

EUROCOPTER CANADA LIMITED

**SUBJECT: SX-16 SEARCHLIGHT INSTALLATION WITH SLASS
(P/N 120-901234-05)**

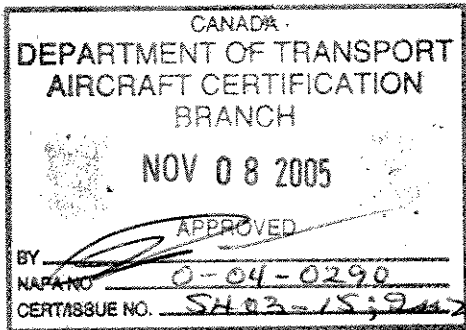
The Spectrolab SX-16 Nightsun Searchlight is a high powered light mounted on the LHS of the helicopter. It can be operated by the pilot using the cyclic or by a trained operator using an operator hand control. The Slaved Searchlight System (SLASS) enables the Searchlight to automatically follow the Electro-Optical FLIR Gimbal.

APPLICABILITY:

This Flight Manual Supplement shall be used when the Spectrolab SX-16 Nightsun Searchlight with SLASS is installed on the helicopter.

Department of Transport
(Canada) Approved

IMPORTANT NOTE



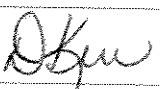



THE INFORMATION AND DATA CONTAINED IN THIS DOCUMENT SUPERSEDE OR SUPPLEMENT THAT CONTAINED IN THE BASIC APPROVED FLIGHT MANUAL FOR THE EC 120 B HELICOPTER IN THOSE AREAS LISTED HEREIN. FOR LIMITATIONS, PROCEDURES AND PERFORMANCE NOT CONTAINED IN THIS DOCUMENT REFER TO THE APPROVED FLIGHT MANUAL AND OTHER APPLICABLE APPROVED FLIGHT MANUAL SUPPLEMENTS.

SECTIONS 2, 3, 4, AND 5 OF THIS DOCUMENT COMPRISE THE APPROVED FLIGHT MANUAL SUPPLEMENT. COMPLIANCE WITH SECTION 2, LIMITATIONS, IS MANDATORY.

SECTIONS 1 AND 6 ARE UNAPPROVED AND ARE PROVIDED FOR INFORMATION ONLY.

James Palmer
Senior Engineer, Aircraft Certification
Aircraft Certification (PAI)
Ontario Region

THE INFORMATION CONTAINED IN THIS DOCUMENT SHALL BE TREATED AS THE PROPERTY OF EUROCOPTER CANADA LIMITED (ECL). THE RECIPIENT OF THIS DOCUMENT SHALL NOT DISCLOSE ANY INFORMATION CONTAINED HEREIN TO THIRD PARTIES WITHOUT THE WRITTEN PERMISSION OF ECL, AND SHALL NOT USE OR REPRODUCE THIS DOCUMENT IN WHOLE OR IN PART FOR ANY PURPOSE OTHER THAN ITS ORIGINALLY INTENDED PURPOSE, OR TO EVALUATE ITS CONTENTS.

	NAME AND SIGNATURE	DATE	COMPANY DEPARTMENT
PREPARED BY:	D. Kerr 	7 Nov. 05	ECL ENGINEERING
PREPARED BY:			
CHECKED BY:	G. Krebs 	Nov 7/05	ECL ENGINEERING
CHECKED BY:			
APP'D / ACCEPTED (Civil A/W Authority)	SEE TCCA STAMP P. Turcotte 	8th Nov 2005	TCCA
RELEASED BY:	R. Manson 	9 Nov 05	ECL ENGINEERING

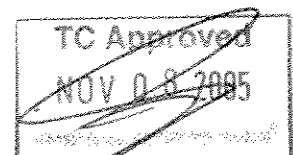
CONTENTS

SECTION	TITLE	PAGE
1	GENERAL	4
2	LIMITATIONS	5
3	EMERGENCY PROCEDURES	6
4	NORMAL PROCEDURES	7
5	PERFORMANCE DATA	10
6	WEIGHT AND BALANCE	11

FIGURES

FIGURE	TITLE	PAGE
1	SX-16 Searchlight Installation with SLASS	4
2	Operator's Hand Control	8
3	Pilot's Cyclic Control	9

Transport Canada Approved





1. GENERAL (unapproved)

The Spectrolab SX-16 Nightsun Searchlight, is a high-intensity (30 million candlepower) searchlight mounted on the LH side of the helicopter. The searchlight is mounted with a dove tail assembly for quick installation and removal. This system is equipped with a pilot's cyclic control.

