Curtiss P-36 Hawk

Curtiss P-36 (Hawk 75R)

Le Curtiss model 75 fut conçu sur fonds privés par Donovan Berlin en 1934, comme avion de chasse monomoteur monoplace. Il fut un des premiers avions de chasse moderne, de construction métallique (avec des gouvernes entoilées), à train rentrant et cockpit fermé. Il disposait d'un moteur en étoile Wright XR-1670-5 de 900 hp, mais pas de blindage et de réservoirs auto-obturants : ce manque était assez courant à l'époque. Son armement consistait en une mitrailleuse de 7,62 mm et d'une autre de 12,7 mm. Son train d'atterrissage principal s'orientait de 90° avant de se rétracter. Il effectua son vol inaugural le 6 mai 1935. Il atteignit la vitesse de 452 km/h pendant les essais. Dès le 27 mai, il fut envoyé à Wright Field afin d'être comparé au Seversky P-35. Curtiss profita du retard provoqué par le crash du P-35 pour remplacer le moteur, peu fiable, par un Wright XR-1820-39 Cyclone de 950 hp. Le prototype fut alors désigné Model 75B. Il fut déclaré vainqueur du concours et reçut une commande de 77 exemplaires. Le 16 juin 1936, 3 prototypes Y1P-36 (Model 75E, moteur Pratt & Whitney R-1830-13 Twin Wasp) furent commandés. Faisant la preuve de leurs performances, ils permirent la commande de 210 P-36A en 1937. Le P-36 s'avérait maniable grâce à sa faible charge alaire et rapide en montée grâce à son ratio poids/puissance. Il entra en service au sein du 20th Pursuit Group en avril 1938. Il souffrit de défauts de jeunesse, en particulier de l'échappement du moteur, du train d'atterrissage et d'une cellule faible à certains endroits. Lorsque ces problèmes furent résolus, l'appareil fut considéré obsolète, et relégués à l'entraînement ou à des détachements outremer. Il fut livré à Pearl Harbor en février 1941 et son unique engagement au sein de l'USAAC fut le 7 décembre. 5 des 39 P-36A présents purent décoller et deux A6M2 Zéro furent abattus pour la perte d'un P-36. La France fut apparemment un des premiers clients export du P-36. Avant même la production du P-36A, l'armée de l'air était en pourparlers pour l'achat de 300 exemplaires. Mais le coût élevé (double de celui d'un MS.406), la lenteur des livraisons, l'opposition de l'USAAC (confrontée alors au même problème) faillirent enterrer le projet et il fallut l'intervention directe de Roosevelt pour permettre à Michel Détroyat de tester un Y1P-36. Son enthousiasme et la menace allemande firent le reste.

Curtiss P-36 (Hawk 75A-3) finlandais

La France reçut 416 H75 en 4 lots distincts, à partir de décembre 1938 et entrèrent en service en mars 1939. 4 groupes de chasse en étaient équipés lors de la déclaration de guerre. Le 8 septembre 1939, ils remportèrent la première victoire alliée sur 2 Bf 109E, revendiquée par le II/4. Ils remportèrent 233 victoires confirmées et 84 probables, pour la perte de 29 d'entre eux en combat aérien, une centaine toutes causes confondues. Soit un tiers des victoires remportées par l'Armée de l'air, alors qu'il ne représentait que 13 % des chasseurs monomoteurs monoplaces. 7 des 11 as français de la bataille de France étaient sur H75. 231 appareils restaient en service en juillet 1940. Après l'armistice, ils se réfugièrent en Afrique du Nord pour éviter d'être capturés. Lors de l'opération Torch, ils se frotteront aux F4F Wildcat, en abattront 7 pour la perte de 15 d'entre eux. Ils seront remplacés par les P-39 et P-40. Une centaine de survivants servirent à des missions d'entraînement ou de liaison, et les ultimes appareils volants servirent à Cazaux jusqu'en 1949. D'autres H75 français se réfugièrent en Grande-Bretagne. Celle-ci avait évaluée un H75A2 avec un Spitfire Mk I, et le premier s'était avéré plus manœuvrant en combat tournant et disposait d'une meilleure visibilité. En revanche, le Spitfire pouvait rompre le combat quand il l'entendait. La RAF n'acheta pas de P-36, mais désigna les H75 français "Mohawk". Ils entrèrent en service dans la RAF (deux squadrons, le 5 et le 155, l'utilisèrent pour l'escorte de bombardiers et l'attaque au sol) et dans la Royal India Air Force. HAL fut chargée de construire 48 Mohawk IV, dont le premier vola le 31 juillet 1942. Seuls 5 furent construits. L'Inde reçut également 74 Mohawk IV (ex-français), 10 Hawk ex-iraniens, ainsi que des H75A-5 construits sous licence en Chine. La RAF et l'Inde retirèrent les Hawk du service en 1944. 12 Mohawk furent cédés au Portugal, qui les utilisa pour défendre les Açores.

