IL-2 STURMOVIK: Battle of Stalingrad

Lavotškin LaGG-3

Description

- Single-seat fighter plane LaGG-3 series 29.
- Engine M-105PF, V-12, take off power 1210 h.p. with 2700 rpm, boost rated at Pk = 1050 mm.
- Empty weight (with coolant water and armament) - 2620 kg.
- Fuel load - 350 kg.
- Take-off weight - 3160 kg.

Maximum true (indicated) level airspeeds, RPM = 2700, Pk=1050 mm.:

- H = 0m; V = 505 km/h (505 km/h); Pk = 1050 mm
- H = 2000m; V = 548 km/h (497 km/h); Pk = 1050 mm
- H = 4000m;V = 572 km/h (468 km/h); Pk = 1050 mm

Climb times (vertical climb speed), RPM = 2700:

- H = 1000m; t = 1 min. 6 sec.; Vy =15.4 m/s; Pk =1050 mm
- H = 2000m; t = 2 min. 15 sec.; Vy =13.£i m/s; Pk = 945 mm
- H = 4000m; t = 4 min. 47 sec.; Vy = 12.1 m/s; Pk = 965 mm
- H = 6000m; t = 8 min. 10 sec.; Vy = 8.0 m/s; Pk = 770 mm.

Engine start and warm-up

- Set mixture selector to shut position (fully backward);
- Close water and oil radiator shutters.
- Set prop pitch control fully backwards (low pitch).
- Set throttle control to low.
- Start the engine and wait for stable engine operation with low RPM.
- Engine warm-up RPM during winter time is between 900-1200 RPM, normal coolant temperature is 60°C without relation on oil temperature.
- Check wheel brakes operation during taxi by pressing brake clutch and slowly advancing the throttle, keep airplane tail in down position. Airplane should start moving with 1850-1900 RPM, after check - pull back throttle and depress brake clutch.

Taking-off

- Fully open water and oil shutter.
- Set propeller control fully advanced (night pitch).
- You may use flaps down 15-20 degrees position for shorten take-off roll.
- Make sure that runway is clear before rolling.
- Softly advance throttle to its maximum position.
- When rolling, keep your run straight and perform take off with slightly lowered tail.
- Push left rudder correspondingly to airplane tendency to yaw to the right. With rapid throttle increasing and tail up - airplane tendency to right yaw is higher.

- When taking-off with side winds the airplane will try to keep its nose into the wind.
- To make your take-off roll straight check forward view by leaning to the left from gunsight.
- Airplane gets airborne at around 180-190 km/h. Do not force airplane to go airborne at lower speeds as airplane controls are ineffective and it may lead to ground bumping by main wheels.
- After take-off at 250 km/h you may lower you flaps at 100m height. Perform climb at 270 km/h.
- Retract your gear and control it with cockpit light indicators and double check by mechanical indicators on wings.

Climbing

- Climb speed is 270 km/h with 2550-2700 RPM depending on water and oil temps.
- At altitudes higher than 4000 meters lower your climb speed by -10km/h with every 1000 meters of height.
- Maximum water temperature is 110°C. In case of engine overheat lower engine RPM to 2300 and perform climbing with higher speeds.
- Recommended water and oil temperatures are between 90-100°C.
- Switch supercharger to 2nd gear after 2000m height.
- When climbing you may use mixture selector to lean the engine after 3000m of height.

Level flight

- Perform switch from climb to level flight by following steps:
  *set your speed with throttle position but no lower than 250 km/h indicated at all altitudes;
  *after that adjust engine RPM correspondingly to airspeed with propeller pitch control; if airspeed drops due to lower pitch RPM setting, increase your throttle setting.
- In case when re-set from low speed flight to higher speed flight:
  *close mixture selector;
  *set prop pitch control correspondingly to speed needed;
  *only after that advance throttle control.
- In case of combat and maximum speed flight steps to follow is:
  *close mixture corrector;
  *set RPM to 2650-2700 for all altitudes;
  *set radiator shutters control by airflow position;
  *in case when flight higher than 2000m set supercharger to 2nd gear position.
- Routine flights, ferry flights, for best fuel consumption before entering combat areas and such, follow next recommendations: Set RPM to 1700, indicated airspeeds: for 5000m alt - 280 km/h, over 5000m - 270km/h.

Gliding and landing

- Before gliding approach set RPM to 2600 with your pitch control, that makes touch and go easier in case of go-around after faulty landing attempt.
- Gliding speed with gear down is 250-260 km/h indicated, with flaps down to 60° - 210-220 km/h; minimal gliding speed with flaps down to 60° - 200 km/h.
- You should always beware that during maneuvering LaGG-3 bleeds its speed badly and gains it very slowly.
- On approach set gear down before Zith turn with speed 300-320 km/h. Glidepath is much steeper with flaps down than with flaps up.
- Go-around decision alt is no lower than 50 meters. When go-around apply throttle gently and keep airspeed over 250 km/h, flaps up on alts over 100-150 meters.
- Correct landing approach is a key for safe landing, follow next steps with LaGG-3 on landing approach:
  * glidepath after 3rh turn should be with 90° to landing course;
  *when gliding after 3rd turn with 90° to landing marks on side you can correct your flight parameters on final approach;
  *last turn (to final approach) make with 90° turn; all of these makes your final approach position parallel to landing signs;
  *when approach correction after final turn allowed to bank airplane but not higher than 115° (left or right).
- Keep your airspeed before pull for leveling, keep alt around 8-6 m.
- Final leveling before touch down should be not higher than 1 m with follow down to 0,5 - 0,25 m.
- Leveling should be performed with slow stick back movement. Airplane with flaps down loses its speed fast and performs three point landing.
- When at high alt leveling is not allowed to push stick forward. In this case - keep your stick position fixed and depress stick gently following by airplane position to runway and altitude drop.
- Its forbidden to rapidly pull stick back on final landing (for three point landing) in any situation, as it may lead to bump of runway or stalling on wing.
- Apply brakes only after three point landing after fully applied stick back and airplane rolling straight (estimated brakes apply is around 1/3 of ground landing roll distance).
- Do not apply brakes and rudder movements rapidly as it may cause airplane ground looping or to change direction. When landing on snow apply brakes carefully.

Edited by Zwoop

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