Nose Video Gimbal

Astar / Twinstar

Instructions for
Continued Airworthiness

Nose Video Gimbal “Straight Tube” Mount

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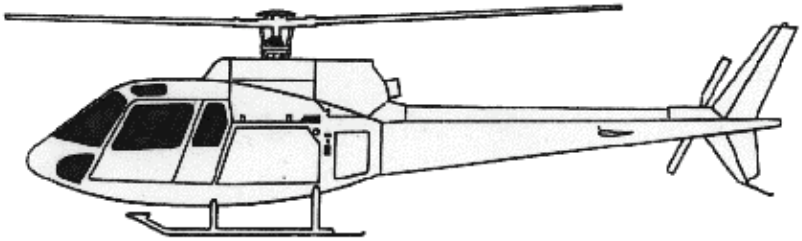
For *Eurocopter* helicopter models:



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1.0 GENERAL

1.1 INTRODUCTION

This manual presents the Instructions for Continued Airworthiness (ICA) for the installation of the Tyler Camera Systems Straight Tube for the Eurocopter 350 & 355 Series Helicopter. The Tyler Straight Tube consists of a welded steel structure with aluminum brackets. Figure 3.1, contains a photograph of the Tyler Straight Tube.

The Straight Tube attaches to the 350 & 355 Series Helicopter using the aluminum clamps attached to the aircrafts frame around the damper area. using the Tyler tang, which protrudes thru the Belly Pan. The Straight Tube is secured with a forward bracket attached to the tang and then to the forward cross tube with a “C” clamp shown in figures 3.2 A,B,C.

1.2 PURPOSE

The purpose of this document is to provide Instructions for Continued Airworthiness to inspect the Tyler Camera Systems Straight tube.

1.3 SCOPE

The scope of this document is limited to information, procedures, requirements and limitations for this Supplemental Type Certificate. When a requirement specified in the appendix to the regulations is not applicable to this Supplemental Type Certificate the requirement will not be included in the Instructions for Continued Airworthiness.

1.4 APPLICABILITY

These Instructions for Continued Airworthiness are applicable to the Tyler Camera Systems Straight Tube installed on the Eurocopter 350 & 355 Series Helicopter.

1.5 UNITS OF MEASUREMENT

Units are in United States Standard Measurements for each measurement tolerance or torque value unless otherwise specified.

1.6 DOCUMENT CHANGE CONTROL

Changes to this document will be distributed to registered owners of the Tyler Camera Systems Straight Tube within 10 days after the revision is approved. Changes to this document will be indicated by a revision number in the footer, vertical lines adjacent to the change, and in the Record of Revisions.

2.0 AIRWORTHINESS LIMITATIONS

No airworthiness limitations associated with this type design change

3.0 INSPECTION REQUIREMENTS

3.2.2

Figure 3.1
Tyler Straight Tube Installation on the AS350 & 355 Model Helicopter

3.1 SCHEDULED INSPECTIONS

The scheduled inspections required by this ICA are contained on the following checklists. This checklist, when completed, is to become a permanent part of the Tyler Straight Tube records.

NOTE: There are no field repairs or overhaul allowed for the Tyler Straight Tube.

If the mount fails the following inspections, the mount is to be removed from the helicopter and returned to Tyler Camera Systems.

3.1.1 100 HOUR INSPECTION INTERVALS

The 100 hour time in service periodic inspections consist of visually inspecting the critical areas of the Tyler Straight Tube installation.

Due to the simplicity of the mount structure, all scheduled 100 hour inspections consist of the same items since the mount is inspected while installed on the helicopter.

The inspections per Table 3.1.1 are required while the Tyler Straight Tube is installed on the helicopter at the time in service interval as specified. The inspection is to be performed by maintenance personnel.