Curtiss P-36 (Hawk 75A-9) iranien

L'Afrique du Sud reçut 72 Mohawk IV à la mi-1941, qui servirent en Afrique du Nord-Est, puis à la défense territoriale de l'Afrique du Sud. 44 Hawk au moins furent capturés par la Luftwaffe, puis transférés à la force aérienne finlandaise du 23 juin 1941 (le lendemain de Barbarossa) à 1944. La majorité (36 exemplaires) était française, mais d'autres venaient de Norvège. Quoiqu'il en soit, ils obtinrent 190 victoires pour la perte de 15 d'entre eux. Bien que les Finnois installèrent un armement plus conséquent et donc plus efficace (jusqu'à deux, voire quatre mitrailleuses de 7,7 mm par aile), les performances n'en souffrirent pas. Ils furent utilisés jusqu'en 1948. Une version simplifiée à train d'atterrissage fixe fut créée à la demande de certains clients, afin de simplifier les opérations de maintenance au sol : L'Argentine par exemple reçut 30 Hawk 75O. La FMA devait en construire 200 sous licence, mais seuls 20 furent achevés. Ceux-ci utilisaient le même moteur Wright Cyclone R-1820-G5 que les B-10 et Northrop 8 alors en service. Ils furent utilisés jusqu'en novembre 1954. La Thaïlande reçut des Hawk 75N (à train fixe eux aussi), qui furent utilisés lors de la guerre contre la France en 1941. Ils servirent aussi contre les Japonais lorsqu'ils envahirent la Thaïlande, au lendemain de Pearl Harbor. D'autre part, la Chine nationaliste reçut un Hawk 75H (lui aussi à train fixe), destiné soi-disant à l'usage personnel de Claire Lee Chennault. Elle reçut également 2 Hawk 75Q, des Hawk 75M et enfin la production sous licence du Hawk 75A-5, transférée plus tard en Inde sous la dénomination Mohawk IV. La Norvège commanda 24 H75A-6 (moteur Twin Wasp). Aucun d'entre eux n'était prêt lors de l'invasion par les Allemands et ils finirent en Finlande. 36 Hawk A-8 (moteur Cyclone) avaient été commandés et reçus par le gouvernement norvégien en exil, au Canada pour l'entraînement. 30 d'entre eux furent revendus à l'USAAC sous la désignation P-36G. 28 d'entre eux furent revendus au Pérou en 1943 dans le cadre de la loi Prêt-Bail. La Hollande avait commandé 24 Hawk 75A-7 pour sa force aérienne en Asie en octobre 1939. Ils étaient armés de deux mitrailleuses 0.303 dans les ailes, d'une autre dans le capot moteur et d'une mitrailleuse 0.50 au même endroit. Cette dernière fut parfois remplacée par 6 bombes de 50 livres. Livrés en 1940, ils servirent à contre-attaquer les Japonais à Malacca, Sumatra et Java, avec succès contre les bombardiers. 1115 P-36 furent construits, dont 900 pour l'export. Il servit de base aux prototypes YP-37 et XP-42, ainsi qu'au P-40. 4 exemplaires ont survécu, dont un P-36 exposé aux États-Unis, un H75N exposé en Thaïlande, un H75A-6 en Nouvelle-Zélande. Un exemplaire, appartenant à The Fighter Collection de Duxford, est présenté en vol aux couleurs françaises. Le P-36 fut un des premiers avions de chasse moderne, contemporain des Bf 109 et Hurricane. Il passe pour avoir été rapidement obsolète, mais il put malgré tout tirer son épingle du jeu. Il reste surtout célèbre pour avoir été l'avion de chasse le plus efficace de la bataille de France.

