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REVISION: n/c
AIRCRAFT: HUSKY A-1

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SUBJECT: Normal Category Gross Weight Increase to 1910 Pounds;
Restricted Operations at 2100 Pounds Gross Weight.

Engineering Data is FAA Approved

1. EFFECTIVITY

Limited Distribution.

Effective for: Christen Industries Inc. A-1 Husky serial numbers 1005, 1019, 1035, 1069, 1073 and 1119;
Aviat Inc. A-1 Husky serial numbers 1186 and 1307.

2. PURPOSE

The A-1 Husky aircraft listed above are eligible for alteration (using FAA Form 337) to allow Normal Category standard airworthiness operation up to a gross weight of 1910 pounds. The same aircraft when altered are also eligible for application (using FAA Form 337) for operation at gross weights up to 2100 pounds for USDA predator control purposes. Flight at weights between 1910 and 2100 pounds requires a Special Airworthiness Certificate for Restricted Operations. The requirements for the special airworthiness certificate include airframe modifications, increased maintenance and inspections and flight envelope restrictions.

3. BACKGROUND

Husky A-1 aircraft have previously operated under contract with the USDA unrestricted as public aircraft. Current legislation requires these aircraft to operate within the limits of their design certification, currently FAR Part 23 Normal Category at maximum gross of 1800 pounds. The information in this service bulletin details the steps necessary to prepare the aircraft for a gross weight increase for Normal Category Standard Airworthiness to 1910 pounds and for application for a Special Airworthiness Certificate for Restricted operations at gross weight up to a maximum of 2100 pounds. Per FAA Order 8130.2C the current A-1 type certificate and FAA approved information in this service bulletin along with FAA Form 337 becomes the equivalent of a restricted TC. Design parameters are specified by inclusion of the FAA approved Airplane Flight Manuals and Supplements for the aircraft.

4. COMPLIANCE

MANDATORY only for Gross Weight Increase and Special Airworthiness - Restricted Certificate.

Operation at gross weight up to 1910 pounds requires compliance with the modification requirements of part 5 below. Application for and operation under a special airworthiness certificate at gross weights between 1910 and 2100 pounds requires compliance with part 5 below plus compliance with the modification, operation, inspection and maintenance requirements of part 6 below.

5. ACCOMPLISHMENT INSTRUCTIONS - 1910 Pound Normal Category

A. Aircraft Configuration.

To qualify for a standard airworthiness gross weight increase to 1910 pounds gross weight the following changes to the Husky A-1 must be accomplished:

1) Horizontal Stabilizer

Aviat Kit No. A-1-538 (Stabilizer Strut Retrofit for Increased Gross Weight) must be installed to reinforce the horizontal stabilizer. The installation of the retrofit kit requires partial uncovering of the horizontal stabilizer leading edge, welded modification of the leading edge tube to install the new strut fittings and recovering of the leading edge.

Kit No. A-1-538 consists of the following components:

Manufacturer	Part No.	Description	Quantity
Aviat	36250-501	Stabilizer Strut Assembly	2
Aviat	36004-003	Bushing	2
	AN43-14A	Eye Bolt	2
	AN365-428	Nut, Self Locking	4
	AN4-7	Bolt	2
	AN960-416	Washer, Flat	6
	AN316-4R	Nut, Check	2
	AN161-32RS	Turnbuckle Fork	2

5. ACCOMPLISHMENT INSTRUCTIONS - 1910 Pound Normal Category

A. Aircraft Configuration. (cont.)

2) Main Landing Gear.

The optional main landing ski gear must be installed:

Main Gear			
Action	Part Number	Qty	Part
Install	Aviat 35017-503	1	A-1 Ski Gear - LH
	Aviat 35017-504	1	A-1 Ski Gear - RH

The main gear wheels, tires and brakes remain unchanged.

3) Tail landing gear.

The tail landing gear tailspring must be replaced with the A-1B tailspring which is a wider 4 leaf assembly:

Tail Gear			
Action	Part Number	Qty	Part
Remove	Univair 9-2-2360-001	1	Spring Assembly
	Aviat 30880-501	1	Tailwheel Spring Bracket
	AN6-23	1	Tailwheel Spring Forward Attach Bolt
	AN960-616	1	Spring Forward Attach Washer
	AN310-6	1	Spring Forward Attach Nut
	AN4-16A	2	Tailwheel Spring Aft Attach Bolts
	AN960-416	2	Spring Forward Attach Washer
	AN365-428	2	Spring Forward Attach Washer
	AN380-3-3	2	Spring Forward Attach Nut
	Scott 3423-2	1	Spacer
	Scott 3241-2	1	Bushing
Install	Aviat 37319-001	1	A-1B Spring Assembly
	Aviat 30880-501	1	Tailwheel Spring Bracket
	AN6-25	1	Tailwheel Spring Forward Attach Bolt
	AN960-616	1	Spring Forward Attach Washer
	AN310-6	1	Spring Forward Attach Nut
	AN4-20A	2	Tailwheel Spring Aft Attach Bolts
	AN960-416	2	Spring Forward Attach Washer
	AN365-428	2	Spring Forward Attach Washer
	AN380-3-3	2	Spring Forward Attach Nut
	Scott 3241-3S	1	Spacer
	Scott 3241-2	1	Bushing

The tailwheel and centering spring assemblies are unchanged and may be reused.