TABLE 3.1.1 100 HOUR TIME IN SERVICE INSPECTIONS

Refer to Item numbers in Table 3.0.1 and Figure 3.2 (1,2,3,4)

INSP.	**DESCRIPTION**	**INSPECTION**	Maintenance Personnel Initial
1	Straight Tube	(1) Visually inspect welds for cracks. (2) Visually inspect tubes for dents, deep scratches, or cracks.	
2	Forward Bracket Assembly	(1) Check for security of clamp on landing gear. (2) Visually inspect all components of clamp for dents, deep scratches, or cracks.	
3	Aft Clamp Assembly	(1) Check for security and tightness of clamp on landing gear. (2) Visually inspect all components of clamp for dents, deep scratches, or cracks.	
4	Belly Pan Holes	(1) Check for any delaminating around the Belly Pan holes	

3.2 1000 HOUR TIME IN SERVICE INSPECTION INTERVAL

The 1000 hour time in service inspection is to be performed as follows
The tube must be removed from the helicopter and disassembled per Section 5.0.

TABLE 3.2.1 1000 HOUR TIME IN SERVICE INSPECTIONS

INSP.	**DESCRIPTION**	**INSPECTION**	Maintenance Personnel Initial
1	Straight Tube	(1) Visually inspect welds for cracks. (2) Visually inspect tubes for dents, deep scratches, or cracks.	
2	Forward Bracket Assembly	(1) Check for security of clamp on landing gear. (2) Visually inspect all components of clamp for dents, deep scratches, or cracks.	
3	Aft Clamp Assembly	(1) Check for security and tightness of clamp on landing gear. (2) Visually inspect all components of clamp for dents, deep scratches, or cracks.	
4	Belly Pan Holes	(1) Check for any delaminating around the Belly Pan holes	

3.3 INSPECTION LIMITS

The Tyler Straight Tube is to be removed from service and returned to Tyler Camera Systems if the following inspection limits are exceeded.

Cracks:	Any indication
Bolt hole elongation	Any Indication
Dents, scratches or nicks	Greater than 0.010 inches
Tube Dents:	Greater than 0.020 inches
Tube scratches:	Greater than 0.010 inches
Delaminating Belly Pan Holes	Any indication

4.0 INSTALLATION & REMOVAL

4.1 For instructions on installation and removal of the camera mounts, refer to the *Tyler* Installation Manual "**Nose Video Gimbal for Astar / Twinstar**" (Report # U.M. INST-001).

5.0 WEIGHT & BALANCE

The weight and center of gravity location for the Tyler Straight Tube is:

RIGHT OR LEFT SIDE INSTALLATION

Ball Wt = 105 (MAX) lbs
Longitudinal .Station: 24 inches

St. Tube= 15 lbs
Longitudinal Station 46 inches

5.1 Nose Mount / **AS-350** *Sample*
5.2 Nose Mount / **AS-355** *Sample*

5.1 Nose Video Gimbal “Straight Tube” / **AS-350** *Sample*

WEIGHT & BALANCE DATA AND EQUIPMENT LIST		a-s st. tube				
Weight x Arm = Moment						
6/23/98		AIRCRAFT MODEL	REGISTRATION	AIRCRAFT S/N	PILOT	
SAMPLE SHEET		AS 350 B/A	N31621	2130	N/A	
		LONGITUDINAL			LATERAL	
ITEM:		WEIGHT	ARM	MOMENT	ARM	MOMENT
AIRCRAFT EMPTY WEIGHT & C.G.		2885	139.07	401216.95	0.489	1410.765
PORT BAGGAGE (L) MAX 264 LBS		0	125.98	0	-21.89	0
REAR BAGGAGE MAX 170 LBS		0	181.1	0		
CAMERA		95	14	1330		
FRAMEWORK MAIN	15	15	46	690	0	0
SUBTOTAL:		2995	134.6367112	403236.95	0.471040067	1410.765
LAP CONTROLLER		10	61.02	610.2	-14.17	-141.7
PILOT (A+) FORWARD RIGHT		240	61.02	14644.8	14.17	3400.8
CO-PILOT (A-) FORWARD LEFT		200	61.02	12204	-14.17	-2834
PAX (B+) INSIDE RIGHT REAR		0	99.99	0	8.15	0
PAX (B-) INSIDE LEFT REAR		0	99.99	0	-8.15	0
PAX (C+) OUTSIDE RIGHT REAR		0	99.99	0	24.45	0
PAX (C-) OUTSIDE LEFT REAR		0	99.99	0	-24.45	0
FUEL(143 GAL. MAX.) X 6.8 GAL.	143	972.4	136.81	133034.044	0	0
EQUIPMENT SUBTOTAL:		1422.4		160493.044		425.1
TOTAL AIRCRAFT WEIGHT:		4417.4	127.6157907	563729.994	0.415598542	1835.865
AIRCRAFT MAX GROSS WEIGHT:		4630		LATERAL C.G. LIMITS:		
NEW USEFUL LOAD:		212.6				
NEW CENTER OF GRAVITY (LONGITUDINAL)		127.6157907		L/H LIMIT:6.30 IN. (0.16M) MINUS		
NEW CENTER OF GRAVITY (LATERAL)		0.415598542		R/H LIMIT: 3.54 IN. (0.09) PLUS		
		LONGITUDINAL C.G. LIMITS:				
		FORWARD LIMIT:				
		124.8 IN. (3.17M) @ 4000 LBS. (2000 KG)				
		126.5 IN. (3.185M) @ 5000 LBS. (2100 KG)				
		REARWARD LIMIT:				
		137.9 IN. (3.445M) @ 5000LBS. (2100KG)				
		139.3 IN. (3.49M) @ 4000 LBS. (1750 KG)				