Source : https://aviationsmilitaires.net/v3/kb/aircraft/show/1688/curtiss-p-36-hawk

Version anglaise Wikipédia

The **Curtiss P-36 Hawk**, also known as the **Curtiss Hawk Model 75**, is an American-designed and built fighter aircraft of the 1930s and 40s. A contemporary of the Hawker Hurricane and Messerschmitt Bf 109, it was one of the first of a new generation of combat aircraft—a sleek monoplane design with a retractable undercarriage making extensive use of metal in its construction. Perhaps best known as the predecessor of the Curtiss P-40 Warhawk, the P-36 saw little combat with the United States Army Air Forces during World War II. It was the fighter used most extensively and successfully by the French Air Force during the Battle of France. The P-36 was also ordered by the governments of the Netherlands and Norway but did not arrive in time to see action before both were occupied by Nazi Germany. The type was also manufactured under license in China, for the Republic of China Air Force, as well as in British India, for the Royal Air Force (RAF) and Royal Indian Air Force (RIAF). Axis and co-belligerent air forces also made significant use of captured P-36s. Following the fall of France and Norway in 1940, several dozen P-36s were seized by Germany and transferred to Finland; these aircraft saw extensive action with the Finnish Air Force against the Soviet Air Forces. The P-36 was also used by Vichy French air forces in several minor conflicts; in one of these, the Franco-Thai War of 1940–41, P-36s were used by both sides. From mid-1940, some P-36s en route for France and the Netherlands were diverted to Allied air forces in other parts of the world. The Hawks ordered by the Netherlands were diverted to the Dutch East Indies and later saw action against Japanese forces. French orders were taken up by British Commonwealth air forces, and saw combat with the South African Air Force (SAAF) against Italian forces in East Africa, and with the RAF over Burma. Within the Commonwealth, the type was usually referred to as the **Curtiss Mohawk**. With around 1,000 aircraft built by Curtiss, the P-36 was a commercial success for the company. It also became the basis of the P-40 and two unsuccessful prototypes: the P-37 and the XP-42.

Design and development

The Curtiss **Model 75** was a private venture by the company, designed by former Northrop Aircraft Company engineer Don R. Berlin. The first prototype, constructed in 1934, featured all-metal construction with fabric-covered control surfaces, a Wright XR-1670-5 radial engine developing 900 hp (670 kW), and typical United States Army Air Corps (USAAC) armament of one .30 in (7.62 mm) and one .50 in (12.7 mm) machine gun firing through the propeller arc. Also typical of the time was the total absence of cockpit armor or self-sealing fuel tanks. The distinctive landing gear, which rotated 90° to fold the main wheels flat into the thin trailing portion of the wing, resting atop the lower ends of the maingear struts when retracted, was a Boeing-patented design for which Curtiss had to pay royalties. The prototype first flew on 6 May 1935, reaching 281 mph (452 km/h) at 10,000 ft (3,000 m) during early test flights. On 27 May 1935, the prototype was flown to Wright Field, Ohio, to compete in the USAAC fly-off for a new single-seat fighter, but the contest was delayed because the Seversky entry crashed on its way there. Curtiss took advantage of the delay to replace the unreliable engine with a Wright XR-1820-39 Cyclone producing 950 hp (710 kW) and to rework the fuselage, adding the distinctive scalloped rear windows to improve visibility. The new prototype was designated **Model 75B** with the R-1670 version retroactively designated **Model 75D**. The fly-off finally took place in April 1936. Unfortunately, the new engine failed to deliver its rated power and the aircraft only reached 285 mph (459 km/h). Although the competing Seversky P-35 also underperformed and was more expensive, it was still declared the winner and awarded a contract for 77 aircraft. However, on 16 June 1936, Curtiss received an order from USAAC for three prototypes designated **Y1P-36**. The USAAC was concerned about political turmoil in Europe, and about Seversky's ability to deliver P-35s in a timely manner, and therefore wanted a backup fighter. The Y1P-36 (**Model 75E**) was powered by a 900 hp Pratt & Whitney R-1830-13 Twin Wasp engine, and the scalloped rear canopy was further enlarged. The new aircraft performed so well that it won the 1937 USAAC competition with an order for 210 **P-36A** fighters. The aircraft's extremely low wing loading of just 23.9 lb/ft^2 gave it outstanding turning performance,[note 1] and its high power-to-weight ratio of 0.186 hp/lb gave superb climbing performance for the time. The single speed supercharger was a serious handicap at high altitudes. Compared to the later Allison-engined P-40, the P-36 shared the P-40's traits of excellent high-speed handling, roll rate that improved at high speed, and relatively light controls at high speed. However, it was underpowered, affecting its acceleration and top speed, and it did not accelerate in a dive as well as the P-40.

