Yak-18T

Normal Checklist

v2.2
July 2009

NOTES

99.4% Crankshaft RPM corresponds to 2900 rpm.

Maximum duration of take off power not more than 5 mins.

	BOOST	RPM
Take Off	9.5	99.4%
Max Cont	9.5	82%
Cruise Climb	7.5	70%
Cruise I	7.3	64%
Cruise II	6.7	59%
Idle	+/-1.5	26%

PRE-FLIGHT

Cockpit

Landing Gear Handle	Down and Latched
Magneto Switch	Off
Brake	On
Battery Switch	On (up)
Engine Instrument Switch	On
Fuel Quantity	Sufficient
Engine Instrument Switch	Off
Battery Switch	Off (mid position)
Main Air Valve	Open 9/10ths
Main Air Supply	30-45Kg/cm^2
Cowl Shutters	Open
Oil Cooler Door	Closed
Flap Handle	Up
Emergency Air Valve	Closed

Do not open the Emergency Air Valve

External

Carry out normal external walk around check including:

Engine Oil Level	Sufficient (9 Lt min)
Fuel	Sufficient
Fuel Drain	Check for Water
Propeller	Pull 8 blades minimum
Manifold drains	Close (twist & drop)
Main Air Purge Valve	Drain, Secure
Chocks	Remove

ENGINE PRIME – *(if required)*

Prime engine with one stroke for every 10°c below 100°c.
Do not pull engine through if cylinder temp above 80°c.

Magneto Switch	Off
Battery Switch	Off (mid position)
Operate primer	Right to Prime
Pull engine through	

BEFORE START

Battery Switch	On (up)
Generator	On
Ignition Switch	On
Landing Gear Lights Switch	On
Engine Instruments Switch	On
Beacon	On
Boost (throttle)	Full, Free, Set 1” Open
Prop	Fully fine
Carburettor Heat	Off
Oil Cooler Door	Closed
Cowl Shutters	Open
Main Air Valve	Open
Main Air Pressure	20 prefer 30-45 Kg/cm^2
Emergency Fuel Shutoff	Open
Emergency Air	Closed
Primer	Left - 2/3 strokes
Fuel pressure	Check rise
Primer	Turn right to assist start
Engine / Flight Instruments	Check

ENGINE START

Brakes	On
Starter Button	Press
Magneto Switch	1+2 after engine fires

Do not turn mags on until engine fires or it might run backwards; hold starter in for 15 secs after engine starts to clear excess fuel in primer; if prop blades rotate left to right cease pressing starter immediately and retry. If engine runs backwards at all, check main air pressure rises afterwards.

AFTER START

Engine RPM	50%
Ts&Ps	Green
Primer	Locked (vertical)
Starter ring	Turn right to lock
Cowl shutters	Close to warm-up
Oil Cooler	Close to warm-up
Carb heat	On to warm up
Remaining switches	On as required
Flaps	Deploy; Check; Retract
Radio	On; frequency set
Intercom	On
Transponder	Sby
U/c retract warning light	Check
Warning Lights	Check
Stall Horn	Check
Volts and Amps	Check / Gen Light Out
Main Air Valve	Confirm Open
Main Air Pressure	Rising to 30-45 Kg/cm^2
Taxi Light	As required

WARM UP & TAXI

Before using greater than 60% RPM for taxi:
Min Oil temperature 40°c; Min CHT 150°c
Once CHT reaches 150°c, set 60% rpm with boost (throttle) and select coarse pitch to quicken warm up.

ENGINE RUN-UP

Cowl Shutters	Open
Oil Cooler	Open
Propeller	Fully Fine
Carb heat	Cold
Boost (throttle)	70%
Engine Instruments	Check
Prop	Pull Coarse 3 times
check RPM decrease 54%	
Magnetos	Both, 1, both, 2, both
max allowable drop 3%	
Carb Heat	On, wait, off
check RPM drop; air inlet temp rise.	
Prop	Set 64%
Boost (throttle)	Open & close 10 units
ensure CSU holds rpm; repeat	
Prop	Fully fine
Boost (throttle)	58%
Amp/Volt meter button	Press: Check 28V
Boost (throttle)	Idle
Amp/Volt meter button	Press: Check 23V
Generator Warning light	Check: on
Boost (throttle)	Open smoothly to 80%
Boost (throttle)	Set 50%

BEFORE TAKEOFF

Pilot Door	Closed; locked
Elevator Trim	Neutral - Green Light
Landing Gear Handle	Down and Latched
Magneto Switch	1+2
Warning Lights	Check
Starter ring	Turn right to lock
Primer	Locked (vertical)
DI/Compass	Synchronise
Engine / Flight Instruments	Check
Transponder	Set 7000
Taxi light	As required
Propeller	Fully fine
Flaps	Up
Cowl Shutters	Open
Oil Cooler Door	As required
Carb Heat	Off
Main Air Valve	Open
Main Air Pressure	30 Kg/cm^2 min
Fuel Quantity	Sufficient
Emergency Fuel Shutoff	Open
Passenger Door	Closed: locked
Harnesses	Waist & shoulders
Flight Controls	Full and Free

TAKE OFF

Rotate at 110 Kph; Unstick at 130 Kph; Climb at 170 Kph

No more usable runway?	U/c retract

At safe height:

Boost (throttle) max	9.5
RPM	82%

CRUISE

Fuel Pressure	0.2 – 0.5 kg/cm^2
Oil Temperature	40 - 75 *°c*
Oil Pressure	4 – 6 kg/cm^2
Main Air Pressure	30 – 55 kg/cm^2
Engine CHT	220 *°c* max
Electrics - Volts	26.5 – 28.5
Electrics - Amps	54 max

BEFORE LANDING

Carb Heat	On
Main Air Supply	30 – 55 Kg/cm^2
Speed	< 200 Kph
Landing Gear	Down, 3 greens, 3 poles
Gear Retract Safety Latch	Locked
Landing/taxi Lights	As required

Maximum duration of taxi/landing lights 5 mins.