5. ACCOMPLISHMENT INSTRUCTIONS - 1910 Pound Normal Category

A. Aircraft Configuration (cont.)

3) Airspeed Indicator.

The airspeed indicator installed in the aircraft must be marked per the approved Husky A-1 Airplane Flight Manual and Husky A-1 Airplane Flight Manual Supplement for 1910 POUNDS GROSS WEIGHT.

B. Weight and balance

The A-1 weight and balance is affected by the following amounts.

Item	Weight Delta (lbs.)	Arm (in)	Moment (in lb)
Tail Spring	+2.8	254.0	+711
Stabilizer Strut Retrofit	+1.72	232.5	+400
Main Landing Gear	+4.2	61.56	+259
Total	+8.72		+1370

C. Flight Manual and Operating Information

The A-1 configured for operation at 1910 pounds is the functional equivalent of the Husky A-1A. The approved operating data for the Husky A-1 at 1910 pounds is contained in the Husky A-1 Airplane Flight Manual plus the approved Husky A-1 Airplane Flight Manual Supplement for 1910 POUNDS GROSS WEIGHT. These documents are available from Aviat Aircraft Inc. only for the aircraft serial numbers listed in the effectivity section of this service bulletin.

5. ACCOMPLISHMENT INSTRUCTIONS - 1910 Pound Normal Category**D. Life-Limited Components.**

The A-1 configured for operation at 1910 pounds gross weight is the functional equivalent of the Husky A-1A which has no life-limited components. The Husky A-1 therefore has no life-limited components.

E. Documentation

Configuring the Husky A-1 for operation at 1910 pounds gross weight is a major alteration and requires completion and FAA approval of FAA Form 337. Application for a standard airworthiness certificate at increased gross weight requires:

1. Configuration of the aircraft and documentation completed per the instructions contained in this section of this service bulletin.
2. Inspection per 8120-10 Request for Conformity issued from Denver FAA ACO (Project No. AT1780DE-A) to verify compliance of aircraft with configuration prescribed in this service bulletin.
3. Execution of FAA Form 337 describing work completed. "FAA approved Aviat Aircraft Inc. Service Bulletin 14" may be referenced as a basis of approval.
4. Attachment of revised operating limitations consisting of the approved Husky A-1 Airplane Flight Manual and Husky A-1 Airplane Flight Manual Supplement for 1910 POUNDS GROSS WEIGHT.

Documents listed in item 3 and 4 above are available from Aviat Aircraft Inc. only for the aircraft serial numbers listed in the effectivity section of this service bulletin. This service bulletin and data shall not be used as an approval basis for increased gross weight certification of the Husky A-1 without the concurrence of Aviat Aircraft Inc. and the official documentation listed above.

6. ACCOMPLISHMENT INSTRUCTIONS - 2100 Pound Restricted Operation**A. Airplane Configuration.**

For issuance of a Special Airworthiness Restricted certificate for operation at 2100 pounds gross weight the Husky A-1 airplane must be in the configuration as described in Section 5 of this service bulletin for standard airworthiness operation at 1910 pounds gross weight. All changes listed in Section 5 must be accomplished and approved before the aircraft is eligible for Special Airworthiness - Restricted certification.

B. Airplane Flight Manual and Operational Data.

Operation at increased gross weight requires restricted loading and airspeed limits which are listed in the FAA approved AIRPLANE FLIGHT MANUAL SUPPLEMENT for A-1 2100 POUND GROSS WEIGHT which is available from Aviat Aircraft Inc. only for the aircraft serial numbers listed in the effectivity section of this service bulletin. The flight manual supplement must be carried in the aircraft at all times while registered for restricted operation.

C. Repetitive Inspections and Maintenance.

Increased inspection and maintenance is required while the aircraft is licensed for Special Airworthiness Restricted Operation. The following requirements are in addition to the inspection and maintenance required for the standard airworthiness A-1 Husky as presented in the HUSKY A-1 and A-1A AIRCRAFT Instructions for Continued Airworthiness.

