damage on the skid tube. A rub strip is installed made of UHMW polyethylene plastic, and is attached with bolts through existing bushings in the skid tube.

CHAPTER 4 - AIRWORTHINESS LIMITATIONS*Transport Canada*

The Airworthiness Limitations section is approved by the Minister and specifies maintenance required by any applicable airworthiness or operating rule unless an alternative program has been approved by the Minister.

FAA

The Airworthiness Limitations section is FAA approved and specifies maintenance required under Sections 43.16 and 91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved.

No additional airworthiness limitations have been imposed due the installation of the Skid Tube Rub Strip.

CHAPTER 5 – INSPECTION REQUIREMENTS

5-1 INSPECTION SCHEDULE

Continued airworthiness is contingent upon compliance with the following inspection items. These items shall be completed in conjunction with the rotorcraft Maintenance Inspection schedule, or other approved program, or upon removal and replacement of any component of the Skid Tube Rub Strip.

100 Hour or Annual Inspection

1. Inspection Area: Skid Tube
 - a) Visually inspect Skid Tube Rub Strip for condition and security.
 - b) Visually inspect fasteners attaching Rub Strip to skid tube for condition and security.

Special Inspections

Following a hard landing or snag on landing gear during take off or landing, inspect the Skid Tube Rub Strip in accordance with the 100 Hour or annual inspection above.

5-2 DAMAGE LIMITS / REPAIR INSTRUCTIONS

If damage is found in the inspections above, repair in accordance with the instructions below.

1. Rub Strip
 - a) Cracks through the full thickness of the rub strip at attachment holes are not acceptable. Replace rub strip if cracks are found at the attachment holes.
 - b) Cracks, nicks, gouges or scratches between attachment holes that do not penetrate more than half the thickness of the Rub Strip are acceptable. Replace rub strip if it becomes damaged to a depth more than half the thickness of the Rub Strip.
 - c) Cracks, nicks, gouges or scratches may not have sharp protruding edges. Blend any cracks, nicks, gouges or scratches to a smooth profile using files or emery paper as required.

CHAPTER 8 – LEVELING AND WEIGHING
8-1 WEIGHT AND BALANCE

Bell 205, 212, 214, 412, all models

P/N	Description	Weight	Longitudinal		Lateral	
		lb	arm in	moment in-lb	arm in	moment in-lb
94301-01-01	RH OB Rub Strip Installation	4.0	120.0	480.0	57.0	228.0
94301-01-02	RH IB Rub Strip Installation	4.0	120.0	480.0	53.0	212.0
94301-01-03	RH OB+IB Rub Strip Installation	7.3	120.0	876.0	55.0	401.5
94301-02-01	LH OB Rub Strip Installation	4.0	120.0	480.0	-57.0	-228.0
94301-02-02	LH IB Rub Strip Installation	4.0	120.0	480.0	-53.0	-212.0
94301-02-03	LH OB+IB Rub Strip Installation	7.3	120.0	876.0	-55.0	-401.5

Bear Paw Compatibility:

P/N	Description	Weight	Longitudinal		Lateral	
		lb	arm in	moment in-lb	arm in	moment in-lb
94302-01	Modified Rub Strip	-0.3	154.75	-46.4	*	*

*Lateral arm and moment determined by installation.

CHAPTER 32 – LANDING GEAR
32-1 RUB STRIP REMOVAL

1. Remove six (6) NAS9926-4L Nuts from AN4-47A or AN4-52A Bolts securing 94320-01 Rub Strip(s) to skid tube.
2. Remove bolts and D2570 Bushing (or equivalent) from both sides. Remove Rub Strip(s) from skid tube.

