

# **INTERNATIONAL BIRDDOG ASSOCIATION**



## **L-19/O-1 OPERATORS SAFETY SYLLABUS**

**JANUARY 2004**

# FOREWORD

The statement has been made that we need to learn from others mistakes since we do not have enough lifetime to make them all ourselves. A truism if there ever was one. This syllabus reflects a lifecycle of learning experiences starting with the first flight of the Birddog to the present. It is a summary of the knowledge and experience gained from over a half of a century of operations. Only through the combined learning efforts of our members, present and past, can we not only improve the breed, but also our capability in managing this aircraft.

This syllabus also stands as a recommendation for future operation of the Birddog and the effort to preserve this precious resource. Disciplined training has always been the hallmark of safe operation of aircraft. Our scenario is no different. We must look at these recommendations as something that is as natural to our flying as a pre-flight or mag check. Only then will these words on paper have the influence to impact the safe operation of the aircraft. Lip service will not do it and neither will wishing. The bottom line is that a Birddog operator needs to discipline him/herself to live these safety recommendation and thereby benefit from the combined experiences of the group.

This is a living document. Nothing says or dictates that all the wisdom of flying has been bequeath. There is more out there and as it becomes available we will enhance our curriculum with updates. Times change and so must we to survive. Anyone's knowledge is welcome and will be evaluated for inclusion.

That's the easy part. Now for the tougher aspect. Is it in your soul to follow through?? Can you make yourself to sit down read the recommendations and learn from them, or will this document fill a space on a shelf. It is my hope this document will occupy a space in your data/map case on your door in the Birddog. Furthermore it is sincerely hoped that it comes out of that box regularly and is applied to every flight.

Best wishes,  
Jim Mulvihill  
President

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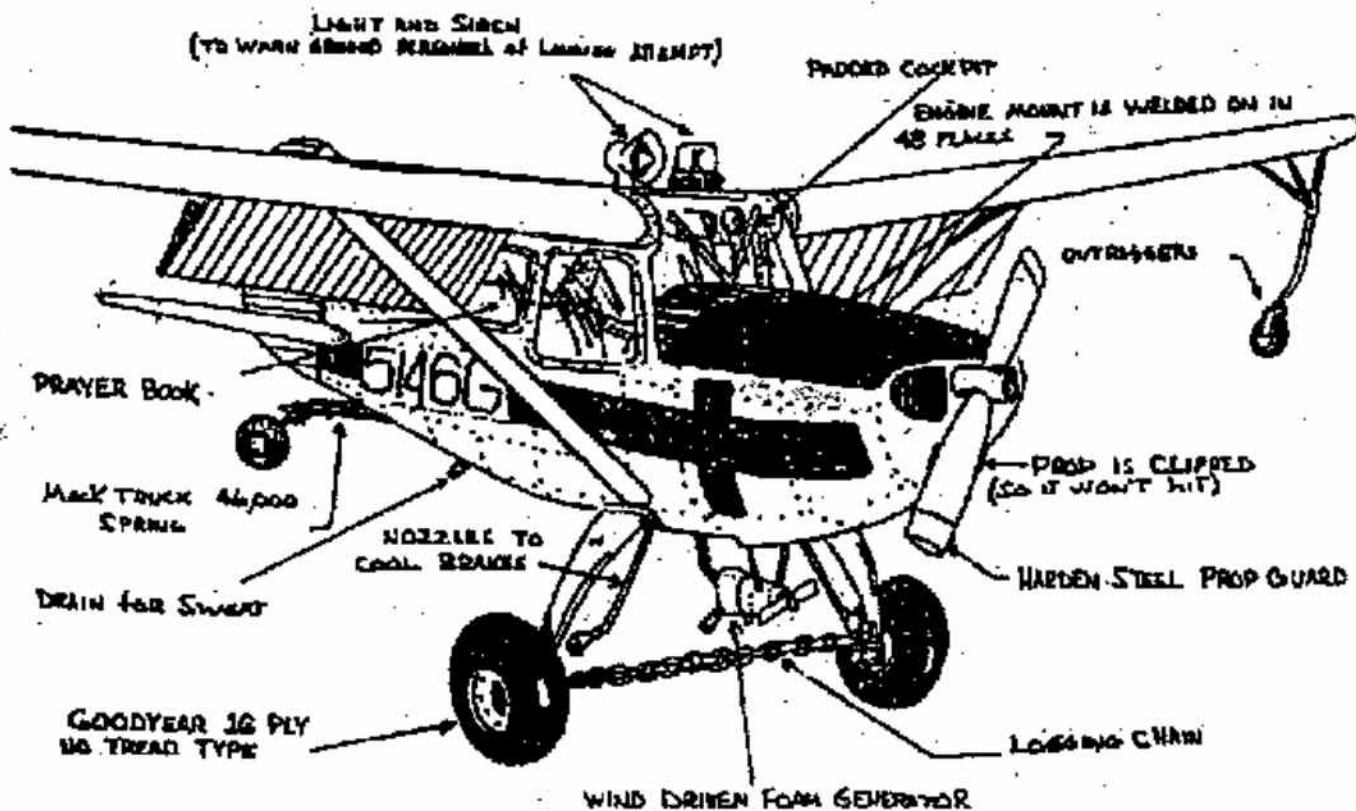
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# CHECK-OUT CERTIFICATE