Propeller	Fine (high)
Fuel	Sufficient
Speed	< 170 Kph
Flaps	Down
Cowl Shutters	As required
Oil Cooler	As required
Doors	Closed: locked
Harness	Secure

SHORT FINALS

Speed (with flaps)	150 Kph
Speed (flapless)	155 Kph
Landing Gear	Down, 3 greens, 3 poles
Propeller	Fully fine
Carb Heat	Off
Cowl Shutters	Open

AFTER LANDING

Gear Retract Safety Latch	Locked
Flaps	Up
Elevator Trim	Neutral - Green Light
Landing Light	Off
Oil Cooler Door	Open
Cowl Shutters	Open

ENGINE SHUTDOWN

Brakes	On
Cowl shutters	Open
Oil Cooler Door	Open
Non essential electrics	Off
(all but first five from left + beacon)	
Prop	Fine
Boost (throttle)	28-34%
CHT	150° max
	(OAT ≥25℃ 165° max)
Boost	60% for 15 secs
Boost	Closed
Magneto Switch	Off
Flying within 1 hr? Open throttle as engine stops.	
Boost	Closed
Main Air Valve	Closed
Electrical Switches	All Off
Master switch	Off (central position)
Map / cabin light switch	Off (central position)
Oil Cooler Door	Closed
Cowl Shutters	Closed
Chocks	Set
Main Air Purge Valve	Drain, Secure
Manifold drains	Open (push up & twist)
Brakes	Off

OPERATING LIMITATIONS SUMMARY

Speeds

Rotate	110 kph (59 kts)
Climb out	170 kph (92 kts)
Cruise	225 kph (121 kts)
Max Cruise	262 kph (141 kts)
Gear extend	200 kph (108 kts)
Flap extend	170 kph (92 kts)
Approach with Flap	150 kph (81 kts)
Approach without Flap	155 kph (83 kts)
Touchdown	130 kph (70kts)
Stall Clean	125 kph (67 kts)
Stall with Flap	114 kph (61 kts)
Never Exceed (VNE)	300 kph (161 kts)
Glide	165 kph (89 kts)

MAX G LIMITS **+6.5 -3.2**

Oil Quantity

Minimum	8 Lts
Aerobatics	Less than 14 Lts
Normal	13-14 Lts
Long Cruise	15-16 Lts
Maximum	20 Lts
Total tank capacity	30 Lts.

Oil Pressure

Normal	4 - 7 kg/cm^2
Minimum at Idle	1 kg/cm^2

Oil Temperature

Min Oil Cooler Inlet	40℃
Norm Oil Cooler Inlet	50 - 65℃
Max Inlet (Continuous)	75℃
Max Inlet (15 Minutes)	85°C

Fuel Pressure

Normal	0.2 - 0.5 kg/cm^2
Minimum at Idle	0.1 kg/cm^2

CHT

Normal	140 - 210℃
Minimum	120℃
Max (Continuous)	230℃
Max at Shutdown	OAT <25℃ - 150℃
	OAT ≥25℃ - 165℃

Generator

Normal Volts	26.5V - 28.5V
Minimum Volts	24V
Max Current	54 A

Main Air System

Minimum for start	20 kg/cm^2
Minimum for take-off	30 kg/cm^2
Normal	30 - 45 kg/cm^2
Maximum	55 kg/cm

TAKEOFF CHARACTERISTICS

Firm Grass

Mass	Speed	Take off Run	10 m height
1650 kg	135 Kph	370 m	670 m
1510 kg	125 Kph	265 m	540 m

Soft Grass

Mass	Speed	Take off Run	10 m height
1650 kg	125 Kph	500 m	920 m
1510 kg	120 Kph	455 m	830 m

LANDING CHARACTERISTICS

Firm Grass

Mass	Speed	Landing Run	From 15 m
1650 kg	130 Kph	470 m	790 m
1510 kg	120 Kph	390 m	690 m

Soft Grass

Mass	Speed	Landing Run	From 15 m
1650 kg	125 Kph	350 m	650 m
1510kg	124 Kph	350 m	610 m

CROSSWIND LIMITS

Take off	23 kts
Landing	19 kts

WEIGHT & BALANCE

	Advanced Training	Primary Training
Empty	1217kg	1217kg
Full load	443kg	303kg
Take off mass	1660kg	1520kg

Full load consisting of

Fuel	100kg	100kg
Oil	18kg	18kg
Pilot	80kg	80kg
Trainees	240kg (3 pp)	80kg
Equipment *(seat cushions/parachutes etc)*	5kg	25kg
Permissible CG position range, % MAC	13.0-26.0	13.0-20.5