

**SECTION 4
NORMAL PROCEDURES**

4.1 GENERAL

This section describes the recommended procedures for the conduct of normal operations for the Turbo Arrow IV. All of the required (FAA regulations) procedures and those necessary for 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.

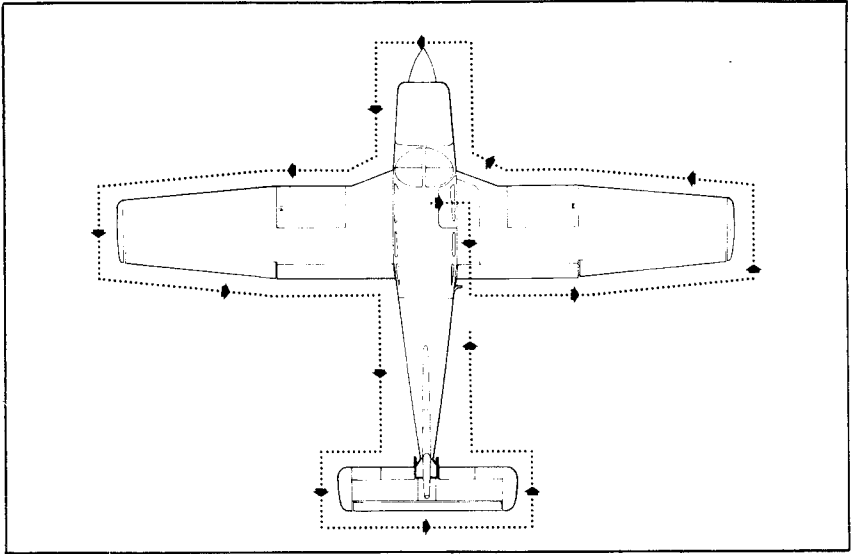
The remainder of the section is devoted to amplified normal procedures which provide detailed information and explanations of the procedures and how to perform them. This portion of the section is not intended for use as an in-flight reference due to the lengthy explanations. The short form check list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

4.3 AIRSPEEDS FOR SAFE OPERATIONS

The following airspeeds are those which are significant to 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 | |
| gear up, flaps up | 97 KIAS |
| gear down, flaps up | 79 KIAS |
| (b) Best Angle of Climb Speed | |
| gear up, flaps up | 79 KIAS |
| gear down, flaps up | 73 KIAS |
| (c) Turbulent Air Operating Speed (See Subsection 2.3) | 124 KIAS |
| (d) Maximum Flap Speed | 108 KIAS |
| (e) Landing Final Approach Speed (Flaps 40°) | 75 KIAS |
| (f) Maximum Demonstrated Crosswind Velocity | 17 KTS |



WALK-AROUND
Figure 4-1

4.5 NORMAL PROCEDURES CHECK LIST

PREFLIGHT CHECK

COCKPIT

Control wheel	release restraints
Parking brake	set
All switches	OFF
Mixture	idle cut-off
Master switch	ON
Fuel gauges	check quantity
Annunciator panel	check
Master switch	OFF
Primary flight controls.....	proper operation
Flaps	proper operation
Trim	neutral
Pitot and static systems	drain
Windows	check clean

Required papers check on board
Tow bar and baggage stow properly - secure
Baggage door close and secure

RIGHT WING

Surface condition clear of ice, frost, snow
Flap and hinges check
Aileron and hinges check
Wing tip and lights check
Fuel tank check supply
visually - secure cap
Fuel tank vent clear
Fuel tank sump drain and check for water,
sediment and proper fuel
Tie down and chock remove
Main gear strut proper
inflation ($2.5 \pm .25$ in.)
Tire check
Brake block and disc check
Fresh air inlet clear

NOSE SECTION

General condition check
Cowling secure
Windshield clean
Propeller and spinner check
Air inlets clear
Alternator belt check tension
Chock remove
Nose gear strut proper
inflation ($2.75 \pm .25$ in.)
Nose wheel tire check
Engine baffle seals check
Oil check quantity
Dipstick properly seated
Oil filler cap secure
Fuel strainer drain

LEFT WING

Surface condition clear of ice, frost, snow
Fresh air inlet clear

- Chock remove
- Main gear strut proper
inflation (2.5 ± .25 in.)
- Tire check
- Brake block and disc check
- Fuel tank check supply
visually - secure cap
- Fuel tank vent clear
- Fuel tank sump drain and check for water,
sediment and proper fuel
- Tie down remove
- Pitot/static head remove cover -
holes clear
- Wing tip and lights check
- Aileron and hinges check
- Flap and hinges check

FUSELAGE

- Antennas check
- Empennage clear of ice, frost, snow
- Fresh air inlet clear
- Stabilator and trim tab check
- Tie down remove
- Master switch ON
- Cockpit lighting check
- Nav and strobe lights check
- Stall warning check
- Pitot heat check
- All switches OFF
- Passengers board
- Cabin door close and secure
- Seat belts and harness fasten/adjust
check inertia reel

