

# AVIAT AIRCRAFT INC.

AIRPLANE FLIGHT MANUAL

# HUSKY A-1B

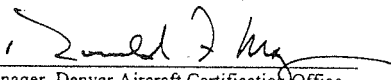
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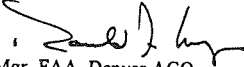
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LOG OF REVISIONS

REVISION LETTER	PAGES AFFECTED	DESCRIPTION OF CHANGE	APPROVAL AND DATE
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Rev A	i, ii, iii, iv, 1, 8, 12, 13, 24, 25	Add Page effectivity sheet, Change Flap extension speed from 73 mph to 80 mph	 Mgr. FAA, Denver ACO Date: 4-29-98

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SECTION I OPERATING LIMITATIONS

A. AIRSPPEEDS

Airspeed Limitations:	<u>IAS</u>
Maximum flap operation ( $V_{FE}$ ) . . . . . (Do not exceed in any operation with flaps extended.)	80 MPH
Maneuvering speed ( $V_A$ ) . . . . . (Above this speed, full control surface deflection not permitted.)	113 MPH
Maximum structural cruising speed ( $V_{NO}$ ) . . . . . (Do not exceed this speed except in smooth air, and then only with caution.)	119 MPH
Never exceed speed ( $V_{NE}$ ) . . . . . (Do not exceed this speed in any operation.)	153 MPH

Airspeed Indicator Markings:

IAS

Flap extended speed (white arc) from stall speed . . . . .	53 MPH
to maximum flap extended speed . . . . .	80 MPH
Normal operating range (green arc) from stall speed . . . . .	58 MPH
to maximum normal operating speed . . . . .	122 MPH
Caution range (yellow arc) from maximum normal operating speed . . . . .	122 MPH
to never exceed speed (red radial) . . . . .	153 MPH
Never exceed speed (red radial) . . . . .	153 MPH

B. POWERPLANT LIMITS

For O-360-C1G or O-360-A1P Lycoming engine and Hartzell HC-C2YK-1BF/F7666A propeller.

Propeller diameter . . . . .	72 inches minimum, 76 inches maximum.
Propeller Pitch Settings (measured at 75% of semi-span) . . . . .	High Pitch 29.0° ± 1.0°
Low Pitch 11.7° ± 0.2°	
Maximum Continuous Power . . . . .	180 H.P. at 2700 RPM
Normal Operating Power . . . . .	135 H.P. at 2400 RPM
Minimum Fuel Grade . . . . .	100/100 LL Octane

OIL PRESSURE

Minimum (red radial) . . . . . 25 PSI

Caution Range (yellow arc) . . . . . from 25 PSI  
to 60 PSI

Normal Range (green arc) . . . . . from 60 PSI  
to 90 PSI

Caution Range (yellow arc) . . . . . from 90 PSI  
to 100 PSI

Maximum (red radial) . . . . . 100 PSI

OIL TEMPERATURE

Maximum (red radial) . . . . . 245 Deg. F./118 Deg. C.

Normal range (green arc) . . . . . from 100 Deg. F./38 Deg. C.  
to 245 Deg. F./118 Deg. C.

TACHOMETER

Recommended idle . . . . . 700 RPM

Normal Range (green arc) . . . . . from 500 RPM  
to 2000 RPM  
and from 2250 RPM  
to 2700 RPM

Red Arc . . . . . from 2000 RPM  
to 2250 RPM  
Continuous operation between 2000 to 2250 RPM prohibited.

Do Not Exceed (red radial) . . . . . 2700 RPM

CYLINDER HEAD TEMPERATURE (red radial) . . . . . 500° F

C. WEIGHTS

Maximum Gross Weight (normal category) . . . . . 2000 LBS

Design Empty Weight dry, no fuel, no oil . . . . . 1190 LBS

NOTE: Datum, FS 0.00 is located 60.0 inches  
forward of wing leading edge.

Maximum Oil . . . . . 2 US GALS 15 LBS

Fuel Capacity . . . . . 52 US GALS 312 LBS

Pilot . . . . . Actual Weight

Passenger . . . . . Actual Weight

Baggage, Maximum . . . . . 50 LBS

Design Useful Load . . . . . 810 LBS

(See Section V, "Weight and Balance", Model A-1B Airplane for allowable weight  
and center of gravity combinations, and detail loading instructions.)

Weight and Center of Gravity Limits (Normal Category)

Most forward Limit . . . . . FS 71.0 at 1530 LBS

Most forward Limit at Maximum Gross Weight . . . . . FS 73.6 at 2000 LBS

Most rearward at Maximum Gross Weight or Less . . . . . FS 80.0 at 2000 LBS

D. FLIGHT LOAD FACTORS (Normal Category)

Positive Limit, Flaps Up . . . . . +3.8

Negative Limit, Flaps Up . . . . . -1.52

Positive Limit, Flaps Down . . . . . +2.0

Negative Limit, Flaps Down . . . . . -1.0



E. FLIGHT LIMITATIONS

This airplane must be operated as a day and night VFR/IFR airplane.  
Flight into known icing conditions is prohibited.  
Acrobatic maneuvers, including spins, are prohibited.  
Demonstrated crosswind velocity is 15 MPH

F. USABLE FUEL

Of the 52 US gallons total fuel capacity, 50 gallons are usable during all normal flight conditions.

Unusable Fuel, normal flight.....2 US gallons.

G. MARKINGS AND PLACARDS

The following placards are installed in the airplane:

At fuel selector handle:

“MAIN FUEL SELECTOR”  
OFF  
ON  
50 GALS USABLE

Adjacent to airspeed indicator:

“DESIGN MANEUVERING SPEED 113 MPH IAS”  
“DEMONSTRATED CROSSWIND VELOCITY 15 MPH”

At rear of baggage compartment:

“MAXIMUM BAGGAGE 50 LBS”

On left side of cockpit immediately aft of pilot's throttle:

“THE MARKINGS AND PLACARDS INSTALLED ON THIS AIRPLANE CONTAIN OPERATING LIMITATIONS WHICH MUST BE COMPLIED WITH WHEN OPERATING THIS AIRPLANE IN THE NORMAL CATEGORY. OTHER OPERATING LIMITATIONS WHICH MUST BE COMPLIED WITH WHEN OPERATING THIS AIRPLANE IN THIS CATEGORY ARE CONTAINED IN THE AIRPLANE FLIGHT MANUAL. OPERATIONS ARE LIMITED TO DAY AND NIGHT VFR AND/OR IFR CONDITIONS. FLIGHT INTO KNOWN ICING CONDITIONS PROHIBITED. ACROBATIC MANEUVERS, INCLUDING SPINS, PROHIBITED”

Adjacent to each main fuel filler neck:

**"FUEL 100/100LL OCTANE 25 GALS USABLE"**

On right side panel next to the alternate static source valve:

**"OPEN FOR ALTERNATE STATIC AIR"**

On lower forward instrument panel:

**"SOLO FRONT SEAT ONLY"**

On lower forward instrument panel:

**"NO SMOKING"**

Next to alternate static source valve:

**"WHEN USING THE ALTERNATE STATIC AIR SOURCE THE FOLLOWING  
SHOULD BE ADDED TO THE ALTIMETER READING**

70 MPH....20 FT 110 MPH....100 FT  
90 MPH....80 FT 130 MPH....120 FT

**CLOSE DOOR AND WINDOWS WHEN USING ALTERNATE STATIC AIR"**

NOTE: No airspeed correction necessary while using alternate static source.

