

CHRISTEN INDUSTRIES, INC

AIRPLANE FLIGHT MANUAL

CHRISTEN A-1

HUSKY

SERIAL # 1177

REGISTRATION # N9616C

FAA APPROVED: _____

for *George H. Meyers III*

MANAGER, DENVER AIRCRAFT
CERTIFICATION OFFICE
NORTHWEST MOUNTAIN REGION
FEDERAL AVIATION ADMINISTRATION

DATE: May 1, 1987

CHRISTEN INDUSTRIES
AIRPLANE FLIGHT MANUAL
MODEL A-1 AIRPLANE

REVISION LETTER	PAGES AFFECTED	DESCRIPTION OF CHANGE	APPROVAL AND DATE
A	Cover, 1, 5, 7, 18, 19, 21	Correct Data	Acting Manager, Denver Aircraft Certif. Office June 24, 1987
B	i, 4 of 22	Correct Placards	Manager, Modifications Boeing Field, Seattle July 22, 1987
C	i, 6 of 22	Add Priming Procedure to <u>STARTING ENGINE</u>	Supervisor, Denver Aircraft Cert. Fld. Off. February 19, 1988
D	1, 7 of 22	Add Suction Gauge Check to Normal Procedures	Supervisor, Denver Aircraft Cert., Fld. Off. June 3, 1988
E	i, ii, 3, 4 of 22, Add pages 4A, 4B of 22	Add (KOEL), and IFR to Operating Placard.	Supervisor, Denver Aircraft Cert., Fld. Off. September 19, 1988
F	i, 1, 18, 19, 20 of 22 Add 18A, 19A, 20A	Change Propeller Minimum Diameter, Add Performance Data	Manager, Modification Branch, Seattle, WA October 14, 1988
G	i, ii, iii, 1 of 26 thru 26 of 26	Remove Airspeed System Calibration Curve & Renumber Pages	Supervisor, Denver Aircraft Cert., Fld. Off. April 20, 1989

FAA APPROVED May 1, 1987

Revision G April 20, 1989

CHRISTEN INDUSTRIES
AIRPLANE FLIGHT MANUAL
MODEL A-1 AIRPLANE

TABLE OF CONTENTS

SECTION I	OPERATING LIMITATIONS	1 of 26
	A. Airspeed B. Powerplant C. Weight D. Flight Load Factors E. Flight Limitations F. Usable Fuel G. Marking and Placards H. Passenger Seating I. Kinds of Operation Equipment List (KOEL)	
SECTION II	NORMAL PROCEDURES	5 of 26
	A. Airspeeds B. Pre-Flight C. Before Starting Engine D. Starting Engine E. Before Take-Off F. Take-Off G. Cruise H. Before Landing I. Balked Landing J. Landing K. After Landing L. Securing Aircraft	
SECTION III	EMERGENCY PROCEDURES	14 of 26
	A. Engine Failure After Take-Off B. Engine Failure During Flight C. Forced Landing With No Power D. Fire 1. Starting 2. On Take-Off 3. In Flight (Engine) 4. In Flight (Electrical) E. Icing (Carburetor) (Pitot, Static) F. Best Glide Speed G. Stall Warning H. Spins	

CHRISTEN INDUSTRIES
AIRPLANE FLIGHT MANUAL
MODEL A-1 AIRPLANE

TABLE OF CONTENTS

SECTION IV	PERFORMANCE INFORMATION	19 of 26
	A. Stalls	
	B. Maneuvers and Entry Speeds	
	C. Engine Cooling	
	D. Take-Off	
	E. Climb	
	F. Landing	
SECTION V	LOADING INFORMATION	1 of 9
	A. Weight and Balance	
	B. Standard and Optional Equipment List	

FAA APPROVED May 1, 1987
Revision G April 20, 1989

CHRISTEN INDUSTRIES
AIRPLANE FLIGHT MANUAL
MODEL A-1 AIRPLANE

SECTION I

OPERATING LIMITATIONS

A. AIRSPEDS

Airspeed Limitations

IAS

1. Maximum flap operation (Vfe) 73 MPH
(Do not exceed in any operation with flaps extended.)
2. Maximum structural cruising speed (Vno) 119 MPH
(Do not exceed this speed except in smooth air,
and then only with caution.)
3. Never exceed speed (Vne) 152 MPH
(Do not exceed this speed in any operation.)

Airspeed Indicator Markings

IAS

1. Flap extended speed (white arc) from stall speed 44 MPH
To maximum flap extended speed 73 MPH
2. Normal operating range (green arc) from stall speed 50 MPH
To maximum normal operating speed 119 MPH
3. Caution range (yellow arc) from maximum normal
operating speed 119 MPH
To never exceed speed (red radial) 152 MPH
4. Never exceed speed (red radial) 152 MPH

B. POWERPLANT LIMITS

For Lycoming O-360-C16 engine and Hartzell HC-C2YK-1BF/F7666A
propeller. Propeller minimum diameter is 72 inches.
Propeller maximum diameter is 76 inches.

1. Propeller Pitch Settings High Pitch $29^\circ \pm 1.0^\circ$
Low Pitch $13^\circ + 0^\circ, -0.5^\circ$
2. Maximum Continuous Power 180 H.P. at 2700 RPM
3. Normal Operating Power 135 H.P. at 2400 RPM
4. Minimum Fuel Grade 100/100LL Octane
5. 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

FAA APPROVED May 1, 1987
Revision G April 20, 1989

CHRISTEN INDUSTRIES
AIRPLANE FLIGHT MANUAL
MODEL A-1 AIRPLANE

SECTION I

B. POWERPLANT LIMITS (continued)

- | | | |
|----------------------------|------|---------|
| Caution Range (yellow arc) | from | 90 PSI |
| | to | 100 PSI |
| Maximum (red radial) | | 100 PSI |
6. 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. |
7. 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 |
| DO NOT EXCEED (red line) | | 2700 RPM |
- ~~8. Continuous operation between 2000 to 2250 RPM prohibited.~~
9. Cylinder Head temperature (red radial) 500° F

C. WEIGHTS

- | | |
|--|----------|
| 1. Maximum Gross Weight (normal category) | 1800 LBS |
| 2. 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
- | | |
|---------------------|--------------------|
| 3. Maximum Oil | 2 US GALS 15 LBS |
| 4. Fuel Capacity | 52 US GALS 312 LBS |
| 5. Pilot | Actual Weight |
| 6. Passenger | Actual Weight |
| 7. Baggage, Maximum | 50 LBS |

CHRISTEN INDUSTRIES
AIRPLANE FLIGHT MANUAL
MODEL A-1 AIRPLANE

SECTION I

C. WEIGHTS (continued)

8. Design Useful Load 610 LBS.
(See Section V, "Weight and Balance", Model A-1 Airplane
for allowable weight and center of gravity combinations
and detail loading instructions.)