## CESSNA 305A "BIRD DOG"

### 01A-L

LATEST MODIFICATION "L" IS FOR LANDING



Despite Latest LG Modifications We Still Ground Loop Taildraggers

## CHAPTER I BIRDDOG PILOT

- A. Normal takeoff techniques in a L-19 requires you to push forward on the stick as some point on the takeoff roll so as to raise the tail off the ground. A little further down the runway the stick is pulled back to attain the proper attitude for takeoff, and at the proper airspeed to become airborne. The critical point here is just when to raise the tail. Due to many factors, the tail of the L-19 can be raised during the first few feet of takeoff roll. Some pilots use this technique, but it should be avoided like the plague!

Just because the elevator can raise the tail wheel does not mean the rudder is effective. At the slow speed encountered during the first part of the takeoff roll, there is not enough air flowing over the rudder for it to be fully effective. If the tail is raised too early and the plane heads for the poa patch, full rudder may not be enough to recover. On the other hand, the tail wheel will take the tail of the aircraft anywhere you want it to go if it's firmly shoved against the ground. How do we do this? Simply hold the stick back firmly and the air flowing over the elevators will hold the tail wheel to the ground like glue and give you excellent directional control until you reach a speed where the rudder is effective.

What speed is that? It is recommended that the stick be held back firmly until the aircraft feels like its ready to fly. At this point, smoothly raise the tail up. Pause momentarily, and then apply the back pressure for takeoff.

Using this technique will enable the tail wheel to maintain directional control until the rudder becomes effective. At that point you raise the tail and transfer all directional control from the tail to the rudder.

- B. Never land a Birdog with a tailwind-----NEVER!

C. If your landing with 60 degrees of flaps, it a really bad time to decide to go around. Check your pilot's manual and you will find it insists that flaps are retracted to 30 degrees before starting a go around. As experience has shown some really bad things can happen if you pour the coals to it when the barn doors are hanging out.

D. The IBDA Safety Director maintains a list of recommended CFI's. An annual flight review to intercept any developing bad habits is not only a smart move, but also lots of fun.

E. The only way to really feel proficient is to fly your Birdog regularly. There are always excuses in life why today is not the day. Pilots are encouraged to fly at least once a week.

F. Practice makes perfect. In establishing proficiency look at how the CFI's and flight manual recommends it and then go practice the maneuver one at a time.

E. If it looks like an impossible landing, it probably is!! Look at your options before trying a landing that may have damage consequences.

F. There is no SHAME in a go-around!!

G. Most Birddog ground loops have occurred in wind conditions of less than 10 knots and favoring the chosen runway. Fly the Birddog from chuck to chock. Do not become complacent!!

