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The Tu-95 Bear: Russia Has Its Very Own B-52 Bomber

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Few aircraft are as distinctive as the massive Tupolev Tu-95 “Bear,” a four-engine Russian strategic bomber and maritime patrol plane with a gigantic unicorn-like refueling probe, giving it the appearance of a monstrosity lurching in from prehistoric times—or at least from shortly after World War II, as is in fact the case.

Don’t let its looks deceive you. Over sixty years later, the Tu-95 remains in service because few aircraft can cover such great distances for such long periods of time while carrying a hefty payload. Which is to say, the Tu-95 is Russia’s B-52—but one with a decidedly maritime bent and a habit of knocking at the door of coastal air-defense systems in Europe, Asia and North America.

Cold War Nuclear Bomber

The Bear was born from the Soviet Union’s desire to develop its own strategic bomber force to match the one fielded by the United States in World War II. Soviet planners requested in 1950 a four-engine bomber that could fly five thousand miles to hit targets across the United States while hauling over twelve tons of bombs.

The jet engines of the time, however, burned through fuel too quickly. Thus, the design bureau of Andrei Tupolev conceived of an aircraft using four powerful NK-12 turboprop engines with contrarotating propellers.

Each of the NK-12s has two propellers, the second one spinning in the direction opposite the first. This not only counteracts the torque created by the rotational airflow of the first propeller, but harnesses it for greater speed. Contrarotating propellers are therefore modestly more efficient—but because they are more expensive to produce and maintain, and also unbelievably noisy, they have not been widely adopted. In fact, the noise produced by Tu-95s has reportedly been remarked upon by submarine crews and *jet* pilots.

On the Tu-95, however, the unconventional engines paid off: the enormous Tu-95 is actually one of the fastest existing propeller planes, capable of going over five hundred miles per hour. The tips of its eighteen-foot diameter propellers actually spin at slightly over the speed of sound. The Bear is also one of very few propeller planes with swept-back wings, which only benefit aircraft capable of flying at higher speeds.

The Tu-95 also had tremendous fuel capacity and could fly over nine thousand miles just using internal fuel. After the initial production variant, later types added the distinctive in-flight refueling probe, even further extending their range. Typical patrols during the Cold War lasted ten hours, but some Tu-95 flights lasted nearly twice as long.

Tu-95s had crew of six to eight depending on the type, including two pilots and two navigators, while the remaining crew operated guns or sensor systems. The original version of the Bear had two twin-barreled twenty-three-millimeter cannons in the belly and tail, and a single fixed gun in the nose, all intended to ward off enemy fighters. This kind of armament became increasingly

obsolete in the age of long-range air-to-air missiles, so the later models got rid of all but the tail gun. (To be fair, tail gunners on B-52s *did* score two or three kills over Vietnam).

The Bear's original intended mission was fairly clear-cut: in the event the Cold War became *really* hot, dozens of individual Bears would fly across the Arctic Circle and drop nuclear bombs on targets over the United States. Even if many fell victim to surface-to-air missiles and defending fighters, the reasoning was that *some* would get through.

This mimicked the U.S. Air Force's own war plans, immortalized in the film *Dr. Strangelove*. However, the Soviet Union did not maintain a twenty-four-hour force of airborne nuclear-armed bombers like the United States did.

Along these lines, Tu-95s were also used in nuclear weapon tests. A Tu-95V dropped the largest nuclear weapon *ever* detonated over Severny Island in 1961, the fifty-megaton *Tsar Bomba*. Deployed by parachute, *Tsar* detonated four kilometers above the ground, sending a mushroom cloud over forty miles into the sky. The shock wave tossed the Bear a thousand meters towards the ground, but the pilot managed to retain control and return to base. The crew had earlier been informed they had only a 50 percent chance of surviving the test.

Maritime Marauders

By the 1960s, the Soviet Union wisely concluded that a nuclear strategic bomber force attempting to drop nuclear gravity bombs over the United States was a wasteful proposition, given the increasing effectiveness of air defenses and the comparatively lower cost of unstoppable ballistic missiles. New variants of the Tu-95 were therefore developed to pursue different missions.

One means of getting around the bomber's vulnerability to interception was to use them as a platform for long-range cruise missiles. The Tu-95K variant could carry the enormous Kh-20 nuclear cruise missile, known by NATO as the AS-3 Kangaroo. The missile had a range of three hundred to six hundred kilometers, and looked like a wingless airplane because it more or less *was* one—it was modeled off the fuselage of a MiG-19.

Another mission assigned the Bear was to shadow U.S. carrier battle groups. Even with state-of-the-art sensors, finding and tracking ships across the vastness of the ocean was a challenging endeavor. However, if a U.S. carrier group could be located, it could be pounced upon by swarms of land-based bombers. The Bear, with its ability to fly over the ocean for hours on end and cover vast territories, was ideal for ferreting out the position of U.S. fleets and tracking their movements.

