NEMETH DESIGNS

Yakovlev YAK-18T

FOR MS FLIGHT SIMULATOR

The Yak 18T was initially designed for training pilots before moving on to Aeroflot as commercial pilot cadets. The Yak 18T is a strong contender for the pilot who wants both aerobatic capability and good touring ability as opposed to one or the other. The 18T is a complex aircraft - it has a 360hp 9-Cylinder M14-P radial engine with both retractable gear and variable pitch propeller.

The fuel is distributed in two main tanks with the capacity of 102 liters (27 gal) each. Before the engine start-up a fuel priming pump is used for priming its cylinders, fuel lines and intake manifold section. The fuel to be used is B-91/115 gasoline.

The oil system ensures oiling and cooling of rubbing surfaces of the engine parts as well as the P-2 regulator pump. The system is forced by a gear pump, mounted on the engine. The oil tank's capacity is 24 l (6.35 gal). The air-oil cooler of tubular type is mounted on the right side of the center-section of the front spar. Its air intake is located in the wing leading edge flap. To make the engine start-up easy in winter the system of oil thinning by gasoline is provided.

The electrical system consists of a direct-current of a voltage of 28V, an alternate single-phase current of a voltage of 115V with frequency of 400 Hz and alternate three-phase current of the voltage of 36V and frequency of 400 Hz. The primary system is a direct-current system with the GSR-3000M generator and the 20NKBN-25UZ storage battery. The sources of alternate current are the PO-250A (115V) transformer and the PT-200Ts (36V) transformer.

Specifications

Empty weight:	1240 kg (2728 lbs)	Range:	760 km (410 nm)
Gross weight:	1650 kg (3630 lbs)	Service ceiling:	5520 m (16730 feet)
Length:	8.39 m (27'6")	VNE (never exceed):	460 km/h (248 knots)
Wing area:	11.16 m (36'7")	Max gear/flap speed:	200 km/h (108 knots)
Engine power:	360 hp	Rate of climb:	5 m/s (~1000 ft/min)
Propeller diameter:	2.4 m (7'10")	Sink rate:	5 m/s (~1000 ft/min)
Stall speed, clean:	120 km/h (64 knots)	Roll rate:	45 degrees
Cruise speed:	200 km/h (108 knots)	Takeoff distance:	370m (1215 feet)
Top speed:	300 km/h (162 knots)	Landing distance:	470m (1542 feet)
Crankshaft RPM:	2900 at 99.4%	Fuel capacity:	204 L (53.9 gallons)
Max. engine speed:	101% for max 5 min	Fuel type:	Petrol B-91

Engine Condition	Power nr. Ground (HP)	Crankshaft Speed	Supercharger pressure, mm mercury column	Specific fuel consumption g/l, s.hr
Take-off regime	360-2% (reduced)	99-4% ground 99+1-2% air	Po+125±15	285-315
Nominal I	290-2% (reduced)	82%-84%	Po+95±15	280-310
Nominal II	240-2% (reduced)	70%	Po+75±15	265-300
Cruise I	0.75 of the measured power at Nominal II	64%	735±15 (absolute)	210-230
Cruise II	0.6 of the measured power at Nominal II	59%	670±15 (absolute)	215-235
Idling		≤ 26%		

NOTE: Please set the flight model to **MODERN** at the realism settings in the options menu otherwise the airplane won't function properly. Legacy mode is **NOT** supported.

COCKPIT LAYOUT

1. Oil-dilution switch
2. Starter button
3 Pneumatic systems pressure
4. Accelerometer
5. Landing gear position indicators
6. Magneto selector
7. Fuel primer
8. Marker signal
9. Landing gear warning lamp
10. Flaps extension caution lamp
11. Engine oil chip warning lamp
12. Lelf fuel tank low warning lamp
13. Right fuel tank low warning lamp
14. Generator fail warning
15. Neutral trim indicator
16. Stall caution lamp
17. Stall occurence warning lamp
18. ADF indicator
    a) adjust heading marker
19. VOR indicator
    a) adjust course
20. NAV radio
    a) antenna select b) frequency swap
    c) ident sound d) frequency adjust
21. ADF radio
    a) antenna select b) frequency swap
    c) ident sound d) frequency adjust
22. Attitude indicator
23. Rate of climb indicator (m/s)
24. Pressure vacuum gauge
25. PT-200 fail warning lamp
26. Altimeter
    a) reference air pressure set
27. Oil temp/Fuel pressure/Oil pressure
28. Tachometer (crankshaft RPM)
29. Airspeed (km/h)
30. Carburetor temperature
31. Cylinder-head temperature
32. Fuel quantity indicator
33. COM radio
    a) Mhz adjust b) Volume
    c) Mute d) Khz adjust
    e) Activate frequency
34. Clock and chronometer
    a) reset b) start/stop
35. Voltmeter/Ammeter
    a) amper/volt select
36. Inclinometer
37. Transponder
    a) mode select b) suawk code set
38. Magnetic deviation indicator
39. Landing gear lever
40. Fuel cut-off lever
41. Left switch panel
    a) battery b) generator
    c) ignition d) gear position
    e) engine gauge f) PO-250 transformer
    g) VOR gauge h) ADF gauge
    i) intercom j) Marker
    k) Fuel gauge l)transponder
42. Right switch panel
    a) taxi light b) PT-200 transformer
    c) compass d) attirude indicator
    e) Stall warning f) panel lights
    g) position lights h) strobe lights
    i) pitot heater j) clock heater
43. Emergency landing gear extension
44. Pneumatic valve knob
45. ADF system select
46. Dome ligth
47. Fuel tank selector
48. Cowl flaps adjuster
49. Throttle
50. Propeller pitch
51. Oil cooler
52. Flap lock
53. Carbutetor heater
54. Landing flap
55. Elevator trim
56. Outside air temperature (C°)

Notes:

*Use the mouse wheel UP/DOWN to select between NEUTRAL/CYLINDER/FUEL-LINE with the **primer pull-lever** (7), then press the left mouse button repeatedly to actuate the selected system.*

*Use the mouse wheel UP/DOWN or press the left mouse button to turn the **magneto switch** (6).*

Use mouse wheel UP/DOWN, or press and hold the left mouse button then drag the mouse left or right to adjust the rotating knobs (radios and navigation instruments).

Use mouse wheel UP/DOWN, or press and hold the left mouse button then drag the mouse left or right to adjust the fine turne levers (throttle, propeller pitch, cowl flaps)

Press the RED (33/e) button next to the number display on the COM radio to activate the shown frequency, or use the default ATC window.