Weight and Center of Gravity Limits (Normal Category)

1. Most forward Limit
FS 72.5 at 1500 LBS
2. Most forward at Maximum Gross Weight
FS 74.5 at 1800 LBS
3. Most rearward at Maximum Gross Weight or Less
FS 78.4 at 1800 LBS

D. FLIGHT LOAD FACTORS (Normal Category)

1. Positive Flight, Limit, Flaps Up + 3.8
Negative Flight, Limit, Flaps Up - 1.5
Positive Flight, Limit, Flaps Down + 2.0
2. Maneuvers and Entry Speeds: See Section IV

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 Prohibited.

F. USABLE FUEL

Of the 52 US GALS 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:

1. At fuel selector handle:
"MAIN FUEL SELECTOR"
OFF ON
50 GALS USABLE

CHRISTEN INDUSTRIES
AIRPLANE FLIGHT MANUAL
MODEL A-1 AIRPLANE

SECTION I

G. MARKINGS AND PLACARDS (continued)

2. Adjacent to airspeed indicator:
"DESIGN MANEUVERING SPEED 94 MPH IAS"
"DEMONSTRATED CROSSWIND VELOCITY 15 MPH"
3. At rear of baggage compartment:
"MAXIMUM BAGGAGE 50 LBS"
4. 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"
5. Adjacent to each main fuel filler neck:
"FUEL 100/100LL OCTANE 25 GALS USABLE"
6. On right side panel next to the alternate static source valve:
"OPEN FOR ALTERNATE STATIC AIR"
7. Lower forward instrument panel:
"SOLO FRONT SEAT ONLY"
8. Lower Forward instrument panel
"NO SMOKING"
9. 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"
10. ~~Next to Tachometer: "AVOID CONTINUOUS OPERATION BETWEEN
2000 - 2250 RPM"~~

H. MAXIMUM PASSENGER SEATING CONFIGURATION

One person rear seat.

FAA APPROVED May 1, 1987
Revision G April 20, 1989

CHRISTEN INDUSTRIES
AIRPLANE FLIGHT MANUAL
MODEL A-1 AIRPLANE

SECTION I

I. KINDS OF OPERATING EQUIPMENT LIST (KOEL)

This airplane may be operated in day or night VFR, day or night IFR, when the appropriate 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 (Note)	0	1	0	2
3- Anti-Collision	0	2	0	2
4- Landing Light	0	1	0	1
6- Taxi Light	0	0	0	0
6- Position Lights	0	3	0	3

Note: Two floods one per side required for IFR night.

CHRISTEN INDUSTRIES
AIRPLANE FLIGHT MANUAL
MODEL A-1 AIRPLANE

SECTION I

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

	VFR Day	VFR Night	IFR Day	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
<u>Vacuum System</u>				
1- Suction Gauge	0	0	1	1
2- Vacuum Pump	0	0	1	1
<u>Engine Indicating</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 equipments required by the FAR Parts 91 and 135 operating requirements.

FAA APPROVED May 1, 1987
Revision G April 20, 1989

CHRISTEN INDUSTRIES
AIRPLANE FLIGHT MANUAL
MODEL A-1 AIRPLANE

SECTION II

NORMAL PROCEDURES

A. AIRSEEDS

		<u>IAS</u>
1. Vx	Best angle of climb (sea level)	58 MPH
	Best angle of climb (10000 ft.)	60.5 MPH
2. Vy	Best rate of climb (sea level)	73 MPH
	Best rate of climb (10000 ft.)	67.5 MPH
3. Va	Maneuvering speed	94 MPH
4. Vfe	Maximum speed, flaps extended	73 MPH
5. Vne	Never exceed speed	152 MPH
6.	For best engine cooling while climbing Use 77 MPH at sea level with a straight line variation to 70 MPH at 10,000 ft.	

B. PRE-FLIGHT

1.	Visually check aircraft for	General Condition
a.	Fabric	General Condition
b.	Screws and cowl fasteners	Secure
c.	Tires	Proper Inflation
d.	Brakes	Secure
e.	Pitot and static openings	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.	Check control surfaces for	Freedom of Movement and Security
4.	Engine	General Condition & Security
a.	Oil	Check Level
b.	Propeller and spinner	Check for Nicks, Cracks Security and Oil Leaks
c.	Carburetor air inlet	Check for Restrictions
d.	Cowl openings	Check for Restrictions

CHRISTEN INDUSTRIES
AIRPLANE FLIGHT MANUAL
MODEL A-1 AIRPLANE

SECTION II

B. PRE-FLIGHT (continued)

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. Seat Belts, Shoulder Harness | Adjust and Lock |
| 3. Fuel Valve | On |
| 4. All Electrical Switches | Off |
| 5. Brakes | Test and Set |

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. None required when engine warm) | 1 to 6 strokes (Then secure primer) |
| 7. Propeller Area | Clear |
| 8. Ignition Switch | Start
(Release when engine starts) |
| 9. Oil Pressure | Check |
| 10. Alternator Field Switch | On |

E. BEFORE TAKE-OFF

- | | |
|--------------------|------------------|
| 1. Cabin Doors | Latched |
| 2. Flight Controls | Free and Correct |

CHRISTEN INDUSTRIES
AIRPLANE FLIGHT MANUAL
MODEL A-1 AIRPLANE

SECTION II

E. BEFORE TAKE-OFF (continued)

- | | |
|--|-------------------------------|
| 3. Elevator Trim | 1/2 Nose Up
(From Neutral) |
| 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, Lean if above 5000') | |
| b. Carburetor Heat (Check for RPM Drop) | Check |
| c. Engine Instruments, Ammeter, and Suction Gauge
(When vacuum system inst.) (4-1/2 to 5-1/2"/Hg) | Check |
| 8. Throttle | 1700 RPM |
| a. Move propeller control through range and
return to: | High RPM |
| 9. Flight Instruments and Radios | Set |
| 10. Carburetor Heat | Cold |

