

IL\*2 Lodebeard

Messerschmitt  
Bf 109F-4

PERFORMANCE NOTES

Speed @ 0000 M: 545 kph  
Speed @ 2000 M: 505 kph  
Speed @ 4000 M: 490 kph  
Climb Rate: 1000 m/min @ 280 kph  
Time to 6000 M: 0m0s  
Ceiling: 12,000 m  
Best Oil/Water Temps: 70-80°C  
•Do Not Exceed 1 Minute At  
Full Power (2700 rpm/1.42 atm)••

COLD ENGINE START

Throttle: 15-20%  
Prop Pitch: auto  
Radiators: auto  
Warm Up: oil 40°C  
To Taxi: unlock tailwheel

TAKE-OFF

Tailwheel: locked  
Flaps: 20° (2 notches on wing)  
Prop Pitch: auto (manual 12:00)  
Rotate: 180 kph  
Clean Aircraft: 250 kph  
•Do Not Exceed 1 Minute At  
Full Power (2700 rpm/1.42 atm)••

CLIMB

250-350 kph @ 2500 rpm/1.3 atm  
•Mind Your Temperatures!••

TRANSIT

2200 rpm/1.0 atm

COMBAT

2700 rpm/1.42 atm (1 minute max!)  
•Mind Your Temperatures!••

LANDING

Prop Pitch: auto (manual 11:30)  
RPM: 1500 rpm/0.6 atm  
Gear: down <350 kph  
Flaps: 20° <250 kph, then as required  
Downwind: 200 kph  
Approach: 180 kph  
Touchdown: 160 kph

AMMO COUNTERS

CLOCK

MANIFOLD PRESSURE (atm)

REPEATER COMPASS

ALTITUDE (km)

SPEEDOMETER (kph)

TACHOMETER (x100 rpm)

TURN/SLIP INDICATOR

COOLANT EXIT TEMP (°C)

OIL INTAKE TEMP (°C)

FUEL (x100 L)

PRESSURES (kgf/cm²)

FUEL

OIL

NAV LIGHTS ON

RIGHT OF SEAT

COCKPIT LAMPS

RADIATOR FLAPS REST

FLAPS UP

FLAPS DOWN

STABILIZER TRIM NOSE UP

STABILIZER TRIM NOSE DOWN

THROTTLE UP

THROTTLE DOWN

PROP PITCH FINE

PROP PITCH COARSE

GEAR UP

GEAR DOWN

GEAR AND LOCKED

GEAR AND LOCKED

MECHANICAL GEAR INDICATORS L R

TAILWHEEL LOCK ON

TAILWHEEL LOCK OFF

PROP PITCH MODE AUTO

PROP PITCH MODE MAN

STABILIZER TRIM NOSE UP

STABILIZER TRIM NOSE DOWN

FLAPS UP

FLAPS DOWN

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**IL★2 Lodebeard**

**Messerschmitt  
Bf 109F-4**

### PERFORMANCE NOTES

- Speed @ 6000 M: 545 kph
- Speed @ 2000 M: 505 kph
- Speed @ 4000 M: 490 kph
- Climb Rate: 1000 m/min @ 280 kph
- Time to 6000 M: 0m05
- Ceiling: 12,000 m
- Best Oil/Water Temps: 70–80°C
- \*\*Do Not Exceed 1 Minute At Full Power (2700 rpm/1.42 atm)\*\*

### COLD ENGINE START

- Throttle: 15–20%
- Prop Pitch: auto
- Radiators: auto
- Warm Up: oil 40°C
- To Taxi: unlock tailwheel

### TAKE-OFF

- Tailwheel: locked
- Flaps: 20° (2 notches on wing)
- Prop Pitch: auto (manual 12:00)
- Rotate: 180 kph
- Clean Aircraft: 250 kph
- \*\*Do Not Exceed 1 Minute At Full Power (2700 rpm/1.42 atm)\*\*