Next to Tachometer

**"AVOID CONTINUOUS OPERATION  
BETWEEN 2000 - 2250 RPM"**

MAXIMUM PASSENGER SEATING CONFIGURATION

One person rear seat.

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I. KINDS OF OPERATING EQUIPMENT LIST (KOEL)

This airplane may be operated in day or night VFR, day or night IFR, when approved equipment is installed and operable. Flight into known or forecast icing conditions is prohibited.

The following equipment list identifies the systems and equipment upon which type certification for each kind of operation was predicated. Unless the airplane is operated in accordance with a current Minimum Equipment List (MEL) issued by the FAA, the following systems and items of equipment must be installed and operable for the particular kind of operation indicated.

	VFR Day	VFR Night	IFR Day	IFR Night
<u>Electrical Power</u>				
1- Battery	1	1	1	1
2- Alternator	1	1	1	1
3- Ammeter	1	1	1	1
4- Alternator Indicator Lights	1	1	1	1
<u>Flight Controls</u>				
1- Trim Indicator (Elevator)	1	1	1	1
2- Stall Warn Horn	1	1	1	1
<u>Fuel</u>				
1- Fuel Quantity Indicator	2	2	2	2
2- Fuel Primer	1	1	1	1
<u>Lights</u>				
1- Cockpit Map (White)	0	1	0	1
2- Instruments Flood Red (Notes)	0	1	0	2
3- Anti-collision	0	2	0	2
4- Landing Light	0	1	0	1
5- Taxi Light	0	0	0	0
6- Position Lights	0	3	0	3
Note: Post Lights or Two floods, one per side required for IFR night.				
<u>Navigation</u>				
1- Sensitive Altimeter	1	1	1	1
2- Airspeed	1	1	1	1
3- Magnetic Compass	1	1	1	1
4- Attitude Indicator (Gyro Stabilized)	0	0	1	1
5- Direction Indicator (Gyro Stabilized)	0	0	1	1
6- Turn and Bank or Turn Coordinator	0	0	1	1
7- Vertical Speed Indicator	0	0	1	1
8- VHF Comm	0	0	1	1
9- VHF Nav or LF Nav	0	0	1	1

I. KINDS OF OPERATING EQUIPMENT LIST (KOEL) (continued)

	VFR Day	VFR Day	IFR Night	IFR Night
<u>Vacuum System</u>				
1- Suction Gauge	0	0	1	1
2- Vacuum Pump	0	0	1	1
<u>Engine Indicators</u>				
1- Tachometer	1	1	1	1
2- Manifold Pressure Gauge	1	1	1	1
3- Cylinder Head Temperature Gauge (CHT)	1	1	1	1
<u>Engine Oil</u>				
1- Oil Temperature Indicator	1	1	1	1
2- Oil Pressure Indicator	1	1	1	1

Note 1 The zeros (0) used in the above list mean that the equipment and/or system was not required for type certification for that kind of operation.

Note 2: The above system and equipment list is predicated on a crew of one pilot.

Note 3: Equipment and/or systems in addition to those listed above may be required by operating regulations (FAR Part 135).

Note 4: The above system and equipment list does not include all specific flight instruments and communications/navigation equipment required by FAR Parts 91 and 135 operating requirements.

SECTION II      NORMAL PROCEDURES

A. AIRSPEDS

Vx-Best angle of climb (sea level) . . . . .	67	MPH
Best angle of climb (10,000 ft.) . . . . .	70	MPH
Vy-Best rate of climb (sea level) . . . . .	74	MPH
Best rate of climb (10,000 ft.) . . . . .	68	MPH
Va-Maneuvering speed . . . . .	113	MPH
Vfe-Maximum speed, flaps extended . . . . .	80	MPH
Vne-Never exceed speed . . . . .	152	MPH

For best engine cooling while climbing, use 74 MPH at seal level with a straight line variation to 68 MPH at 10,000 ft.

B. PRE-FLIGHT

1. Visually check aircraft for
  - a. Fabric . . . . . General Condition
  - b. Screws and cowl fasteners . . . . . Secure
  - c. Tires . . . . . Proper Inflation
  - d. Brakes . . . . . Secure
  - e. Pitot - static tube ports . . . . . Check for Blockage
  - f. Tie-downs (wings-tail) . . . . . Disconnect
2. Visually check fuel level in tanks
  - a. Clear fuel strainer and tank sumps of possible water and sediment.
  - b. Fuel caps . . . . . Secure
  - c. Fuel vent openings . . . . . Unobstructed
3. Control surfaces . . . . . Check Freedom of Movement and Security
4. Engine . . . . . General Condition & Security
  - a. Oil . . . . . Check Level (7 - 8 qts)
  - b. Propeller and Spinner . . . . . Check for Nicks, Cracks, Security and Oil Leaks
  - c. Carburetor air inlet . . . . . Check for Obstructions
  - d. Cowl openings . . . . . Check for Obstructions
5. In cold weather remove any accumulations of frost, ice, or snow.
6. If night flight is planned, check all lights.

C. BEFORE STARTING ENGINE

1. Pre-flight ..... Complete
2. Flight Controls ..... Free and Correct
3. Seat Belts, Shoulder Harness ..... Adjust and Lock
4. Fuel Valve ..... On
5. All Electrical Switches ..... Off
6. Brakes ..... Test and Set  
The parking brake controls consist of small metal tabs on the top of each brake master cylinder on the rear pedals. To set: 1. Apply pressure to brake pedals.  
2. Lift up on tabs. 3. Release pressure to brake pedals 4. The tabs should lock the pistons in place. To release: 1. Apply pressure to brake pedals. 2. Release pressure to brake pedals.

D. STARTING ENGINE

1. Mixture ..... Rich
2. Carburetor Heat ..... Cold
3. Propeller Control ..... Full Increase (In)
4. Master Switch ..... On
5. Throttle ..... Open 1/4 Inch
6. Prime (Depending on temperature) ..... 1 to 6 strokes (then secure primer)  
(None required when engine is warm.)
7. Propeller Area ..... Clear
8. Ignition Switch ..... Start (Release when engine starts)
9. Oil Pressure ..... Check
10. Alternator Field Switch ..... On

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M. START ENGINE USING EXTERNAL BATTERY POWER (OPTIONAL GROUND POWER PLUG)

CAUTION

Engine start with external power must only be accomplished with the assistance of a qualified ground crewman.