F. TAKE-OFFNormal

- | | |
|----------------------|--------------------------------------|
| 1. Wing Flaps | 0° |
| 2. Propeller Control | Full Increase (In) |
| 3. Throttle | Full Open |
| 4. Elevator | 1/4 Up From Neut.
(Hold Tail Low) |
| 5. Lift-Off | 50 to 55 MPH |
| 6. Climb | 68 MPH |

Maximum Performance

- | | |
|---------------|-----|
| 1. Wing Flaps | 30° |
|---------------|-----|

CHRISTEN INDUSTRIES
AIRPLANE FLIGHT MANUAL
MODEL A-1 AIRPLANE

SECTION II

E. TAKE-OFF (continued)

- | | |
|----------------------|--|
| 2. Trim | Adjust (3/4 Nose Up
From Neutral) |
| 3. Propeller Control | Full Increase (In) |
| 4. Throttle | Full Open |
| 5. Brakes | Release |
| 6. Elevator | 1/2 Up From Neut.
(Hold Tail On Grd.) |
| 7. Lift Off | 44 to 48 MPH |
| 8. Climb | 58 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 is regained. | |

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
(Or as needed for approach) | Close |
| 4. Flaps | 30° |
| 5. Airspeed | 58 MPH |

CHRISTEN INDUSTRIES
AIRPLANE FLIGHT MANUAL
MODEL A-1 AIRPLANE

SECTION II

H. BEFORE LANDING (continued)

- | | |
|----------------------|---------------|
| 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 | 0° |
| 5. Climb Airspeed (Vx) | 58 MPH (Sea Level) |

J. LANDINGNormal

- | | |
|-----------------|--|
| 1. Airspeed | 58 MPH
(Airspeed to 50 ft. obstacle height) |
| 2. Flaps | 30° |
| 3. Trim | Adjust |
| 4. Power | Idle (Or As Required) |
| 5. Touchdown | Tail Wheel First |
| 6. Landing Roll | Elevator Up (Full Back) |
| 7. Flaps | 0° (After Touchdown) |
| 8. Brake | Minimum Required |

Short Field

- | | |
|-------------|------------------|
| 1. Airspeed | 50 to 55 MPH |
| 2. Flaps | 30° |
| 3. Trim | Adjust (Nose Up) |

CHRISTEN INDUSTRIES
AIRPLANE FLIGHT MANUAL
MODEL A-1 AIRPLANE

SECTION II

J. LANDING (continued)

- | | |
|-----------------|---|
| 4. Power | As Required |
| 5. Touchdown | Tail Wheel First |
| 6. Landing Roll | Elevator Full Back |
| 7. Flaps | 0° (After Touchdown)
For Maximum Brake Effectiveness |
| 8. Brake | Apply Heavily |

Cross Wind

- | | |
|---------------------|--|
| 1. Airspeed | 55 to 60 MPH |
| 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 | 0° |

K. AFTER LANDING

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

CHRISTEN INDUSTRIES
AIRPLANE FLIGHT MANUAL
MODEL A-1 AIRPLANE

SECTION II

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 |

CHRISTEN INDUSTRIES
AIRPLANE FLIGHT MANUAL
MODEL A-1 AIRPLANE

SECTION III EMERGENCY PROCEDURES

A. ENGINE FAILURE AFTER TAKE-OFF

1. Lower nose to maintain airspeed.
In most cases, landing should be planned straight ahead.
2. Airspeed 68 MPH (NO Flaps)
58 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 68 MPH (NO Flaps)
58 MPH (30° Flaps)

CHRISTEN INDUSTRIES
AIRPLANE FLIGHT MANUAL
MODEL A-1 AIRPLANE

SECTION III

C. FORCED LANDING WITH NO POWER (continued)

- | | |
|--------------------|----------------------------------|
| 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. FIRES1. Engine Fire--Starting

- a. Continue cranking in an attempt to start the engine.
- b. If start is successful, run engine at 1700 RPM for a few minutes before shutting down to inspect damage.
- c. If starting is unsuccessful continue cranking 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 thorough inspection before conducting another flight.

CHRISTEN INDUSTRIES
AIRPLANE FLIGHT MANUAL
MODEL A-1 AIRPLANE

SECTION III

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
incombustable 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 | |

CHRISTEN INDUSTRIES
AIRPLANE FLIGHT MANUAL
MODEL A-1 AIRPLANE

SECTION III

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 Breaker Check
(Check for faulty circuit, do not reset)
- g. Radio/Electrical Switches On
(On one at a time, with delay after each one until faulty circuit is localized)
- 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. Note altimeter error from placard
- c. Remain clear of icing and Land As Soon As Possible

F. BEST GLIDE SPEED 73 MPH

G. STALL WARNING INOPERABLE WITH MASTER SWITCH OFF

CHRISTEN INDUSTRIES
AIRPLANE FLIGHT MANUAL
MODEL A-1 AIRPLANE

SECTION III

H. SPINS

1. Spins Are Unauthorized
2. Recovery from an inadvertent spin
 - a. Retract 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.

CHRISTEN INDUSTRIES
AIRPLANE FLIGHT MANUAL
MODEL A-1 AIRPLANE

SECTION IV

PERFORMANCE INFORMATION

A. STALLS

1. Altitude loss during power off stalls 150 ft.
2. Power off stalling speed versus bank angle @ 1800 lbs.

<u>BANK ANGLE</u>		<u>STALLING SPEED (IAS)</u>
0° Flaps	0°	51 MPH
	30°	55 MPH
	45°	61 MPH
	60°	72 MPH
30° Flaps	0°	45 MPH
	30°	48 MPH
	45°	54 MPH
	60°	64 MPH