Operational history

Argentina

FMA Curtiss Hawk 75O

Argentina bought a number of the simplified, fixed landing gear **Hawk 75O**s, (intended for rough-field operations and ease of maintenance) and purchased a manufacturing license for the type; 30 were built and delivered by Curtiss, and 20 produced locally. These aircraft used the same engine, Wright Cyclone R-1820-G5 as the Martin 139WAA's and Northrop 8A-2s used by the Argentine Army Aviation at the time. Usually armed with one 11.35 mm (0.45 in) Madsen machine gun heavily modified for aircraft use and three 7.65 mm (0.30 in) Madsen light machine guns, there was provision for up to 10 30 lb (14 kg) bombs on underwing pylons. The last Argentinian Hawks remained in service until November 1954.[2][3]

Brazil

In March 1942, 10 USAAC P-36As were transferred to Brazil.

British Commonwealth

RAF Mohawk IVs in India in January 1943

The Royal Air Force (RAF) also displayed interest in the aircraft. Comparison of a borrowed French **Hawk 75A-2** with a Supermarine Spitfire Mk I revealed that the Hawk had several advantages over the early variant of the iconic British fighter. The Hawk was found to have lighter controls than the Spitfire at speeds over 300 mph (480 km/h), especially in diving attacks, and was easier to maneuver in a dogfight (thanks to the less sensitive elevator). The Hawk also had better all-around visibility and was easier to control on takeoff and landing. Not surprisingly, the Spitfire's superior acceleration and top speed ultimately gave it the advantage of being able to engage and leave combat at will. Although the British decided not to purchase the aircraft, they soon came into possession of 229 Hawks by way of shipments diverted from occupied France and aircraft flown by escaping French pilots. The aircraft received the designations **Mohawk** I through IV, mirroring French **Hawk 75A-1** through **A-4**, and were fitted with 0.303-cal. machine guns and conventional throttles (forward to increase power).[4] Although the Hawk was considered obsolete, a number saw service with the RAF and Royal Indian Air Force (RIAF) in India and Burma. In April 1941, the government of British India ordered 48 Cyclone-powered Mohawk IVz (Hawk 75A) for the RIAF, to be built by Hindustan Aircraft. The first such aircraft completed was test flown on 31 July 1942. Only four additional aircraft were completed before the project was abandoned. However, Chinese license production of the **Hawk 75A-5** was moved to India, and these aircraft were also absorbed into the RAF/RIAF as Mohawk IVs. They were supplemented by 10 Hawk 75A-9s that were captured in Iran, during the Anglo-Soviet invasion of Iran of August 1941.[5] A further 74 Mohawk IVs that had originally been ordered by France were shipped to India from the United Kingdom.[4] The only RAF units to see combat in Mohawks were No. 5 Squadron RAF and No. 155 Squadron RAF, using the type mainly for bomber escort and ground attack. The type was retired by the RAF/RIAF in 1944.[6]

The South African Air Force received 72 Mohawks. Its first Mohawks were delivered to East Africa in mid-1941, where they were used by 3 Squadron SAAF to support operations in the East African Campaign, taking part in the Battle of Gondar which ended the campaign, and helping to patrol the border with Vichy French held Djibouti.[7] These Mohawks were then sent to South Africa, where, supplemented by fresh deliveries, they were used for training and for home defense.[8]

