# Hawks in China in 1945

by Gifford Bull

SOME OF THE CURTISS HAWKS which were sold to China in 1933 or 1934 were still in existence in 1945, although they were not being flown. The writer was a pilot for China National Aviation Corporation (CNAC) in 1944 and 1945 and on a routine cargo flight to Ipin saw and photographed these Hawks.

Ipin, like many of the cities and towns in China, had more than one name and was also called Suifu or Suchow. It had a grass airport on the bank of the Yangtze River, about 133 miles southwest of Chungking. This meant that cargo unloaded at Ipin could be floated downriver to Chungking. Away from the landing area but still on the airport were some rather decrepit hangars made of wooden poles and bamboo mats. In one of these hangars were two of the *Cyclone*-powered Hawks. In another were three Ryan ST-type trainers with Kinner engines and no fairings on the landing gear, like the U.S. PT-22, and in two other hangars were two Russian twin-engine medium bombers.

The Hawks were in reasonably good condition, with all the fabric intact and air in the tires. The inspection panels and the removable metal panels which covered the sides of the fuselage from the engine back to the cockpit were all in place. The airplanes appeared to be essentially in flying condition. A spare Hawk wing was lying along the side of the hangar and can be seen in the photo, with the Chinese 12-pointed star or sunburst in a circle at the end of the wing. There were no stripes or other markings on the fin and rudder.

The *Cyclone* Hawks were featured in the November 1933 issue of *Aero Digest,* with the cover picture and a five-page article including a technical description, photos and a three-view drawing. Many of the ads in that issue referred to the contribution of the advertiser to the Hawk program. The Curtiss ad boasted "102 *Cyclone* Hawks sold to foreign governments in twelve months," and that they had been "manufactured and delivered abroad by Curtiss." The article emphasized the export aspects of the program, and described in some detail the way in which the airplane was packed for shipment, including a picture of the wing and tail group in the special crate, ready to go to Turkey. The entire powerplant was shipped installed in the airplane, to make "for quick erection at its destination."

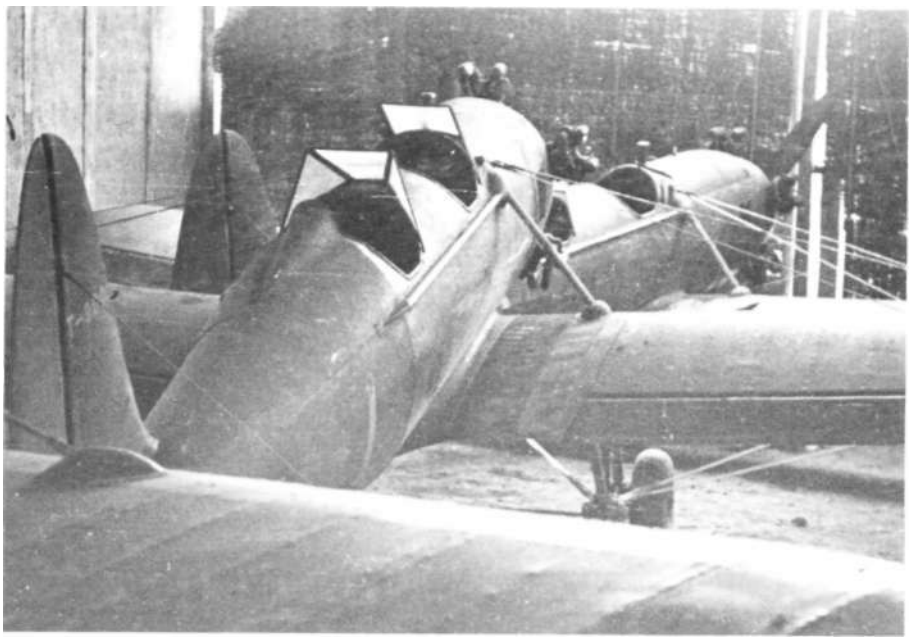
A small article in the April 1934 issue of *Aero Digest* said, "During 1933 [China] purchased 50 *Cyclone-powered* Hawk pursuit biplanes as well as a number of Curtiss-Wright training planes and arrangements are now being completed for the manufacture of Curtiss military planes in that country." The article included a small photo of a *Cyclone* Hawk in U.S. markings, or at least with red and white horizontal stripes on the rudder. Another picture in *Aero Digest* for February 1934 showed 14 Hawks in Chinese markings lined up on a grass field, with the caption, "Some of 50 Wright-powered Curtiss Hawks recently sold to the Chinese government." The Hawks in that picture had the flat belly tank installed on each of them.