H. If you have lots of tail wheel time and buy a Birddog, insist on a checkout with a recommended CFI. A Birddog is a different kind of animal!

## **CHAPTER II BIRDDOG MECHANICAL OPERATION**

A. if the engine should suddenly start running rough, indicating too rich a mixture, briskly move the mixture control through its full range of travel several times. This should cause the engine to run smoothly again. Occasionally dirt may become lodged under the mixture control poppet valve in the carburetor causing an excessively rich mixture to result. Fore and aft movement of the mixture control dislodges this dirt and resumes normal operation.

B. Aircraft tubes and tires always seep air. What is the last time you checked the pressure in yours?

C. With time, oil and fuel lines do wear out.....how long have yours been in service??

D. The gear attachment bolts will stretch with enough hard landings. Have yours ever been converted to a fresh NAS bolt?

E. The rudder pedals get lots of wear and tear over the years --- can you afford to have one break in flight?

F. Fifty years ago the military said our oil coolers had a 1200 hour service life – have you checked yours lately?

G. Tail wheels need lot of regular attention. What's the last time you're A/P checked yours?

II. Control cables should be checked on regular intervals. Although all locations should be checked regularly, two in particular are at high risk. One is the aileron cable near the rub strip on the wing. The other is the rudder cables as they go through the baggage compartment bulkhead and enter the rear fuselage. Contact your favorite mechanic for the proper way to check for damage assessment.

### **CHAPTER III OTHER BIRDDOG SAFETY ISSUES**

A. Never drain fuel out of the wings into plastic receptacles. Mr. Static Electricity can ruin your day with one quick fireball.

B Several late issues of the Birddog manual may have an improper component listed for the clevis rod end (fork) that connects the rudder cable to the rudder link shackles. This component is listed apparently incorrectly as an AN-161-32RI. (MS21252-5RI.). Most older manuals show this component to be an AN161-22RL, which appears to be correct. If you contemplate replacing this component be sure to check with you local mechanic to make sure the right parts are used.

C. If you buy a Birddog seriously consider having a current, proficient Birddog pilot ferry the new pride and joy to your home base.

## **CHAPTER IV**

# **BIRDDOG PRIMARY FLIGHT PROFICIENCY RECOMMENDATIONS**

## BIENNIAL FLIGHT REVIEW

The biennial flight review is NOT a check ride. It is meant to be a review of the new regulations and to do maneuvers in the airplane that we don't do in normal flight. If we don't do some maneuver to the satisfaction of the flight instructor, the instructor will give instruction to help us do the maneuver better. The review is only required once every 2 years, however I encourage each pilot to do it every year and make it worth while and save your airplane and your self esteem.

The following is a list of items that should be included in your review.

### I. Oral discussion.

1. New regulations and a review of the ones that affect your area of operations.
2. Mechanical items that affect the Bird Dog in particular.
3. TFR and weather that are focused at our home base.

### II. Flight.

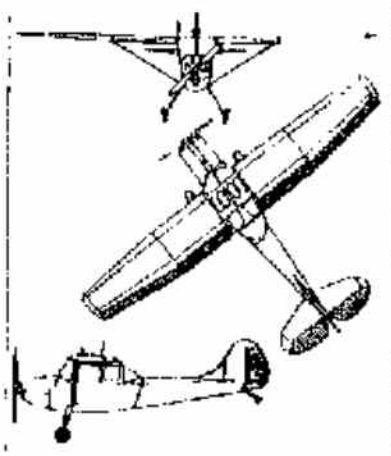
1. Preflight and walk around
2. Checklist and engine start
3. Taxi
4. Normal take-off
5. Climbs and climbing turns
6. Level turns shallow, 30 and 45 degrees of bank.
7. Stalls: straight ahead, 30 degrees of bank and power on or departure stalls, rudder control stall.
8. Rectangular course or "S" turns across a road.
9. Simulated engine out landings, using high key, base key and low key method
10. Landings: normal landings, 3 point and wheel, cross wind landings: 3 point and wheel. Short field and soft field. No flap, 30 and 45 degree flap landings
11. Takeoffs: during the landings phase also perform short and soft field takeoff: with a variety of flap settings in both headwind and crosswinds.

