

AirFilm Camera Systems

REPORT NO. AFSP-006

INSTALLATION MANUAL

AFSP-1 SINGLE POLE UTILITY MOUNT



STC NUMBER SR01785LA

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Hangar No. 2
Georgetown, Ca 95634

LOG OF REVISIONS

REV	REVISION DATE	PAGES EFFECTED	COMMENTS
N/C	5/10/2005	ALL	ORIGINAL SUBMITTAL
A	6/15/2005	ALL	MINOR NOTE CHANGE, A956
B	9/10/2007	PG. 11	UPDATED
C	3/1/2014	PG. 2 UPDATED ELIGIBILITY PG. 9 UPDATED LIMITATIONS MATCH RFM PG. 16 ADDED APPENDIX C REMOVED PAYLOAD LIST	UPDATED

1.0 INTRODUCTION AND GENERAL DESCRIPTION:

The AFSP-1 Single Pole Mount system is Installed on the Eurocopter AS350 & AS355 series helicopters. It can be installed on High or Low Gear aircraft. The mount can be installed on the right or left hand side of the aircraft.

AS350 models B, B1, B2, BA, B3, C, D, and D1
AS355 models E, F, F1, F2, N, and NP

The AFSP-1 mount system consists of a support bar that attaches to the forward landing gear cross tube and floor tuning hammer weight attachment points. A single tube allows for the mounting of a camera / sensor system.

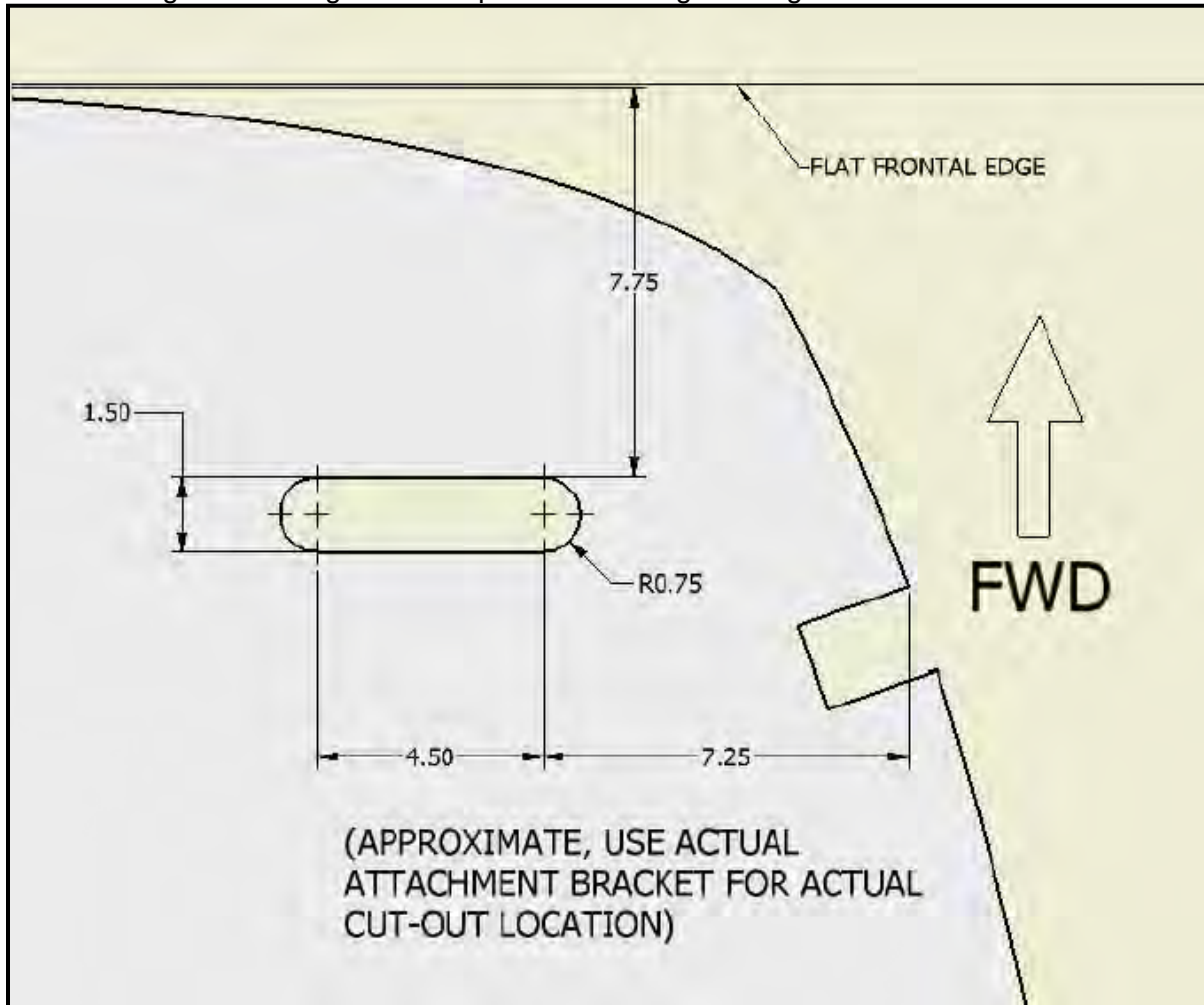
After installation, calculate weight and balance for Installed items and check for proper loading of aircraft.

A modification to the forward belly panel per Section 2 is required to provide for the T Bracket. Antenna, lights, and additional installed equipment may need to be relocated to provide clearance for the camera mount system.

If camera / sensor installations require additional power or system requirements beyond the placarded OEM auxiliary power outlet, additional certification(s) may be required.

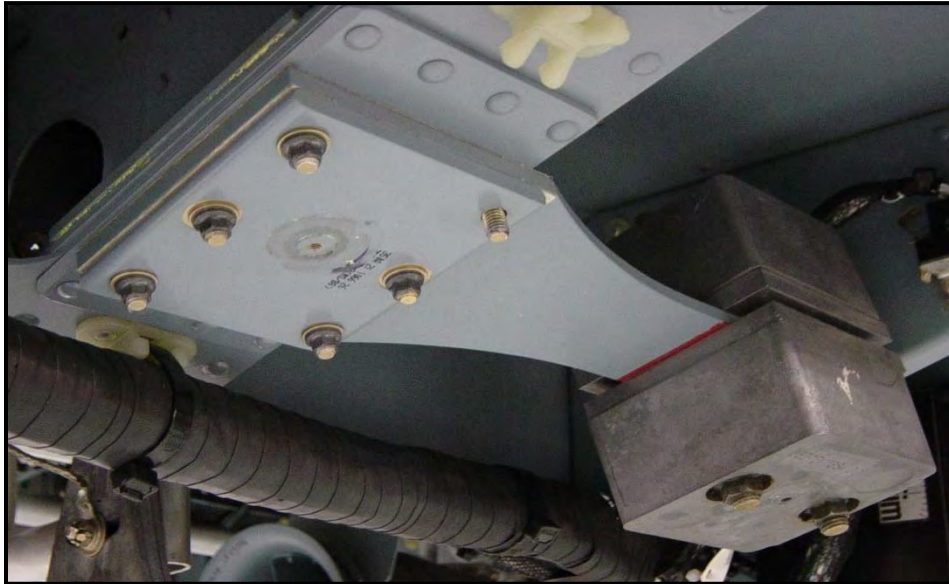
2.0 INSTALLATION INSTRUCTIONS: NOSE MOUNT SUPPORT

- 2.1 Confirm that the mount will not interfere with any exterior kits, antennas, and other exterior mounted assemblies.
- 2.2 Remove the forward belly panel – Use caution for any antennas located on the panel. Disconnect any cabling before removing the panel.
- 2.3 Straight cut through material per the following drawing.



- 2.2 Remove foam core from around edge of cutout. Min 0.200 in depth.
- 2.3 Edge fill cutout in belly panel with epoxy / filler with supplied West Systems 101 Epoxy Repair Kit, refer to manufacturer's instructions or equivalent ie: Ciba Giegy AV1258/HV1258.
- 2.4 Lay-up 9 oz fiberglass tape as supplied in West Systems 101 Epoxy Repair Kit (or equivalent) over edge filling to provide edge protection for belly panel. Refer to manufacturers instructions.

