

NIFE CHECKLIST STUDY GUIDE

“Hollywood Script”



Introduction: The purpose of this guide is to introduce students to the use of NIFE checklists and also serve as a Standard Operating Procedure (SOP) for the verbiage used in challenges and responses, thereby improving CRM between crewmembers.

Checklists are safety tools: they provide mechanisms to ensure the aircraft is set up for flight, or to correct deficiencies before they cause a mishap. Extra guidance and explanations are included in the ACTION column of this guide.

At NIFE, checklists shall be initiated and read by the student, and shall be conducted in a challenge-action-response format. In general, the student will state the challenge, perform or verify the action and give the reply.

Execution: Initiate a checklist by announcing the title before working through each step sequentially. Each step of a checklist shall be executed by first stating the CHALLENGE, then performing the ACTION, and then stating the REPLY— actions are not to be verbalized. Upon completion of a checklist, state “[Checklist title] complete.” If a checklist needs to be paused or interrupted, state “holding the checklist at [item].” When ready to resume the checklist, state “continuing checklist.”

When an ACTION involves a "check" of the position or setting of a movable control or switch, the student is expected to TOUCH that item to aid in verification of its position or setting, and if necessary, change its setting or position to make it consistent with the prescribed reply.

Whenever a checklist item requires manipulation of a flight control, that action shall ONLY be performed by the person at the controls. The definition of “flight controls” includes the yoke and rudder, as well as the flaps, throttle, and brakes.

Responses such as “SET” imply that the item has been setup appropriately for the event’s conduct. Items are **never** to be reported "as required." Report the actual switch position.

NOTICE

Students are expected to bring the following items to each flight event.

1. Kneeboard (with notepad for writing down ATIS/clearance, and pen/pencil. Your writing instrument **shall** be secured (tied to kneeboard, etc. Do not purchase or use ID card reels to tether your writing utensil to your kneeboard.)
2. NIFE INFLIGHT GUIDE (kneeboard cards)
3. Filled out TOLD card for your specific event
4. Flight Training Instruction
5. Master Curriculum Guide

**PREFLIGHT WALK-
AROUND INSPECTION**

Pre-flight checklist does not need the verbal challenge response. Students will execute with the instructor following behind for proper checks. Fuel checks, removal of pitot tube cover, and Oil level check must be completed prior to walk-around inspection for timeliness of needing to service the oil or fuel. Fuel samples – use sampler cup and drain small quantity of fuel from fuel tank sump quick drain valve to check for water/sediment. Engine oil – do not operate with less than 6 quarts or 5.5 when the engine is hot. Nose fuel strainer – pull out knob for about 4 seconds to clear strainer of possible water/sediment. Always check the prop clear visually and verbally when required. Visually check the entire airplane while conducting the walk-around for general condition and security (damage, cuts, dents, or missing fasteners). Check freedom of movement and security for all control surfaces. Nosewheel strut should have a minimum of 3 inches. If leaving the airplane any time after the pre-flight has been conducted, ensure the control wheel lock is in, doors closed, tie downs used if windy, chocks are installed, and sunscreen are installed.

"BEFORE STARTING ENGINE CHECKLIST"

<u>CHALLENGE</u>	<u>ACTION</u>	<u>REPLY</u>
1. "PREFLIGHT INSP"	Ensure a thorough walk-around was accomplished prior to starting checklist. Verbalize fuel state and oil quantity.	“COMPLETED”
2. "CIRCUIT BREAKERS"	Visually look at every circuit breaker to verify that none are popped.	“CHECKED IN”
3. “BRAKES”	Gently pump and apply positive pressure to both brakes.	“CHECKED”

**4. "SEATS,
BELTS/HARNESSES"**

Adjust seats in order to properly use full rudders and ensure seats are locked in place. Then connect belts and harnesses ensuring a snug fit.

