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SECTION 4

NORMAL PROCEDURES

4.1 GENERAL

This section clearly describes the recommended procedures for the conduct of normal operations for the Cherokee Lance. All of the required (FAA regulations) procedures and those necessary for the operation of the airplane as determined by the operating and design features of the airplane are presented.

Normal procedures associated with those optional systems and equipment which require handbook supplements are provided in Section 9 (Supplements).

These procedures are provided to present a source of reference and review and to supply information on procedures which are not the same for all aircraft. Pilots should familiarize themselves with the procedures given in this section in order to become proficient in the normal operations of the airplane.

The first portion of this section consists of a short form check list which supplies an action sequence for normal operations with little emphasis on the operation of the systems.

The remainder of the section is devoted to amplified normal procedures which provide detailed information and explanations of the procedures and how to perform them. This portion of the section is not intended for use as an in-flight reference due to the lengthy explanations. The short form check list should be used for this purpose.

4.3 AIRSPEEDS FOR SAFE OPERATIONS

The following airspeeds are those which are significant to the operation of the airplane. These figures are for standard airplanes flown at gross weight under standard conditions at sea level.

Performance for a specific airplane may vary from published figures depending upon the equipment installed, the condition of the engine, airplane and equipment, atmospheric conditions and piloting technique.

(a) Best Rate of Climb Speed (IAS)	
gear up, flaps up	106 MPH (92 KTS)
gear down, flaps up	100 MPH (87 KTS)
(b) Best Angle of Climb Speed (IAS)	
gear up, flaps up	100 MPH (87 KTS)
gear down, flaps up	78 MPH (68 KTS)
(c) Turbulent Air Operating Speed (IAS)	122 MPH (106 KTS)
(d) Landing Approach Speed (IAS)	86 MPH (75 KTS)
(e) Maximum Demonstrated Crosswind Velocity	20 MPH (17 KTS)