BEFORE STARTING ENGINE

- Avionics switch OFF
- Parking brake set
- Propeller full INCREASE rpm
- Fuel selector desired tank
- Alternate air OFF

**STARTING ENGINE (AIRPLANE EQUIPPED WITH STANDARD
ENGINE PRIMER SYSTEM)**

Fuel selector ON
Mixture RICH
Throttle half travel
Propeller FORWARD
Master switch ON
Propeller clear
Starter engage
Primer button ON as required
Throttle retard when engine starts
Oil pressure check
Alternator check
Gyro vacuum check

**STARTING ENGINE (AIRPLANE EQUIPPED WITH OPTIONAL
ENGINE PRIMER SYSTEM)**

Fuel selector ON
Mixture full RICH
Throttle full FORWARD
Prop control full FORWARD
Master switch ON
Auxiliary fuel pump OFF
Primer ON

See Figure 4-3 for
Priming Time

Throttle CLOSE
Starter engage immediately
At temperatures below +20° F continue priming while cranking until engine starts.

When engine starts firing - open throttle very slowly to raise engine speed to 1000 RPM. As engine speed accelerates through 500 RPM, release starter.
Primer release
Auxiliary fuel pump low only as necessary to obtain smooth engine operation (1-3 minutes will be required when temp. is below 20° F)

If engine begins to falter:

Primer button tap
Throttle 1000 RPM
Auxiliary fuel pump OFF after start complete

STARTING WITH EXTERNAL POWER SOURCE

Master switch OFF
All electrical equipment OFF
Terminals connect
External power plug insert in fuselage

Proceed with normal start

Throttle lowest possible RPM
External power plug disconnect from fuselage
Master switch ON - check ammeter
Oil pressure check

WARM-UP

Throttle 900 to 1200 RPM

TAXIING

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

GROUND CHECK

Parking brake set
Propeller full INCREASE
Throttle 1800 to 2000 RPM
Magnetos max. drop 150 RPM -
max. diff. 50 RPM
Vacuum 4.8" Hg. to 5.1" Hg.

- Oil temperature 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 oil temperature is at least 100 °F.
- Auxiliary fuel pump OFF
- Fuel pressure check
- Throttle retard
- Manifold pressure line drain

BEFORE TAKEOFF

- Master switch ON
- Flight instruments check
- Fuel selector proper tank
- Auxiliary fuel pump OFF
- Engine gauges check
- Alternate air CLOSED
- Seat backs erect
- Mixture set
- Prop set
- Belts/harness fastened/adjusted
- Empty seats seat belts snugly fastened
- Flaps set
- Trim tab set
- Controls free
- Doors latched
- Air conditioner OFF
- Parking brake release

TAKEOFF

NORMAL

- Flaps set
- Tab set
- Accelerate to 70 to 77 KIAS.
- Control wheel back pressure to rotate to climb attitude

SHORT FIELD, OBSTACLE CLEARANCE

Flaps 25° (second notch)
Accelerate to 53 to 64 KIAS depending on aircraft weight.
Control wheel back pressure to
rotate to climb attitude
After breaking ground, accelerate to 59 to 68 KIAS depending on aircraft weight.
Gear (OVERRIDE ENGAGED on aircraft equipped
with backup gear extender) UP
Accelerate to best flaps up angle of climb speed - 79 KIAS, slowly retract the
flaps and climb past the obstacle.
Accelerate to best flaps up rate of climb speed - 97 KIAS.

SOFT FIELD

Flaps 25° (second notch)
Accelerate to 53 to 64 KIAS depending on aircraft weight.
Control wheel back pressure to
rotate to climb attitude
After breaking ground, accelerate to 59 to 68 KIAS depending on aircraft weight.
Gear (OVERRIDE ENGAGED on aircraft equipped
with backup gear extender) UP
Accelerate to best flaps up rate of climb speed 97 KIAS.
Flaps retract slowly

TAKEOFF CLIMB

Mixture full RICH
Prop speed 2575 RPM
Manifold pressure DO NOT EXCEED 41 in. Hg.
Climb speed
Best angle 79 KIAS
Best rate 97 KIAS
Auxiliary fuel pump LO - if required

CRUISE CLIMB

Mixture full RICH
Prop speed 2450 RPM
Manifold pressure 33 in. Hg.
Climb speed 104 KIAS
Auxiliary fuel pump LO - if required

CRUISING

Reference performance charts, Teledyne Continental Operator's Manual and power setting table.

- Normal max power 75%
- Power set per power table
- Mixture adjust
- Auxiliary fuel pump LO - if required

APPROACH AND LANDING

- Fuel selector proper tank
- Seat backs erect
- Belts/ harness fasten/adjust
- Mixture set
- Propeller set
- Gear down - 133 KIAS max
- Flaps set - 108 KIAS max
- Air conditioner OFF
- Trim to 75 KIAS.

STOPPING ENGINE

- Flaps retract
- Air conditioner OFF
- Radios OFF
- Propeller full INCREASE
- Throttle full aft
- Mixture idle cut-off
- Magnetos OFF
- Master switch OFF

PARKING

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