China

The prototype of the **Hawk 75H**—a simplified version with fixed landing gear, like the 75O—was eventually sold to the Chinese Nationalist government who presented it to Claire L. Chennault for personal use. China also received two similar demonstrators, the **Hawk 75Q**. They also used a number of simplified **Hawk 75M**s against the Japanese. On 11 January 1939, five Hawk 75Ms of the veteran CAF 25th Fighter Squadron led by commander Liu Yijun (劉依鈞) were flown to the new wartime capital of Chongqing in preparations for defense duties there; Liu Yijun and his four specially-trained Hawk 75 pilots all died in the crash of transport aircraft in the return flight.[9] These Hawk 75Ms were intended for the newly established 16th and 18th Fighter Squadrons that were previously light attack-bomber squadrons, but did not supersede the increasingly obsolescent Polikarpov I-15 and I-16 that formed the backbone of most of China's fighter squadrons from 1938 to 1941.[10] The **Hawk 75A-5** was built under license in China, but production was later moved to India, and these aircraft were absorbed into the RAF as the Mohawk IV.

Finland

Curtiss Hawk 75A-3 in Finnish service

After the fall of France, Germany agreed to sell captured Curtiss Hawk fighters to Finland in October 1940. In total, 44 captured aircraft of five subtypes were sold to Finland with three deliveries from 23 June 1941 – 5 January 1944.[11] Not all were from the French stocks, 13 were initially sold to Norway and captured when the Germans conquered that country.[12] The aircraft were given serial codes CU-501 to CU-507 (A-4 submodel with Cyclone) and CU-551 to CU-587 (all other submodels with Twin Wasp). In Finnish service, the Hawk was well liked, affectionately called *Sussu* ("Sweetheart").[13] The Finnish Air Force enjoyed success with the type, credited with 190⅓ kills by 58 pilots, between 16 July 1941 and 27 July 1944, for the loss of 15 of their own.[11] Finnish Hawk pilots included the type's highest-scoring ace, Altto Kalevi "Kale" Tervo, with between 14¼ and 15¾ victories in the type; another ace, Kyösti "Kössi" Karhila, scored 12¼ or 13¼ of his 32¼ victories in the Hawk.[14][15] The Finnish Hawks were initially armed with either four or six 7.5mm machine guns. While sufficient during the early phase of the Continuation War, the increasing speeds and armor of Soviet aircraft soon showed this armament was not powerful enough.

From 1942, the State Aircraft Factory replaced the fuselage machine guns with either one or two .50 in (12.7 mm) Colt or Browning FN machine guns and installed two or four .303 in (7.7 mm) Browning machine guns in each wing. The 12.7mm Berezin UB or LKk/42 heavy machine guns were also used.[11] The installation of heavier armament did not change the very good flying characteristics of the fighter, and the armament was much more effective against Soviet aircraft. The Finnish Hawks were also equipped with Revi 3D or C/12D gunsight. Surviving Finnish aircraft remained in service with the FAF aviation units HLeLv 13, HLeLv 11 and LeSK until 30 August 1948, when the last operational Finnish Hawks were put into storage. In 1953, the stored aircraft were scrapped.[11][16]

France

Curtiss H75A-1 of the 3rd flight of Groupe de Chasse II/5 French Air Force, June 1940

Even before the P-36A entered production, the French Air Force entered negotiations with Curtiss for delivery of 300 aircraft. The negotiating process ended up being very drawn-out because the cost of the Curtiss fighters was double that of the French Morane-Saulnier M.S.406 and Bloch MB.150, and the delivery schedule was deemed too slow. Since the USAAC was unhappy with the rate of domestic deliveries and believed that export aircraft would slow things down even more, it actively opposed the sale. Eventually, it took direct intervention from U.S. President Franklin Roosevelt to give the French test pilot Michel Detroyat a chance to fly the Y1P-36. Detroyat's enthusiasm, problems with the MB.150, and the pressure of continuing German rearmament finally forced France to purchase 100 aircraft and 173 engines. The first **Hawk 75A-1** (or **H75A-1 n°1**) arrived in France in December 1938 and began entering service in March 1939. A few months later, this aircraft was part of "Groupe de Chasse II/5 La Fayette" (heir of the Escadrille Lafayette that fought in France during World War I), wearing the famous Sioux Head on its fuselage side. After the first few examples, aircraft were delivered in pieces and assembled in France by the *Société Nationale de Constructions Aéronautiques du Centre*. Officially designated as the **Curtiss H75-C1** (the "Hawk" name was not used in France), the aircraft were powered by Pratt & Whitney R-1830-SC-G engines of 900 hp and had instruments calibrated for the metric system, a seat for French dorsal parachutes, a French-style throttle which operated in reverse from U.S. and British aircraft (full throttle was to the rear rather than to the front) and armament of four (later models had six with two firing through the prop and four in the wings) 7.5 mm FN-Browning machine guns, aimed with a French-supplied Baille-Lemaire gun sight. The aircraft evolved through several modifications, the most significant being the installation of the Wright R-1820 Cyclone engine.