- 2.5 Using a 6mm-socket remove an existing metric nut off of the hammer weight. Replace with special nuts provided 6 each side (A700)



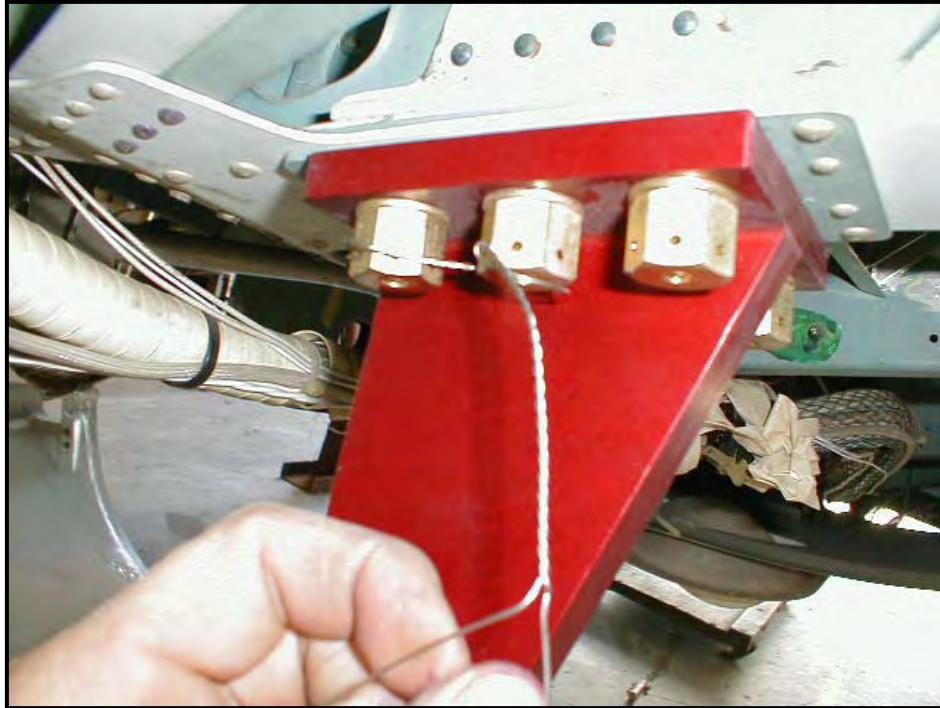
CAUTION: REMOVE AND REPLACE NUTS ONE AT A TIME, TO ENSURE THE HAMMER WEIGHT DOES NOT MOVE FROM PRESET LOCATION

- 2.6 Attach the HAMMER WEIGHT -T BRACKETS (A701) to the hammer weight existing bolts. (SEE ABOVE CAUTION)
Place the bracket up to the underside of the hammer weight attachment nuts.

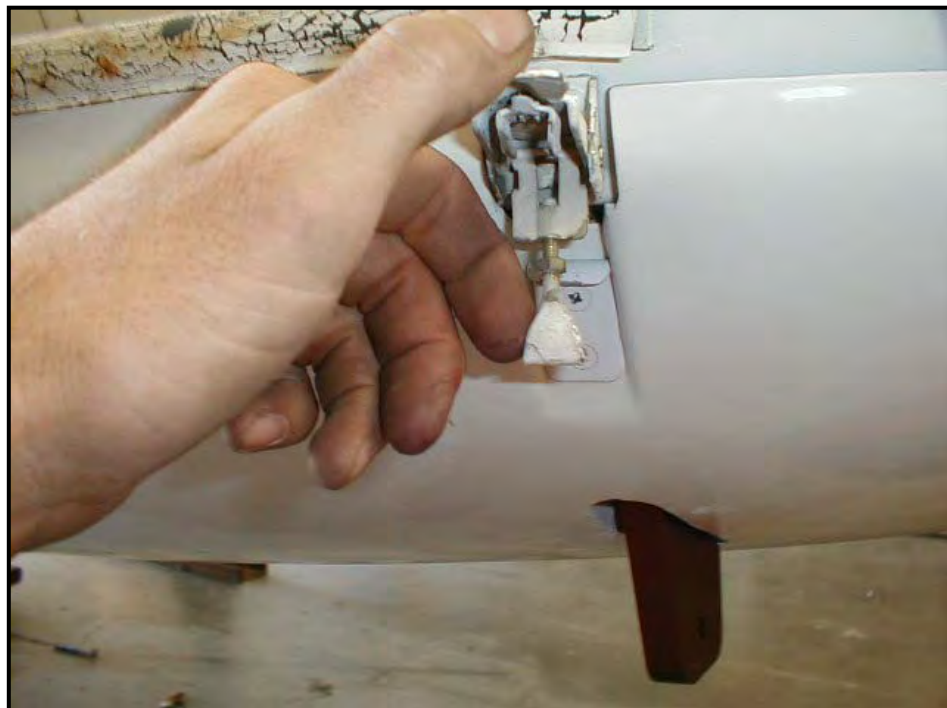


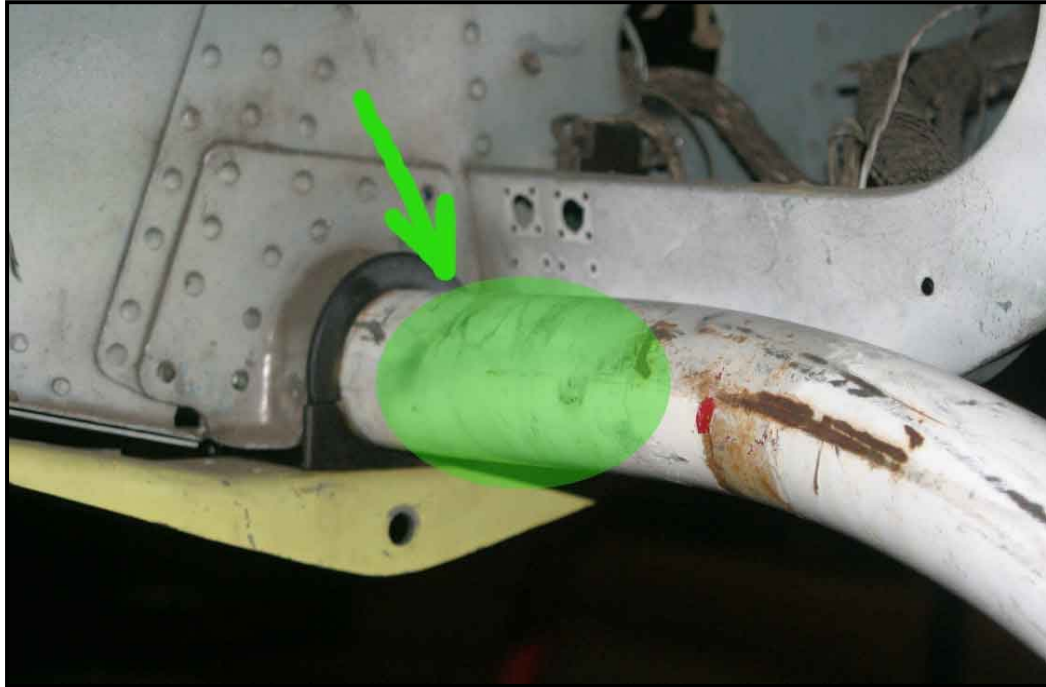
- 2.7 Torque nuts to 72-84 in lbs. (use caution when using the 3/4" socket wrench to tighten bolts- note that the bolts are 6mm dia and proper torque will be achieved quickly).