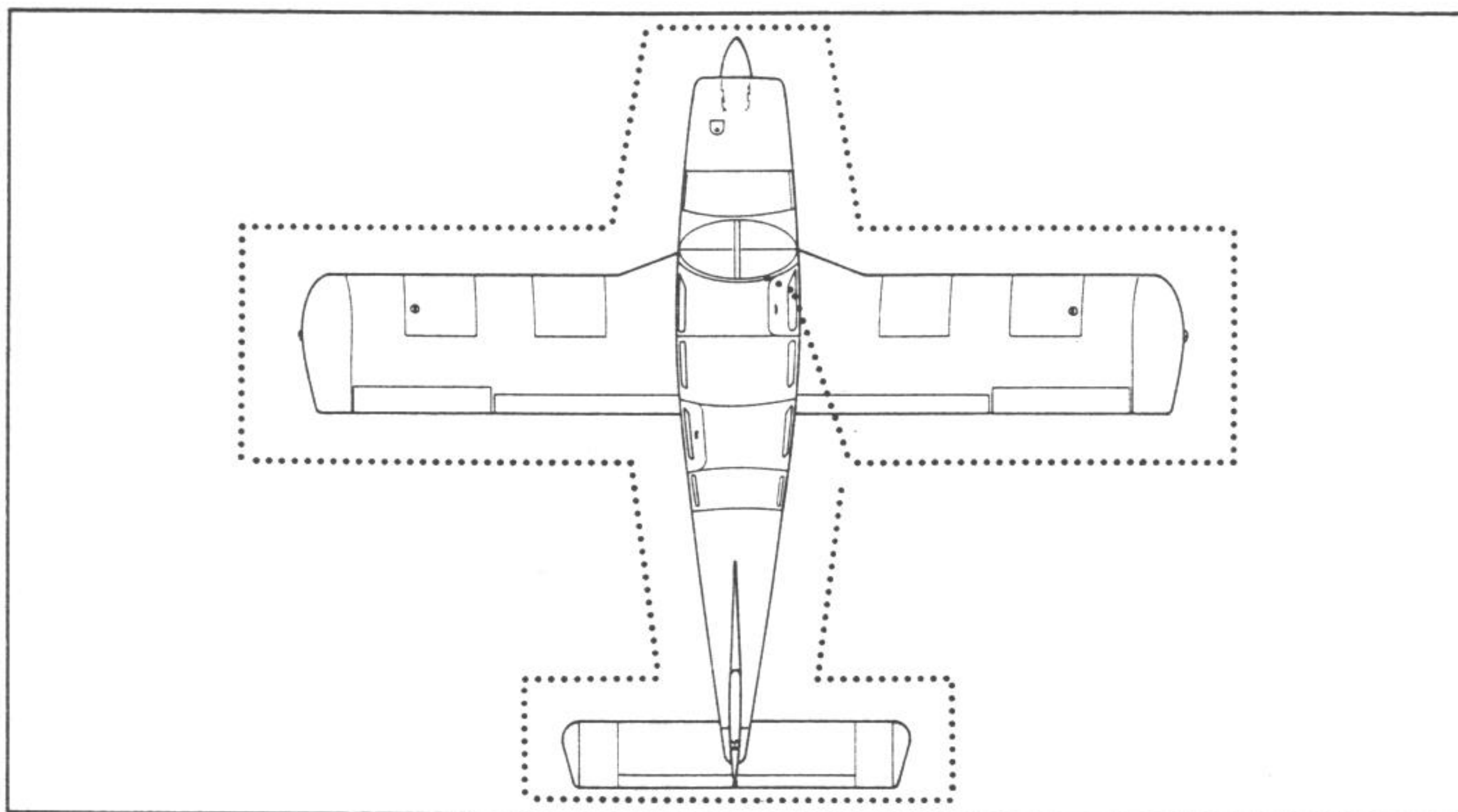


Figure 4-1

PREFLIGHT CHECK

Control wheel	release belts
Parking brake	set
Master switch	ON
Fuel quantity gauges	check
Master switch	OFF
Ignition	OFF
Exterior	check for damage
Control surfaces	check for interference - free of ice, snow, frost
Hinges	check for interference
Wings	free of ice, snow, frost
Stall warning	check
Navigation lights	check
Fuel tanks	check supply visually - secure caps
Fuel tank sumps	drain and check for water, sediment and proper fuel
Fuel vents	open
Main gear struts	proper inflation (4.0 in.)
Tires	check
Brake blocks	check

Pitot heat	remove cover - holes clear
Windshield	clean
Propeller and spinner	check
Fuel and oil	check for leaks
Oil	check level
Dipstick	properly seated
Cowling	secure
Inspection covers	secure
Nose wheel tire	check
Nose gear strut	proper inflation (2.60 in.)
Air inlets	clear
Alternator belt	check tension
Tow bar and control locks	stow
Baggage	stowed properly - secure
Baggage door	close and secure
Fuel strainer	drain and check for water, sediment and proper fuel
Primary flight controls	proper operation
Cabin doors	close and secure
Required papers	on board
Seat belts and harness	fastened - check inertia reel

BEFORE STARTING ENGINE

- | Parking brake set
- Propeller full INCREASE rpm
- Fuel selector desired tank

STARTING ENGINE WHEN COLD

- Throttle 1/2" open
- Master switch ON
- Electric fuel pump ON
- Mixture prime - then idle cut-off
- Starter engage
- Mixture full RICH
- Throttle adjust
- Oil pressure check

STARTING ENGINE WHEN HOT

- Throttle 1/2" open
- Master switch ON
- Electric fuel pump ON
- Mixture idle cut-off
- Starter engage
- Mixture advance
- Throttle adjust
- Oil pressure check

STARTING ENGINE WHEN FLOODED

- Throttle open full
- Master switch ON
- Electric fuel pump OFF
- Mixture idle cut-off
- Starter engage
- Mixture advance
- Throttle retard
- Oil pressure check

STARTING WITH EXTERNAL POWER SOURCE

- Master switch OFF
- Terminals connect
- Plug insert in fuselage
- Master switch ON
- Proceed with normal start
- Master switch OFF
- Plug disconnect from fuselage
- Master switch ON - check ammeter
- Oil pressure check

WARM-UP

- Throttle 1000 to 1200 RPM

TAXIING

- Chocks removed
- | Parking brake release
- Taxi area clear
- Throttle apply slowly
- Prop high RPM
- Brakes check
- Steering check