The airplane was the same as the Navy F11C-2, except that the Navy airplane had high-pressure tires while the export version had the fat, low-pressure tires visible in the photo, obviously more suitable for operation from grass or dirt runways. The wheels were enclosed in half pants, like the Hawk P6E. The Navy F11C-2 had a tail wheel, but the *Aero Digest* article states that a steerable tail skid was standard, and a skid is shown in the three-view and was installed on the airplane in the photo. The tail skid used rubber disks in compression for shock absorption. Springs were installed in the steering cables to the tail skid to allow a certain amount of decoupling between rudder motion and tail skid motion, as is done in modern tail wheel airplanes to allow the pilot to move the rudder to keep the airplane straight on landing and takeoff no matter what the position of the tail skid or wheel. A rather flat streamlined 50-gallon auxiliary tank could be installed along the belly from the landing gear leg to the aft pan of the cockpit. A bomb could be installed in that location, but the Hawks seen in China had neither. Bomb racks could be installed under the lower wing as shown in the three-view, but this airplane did not have them.

Curtiss offered any of the nine variants of the Wright *Cyclone* R-1820-F engine in the Hawk with differences, among other things, in the supercharger gear ratio. The F2 version produced 735 hp at 4,000 feet, and the F3 version 710 hp at 7,000 feet. These were presumably the critical altitudes for these engines and, in a statement which sounds quaint to modern or even World War II ears, the *Aero Digest* article stated, "As the Hawk is designed for high-altitude flying the *Cyclone* R-1820-F2 and R-1820-F3 power the majority of these ships now in service." Either of these engines required 87 octane fuel. At the time this was the high octane fuel and not very easy to get, so the article noted, "In countries where 87 octane fuel is not available, several models of the *Cyclone* for use with 73 or 80 octane fuel may be supplied." The model of the *Cyclone* installed in the China Hawks was not determined at the time the airplane was seen in 1945. The ring cowling seen in the photo was standard. The Hamilton-Standard propeller was fixed pitch, ground adjustable.

The Hawks at Ipin looked very pen

and pretty, as Hawks do, and the temptation to fly one was great, but common sense and a CNAC C-47 called for the homebound trip across the mountains to India. •



**Curtiss *Cyclone* Hawk at Ipin, China, 1945. (Photo by Gifford Bull. Copyright G. Bull)**

**Kinner-powered Ryan trainers in a bamboo hangar at Ipin, China, 1945. (Photo by Gifford Bull. Copyright G. Bull)**

**REFERENCES**

*Aero Digest,* November 1933, Vol. 23, No. 5, p.50.
*Aero Digest,* February 1934, Vol. 24, No. 2, p. 70.
*Aero Digest,* April 1934, Vol. 24, No. 4, p. 35.

**ABOUT THE AUTHOR**

Gifford Bull comes from Ithaca, N.Y., where he soloed in 1936 at age 15. He continued flying and instructing while in engineering at Cornell. After two years of autopilot development at Sperry Gyroscope he went overseas as a pilot for China National Aviation Corp. (CNAC), flying the Hump from India to China. After the war he flew for Bill Lear, got a Master's in aero engineering at Cornell, and spent the next 28 years as engineer and test pilot at Cornell Aeronautical Laboratory, now Calspan. He initiated using the variable stability airplanes developed at CAL to teach dynamic stability and handling qualities at the Navy and Air Force Test Pilot Schools, and for 15 years managed and flew the program. In 1976 he went to Mississippi State University as professor and chief test pilot for the MSU Raspet Flight Laboratory, retiring in 1990. He continues consulting, flying for the MSU Laboratory, and flying around the country in a Bonanza.