B. MANEUVERS AND ENTRY SPEEDS

1. Design maneuvering speed 94 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.

CHRISTEN INDUSTRIES
AIRPLANE FLIGHT MANUAL
MODEL A-1 AIRPLANE

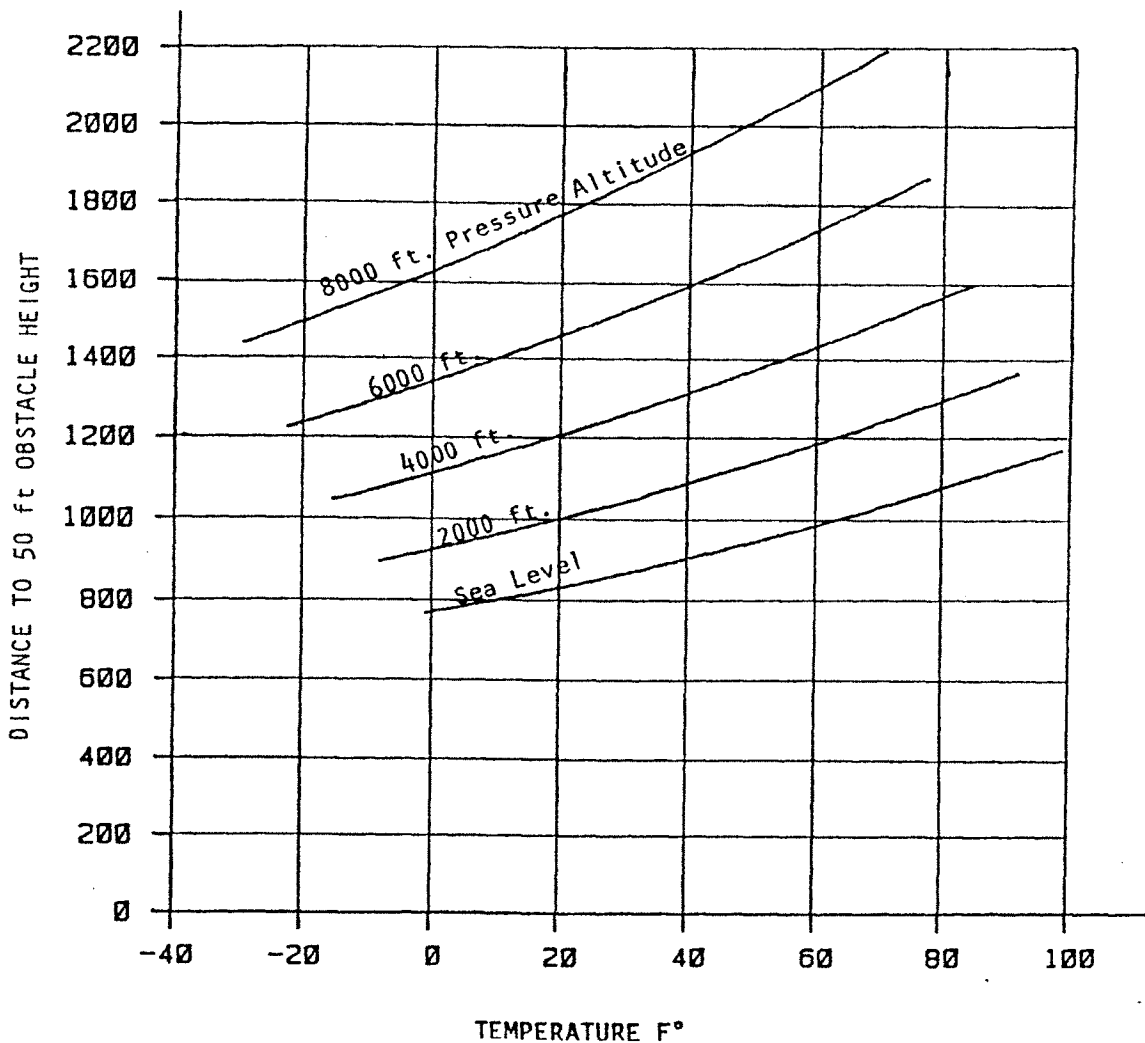
SECTION IV

D. TAKE-OFF

76 Inch Diameter Propeller

1. Take-off Normal Flaps 0° (Over 50 Ft. Obstacle)
Maximum weight 1800 LBS.

2. Notes: 1. No wind
2. Hard surface runway (dry, level)
3. Lift-off 50 to 55 MPH IAS.
4. Airspeed at 50 ft. obstacle height
1.3 Vs1 = 68 MPH IAS.
5. Ground roll is approximately 40% of
total distance to 50 ft. obstacle height.
6. Technique as specified in Section II.