"ADJUSTED & SECURED"

"BEFORE STARTING ENGINE CHECKLIST COMPLETE"

"STARTING ENGINE CHECKLIST"

<u>CHALLENGE</u>	<u>ACTION</u>	<u>REPLY</u>
1. "IGNITION KEY"	Take the key off the glare shield and insert into the ignition.	"INSERTED"
2. "AVIONICS"	Check switch in OFF . **NOTE: The avionics power switch must be OFF during engine starts to prevent possible damage to avionics	"OFF"
3. "CARB HEAT"	Check carb heat knob is pushed in for OFF .	"OFF"
4. "BEACON"	Turn the beacon switch to the ON position. If a beacon is not installed, turn the strobe light switch to the ON position.	"ON"
5. "MIXTURE"	Check the mixture knob is pushed in for RICH .	"FULL RICH"
6. "THROTTLE"	Push the throttle knob in about 1/8 of an inch.	"SLIGHT"
7. "PRIMER"	Prime the engine using 1 stroke on warmer days or up to 6 strokes on colder days. If the engine is warm from a previous flight, you should not need to use prime. Afterwards, ensure primer is in and locked.	"AS REQ IN LOCKED"
8. "BRAKES"	Apply pressure to brakes until the engine has started and is stable	"HOLD"
9. "PROP"	Check prop area clear visually and verbally.	"CLEAR"

10. "MASTER"	Move the master switch to the ON position	"ON"
11. "IGNITION"	Turn the ignition to the START position while keeping your hand on the throttle.	"START"
12. "THROTTLE"	As the engine begins to start, adjust the throttle knob until reaching 1000 RPM.	"1000 RPM"
13. "OIL PRESSURE"	Visually check oil pressure during engine start. **CAUTION: If the oil gauge does not begin to show pressure within 30s in the summertime or up to a minute in very cold weather, stop the engine and investigate.	"CHECKED"
14. "AMMETER"	Check the ammeter gauge for positive amps.	"POSITIVE"
15. "AVIONICS"	Move the avionics switch to the ON position.	"ON"

After master switch is on, conduct an ICS check.

Student: "ICS check," IP: "Loud and clear, how me?" Student: "I have you the same."

16. "NAV / STROBE LIGHTS"	Move the navigation lights and the strobe light to the ON position.	"ON"
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"STARTING ENGINE CHECKLIST COMPLETE"

"BEFORE TAXI CHECKLIST"

<u>CHALLENGE</u>	<u>ACTION</u>	<u>REPLY</u>
1. "FLIGHT CONTROLS"	Move each of the flight controls to the full position while checking outside to verify free and correct.	"CHECKED"

2. "TRIM"	Check trim is set for takeoff	"SET"
3. "MIXTURE"	Pull the mixture knob out to lean the mixture, usually about 1 inch.	"LEAN"
4. "FLAPS"	Select flaps up. Check the gauge and visually verify flaps are UP .	"UP"
5. "HEAT/AIR VENT/DEFROST"	Use as required depending on current conditions.	"AS REQ"
6. "RADIO"	Tune up and record ATIS, if not already received. Tune up ground control or CTAF. Adjust radio volume as necessary. Set the next desired frequencies according to comm plan.	"CHECKED & SET"
7. "FLIGHT INSTRUMENTS"	Check current altimeter setting dialed in and altimeter shows within 75' of airfield elevation. Attitude indicator is erect and stable. Airspeed indicator is at 0 knots. VSI +/- 100 ft. Heading indicator matching compass. Compass general condition. Compass card visible and legible. Turn coordinator shows wings level, ball in bracket and full of fluid. Turn transponder on and select altitude (ALT), set in proper code if already received.	"CHECKED & SET"

"BEFORE TAXI CHECKLIST COMPLETE"

After completing the “Before Taxi Checklist,” you may now be ready to call clearance, if applicable for a VFR departure, or ground for taxi directions (or make a CTAF call for taxi). At KPNS you should already have a squawk code prior to pre-flight, if not, after calling for a VFR departure, clearance should then provide a squawk code. Depending on your airfield or ability for parking ramp movement, you also may be able to accomplish the “Taxi” and “Run-up Checklist” within the ramp area. Then call ground for taxi directions (or CTAF call) prior to leaving the ramp area. A more in-depth discussion, regarding communication, can be found in the FTI in appendix B and C. Below are some example radio calls. While practicing and/or chair flying, make sure to keep using different call signs.