GROUND CHECK

- | Parking brake set
- Propeller full INCREASE
- Throttle 2000 RPM
- Magnetos max. drop 175 RPM
- max. diff. 50 RPM
- Vacuum 5.0" Hg. \pm .1
- Oil temp check
- Oil pressure check
- Air conditioner check
- Annunciator panel press-to-test
- Propeller exercise - then full INCREASE
- Alternate air check
- Engine is warm for takeoff when throttle can be opened without engine faltering.
- Electric fuel pump OFF
- Fuel pressure check

SOFT FIELD

Flaps 25° (second notch)
Accelerate to 46-61 mph IAS (40 to 53 kts IAS)
depending on aircraft weight
Control wheel back pressure to
rotate to climb attitude
After breaking ground, accelerate to 60-67 mph IAS
(52 to 58 kts IAS) depending on aircraft weight

Accelerate to best flaps up rate of climb speed 106
mph IAS (92 kts IAS)
Flaps retract slowly

CLIMB

Best rate (3600 lb) (gear up)	
(flaps up)	106 mph IAS (92 kts IAS)
Best rate (3600 lb) (gear down)	
(flaps up)	100 mph IAS (87 kts IAS)
Best angle (3600 lb) (gear up)	
(flaps up)	100 mph IAS (87 kts IAS)
Best angle (3600 lb) (gear down)	
(flaps up)	78 mph IAS (68 kts IAS)
En route	120 mph IAS (104 kts IAS)
Electric fuel pump	OFF at desired altitude

CRUISING

Reference performance charts, Avco-Lycoming
Operator's Manual and power setting table.

Normal max power	75%
Power	set per power table
Mixture	adjust

Flaps 25° (second notch)
Accelerate to 46-61 mph IAS (40 to 53 kts IAS)
depending on aircraft weight
Control wheel back pressure to
rotate to climb attitude

After breaking ground, accelerate to 60-67 mph IAS (52 to 58 kts IAS) depending on aircraft weight

Gear (OVERRIDE ENGAGED on aircraft equipped with backup gear extender) UP

Accelerate to best flaps up angle of climb speed - 100 mph IAS (87 kts IAS), slowly retract the flaps and climb past the obstacle.

Accelerate to best flaps up rate of climb speed - 106 mph IAS (92 kts IAS)

Fuel selector	proper tank
Seat backs	erect
Belts/harness	fasten
Electric fuel pump	ON
Mixture	set
Propeller	set
Gear	down - 149 MPH IAS (129 KTS IAS) max
Flaps	set - 122 MPH IAS (106 KTS IAS) max
Air conditioner	OFF
Trim to 86 MPH IAS (75 KTS IAS)	

Flaps	retract
Electric fuel pump	OFF
Air conditioner	OFF
Radio's	OFF
Propeller	full INCREASE
Throttle	full aft
Mixture	idle cut-off
Magnetos	OFF
Master switch	OFF

Parking brake	set
Control wheel	secured with belts
Flaps	full up
Wheel chocks	in place
Tie downs	secure

4.7 AMPLIFIED NORMAL PROCEDURES (GENERAL)

The following paragraphs are provided to supply detailed information and explanations of the normal procedures necessary for the operation of the airplane.

4.9 PREFLIGHT CHECK

The airplane should be given a thorough preflight and walk-around check. The preflight should include a check of the airplane's operational status, computation of weight and C.G. limits, takeoff distance and in-flight performance. A weather briefing should be obtained for the intended flight path, and any other factors relating to a safe flight should be checked before takeoff.

Upon entering the cockpit, release the seat belts securing the control wheel and set the parking brake. Turn "ON" the master switch and check the fuel quantity gauges for sufficient fuel. After the fuel quantity check is made turn the master switch "OFF" and the ignition switch "OFF."

To begin the exterior walk-around, check for external damage and operational interference of the control surfaces or hinges. Insure that the wings and control surfaces are free of snow, ice, frost or any other foreign materials.

An operational check of the stall warning system should now be made by turning the master switch "ON," lifting the detector and checking to determine if the horn is actuated. The master switch should be returned to the "OFF" position after the check is complete.

The next step is to check the navigation lights. The master switch must be "ON" for this check.

A visual check of the fuel tank quantity should be performed. Remove the filler cap from each tank and visually check the supply. Be sure to secure the caps properly after the check is complete. Each inboard tank is furnished with an external fuel quantity indicator to assist the pilot in determining fuel quantities of less than 25 gallons. A visual check of this indicator should also be made.