### CLIMB

- 250–350 kph @ 2500 rpm/1.3 atm
- \*\*Mind Your Temperatures!\*\*

### TRANSIT

- 2200 rpm/1.0 atm

### COMBAT

- 2700 rpm/1.42 atm (1 minute max!)
- \*\*Mind Your Temperatures!\*\*

### LANDING

- Prop Pitch: auto (manual 11:30)
- RPM: 1500 rpm/0.6 atm
- Gear: down <350 kph
- Flaps: 20° <250 kph, then as required
- Downwind: 200 kph
- Approach: 180 kph
- Touchdown: 160 kph

### AMMO COUNTERS

### CLOCK

### MANIFOLD PRESSURE (atm)

### REPEATER COMPASS

### ALTITUDE (km)

### SPEEDOMETER (kph)

### TACHOMETER (x100 rpm)

### TURN/SKID INDICATOR

### PROP PITCH

### FUEL (kg/cmh) OIL INTAKE TEMP (°C)

### COOLANT EXIT TEMP (°C)

### FUEL (x100 L)

### PRESSURES

### LIGHTS ON NAV LIGHTS OFF RIGHT OF SEAT COCKPIT LAMPS

### AUTO CLOSE OPEN REST RADIATOR FLAPS

### MECHANICAL GEAR INDICATORS L R UP DOWN

### GEAR UP AND LOCKED GEAR DOWN AND LOCKED

### MAGNETOS ON OFF

### THROTTLE UP DOWN FINE PROPR PITCH COARSE

### TAILWHEEL LOCK ON OFF

### STABILIZER TRIM NOSE DOWN NOSE UP

### FLAPS UP DOWN

Updated:  
2014-06-16

IL★2 Lodebeard

Messerschmitt

Bf 109G-2





## IL★2 Lodebeard Junkers Ju 87D-3

### PERFORMANCE NOTES

Speed @ 0000 M: 400 kph  
Speed @ 2000 M: 380 kph  
Speed @ 4000 M: 340 kph  
Speed @ 6000 M: 310 kph  
Ceiling: 3500 m

•Avoid prolonged RPM of >2250\*  
•Avoid rapid increase of throttle\*

### COLD ENGINE START

Throttle: 15-20%

RPM Control: min (back)

Oil and Water Rads: closed

Warm Up: oil 40°C

To Taxi: rpm control to max,  
unlock tailwheel, & open oil rad

### TAKE-OFF

Tailwheel: locked

Flaps: optional

Oil & Water Rads: open

RPM Control: max (forward)