Student: *“Pensacola Ground, KABAR 15, general aviation parking, taxi information Bravo.”*

Controller: *“KABAR 15, Pensacola Ground, taxi to runup via Charlie Delta.”*

Student: *“Taxi to runup via Charlie Delta, KABAR 15.”*

When runup complete, contact ground for further taxi. Student: *“Pensacola Ground, KABAR 15, complete with runup.”*

Controller: *“KABAR 15, taxi runway 26 via Delta.”*

Student: *“taxi runway 26 via Delta.”*

After passing the last taxiway, switch from the ground frequency to tower. When number one holding short and ready for departure, contact tower.

Student: *“Departure 119.0, 119.9 switching, KABAR 15.”*

The following checklist, “Taxi Checklist” should have been completed on the roll. “Run-up Checklist” may have been done at the ramp, after taxi directions to a designated run-up area (followed by further taxi directions to the runway hold short), or before the hold short off to the side.

“TAXI CHECKLIST”

<u>CHALLENGE</u>	<u>ACTION</u>	<u>REPLY</u>
1. “TRANSPONDER”	Ensure the proper code is entered, depending on location, and the transponder is set to altitude.	“SQK CODE/ALT”
2. “BRAKES”	After establishing forward movement, apply both brakes to ensure proper function.	“CHECKED”
3. “HEADING & TURN COORDINATORS”	Once clear of personnel or objects, apply L or R rudder and check proper needle and ball deflection. i.e. While applying left rudder, state “Left needle Right ball” and vice versa for other rudder.	“CHECKED”

“TAXI CHECKLIST COMPLETE”

“RUN-UP CHECKLIST”

<u>CHALLENGE</u>	<u>ACTION</u>	<u>REPLY</u>
1. "BRAKES"	Ensure nosewheel is aligned with aircraft orientation, then apply pressure to the brakes and hold.	"HOLD"
2. "FUEL SELECTOR"	Check the selector in BOTH .	"BOTH"
3. "MIXTURE"	Check knob is pushed in for RICH .	"FULL RICH"
4. "THROTTLE"	Push in throttle to set 1700 RPM.	"1700 RPM"

5. "MAGS"	After throttle is set to 1700 RPM, move the magneto switch first to the R position and note RPM. Next move the switch back to BOTH to clear the other set of plugs. Then move switch to the L position, note RPM and return the switch back to BOTH. RPM should not exceed 125 RPM drop on either side or show greater than 50 RPM difference between magnetos.	"CHECKED"
6. "CARB HEAT"	Apply carb heat and note a RPM drop of 50-100 RPM.	"CHECKED ON"
7. "VOLTMETER/ AMMETER"	Check for proper voltage and ammeter is positive.	"CHECKED"
8. "SUCTION GAUGE"	Check the suction gauge to ensure it reads in the green arc.	"CHECKED"
9. "OIL TEMP/PRESS"	Check that the oil temperature and pressure gauges are in the proper range.	"CHECKED"
10. "THROTTLE"	Check that the RPM stays above 600 and the engine doesn't quit.	"IDLE"
11. "CARB HEAT"	Turn carb heat off and note a RPM rise of 50-100 RPM.	"CHECKED OFF"
12. "THROTTLE"	Check full throttle to verify 2250 – 2450 RPM.	"FULL"
13. "THROTTLE"	Set the throttle knob back to 1000 RPM.	"1000 RPM"
14. "THROTTLE FRICTION LOCK"	Adjust the friction lock around the throttle assembly as desired for a snug fit.	"ADJUSTED"
15. "MIXTURE"	Pull the mixture knob out about 1 inch to LEAN .	"LEAN"

