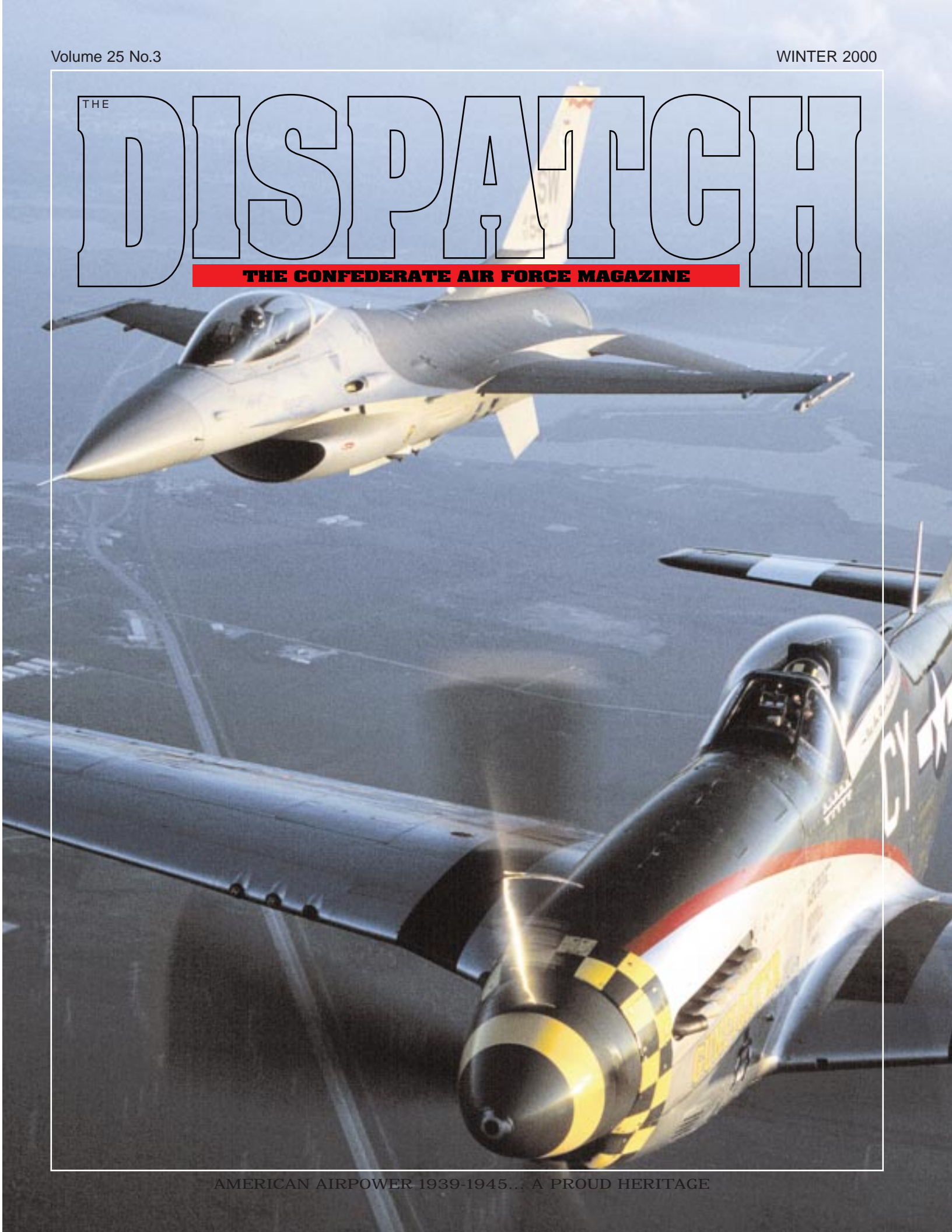


THE DISPATCH

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The Aircraft of Nikolai Polikarpov

NIKOLAI NIKOLAYEVICH POLIKARPOV (PRONOUNCED POLY-CAR-POFF) SHOWED GREAT PROMISE IN THE FLEDGLING POST CZAR RUSSIAN AVIATION INDUSTRY.



By Col Jim Chisolm

At age 26, one year after the Bolshevik Revolution of 1917, Polikarpov was tasked with building the British designed de Havilland DH-4s at the Moscow Duks aircraft factory. Following completion of 63 DH-4 aircraft, Polikarpov took the de Havilland DH-9 aircraft and modified it to utilize readily available material, which subsequently went into production as the R-1. Over 2,700 of the R-1 aircraft were produced.

Nikolai Polikarpov began to produce his own designs and proved to be quite ahead of his time. An ambitious design known as the Polikarpov I-1 (I for Itribityel, Russian for fighter) was the first home designed and produced fighter aircraft of the Soviet Union. The I-1 was a low-wing monoplane single-seat fighter, an odd sight in 1923. More impressive than the monoplane design was the cantilever wing design with no sign of external support. Thirty of these aircraft were produced, but due to a high propensity for spinning they were never issued to operational air units. Lessons learned in the I-1 project would serve Polikarpov well in the future.

In 1927 and early 1928 the Polikarpov U-2 came on the scene. An economic, docile, and reliable biplane, the U-2 was an instant success and went into immediate production. U-2s served as trainer



aircraft, air ambulances, light transports, liaisons, and even propaganda aircraft that were equipped with loud speakers and often dropped leaflets. The type was nicknamed the Kukuruznik (corn-planter). The U-2 was later redesignated the Po-2 to honor Polikarpov following his death in 1944. It was most likely the highest quantity aircraft ever built with production estimates as high as 40,000. Production continued in Poland until 1953.