The H75-C1 variant saw little operational use due to its late delivery and reliability problems with the Wright radial engine. A total of 316 H75s were delivered to France before the German occupation.[17]

Curtiss H75C-1

On September 20, Sergeant André-Armand Legrand, pilot of the H75A-1 n°1 in the *Groupe de Chasse II/5 La Fayette* was credited of the first Allied air victory of World War II on the Western front with shooting down a Messerschmitt Bf 109E of the *Luftwaffe* 3/JG 53, over Überherrn. During 1939–1940, French H75 pilots claimed 230 air-to-air kills (of a total of 1,009 air-to-air kills by the French Air Force during 1939–1940) and 81 probable victories in H75s against only 29 aircraft lost in aerial combat.[18] While making up only 12.6 per cent of the French Air Force single-seater fighter force, the H75 accounted for almost a third of the air-to-air kills during the 1940 Battle of France.[17] Of the 11 French aces of the early part of the war, seven flew H75s. The leading ace of the time was Lieutenant Edmond Marin la Meslée with 15 confirmed and five probable victories in the type. H75-equipped squadrons were evacuated to French North Africa before the Armistice to avoid capture by the Germans. While under the Vichy government, these units clashed with British aircraft during the Battle of Mers El-Kebir and the Battle of Dakar. During Operation Torch in North Africa, French H75s fought against U.S. Navy F4F Wildcats, losing 15 aircraft while shooting down seven American aircraft. From late 1942, the Allies started re-equipping the formerly Vichy-controlled French H75 units with P-40s and P-39s.

Iran

A total of 10 **Hawk 75A-9s** were delivered to Persia, but were captured by the British during the Anglo-Soviet invasion of Iran while still in crates. These were then used by the RAF in India as Mohawk IVs.

Dutch East Indies

In October 1939, the Netherlands ordered 24 Hawk 75A-7s for their colonies of the Dutch East Indies (*Oost Indië*). These planes were powered by 1,200 hp Cyclones. Factory armament was one .50 inch and one .303 inch machine gun in the cowl with two .303 machine guns in the wings. After delivery, the .50 weapons were replaced to standardize parts and ammo. The plane could carry six 23 kg (51 lb) bombs. The fighters were shipped in 1940 and almost rerouted to the Netherlands when Germany invaded.

But as the mainland surrendered, the aircraft continued to the colonies where they were used extensively against the Japanese attack on the Far Eastern part of the kingdom. By that time, the aircraft had flown so many hours that the engines were showing serious wear and tear. Most Dutch Hawks were assigned to the *1ste JachtVliegAfdeling - VliegtuigGroep IV* (1ste JaVA - 1-VlG IV; "1st Fighter Squadron - Flying Group IV") of the Royal Netherlands East Indies Army Air Force (ML-KNIL), although some flew with 1-VlG V. These aircraft saw action over Malacca, Sumatra and Java, successfully bombing the railroad and intercepting bombers and participated in the extensive dogfights over Soerabaja, where USAAF, RAF and ML aircraft fought Japanese bombers and fighters together.

