

R-5 in the history of Soviet aviation

It is unnecessary to present R-5 for Russians.

R-5 was developed under the specification issued in 1926, calling for two-seat reconnaissance and light bomber aircraft, initially powered by M-13 piston water-cooled engine, later replaced by BMW-VI and M-17. Technical specifications were issued in 1927 and construction works begun. In 1928 the first experimental aircraft was built. R-5 passed test flights smoothly and was placed into large scale production starting from 1929.

More than 6000 R-5 of all modifications was built, including ground-attack version (R-5Sh), torpedo-carrier (R-5T), floatplane (R-5A), high-speed light bomber (R-5SSS), postal (designated as P-5 – “Pochtovi-5”), passenger (PR-5 – “Passenger” R-5), and large number of special arctic modifications (such as ARK-5) and others.

R-5 was used as a test-bed for new military equipment. Using R-5 first experiments with parachute dropping were carried out. This strong and stable aircraft was used for advanced pilot training and glider towing, sky-diving in military and civil pilot training schools.

R-5 played major part in establishing airmail service along wide Russian lands. Specially formed “PRAVDA flight” used R-5 for express mail service from Moscow to Leningrad (St. Petersburg), Kiev, Kharkov and other cities. Pilots fly their aircraft even during nights, despite bad weather. Pilot skill and reliability of R-5 allowed successful evacuation of survivors from “Chelyuskin” steamship, crushed by ice fields in 1933.

R-5 participated in numerous military conflicts around the world. They took part in civil war in China (in service with Chinese Nationalists air forces), they fight in Spain (in service with Spain Republicans air forces). They defended Soviet Union and Mongolia during Nomonhan incident, fighting numerous Japanese aircraft. They participate the Winter war with Finland, bombing Finnish fortifications and evacuating wounded soldiers. Even during Great Patriotic war with Nazi, old and obsolete R-5 were used as night bombers and transports. R-5 carried supplies to partisans, evacuated wounded soldiers, served as executive aircraft.



R-5 was one of the first aircraft in Soviet Union sold to other countries. In 1931 R-5 won the contract for reconnaissance aircraft for Persian army. In 1933 squadron of R-5 was sold to Chinese government. In 1936 first batch of R-5 was transferred to Spain republicans. It is interesting to mention, that Republicans R-5 remains in service with Spanish air forces even after the end of Civil War. 9 R-5 were in active service until 1945.

Today the only R-5 remained is exposed in Russian Air Force museum in Monino, off Moscow.

This model represents a floatplane version of R-5, designated R-5A, or MP-5 (Morskoj Pochtovyj – 5 – “seaplane postal – 5”). 111 aircraft of this type were constructed. It was possible to use both seaplane and wheeled undercarriage on R-5A. This particular aircraft was constructed in 1934. It belongs to the Polar Aviation. In 1934 – 1935 it participated in the wintering at Cap Chelyuskin polar station and until 1937 was used on the postal and transport routes in Siberia.

How to fly R-5?

R-5 of first production batches has no wheel brakes. In model presented in this package only rudimentary brakes are used.

Electrical system included only NAV, panel and landing lights and Pitot tube heater. Air for carburetor was heated using exhaust gases. One wind-driven electrical generator was installed on the lower right wing. Some aircraft were equipped with wireless sets.

1. Engine startup.

If you are in wheeled aircraft - apply parking breaks. Set engine throttle at 25%, mixture throttle at 100%. Switch ON magnetos. Normal rate is about 590 rpm. R-5 is equipped with compressed air starter.

2. Take-off.

While parking breaks are ON, gentle apply full throttle until you have about 850 rpm, than release breaks. R-5 have no steerable landing gear or water rudders, so use rudder to keep strait run. Pull stick and take off at speed about 110 kph for wheeled chassis or 130 kph for seaplane. Normal take-off run does not exceeded 300 meters for wheeled aircraft.

3. Cruise flight

R-5 USSR-353 have extra fuel capacity 1270 liters (about 336 gal), thus allowing up to 10 hours of flight at most economical speed – about 165 kph. To achieve this, you must set fuel throttle at 65% and mixture throttle at 75%, keeping engine at 1290 rpm. Aircraft is stable and required only moderate trimming during long flights. R-5 is capable to reach maximum level speed about 225 kph and to make loops, dives and turns.

4. Landing

R-5 allowed so-called “three-point landing”, when aircraft touched ground with main wheels and tail skid simultaneously. This landing allowed very small landing run, no more than 300 meters. Of course, R-5 is not STOL aircraft, but... R-5 can fly steady at speed above 90- kph. Approach must be made at speed about 110 – 120 kph, rising aircraft' nose to keep altitude. Landing is performed at speed about 100 – 110 kph. Switch engine off on landing run.

R-5 control panel



All gauges used in this model are calibrated in metric system. So, all temperatures are in centigrade, altitude is measured in meters, speed – in kilometers per hour, fuel and oil pressure is measured in kilograms per square centimeter.

Following gauges are installed:

- 1 – Startup magneto;
- 2 – Carburetor heating control;
- 3 – Fuel and mixture control throttles;
- 4 - Electric switchboard;
- 5 – “Three needle engine indicator”, displayed simultaneously oil temperature on upper scale, oil pressure on lower left scale and fuel pressure on lower right scale;
- 6 – Magneto switch;
- 7 – Fuel tank group valve;
- 8 – Thermometer, displayed cooling liquid temperature;
- 9 – Airspeed speed indicator;
- 10 – RPM gauge (tachometer);

- 11 – Hydrostatic fuel quantity gauge calibrated for upper tank (fuel quantity is measured in kilograms);
- 12 – Upper tank selector for fuel quantity gauge;
- 13 – Air pump for upper tank fuel quantity gauge;
- 14 – Turn coordinator
- 15 – Altimeter;
- 16 – Hydrostatic fuel quantity gauge calibrated for lower tank (fuel quantity is measured in kilograms);
- 17 – Lower tank selector for fuel quantity gauge;
- 18 – Air pump for lower tank fuel quantity gauge;
- 19 – Vertical speed indicator (variometer);
- 20 – clocks;
- 13 – AL-2 magnetic compass;

Additional equipment



- 22 – A-4 magnetic compass;
- 23 – “Luch” command radio;

24 – OPB drift indicator.

Like all contemporary aircrafts, R-5 was equipped with magnetic compass only. A-4 was standard magnetic compass installed in Soviet aircraft during 30-th years. This is precise aperiodic magnetic compass, provided bearing accuracy about 1 degree. This gauge can be used for flight heading indication and for flight heading setting.

Central white arrow mark shows current aircraft course, long while mark shows course set. The heading of 312 degrees. To set heading one can rotate bearing ring with mouse clicks until red heading line is set along heading desired. After course is set, pilot makes a turn until red wire will set parallel to wires on the bearing plate.

Because this particular R-5A “USSR N-27” was intended to fly in North conditions, additional equipment was installed, including sun compass and sextant. Sun compass can be called by pressing <shift>+5, and sextant – by pressing <shift>+6.