

TM 55-1510-212-CL

Operator's and Crewmember's Checklist

ARMY MODEL

T-41B

Aircraft

Pilot's Checklist

U.S. ARMY AVIATION SCHOOL

APRIL 1969

CUT ON LINE TO FIT TM 1500-1 INSERT

TM 55-1510-212-CL

U.S. ARMY AVIATION SCHOOL
Fort Rucker, Alabama 18 Apr 69

TM 55-1510-212-CL is published for the use
of all concerned.

DISTRIBUTION:

To be distributed in accordance with the
requirements for Operator and Crew Main-
tenance Instructions for T-41B aircraft.

GENERAL INFORMATION AND SCOPE

SCOPE. This checklist contains the operator's and crew-member's checks to be accomplished during normal and emergency operations. Performance data pertinent to normal operation of the aircraft is provided in the performance data section of this checklist.

GENERAL INFORMATION. The checklist consists of three parts: Normal procedures, emergency procedures, and performance data. Normal procedures consist of the step procedures required for normal flight. Emergency procedures are subdivided into 10 classifications as follows: Engine, propeller (Prop), fire, fuel, electrical (Elect), hydraulic (Hyd), landing and ditching (Ldg/Dtch), flight controls (Flt Cont), bailout or ejection (Bailout) (Eject), and armament (Armt), as applicable. Performance data consists of charts and tables that may be used to obtain takeoff, cruise, and landing data. The takeoff and landing data card is also contained in the performance data.

NOTE

This checklist does not replace the amplified version of the procedures in the operator's manual (TM 55-1510-212-10), but is a condensed version of each procedure.

Normal Procedures Pages. The contents of normal procedures of this manual are a condensation of the amplified checklist appearing in the normal procedures or crew duties portion of the applicable operator's manual.

Emergency Procedures Pages. The requirements in this section of the condensed checklist manual (CL) are identical to those for the normal procedures, except that the information is drawn from the amplified checks in the emergency procedures portion of the operator's manual. The emergency requirements are subdivided into the classifications listed.

Performance Data Pages. A takeoff and landing data card is provided. The card covers the four phases listed below as well as all those items which are applicable and change during takeoff and landing.

Takeoff Data
Landing Immediately After Takeoff
Landing Data
Conditions

Symbols Preceding Numbered Steps.

- * - Indicates performance of steps is mandatory for all "Thru Flights."
- (N) - Means performance of step is mandatory for "Night Flights."
- ★ - Indicates a detailed procedure for this step is included in the Performance Checks section, located at the back of the checklist.
- (I) - Indicates mandatory check for "Instrument Flights."
- (O) - Indicates if installed.

Reports of errors, and recommendations for improving this publication by the individual user is encouraged. For recommending changes refer to USAAVNS Regulation 310-7.

BEFORE EXTERIOR CHECK

- *1. Publications—checked.
2. First aid kit—checked.
3. Fire extinguisher—checked.
4. Emergency door releases—checked.
5. Fuel selector—BOTH.
6. Trim tab—TAKEOFF.
7. Parking brake—set.
8. Flight controls—UNLOCKED.
9. Fuel shutoff valve—ON.
10. Ignition switch—OFF.
11. Fuel strainer—drain.
12. Master switch—ON.
13. Pitot heat—checked.
- (0) 14. Alternator—ON.
15. Rotating beacon—checked.
16. Warning lights—checked.
17. Fuel quantity—checked.
- (0) 18. Alternator switch—OFF.
- ★19. Auxiliary fuel pump—checked.
20. Flaps—DOWN.
- (N) 21. Lighting systems—checked.
22. Master switch—OFF.
23. Cargo—secure.

EXTERIOR CHECK

LEFT LANDING GEAR

1. Brake assembly—checked.
2. Wheel assembly and strut—checked.
- *3. Tire—checked.

LEFT WING

1. Fuel tank—drain.
2. General condition—checked.
3. Controls—checked.
4. Wingtip and nav light—checked.
5. Landing light—checked.
6. Stall port—checked.
7. Fuel vent—checked.
8. Pitot tube—checked.
- *9. Tiedown—released.
10. Strut—checked.
11. Door hinge pins—checked.
- *12. Fuel tank—checked.

ENGINE AND PROP

- *1. Oil quantity and cap—checked.
2. Cowling—checked.
3. Prop—checked.
4. Fuel strainer—checked.