The Tu-95RT maritime reconnaissance variant was produced to specially perform this duty: it had surface-search radar in a belly pod and even added a glass observation blister just behind the tail gun position.

Not only was tracking fleet movements useful in the event of a war, but it also served as a psychological tactic to emphasize the Navy's vulnerability to air attack. U.S. carrier fighters

were often scrambled to chase off the intrusive Bears. Photographs of the many Bear-on-fighter encounters are icons of the Cold War era.

Tu-95 Variants

There was a multitude of experimental Bears, including the Tu-95LAL, which was powered by a nuclear reactor, and the Tu-95K, designed to carry MiG-19 fighters for airborne deployment.

Models that entered production included the Tu-95MR photo-reconnaissance aircraft, and the improved Tu-95K and KM with better sensors and the capability of launching Kh-22 missiles

The Soviet Union eventually developed a specialized antisubmarine reconnaissance plane from the Bear, the Tu-142. This arose out of fear of the new Polaris Submarine-Launched Ballistic Missile (SLBM), which performed the first underwater ballistic-missile launch in 1960. The Tu-142 is distinguished by its Berkut (Golden Eagle) surface-search and targeting radar. A boom in the tail houses a Magnetic Anomaly Detector useful for finding submarines. The Tu-142 is stretched a bit longer to accommodate all of the sensors packed inside it.

These systems had to be upgraded several times during the Cold War to keep up with U.S. submarine technology. The current variant, the Tu-142MZ, can use superior RGB-16 and RGB-26 sonar-buoys and has more powerful engines. On repeated occasions, Tu-142s succeeded in detecting U.S. submarines and following them for hours at a time. Two special Tu-142MRs designed to communicate with Russian submarines were also produced.

The Russian Naval Air Arm still operates fifteen Tu-142s today. One was recently spotted in Syria—either using its systems to spy on Syrian rebel positions or monitor U.S. fleet movements.

The Indian Navy has operated eight Tu-142MK-Es since 1988—though they are due to be replaced by twelve P-8I Poseidon aircraft in the near future.

The Bear was also developed into Russia's first AWACs aircraft—the Tu-126—and the Tu-114 *airliner* which carried Khrushchev on a nonstop eleven-hour flight from Moscow to New York in 1959. However, neither type still flies today.

Besides the Tu-142, the only Tu-95s in service today are over fifty Tu-95MS aircraft, actually developed from the Tu-142 airframe to serve as a cruise-missile carrier capable of firing Kh-55 missiles, also known as the AS-15 by NATO. They have recently been upgraded to carry sixteen cruise missiles each, and outfitted with new navigation/targeting systems. The Kh-55 comes in many variants, both conventional and nuclear, with ranges as long as three thousand kilometers and as short as three hundred.

The Tu-95MSM variant can also fire the Kh-101 and nuclear Kh-102 stealth cruise missiles which skim at low altitude and boast a reduced radar-cross section. These missiles can reach up to 5,500 kilometers away.

Despite such deadly payloads, the Bear may be suffering from its age. In the summer of 2015 they were briefly grounded after suffering their second accident in two years.

The Tupolev Today

The Bear is still flying across the Pacific and Atlantic Ocean in the twenty-first century. One of its principal missions can be described as trolling other countries.

Tu-95s have been detected buzzing by the coast of England, fifty miles west of California, into the Alaskan air defense identification zone, and inside Japanese airspace. The closer flights usually provoke a fighter interception in response. Most of the time they don't actually violate foreign airspace.

Such patrols, routine during the Cold War, were resumed by Putin in 2007. Although these are theoretically surveillance missions, their main intention is to remind other countries that Russia remains capable of sending nuclear-armed bombers close to their airspace if it chooses to.

Regular flights by U.S. RC-135 spy planes are also known to elicit interceptions by Chinese and Russian fighters. However, the RC-135 cannot carry any weapons.

Of course, the Bear is anything but stealthy and could not survive against modern air- and surface-launched anti-aircraft missiles. However, a Bear launching cruise missiles doesn't have to get *close* to air defenses in the first place.

In November 2015, fifty-nine years after entering service, the Tu-95 finally saw combat as a bomber. Videos from the Russian Ministry of Defense in the fall of 2015 show them launching cruise missiles that went on to pound the positions of Syrian rebels. Moscow's first-time deployment of the cruise missiles on air and naval platforms has been interpreted as a means of demonstrating its military capabilities to the world.

The Russian military today maintains a diverse fleet of bombers capable of carrying heavier payloads and flying at faster speeds than the Tu-95. However, the venerable Bear remains well adapted to the job of hauling heavy cruise missiles and keeping a watchful eye over the Pacific and Atlantic—especially when being discreet is not merely unnecessary for the mission, but contrary to its purpose.