1. Pre-flight . . . . . Complete
2. Seat belts and shoulder harnesses. . . . . Adjust and lock
3. Fuel valve. . . . . On
4. All electrical switches. . . . . Off

CAUTION

Insure that all electrical switches, radios, and avionics are off prior to connecting external battery power. Failure to do so may result in damage to electronic equipment.

5. Battery access panel. . . . . Remove for access to ground power plug
6. Brakes. . . . . Test and set
7. Mixture. . . . . Rich
8. Carburetor heat. . . . . Cold
9. Propeller Control. . . . . Full Increase (In)
10. External battery power. . . . . Connect
11. Master Switch. . . . . On
12. Throttle. . . . . Open 1/4 inch
13. Prime (depending on temperature). . . . . 1 to 6 strokes (then secure primer)
14. Propeller area. . . . . Clear
15. Ignition switch. . . . . Start (release at engine start)
16. Oil Pressure. . . . . Check
17. External Power. . . . . Disconnect
18. Alternator field switch. . . . . On
19. Battery access panel. . . . . Secure

E. BEFORE TAKE-OFF

1. Cabin Doors. . . . . Latched
2. Flight Controls. . . . . Free and Correct
3. Elevator Trim. . . . . Half way between Full Nose Up and Neutral  
can be used for all weights and CG locations.
4. Fuel Valve. . . . . On
5. Mixture. . . . . Full Rich (In)

6. Brakes ..... Set
7. Throttle ..... 1900 RPM
  - a. Magnetos ..... Check  
(RPM drop should not exceed 150 RPM on either magneto  
or 50 RPM between magnetos. Lean if above 5000' MSL.)
  - b. Carburetor Heat ..... Check RPM drop.
  - c. Engine Instruments ..... Check  
Ammeter ..... Check Battery Charging  
Suction Gauge (vacuum system installed) ..... (4½ to 5½ " Hg)
8. Throttle ..... 1700 RPM
  - a. Prop Governor ..... Check  
Move propeller control through complete range and return to high RPM
9. Flight Instruments and Radios ..... Set
10. Carburetor Heat ..... Cold

F. TAKE-OFF

Normal Takeoff

1. Wing Flaps ..... 0°
2. Propeller Control ..... Full Increase (In)
3. Throttle ..... Full Open
4. Elevator ..... ¼ Up From Neutral  
(Hold Tail Low)
5. Lift-Off ..... 55 to 60 MPH
6. Climb ..... 74 MPH

Crosswind Takeoff

1. Wing Flaps ..... 0°
2. Propeller Control ..... Full Increase (In)
3. Throttle ..... Full Open
4. Elevator ..... ¼ Up From Neutral  
(Hold Tail Low)



5. Ailerons..... Into Wind
6. Lift-Off..... 55 to 60 MPH  
Keep upwind wing low and nose aligned with runway
7. Climb..... 74 MPH

Maximum Performance Takeoff

1. Wing Flaps..... 30°
2. Trim..... Half way between Full Nose Up and Neutral  
can be used for all weight and CG locations
3. Propeller Control..... Full Increase (In)
4. Throttle..... Full Open
5. Brakes..... Release
6. Elevator..... ½ Up From Neutral  
(Hold Tail on Ground)
7. Lift Off..... 53 to 58 MPH
8. Climb..... 65 MPH

G. CRUISE

1. Propeller control..... 2250 to 2700 RPM
2. Throttle..... For Desired Manifold Pressure
3. Mixture..... Lean
  - a. Move from rich toward lean (pull).
  - b. Continue until engine roughness is noted.
  - c. Enrich until engine runs smoothly and power regained (25° rich of peak EGT)

NOTE: For best economy 2350 RPM at 20 inches manifold pressure,  
lean mixture as described in step 3.

H. BEFORE LANDING

1. Mixture..... Rich
2. Carburetor Heat..... On

3. Throttle..... Close  
(Or as needed for approach)
4. Flaps.....As desired  
(see Section IV - F)
5. Airspeed.....68 MPH for 30° Flaps  
75 MPH for 0° Flaps
6. Propeller Control..... Full Increase

NOTE: A spring type trim system is installed, use trim to help reduce up elevator force while landing.

I. BALKED LANDING

1. Throttle..... Open
2. Propeller..... Full Increase (In)
3. Carburetor Heat..... Cold
4. Flaps..... slowly retract to 0°
5. Climb Airspeed (Vx)..... 74 MPH (Sea Level)

J. LANDING

Normal Landing

1. Airspeed..... Below 80 MPH
2. Flaps.....As desired  
(see Section IV-F)
3. Trim..... Adjust for 68 MPH for 30° Flaps  
75 MPH for 0° Flaps
4. Power..... Idle (Or As Required)
5. Touchdown..... Tail Down Landing - Tail Wheel First  
Wheel Landing - Main Wheels First
6. Landing Roll..... Tail Down Landing - Elevator Up (Full Back)  
Wheel Landing - Slowly lower tail to runway, then Full aft stick
7. Brake..... As Required

Short Field Landing

1. Airspeed. . . . . 68 MPH
2. Flaps. . . . . 30°
3. Trim. . . . . Adjust (Full Nose Up)
4. Power. . . . . As Required
5. Touchdown. . . . . Tail Wheel First
6. Landing Roll . . . . . Elevator Full Back
7. Flaps . . . . . Retract to 0° After Touchdown  
For maximum Brake Effectiveness
8. Brake . . . . . Apply Heavily

Cross Wind Landing

1. Airspeed. . . . . 68 MPH for 30° Flaps  
75 MPH for 0° Flaps
2. Flaps . . . . . As Desired  
(Recommended 30°)
3. Power. . . . . As Required
4. Ailerons--Rudder. . . . . On Short Final Use Ailerons  
to Keep Upwind Wing Low,  
Rudder to Hold Runway Alignment
5. Touchdown. . . . . Tail Wheel First  
(Do not Touch Down In A Slip)
6. Landing Roll. . . . . Use Aileron to Keep Upwind  
Wing Down, Rudder and Brakes  
(If needed) for Directional Control
7. Flaps. . . . . Retract to 0°

K. AFTER LANDING

1. Flaps ..... 0°
2. Carburetor Heat ..... Cold

L. SECURING AIRCRAFT

1. Brakes ..... Set
2. Radios, Electrical ..... Off
3. Mixture ..... Idle Cut Off
4. Ignition Switch ..... Off
5. Master Switch ..... Off
6. Secure Aircraft ..... Tie Down