1) Airplane Inspection Periods

One hundred hour inspections are required while the aircraft is registered for Special Airworthiness Restricted Operation. This inspection is a complete check of the aircraft and its systems and must be accomplished by a qualified aircraft and powerplant mechanic. The Special Airworthiness Restricted Operation 100 hour inspection schedule follows the requirements for the Standard Airworthiness aircraft contained in Section II of the basic HUSKY A-1 and A-1A AIRCRAFT Instructions for Continued Airworthiness.

An annual inspection is required to keep the Airworthiness Certificate in effect. While licensed in Special Airworthiness Restricted Operation the requirements of the annual inspection must be performed every 12 months or 1000 hours, whichever comes first. The annual inspection consists of the requirements of the 100 hour inspection schedule plus the added requirements of Section 6.C.3 of this service bulletin and must be approved by a mechanic holding an Inspection Authorization or by an approved repair station.

6. ACCOMPLISHMENT INSTRUCTIONS - 2100 Pound Restricted Operation**C. Repetitive Inspections and Maintenance****1) Airplane Inspection Periods (cont.)**

Special Airworthiness Restricted Operation licensing of the Husky A-1 aircraft requires pre and post-licensing inspection of the aircraft. Prior to licensing for Special Airworthiness Restricted Operation a complete annual/1000 hour inspection as described above is required. The date and hours on the airframe at the time of this inspection set the start of the recurring special airworthiness annual/1000 hour inspection period. At 6 year intervals while under special airworthiness certification the aircraft must be returned to Aviat Aircraft Inc. for a factory performed special airworthiness annual/1000 hour inspection. When the aircraft is removed from special airworthiness certification and returned to standard airworthiness registration, the aircraft must be returned to Aviat Aircraft Inc. for a factory performed special airworthiness annual/1000 hour inspection prior to returning the aircraft to Standard Airworthiness only licensing and resumption of standard airworthiness Instructions for Continued Airworthiness.

2) 100 Hour Inspection

No change from the Standard Airworthiness A-1 100 hour inspection as described in the FAA-approved HUSKY A-1 and A-1A AIRCRAFT INSTRUCTIONS FOR CONTINUED AIRWORTHINESS.

3) Special Airworthiness Annual/1000 Hour Inspection

The special airworthiness annual/1000 hour inspection consists of the standard airworthiness A-1 annual inspection plus the following 18 requirements:

1. Inspect the wing root attachment fittings and spar ends for signs of cracks and deformation.
2. Visually inspect the wing spars at the wing strut attachments, the wing strut and attachment fittings for signs of cracks and deformation. Remove and replace attachment hardware per section 6.D with new unused hardware. Inspect the removed hardware for signs of wear, cracks or deformation. Destroy removed hardware to prevent reuse.
3. Visually inspect the wing flap hinges and rear spar attachment points for wear and damage.
4. Visually inspect the aileron hinges and attachment points for wear and damage.
5. Visually inspect the fuel tank supports and straps for cracks or deformation or looseness. Check the clamping bolt for visible stretch and check the fuel tank surface for wear at the straps.

6. ACCOMPLISHMENT INSTRUCTIONS - 2100 Pound Restricted Operation**C. Repetitive Inspections and Maintenance****3) Special Airworthiness Annual/1000 Hour Inspection (cont.)**

6. Inspect the internal wing drag and anti-drag wires for proper tension.
7. Inspect wing ribs for proper attachment to spars. Fit should be tight with no play or gaps at the fasteners.
8. Inspect fabric for proper attachment to ribs and wing structure.
9. Inspect landing gear frames and attach points for cracked welds or tubing. Remove and replace attachment hardware per section 6.D with new unused hardware. Inspect removed hardware for evidence deformation or abnormal wear. Removed hardware must be destroyed to prevent reuse.
10. Inspect landing gear bungee truss structure for cracks or deformation.
11. Inspect tail surfaces and attachment points. Visually inspect the fuselage upper longerons and welds in the area of the attachment of the horizontal stabilizer. Remove and replace attachment hardware with new unused hardware per section 6.D. Inspect removed hardware for signs of deformation or abnormal wear. Removed hardware must be destroyed to prevent reuse.
12. Inspect tail surfaces struts for cracks or deformation.
13. Inspect the tailwheel and tailspring and attachment for condition and alignment. Remove and replace the tailwheel and tailspring attachment hardware per section 6.D with new unused hardware. Inspect the removed hardware for signs of deformation or abnormal wear. Removed hardware must be destroyed to prevent reuse.
14. Inspect the aft fuselage longerons for evidence of damage or distortion. Inspect the fabric on the aft fuselage for looseness or other signs of change in the geometry of the longerons or their supporting diagonal braces.
15. Inspect the engine mount and attachments for integrity, alignment and damage.
16. Inspect the overall exterior of aircraft for any noticeable distortion or abnormal paint or fabric deterioration.
17. If any serious defects are found, an FAA Form 8010-4 malfunction or defect report must be completed and filed with the Flight Standards District Office having jurisdiction over the aircraft's operation.
18. The certified mechanic performing the inspection must make an entry in the aircraft logbook stating the inspection was completed and if the aircraft was found to be in an airworthy or unairworthy condition as appropriate.