Rotate: 170 kph

### CLIMB

240 kph @ 2450 rpm/1.25 atm

30 minutes max @ 2450 rpm/1.25 atm

No restriction @ 2250 rpm/1.15 atm

### TRANSIT

2100 rpm/1.2 atm

### COMBAT

2250 rpm/1.2 atm

### LANDING

Water Rad: closed

RPM: 2000 rpm/0.6 atm

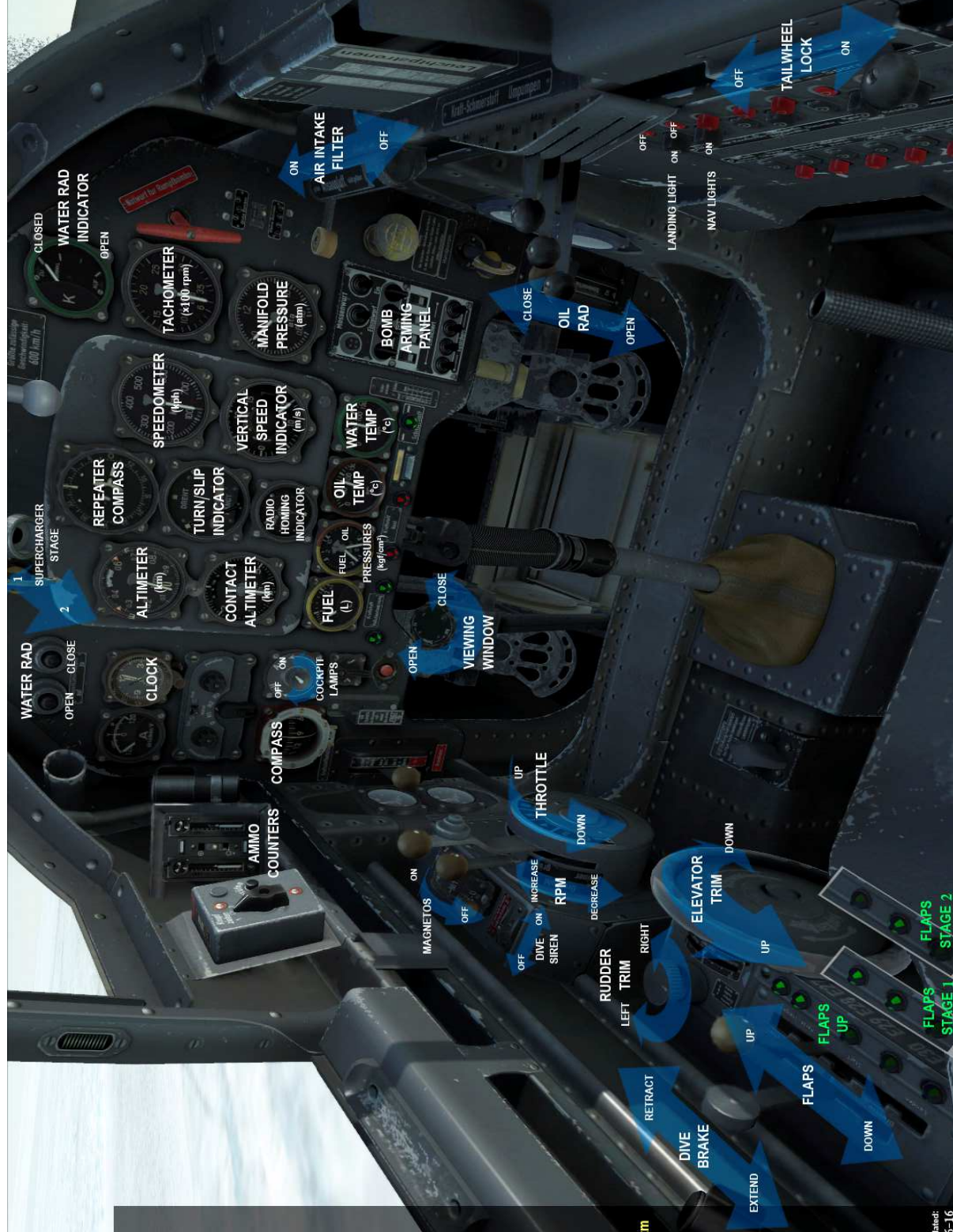
Flaps: set to stage 1 <250 kph

Downwind: 200 kph

Approach: 190 kph

Touchdown: 150 kph

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2014-06-16



## IL★2 Lodebeard

**Lavochkin  
La-5 (Series 8)**

## PERFORMANCE NOTES

## Work In Progress

Speed @ 0000 M:

Speed @ 2000 M:

Speed @ 4000 M:

Climb Rate:

Time to 6000 M:

**Ceiling:**

**Best Oil Temp:**

**Supercharger Stage 2 @ 2000 m**

- Engine Boost Below 2000 m Only •

## COLD ENGINE START

**Throttle: 15-20%**

**Mixture: full rich**

Oil &amp; Cowl Rads: closed

RPM Control: min (back)

**Warm Up: oil 40 °C,**

cylinder heads 100–250°C

To Taxi: rpm control to max

**& lean out mixture**

## TAKE-OFF

Flaps: 20°

**Mixture: full rich**

Oil &amp; Cowl Rads: open

RPM Control: max (forward)

Rotate: 180 kph

**Clean Aircraft: 250 kph**

## CLIMB

## TRANSIT

## COMBAT

• Engine Boost Below 2000 m Only\*

## LANDING

Oil &amp; Cowl Rads: closed

**RPM Control:**

**Gear: down <320 kph**

Flaps: 10° < 250 kph. 30° for final

Downwind: 220 kph

**Downwind: 220 kph**  
**Approach: 200–210 kph**

Approach: 200 Z10 kph  
Touchdown: 3-point @ 170 kph

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2014-06-16

IL★2 Lodebeard

Lavochkin-Gorbunov-Gudkov  
LaGG-3 (Series 29)



