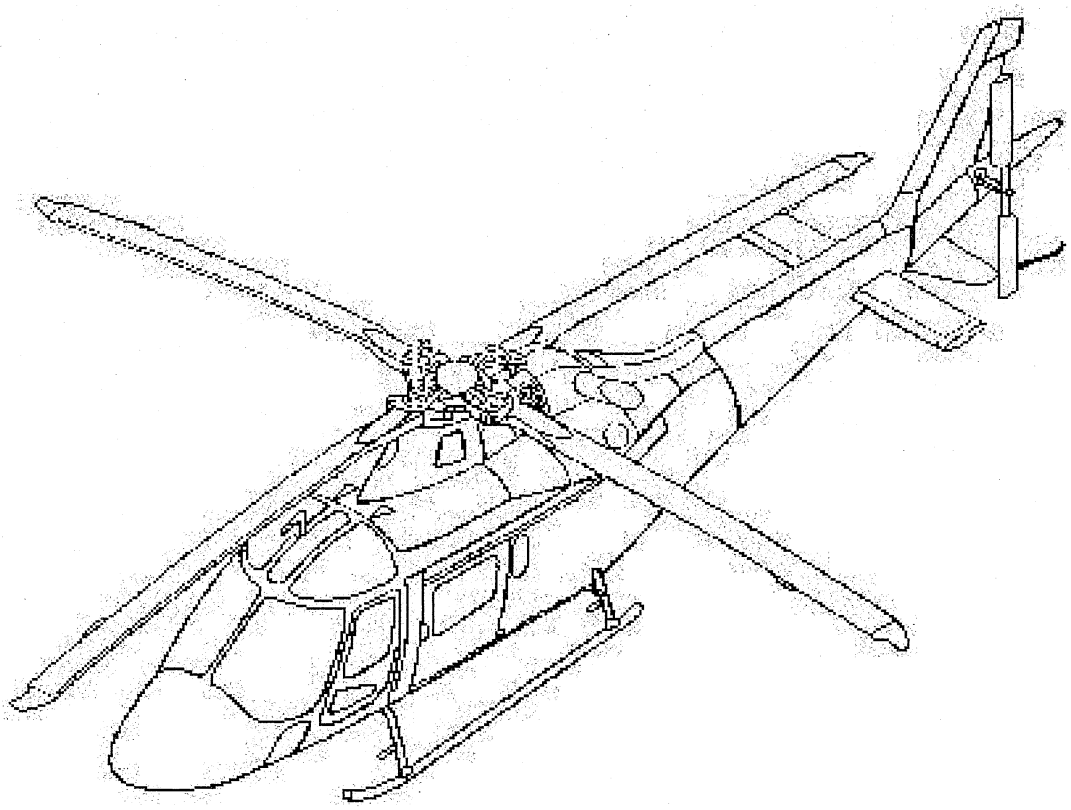
AIR COMM CORPORATION
3300 AIRPORT ROAD
BOULDER, CO. 80301

DOCUMENTS FOR THE INSTALLATION OF THE AGUSTA MODEL A119 / AGUSTA WESTLAND AW119 MKII CABIN AIR CONDITIONING SYSTEM



Revision 5 **12 October 2009**

RECORD OF REVISION

REVISION NUMBER	ISSUE DATE	DATE INSERTED	BY	Description of Change
1	02/01/06	02/01/06	GP	Added -206 weight and balance info.
2	05/05/06	05/05/06	GP	Added -208 weight and balance info.
3	12/15/06	12/15/06	GP	Added -210 weight and balance info.
4	07/02/07	07/02/07	GP	Added Agusta Westland AW119 MKII
5	10/12/09	10/12/09	GP	Added -212 weight and balance info.

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LIST OF EFFECTIVE PAGES

LIST OF REVISIONS

Revision 0 (Original Issue)...11 October, 2001
Revision 1 .....1 February 2006
Revision 2 .....5 May 2006
Revision 3 .....15 December 2006
Revision 4 ..... 2 July 2007
Revision 5 ..... 12 October 2009

LIST OF EFFECTIVE PAGES

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CHAPTER 0
INTRODUCTION

This document contains information, which is required for the installation and operation of the Air Comm Corporation's air conditioning system installed in the Agusta A119 & Agusta Westland AW119 MKII series helicopter. After completion of the installation of the air conditioner system the Weight & Balance Information, Flight Manual Supplement, and the Supplemental Type Certificate must be removed from this document and placed with the appropriate existing aircraft documents.