The installation with SLASS converts the Searchlight into a Slaved System which allows the Searchlight to follow in the same direction as the Electro-Optical FLIR Gimbal. When the SLAVE switch is "OFF" the SLASS hand control converts to a manual Searchlight controller using the eight-way switch. The SLASS hand control is attached to the FLIR hand control.

Flight limitations for the side -mounted searchlight are covered by FAA STC SR01302LA (Transport Canada accepted).

The light can be controlled by any trained crew member excluding the pilot by means of an external control box, or by the pilot using the cyclic stick control switches. This system is equipped with pilot and SX-16/SLASS operator directional and focus control for the Searchlight. It has a slew capability of approximately 100° in azimuth off of the LHS of the aircraft, and -10° to -70° in elevation from the horizon.

The complete system consists of the following main components:

- airframe mount with dove tail assembly for quick removal
- gimbal assembly with electrical actuators
- searchlight with xenon arc lamp, and cooling fan
- SLASS Cables
- SLASS Electrical Control Unit
- Operator's Hand Control

Name of Assembly	Part No.
SLASS Integration with FLIR	120-901234-05

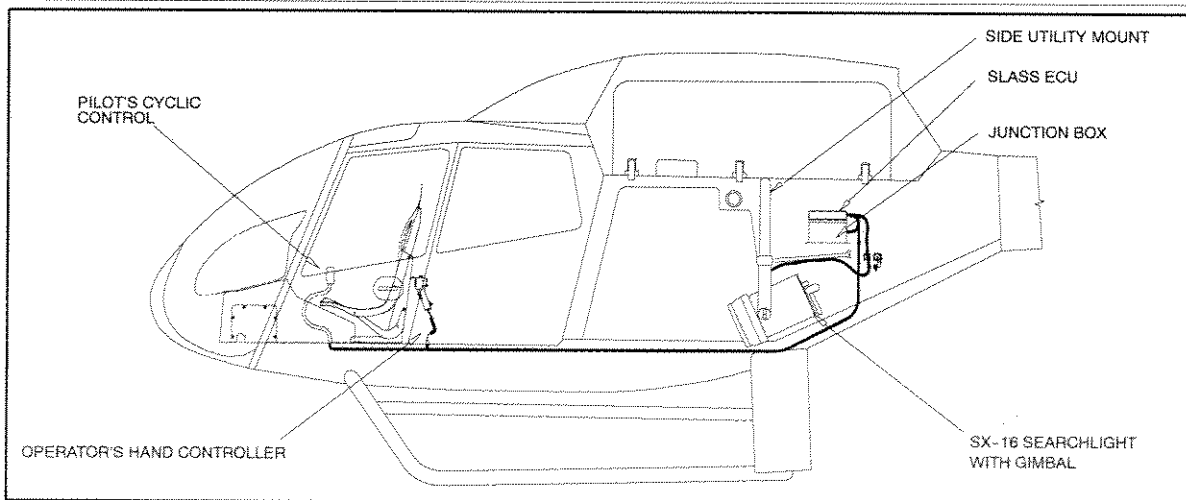


Figure 1 SX-16 Searchlight Installation with SLASS

Transport Canada Unapproved





2. LIMITATIONS

a. Operation

The Spectrolab SX-16 Searchlight with SLASS shall be operated by a trained crew member.

Operation of the Spectrolab SX-16 Nightsun Searchlight, in conjunction with emergency or fixed floats, is not authorized without the installation of azimuth-limiting stops to avoid the potential for the light beam burning the float material.

CAUTION THE SEARCHLIGHT PRODUCES EXTREMELY HIGH TEMPERATURES AT CLOSE PROXIMITY TO THE LIGHT. CARE SHALL BE TAKEN DURING LOW HOVERING FLIGHT AND GROUND OPERATION TO AVOID SETTING BRUSH / GRASS FIRES OR BURNING LANDING PAVEMENT.