16. “TAKEOFF BRIEF” *“Rotate at ____ (Vr), climb out at ____ (Vy), departing to the ____ (east, west, etc.). Any malfunction prior to rotate, we’ll abort the takeoff. Any malfunction after rotate, we’ll climb to 1000 feet, enter the pattern and troubleshoot. If we have an engine failure after rotate with runway remaining – set it back down. If engine failure below 800’ AGL – select landing site within 30° of the nose. If engine failure above 800’ AGL – enter low key for nearest suitable runway.”* **“COMPLETE”**

“RUN-UP CHECKLIST COMPLETE”

When runup complete, contact ground for further taxi. Student: *“Pensacola Ground, KABAR 15, complete with runup.”*

Controller: *“KABAR 15, taxi runway 26 via Delta.”*

Student: *“taxi runway 26 via Delta.”*

After passing the last taxiway, switch from the ground frequency to tower. When number one holding short and ready for departure, make an appropriate tower or CTAF call for departure. **Departure vs Takeoff.** Avoid using the term “takeoff” except when repeating a takeoff clearance or announcing aborting takeoff. Use the term “departure,” when making requests or during taxi.

Student: *“Pensacola Tower, KABAR 15 holding short runway 26, ready for departure.”*

Controller: *“KABAR 15, Pensacola Tower, runway 26 cleared for takeoff, on departure maintain runway heading, switch to approach.”*

Student: *“Cleared for takeoff, runway heading, switching, KABAR 15.”*

If ever cleared to switch to approach before beginning the takeoff roll, it is good headwork to remain on tower frequency until airborne. This way if needing to abort for whatever reason, you can make the appropriate call to tower.

LINEUP CHECKLIST is executed after getting clearance or making a CTAF advisory call for takeoff.

“LINEUP CHECKLIST”

<u>CHALLENGE</u>	<u>ACTION</u>	<u>REPLY</u>
1. "FLAPS"	Check flaps are in the up position.	"UP"
2. "MIXTURE"	Check mixture knob is pushed in for FULL RICH .	"FULL RICH"
3. "CARB HEAT"	Check carb heat knob is pushed in for OFF .	"OFF"
4. "INSTRUMENTS & TRANSPONDER"	Ensure the heading indicator is aligned to compass and transponder is squawking proper code and altitude.	"CHECKED"
5. "DOORS"	Properly close and latched both doors and windows.	"LATCHED"
6. "EXT LIGHTS"	Move strobe light switch and landing light to ON .	"ON"

“LINEUP CHECKLIST COMPLETE”

Visually clear the runway environment before taxiing onto an active runway. Verify the heading indicator is aligned with runway heading. Hold the brakes, set throttle to 2000 RPM, and check that the oil temp, pressure, ammeter, and suction are within the green range. Release the brakes placing your heels on the deck and set full-throttle. Check IAS gauge for increasing airspeed. ICS comms during the takeoff roll are as follows, “Instruments in green, Airspeed alive, 55 knots Rotate.”

There is more discussion about follow-on radio calls in the FTI appendix B regarding tower to approach controllers. Especially since Pensacola airport is within a Class Charlie airspace. If taking off at a non-towered field, refer to appendix C for standard communications.

"CLIMB CHECKLIST"

<u>CHALLENGE</u>	ACTION	<u>REPLY</u>
1. "AIRSPEED"	Check and fly best rate of climb airspeed Vy (73 KIAS). If obstacles are near, fly best angle of climb Vx (62 KIAS) until clear, then transition to Vy.	"73 KIAS"
2. "THROTTLE"	Check the throttle is full open (pushed in).	"FULL"
3. "MIXTURE"	At lower altitudes, check mixture knob is pushed in for FULL RICH . You may need to lean the mixture for best power at higher altitudes. In this case, lean as necessary for maximum RPMs.	"FULL RICH"
4. "INSTRUMENTS"	Check for gauges in the green and proper heading to compass alignment.	"CHECKED"
5. "TAXI/LANDING LIGHT"	Move the taxi light and landing light switch to OFF .	"OFF"