FAA APPROVED May 1, 1987
Revision G, April 20, 1989

CHRISTEN INDUSTRIES
AIRPLANE FLIGHT MANUAL
MODEL A-1 AIRPLANE

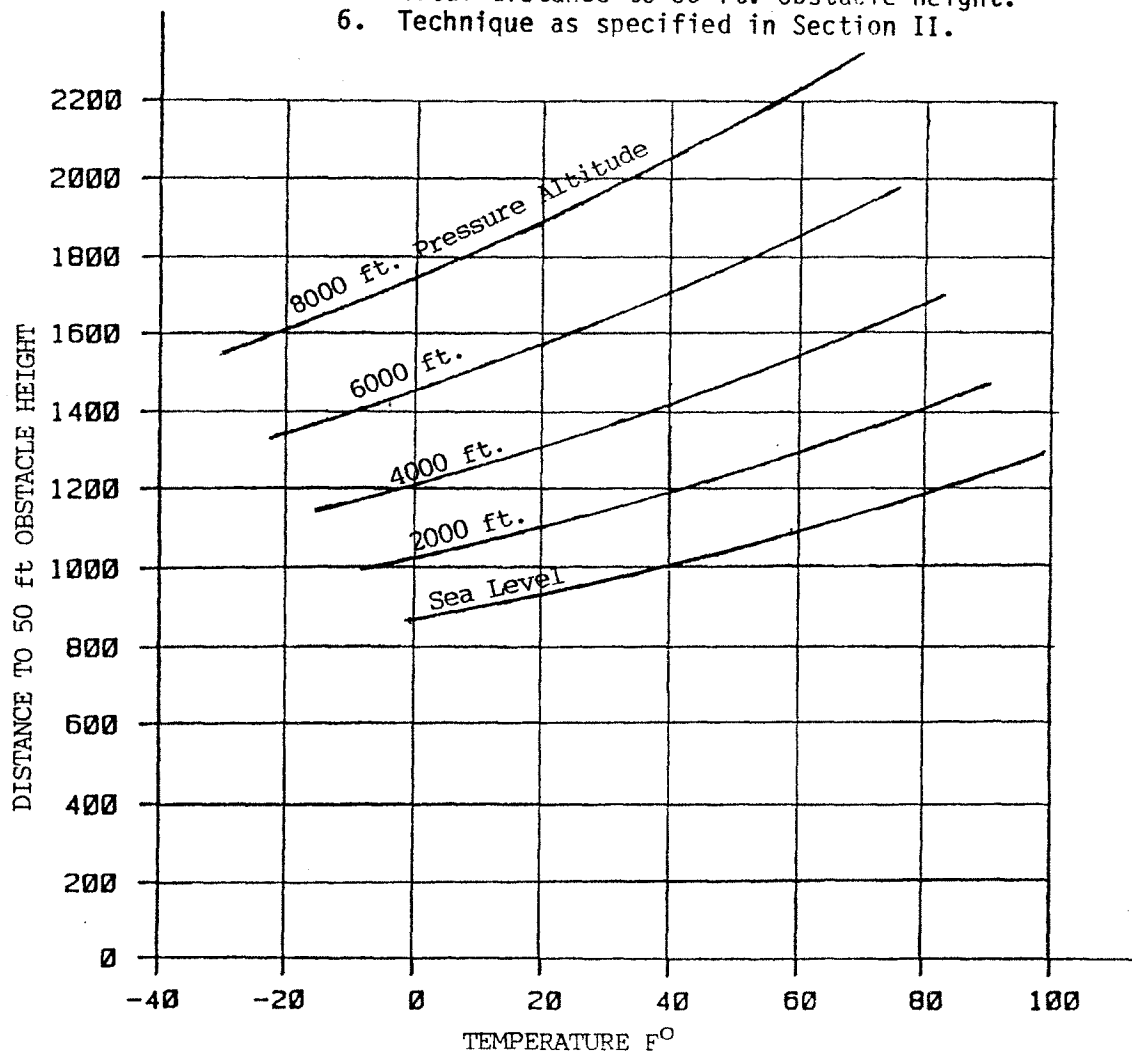
SECTION IV

D. TAKE-OFF (continued)

72 Inch Diameter Propeller

1. Take-off Normal Flaps 0° (Over 50 Ft. Obstacle)
Maximum weight 1800 LBS.

2. Notes: 1. No wind
2. Hard surface runway (dry, level)
3. Lift-off 50 to 55 MPH IAS.
4. Airspeed at 50 ft. obstacle height
1.3 V_{sl} = 68 MPH IAS.
5. Ground roll is approximately 40% of
total distance to 50 ft. obstacle height.
6. Technique as specified in Section II.



FAA APPROVED May 1, 1987
Revision G April 20, 1989

CHRISTEN INDUSTRIES
AIRPLANE FLIGHT MANUAL
MODEL A-1 AIRPLANE

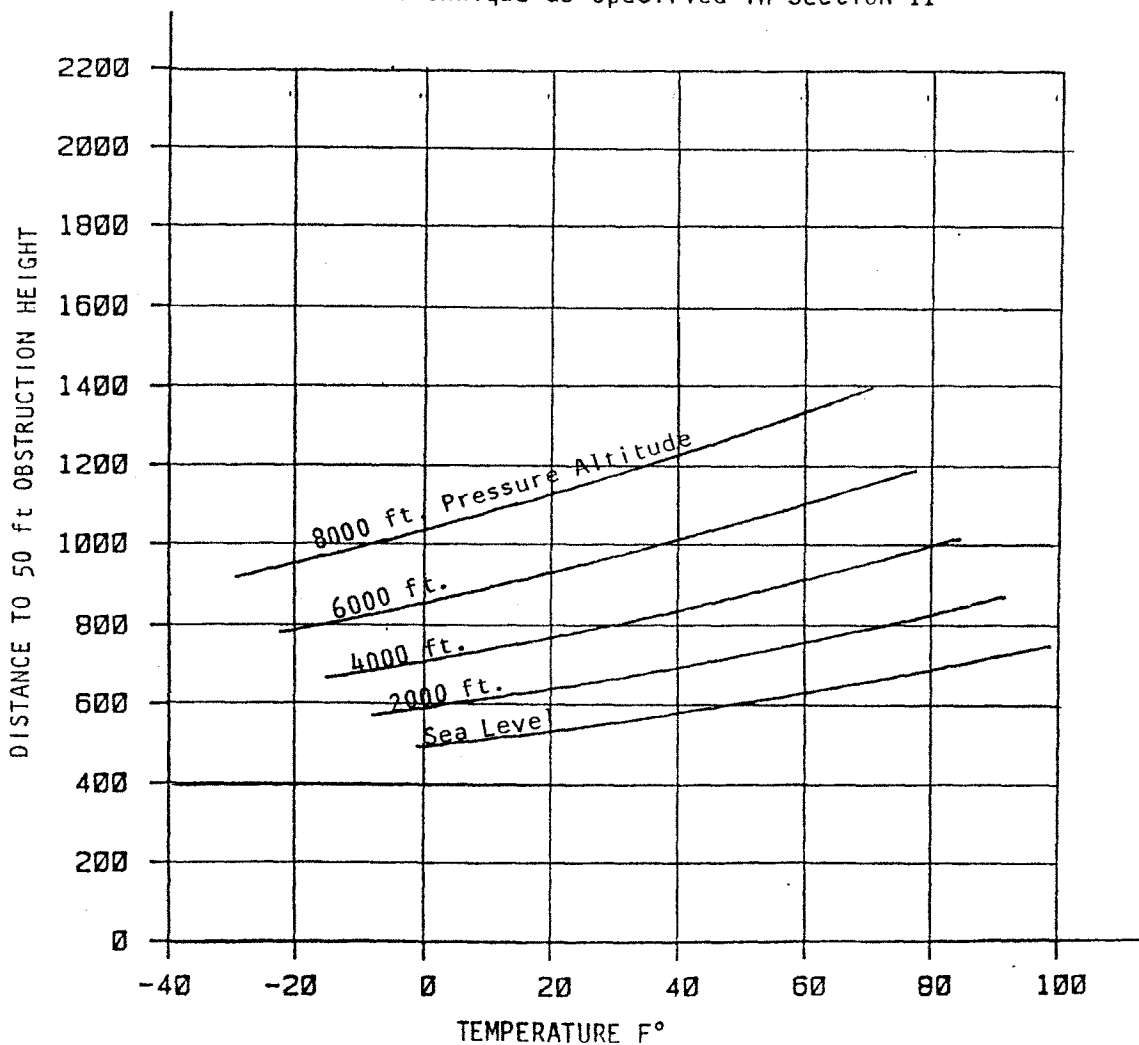
SECTION IV

D. TAKE-OFF (continued)

76 Inch Diameter Propeller

1. Take-off Maximum Performance. Flaps 30°, (Over 50 Ft. Obstacle)
Maximum Weight..... 1800 LBS.

2. Notes:
1. No wind
 2. Hard surface runway (dry, level)
 3. Lift-off 44 to 48 MPH IAS.
 4. Airspeed at 50 ft. obstacle height
1.3 V_{sl} = 58 MPH IAS
 5. Ground roll is approximately 42.5% of
total distance to 50 ft. obstacle height.
 6. Technique as specified in Section II