This scenario requires about 2 hours and will give you more confidence to control your Bird Dog in any situation within your own preset limitations. We all must be aware of cockpit resource management and be aware of our physical and mental conditions before we fly. We have the expanded version of the above lesson plan and can provide it to the instructors and at fly-ins as we meet across the country.



Aircraft: Cessna L 19A Bird Dog  
 Manufacturer: Cessna Aircraft Co.  
 Type: Liaison  
 Year: 1950  
 Engine: One Continental C-470-B, 4-cylinder, horizontally opposed, air-cooled, 213 hp  
 Wingspan: 35 ft 0 in (10.67 m)  
 Length: 25 ft 9 in (7.85 m)  
 Height: 7 ft 2 in (2.21 m)  
 Weight: 2,400 lb (1,088 kg) (Loaded)  
 Maximum speed: 151 mph (243 km/h) at sea level  
 Ceiling: 18,500 ft (5,640 m)  
 Range: 520 miles (836 km)  
 Crew: 2

This was the most widely used light liaison and observation aircraft used by the U.S.A.F. and U.S.A.A.F. in the postwar period. More than 3,100 Cessna L 19 Bird Dogs were produced, and remained in service from the end of 1950 until the late 1970s, taking part in the Korean War and the Vietnam War. The Bird Dog was derived directly from a commercial model, the Cessna 170. The initial order for 14 aircraft handed out in June 1950 was soon followed by further massive orders which, by October 1954, brought the total of L-19As delivered to 2,480. In 1956 a further 310 aircraft (T1-19A) were ordered for training purposes, while in 1957 the U.S.A.F. requested 306 Bird Dogs with modified engines and equipment, which it designated L-19E. The production of this version stopped in 1959, but in 1961 a further 70 were ordered.



This is a re-print of the original text book used by instructors and Army student pilots being taught by Civilian Flight Instructors under contract by the U.S. Army in 1956.

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STUDENT TEXTBOOK (L-19)  
OCTOBER 1956

SECTION I

OPERATING INSTRUCTIONS

A. OBJECTIVE

To standardize the operating instructions for L-19A aircraft.

B. INTRODUCTION

The provisions of this text will be used as a guide by pilots operating L-19A aircraft assigned to this program.

C. LIMITATIONS AND RESTRICTIONS

Maneuver	Entry Speed (IAS)
Chandelle	105 mph
Lazy Eight	110 mph
Steep Turn	90-100 mph
Stalls	Stalling

1. Intentional spinning with flaps down prohibited.
2. Do not extend flaps at airspeeds greater than 90 mph.
3. Do not exceed 178 mph IAS at any time.
4. Do not exceed 145 mph IAS with rear windows open.
5. Do not exceed 120 mph IAS with front windows open.
6. Do not exceed 2600 engine rpm at any time.
7. Trim control will not be used when flaps are used.

PREFLIGHT INSPECTION AND COCKPIT PROCEDURE  
FOR L-19 AIRCRAFT

**PURPOSE AND SCOPE:** This checklist provides standard procedures for pilots to follow in accomplishing the preflight inspection and pre-takeoff cockpit check of the L-19 airplane. Purpose of the inspection is to insure that the airplane is in flyable condition. The inspection is performed prior to flight, and consists of a visual and operational check to discover any defects, failures and/or maladjustments which could lead to airplane accidents or aborted missions. This check also serves to acquaint the pilot with any unusual characteristic or condition which, if unknown, could lead to trouble.