1. SCOPE

   The scope of this document encompasses the general procedures and reference documentation necessary to install the Air Comm Corporation air conditioning system in the Agusta A119 & Agusta Westland AW119 MKII series helicopter.

2. PURPOSE

   The purpose of this document is to provide the aircraft mechanic in the field the necessary information and documentation to install the air conditioning system.

3. ARRANGEMENT

   This document is arranged by chapters, which are broken down into paragraphs and sub-paragraphs. All of the chapters and paragraphs are listed in the front of this document in the Table of Contents, and are further identified by their individual page number.

4. APPLICABILITY

   This document is applicable to Agusta Helicopter models A119 that are equipped with the Air Comm Corporation kit number A119EC-212 air conditioner system.

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CHAPTER 1
GENERAL INSTALLATION PROCEDURE & REFERENCE DOCUMENT

1. GENERAL INSTALLATION PROCEDURE

This section is intended to supplement the information contained on the installation drawings. All details and notes contained on the drawings should be reviewed carefully. As instructions for installation are provided on the installation drawing where appropriate, and are not repeated in this document.

It will be necessary to remove the transmission cowlings, the main cabin headliner, Chin bubbles, to facilitate the installation of this kit.

The system components and associated hardware are packaged separately. Prior to beginning the installation it is recommended that the hardware be inventoried and placed in separate (labeled) boxes to prevent mixing.

Care should be taken to prevent contamination of the air conditioner system! All plugs on the plumbing assemblies and system components should *not* be removed until just prior to installation of the part. The exception to this procedure is the installation of the receiver / drier bottle. The receiver / drier should be left capped and not installed until just prior to servicing the system with refrigerant. This prevents the desiccant inside the bottle from becoming saturated with water.

2. REFERENCE DOCUMENT

The approval basis of the system covered by this document is Supplemental Type Certificate **SR00463DE**

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CHAPTER 2
WEIGHT & BALANCE INFORMATION

This page must be removed and placed with the appropriate existing aircraft documents.

Weight & Balance / Weight breakdown – Agusta A119 Air Conditioner System:
Ref. Dwg. **A119-212**

English Units					
Item	**Wt. (lbs)**	**X-Arm (in)**	**X-M (in-lb)**	**Y-Arm (in)**	**Y-M (in-lb)**
Total A119-212	99.67	134.9	13,444.9	-1.88	-187.6

Metric Units					
Item	**Wt. (kg)**	**X-Arm (mm)**	**X-M (kg-mm)**	**Y-Arm (mm)**	**Y-M (kg-mm)**
Total A119-212	45.30	3426	155227	-47.8	-2165

Weight Breakdown (Dual Forward Evaporator Blowers)

English Units					
Item	**Wt. (lbs)**	**X-Arm (in)**	**X-M (in-lb)**	**Y-Arm (in)**	**Y-M (in-lb)**
Total A119-212	105.8	129.2	13,669.4	-1.56	-165.5

Metric Units					
Item	**Wt. (kg)**	**X-Arm (mm)**	**X-M (kg-mm)**	**Y-Arm (mm)**	**Y-M (kg-mm)**
Total A119-212	50.0	3257.6	156,241.2	-50.4	-1,891.7

CHAPTER 3
FLIGHT MANUAL SUPPLEMENT

1. FLIGHT MANUAL SUPPLEMENT

The following document must be removed and placed with the appropriate existing aircraft documents.

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AIR COMM CORPORATION
3330 AIRPORT ROAD
BOULDER, CO 80301

FAA APPROVED
ROTORCRAFT FLIGHT MANUAL SUPPLEMENT
to the
Approved Rotorcraft Flight Manuals for
AGUSTA MODELS A119 & AW119 MKII

CABIN AIR CONDITIONING SYSTEM

Document No. A119-1

Aircraft Serial No.: _____ Aircraft Reg. No. _____

This supplement must be attached to the appropriate Approved Rotorcraft Flight Manual when the rotorcraft has been modified by the installation of Air Comm Corporation's Cabin Air Conditioning System in accordance with STC No. SR00463DE.