SECTION III EMERGENCY PROCEDURES

MAXIMUM GLIDE DISTANCE SPEED ..... (NO FLAPS) 73 MPH  
LOWEST RATE OF DESCENT SPEED ..... (NO FLAPS) 68 MPH

A. ENGINE FAILURE AFTER TAKE-OFF

1. Lower nose to maintain airspeed.  
In most cases, landing should be planned straight ahead
2. Airspeed ..... 75 MPH (No Flaps)  
68 MPH (30° Flaps)  
(30° Flaps Recommended)
3. Mixture ..... Cut Off
4. Fuel Valve ..... Off
5. Master Switch ..... Off

B. ENGINE FAILURE DURING FLIGHT

1. Establish glide at 73 MPH  
While gliding toward a suitable landing area, an effort should be made to identify cause of failure. If time permits, proceed as follows:
2. Airspeed ..... 73 MPH
3. Propeller ..... Full Increase (In)
4. Carburetor Heat ..... Hot
5. Fuel Valve ..... On
6. Mixture ..... Rich
7. Ignition Switch ..... Both  
(Or START if propeller is not windmilling)

NOTE: If the engine cannot be restarted, a forced landing without power must be executed.

C. FORCED LANDING WITH NO POWER

1. Airspeed ..... 75 MPH (No Flaps)  
68 MPH (30° Flaps)
2. Mixture ..... Idle Cut-Off
3. Propeller ..... Full Decrease (Out)
4. Fuel Shutoff ..... Off
5. Ignition Switch ..... Off
6. Wing Flaps ..... As Required  
(30° Recommended)
7. Master Switch ..... Off
8. Door ..... Unlatch
9. Touch Down ..... Tail Wheel First
10. Brakes ..... Apply Heavily

D. FIRES

1. Engine Fire -- Starting

- a. Continue cranking in an attempt to start the engine.
- b. If starts is successful, run engine at 1700 RPM for a few minutes before shutting down to inspect damage.
- c. If starting is unsuccessful continue cranking engine for two to three minutes:
  1. Mixture ..... Cut Off
  2. Throttle ..... Full Open
  3. Obtain fire extinguisher
- d. When ready to extinguish fire:
  1. Discontinue cranking
  2. Master, Ignition Switch ..... Off
  3. Fuel Valve ..... Off
- e. Make a thorough inspection before conducting another flight.

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D. FIRES (continued)

2. Engine Fire On Take-Off

a. Before Lift-Off

1. Throttle. . . . . Idle
2. Brakes. . . . . Apply Heavily
3. Mixture. . . . . Cut-Off
4. Switches (after engine stops). . . . . Off

b. After Lift-Off

1. Throttle. . . . . Idle
2. Complete as much of "Fire in Flight" as possible. . . . . (D(3))
3. Land As Soon As Possible  
(Follow Forced Landing With No Power)

3. Fire In Flight (Engine)

- a. Fuel shut off. . . . . Off
- b. Mixture. . . . . Cut Off
- c. Switches. . . . . Off
- d. Cabin Heat. . . . . Off
- e. Airspeed . . . . . (that which will provide an incombustible mixture)
- f. Land As Soon As Possible  
(Using Forced Landing With No Power)

4. Fire in Flight (Electrical)

The initial indication of an electrical fire is an odor of burning insulation  
The following procedure should be used.

- a. Master Switch. . . . . Off
- b. All Radio/Electrical Switches. . . . . Off
- c. Fire Extinguisher. . . . . Activate (If Available)
- d. Land As Soon As Possible

D. FIRES (continued)

If landing cannot be made immediately and fire appears out and electrical power is necessary for continuance of flight

- e. Master Switch. . . . . On
- f. Circuit Breakers. . . . . Check for open circuit, do not reset
- g. Radio/Electrical Switches. . . . . On  
(On one at a time, with delay after each one until faulty circuit is located.)
- h. Land As Soon As Possible

E. ICING (FLIGHT INTO KNOWN ICING PROHIBITED)

1. Carburetor

- a. Carburetor Heat. . . . . Hot
- b. When ice has cleared  
Carburetor Heat. . . . . Cold
- c. If carburetor heat is used continuously,  
lean mixture for maximum manifold pressure.

2. Pitot Static System

- a. Alternate static valve. . . . . Open
- b. Apply altimeter correction from placard, no airspeed correction applies.
- c. Remain clear of icing and Land As Soon As Practical

F. STALL WARNING INOPERABLE WITH  
MASTER SWITCH OFF



H. SPINS

1. Spins Are Unauthorized
2. Recovery from an inadvertent spin
  - a. Retard throttle to idle
  - b. Apply full opposite rudder  
(Opposite direction of rotation)
  - c. Move control stick forward of neutral in brisk motion.
  - d. When rotation stops, neutralize rudder, make a smooth recovery from dive.

SECTION IV PERFORMANCE INFORMATION

A. STALLS

1. Altitude loss during power off stalls . . . . . 150 ft.

2. Power off stalling speed versus bank angle @ 2000 lbs.

	<u>BANK ANGLE</u>	<u>STALLING SPEED (IAS)</u>
0° Flaps	0°	58 MPH
	30°	62 MPH
	45°	69 MPH
	60°	82 MPH
30° Flaps	0°	53 MPH
	30°	57 MPH
	45°	63 MPH
	60°	75 MPH

B. MANEUVERS AND ENTRY SPEEDS

1. Design maneuvering speed . . . . . 113 MPH IAS

2. All acrobatic maneuvers, including spins are unauthorized.

C. ENGINE COOLING

Engine cooling demonstrated to a maximum ambient atmospheric temperature, corresponding to sea level conditions of 100° F.

D. TAKE-OFF

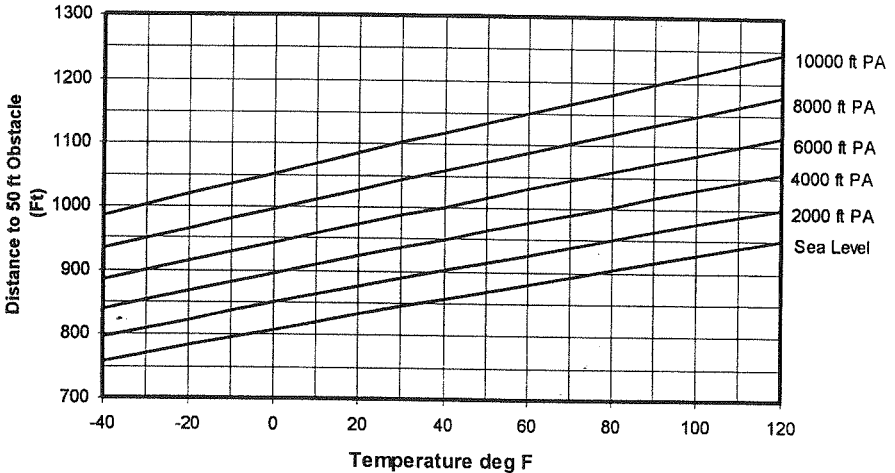
76 Inch Diameter Propeller

1. Take-off Normal  
 Maximum weight ..... 2000 lbs.  
 Flaps 0° (Over 50 Ft. Obstacle)

2. Notes:

1. No wind
2. Hard surface runway (dry, level)
3. Lift-off 55 to 60 MPH IAS.
4. Airspeed at 50 ft. obstacle height 1.3 Vs1 = 75 MPH IAS
5. Ground roll is approximately 66% of total distance to 50 ft. obstacle height.
6. Technique as specified in Section II.