NOSE LANDING GEAR

- *1. Tiedown—released.
- *2. Tire—checked.
- 3. Nose gear assembly—checked.

RIGHT WING

- 1. General condition—checked.
- *2. Fuel tank—checked.
- 3. Door hinge pins—checked.
- 4. Strut—checked.
- *5. Tiedown—released.
- 6. Wingtip and nav light—checked.
- 7. Controls—checked.
- 8. Fuel tank—drain.

RIGHT LANDING GEAR

- 1. Brake assembly—checked.
- 2. Wheel assembly and strut—checked.
- *3. Tire—checked.

FUSELAGE - RIGHT SIDE

- (0)1. Fuel reservoir tank—drain.
- 2. General condition—checked.
- 3. Static port—checked.
- 4. Antennas—checked.

EMPENNAGE

1. General condition—checked.
2. Controls and trim tab—checked.
3. Nav light—checked.
- *4. Tiedown—released.

FUSELAGE - LEFT SIDE

1. General condition—checked.
2. Static port—checked.

***INTERIOR CHECK**

1. Right seat, belt, and harness (solo flight)—secured.
2. Passenger briefing—complete.
3. Cabin heat and air—as desired.

BEFORE STARTING ENGINE

- *1. Seat, belt, and harness—adjusted.
2. Cockpit light—OFF.
3. Compass—checked.
4. Pilot's signal distribution panel—set.
5. Radios—OFF.
- *6. Mixture—RICH.
- *7. Prop—INCREASE rpm.
- *8. Throttle—set.
9. Circuit breakers—checked.
10. Light switches—OFF.
11. Pitot heat—OFF.
12. Primer—LOCKED.
13. Map light switch—OFF.
14. Flight instruments—checked.
15. Engine instruments—checked.
16. Copilot's signal distribution panel—set.

***STARTING ENGINE**

- (N) 1. Nav lights—ON/FLASH.
2. Master switch—ON.
3. Prop—clear.
- ★4. Auxiliary fuel pump—as required.
5. Ignition switch—start.
6. Auxiliary fuel pump—OFF.
7. Oil pressure—checked.
8. Throttle 1000 rpm—set.
- (0)9. Alternator switch—ON.

***BEFORE TAXIING**

1. Radios—ON.
2. Flaps—UP.
3. Taxi clearance—as required.
4. Chocks—removed.
5. Parking brake—released.

***TAXIING**

1. Brakes—checked.
2. Flight instruments—checked.

ENGINE RUNUP

- *1. Nose wheel—centered.
- *2. Parking brake—set.
- *3. Throttle 1000 rpm—set.
- ★*4. Mags groundout—checked.
- *5. Engine instruments—checked.
- ★*6. Mags—checked.
- ★*7. Prop—checked.
- ★8. Mixture—checked.
- ★9. Idle speed—checked.
- (I) 10. Vacuum gage—checked.
- *11. Throttle 1000 rpm—set.

*BEFORE TAKEOFF

1. Flight controls—checked.
2. Fuel selector—BOTH.
3. Trim—set.
4. Flight and engine instruments—checked.
5. Flaps—as desired.
6. Mixture—RICH.
7. Prop—INCREASE rpm.
- (I)8. Nav radios—set.
9. Harness—LOCKED.
10. Windows and doors—secured.
11. Takeoff clearance—as required.
12. Beacon—ON.
- (N)(0)13. Nav lights—STEADY.

LINEUP

1. Heading indicator—set.
- (I)2. Pitot heat—as required.

AFTER TAKEOFF CLIMB

1. Flaps—UP.
- (N)2. Landing lights—OFF.
3. Climb power—set.
4. Mixture—set.

DESCENT

1. Mixture—RICH.
2. Throttle—adjusted.

BEFORE LANDING

1. Fuel selector—BOTH.
2. Mixture—RICH.

LANDING CHECK

1. Prop—INCREASE rpm.
2. Flaps—as required.
3. Shoulder harness—LOCKED.
- (N)4. Landing lights—as desired.

GO-AROUND

1. Throttle—FULL OPEN.
2. Flaps—UP.
3. Climb power—set.
- (N)4. Landing lights—OFF.

AFTER LANDING

1. Flaps—UP.
2. Pitot heat—OFF.
3. Beacon—OFF.
- (N)4. Landing lights—as required.
- (N)(0)5. Nav lights—FLASH.

ENGINE SHUTDOWN

1. Nose wheel—centered.
2. Parking brake—set.
3. Throttle 1000 rpm—set.
4. Radios—OFF.
5. Mags groundout—checked.
6. Alternator switch—OFF.
7. Mixture—idle cutoff.
8. Mag switch—OFF.
9. All switches—OFF.