The fuel system should be drained daily prior to the first flight and after refueling to check for water, sediment and proper fuel. Each fuel tank is equipped with an individual quick drain located at the lower inboard rear corner of the tank. The fuel strainer and a system quick drain valve are located in the fuselage at the lowest point of the fuel system. It is important that the fuel system be drained properly.

Drain each tank through its individual quick drain located at the lower inboard rear corner of the tank, making sure that enough fuel has been drained to insure that all water and sediment is removed.

Next, place a container under the fuel sump drain outlet located under the fuselage.

Now drain the fuel strainer by pressing down on the lever located on the right hand side of the cabin below the forward edge of the rear seat. The fuel selector should be positioned in the following sequence while draining the strainer: "OFF," "LEFT," "RIGHT." This is done to insure that the fuel lines between each tank outlet and fuel strainer are drained as well as the strainer. When the fuel tanks are full, it will take approximately six seconds to drain all the fuel in one of the lines from a tank to the fuel strainer. When the fuel tanks are less than full, it will take a few seconds longer.

Examine the contents of the container placed under the fuel sump drain outlet for water, sediment and proper fuel and dispose of the contents.

CAUTION

When draining any amount of fuel, care should be taken to insure that no fire hazard exists before starting engine.

After using the under-seat quick drain, it should be checked from outside to make sure it has closed completely and is not leaking.

Check all of the fuel tank vents to make sure they are open.

Next, a complete check of the landing gear. Check the main gear shock struts for proper inflation. There should be 4.0 inches of strut exposure under a normal static load. The nose gear should be checked for 2.60 inches of strut exposure. Check all tires for cuts and wear and insure proper inflation. Make a visual check of the brake blocks for wear or damage.

Remove the cover from the pitot head on the underside of the left wing. Check the pitot head to make sure the holes are open and clear of obstructions.

Don't forget to clean and check the windshield.

The propeller and spinner should be checked for defects or nicks.

Lift the cowlings and check for any obvious fuel or oil leaks. Check the oil level. Make sure that the dipstick has properly seated after checking. Secure the cowlings and check the inspection covers.

Check the air inlets for foreign matter and the alternator belt for proper tension.

Stow the tow bar and check the baggage for proper storage and security. The baggage compartment doors should be closed and secure.

Upon entering the aircraft, ascertain that all primary flight controls operate properly. Close and secure the fore and aft cabin doors and check that all the required papers are in order and in the airplane.

Fasten the seat belts and shoulder harness and check the function of the inertia reel by pulling sharply on the strap.

4.11 BEFORE STARTING ENGINE

Before starting the engine the parking brake should be set "ON" and the propeller lever moved to the full "INCREASE" rpm position. The fuel selector should then be moved to the desired tank.

4.13 STARTING ENGINE

(a) Starting Engine When Cold

Open the throttle lever approximately 1/2 inch. Turn "ON" the master switch and the electric fuel pump. Move the mixture control to full "RICH" until an indication is noted on the fuel flow meter. The engine is now primed.

Move the mixture control to idle cut-off and engage the starter by rotating the magneto switch clockwise and pressing in. When the engine fires, release the magneto switch, advance the mixture control to full "RICH" and move the throttle to the desired setting.

If the engine does not fire within five to ten seconds, disengage the starter and reprime.

(b) Starting Engine When Hot

Open the throttle approximately 1/2 inch. Turn "ON" the master switch and the electric fuel pump. Move the mixture control lever to idle cut-off and engage the starter by rotating the magneto switch clockwise and pressing in. When the engine fires, release the magneto switch, advance the mixture and move the throttle to the desired setting.

(c) Starting Engine When Flooded

The throttle lever should be full "OPEN." Turn "ON" the master switch and turn "OFF" the emergency fuel pump. Move the mixture control lever to idle cut-off and engage the starter by rotating the magneto switch clockwise and pressing in. When the engine fires, release the magneto switch, advance the mixture and retard the throttle.

(d) Starting Engine With External Power Source

An optional feature called the Piper External Power (PEP) allows the operator to use an external battery to crank the engine without having to gain access to the airplane's battery.