CAUTION OPERATION OF THE SEARCHLIGHT BELOW 100 FEET SHALL BE AVOIDED BECAUSE OF THE POSSIBILITY OF EXCESSIVE GLARE.

CAUTION THE SEARCHLIGHT SHALL BE SWITCHED OFF FOR FLIGHT INTO CLOUDS OR FOG.

b. Airspeed Limitations

For Airspeed Limitations of the Universal Mount refer to STC SR01302 LA "AIR-FILM Camera Systems" Flight Manual Supplement (AF-120-RFM).

c. Placards and Markings

For Placards and Markings of the Universal Mount, refer to STC SR01302 LA.

For Placards and Markings of the SLASS refer to Universal Searchlights, Operation and Installation Manual for the Model S-301 Slaved Searchlight System (SLASS).

For additional Placards and Markings refer to the ECL ICA-ECL-122.

Transport Canada Approved





3. EMERGENCY PROCEDURES

• **Generator Failure**

Pilot issues a verbal command to Searchlight Operator : Searchlight OFF
(Operator Hand Control SX-16 ST ON/OFF switch)

Refer to the Basic Aircraft Flight Manual for generator failure emergency procedures.

• **Excessive Glare/Reflection in Cockpit**

Pilot's Cyclic Control : Pilot moves light so as not to have excessive glare/reflection.
(Pilot's Cyclic Control SX-16 CONT (four-way) switch)

OR

Pilot issues a verbal command to Searchlight Operator : Searchlight OFF
(Operator Hand Control SX-16 ST ON/OFF switch)

Transport Canada Approved





4. NORMAL PROCEDURE

a. Pre-Flight Check

The following checks are to be carried out prior to every flight requiring the use of the SX-16 Nightsun Searchlight with SLASS.

(1) External Check

- Mounting Brackets : Check for security
- Electrical plug connections : Check for condition
- SX-16 Glass, Lamp and Reflector : Check for condition
- Dove tail assembly : Check for engagement

(2) Circuit Breaker Check

- SX-16 Circuit Breaker : Check for engagement

(3) Operational Check

NOTE Control of the light is powered ON and OFF by utilizing only the Operator Hand Control.

To operate SLASS in Slave mode complete Gimbal and Searchlight alignment, refer to the SLASS Operation and Installation Manual

- : Check for calibration and operation

CAUTION DO NOT TURN THE SX-16 ON UNTIL THE ENGINE IS RUNNING AT FLIGHT IDLE, AND THE GENERATOR LOAD IS BELOW 50 AMPS. TURN OFF THE SX-16 IMMEDIATELY AFTER TESTING.

CAUTION HOLD THE HAND CONTROLLER TOGGLE SWITCH IN THE START POSITION FOR APPROXIMATELY 5 SECONDS, UNTIL SEARCH LIGHT ILLUMINATES, AND THEN RELEASE SWITCH IMMEDIATELY. HOLDING THE SWITCH IN THE START POSITION ANY LONGER THAN NECESSARY WILL CAUSE CONSIDERABLE DAMAGE TO THE LAMP.

Transport Canada Approved





(a) Operator Hand Control - (refer to Figure 2)

- SX-16 ST ON/OFF switch : Switch to START then release to ON.
- SX-16 CONT (eight-way) switch : Verify correct light movement in the direction selected (UP, DOWN, LEFT, RIGHT).
- SX-16 FOC switch : Verify focus adjustment movement.
- SLAVE mode switch : Verify Searchlight moves to the Electro-Optical FLIR Gimbal reference position
- Calibrate switch : Press to clear incorrect data and to recalibrate reference position
- VEMD Ammeter Indicator : Verify current consumption under 150A
- SX-16 ST ON/OFF switch : Switch OFF