Items and procedures for the normal A-1 annual inspection not listed above are still included in the annual/1000 hour inspection.

6. ACCOMPLISHMENT INSTRUCTIONS - 2100 Pound Restricted Operation**C. Repetitive Inspections and Maintenance****4) Inspection Prior to Licensing for Special Airworthiness Restricted Operation**

Since standard airworthiness inspection and maintenance does not track the Special Airworthiness Restricted Operation life-limited parts, all life limited parts listed in section 6.D must be replaced and logged prior to licensing the aircraft for Special Airworthiness Restricted Operation. The annual/1000 hour inspection procedures described above must be performed prior to licensing the aircraft for Special Airworthiness Restricted Operation. Unairworthy conditions and undocumented type design deviations must be corrected prior to licensing for Special Airworthiness Restricted Operation.

5) Inspection Prior to Removing Aircraft From Special Airworthiness Restricted Operation

When removing an aircraft from Special Airworthiness Restricted Operation licensing or after 6 years of service in Special Airworthiness licensing, the aircraft must be returned to Aviat Aircraft Inc. for a factory performed special airworthiness annual/1000 hour inspection regardless of length of time since the last special airworthiness annual/1000 hour inspection. Standard Airworthiness inspection and maintenance does not track the Special Airworthiness Restricted Operation life-limited parts, therefore all life-limited parts listed in section 6.D must be replaced prior to returning the aircraft to Standard Airworthiness only service. Unairworthy conditions and undocumented type design deviations must be corrected prior to returning the aircraft to Standard Airworthiness usage.

6. ACCOMPLISHMENT INSTRUCTIONS - 2100 Pound Restricted Operation

D. Life-Limited Parts

The following hardware must be removed and replaced with new unused hardware per section 6.C at each annual/1000 hour inspection. Removed hardware must be destroyed following inspection to prevent reuse.

Structure	Item	Qty	Description
Front Spar to Lift Strut Attachment	AN5-25A	2	Bolt
	AN960-516	2	Washer
	AN365-524	2	Nut
Horizontal Stabilizer Attachment	AN4-32A	4	Bolt
	AN960-416	4	Flat Washer
	AN365-428	4	Self-Locking Hex Nut
Horizontal Stabilizer Strut Attachment	AN43-14A	2	Eye Bolt
	AN4-7	2	Bolt
	AN4-6A	2	Bolt
	AN365-428	6	Self-Locking Hex Nut
	AN960-416	8	Washer, Flat
Main Landing Gear Attachment	AN6-34	4	Bolt
	AN310-6	4	Castle Nut
	AN380-3-3	4	Cotter Pin
	AN960-616	4	Flat Washer
Tailspring Attachment Forward	AN6-25	1	Bolt
	AN960-616	1	Washer
	AN310-6	1	Castle Nut
	AN380-3-3	1	Cotter Pin
Tailspring Attachment Aft	AN4-20A	2	Bolt
	AN960-416	4	Washer
	AN365-428	2	Self-locking Hex Nut
Tailwheel Attachment	AN7-21	1	Bolt
	AN960-716	1	Washer
	AN310-7	1	Castle Nut
	AN380-3-3	1	Cotter Pin

6. ACCOMPLISHMENT INSTRUCTIONS - 2100 Pound Restricted Operation**E. Documentation**

Configuring the Husky A-1 for special airworthiness restricted operation at 2100 pounds gross weight is a major alteration and requires completion and FAA approval of FAA Form 337. Application for a special airworthiness restricted certificate requires the following documentation:

1. Alteration of the aircraft and documentation completed per the instructions contained in this section of this service bulletin.
2. Refer to compliance with 8120-10 Request for Conformity completed for Section 5 paragraph E subparagraph 2 of this service bulletin for aircraft configuration conformity.
3. Execution of FAA Form 337 describing work completed. "FAA approved Aviat Aircraft Inc. Service Bulletin 14" may be referenced as a basis of approval.
4. Attachment of revised operating limitations consisting of the approved Husky A-1 Airplane Flight Manual, the approved Husky A-1 Airplane Flight Manual Supplement for 1910 POUNDS GROSS WEIGHT, and the FAA approved AIRPLANE FLIGHT MANUAL SUPPLEMENT for A-1 2100 POUND GROSS WEIGHT.

Documents listed in items 3 and 4 above are available from Aviat Aircraft Inc. only for the aircraft listed in the effectivity section of this service bulletin. This service bulletin and data shall not be used as an approval basis for special airworthiness restricted certification of the Husky A-1 without the concurrence of Aviat Aircraft Inc. and the official documentation listed above.