2.8 Use 0.032 diameter safety wire to secure all nuts as shown.

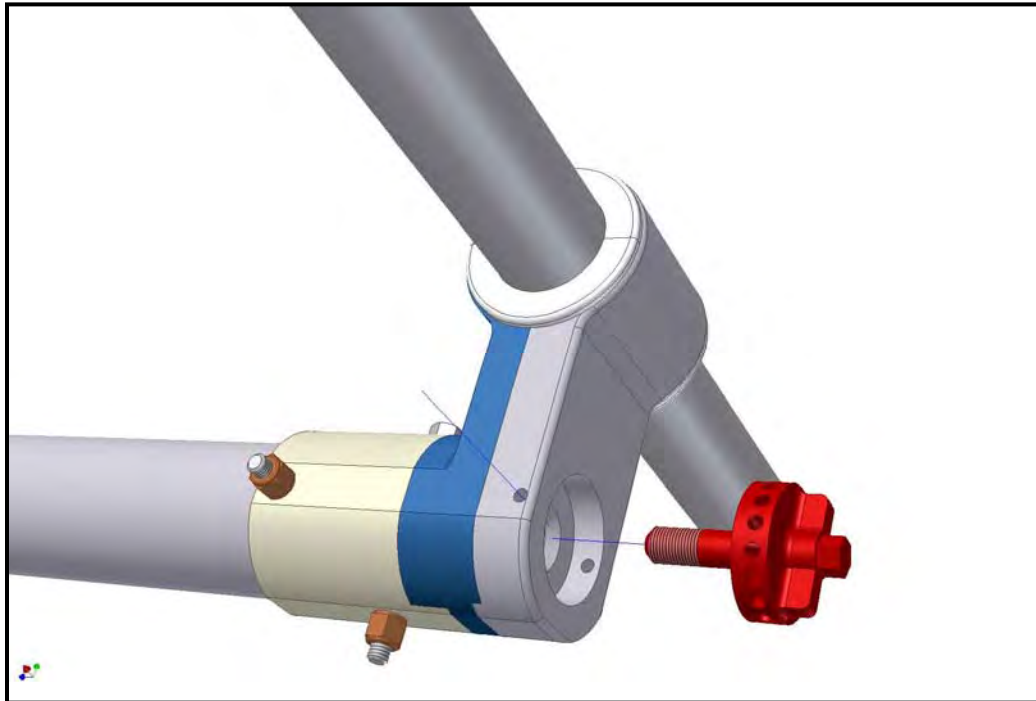


2.9 Attach the modified forward belly panel. Check that clearance holes allow the T brackets to extend through the panel.

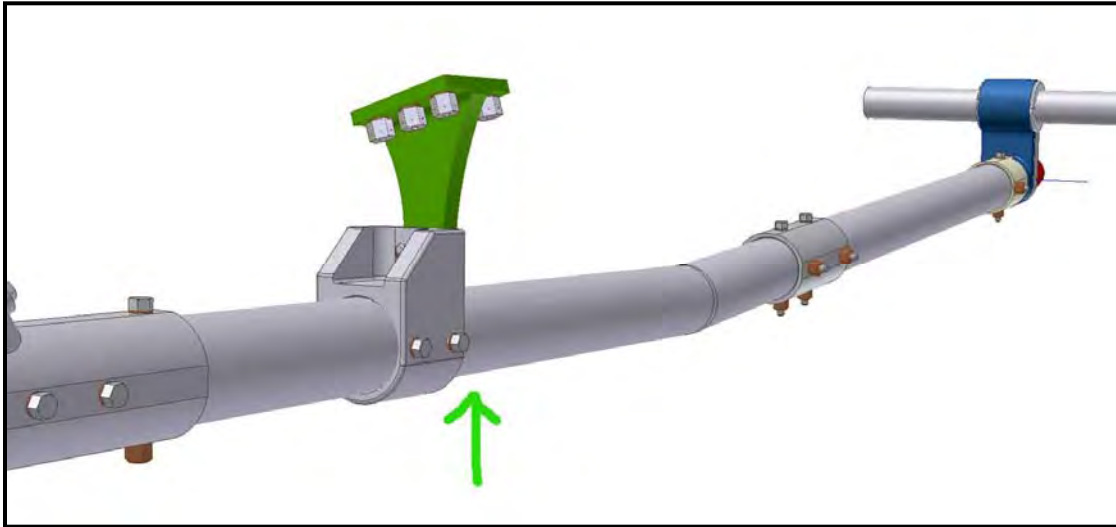




2.10 Locate area on FWD cross tube as shown in picture above. The attachment area is approximately 2 inches outside of the cargo swing attach bracket shown in green.

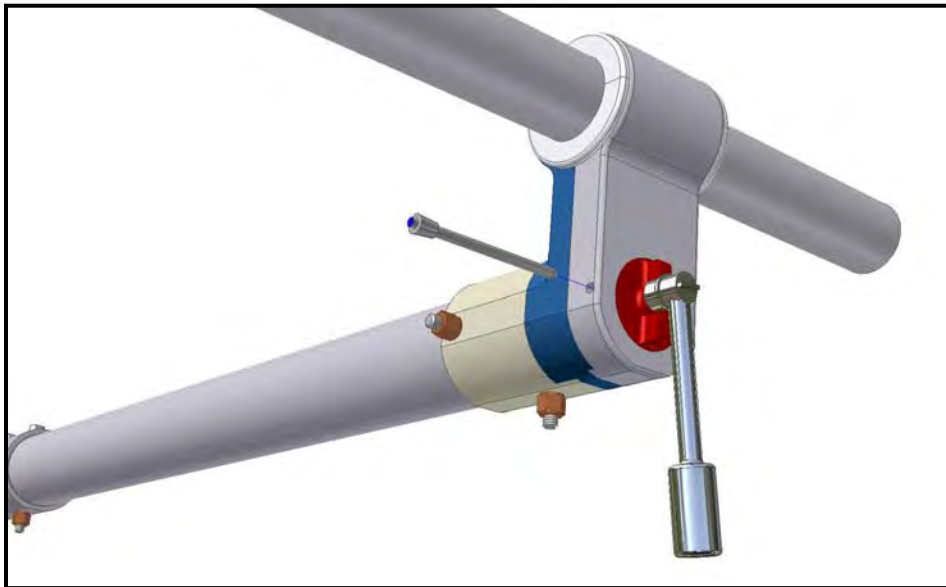


- 2.11 Attach the aft end of the AFSP-1 mount to the forward cross tube. Use the Delrin Gear pad's AFSP-25 or 3/16" Neoprene rubber to protect the aircraft landing gear, Hand tighten the assembly and allow the forward area of the mount to rest on floor.



- 2.12 Raise the AFSP-1 Mount assembly to line up the AFSP-36 with the installed T-bracket. Attach using the following fasteners and torque to 160-190 In Lbs.

QTY	TYPE - NUMBER	ITEM
1	AN6-22A	HEX HEAD BOLT
2	AN960-616	WASHERS
1	AN365-624A	STOP NUTS



- 2.13 Torque the AFSP-1 aft section around the FWD cross tube to 160-240 Inch Lbs.

- 2.14 Install ¼ Safety Pin provided to secure AFSP-24 locking bolt.
- 2.15 **Check entire mount for proper bolt torque settings, and security.**

3.0 FINAL INSTALLATION INSTRUCTIONS:

- 3.1 Check entire mount for security and proper bolt torque settings.
- 3.2 Calculate Weight and Balance.
- 3.3 Install the following Placard in cockpit.

**REDUCE PUBLISHED V_{NE} BY 15 KIAS
WITH A PAYLOAD INSTALLED OR MOUNT ONLY**

- 3.4 Make log book entries as required by Federal Aviation Regulations.
- 3.5 Return aircraft to service

4.0 REMOVAL INSTRUCTIONS

To remove AFSP-1 mount from aircraft::

- 4.1 Follow directions in reverse order and replace all original hardware / fixtures that were removed for installation of AFSP-1 mount.
- 4.2 Remove any AFSP-1 mount placards from cockpit
- 4.3 Calculate weight and balance
- 4.4 Make appropriate log book entry
- 4.5 Return Aircraft to service

5.0 WEIGHT AND BALANCE

The following table presents the location of the weight center of gravity of the mount and payload sensor/camera for adjustment of the aircraft weight and center of gravity with the mount installed.

TABLE 5.1 WEIGHT AND CENTER OF GRAVITY LOCATIONS

DESCRIPTION	WEIGHT (lbs)	STATION (in)	BL (in)
AFSP-1 MOUNT	44	53.9	-21
PAYLOAD	150 max	5.7	-21.8

6.0 LIMITATIONS

The maximum weight and frontal area allowed to be installed on AFSP-1 Single Pole Utility Mount are as follows:

WEIGHT = 150 lbs

Frontal area = 2.5 square feet

Minimum ground clearance = 6 inches

Determination of the frontal area and weight must be made to establish if it is eligible for installation. The shape of the payload must be cylindrical, spherical, or a combination of the two. No large concave forward facing surfaces with a drag coefficient (C_D) greater than 1.2.