## PERFORMANCE NOTES

Speed @ 0000 M: 505 kph  
Speed @ 2000 M: 497 kph  
Speed @ 4000 M: 468 kph  
Climb Rate: 700 m/min @ 270 kph  
Time to 6000 M: 8m10s  
Ceiling: 10,000 m  
Best Oil & Water Temps: 90-100°C  
Supercharger Stage 2 @ 2000 m

## COLD ENGINE START

Throttle: 15-20%  
Mixture: full rich  
Oil & Water Rads: closed  
RPM Control: min (back)  
Warm Up: oil 40°C  
To Taxi: rpm control to max  
& lean out mixture

## TAKE-OFF

Flaps: 20°  
Mixture: full rich  
Oil & Water Rads: open  
RPM Control: max (forward)  
Rotate: 190 kph  
Clean Aircraft: 250 kph

## CLIMB

250-300 kph @ 2550-2700 rpm  
Supercharger Stage 2 @ 2000 m

## TRANSIT

1700 rpm

## COMBAT

2650-2700 rpm

## LANDING

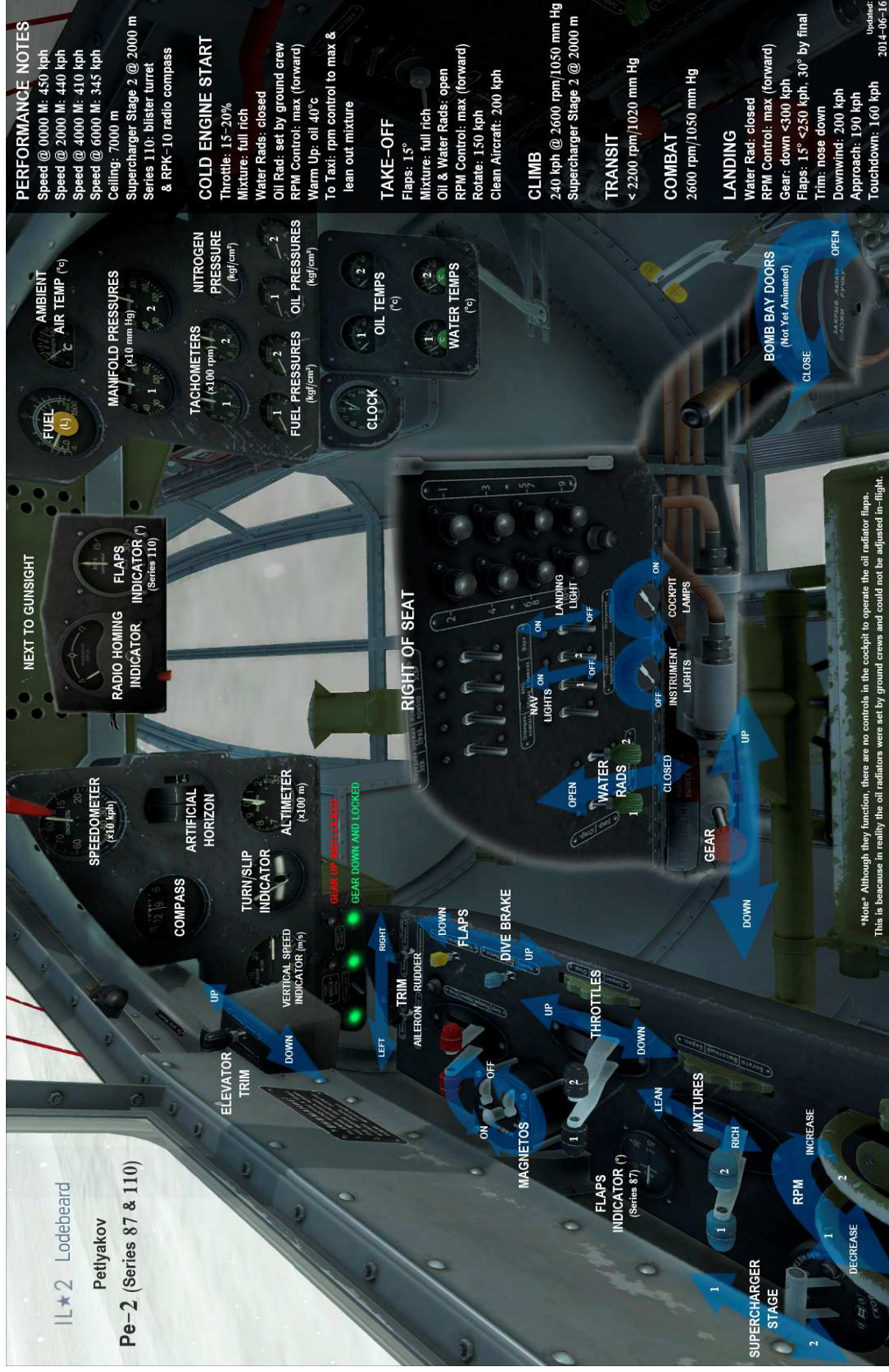
Oil & Water Rads: closed  
RPM Control: 2600 rpm  
Gear: down <350 kph  
Flaps: down <250 kph, then as required  
Downwind: 220 kph  
Approach: 200 kph  
Touchdown: 170 kph