FAA APPROVED May 1, 1987
Revision G April 20, 1989

CHRISTEN INDUSTRIES
AIRPLANE FLIGHT MANUAL
MODEL A-1 AIRPLANE

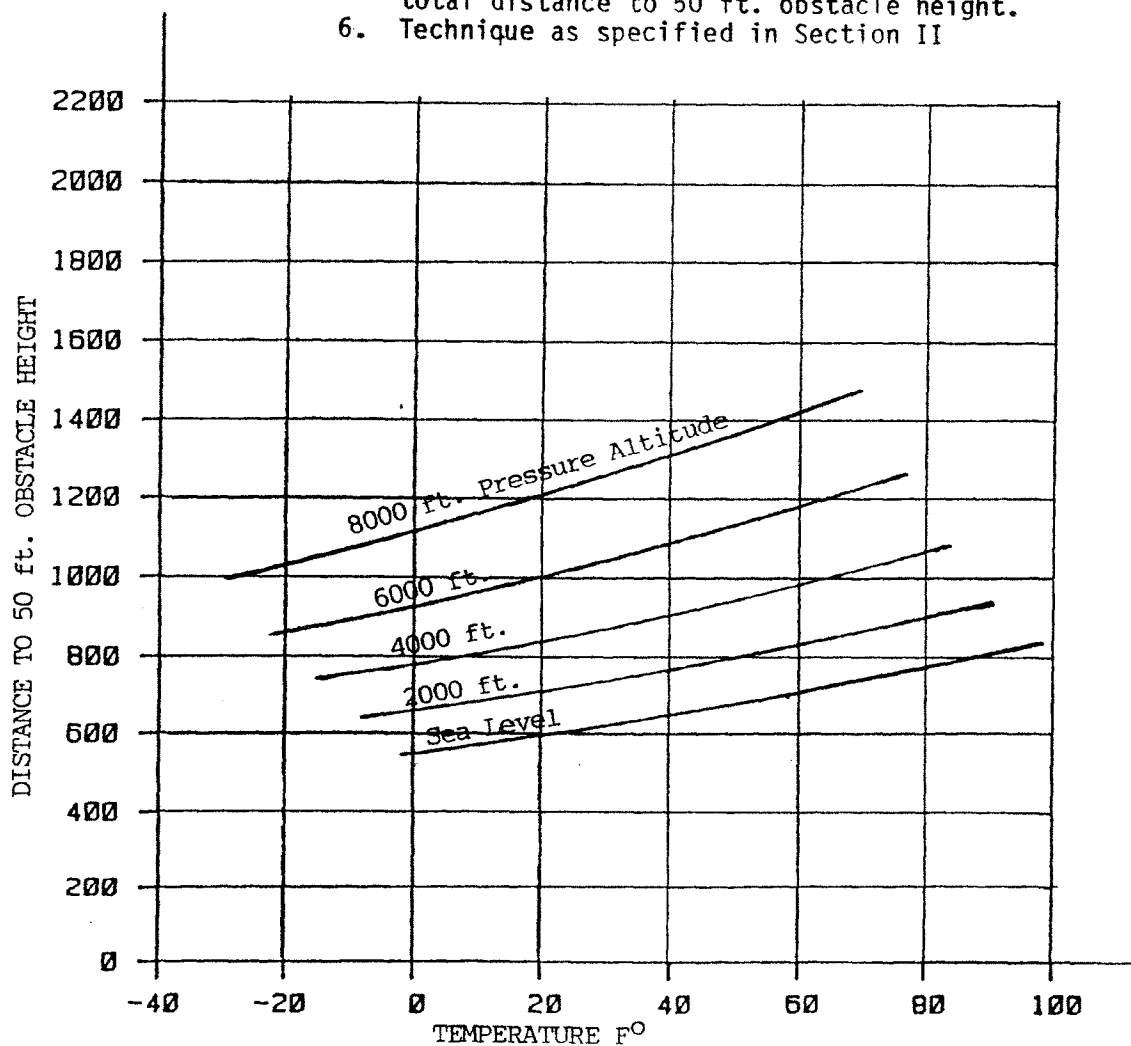
SECTION IV

D. TAKE-OFF (continued)

72 Inch Diameter Propeller

1. Take-off Maximum Performance. Flaps 30°, (Over 50 Ft. Obstacle)
Maximum Weight..... 1800 LBS.

2. Notes:
 1. No wind
 2. Hard surface runway (dry, level)
 3. Lift-off 44 to 48 MPH IAS.
 4. Airspeed at 50 ft. obstacle height
1.3 Vsl = 58 MPH IAS
 5. Ground roll is approximately 42.5% of
total distance to 50 ft. obstacle height.
 6. Technique as specified in Section II