Take-Off Distance to 50 ft Obstacle  
 Flaps 0 deg - 76 in Dia. Prop



D. TAKE-OFF (continued)

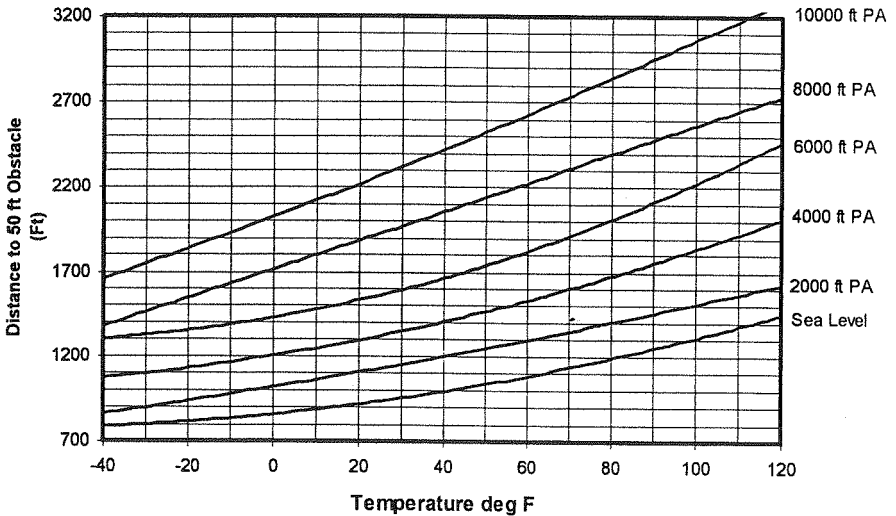
72 Inch Diameter Propeller

1. Take-off Normal Flaps 0° (Over 50 ft. Obstacle)  
 Maximum weight 2000 lbs.

2. Notes:

1. No wind
2. Hard surface runway (dry, level)
3. Lift-off 55 to 60 MPH IAS.
4. Airspeed at 50 ft. obstacle height 1.3  $V_{s1}$  = 75 MPH IAS
5. Ground roll is approximately 40% of total distance to 50 ft. obstacle height.
6. Technique as specified in Section II.

**Take- Off Distance to 50 ft Obstacle**  
**Flaps 0 deg- 72 in Dia. Prop**



D. TAKE-OFF (continued)

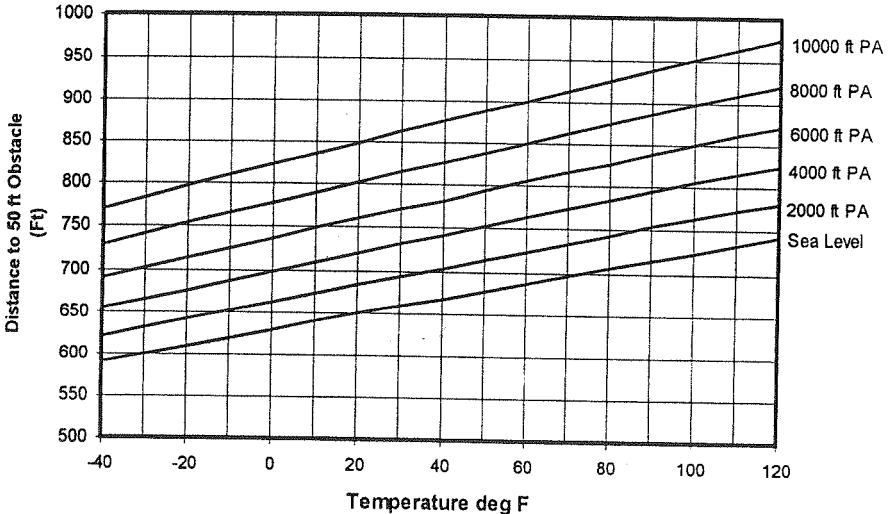
76 Inch Diameter Propeller

1. Take-off Maximum Performance  
 Maximum weight ..... 2000 lbs.  
 Flaps 30° (Over 50 ft. Obstacle)

2. Notes:

1. No wind
2. Hard surface runway (dry, level)
3. Lift-off 53 to 58 MPH IAS.
4. Airspeed at 50 ft. obstacle height 1.3 Vs1 = 70 MPH IAS
5. Ground roll is approximately 74% of total distance to 50 ft. obstacle height.
6. Technique as specified in Section II.

**Take- Off Distance to 50 ft Obstacle  
 Flaps 30 deg - 76 in Dia. Prop**



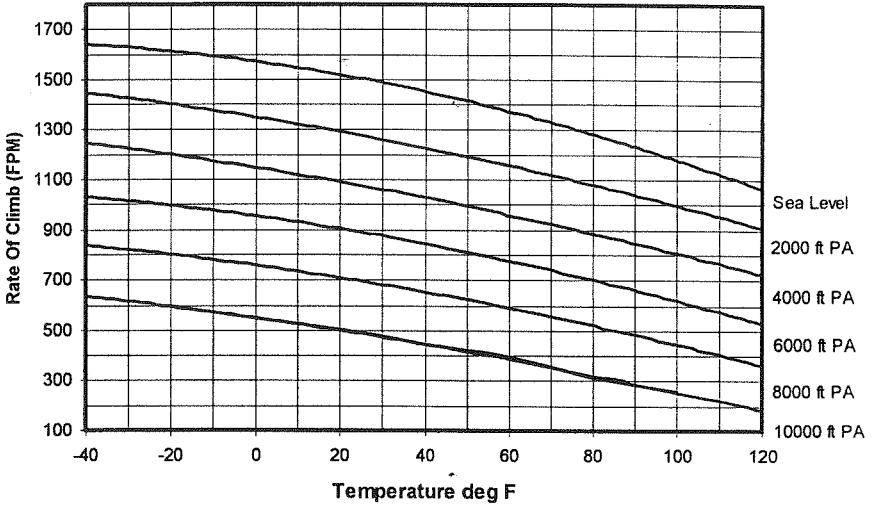


E. CLIMB

76 Inch Diameter Propeller

- Notes:
1. All climbs are with 0° flaps
  2. Climb speed is best rate of climb:  
74 MPH at sea level to 68 MPH at 10,000 ft. with a straight line variation.
  3. Smooth air, no wind.
  4. Maximum weight. . . . . 2000 lbs.