Turn the airplane master switch "OFF." Connect the RED lead of the PEP kit jumper cable to the POSITIVE (+) terminal of an external 12-volt battery and the BLACK lead to the NEGATIVE (-) terminal. Insert the plug of the jumper cable to the socket located on the fuselage.

Turn "ON" the airplane master switch and proceed with the normal engine starting procedure.

After the engine has started, turn the master switch "OFF" and disconnect the jumper cable from the airplane. Return the master switch to the "ON" position and check the alternator ammeter for an indication of output. DO NOT ATTEMPT FLIGHT IF THERE IS NO INDICATION OF ALTERNATOR OUTPUT.

When the engine is firing evenly, advance the throttle to 800 RPM. If oil pressure is not indicated within thirty seconds, stop the engine and determine the trouble. In cold weather it will take a few seconds longer to get an oil pressure indication. If the engine has failed to start, refer to the Lycoming Operating Handbook, Engine Troubles and Their Remedies.

Starter manufacturers recommend that cranking periods be limited to thirty seconds with a two minute rest between cranking periods. Longer cranking periods will shorten the life of the starter.

4.15 WARM-UP

Warm-up the engine at 1000 to 1200 RPM. Avoid prolonged idling at low RPM, as this practice may result in fouled spark plugs.

Takeoff may be made as soon as the ground check is completed, provided that the throttle may be opened fully without backfiring or skipping, and without a reduction in engine oil pressure.

Do not operate the engine at high RPM when running up or taxiing over ground containing loose stones, gravel or any loose material that may cause damage to the propeller blades.

4.17 TAXIING

Before attempting to taxi the airplane, ground personnel should be instructed and approved by a qualified person authorized by the owner. Ascertain that the wheel chocks have been removed and propeller back blast and taxi areas are clear. Release the parking brake.

Power should be applied slowly to start the taxi roll. Taxi a few feet forward and apply the brakes to determine their effectiveness. Taxi with the propeller set in low pitch, high RPM setting. While taxiing, make slight turns to ascertain the effectiveness of the steering.

Observe wing clearances when taxiing near buildings or other stationary objects. If possible, station an observer outside the airplane.

Avoid holes and ruts when taxiing over uneven ground.

Do not operate the engine at high RPM when running up or taxiing over ground containing loose stones, gravel or any loose material that may cause damage to the propeller blades.

4.19 GROUND CHECK

Set the parking brake. The magnetos should be checked at 2000 RPM with the propeller set at high RPM. Drop off on either magneto should not exceed 175 RPM and the difference between the magnetos should not exceed 50 RPM. Operation on one magneto should not exceed 10 seconds.

Check the vacuum gauge; the indicator should read $5.0'' \pm .1''$ Hg at 2000 RPM.

Check both oil temperature and oil pressure. The temperature may be low for some time if the engine is being run for the first time of the day, but as long as the pressure is within limits the engine is ready for takeoff.

Check the annunciator panel lights with the press-to-test button. Also check the air conditioner and the alternate air.

The propeller control should be moved through its complete range to check for proper operation, and then placed in full INCREASE rpm for takeoff. To obtain maximum rpm, push the pedestal mounted control fully forward on the instrument panel. Do not allow a drop of more than 500 rpm during this check. In cold weather the propeller control should be cycled from high to low rpm at least three times before takeoff to make sure that warm engine oil has circulated.

The electric fuel pump should be turned OFF after starting or during warmup to make sure that the engine driven pump is operating. Prior to takeoff the electric pump should be turned ON again to prevent loss of power during takeoff should the engine driven pump fail. The engine is warm enough for takeoff when the throttle can be opened without the engine faltering.

4.21 BEFORE TAKEOFF

All aspects of each particular takeoff should be considered prior to executing the takeoff procedure.

On aircraft equipped with the backup gear extender, after takeoff, if the gear selector switch is placed in the gear up position before reaching the airspeed at which the system no longer commands gear down*, the gear will not retract. For obstacle clearance on takeoff and for takeoffs from high altitude airports, the landing gear can be retracted after lift-off at the pilot's discretion by placing the gear selector switch in the UP position and then latching the emergency gear lever in the OVERRIDE ENGAGED position. If desired, the OVERRIDE ENGAGED position can be selected and latched before takeoff, and the gear will then retract as soon as the gear selector switch is placed in the UP position. Care should always be taken not to retract the gear prematurely, or the aircraft could settle back onto the runway. If the override lock is used for takeoff, it should be disengaged as soon as sufficient airspeed and terrain clearance are obtained, to return the gear system to normal operation. For normal operation, the pilot should extend and retract the gear with the gear selector switch located on the instrument panel, just as he would if the backup gear extender system were not installed.

