



## Aviation In The Spanish Civil War and WWII On The Eastern Front

By Louis V. Divone, VAHS

You are all familiar with aviation in WWII; some of you fought in it. But there were other fronts, battles, and aircraft in other sectors besides Western Europe, the Mediterranean, and the Pacific. Some are likely to be much less familiar. There are numerous air museums in those other sectors with rare and unusual aircraft which may intrigue you.

The Spanish Civil War was a precursor to WWII and allowed some of the belligerents to try out their new toys. Germany sent Heinkel and Henschel biplanes (none of which exist to my knowledge) while Italy sent Fiat CR-32s to help Franco and the Fascist side. The CR-32 was liquid cooled with “W” shaped Warren truss interplane struts and, like Italian race cars, had sensitive and well harmonized controls.



Fiat CR-32: Spanish Air Force Museum

The Soviets sent Polikarpov I-15s, to help the Republicans. The I-15 was a stubby little biplane with a gulled shoulder-mounted upper wing and single interplane “I” struts. It looks somewhat like the Laird Solution Thompson racer of the early 1930s and was very nimble and maneuverable. Mussolini started supplying Fiat CR-42s, larger and with a more powerful radial engine, and while faster than the CR-32 lost some maneuverability in the tradeoff; it still used the trademark Warren truss struts.



Polikarpov Po I-15: Spanish Air Force Museum



Fiat CR-42: Battle of Britain Museum

At that point, Stalin shocked the aviation world. He sends down Polikarpov I-16s, which was a “Gee Bee” looking stubby hot machine. We and the Brits and the French are still flying biplanes with maybe a few fixed gear, wire braced P-26s starting the transition. And here comes the previously secret I-16 which was an essentially all metal, cantilevered low wing monoplane with retractable gear! And Stalin has enough of them to send several squadrons to Spain.

They way out-performed the Fiats and Henschels until Hitler sent the new Messerschmitt Bf-109. Actually the I-16 could hold its own with the early 109-Bs, but the later Emils outclassed it. With that, the better led Fascists overwhelmed the disorganized and fractious Republicans and it was all over. But now WWII was beginning to break out and as we head north, we'll stop in Switzerland to check my numbered bank account and visit the Swiss Transport Museum.



Po I-16: Spanish Air Force Museum

It has several dozen aircraft, including a number of one-of-a-kinds, one of which is American. It is a Lockheed Orion; one of those wooden speedsters that Lockheed was noted for in the early 1930s. SwissAir bought two of them and used them on fast express services; painted red, their pilots called them the 'Red Dogs'. But they didn't carry enough passengers, who were also nervous about night flight over the Alps with a single engine, and the wood didn't age well so they were finally sold off to a French broker.



Lockheed Orion: Swiss Transportation Museum

Meanwhile, the Rudolf Wolf Company, a New York burlap firm, had a need for fast business aircraft to rush urgent orders of – burlap! Northwest Airlines, Varney, and others listened to that cockamamie story with a straight face, but for hard cash, sold their aging

Orions to put down payments on new all metal twins. And the Orions all disappeared! With a few wood screws to mount machine guns and bomb racks and you have an instant warplane. I'm exaggerating, but the Republicans were desperate for attack aircraft and the Orions were fast, maneuverable, cheap and expendable and sadly none survived that awful civil war.

This Orion is actually Jimmy Doolittle's "Shell-Lightning" in which he set several long distance records hawking Shell Oil products. Shell wouldn't sell to the Wolf company and later Paul Mantz flew it in the Bendix Race. After the war, SwissAir obtained it and had it painted in the colors of her 'Red Dogs'. Which is why this is, I believe, the only Orion left in the world.

Meanwhile, Hitler re-occupied the Rhineland, annexed Austria, and is heading for Czechoslovakia. The Avia B-534 was their top of the line fighter. It is a shame it is in a back-lit dark museum and painted olive drab, such that it is hard to get a decent photo. But I would rank it, along with the Hawker Fury and the Curtiss P-6E Hawk in the Selfridge Field Snow Owl colors, as one of the most beautiful aircraft of the golden age of the biplane fighter.



Avia B-534: Czech Air Force Museum

The original B-34 of the early 1930s was a world class fighter and many were exported to the Balkans and Eastern Mediterranean countries. But small countries don't have the resources to develop new aircraft very frequently and one can upgrade just so far. So by 1938, the B-534 [upgraded B-34] was becoming obsolete. Coupled with the loss of the Sudetenland, which had fortified their northwest frontier, including outlying fighter bases, the Avia's fought hard but were overwhelmed in short order by Hitler's Bf-109s.

Hitler's appetite leads him next to attack Poland (with Russia nibbling off the Eastern part a few weeks later). PZL, Poland's state aircraft factory, was contemporary with Jack Northrop in developing the all metal monocoque structure. Their top fighter was the PZL-11c, all metal with a gull wing, if still strut braced. Like the Avia, the earlier aircraft in the series were hot aircraft in the early 1930s, but by 1939 were badly outclassed. Another problem small or less developed countries have is that while they have good designers and can weld tubing or roll aluminum, it is the components, particularly engines, that require a more advanced infrastructure. So they have to buy or license-build their engines and the exporter may not want to sell their top of the line. It is hardly a level playing field when one is stuck with a 550 HP Bristol radial and your opponent has a 1100 HP Daimler-Benz.