1. PREFLIGHT INSPECTION

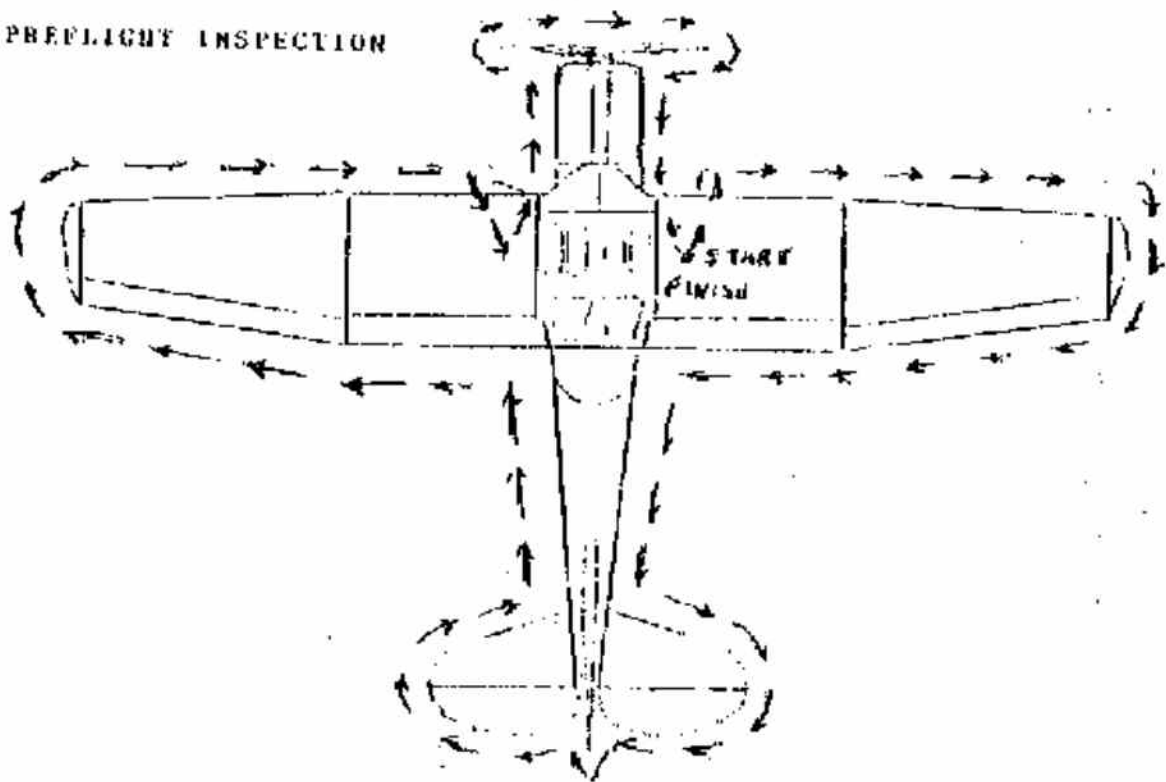


Figure 1. Direction of L-19 Preflight Visual Inspection

a. Cockpit Inspection:

- (1) Check Form 781-2 and 3 to determine "Status Today" and to obtain a detailed explanation of each defect in the event the airplane is on a red symbol. Check remarks of previous pilots if airplane has been flown that day.
- (2) Check to determine that all switches are in OFF position.

#### WARNING

Do not begin outside inspection unless the ignition is OFF.

- (3) Release control locks.
- (4) Check throttle CLOSED.
- (5) Turn fuel selector valve ON.
- (6) Check fire extinguisher and first aid kit for physical presence and condition.
- (7) Remove or secure any loose objects in cabin and baggage compartment.
- (8) Check headsets and microphone for physical presence and condition.
- (9) Check emergency door release.

#### b. Outside inspection:

#### WARNING

During the outside inspection, check for any signs of distortion caused by excess loads imposed on the structure. Also check the strut fittings for wear or elongation of holes. Check all rivets on strut for tightness and distortion.