Alternate T-Bracket Installation

7.0 Installation of Quick Clamp Style T-bracket.

7.1 The A956 quick clamp may be substituted for the standard A952 T-bracket assembly.

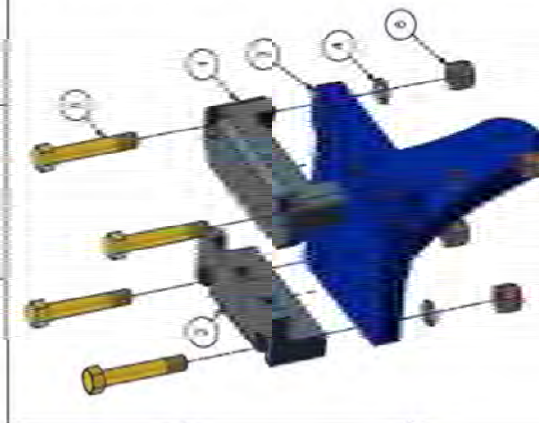
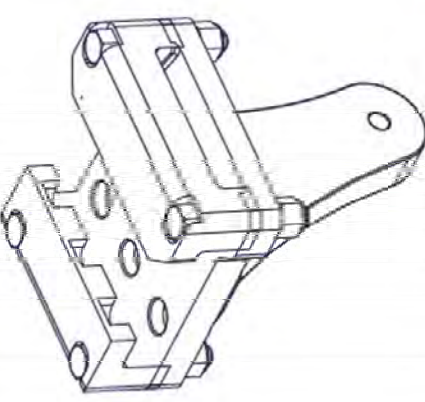
INSTALLATION INSTRUCTIONS:

PART NO A956 QUICK CLAMP ASSY IS THE ALTERNATE INSTALLATION OF STANDARD BRACKET ATTACHMENT A952, A9700 AND AF150. INSTALLS IN SAME LOCATION (SEE FIG 1)

1. INSTALL QUICK CLAMP ASSY A956 IN PLACE OF STANDARD T-BRACKET ASSY.
2. ATTACH BOLTS THRU TOP OF RETAINING CLAMPS A733 AND A74. HEX BOLTS HEAD ARE CAPTURED AND DO NOT REQUIRE A SOCKET TOOL.
3. ATTACH A738 T-BRACKET CLAMP TOGETHER USING WASHER AND NUT.
4. TORQUE TOGETHER IN A DIAGONAL PATTERN TO ENSURE EVEN TORQUE. PRESSURE TORQUE HARDWARE 100-140 IN LBS.
5. INSURE BRACKET IS SOLID WITH NO PLAY BETWEEN AIRCRAFT AND BRACKET.
6. TO REMOVE A956 ASSY, REMOVE HARDWARE AND REMOVE FROM AIRCRAFT.

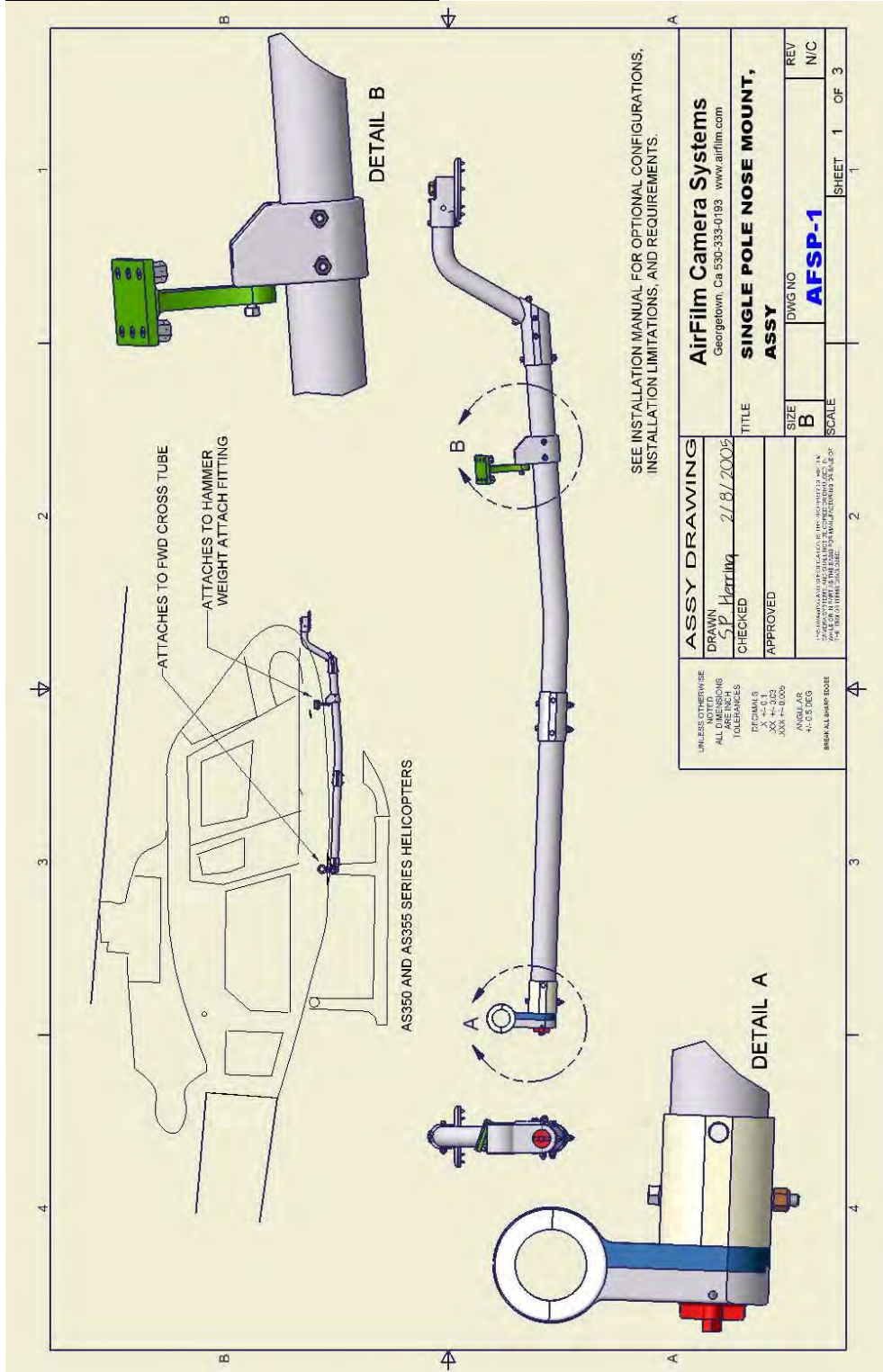
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	A733 (AFDP-1)	T-BRACKET CLAMP AFT
2	1	A734 (AFDP-1)	T-BRACKET CLAMP FWD
3	1	A735	T-BRACKET CLAMP C
4	4	AN600-516	WASHER
5	4	AN5-22A	HEX BOLT
6	4	AN605-524A	STOP NUT