PZL-11c: Polish Air Force Museum

WWII is now on in full. I'm going to skip the invasions of the low countries and the Battles of France and Britain for now and jump two years to June 1941. Stalin was taken totally by surprise. Not that he trusted Hitler, but just that he didn't think he would attack until he had subdued Britain. So much so that he ordered no patrols and no shooting at any Germans without his order so as not to give Hitler any excuses; as if he needed to be provoked.

That surprise, plus fear of acting without orders, caused a disaster; Russia lost fully half of her combat aircraft fleet in the first week of the war and the German Blitzkrieg collapsed the Russian lines. The saving grace was that most of those destroyed were Polikarpov I-153s (the retractable gear version), I-16s and other obsolescent aircraft; most new Migs, Yaks, Ilyushins, were still off to the east, just being built at factories in the Caucasus, or just being delivered to fighting regiments.

A couple of interesting obsolescent aircraft were the Tupolev SB-2 and the Ilyushin DB-3. The SB-2 was known as the 'Speed Bomber,' similar in concept to the later Mosquito, designed to outrun rather than outgun its adversary. The DB-3's cockpit and nose are fascinating, looking like an artist's concept off the cover of some Pulp flying magazine.



Ilyushin DB-3: Russian Air Force Museum



Tupolev SB-2: Russian Air Force Museum

Another obsolete aircraft, which was actually in service from 1929 through the 1950s, with some probably still flying today, was the Polikarpov Po-2. Looking like an ugly Stearman, it is believed to have been produced in larger quantity than any other aircraft; somewhere over 40,000. Primarily built as a 2-seat trainer, it was adapted to all sorts of roles. I have seen crop dusting versions in Hungary and stretcher-carrying Med-evacs in Poland.

There is a truly inspiring one in the Russian Air Force Museum at Monino, outside Moscow. Many women pilots, trained under some young communist clubs, volunteered to fight. Initially rejected by the men, as the Russians began throwing up everything they could to stop or slow the Germans, three



Polikarpov Po-2 of the *Night Witches*: Russian Air Force Museum

all-women Regiments were formed; two flew day fighters or bombers. But the third was a night bomber Regiment. The tube and fabric Po-2 had one machine gun in the rear cockpit and a couple of 20 kg bombs under the wings. They would go out, night after night, to harass the German front line troops. And not just each night, but 3,4,5 sorties a night. They mostly lived in tents or farmhouses and operated out of fields just a few miles behind the front.

They became known as the *Night Witches*. In their open cockpits in bitter cold, with no, or at best, a primitive radio they had to navigate over snow covered plains at night, find the Germans, find their way home, and

hope that at 90 knots they could outfox any high-speed night fighters that might spot them. They ran well over 50% casualties in the course of their operations. Stalin awarded them by naming them a 'Guards' Regiment, which is the highest honor a fighting unit could receive. And still today, some argue about women in aerial combat.

By now, the Yak fighters, Petlyakov twin engine light bombers, and the immortal Il-2 Shturmoviks are showing up, and combined with the pressures of the bombing campaign in the west diverting German



Petlyakov Pe-2: Polish Military Museum

resources, Russia begins to gain air superiority, or at least parity. I was surprised to see that, while they have inertia starters, the pragmatic Russians still retained the antiquated Huck Starter fitting on their spinners. This proved to be a boon when Russia's other ally, the Siberian winter hit. It doesn't take that much fuel to keep a truck running all night. So they could crank up at dawn. Did you ever try to start a 1200 HP liquid cooled Benz at 40 below in a 30 knot wind? The Russians could get airborne when the Germans couldn't.



**Huck Starter: Shuttleworth Trust**

So slowly the tide turned and the rest is the history you know. But the battles in Spain and the gigantic, but lesser known ones (to many of us) in the East, like Kursk and the Privet Marshes, helped shape the world and the now rare aircraft that fought in them are fascinating to behold.

(Lou Divone is the author of *Wings of History: The Air Museums of Europe*; Oakton Hills Publication, which contains these and other photos taken by Lou and his wife Judy).



**Lou with Bulgarian Ilyushin IL-2 Shturmovik**

Lou died Sunday, May 9, 2004. He prepared one more article for us, his story of the Battle of Britain in WWII, which will be presented in these pages in our next issue. His wife, Judy, is preparing a short biography of Lou's remarkable and interesting life. Lou wrote many articles for this column; in fact, his early stories were an inspiration for my efforts to create a venue for recording Virginia aviation history, and his unflagging editorial work on the Society's first book, *Virginia Airports*, was crucial to its successful completion. I will greatly miss his good humor and his willingness to do whatever I asked. Thanks Lou - Norm.