"CLIMB CHECKLIST COMPLETE"

“CRUISE CHECKLIST”

<u>CHALLENGE</u>	<u>ACTION</u>	<u>REPLY</u>
1. "THROTTLE"	Check cruise setting of 2100-2300 RPM to establish 90 KIAS.	" ____RPM"
2. "MIXTURE"	Lean the mixture knob as needed for smooth engine operation depending on altitude during cruise transit. If equipped, use the EGT gauge to adjust mixture, if not, lean until RPMs deteriorate, then add a twist or two in order to slightly enrichen the mixture.	"SET"
3. "INSTRUMENTS"	Check for gauges in the green and proper heading to compass alignment.	"CHECKED"

“CRUISE CHECKLIST COMPLETE”

The PRE MANEUVER checklist should be executed prior to each high work maneuver at the discretion of the Instructor. At the completion of all high work maneuvers, ensure to switch the landing light back to OFF.

“PRE MANEUVER CHECKLIST”

1. “FUEL SELECTOR”	Check the selector is in BOTH .	“BOTH”
2. “MIXTURE”	Check mixture knob is pushed in for FULL RICH .	“FULL RICH”
3. “LANDING LIGHT”	Move the landing light switch to ON .	“ON”

“PRE MANEUVER CHECKLIST COMPLETE”

“DESCENT CHECKLIST”

<u>CHALLENGE</u>	<u>ACTION</u>	<u>REPLY</u>
1. “INSTRUMENTS”	Check for gauges in the green and proper heading to compass alignment.	“CHECKED”
2. "MIXTURE"	Richen as necessary to ensure smooth engine operation.	“ADJUSTED”
3. “FUEL SELECTOR”	Check the selector is in BOTH .	“BOTH”
4. "CARB HEAT"	Use as required to prevent carb icing from forming.	"AS REQUIRED"
5. "THROTTLE"	Adjust as necessary to set desired airspeed during descent.	"AS REQUIRED"

“DESCENT CHECKLIST COMPLETE”

Prepare for communications inbound back to home field early. They will differ between coming back to a controlled airspace versus a non-towered field. For a controlled airspace, prior to entry contact the approach controller with the standard *who, where, what* format. Same format should be used for a non-controlled airspace using a CTAF frequency. Below is an example coming back into a controlled airspace (also found in FTI appendix B).

Student: *“Pensacola Approach, KABAR 15, 30mi to the east, 3500, information Papa, inbound full stop at Pensacola airport.”*

Controller: *“KABAR 15, Pensacola Approach, squawk 1325.”*

Student: *“1325, KABAR 15.”*

Controller: *“KABAR 15, radar contact 30mi to the east, continue inbound.”*

Student: *“Continue inbound KABAR 15.”*

Controller: *“KABAR 15 switch tower 119.9.”*

Student: *“Switch tower 119.9 KABAR 15.”*

Student: *“Pensacola Tower, KABAR 15, 10mi east, information Papa, full stop.”*

Controller: *“KABAR 15 enter left downwind runway 35.”*

Student: *“Left downwind runway 35, KABAR 15.”*

Controller: *“KABAR 15, cleared to land runway 35.”*

Pilot: *“Cleared to land runway 35, KABAR 15.”*

Before landing checklist should be executed as soon as possible once established in the landing pattern. Save steps 5 and 6 until the abeam position. The after abeam position procedures shall be executed per the FTI. Once rolling out on final, as a safety check, verify the Before Landing checklist has been executed and that you are cleared to land (either cleared by tower or that you have visually cleared the runway and can proceed at a non-towered airfield. On short final state, "Before Landing Checklist complete, Cleared to land."