The information in this document supplements or supersedes the basic flight manual only in the items contained herein. For limitations, procedures and performance information not contained in this supplement, consult the basic flight manual.

Approved: Robert F. Clarke, for Date: June 11, 2009
Manager, Flight Test Br., ANM-160L
Federal Aviation Administration
Los Angeles Aircraft Certification Office
Transport Airplane Directorate

Original FAA Approval: January 11, 2002

Log of Revisions

Pgs	Rev	Change Description	FAA Approval
	0	Original	Dave Grossman Date: 01/11/02 Denver Aircraft Cert. Office
1, 2, 3, 4	1	Added clutch timer and thermal switch	G. Sloan : 4/12/02 Denver Aircraft Cert. Office
2, 4, 6	2	Added Interactive Display System interface for comp clutch	Dave Grossman Date:12/17/03 Denver Aircraft Cert. Office
4, 7, 8	3	Changed to Poly v belt. Removed clutch timer and thermal switch	Melissa Sandow Date:7/14/05 Denver Aircraft Cert. Office
1-10	4	Added AW119 MKII model callout.	Melissa Sandow Date:11/28/07 Denver Aircraft Cert. Office
2, 3, 5, 6, 7, & 8	5	"Dual blower" was "retractable scoop/blower." Updated Fig.1, Relay Panel Fig, & Amp draw.	Date: 4/5/08 Denver Aircraft Cert. Office
1-10	6	Incorporated performance improvement changes on pages 3, 5, 7, & 8, and revised supplement format.	Robert F Clarke, for Date: 6/11/2009 Mgr, Flight Test Br, ANM-160L FAA, Los Angeles ACO Transport Airplane Directorate

INTRODUCTION

The A119 air conditioner is a vapor cycle system which includes the following components:

Compressor
Condenser
Forward Mounted Evaporator
Aft Mounted Evaporator
Plumbing System
Electrical System

The compressor is belt driven through an electric clutch by a sheave mounted to the oil cooler blower shaft.

The condenser, mounted below the baggage floor, features a blower assembly and a separate heat exchanger to reject system heat overboard.

The forward evaporator is mounted on the left side of the instrument panel console. Conditioned air is delivered to the crew by means of air ducts, mounted to the sides of the instrument panel console. An optional RH mounted blower may be installed.

The aft evaporator assembly is mounted above the cabin top and is enclosed by the transmission cowling. Cabin return air is ducted to the evaporator through a cutout in the cockpit closeout panel at fuselage station 2050. Conditioned air is pumped to the existing headliner ducting through the existing fresh air inlet in the cabin top.

An electric actuator controlled airbox is provided to control the flow of conditioned and fresh air. When the air conditioner is in the ON or BLOWER mode, the fresh air inlet is closed.

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Document No. A119-1

RFM Supplement to RFMs for
Agusta A119 & AW119 MkII
STC No. SR00463DE

CABIN AIR CONDITIONING SYSTEM

The compressor installation incorporates a poly-v type drive belt and is driven by a sheave mounted to the oil cooler blower shaft.

A high pressure switch will disengage the compressor clutch if high compressor discharge pressures occur. The system re-engages when the discharge pressure reduces by 100 psi.

The cockpit-mounted air conditioner control panel is located in the forward right side of the overhead aircraft switch panel. A COMP ON light, located on the upper main instrument panel, provides a visual status of compressor operation. For aircraft equipped with an Interactive Display System (IDS), compressor engagement is displayed on the IDS as a green "ECS ON" annunciation

In addition, the control panel includes a temperature control knob. Temperature control is achieved by means of a refrigerant bypass valve, thus eliminating compressor cycling.

The system control features AC-OFF-BLR functions incorporated on a single "three position" switch. Two additional "two position" switches are provided for HI and LO blower selection for the forward and rear evaporators. The forward and aft evaporators can be operated independently of each other in the high or low blower positions.