If the airplane is to be operated with the rear cabin door removed, it is recommended that all passengers wear parachutes.

After all aspects of the takeoff are considered, a pretakeoff check procedure must be performed.

Turn ON the master switch and check and set all of the flight instruments as required. Check the fuel selector to make sure it is on the proper tank (fullest). Turn ON the electric fuel pump and check the engine gauges. The alternate air should be in the CLOSED position.

All seat backs should be erect.

The mixture and propeller control levers should be set and the seat belts and shoulder harness fastened. Fasten the seat belts snugly around the empty seats.

Exercise and set the flaps and trim tab. Ensure proper flight control movement and response.

All doors should be properly secured and latched.

On air conditioned models, the air conditioner must be OFF to ensure normal takeoff performance. Release the parking brake.

*Approximately 93 mph IAS, (81 kts IAS) at sea level to approximately 115 mph IAS, (100 kts IAS) at 10,000 ft with a straight line variation between.

4.23 TAKEOFF

The normal takeoff technique is conventional for the Cherokee Lance. The tab should be set slightly aft of neutral, with the exact setting determined by the loading of the airplane. Allow the airplane to accelerate to 60 to 75 mph IAS (52 to 65 kts IAS) depending on the weight of the aircraft and ease back on the control wheel to rotate to climb attitude.

The procedure used for a short field takeoff with an obstacle clearance or a soft field takeoff differs slightly from the normal technique. The flaps should be lowered to 25° (second notch). Allow the aircraft to accelerate to 46 to 61 mph IAS (40 to 53 kts IAS) depending on the aircraft weight and rotate the aircraft to climb attitude. After breaking ground, accelerate to 60 to 67 mph IAS (52 to 58 kts IAS), depending on aircraft weight and select gear up*. Continue to climb while accelerating to the flaps-up rate of climb speed, 106 mph IAS (92 kts IAS) if no obstacle is present or 100 mph IAS (87 kts IAS) if obstacle clearance is a consideration. Slowly retract the flaps while climbing out.

4.25 CLIMB

The best rate of climb at gross weight will be obtained at 106 mph IAS (92 kts IAS). The best angle of climb may be obtained at 100 mph IAS (87 kts IAS). At lighter than gross weight these speed are reduced somewhat**. For climbing en route, a speed of 120 mph IAS (104 kts IAS) is recommended. This will produce better forward speed and increased visibility over the nose during the climb.

When reaching the desired altitude, the electric fuel pump may be turned off.

NOTE

On aircraft equipped with the backup gear extender, to prevent the landing gear from extending automatically during climbs at best angle of climb speed at any altitude, or best rate of climb speed above approximately 15,000 feet density altitude, it may be necessary to select **OVERRIDE ENGAGED**. This altitude decreases with reduced climb power and increases with increased climb speed.

*If desired, on aircraft equipped with backup gear extender, the **OVERRIDE ENGAGED** position can be selected and latched before takeoff. The gear will now retract as soon as the gear selector switch is placed in the UP position. Care should be taken not to retract the gear prematurely, in event aircraft should settle back onto the runway. If the override lock is used for takeoff, disengage as soon as sufficient terrain and obstacle clearance is obtained, to return the gear system to normal operation.

**To obtain the performance presented in the Performance Section of this handbook, full power (full throttle and 2700 rpm) must be used.

4.27 CRUISING

The cruising speed of the Cherokee Lance is determined by many factors, including power setting, altitude, temperature, loading and equipment installed in the airplane.

The normal maximum cruising power is 75% of the rated horsepower of the engine. When selecting cruising RPM below 2300, limiting manifold pressure for continuous operation, as specified by the appropriate "Avco-Lycoming Operator's Manual," should be observed.

To obtain the desired power, set the manifold pressure and RPM according to the power setting table in this manual.