FAA APPROVED May 1, 1987
Revision G April 20, 1989

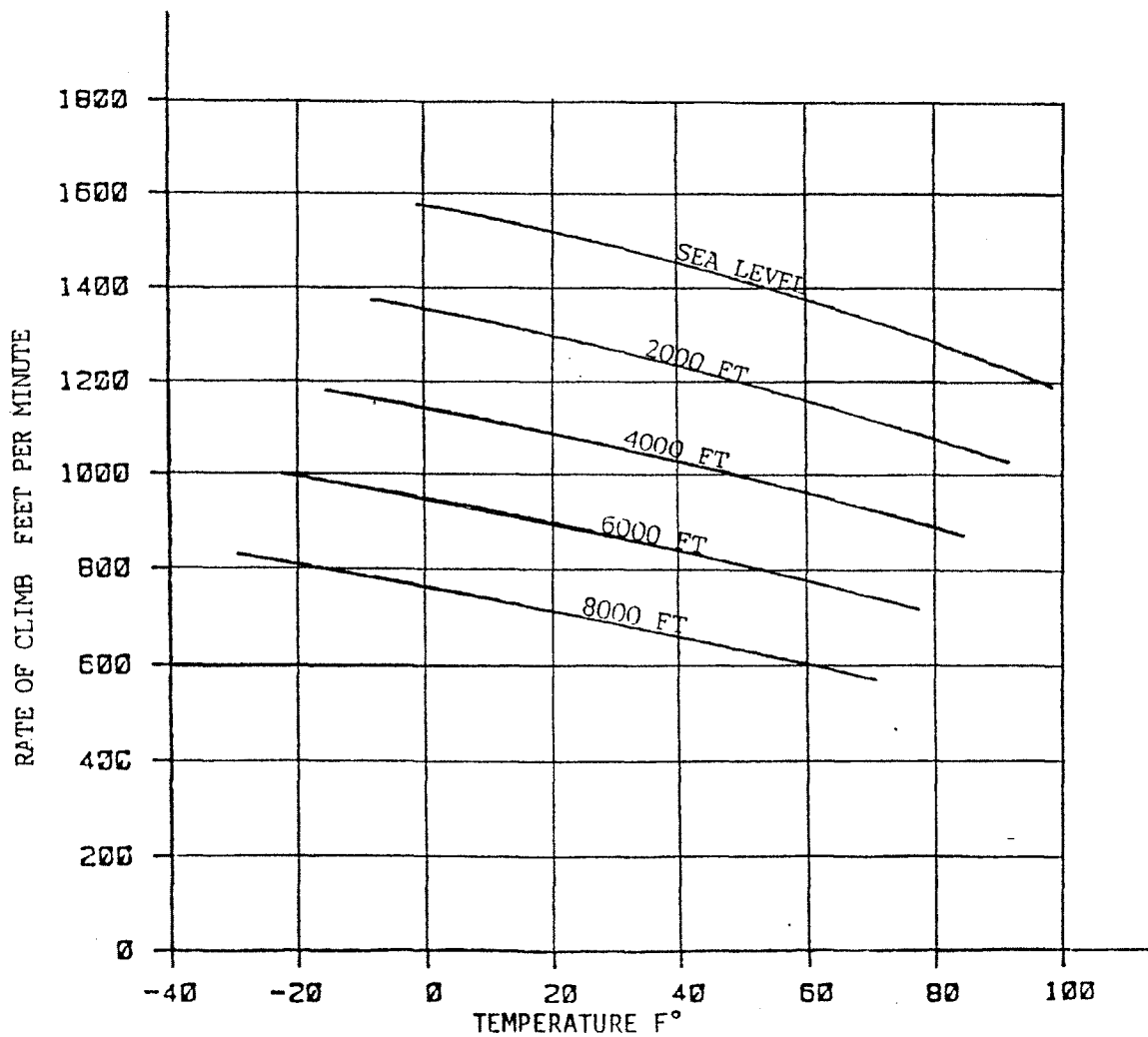
CHRISTEN INDUSTRIES
AIRPLANE FLIGHT MANUAL
MODEL A-1 AIRPLANE

SECTION IV

E. CLIMB

76 Inch Diameter Propeller

- Notes: 1. All climbs are with 0° flaps
 2. Climb speed is best rate of climb.
 73 MPH at sea level to 67 MPH at 10,000 ft.
 with a straight line variation.
 3. Smooth air, no wind.
 4. Maximum weight.....1800 LBS.