Norway

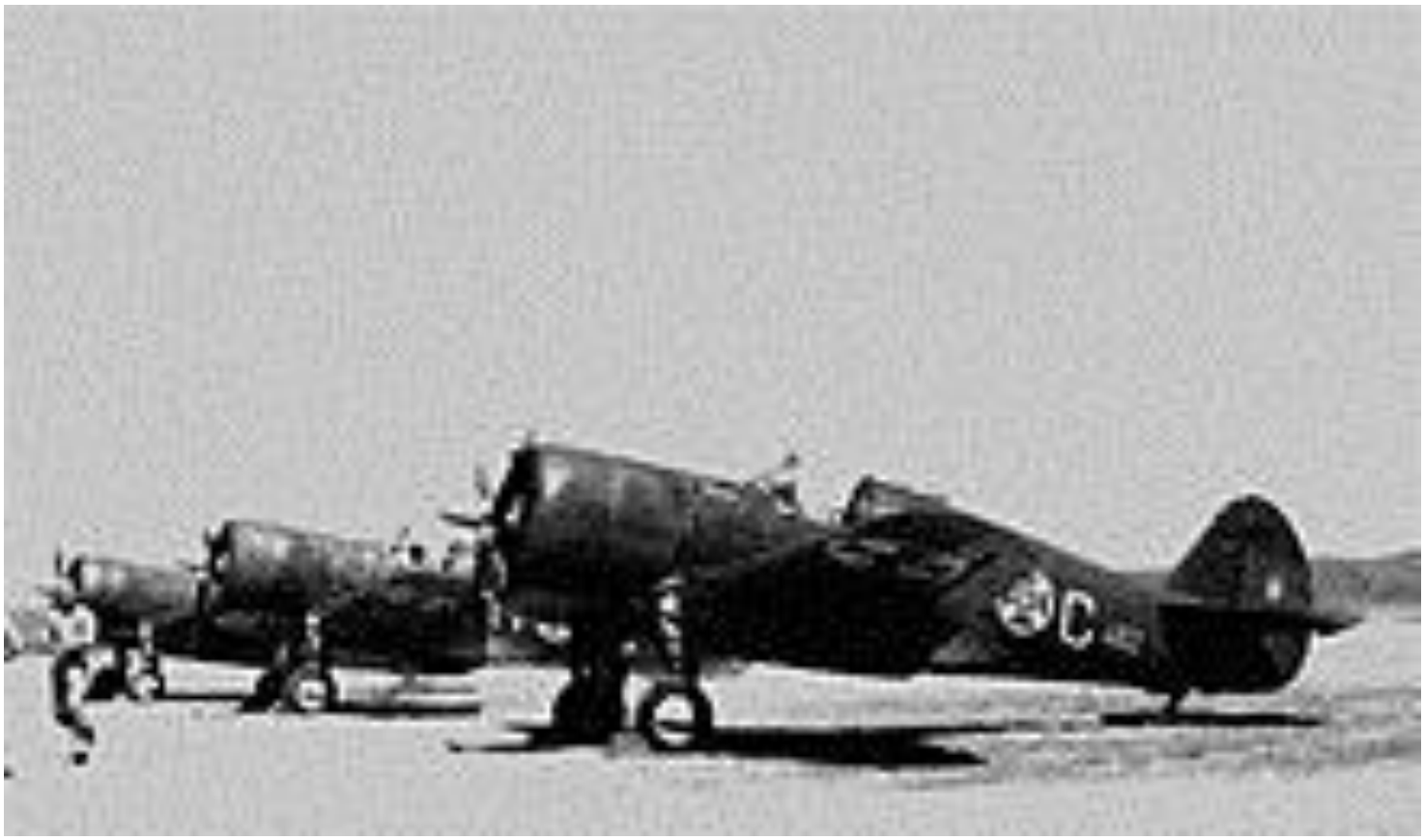
Hawk 75s at Little Norway in 1942

Norway ordered 24 Twin Wasp-powered **Hawk 75A-6s**, of which 19 were delivered and seven assembled at the time of the German invasion. None of the aircraft were combat-ready. The disassembled aircraft were disabled by a single customs employee who smashed the instruments and cut all the wires he could reach. Thirteen Norwegian Hawks captured by the Germans were part of the first batch of 29 P-36s sent to Finland.[12] Norway also ordered 36 Cyclone-powered **Hawk 75A-8s**. Most of this batch (a total of 30) were delivered as advanced trainers to "Little Norway" near Toronto, Ontario, Canada, a Norwegian training base established by the London-based government-in-exile.[19] Still later, they were resold to the U.S. and redesignated the P-36G model.[20]

Peru

In 1943, the U.S. sent 28 Hawks to Peru under the Lend-Lease agreement. These were ex-Norwegian P-36Gs that had served in Canada.