Use of the mixture control in cruising flight reduces fuel consumption significantly, especially at higher altitudes. The mixture should be leaned during cruising operation above 5000 ft. altitude and at pilot's discretion at lower altitudes when 75% power or less is being used. If any doubt exists as to the amount of power being used, the mixture should be in the full "RICH" position for all operations under 5000 feet.

To lean the mixture, disengage the lock and pull the mixture control until the engine becomes rough, indicating that the lean mixture limit has been reached in the leaner cylinders. Then enrich the mixture by pushing the control towards the instrument panel until engine operation becomes smooth. The fuel flow meter will give a close approximation of the fuel being consumed. The low side of the power setting, as shown on the fuel flow meter, indicates best economy for that percent of power while the high side indicates best power.

If the airplane is equipped with the optional exhaust gas temperature (EGT) gauge, a more accurate means of leaning is available to the pilot. For this procedure, refer to the "Avco-Lycoming Operator's Manual."

In order to keep the airplane in best lateral trim during cruise flight, the fuel should be used alternately from each tank at one hour intervals.

Always remember that the electric fuel pump should be turned "ON" before switching tanks, and should be left on for a short period thereafter. To preclude making a hasty selection, and to provide continuity of flow, the selector should be changed to another tank before fuel is exhausted from the tank in use. The electric fuel pump should be normally "OFF" so that any malfunction of the engine driven fuel pump is immediately apparent. If signs of fuel starvation should occur at any time during flight, fuel exhaustion should be suspected, at which time the fuel selector should be immediately positioned to a full tank and the electric fuel pump switched to the "ON" position.

4.29 APPROACH AND LANDING

Check to insure the fuel selector is on the proper (fullest) tank and that the seat backs are erect. The seat belts and shoulder harness should be fastened and the inertia reel checked.

Turn "ON" the electric fuel pump and turn "OFF" the air conditioner. The mixture should be set in the full "RICH" position. Set the propeller at full "INCREASE" rpm to facilitate ample power for an emergency go-around.

The landing gear may be extended at speeds below 150 MPH CAS (130 KTS CAS). The airplane should be trimmed to an approach speed of about 86 MPH IAS (75 KTS IAS) with flaps extended. The flaps can be lowered at speeds up to 125 MPH CAS (109 KTS CAS), if desired.

The mixture control should be kept in full "RICH" position to insure maximum acceleration if it should be necessary to open the throttle again.

The amount of flap used during landings and the speed of the aircraft at contact with the runway should be varied according to the landing surface and conditions of wind and airplane loading. It is generally good practice to contact the ground at the minimum possible safe speed consistent with existing conditions.

Normally, the best technique for short and slow landings is to use full flap and enough power to maintain the desired airspeed and approach flight path. Mixture should be full "RICH," fuel on the fullest tank, and electric fuel pump "ON." Reduce the speed during the flareout and contact the ground close to the stalling speed. After ground contact hold the nose wheel off as long as possible. As the airplane slows down, gently lower the nose and apply the brakes. Braking is most effective when flaps are raised and back pressure is applied to the control wheel, putting most of the aircraft weight on the main wheels. In high wind conditions, particularly in strong crosswinds, it may be desirable to approach the ground at higher than normal speeds with partial or no flaps.

4.31 STOPPING ENGINE

At the pilot's discretion, the flaps should be raised and the electric fuel pump turned "OFF." The air conditioner and radios should be turned "OFF," the propeller set in the full "INCREASE" position, and the engine stopped by disengaging the mixture control lock and pulling the mixture control back to idle cut-off. The throttle should be left full aft to avoid engine vibration while stopping. Then the magneto and master switches must be turned "OFF."

4.33 PARKING

If necessary, the airplane should be moved on the ground with the aid of the nose wheel tow bar provided with each airplane and secured behind the rear seats. The aileron and stabilator controls should be secured by looping the safety belt through the control wheel and pulling it snug. The flaps are locked when in the "UP" position and should be left retracted.

Tie downs can be secured to rings provided under each wing and to the tail skid. The rudder is held in position by its connections to the nose wheel steering and normally does not have to be secured.

4.35 STALLS

The stall characteristics of the Cherokee Lance are conventional. An approaching stall is indicated by a stall warning horn which is activated between five and ten miles per hour above stall speed. Mild airframe buffeting and gentle pitching may also precede the stall.