FAA APPROVED May 1, 1987
 Revision G April 20, 1989

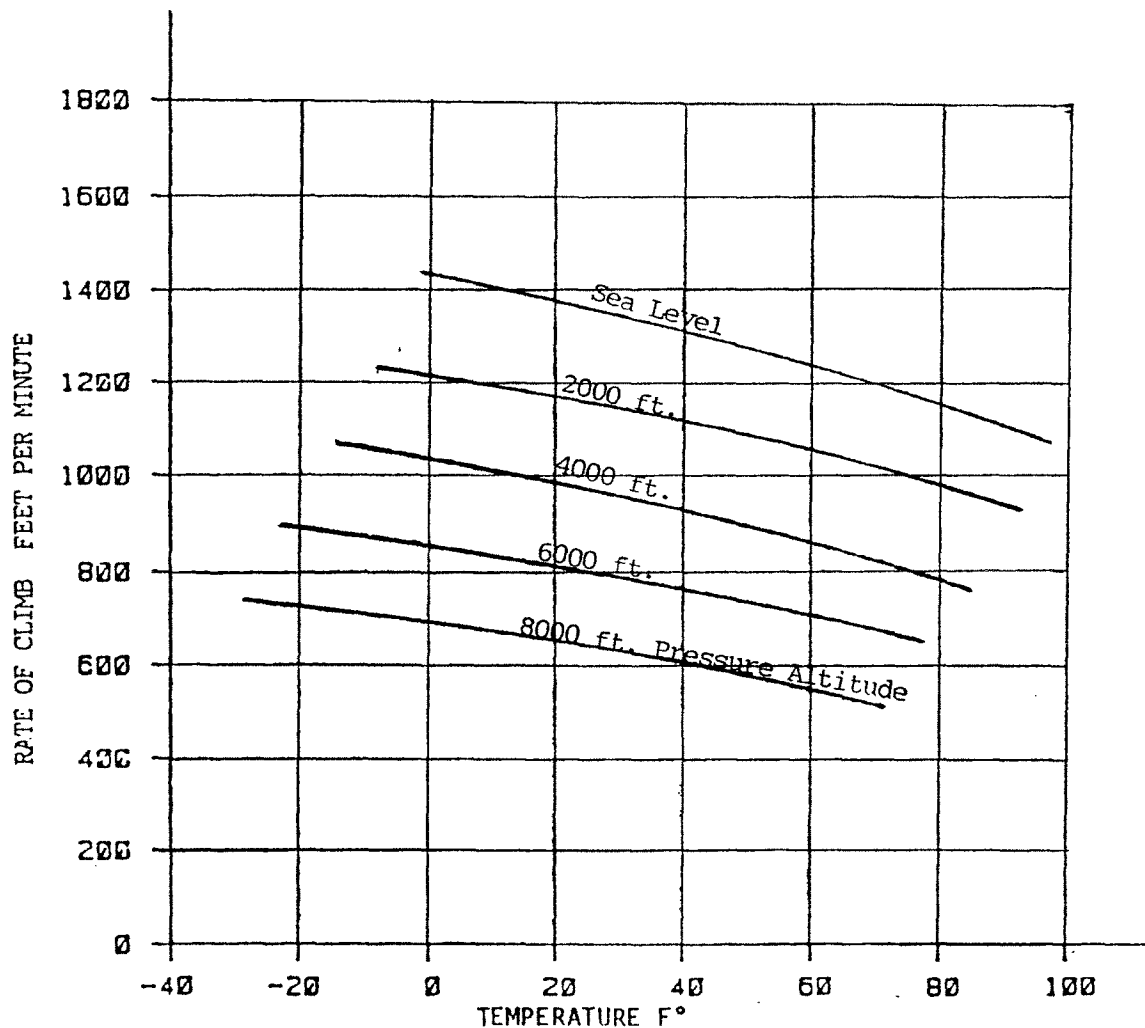
CHRISTEN INDUSTRIES
AIRPLANE FLIGHT MANUAL
MODEL A-1 AIRPLANE

SECTION IV

E. CLIMB (continued)

72 Inch Diameter Propeller

- Notes: 1. All climbs are with 0° flaps
 2. Climb speed is best rate of climb.
 73 MPH at sea level to 67 MPH at 10,000 ft.
 with a straight line variation.
 3. Smooth air, no wind.
 4. Maximum weight.....1800 LBS.



FAA APPROVED May 1, 1987
 Revision G April 20, 1989

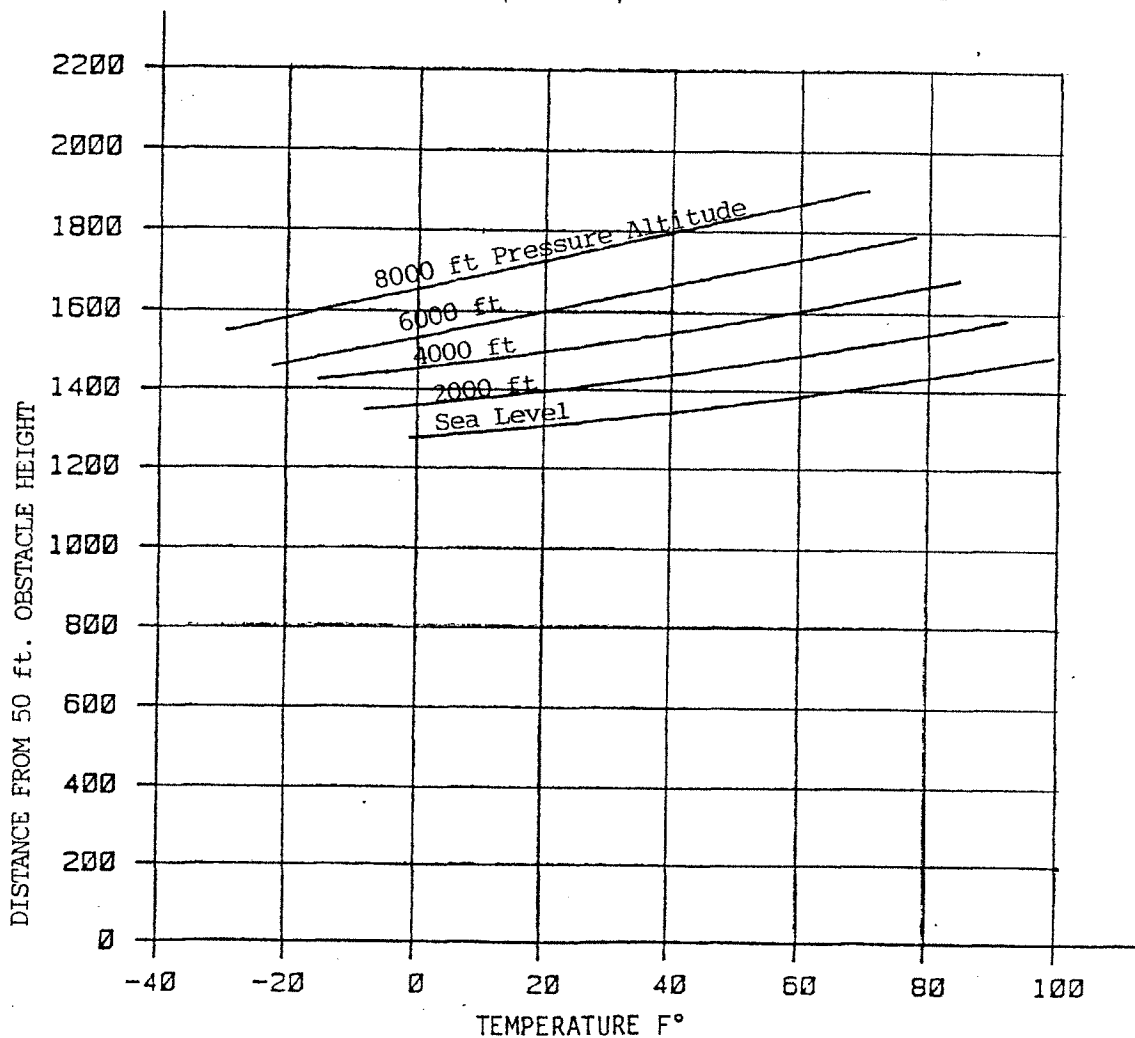
CHRISTEN INDUSTRIES
AIRPLANE FLIGHT MANUAL
MODEL A-1 AIRPLANE

SECTION IV

F. LANDING

Landing over 50 ft. obstacle, 30° Flaps,
Maximum weight.....1800 LBS.

- NOTES:
1. No wind
 2. Hard surface runway (dry, level)
 3. Airspeed at 50 ft. obstacle height
1.3 V_{so} = 58 MPH IAS
 4. Ground roll is approximately 36.5% of total
landing distance from 50 ft. obstacle height.
 5. Brakes, apply heavily.
 6. Technique as specified in Section II



FAA APPROVED May 1, 1987
Revision G April 20, 1989