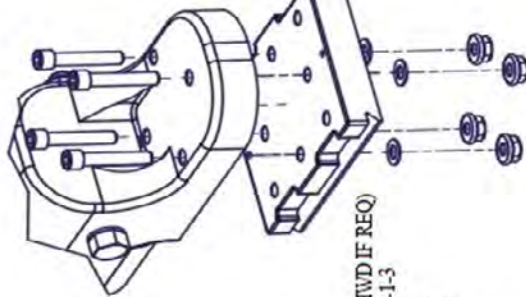
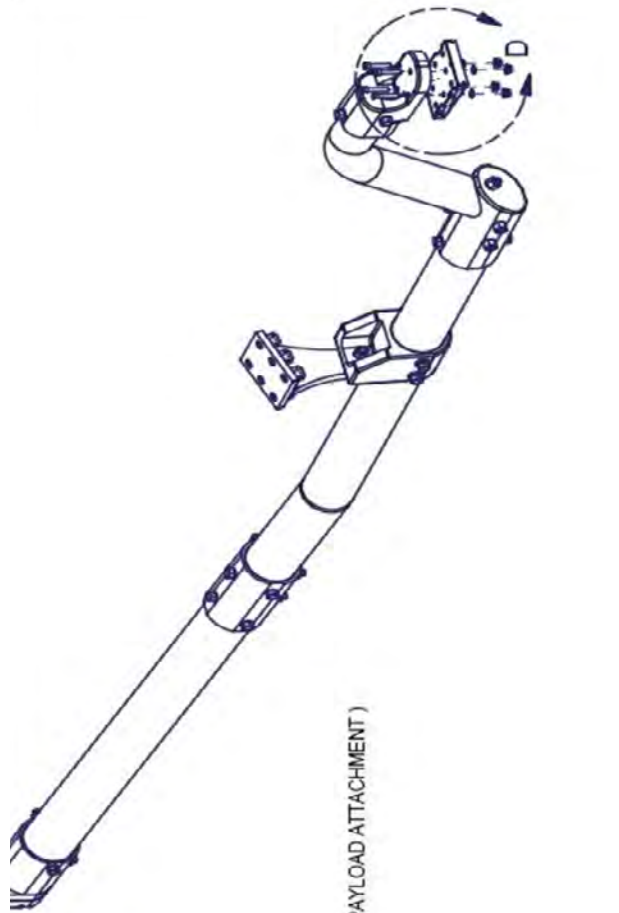
NOTE: PROCEDURE THE SAME FOR A735-R RH INSTALLATION

A735-L (LEFT HAND SHOWN)

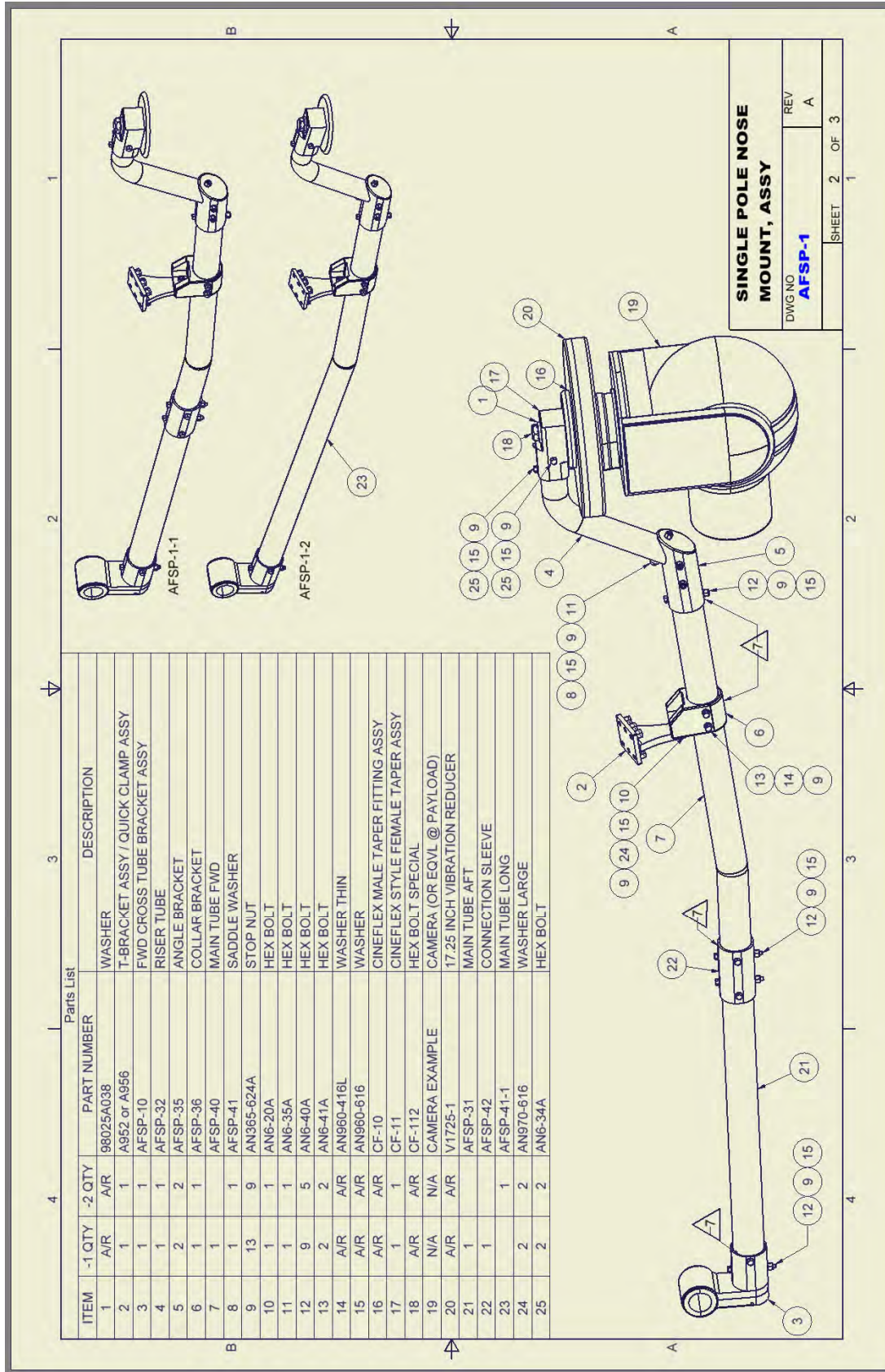
APPENDIX B – REF DRAWINGS

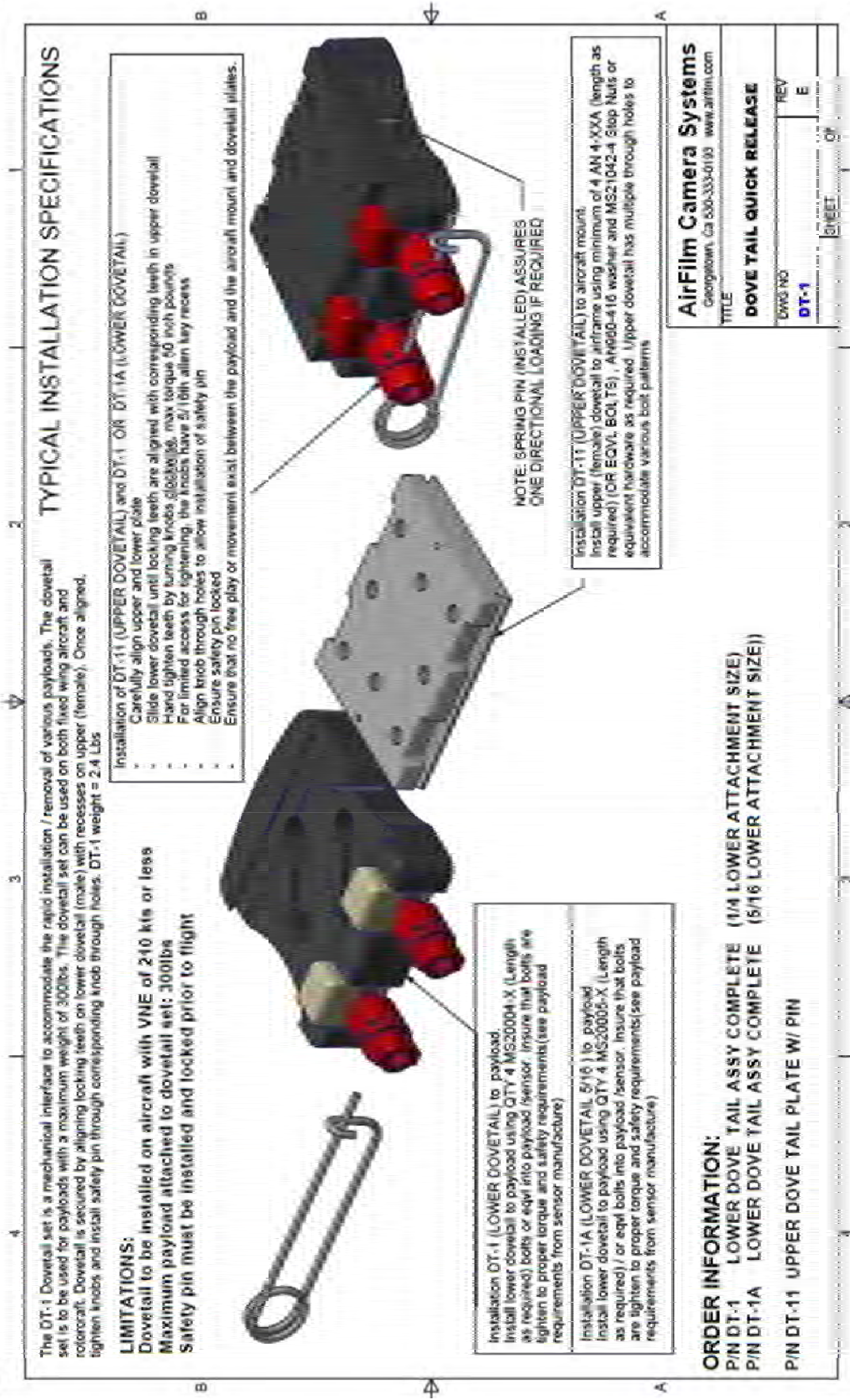




NOTE: (REF INSTALL HWD IF REQ)
 AF-HWKI DI-11-AFSP-1-3
 4 MS20004-15 BOLT
 4 MS20002C4 WASHER
 4 AN960-416L WASHER
 4 MS21042-4 NUT