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IL★2 Lodebeard

Petlyakov

Pe-2 (Series 87 & 110)



## PERFORMANCE NOTES

Speed @ 0000 M: 450 kph  
Speed @ 2000 M: 440 kph  
Speed @ 4000 M: 410 kph  
Speed @ 6000 M: 345 kph  
Ceiling: 7000 m  
Supercharger Stage 2 @ 2000 m  
Series 110: blister turret  
& RPK-10 radio compass

## COLD ENGINE START

Throttle: 15-20%  
Mixture: full rich  
Water Rads: closed  
Oil Rad: set by ground crew  
RPM Control: max (forward)  
Warm Up: oil 40°C  
To Taxi: rpm control to max & lean out mixture

## TAKE-OFF

Flaps: 15°  
Mixture: full rich  
Oil & Water Rads: open  
RPM Control: max (forward)  
Rotate: 150 kph  
Clean Aircraft: 200 kph

## CLIMB

240 kph @ 2600 rpm/1050 mm Hg  
Supercharger Stage 2 @ 2000 m

## TRANSIT

< 2200 rpm/1020 mm Hg

## COMBAT

2600 rpm/1050 mm Hg

## LANDING

Water Rad: closed  
RPM Control: max (forward)  
Gear: down <300 kph  
Flaps: 15° <250 kph, 30° by final  
Trim: nose down  
Downwind: 200 kph  
Approach: 190 kph  
Touchdown: 160 kph

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2014-06-16

NEXT TO GUNSIGHT

RADIO HOMING  
INDICATOR  
(Series 110)

MANIFOLD PRESSURES  
(x10 mm Hg)

TACHOMETERS  
(x100 rpm)

NITROGEN  
PRESSURE  
(kgf/cm²)

FUEL PRESSURES  
(kgf/cm²)

OIL PRESSURES  
(kgf/cm²)

CLOCK

OIL TEMPS  
(°C)

WATER TEMPS  
(°C)

RIGHT OF SEAT

MAGNETOS

FLAPS  
INDICATOR (°)  
(Series 87)

THROTTLES

MIXTURES

SUPERCHARGER  
STAGE

RPM

INCREASE  
DECREASE

BOMB BAY DOORS  
(Not Yet Animated)

CLOSE  
OPEN

GEAR

UP  
DOWN

WATER  
RADS

OPEN  
CLOSED

LANDING  
LIGHT

ON  
OFF

COCKPIT  
LAMPS

ON  
OFF

\*Note\* Although they function, there are no controls in the cockpit to operate the oil radiator flaps.  
This is because in reality the oil radiators were set by ground crews and could not be adjusted in-flight.

# IL-2 Lodebeard

Yakovlev

Yak-1 (Series 69)