**Climb Performance**  
**Flaps 0 deg- 76 in Dia. Prop**



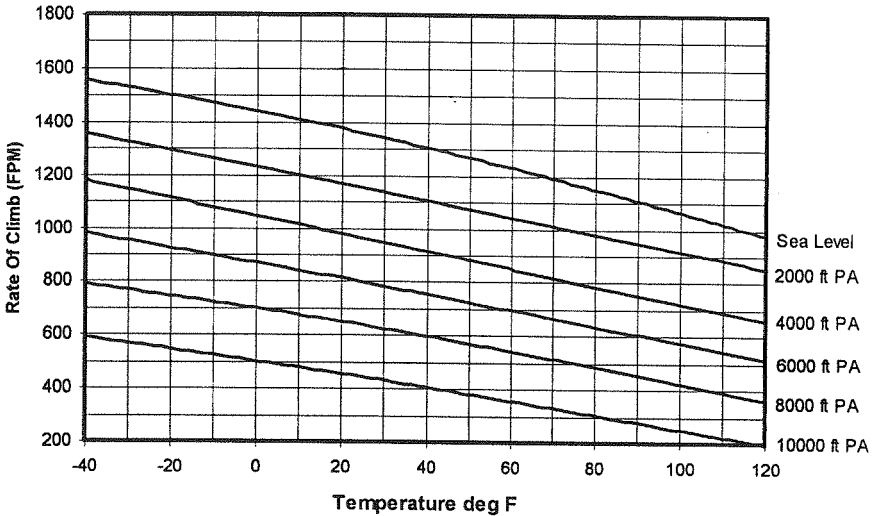
APR 29 '98

E. CLIMB (continued)

72 Inch Diameter Propeller

- Notes:
1. All climbs are with 0° flaps
  2. Climb speed is best rate of climb:  
74 MPH at sea level to 68 MPH at 10,000 ft. with a straight line variation.
  3. Smooth air, no wind.
  4. Maximum weight. . . . . 2000 lbs.

**Climb Performance**  
**Flaps 0 deg- 72 in Dia. Prop**



APR 29 '98



F. LANDING

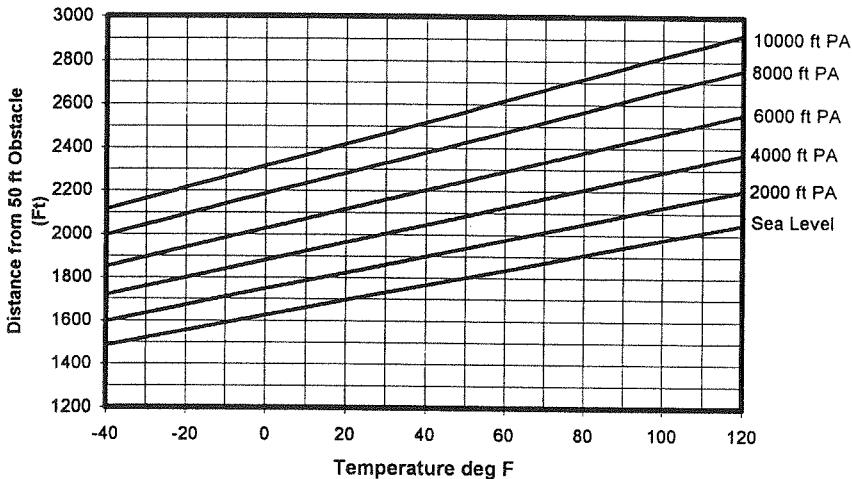
Landing Over 50 ft. Obstacle, Flaps 0°

Maximum weight. . . . . 2000 lbs.

Notes:

1. No wind
2. Hard surface runway (dry, level)
3. Airspeed at 50 ft. obstacle height 1.3 Vs1 = 75 MPH IAS
4. Ground roll is approximately 56% of total landing distance from 50 ft. obstacle height.
5. Brakes, apply heavily.
6. Technique as specified in Section II.

**Landing Distance from 50 ft Obstacle  
Flaps 0 deg**



F. LANDING (continued)

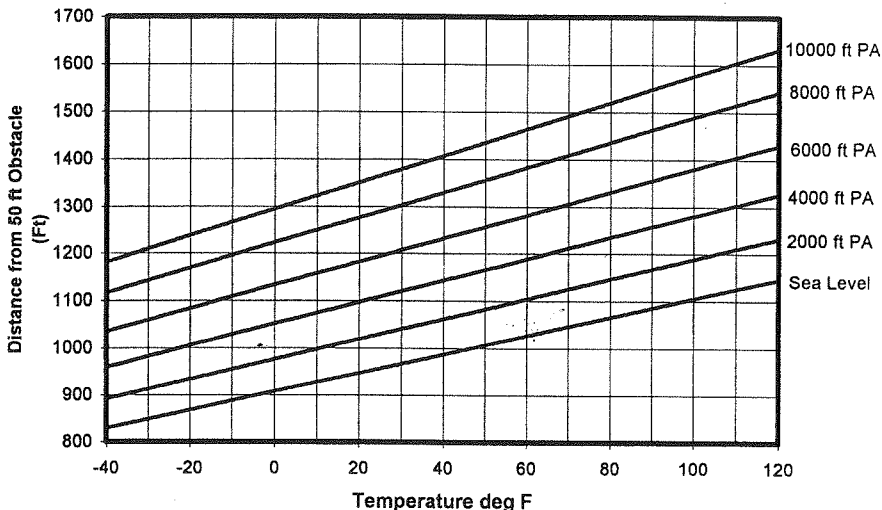
Landing Over 50 ft. Obstacle, Flaps 30°

Maximum weight. . . . . 2000 lbs.

Notes:

1. No wind
2. Hard surface runway (dry, level)
3. Airspeed at 50 ft. obstacle height 1.3  $V_{s1}$  = 70 MPH IAS
4. Ground roll is approximately 61% of total landing distance from 50 ft. obstacle height.
5. Brakes, apply heavily.
6. Technique as specified in Section II.