BEFORE LEAVING AIRCRAFT

1. Controls—LOCKED.
2. Form 2408—completed.
3. Windows and doors—closed.
4. Aircraft—secured.

NOTE

The urgency of certain emergencies requires immediate and instinctive action by the pilot. The most important single consideration is aircraft control. All procedures are subordinate to this requirement.

ENGINE FAILURE

DURING TAKEOFF RUN (ABORT)

1. Throttle—closed.
2. Braking—as required.

IMMEDIATELY AFTER TAKEOFF

1. Throttle—CLOSED.
2. Flaps—as required.
3. Land—straight ahead.

DURING FLIGHT

1. Fuel selector—BOTH.
2. Mixture—RICH.
3. Prop—INCREASE rpm.
4. Auxiliary fuel pump—as required.

ENGINE RESTART DURING FLIGHT

1. Fuel selector—BOTH.
2. Mixture—RICH.
3. Prop—INCREASE rpm.
4. Throttle 1 inch open—set.
5. Auxiliary fuel pump—as required.
6. Mags—BOTH.

CHIP DETECTOR WARNING LIGHT

1. Engine instruments—monitor.
2. Land as soon as practicable.

PROPELLER FAILURE

1. Airspeed—reduce(increase pitch).
2. Throttle—reduce power.
3. Prop—DECREASE rpm.

NOTE

If, after moving prop lever through full range of travel, control is not regained, reposition prop to full increase, adjust throttle to maintain rpm within limits, and land as soon as practicable. Propeller failure resulting in high pitch (low rpm) is rare; however, if this type of failure occurs, use minimum power required to maintain flight.

FIRE

ENGINE FIRE DURING START

1. Throttle—OPEN.
2. Ignition switch—START.
3. Mixture—idle cutoff (if fire is not extinguished).
4. Mags—OFF.
5. Master switch—OFF.
6. Fuel shutoff valve—OFF.
7. Exit aircraft.

ENGINE FIRE DURING FLIGHT

1. Cabin heat and air knobs—IN.
2. Fuel shutoff valve—OFF.
3. Mags—OFF.

FUSELAGE FIRE

1. Master switch—OFF.
2. Air controls—OFF.
3. Fight the fire.

ELECTRICAL FIRE

1. Master switch—OFF.
- (0)2. Alternator switch—OFF.
3. Isolate defective circuit.

SMOKE AND FUME ELIMINATION

1. Cabin heat knob—OFF.
2. Cabin air knob—OFF.
3. Upper air vents—OPEN.
4. Pilot's window—OPEN (below 100 mph).

FUEL SYSTEM FAILURE

LOSS OF FUEL PRESSURE

1. Mixture—RICH.
2. Auxiliary fuel pump—ON (high).
3. Mixture—as required.

ELECTRICAL SYSTEM FAILURE

If a complete electrical failure occurs, or if it becomes necessary to turn the alternator and master switches OFF, a landing should be made as soon as practicable.

HYDRAULIC SYSTEM

NOT APPLICABLE

LANDING AND DITCHING

EMERGENCY DESCENT

1. Mixture—RICH.
2. Prop—INCREASE rpm.
3. Throttle—CLOSED.
4. Flaps—UP.
5. Airspeed— V_d .

LANDING ON ROUGH TERRAIN

1. Doors—OPEN.
2. Seatbelt and shoulder harness—tightened.
3. Flaps—DOWN.
4. Shoulder harness—LOCKED.
5. Make a normal, tail-low, full-stall landing.

LANDING WITH FLAT TIRE

1. Land—on side of runway favoring good tire.
2. Brake—on good wheel only.

DITCHING

1. Radio—distress procedure.
2. Passengers—briefed.
3. Parachute—unbuckled, remove shoulder straps.
4. Doors—OPEN.
5. Belts and harnesses—tight and locked.
6. Flaps—DOWN.
7. Master switch—OFF.

FLIGHT CONTROL SYSTEM FAILURE

WING FLAPS (Electrically operated)

If other than normal wing flap operation is noticed during operation of flaps, immediately release the flap switch, which is spring-loaded to the neutral or off position. Attempt to equalize the flap setting. If unable, land at nearest available airfield as soon as practicable.