5.2 Nose Video Gimbal “Straight Tube” / **AS-355** *Sample*

WEIGHT & BALANCE DATA AND EQUIPMENT LIST		a-s st. tube mt.				
Weight x Arm = Moment						
6/23/98		AIRCRAFT MODEL	REGISTRATION	AIRCRAFT S/N	PILOT	
SAMPLE SHEET		AS 355 F1	N5802W	5221	N/A	
		LONGITUDINAL			LATERAL	
ITEM:		WEIGHT	ARM	MOMENT	ARM	MOMENT
AIRCRAFT EMPTY WEIGHT & C.G.		3195.89	138.88	443845.2032	0.489	1562.7902
STARBOARD BAGGAGE (R) MAX 220 LBS		0	125.98	0	21.89	0
PORT BAGGAGE (L) MAX 264 LBS		0	125.98	0	-21.89	0
REAR BAGGAGE MAX 170 LBS		0	181.1	0	0	0
CAMERA		105	14	1470	0	0
FRAMEWORK MAIN	15	15	46	690	0	0
SUBTOTAL:		3315.89	134.5054279	446005.2032	0.471303394	1562.7902
LAP CONTROLLER		10	61.02	610.2	-14.17	-141.7
PILOT (A+) FORWARD RIGHT		180	61.02	10983.6	14.17	2550.6
CO-PILOT (A-) FORWARD LEFT		0	61.02	0	-14.17	0
PAX (B+) INSIDE RIGHT REAR		0	99.99	0	8.15	0
PAX (B-) INSIDE LEFT REAR		0	99.99	0	-8.15	0
PAX (C+) OUTSIDE RIGHT REAR		0	99.99	0	24.45	0
PAX (C-) OUTSIDE LEFT REAR		0	99.99	0	-24.45	0
FUEL(194.6 GAL. MAX.) X 6.8 (FOR. 1) GAL.	80	544	127.55	69387.2	0	0
FUEL(194.6 GAL. MAX.) X 6.8 (aft 2) GAL.	80	544	151.55	82443.2		
EQUIPMENT SUBTOTAL:		1278		163424.2		2408.9
TOTAL AIRCRAFT WEIGHT:		4593.89	132.6608611	609429.4032	0.864559275	3971.6902
AIRCRAFT MAX GROSS WEIGHT:		5291		LATERAL C.G. LIMITS:		
NEW USEFUL LOAD:		697.11				
NEW CENTER OF GRAVITY (LONGITUDINAL)		132.6608611		L/H LIMIT:6.30 IN. (0.16M) MINUS		
NEW CENTER OF GRAVITY (LATERAL)		0.864559275		R/H LIMIT: 3.54 IN. (0.09) PLUS		
		LONGITUDINAL C.G. LIMITS:				
		FORWARD LIMIT:				
		124.8 IN. (3.17M) @ 4000 LBS. (2000 KG)				
		126.5 IN. (3.185M) @ 5000 LBS. (2100 KG)				
		REARWARD LIMIT:				
		137.9 IN. (3.445M) @ 5000LBS. (2100KG)				
		139.3 IN. (3.49M) @ 4000 LBS. (1750 KG)				