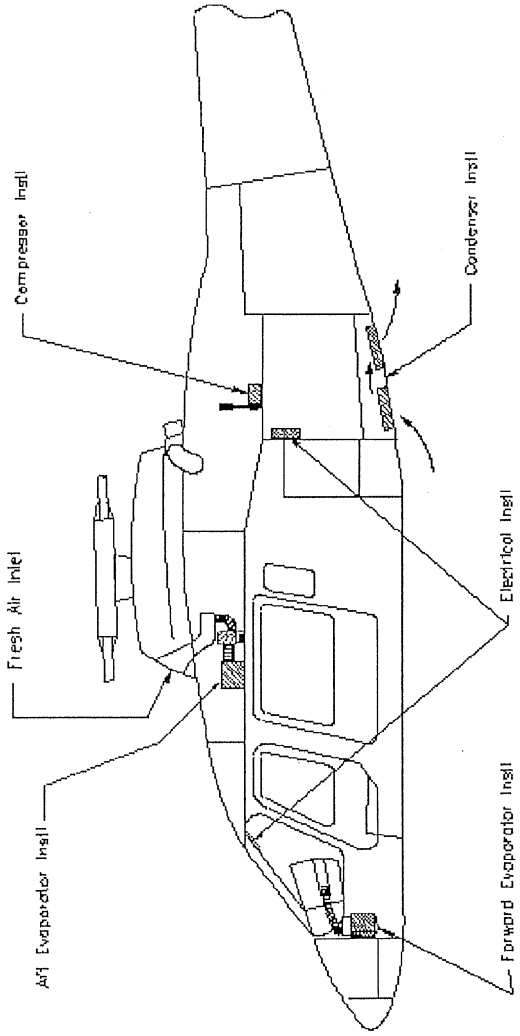

Figure 1 General Arrangement, Cabin Air Conditioner

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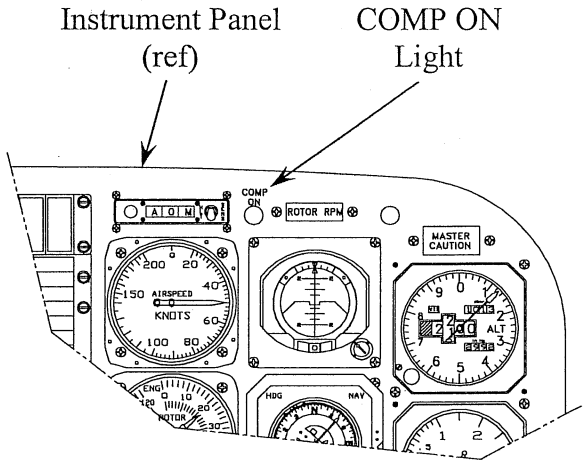
STC No. SR00463DE

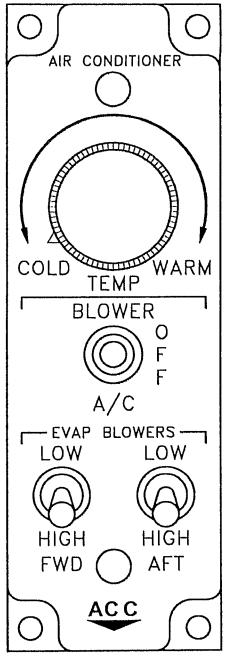
CABIN AIR CONDITIONING SYSTEM

SECTION 1 OPERATING LIMITATIONS

PLACARDS AND MARKINGS



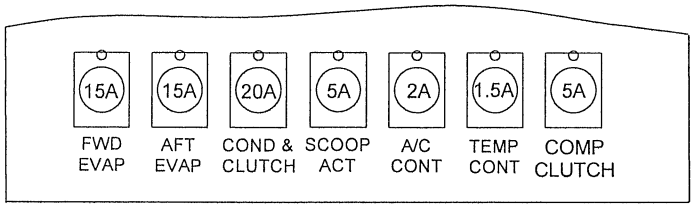
A separate COMP ON light is installed on the instrument panel as shown for aircraft that are not equipped with an Interactive Display System



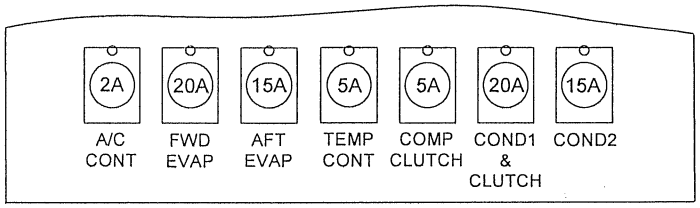
Located in cockpit overhead switch panel.