BAILOUT

1. Seatbelts and harnesses—unfasten.
2. Helmet—disconnect.
3. Emergency door releases—PULL.
4. Exit—dive out and down.

ARMAMENT

NOT APPLICABLE

TAKEOFF AND LANDING DATA CARD

TAKEOFF DATA

TAKEOFF SPEED _____ KN

TAKEOFF GROUND RUN _____ FT

TAKEOFF OVER ____ FT OBST _____ FT

CLIMB POWER: ____ RPM _____

INITIAL CLIMB AIRSPEED _____ KN

LANDING IMMEDIATELY AFTER TAKEOFF

FINAL APPROACH SPEED _____ KN

TOUCHDOWN SPEED _____ KN

LANDING GROUND ROLL _____ FT

LANDING DATA

FINAL APPROACH SPEED _____ KN

TOUCHDOWN SPEED _____ KN

LANDING GROUND ROLL _____ FT

CONDITIONS

DENSITY ALTITUDE _____ FT

PRESSURE ALTITUDE _____ FT

TEMPERATURE _____ °C

WIND: DIRECTION ____ VELOCITY _____ KN

RUNWAY LENGTH ____ FT HEADING _____

GROSS WT (TAKEOFF) _____ LB

REMARKS:

Recommended maximum wind limitations:

90° crosswind 15 knots

60° crosswind 18 knots

30° crosswind 27 knots

Maximum wind - no crosswind 30 knots

Maximum gust spread 10 knots

MAXIMUM PERFORMANCE TAKE-OFF DATA

SOD SURFACE RUNWAY, FLAPS 20°

GROSS WEIGHT LBS	IAS AT 50 FT MPH	HEAD WIND KNOTS	@ S. L. & 59°F		@ 2500 ft. & 50°F		@ 5000 ft. & 41°F		@ 7500 ft. & 32°F	
			GROUND RUN	TOTAL TO CLEAR 50' OBS	GROUND RUN	TOTAL TO CLEAR 50' OBS	GROUND RUN	TOTAL TO CLEAR 50' OBS	GROUND RUN	TOTAL TO CLEAR 50' OBS
2500	60	0	635	1045	765	1245	930	1515	1135	1885
2200	56	0	470	795	565	935	680	1120	830	1360
1900	52	0	335	600	400	695	480	820	580	970

NOTE: Increase distance 10% for each 25°F above standard temperature for particular altitude.

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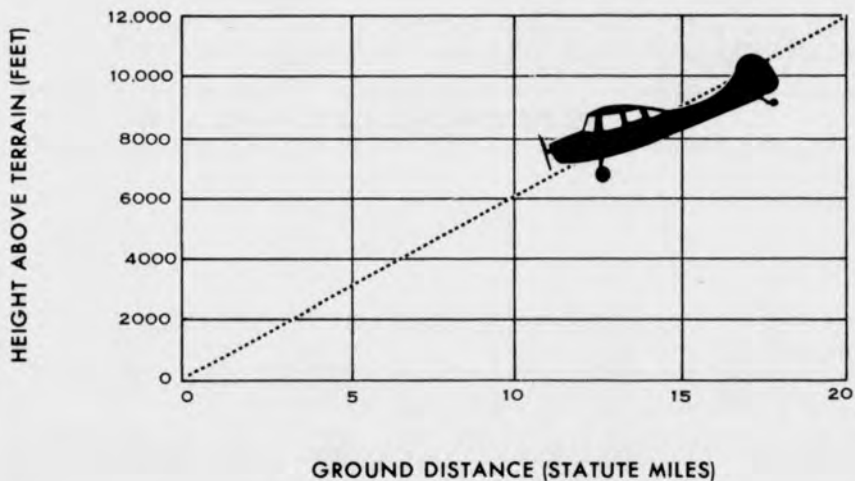
MAXIMUM RATE-OF-CLIMB DATA

GROSS WEIGHT LBS.	@ S. L. & 59°F			@ 5000 ft. & 41°F			@ 10,000 ft. & 23°F			@ 15,000 ft. & 5°F		
	IAS MPH	RATE OF CLIMB FT/MIN	GALS OF FUEL USED	IAS MPH	RATE OF CLIMB FT/MIN	FROM S. L. FUEL USED	IAS MPH	RATE OF CLIMB FT/MIN	FROM S. L. FUEL USED	IAS MPH	RATE OF CLIMB FT/MIN	FROM S. L. FUEL USED
2500	95	915	1.3	91	680	2.9	87	450	4.9	83	215	7.8
2200	92	1120	1.3	88	860	2.7	85	595	4.3	81	340	6.4
1900	88	1390	1.3	85	1095	2.3	82	800	3.5	79	505	5.1

NOTE: Flaps up, full throttle, 2800 rpm, mixture at recommended leaning schedule.
Fuel used includes warm-up and take-off allowance.