- (1) Drain a small quantity of gas from the right fuel tank drain cock. Inspect fuel for water, dirt, or sediment.
- (2) Inspect right wing strut for dents and cracks.
- (3) Check the right wing for skin damage, signs of buckling, cracking, splitting, general distortion or dents. If ice or excessive frost has formed on the surface of the wing, remove ALL traces before the aircraft is flown.
- (4) Check navigation light for general condition.
- (5) Check right aileron and flap hinges for freedom of movement, security, and signs of excessive wear at mounting hinges. Check for any sign of skin contact between wing and aileron or flap which could cause wear on skin of either part.
- (6) Check right STATIC SOURCE for possible stoppage. Remove any foreign matter accumulated in or around the STATIC SOURCE opening.

#### CAUTION

Care should be taken not to clog STATIC SOURCE opening.

- (7) Inspect fuselage and tail surface for skin damage such as dents, rips, tears, buckling, loose rivets or any distortion which could have been caused by unusual stresses being placed on the airplane.
- (8) Check elevator and rudder hinge bolts for excessive wear, security, elongation of bearing surfaces, and distortion of any kind around the fittings.
- (9) Check tailwheel springs for proper alignment and security. Check steering chains for proper tension and security. Check tire inflation. Check rudder horns for cracks or distortion.
- (10) Check left STATIC SOURCE for possible stoppage. Remove any foreign matter which has accumulated in or around the STATIC SOURCE opening.

#### CAUTION

Care should be taken not to clog the STATIC SOURCE opening.

- (11) Check left aileron and flap hinges for freedom of movement, security, signs of excessive wear at the mounting hinges, and any sign of skin contact.
- (12) Check navigation light for general condition.
- (13) Check left wing for skin damage, signs of buckling, cracking, splitting, general distortion or dents. If ice or excessive frost has formed on the surface of the wing, remove ALL traces before the aircraft is flown. Check landing light window for security and cleanliness.
- (14) Remove pitot tube cover and check pitot tube for possible stoppage, alignment and security. If the possibility of icing exists, check the pitot heater by turning the master switch and the pitot heater switch "ON", then check for heat at the pitot tube.
- (15) Inspect left wing strut for dents and cracks. Be particularly careful to check for any signs of distortion caused by excessive loads imposed on the structure. Also check strut fittings for wear or elongation of holes. Check all rivets on strut for tightness and distortion.
- (16) Drain a small quantity of gas from left fuel tank drain cock. Inspect fuel for water, dirt, and sediment.

- (17) Check fuel level of left wing tank by removing fuel tank cap and checking both visually and by feel. Replace and secure fuel tank cap.
- (18) Check top of left wing and center of fuselage for distortion or damage. Check condition of antennas.
- (19) Check left landing gear for alignment and distortion.
- (20) Visually check brake clips for presence and condition. Check axle alignment and wheel axis for proper position.
- (21) Visually check tire for cuts, bruises and proper inflation.
- (22) Check brake lines for damage or signs of leakage.
- (23) Inspect auxiliary fuel pump drain opening for stoppage.
- (24) Open left cowl. Check oil level, security of oil filler cap, exhaust stacks for security of mounting, all other accessible assemblies for appearance and security. Close cowl flap and secure fasteners, being particularly careful to insert safety clips from front to back. Drain a small quantity of fuel from fuel strainer, inspect for water, dirt, and sediment.
- (25) Check propeller for nicks and security. Preceding first flight of the day, pull propeller through two revolutions.
- (26) Remove ram filtered air cover, if installed. Check air filter for excessive accumulation of dirt.
- (27) Open right cowl flap and check for security of mounting of all accessible assemblies. Close cowl flap and secure fasteners, being particularly careful to insert safety clips from front to back.
- (28) Check cleanliness of windshield and cabin windows. Notice any signs of cracking or crazing.
- (29) Check the right landing gear for alignment and distortion.
- (30) Visually check brake clips for presence and condition, axle alignment and wheel axis for proper position.
- (31) Visually check tire for cuts, bruises and proper inflation.
- (32) Check brake lines for damage or signs of leakage.