The gross weight stalling speed of the Cherokee Lance with power off and full flaps is 70 MPH CAS (61 KTS CAS). With the flaps up this speed is increased 7 MPH (6 KTS). Loss of altitude during stalls can be as great as 400 feet, depending on configuration and power.

The following performance figures were obtained during FAA type tests and may be realized under conditions indicated with the airplane and engine in good condition and with average piloting technique. All performance is given for 3600 pounds. Stall speeds at lower weights will be correspondingly less.

The loss of altitude during stalls may be as much as 400 feet, depending on configuration and power.

Stalling speeds, in mph, power off, versus angle of bank (calibrated airspeed):

Angle of Bank		0°	20°	40°	50°	60°
Gear Down - Flaps Up	MPH	77	79	88	96	109
	KTS	67	69	76	83	95
Gear Down - Flaps - 10° (First Notch)	MPH	75	77	86	94	106
	KTS	65	67	74	81	92
Gear Down - Flaps - 25° (Second Notch)	MPH	71	73	81	89	100
	KTS	62	64	71	77	87
Gear Down - Flaps - 40° (Third Notch)	MPH	70	72	80	87	99
	KTS	61	63	69	76	86

NOTE

The stall warning system is inoperative with the master switch "OFF."

During preflight, the stall warning system should be checked by turning the master switch "ON," lifting the detector and checking to determine if the horn is actuated. The master switch should be returned to the "OFF" position after the check is complete.

4.37 TURBULENT AIR OPERATION

In keeping with good operating practice used in all aircraft, it is recommended that when turbulent air is encountered or expected, the airspeed be reduced to maneuvering speed to reduce the structural loads caused by gusts and to allow for inadvertent speed build-ups which may occur as a result of the turbulence or of distractions caused by the conditions.

4.39 LANDING GEAR

Some airplanes are equipped with an airspeed - power sensing system (backup gear extender) which extends the landing gear under low airspeed - power conditions* even though the pilot may not have selected gear down. This system will also prevent retraction of the landing gear by normal means when the airspeed - power values are below a predetermined minimum. To override this system or to hold the emergency gear lever in the OVERRIDE ENGAGED position without maintaining manual pressure on the emergency gear lever, pull the lever full up and push the latch down. To release the override, pull lever up to disengage the latch, then release lever.

For normal operation, the pilot should extend and retract the gear with the gear selector switch located on the instrument panel, just as he would if the backup gear extender system were not installed.

The pilot should become familiar with the function and significance of the landing gear position indicators and warning lights.

The red gear warning light on the instrument panel and the horn operate simultaneously in flight when the throttle is reduced to where the manifold pressure is approximately 14 inches of mercury or below, and the gear selector switch is not in the DOWN position. On aircraft equipped with the backup gear extender, this warning will also occur during flight when the system has lowered the landing gear and the gear selector switch is not in the DOWN position and the throttle is not full OPEN.

The red gear warning light on the instrument panel and the horn will also operate simultaneously on the ground when the master switch is ON and the gear selector switch is in the UP position.

The three green lights on the instrument panel operate individually as each associated gear is locked in the extended position.

WARNING

Radio lights' dimmer switch must be off to obtain gear lights full intensity during daytime flying. When aircraft is operated at night and radio lights' dimmer switch is turned on, gear lights will automatically dim.

On aircraft equipped with the backup gear extender, the yellow Auto Ext. OFF light immediately below the gear selector switch flashes whenever the emergency gear lever is in the OVERRIDE ENGAGED position.

When the Emergency Landing Gear Extension Procedure (Paragraph 3.27) is performed for training purposes, the following changes must be made to the procedure in order to prevent the hydraulic pump from activating during the procedure. On aircraft equipped with the backup gear extender, the landing gear selector must be left in the UP position until all gear position indicators are green. On aircraft which do NOT have the backup gear extender, a pull type LANDING GEAR PUMP circuit breaker is installed and must be pulled prior to executing the emergency extension procedure. The circuit breaker must be reset after the completion of the procedure to allow normal gear system operation.

4.41 WEIGHT AND BALANCE

It is the responsibility of the owner and pilot to determine that the airplane remains within the allowable weight vs. center of gravity envelope while in flight.

For weight and balance data, refer to Section 6 (Weight and Balance).

*Approximately 118 mph IAS, (103 kts IAS) at any altitude, power off.