**Landing Distance from 50 ft Obstacle  
Flaps 30 deg**



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SECTION V

LOADING INFORMATION

ACTUAL WEIGHT & BALANCE OF:

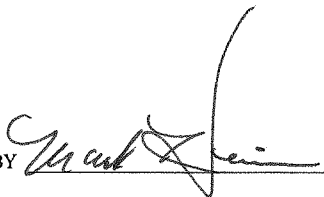
MODEL: AVIAT A-1B

SERIAL NO: 2109

DATE: 9-14-2000

UPDATE: 9-15-2000

PREPARED BY



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NOTE:

It is the responsibility of the pilot to ensure that the airplane is operated in loading configurations which are within the approved weight and center of gravity limits

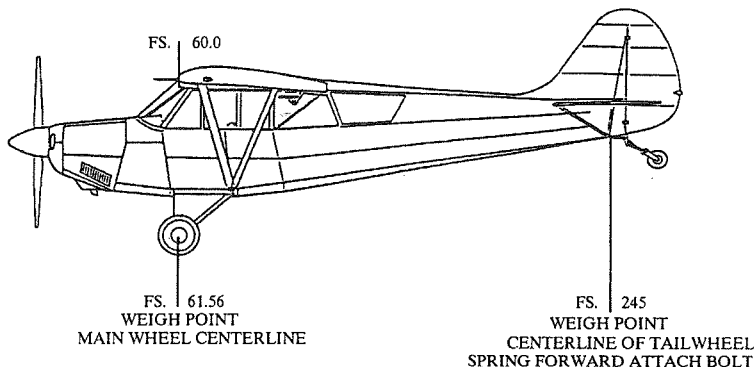
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LOADING INFORMATION (Cont'd)

A. WEIGHT & BALANCE

WEIGHING GEOMETRY:



DATUM IS 60.0 INCHES FORWARD OF WING LEADING EDGE

WEIGHING PERFORMED WITH AIRPLANE LEVEL

LEVELING DATUM IS BOTTOM CABIN DOOR SILL

1. EMPTY WEIGHT AS WEIGHED

SCALE	READING	TARE	NET
LEFT MAIN	618.6 LB	- 0 LB	618.6 LB
RIGHT MAIN	598.8 LB	- 0 LB	598.8 LB
TAIL	116.5 LB	- 23 LB	93.5 LB
EMPTY WEIGHT AS WEIGHED			1310.9 LB

LOADING INFORMATION (Cont'd)

A. WEIGHT & BALANCE (Cont'd)

2. EMPTY WEIGHT C.G. (AS WEIGHED)

$$\text{C.G.} = \frac{(\text{LEFT MAIN NET} + \text{RIGHT MAIN NET}) 61.56 + (\text{TAIL}) 245}{\text{TOTAL NET}}$$

$$\text{C.G.} = \frac{(618.6 + 598.8) 61.56 + (93.5) 245}{(1310.9)}$$

$$\text{C.G.} = \frac{97850.6}{(1310.9)} = 74.6 \text{ INCHES AFT OF DATUM}$$

NOTE: FOR ITEMS OF EQUIPMENT INCLUDED IN THE EMPTY WEIGHT REFER TO SECTION V B., ("STANDARD & OPTIONAL EQUIPMENT LIST") IN THIS AIRPLANE FLIGHT MANUAL.

3. STANDARD ZERO-FUEL WEIGHT & MOMENT

The following zero-fuel weight is for AVIAT HUSKY A-1B airplane, Serial No. 2109 with two gallons (8 qts.) of oil, zero fuel, no pilot, no passenger, no baggage.

ITEM	WEIGHT	ARM	MOMENT
AS WEIGHED	1310.9	74.6	97850.6
OIL CORRECTION	15.0	25.92	388.8
FUEL CORRECTION		84.0	
OTHER CORRECTION (describe) *	15.7	49.4	775.1
STANDARD ZERO-FUEL	1341.6	73.8	99014.5

\* see back of page 6 for list

4. EQUIPPED WEIGHT EMPTY

The equipped weight empty of the airplane is the standard zero-fuel weight, plus 2 gallons of unusable fuel, and includes 8 quarts of oil.

ITEM	WEIGHT	ARM	MOMENT
STANDARD ZERO-FUEL	1341.6	73.8	99014.5
UNUSABLE FUEL	12.0	84.0	1008
EQUIPPED WEIGHT EMPTY	1353.6	73.9	100022.5

INITIAL RELEASE APR 29 98

**SUPERSEDED**  
 DATE 4-3-2001 am  
 WIPAIRE, INC.  
 CRS # RJWR 390K

LOADING INFORMATION (Cont'd)

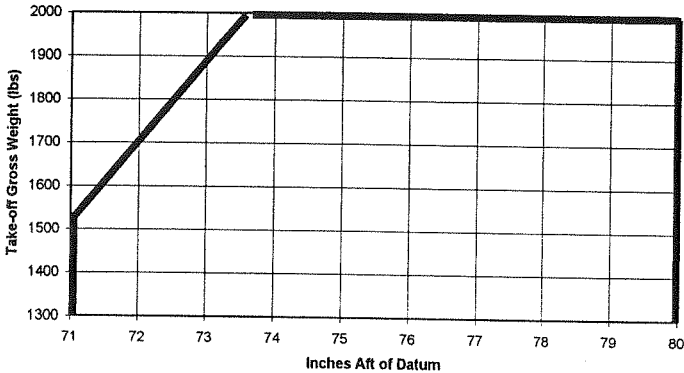
5. DETERMINING AIRPLANE WEIGHT & C.G.

ITEM	WEIGHT	ARM	MOMENT
EQUIPPED WEIGHT EMPTY			
FUEL ( 7.5 GAL MIN)		84.0	
PILOT (USE ACTUAL WEIGHT)		72.5	
PASSENGER (USE ACTUAL WEIGHT)		99.0	
BAGGAGE (50 LBS MAX)		120.0	
TOTAL			

C.G. =  $\frac{\text{TOTAL MOMENT}}{\text{TOTAL WEIGHT}}$  = \_\_\_\_\_ = \_\_\_\_\_ inches

Check to be sure the C.G. lies within the C.G. envelope shown below.

CG Envelope



C. G. ENVELOPE

LOADING INFORMATION (Cont'd)

B. STANDARD & OPTIONAL EQUIPMENT LIST

The Model A-1B airplane empty weight includes the following items of installed equipment. The following equipment was installed in this airplane as delivered from the factory and is included in the empty weight.