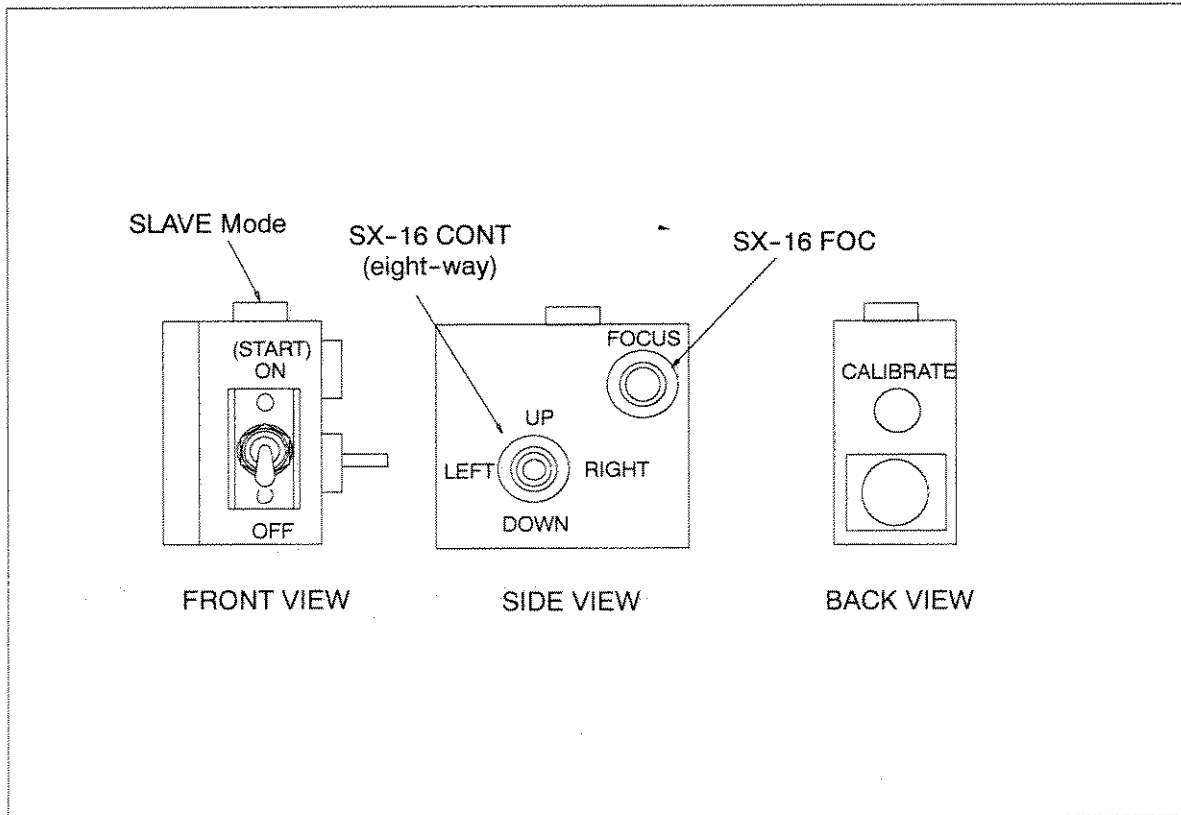


Figure 2 Operator's Hand Control

Transport Canada Approved





(b) Pilot's Cyclic Control Dual Searchlight Functions - (refer to Figure 3)

- SX16 CONT (four-way) switch : Verify correct light movement in the direction selected (UP, DOWN, LEFT, RIGHT).
- SX16 FOC switch : Verify focus adjustment movement.