SECTION 1 OPERATING LIMITATIONS (cont'd)

PLACARDS AND MARKINGS (cont'd)



Located on forward panel of baggage compartment
(Retractable Condenser Scoop Configuration)



Located on forward panel of baggage compartment
(Dual Condenser Blower Configuration)

MAG COMPASS DEVIATION
MAY BE EXCESSIVE WITH
AIR COND OR BLOWER ON

Located at center line on lower edge of instrument panel

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CABIN AIR CONDITIONING SYSTEM

SECTION 2 NORMAL PROCEDURES

PREFLIGHT CHECK (EXTERIOR)

Compressor – check security
Compressor Drive Belt – Check tension and general condition
Compressor Belt Shield – Check security
Condenser – Check security

ENGINE PRESTART CHECK

A/C – BLR – OFF Switch - OFF

BEFORE TAKEOFF

A/C – BLR – OFF Switch – As desired
EVAP BLOWERS HI/LO Switch – As desired

IN FLIGHT OPERATIONS

A/C – BLR – OFF Switch – As desired
EVAP BLOWERS HI/LO Switch – As desired

NOTE
Total air conditioning system electrical load is
48 amps. Monitor amps. (Dual Condenser Blowers)

SECTION 3 EMERGENCY PROCEDURES

A/C – BLR – OFF Switch - OFF

Operate switch to OFF for any of the following emergencies:

Engine Failure
Engine Overtemperature
Generator Failure

SECTION 4 MALFUNCTION PROCEDURES

If outlet air is not cool, turn A/C – BLR – OFF switch to OFF or BLR to preclude damage to the compressor.

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CABIN AIR CONDITIONING SYSTEM

SECTION 5 PERFORMANCE DATA

When the A/C is operating, the performance data in the basic flight manual should be reduced as shown below:

Rate of Climb Degradation

Reduce the rate of climb in the basic Flight Manual by the amount shown below:

R/C Reduction:.....48 ft / min (14.6 m / min)

Hover Ceiling In Ground Effect and Out of Ground Effect

Add 54 lb (24.5 kg) to the actual IGE/OGE hover gross weight for takeoff power or maximum continuous power when entering the chart to determine hover ceiling.

CHAPTER 4
SUPPLEMENTAL TYPE CERTIFICATE

1. SUPPLEMENTAL TYPE CERTIFICATE

   The following document must be removed and placed with the appropriate existing aircraft documents.

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United States of America
Department of Transportation -- Federal Aviation Administration

Supplemental Type Certificate

Number **SR00463DE**

This certificate issued to: Air Comm Corporation
3300 Airport Road
Boulder, Colorado 80301

certifies that the change in the type design for the following product with the limitations and conditions therefore as specified hereon meets the airworthiness requirements of Part 27 *of the* Federal Aviation *Regulations.*

Original Product - Type Certificate Number: H7EU

Make: Agusta S.p.A.

Model: A119, AW119MKII

Description of Type Design Change:
Installation of Cabin Air Conditioning System in accordance with Air Comm Corporation Master Drawing List Report No. DL-A119, revision B, dated December 26, 2001, FAA approved January 11, 2002, or later FAA approved revision.

Limitations and Conditions:
1. Instructions for Continued Airworthiness, Air Comm Corporation Report A119-206M-1, dated August 29, 2005, FAA accepted September 29, 2005, or later FAA accepted revision is required for this installation.
2. FAA approved Flight Manual Supplement, Document No. A119-1, dated January 11, 2002, or later FAA approved revision is required.
3. Compatibility of this design change with previously approved modifications must be determined by the installer.
4. If the holder agrees to permit another person to use this certificate, the holder shall give the other person written evidence of that permission.
5. A copy of this certificate must be maintained as part of the permanent records of the aircraft.

This certificate and the supporting data which is the basis for approval shall remain in effect until surrendered, suspended, revoked or a termination date is otherwise established by the Administrator of the Federal Aviation Administration.

Date of application: July 26, 2001
Date of issuance: January 11, 2002
Date reissued:
Date amended: November 27, 2007; 1/24/06

By direction of the Administrator

Melissa Sandow (*Signature*)
Senior Engineer
Northwest Mountain Region
Denver Aircraft Certification Office
(*Title*)

Any alteration of this certificate is punishable by a fine of not exceeding $1,000, or imprisonment not exceeding 3 years, or both.

This certificate may be transferred in accordance with FAR 21.47.