Portugal



Curtiss Hawk 75A-4 in Azores

Portugal was officially neutral during World War II, although the Allies were allowed to use or establish ports and airfields on various Portuguese territories. One result of these friendly relations was the transfer by the British government of 12 Hawk 75A variants to the Portuguese Air Force, or *Força Aérea Portuguesa* (FAP), which assigned them to air defense duties in the Azores.

Thailand

Curtiss Hawk 75N

A few Hawk 75Ns were used by Thailand during the French-Thai War. They also fought at the Battle of Prachuab Khirikhan against Japanese forces during the Japanese Invasion of Thailand. On 28 January 1941, the Royal Thai Air Force (RTAF) dispatched nine Ki-30 Nagoyas, escorted by three Hawk 75s, to bomb Pailin and Sisophon in French Indochina. Thailand was perhaps the only country operating both Japanese and American aircraft just before World War II.[21]

United States

The first production P-36As were delivered to the 20th Pursuit Group at Barksdale Field in Louisiana in April 1938. The aircraft's service history was marred by numerous teething problems with the engine exhaust, skin buckling over landing gear, and weak points in the airframe, severely restricting the performance envelope. By the time these issues were resolved, the P-36 was considered obsolete and was relegated to training units and overseas detachments at Albrook Field in the Panama Canal Zone, Elmendorf Field in Alaska, and Wheeler Field in Hawaii. The P-36s had been delivered to Hawaii in February 1941 by being loaded on the aircraft carrier USS *Enterprise* in California, then in a first for the USAAC, flown off the carrier's deck by the P-36's U.S. Army Air Corps pilots when the *Enterprise* neared the coast of Hawaii. This saved considerable time over the traditional shipping method of having the fighters first disassembled, crated and then loaded by crane in the hold of a freighter, then unloaded and reassembled in Hawaii.[22] The only combat by U.S.-operated P-36s took place during the Japanese attack on Pearl Harbor. Five of the 39 P-36A Hawks at Pearl Harbor, delivered previously by the USS *Enterprise*, were able to take off during the attack and were credited with shooting down two Japanese Mitsubishi A6M2 Zeros for the loss of one P-36, thereby scoring U.S. aerial victories that were among the first of the Second World War.

Specifications (P-36A)

General characteristics

- **Crew:** One
- **Length:** 28 ft 6 in (8.69 m)
- **Wingspan:** 37 ft 4 in (11.38 m)
- **Height:** 8 ft 5 in (2.57 m)
- **Wing area:** 235.94 sq ft (21.920 m^2)
- **Airfoil: root:** NACA 2215; **tip:** NACA 2209[36]
- **Empty weight:** 4,567 lb (2,072 kg)
- **Gross weight:** 5,650 lb (2,563 kg)
- **Max takeoff weight:** 6,010 lb (2,726 kg)
- **Powerplant:** 1 × Pratt & Whitney R-1830-17 Twin Wasp 14-cylinder air-cooled radial piston engine, 1,050 hp (780 kW)
- **Propellers:** 3-bladed constant-speed propeller

Performance

- **Maximum speed:** 313 mph (504 km/h, 272 kn)
- **Cruise speed:** 270 mph (430 km/h, 230 kn)
- **Range:** 625 mi (1,006 km, 543 nmi) at 270 mph (230 kn; 430 km/h)

860 mi (750 nmi; 1,380 km) at 200 mph (170 kn; 320 km/h)

- **Service ceiling:** 32,700 ft (10,000 m)
- **Rate of climb:** 3,400 ft/min (17 m/s)
- **Wing loading:** 23.9 lb/sq ft (117 kg/m^2)
- **Power/mass:** 0.186 hp/lb (0.306 kW/kg)

Armament

- **Guns:** 1 × 0.30 in (7.62 mm) M1919 Browning machine gun
  - 1 × 0.50 in (12.70 mm) M2 Browning machine gun[note 2]
- **Bombs:** some later fitted with a hardpoint under each wing that could carry a bomb of up to 100 lb (45 kg) or a light bomb rack for three 50 lb (23 kg), five 20 lb (9.1 kg) or 30 lb (14 kg) bombs

Source : https://en.wikipedia.org/wiki/Curtiss_P-36_Hawk