CHECK ITEMS INSTALLED

(X)	1.	ENGINE (Textron Lycoming O-360-C1G or O-360-A1P)	Weight	<u>292.0</u> lbs @ FS	<u>20.0</u>
(X)	2.	PROPELLER (Hartzell HC-C2YK-ABF/F7666A)	Weight	<u>57.0</u> lbs @ FS	<u>4.0</u>
(X)	3.	PROPELLER SPINNER (Hartzell 836-60)	Weight	<u>5.5</u> lbs @ FS	<u>2.0</u>
(X)	4.	GOVERNOR (Hartzell V3-6)	Weight	<u>3.5</u> lbs @ FS	<u>10.0</u>
(X)	5.	STARTER ( ) B & C (BC315-100-2) ( ) Textron Lycoming (31A21198) (X) SKY-TEC 149-12PM	Weight	<u>10.0</u> lbs @ FS	<u>11.0</u>
			Weight	<u>11.5</u> lbs @ FS	<u>11.0</u>
			Weight	<u>8.0</u> lbs @ FS	<u>11.0</u>
(X)	6.	ALTERNATOR (Prestolite ALY 8420)	Weight	<u>12.0</u> lbs @ FS	<u>11.0</u>
(X)	7.	MAIN GEAR WHEELS (Cleveland Model 40-60)	Weight	<u>6.3</u> lbs @ FS	<u>61.5</u>
(X)	8.	MAIN GEAR BRAKES (Cleveland Model 30-60)	Weight	<u>2.5</u> lbs @ FS	<u>61.5</u>
(X)	9.	MAIN GEAR TIRES ( ) 6.00x6 4 Ply Type III Tube ( ) 8.00x6 4 Ply Type III Tube (X) 8.50x6 6 Ply Type III Tube ( ) 24X10X6 Type III Tundra ( ) 26X10 5-6 Tundra and 8.5x6 Tube	Weight	<u>12.4</u> lbs @ FS	<u>61.5</u>
			Weight	<u>20.0</u> lbs @ FS	<u>61.5</u>
			Weight	<u>32.0</u> lbs @ FS	<u>61.5</u>
			Weight	<u>50.0</u> lbs @ FS	<u>61.5</u>
			Weight	<u>50.0</u> lbs @ FS	<u>61.5</u>
(X)	10.	TAIL WHEEL UNIT (Scott 33200A)	Weight	<u>8.0</u> lbs @ FS	<u>263.7</u>
(X)	11.	RADIO (Use actual weight)	Weight	_____ lbs @ FS	_____
( )	12.	RADIO (Use actual weight)	Weight	_____ lbs @ FS	_____

\* see back of page



\*Optional equipment installed after weight.  
Calculated empty weight listed on page 4 of 7  
with the following equipment installed.

Garmin 430 + com/nav/gps ant.	6.5 lbs @ FS 51
GTX 327 transponder	2.3 lbs @ FS 51
GMA 340 Audio panel	1.6 lbs @ FS 51
GI 106A CDI	1.4 lbs @ FS 51
ACK-A30 encoder	.4 lbs @ FS 37
LC-2 chronometer	.5 lbs @ FS 51
Marker Ant.	.5 lbs @ FS 48
RAMI Au570 coupler	1.5 lbs @ FS 46
Wiring	1.0 lbs @ FS 40

LOADING INFORMATION (Cont'd)

B. STANDARD & OPTIONAL EQUIPMENT LIST (Cont'd)

( )	13. RADIO (Use actual weight)	Weight _____ lbs @ FS _____
( )	14. RADIO (Use actual weight)	Weight _____ lbs @ FS _____
( )	15. RADIO (Use actual weight)	Weight _____ lbs @ FS _____
(X)	16. BATTERY	
	( ) Gel/Cell (U-128 or U1-31)	Weight <u>24.0</u> lbs @ FS <u>144.0</u>
	(X) Concorde (RG-25)	Weight <u>22.8</u> lbs @ FS <u>144.0</u>
(X)	17. ELT (AmeriKing AK-450)	Weight <u>3.45</u> lbs @ FS <u>145.0</u>
(S)	18. VACUUM PUMP (SigmaTek 1U128B-005 or equiv.)	Weight <u>2.4</u> lbs @ FS <u>32.0</u>
(X)	19. ARTIFICIAL HORIZON (R C Allen 22-7)	Weight <u>2.2</u> lbs @ FS <u>48.0</u>
(X)	20. DIRECTIONAL GYRO (R C Allen 11A-8 or equiv.)	Weight <u>2.7</u> lbs @ FS <u>48.0</u>
(X)	21. TURN COORDINATOR (Electric Gyro 1394T100-7Z, or equiv.)	Weight <u>1.2</u> lbs @ FS <u>48.0</u>
(X)	22. RATE OF CLIMB (United Instruments 7040-C2B or equiv.)	Weight <u>.7</u> lbs @ FS <u>48.0</u>
( )	23. SCHWEIZER TOW HOOK INSTL.	Weight <u>3.8</u> lbs @ FS <u>144.0</u>
( )	24. EDO 89-2000 FLOAT INSTL.	Weight <u>198.0</u> lbs @ FS <u>67.3</u>
( )	25. AERO SKI WHEEL REPLACEMENT SKIS (Use actual weight difference)	Weight _____ lbs @ FS <u>58.3</u>
( )	26. AERO RETRACT SKIS, MODEL R2800 (Use actual weight difference)	Weight _____ lbs @ FS <u>57.8</u>
( )	27. WHEEL FAIRINGS (Christen Dwg 35602)	Weight <u>8.4</u> lbs @ FS <u>61.5</u>
( )	28. REMOTE OIL FILTER INSTL.	Weight <u>4.8</u> lbs @ FS <u>36.0</u>



# Flight-Resource



Larry Schlasinger

**MT Propeller Authorized Sales Representative**

[www.flight-resource.com](http://www.flight-resource.com)

Box 767 Chetek, WI 54728

866 717 1117 [sales@flight-resource.com](mailto:sales@flight-resource.com)

## Weight & Balance for N990HP & equipment list revision

### Equipment removed:

Hartzell Propeller HC-C2YK-1BF/F7666A-4 w/spinner

Weight 62.4 arm 3.82 moment 238.37

### Installed:

MT MTV-15-B/210-58 Propeller & spinner

Weight 45.6 arm 4.57 moment 208.39

### New Weight & Balance Wheels:

Empty weight 1347.8

CG 75.2

Moment 101408

Useful load 652.2

### New Weight & Balance Floats:

Empty Weight 1624.2

CG 73.0

Moment 118705

Useful load 574.85

Larry Schlasinger A&P476540938IA

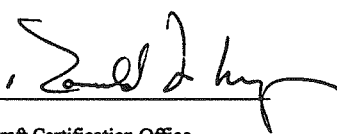
AVIAT AIRCRAFT INC.  
Airplane Flight Manual Supplement  
VM1000 ENGINE MONITORING SYSTEM

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**AIRPLANE FLIGHT MANUAL SUPPLEMENT**  
**FOR**  
**MODEL A-1, A-1A, A-1B HUSKY AIRPLANE**

**REGISTRATION NO.** N990HP  
**SERIAL NO.** 2109

This supplement must be attached to the FAA Approved Airplane Flight Manual, dated May 30, 1996 or later FAA approved flight manual for A-1; and dated January 28, 1998 or later FAA Approved Flight Manual for A-1A and A-1B, when equipped with the Vision Microsystems VM1000 Engine Monitoring System. The information contained herein supplements the information of the basic Airplane Flight Manual.

**FAA APPROVED**   
Ronald May  
Manager, Denver Aircraft Certification Office  
Northwest Mountain Region  
Federal Aviation Administration  
Date August 18, 1999