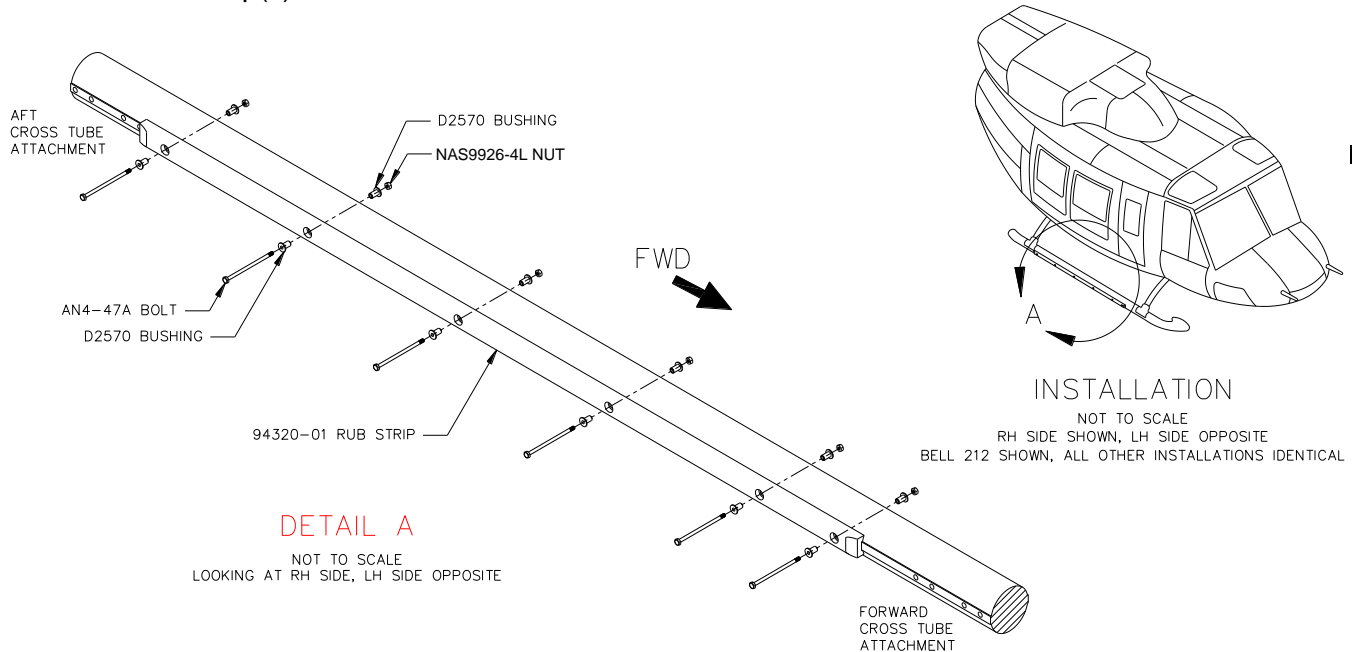


Figure 32.1 – Rub Strip Removal / Installation

32-2 RUB STRIP INSTALLATION

Ground handling provisions must be removed from skid tube if installed.

Inboard or Outboard:

1. Locate 94320-01 Rub Strip on skid tube. Remove plugs from skid tube bushings as required to install Rub Strip.
2. Insert six (6) D2570 Bushings (or equivalent) through Rub Strip into bushing in skid tube. Insert six (6) D2570 Bushings (or equivalent) into opposite side of skid tube.
3. Insert six (6) AN4-47A Bolts through bushings. Install NAS9926-4L Nuts on bolts. Torque nuts to 30-40 in-lbs.

Inboard and Outboard:

1. Locate 94320-01 Rub Strip on skid tube. Remove plugs from skid tube bushings as required to install Rub Strips.
2. Insert six (6) D2570 Bushings (or equivalent) through Rub Strip into bushing in skid tube. Repeat for opposite side of skid tube.
3. Insert six (6) AN4-52A Bolts through bushings. Install NAS9926-4L Nuts on bolts. Torque nuts to 30-40 in-lbs.

32-3 BEAR PAW COMPATIBILITY

The Rub Strip may be modified for compatibility with Alpine Aerotech bear paws, refer to drawing 94302. Modified Rub Strip part number 94302-01 may be used as a direct replacement for Rub Strip part number 94320-01. Removal and installation instructions are the same.

32-4 PARTS LIST

Qty.	P/N	Description	Manufacturer / Supplier
1	94301-01-01	RH OB Skid Tube Rub Strip Installation	DART
1	94301-01-02	RH IB Skid Tube Rub Strip Installation	
1	94301-02-01	LH OB Skid Tube Rub Strip Installation	
1	94301-02-02	LH IB Skid Tube Rub Strip Installation	
. 1	94320-01	Rub Strip	
. 1	94302-01	Modified Rub Strip (Alternate)	
. 12	D2570	Bushing	
. 12	94321-01	Bushing (Alternate)	
. 6	AN4-47A	Bolt	
. 6	NAS9926-4L	Nut	
1	94301-01-03	RH OB + IB Skid Tube Rub Strip Installation	DART
1	94301-02-03	LH OB + IB Skid Tube Rub Strip Installation	
. 2	94320-01	Rub Strip	
. 2	94302-01	Modified Rub Strip (Alternate)	
. 12	D2570	Bushing	
. 12	94321-01	Bushing (Alternate)	
. 6	AN4-52A	Bolt	
. 6	NAS9926-4L	Nut	