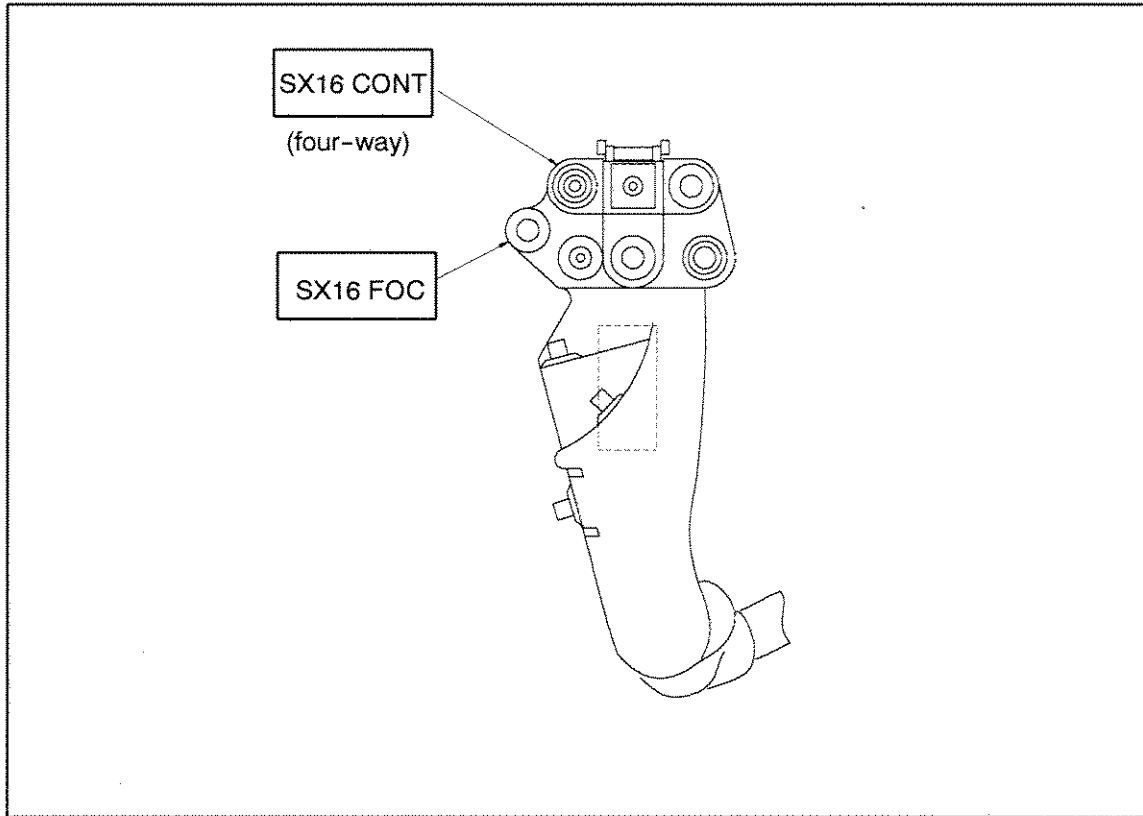
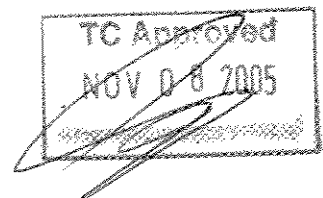


Figure 3 Pilot's Cyclic Control

Transport Canada Approved





b. Operation

The SLASS is controlled by the Operator's Hand Control. The system is equipped with pilot and SX-16/SLASS operator directional and focus control for the Searchlight. The directional control priority is to the pilot, whereas the focus control has no override priority.

To operate System in Slave mode, refer to the SLASS Operation and Installation Manual.

(1) Switching System ON

- (a) Operator Hand Control (only) - (refer to Figure 2)
 - SX-16 ST ON/OFF switch - Position to START then release to ON
 - VEMD Ammeter Indicator - Verify current consumption under 150A

(2) Focus and Position

- (a) Operator Hand Control - (refer to Figure 2)
 - SX-16 FOC switch - Press switch until desired beam aperture is achieved.
 - SX-16 ST (eight-way) switch (UP, DOWN, LEFT, RT) - Operate as required to position light (UP, DOWN, LEFT, RIGHT)
- (b) Pilot's Cyclic with Dual Searchlight Functions - (refer to Figure 3)
 - SX16 FOC switch - Press switch until desired beam aperture is achieved.
 - SX16 CONT (four-way) switch (UP, DOWN, LEFT, RT) - Operate as required to position light (UP, DOWN, LEFT, RIGHT)

(3) Switching System OFF

- (a) Operator Hand Control (only) - (refer to Figure 2)
 - SX-16 ST ON/OFF switch - Switch to OFF

5. PERFORMANCE DATA

For Performance Limitations refer to STC SR01302LA - "AIRFILM Camera Systems" Flight Manual Supplement (AF-120-RFM).

Transport Canada - Approved





6. WEIGHT AND BALANCE (Removeable items) (unapproved)

DESCRIPTION	WEIGHT		ARM		MOMENT	
	kg	lb	m	in	m kg	in lb
SX-16 Assembly (P/N 120-901234-01)	19.20	42.3	4.66	183.5	89.47	7762.1
Utility Mount (P/N AF 120)	9.77	21.5	4.66	183.5	45.53	3945.3
Hand Control (P/N 120-901304)	0.28	0.6	2.80	110.2	0.78	66.1

Transport Canada Unapproved