DETAIL D
 REF TYP ATTACHMENT VIEW





TYPICAL INSTALLATION SPECIFICATIONS

The DT-1 Dovetail set is a mechanical interface to accommodate the rapid installation / removal of various payloads. The dovetail set is to be used for payloads with a maximum weight of 300lbs. The dovetail set can be used on both fixed wing aircraft and rotorcraft. Dovetail is secured by aligning locking teeth on lower dovetail (male) with recesses on upper (female). Once aligned, tighten knobs and install safety pin through corresponding knob through holes. DT-1 weight = 2.4 Lbs

- INSTALLATION OF DT-11 (UPPER DOVETAIL) AND DT-1 OR DT-1A (LOWER DOVETAIL)**
- Carefully align upper and lower plate
 - Slide lower dovetail until locking teeth are aligned with corresponding teeth in upper dovetail
 - Hand tighten teeth by turning knobs clockwise, max torque 50 inch pounds
 - For limited access for tightening, the knobs have 5/16th allen key recess
 - Align knob through holes to allow installation of safety pin
 - Ensure safety pin locked
 - Ensure that no free play or movement exist between the payload and the aircraft mount and dovetail plates.

LIMITATIONS:
 Dovetail to be installed on aircraft with VNE of 210 kts or less
 Maximum payload attached to dovetail set: 300lbs
 Safety pin must be installed and locked prior to flight

Installation DT-1 (LOWER DOVETAIL) to payload.
 Install lower dovetail to payload using QTY 4 MS20004-X (Length as required) bolts or eqpt into payload /sensor. Insure that bolts are tighten to proper torque and safety requirements(see payload requirements from sensor manufacture)

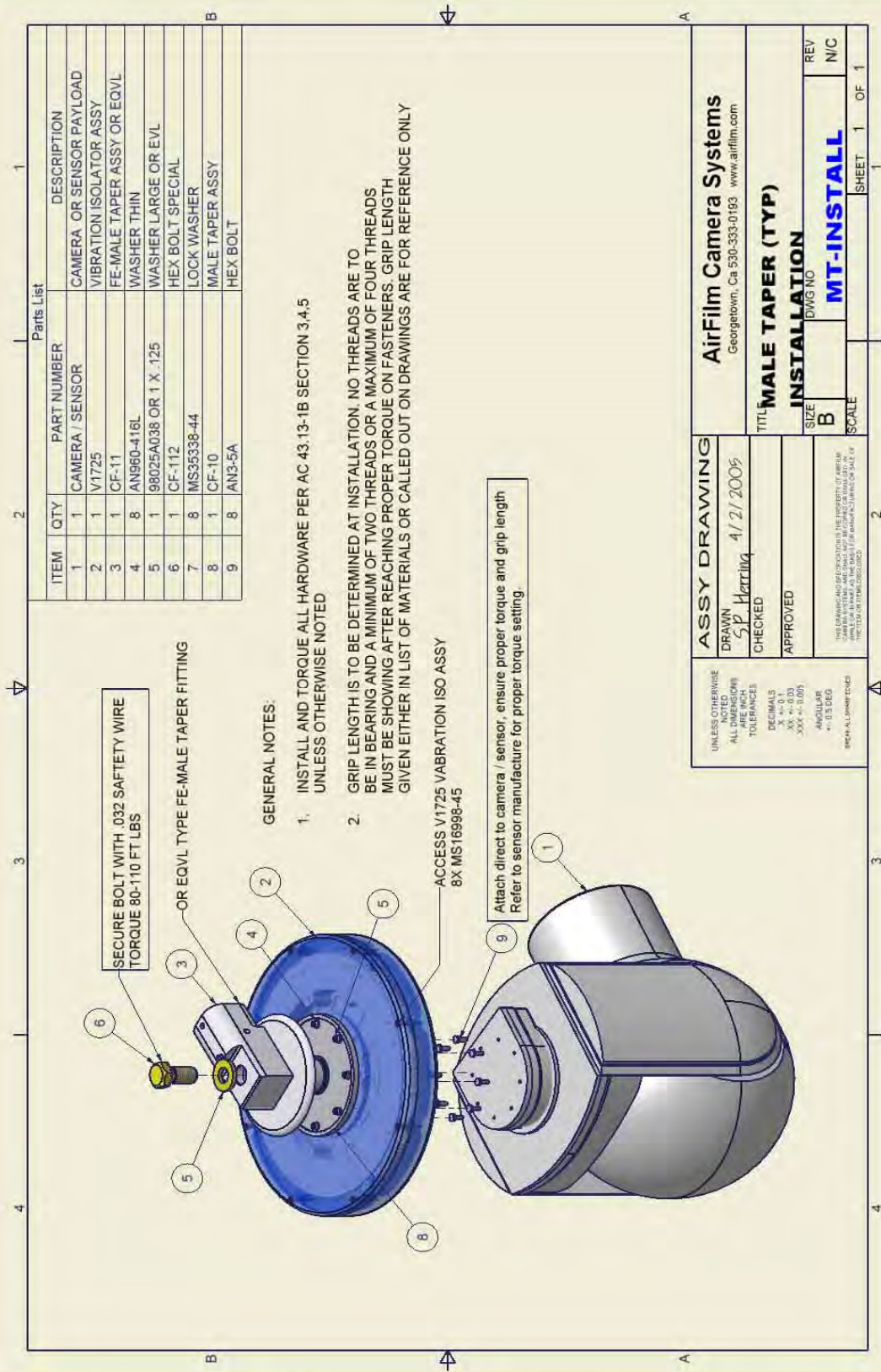
Installation DT-1A (LOWER DOVETAIL 5/16) to payload
 Install lower dovetail to payload using QTY 4 MS20005-X (Length as required) / or eqpt bolts into payload /sensor. Insure that bolts are tighten to proper torque and safety requirements(see payload requirements from sensor manufacture)

NOTE: SPRING PIN (INSTALLED) ASSURES ONE DIRECTIONAL LOADING IF REQUIRED

Installation DT-11 (UPPER DOVETAIL) to aircraft mount.
 Install upper (female) dovetail to airframe using minimum of 4 AN 4-XXX (length as required) (OR EQV, BOL, TS) , AN660-416 washer and MS21042-4 Stop Nuts or equivalent hardware as required. Upper dovetail has multiple through holes to accommodate various bolt patterns

ORDER INFORMATION:
 P/N DT-1 LOWER DOVE TAIL ASSY COMPLETE (1/4 LOWER ATTACHMENT SIZE)
 P/N DT-1A LOWER DOVE TAIL ASSY COMPLETE (5/16 LOWER ATTACHMENT SIZE)
 P/N DT-11 UPPER DOVE TAIL PLATE W/ PIN

AirFilm Camera Systems Georgetown, Ca 530-333-0100 www.airfilm.com	
TITLE DOVE TAIL QUICK RELEASE	
DWG NO DT-1	REV E
SHEET OF	



SECURE BOLT WITH .032 SAFETY WIRE
TORQUE 80-110 FT LBS

OR EQVL TYPE FE-MALE TAPER FITTING

ACCESS V1725 VIBRATION ISO ASSY
8X MS16996-45

Attach direct to camera / sensor, ensure proper torque and grip length
Refer to sensor manufacture for proper torque setting.