Polikarpov's successes continued. Succeeding Igor Sikorsky at the Russo-Baltic Railcar Factory, he was tasked with the production of Ilya Muromets bombers. He even rose to the top post of the OSS (Department of Experimental

Land Plane Construction). Polikarpov was at the height of the Russian aviation industry; however his fortune was about to turn.

FOLLOWING A TWO-YEAR SPAN with lack of progress on Stalin's new fighter, Polikarpov and fellow aircraft designer and builder Dmitri Grigorovich (creator of the flying boats for the tsar's navy during World War I) were ordered to design under the helpful encouragement of the state while in an internal prison. A harsh punishment for lack of productivity by western standards, the alternative was the firing squad or labor camp. "Internal prison" was the way the Soviet Union could keep their talent alive while putting them under close scrutiny.

Polikarpov, with the assistance of Grigorovich, developed the Polikarpov I-5 in record time while being detained. State Aircraft Factory 39 (a Soviet internal prison) rolled out the VT-11 (later the I-5) in April 1930. The VT of VT-11, which was inscribed inside the red

star on the fuselage, stood for Vnutrennaya Tyur'ma, which literally translates to "internal prison", a direct sign of the origin of the aircraft. A single seat biplane fighter, the I-5 became the mainstay Soviet fighter aircraft until 1936. The success of the I-5 gained Polikarpov and Grigorovich their freedom.

In 1933 the TsKB-3 prototype aircraft became available. The TsKB-3 (TsKB stands for Central Design Bureau), later redesignated the I-15 Chaika (Gull), was a direct development of the I-5. The I-15 was noted for its upper wing "gull" into the main body of the aircraft. Other innovations included the I-type wing struts, single strut landing gear with wheel pants, and a 775-horsepower radial engine compared to the 480-

horsepower radial of the I-5. The highly maneuverable

I-15 fought not

only with the Russian Air Force but also with the Chinese against the Japanese and with the Republican (government) forces during the Spanish Civil War. I-15s were flown by both Soviet and Spanish pilots during the Spanish Civil War. The Republicans flew the aircraft with much success, nicknaming it the Chato or snub-nose.

Following on the heels of the success of the I-15, Polikarpov produced the most advanced fighter aircraft in the world at that time, the I-16. The I-16 Ishak (Little Donkey), debuting in 1933, was the first fighter in the world to go into production with a cantilever

monoplane wing, variable pitch propeller and retractable landing gear. This was a considerable feat of engineering to produce the first fighter with retractable landing gear; the Germans didn't start production of the Bf-109 with retractable landing gear until 1935, a full two years later. The I-16 also boasted a top speed near 300 mph. Along with outstanding maneuverability and rapid rate of climb, this undoubtedly made the I-16 the greatest fighter of its day.

The I-16 was designed for simplicity. A combination of wood, fabric and metal were utilized in combinations that would allow low-skilled labor to produce the aircraft. The main fuselage, comprised of multiple layers of wood glued together and covered



with fabric, was constructed in two halves – left and right – much like a model airplane kit. The wings were made of metal in a cantilever (self-supporting) structure, fabric covered. The landing gear required the pilot to manually operate a hand-crank, which required over 40 turns to raise the gear. Early production aircraft were equipped with a canopy over the cockpit. However, the Russian pilots thought it obscured visibility, and they were removed from the remaining models.

Approximately 500 I-16s were supplied to the Republican forces in Spain and quickly earned a name for themselves. To the Republican pilots the I-16 was known as the Mosca or Fly; to the Nationalists it was known as the Rata or Rat. Little Donkeys, stubby and flat nosed, were a match for anything in the air at the time. Not until the Italian C.R.32 biplanes were the I-16s equaled. They were eventually overcome by the Bf-109, though some accounts have the I-16 toe to toe with the very earliest version. I-16s were operational in Spain until the late 1940s. The aircraft were obsolete by the time of the German invasion and suffered heavy losses. In an act of desperation, the I-16 was used for ramming attacks on German bombers. Taran (ramming attacks) would pit the ruggedness of the I-16 against the airframe of the attacker. After ramming the attacker the Russian pilot would bail out of the aircraft to



safety, as the theory goes. Many a Russian pilot survived a Taran attack, demonstrating the ruggedness of the Polikarpov design. I-16s also fought in China against the Japanese and equaled the competition until the advent of the Mitsubishi Zero-sen in 1940. Totalling all versions of the I-16, 7,005 single-seat aircraft were built.

The first country to develop the monoplane fighter was also the last to retire the biplane. After the air war in Spain, Soviet observers deemed that the biplane continued to have a role in air combat. Polikarpov was instructed to develop a more advanced biplane fighter from the I-15. In 1938 the prototype I-153, also known as the Chaika, was first flown and deliveries were received in 1939. The I-15 tail and body were retained, albeit strengthened. The main landing gear was designed to retract into the fuselage at a 90-degree angle to the down position allowing the wheels to parallel the wing profile. The I-153 was available in large numbers during the June 1941 German offensive. Being outclassed by the advanced German aircraft, it suffered great losses. Following June 1941, the I-153 was relegated to ground attack units and remained in service until 1943.

The final version of the I-16, the I-180, took many of the attributes of its predecessor. Looking more like a modern fighter of the era, the I-180 retained the open cockpit and tail section of the I-16 with an elongated engine cowling and aerodynamic spinner. The I-180 never went into production with a final version. The I-185 crashed in April 1943, 15 months before the death of Polikarpov. This ended the development program.

You can own a Little Donkey of your own. Five of the six I-16s are for sale, as is the I-153.