"BEFORE LANDING CHECKLIST"

<u>CHALLENGE</u>	<u>ACTION</u>	<u>REPLY</u>
1. "SEAT BELTS & HARNESES"	Check for snug fit and still secured.	"SECURED"
2. "FUEL SELECTOR "	Check the selector in BOTH .	"BOTH"
3. "MIXTURE"	Check the mixture knob pushed in for RICH .	"FULL RICH"
4. "LANDING/TAXI LIGHTS"	Move the taxi and landing light switch to ON .	"ON"
5. "CARB HEAT"	Check the carb heat knob pulled out for ON .	"ON"
6. "FLAPS"	Set the flaps according to the FTI.	"FLAPS ____"

"BEFORE LANDING CHECKLIST COMPLETE"

During the landing roll, expect tower to tell you to turn at a specific intersection to exit the runway and to switch to ground frequency. If they haven't and you're at a safe taxi speed (exit speed to turn off the runway) expect to take the next taxiway and report to tower, you're clear of the runway at your specific taxiway. Then expect a switch to ground, where you can make your taxi request call back to parking.

Student: "Pensacola Tower, KABAR 15 is clear of runway 35 on Delta."

Tower: "KABAR 15, Roger switch ground, 121.9."

Student: "121.9 KABAR 15."

Student: "Pensacola Ground, KABAR 15, Off 35 on Delta, request taxi back to the ramp."

Ground: "KABAR 15, Pensacola Ground, taxi to parking Delta Charlie."

Student: Delta Charlie to the ramp, KABAR 15. Have a good day."

"AFTER LANDING CHECKLIST"

<u>CHALLENGE</u>	<u>ACTION</u>	<u>REPLY</u>
1. "THROTTLE"	Move the throttle knob to set 1000 RPM	"1000 RPM"
2. "FLAPS"	Move the flaps to the UP position	"UP"
3. "MIXTURE"	Pull the mixture knob to lean for taxi, approximately 1 inch.	"LEAN"
4. "CARB HEAT"	Push the carb heat knob in for OFF .	"OFF"
5. "STOBES/LANDING LIGHT"	Move the strobe light switch and landing/taxi light switches to OFF .	"OFF"

6. "PITOT HEAT"	Ensure the pitot heat switch is in the OFF position.	"OFF"
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"AFTER LANDING CHECKLIST COMPLETE"

“SECURING CHECKLIST”

<u>CHALLENGE</u>	<u>ACTION</u>	<u>REPLY</u>
1. “ELT”	Ensure the ELT is silent by selecting 121.5 in the active comm radio.	“CHECKED”
2. “TRANSPONDER”	Turn the transponder to standby mode.	“STAND BY”
3. "AVIONICS"	Turn OFF the avionics switch	"OFF"
4. “THROTTLE”	Pull out the throttle knob to IDLE .	“IDLE”
5. "MAGS"	Check for grounding by rotating the key to off, then back to BOTH	"CHECKED BOTH "
6. “MIXTURE”	Pull out mixture knob to IDLE CUTOFF	“IDLE CUTOFF”
7. "MAGS"	Move the mag switch to OFF .	"OFF"
8. "MASTER"	Move the master switch to OFF .	"OFF"
9. "AIRCRAFT KEYS"	Remove the keys from the ignition and place on the fuel selector.	"FUEL SELECTOR"
10. “INT/EXT LIGHTS”	Move the interior and exterior light switches to OFF .	“OFF”

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| 11. "CONTROLS LOCK" | Insert control lock in yoke pushrod with flag on the left. | "INSTALLED" |
| 12. "COVERS/TIE DOWNS" | Install covers and tie downs as necessary if last flight of the day. | "INSTALLED" |
| 13. "CHOCKS" | | "INSTALLED" |
| 14. "SUNSCREENS" | Install all sunscreens | "INSTALLED" |
| 15. "HOBBS/TACH" | Record the flight time. | "RECORDED" |
| 16. "CABIN/BAGGAGE DOOR" | Verify closed. | "CLOSED" |

"SECURING CHECKLIST COMPLETE"