MAXIMUM GLIDE

- SPEED 85 MPH (IAS)
- PROPELLER WINDMILLING
- FLAPS UP • ZERO WIND



MAXIMUM PERFORMANCE LANDING DATA

SOD SURFACE RUNWAY - NO WIND

40° FLAPS - POWER OFF

Gross Weight Lbs	Approach IAS Mph	@ 5 ft & 59°F		@ 2500 ft & 50°F		@ 5000 ft & 41°F		@ 7500 ft & 32°F	
		Ground Roll	Total To Clear 50' Obs	Ground Roll	Total To Clear 50' Obs	Ground Roll	Total To Clear 50' Obs	Ground Roll	Total To Clear 50' Obs
2500	60	400	860	420	905	445	955	465	1005

NOTE: Reduce landing distance 10% for each 4 knots headwind.

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CRUISE PERFORMANCE

NORMAL LEAN MIXTURE

2500 FEET

Standard Conditions  Zero Wind 

Gross Weight - 2500 Pounds

RPM	MP	% BHP	TAS MPH	GAL/ HOUR	46 GAL (NO RESERVE)	
					ENDR. HOURS	RANGE MILES
2600	24	76	144	12.6	3.7	525
	23	71	141	11.9	3.9	545
	22	67	137	11.2	4.1	560
	21	62	133	10.5	4.4	580
2500	25	77	145	12.7	3.6	525
	24	73	141	12.1	3.8	535
	23	68	138	11.4	4.0	555
	22	64	134	10.8	4.3	570
2400	25	72	141	12.0	3.8	540
	24	68	138	11.4	4.0	555
	23	64	135	10.8	4.3	575
	22	60	130	10.2	4.5	585
2300	25	68	138	11.4	4.0	555
	24	64	134	10.8	4.3	570
	23	60	130	10.2	4.5	585
	22	56	126	9.6	4.8	605
2200	25	63	134	10.7	4.3	575
	24	59	130	10.1	4.6	590
	23	55	126	9.4	4.9	615
	22	52	122	9.0	5.1	625
	21	48	117	8.3	5.5	650
	20	44	113	7.7	6.0	675
	19	40	107	7.1	6.5	690
	18	37	100	6.6	7.0	695

CRUISE PERFORMANCE

NORMAL LEAN MIXTURE

5000 FEET

Standard Conditions  Zero Wind 

Gross Weight - 2500 Pounds

RPM	MP	% BHP	TAS MPH	GAL/ HOUR	46 GAL (NO RESERVE)	
					ENDR. HOURS	RANGE MILES
2600	23	75	146	12.4	3.7	540
	22	70	143	11.7	3.9	560
	21	65	139	11.0	4.2	580
	20	61	134	10.4	4.4	590
2500	23	72	144	12.0	3.8	550
	22	67	140	11.2	4.1	575
	21	62	136	10.5	4.4	595
	20	58	131	9.9	4.6	610
2400	23	67	140	11.2	4.1	575
	22	63	136	10.7	4.3	585
	21	59	132	10.1	4.6	600
	20	54	127	9.3	4.9	630
2300	23	63	136	10.7	4.3	585
	22	59	132	10.1	4.6	600
	21	55	127	9.4	4.9	620
	20	51	123	8.8	5.1	630
2200	23	58	132	9.9	4.6	610
	22	55	127	9.4	4.9	620
	21	51	123	8.8	5.1	630
	20	47	118	8.2	5.6	660
	19	43	113	7.6	6.1	685
	18	39	107	6.9	6.7	710
	17	35	99	6.3	7.3	720