Parts List		
ITEM	QTY	DESCRIPTION
1	1	CAMERA OR SENSOR PAYLOAD
2	1	VIBRATION ISOLATOR ASSY
3	1	FE-MALE TAPER ASSY OR EQVL
4	8	WASHER THIN
5	1	98025A038 OR 1 X .125 WASHER LARGE OR EQVL
6	1	HEX BOLT SPECIAL
7	8	LOCK WASHER
8	1	MALE TAPER ASSY
9	8	HEX BOLT

- GENERAL NOTES:**
- INSTALL AND TORQUE ALL HARDWARE PER AC 43.13-1B SECTION 3.4.5 UNLESS OTHERWISE NOTED
 - GRIP LENGTH IS TO BE DETERMINED AT INSTALLATION. NO THREADS ARE TO BE IN BEARING AND A MINIMUM OF TWO THREADS OR A MAXIMUM OF FOUR THREADS MUST BE SHOWING AFTER REACHING PROPER TORQUE ON FASTENERS. GRIP LENGTH GIVEN EITHER IN LIST OF MATERIALS OR CALLED OUT ON DRAWINGS ARE FOR REFERENCE ONLY

ASSY DRAWING DRAWN <i>Sp. Harting</i> 4/21/2005 CHECKED APPROVED		AirFilm Camera Systems Georgetown, Ca 930-333-0193 www.airfilm.com	
TITLE MALE TAPER (TYP) INSTALLATION DWG NO		REV	OF
SIZE	B	MT-INSTALL	1
SCALE			1

UNLESS OTHERWISE ALL DIMENSIONS ARE INCH TOLERANCES DECIMALS X = 0.00 Y = 0.01 Z = 0.05 ANGULAR ** 0.5 DEG INCH ALL DIMENSIONS

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APPENDIX D - METHOD OF ADDING ADDITIONAL SENSOR /CAMERA / PAYLOADS

1. Overview

This Appendix provides the requirements necessary to qualify sensor / camera / light payloads – IF NEEDED.

It may also be used as a check list for previously approved sensor /cameras / light payloads if desired.

The STC flight testing was conducted and the STC approved with the largest and heaviest payload expected for use with this mount. The specific sensor/cameras/light not listed in the installation manual of equal or lesser than the limit case are accepted with this follow-on test plan.

2. Sensor/ Camera/ payload

Make & Model _____

3. Test Team

Pilot/s

Print Name

Mechanic and/or Engineer and/or Camera Operator

Print Name

4. Test Aircraft Configuration and Location

Aircraft Model, Registration & Serial Number

Model

Registration Number

Serial Number

Test Configurations

Empty weight with appropriate fuel and camera system installed

Takeoff Gross weight with crew

Configuration	Gross Weight	Longitudinal CG	Lateral CG
Empty Wt			
Takeoff Wt			

Test Location

Airport or Test Site

5. Test Conditions

Date: _____

Weather: Ceiling _____ Visibility _____ Winds _____

Altimeter _____ Field Elevation _____

Flight Time: Engine Start _____ Shut Down _____ Flt Time _____

6. Flight Test

6.1. Overview

Applicable regulations demonstrated for compliance are indicated with the following symbol ➔. The testing required for the compliance findings of this installation will be made by as a subject/qualitative evaluation. Although the most critical CG is considered to be at the aft limit for most tests this configuration is mounted forward of the mast should not approach the aft limits. This also depends on crew loading. The test team conducts the following tests and evaluations and mark initial the box at the end of each section if the configuration successfully passes the requirements.

6.2 FAR § 29.51 Takeoff

6.2.1 Applicable Regulation

- ➔(a) The takeoff data required by Secs. 29.53, 29.55, 29.59, 29.60, 29.61, 29.62, 29.63, and 29.67 must be determined--
 - (1) At each weight, altitude, and temperature selected by the applicant; and
 - (2) With the operating engines within approved operating limitations.
- ➔ (b) Takeoff data must--
 - (1) Be determined on a smooth, dry, hard surface; and
 - (2) Be corrected to assume a level takeoff surface.
- (c) No takeoff made to determine the data required by this section may require exceptional piloting skill or alertness, or exceptionally favorable conditions.

6.2.1 Method of Compliance

The recommended takeoff procedure must be demonstrated to remain clear of the HV "avoid" areas without requiring exceptional piloting skill or exceptionally favorable conditions.

A qualitative evaluation of the ability to safely land at any point along the flight path will be made using judgment and experience with the basic aircraft. No engine failure testing at low altitude will be conducted.

The normal takeoff procedures will be used for the sensor/camera/light payload and mount installation.

6.2.2 Findings

Satisfactory _____

6.3 FAR § 29.71 Glide Performance

6.3.1 Applicable Regulation

- ➔ For each category B helicopter, except multiengine helicopters meeting the requirements of Sec. 29.67(b) and the powerplant installation requirements of category A, the steady angle of glide must be determined in autorotation--
 - (a) At the forward speed for minimum rate of descent as selected by the applicant;
 - ➔ (b) At the forward speed for best glide angle;
 - (c) At maximum weight; and
 - ➔ (d) At the rotor speed or speeds selected by the applicant

6.3.2 Method of Compliance

(1) Performance capabilities during stabilized autorotative descent are useful pilot tools to assist in the management of a Category B rotorcraft when all engines fail. This information is also useful in determining the suitability of available landing areas along a given route segment.

(2) Two speeds are of particular importance, the speed for minimum rate of descent and the speed for best angle of glide. These speeds along with glide distance information are required as flight manual entries per FAR § 29.1587. The recommended speed for autorotation is usually optimized to assure an effective flare capability and yet be slow enough to allow a controlled, relatively slow touchdown condition. Recommended autorotation speed is ordinarily between the minimum rate of descent and maximum glide angle speeds.

An autorotative descent starting at least 1000 feet above the ground and at the speed published in the RFM, 100% RPM value will be demonstrated. Small turns will be conducted in the descent. The maneuver will be terminated with power at a safe altitude.

The aircraft should be easily controllable and the difference between the mount and camera/sensor/light payload and the clean configuration is the evaluation point.

6.3.3 Findings

Satisfactory _____ Altitude Band HP _____ Fuel Gage Reading _____

6.4 FAR § 29.143 Controllability and Maneuverability

6.4.1 Applicable Regulation

- ➔(a) The rotorcraft must be safely controllable and maneuverable -
 - ➔ (1) During steady flight; and
 - ➔(2) During any maneuver appropriate to the type, including -
 - ➔ (i) Takeoff;
 - ➔ (ii) Climb;
 - ➔ (iii) Level flight;
 - ➔ (iv) Turning flight;
 - ➔ (v) Glide
 - ➔ (vi) Landing (power on and power off);

- ➔(b) The margin of cyclic control must allow satisfactory roll and pitch control at VNE with -
 - (1) Critical weight;
 - (2) Critical center of gravity;
 - (3) Critical rotor rpm; and
 - (4) Power off (except for helicopters demonstrating compliance with paragraph (f) of this section) and power on.

- (c) A wind velocity of not less than 17 knots must be established in which the rotorcraft can be operated without loss of control on or near the ground in any maneuver appropriate to the type (such as crosswind takeoffs, sideward flight, and rearward flight), with -
 - (1) Critical weight;
 - (2) Critical center of gravity;
 - (3) Critical rotor rpm; and
 - (4) Altitude, from standard sea level conditions to the maximum altitude capability of the rotorcraft or 7,000 feet, whichever is less.

- (d) The rotorcraft, after failure of one engine in the case of multiengine rotorcraft that meet Transport Category A engine isolation requirements, or complete engine failure in the case of other rotorcraft, must be controllable over the range of speeds and altitudes for which certification is requested when such power failure occurs with maximum continuous power and critical weight. No corrective action time delay for any condition following power failure may be less than -
 - (1) For the cruise condition, one second, or normal pilot reaction time (whichever is greater); and
 - (2) For any other condition, normal pilot reaction time.

(e) For helicopters for which a VNE (power off) is established under § 29.1505(c), compliance must be demonstrated with the following requirements with critical weight, critical center of gravity, and critical rotor rpm:

(1) The helicopter must be safely slowed to VNE (power off), without exceptional pilot skill, after the last operating engine is made inoperative at power on VNE.