CRUISE PERFORMANCE

NORMAL LEAN MIXTURE

7500 FEET

Standard Conditions  Zero Wind 

Gross Weight - 2500 Pounds

RPM	MP	% BHP	TAS MPH	GAL/ HOUR	46 GAL (NO RESERVE)	
					ENDR. HOURS	RANGE MILES
2600	21	69	145	11.5	4.0	580
	20	64	140	10.8	4.3	595
	19	59	135	10.1	4.6	615
	18	54	130	9.3	4.9	640
2500	21	66	142	11.1	4.1	585
	20	61	137	10.4	4.4	605
	19	56	132	9.6	4.8	630
	18	52	127	9.0	5.1	650
2400	21	62	138	10.5	4.4	605
	20	57	133	9.7	4.7	630
	19	53	128	9.1	5.0	645
	18	49	123	8.5	5.4	665
2300	21	58	133	9.9	4.6	620
	20	53	129	9.1	5.0	650
	19	49	124	8.5	5.4	670
	18	45	118	7.9	5.8	685
2200	21	54	129	9.3	4.9	635
	20	50	124	8.7	5.3	655
	19	46	119	8.0	5.8	680
	18	42	113	7.4	6.2	700
	17	38	105	6.8	6.8	710

CRUISE PERFORMANCE

NORMAL LEAN MIXTURE

Standard Conditions $\searrow$ Zero Wind $\searrow$
Gross Weight - 2500 Pounds

10,000 FEET

RPM	MP	% BHP	TAS MPH	GAL/ HOUR	46 GALLONS (NO RESERVE)	
					ENDR. HOURS	RANGE MILES
2600	19	62	141	10.5	4.4	620
	18	58	136	9.9	4.6	630
	17	53	130	9.1	5.1	655
	16	47	123	8.2	5.6	690
2500	19	60	138	10.2	4.5	620
	18	55	133	9.4	4.9	650
	17	50	127	8.7	5.3	545
	16	45	120	7.9	5.8	700
2400	19	56	134	9.6	4.8	640
	18	51	129	8.8	5.1	660
	17	47	123	8.2	5.6	690
	16	42	115	7.4	6.2	715
2300	19	52	130	9.0	5.1	665
	18	48	124	8.3	5.5	685
	17	44	117	7.7	6.0	700
	16	39	109	6.9	6.7	725
2200	19	49	125	8.5	5.4	675
	18	45	119	7.9	5.8	690
	17	41	112	7.3	6.3	705
	16	37	104	6.6	7.0	725

CRUISE PERFORMANCE

NORMAL LEAN MIXTURE

Standard Conditions $\searrow$ Zero Wind $\searrow$
 Gross Weight - 2500 Pounds

15,000 FEET

RPM	MP	% BHP	TAS MPH	GAL/ HOUR	46 GALLONS (NO RESERVE)	
					ENDR. HOURS	RANGE MILES
2600	15	49	130	8.5	5.4	705
	14	43	119	7.6	6.1	720
	13	38	109	6.8	6.8	735
2500	15	46	125	8.0	5.8	720
	14	41	116	7.3	6.3	730
	13	36	106	6.5	7.1	750
2400	15	43	120	7.6	6.1	725
	14	38	111	6.8	6.8	750
2300	15	40	114	7.1	6.5	740
	14	36	105	6.5	7.1	745
2200	15	37	109	6.6	6.7	760

PERFORMANCE CHECKS

AUXILIARY FUEL PUMP CHECK

Set mixture to idle cutoff and throttle three-fourths travel open. Set fuel pump switch to HIGH and listen for high pump operation; retard throttle and listen for fuel pump speed change to low operation. Turn fuel pump OFF.

AUXILIARY FUEL PUMP FOR START

Cold engine—auxiliary fuel pump on low (pressure steady 2 to 4 GPH).

Hot engine—auxiliary fuel pump OFF. If engine will not start after four revolutions of prop, turn fuel pump to LOW.

MAG GROUNDOUT

Check for groundout at 1000 rpm.

MAG CHECK

Check at 1800 rpm. Maximum allowable drop is 125 rpm.

Maximum differential between mags is 50 rpm.

PROP CHECK

With prop at INCREASE rpm and power set to 1800 rpm, pull prop control to DECREASE rpm and check for 500 rpm drop. Return prop to INCREASE rpm.

(Cycle prop three times for cold engine.)

MIXTURE CHECK

Check at 1000 rpm by moving mixture control toward lean position. Maximum increase is 25 rpm.

IDLE CHECK

Check for 650 to 675 rpm with throttle closed.