(2) At a speed of 1.1 VNE (power off), the margin of cyclic control must allow satisfactory roll and pitch control with power off.

6.4.2 Method of Compliance

The general requirements for control and for maneuverability are summarized in section (a) of the AC, which is largely self-explanatory.

Section (b) specifies flight at V_{NE} with critical weight, center of gravity (CG), rotor RPM, and power. Adequate cyclic authority must remain at V_{NE} for nose down pitching of the rotorcraft and for adequate roll control.

The helicopter will be flown between 1000 and 3000 feet above ground. The test altitude will be dependent on traffic and terrain and conditions close to sea level pressure are desirable. V_{NE} will be the value stated in the RFM for the test density altitude.

Qualitative measurement techniques (pilot opinion) will be used. The tests will include:

Takeoff

Climbing flight

Forward flight to V_{NE}, not more than the published RFM limit at MCP (maybe less than MCP)

Left & right 30 degree bank turns at V_{NE} and at MCP (maybe less than MCP)

Take-off & Landings (Power **on** only).

The aircraft should be easily controllable and adequate cyclic margins should exist throughout the flight test points. The difference between the mount and sensor / camera / light payload and the clean configuration is the evaluation point.

6.4.3 Findings

Satisfactory _____ Cruise Altitude HP _____ Fuel Gage Reading _____

6.5 FAR § 29.171 Stability: General

6.5.1 Applicable Regulation

➔ The rotorcraft must be able to be flown, without undue pilot fatigue or strain, in any normal maneuver for a period of time as long as that expected in normal operation. At least three landings and takeoffs must be made during this demonstration.

6.5.2 Method of Compliance

Compliance with the requirements of this section can often be obtained for the VFR condition without any specific or designated flight testing. Demonstrate that the aircraft can be satisfactorily flown throughout the maximum endurance capabilities of the rotorcraft including night and turbulence conditions if those are critical. This test should be conducted with minimum required systems in the aircraft and with minimum flight crew.

Compliance for this requirement will be evaluated throughout the test program.

6.5.3 Findings

Satisfactory _____

6.6 FAR § 29.251 Vibration

6.6.1 Applicable Regulation

➔ Each part of the rotorcraft must be free from excessive vibration under each appropriate speed and power condition.

6.6.2 Method of Compliance

This flight requirement may be both a qualitative and quantitative flight evaluation. Section 29.571(a) contains the flight load survey requirement that results in accumulation of vibration quantitative data. Section 29.629 generally requires quantitative data to show freedom from flutter for each part of the rotorcraft including control or stabilizing surfaces and rotors.

The aircraft should have a good track & balance for this evaluation. The airspeed should be evaluated at 20 kt increments out to the RFM VNE speed. Variations in rotor RPM expected in normal flight should be evaluated. Changes in vibration are best sensed in the cyclic and pedal controls. The stability of the camera/sensor image will be a good indicator.

The pilot will make a subjective evaluation of the difference between the mount and sensor / camera/ light payload and the clean configuration is the evaluation point.

Compliance with this requirement will be evaluated during testing of FAR §29.143 Controllability and Maneuverability.

6.6.3 Findings

Satisfactory _____

6.7 FAR § 29.773 Pilot Compartment View

6.7.1 Applicable Regulation

(a) Nonprecipitation conditions. For nonprecipitation conditions, the following apply:

➔ (1) Each pilot compartment must be arranged to give the pilots a sufficiently extensive, clear, and undistorted view for safe operation.

➔ (2) Each pilot compartment must be free of glare and reflection that could interfere with the pilot's view. If certification for night operation is requested, this must be shown by night flight tests.

(b) Precipitation conditions. For precipitation conditions, the following apply:

(1) Each pilot must have a sufficiently extensive view for safe operation—

(i) In heavy rain at forward speeds up to VH; and

(ii) In the most severe icing condition for which certification is requested.

(2) The pilots must have a window that—

(i) Is openable under the conditions prescribed in subparagraph (1) of this paragraph; and

(ii) Provides the view prescribed in that subparagraph.

6.7.2 Method of Compliance

The section outlines requirements for pilot view in fairly general terms. The aircraft was approved with the installed glareshield and instrument panel that meet the rules. Any additional equipment/monitors must be positioned so as not to limit or obstruct the pilot's field of view. There will be some cases where the installation will be temporary and for a unique mission and consideration should be given for these limited cases and time.

If night operations are expected with an operational system, a "dark cockpit" or night evaluation will be necessary to insure the glare/reflection will not interfere with the pilot duties. A limitation to the use at night is an option.

6.7.3 Findings

Satisfactory _____

6.8 FAR § 29.787 Cargo & Baggage Compartment

6.8.1 Applicable Regulation

Cargo and baggage compartments.

(a) Each cargo and baggage compartment must be designed for its placarded maximum weight of contents and for the critical load distributions at the appropriate maximum load factors corresponding to the specified flight and ground load conditions, except the emergency landing conditions of Sec. 29.561.

(b) There must be means to prevent the contents of any compartment from becoming a hazard by shifting under the loads specified in paragraph (a) of this section.

➔ [(c) Under the emergency landing conditions of Sec. 29.561, cargo and baggage compartments must--

(1) Be positioned so that if the contents break loose they are unlikely to cause injury to the occupants or restrict any of the escape facilities provided for use after an emergency landing; or

(2) Have sufficient strength to withstand the conditions specified in Sec. 29.561 including the means of restraint, and their attachments, required for the maximum authorized weight of cargo and baggage at the critical loading distribution.]

(d) If cargo compartment lamps are installed, each lamp must be installed so as to prevent contact between lamp bulb and cargo.

6.8.2 Method of Compliance

Amendment 29-31 adds two subparagraphs to § 29.787(c) which clarifies that cargo and baggage compartments should be designed to protect occupants from injury by the compartment contents during emergency landings. This may be done by location or by retention provisions.

The sensor/camera/light controllers and power supply must be located and secured in a position that will not endanger occupants in an emergency landing impact.

Consideration should be given to stowage and egress when filming in hovering flight. In some cases this might not be possible.

6.8.3 Findings

Comment: _____

Satisfactory _____

6.9 FAR § 29.1301 Function and Installation.

6.9.1 Applicable Regulation

Each item of installed equipment must--

- ➔ (a) Be of a kind and design appropriate to its intended function
- (b) Be labeled as to its identification, function, or operating limitations, or any applicable combination of these factors;
- (c) Be installed according to limitations specified for that equipment; and
- ➔ (d) Function properly when installed.

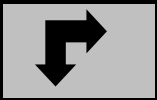
6.9.2 Method of Compliance

For optional equipment, the emphasis on functioning is rather limited compared to that for required equipment. The conditions under which the optional equipment is evaluated should be recorded in the report. The major emphasis for this type of equipment should be to ensure it does not interfere with the operation of systems that are required for safe operation of the rotorcraft, and that the failure modes are acceptable and do not create any hazards.

During flight operations, operate all avionics and electrical systems. Complete the matrix below. The matrix is laid out with the newly installed equipment listed at the top of the page and all aircraft systems listed down the left side of the page. Note any EMI or RFI either TO or FROM the installed equipment. Note any anomalies or EMI/RFI interference to other instruments or indications during all testing phases of flight.

Each item must be checked. Check off each block if no interference is noted. If interference is present during the test, DO NOT CHECK THE BOX and explain in Comments section at end of section. If applicable, note relevant conditions (i.e. frequencies, OBI selection, function modes) under which the interference occurred.

6.9.3 Findings

Interference?		Camera/Sensor/Light	Position Controller
Camera/Sensor/Light			
Position Controller			
VHF Comm 1			
VHF Comm 2			
VHF Comm 3			
VHF NAV 1			
VHF NAV 2			
ADF 1			
XPONDER 1			
Other Radios			
Audio 1			
Audio 2			
Standby Compass			
Engine Inst			
Fuel Gage			
Clock			
Voltmeter			
Ammeter			
Other			

EMI / RFI Comments:

Satisfactory _____

Signatures

General test findings _____

Pilot Signature _____

Mechanic/ Engineer _____

Other Flt Personnel Signature & Function
