

Curtiss XP-55 Ascender



[Curtiss XP-55 Ascender au sol](#)

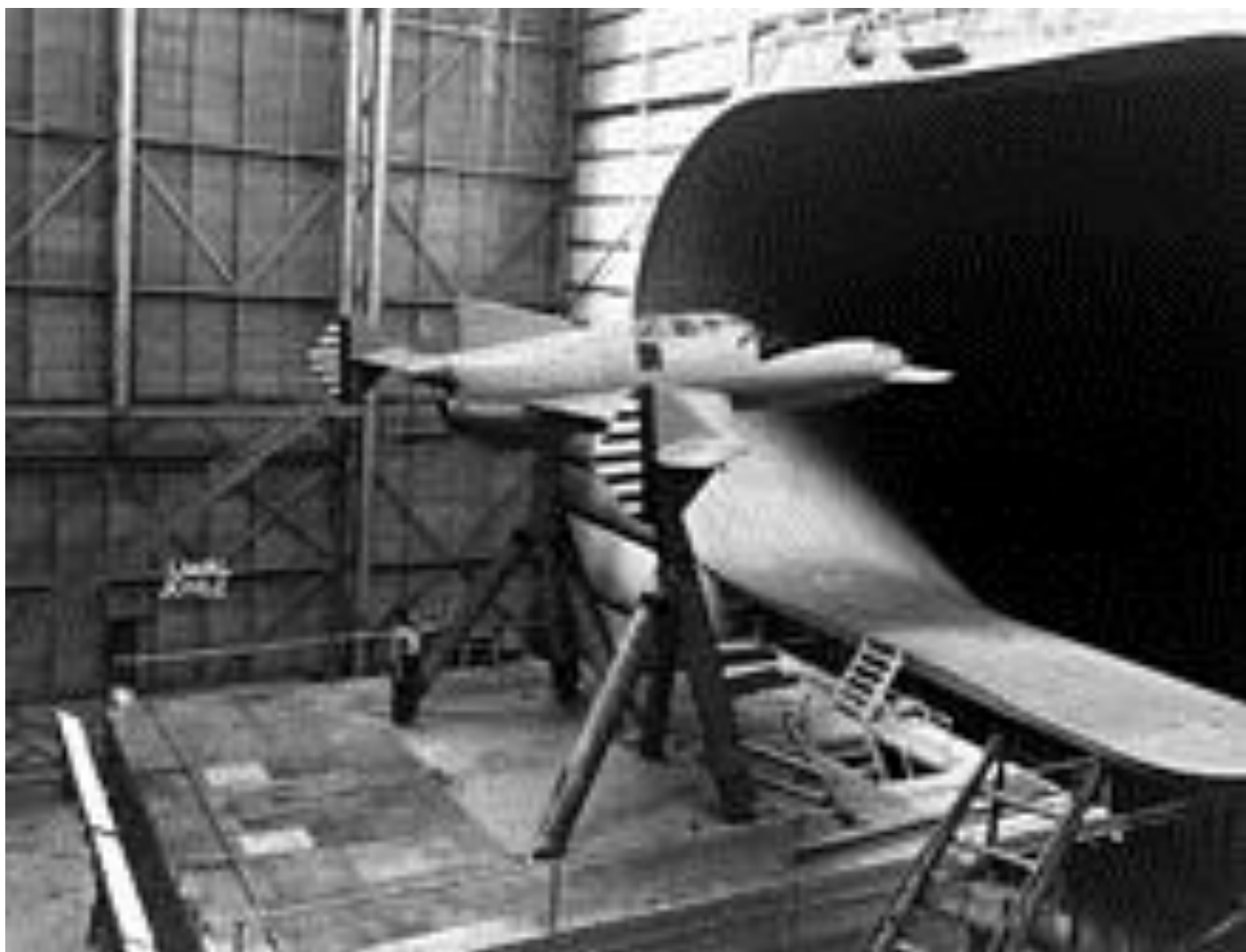
Le 27 novembre 1939, l'USAAF lança le programme R40C pour un chasseur moderne, dont les performances, l'armement et la visibilité devaient être nettement supérieures à celles des chasseurs contemporains. C'était surtout un programme expérimental destiné à encourager les constructeurs à tester des configurations inhabituelles. Il eut pour concurrents le Vultee XP-54, le Curtiss XP-55 et le Northrop XP-56. Curtiss-Wright propose le CW-24 et reçoit le 22 juin 1940 un contrat pour des tests en soufflerie. Ces tests étant peu concluants, Curtiss décide de construire une maquette volante à l'échelle, le CW-24B. Celle-ci dispose d'un fuselage en tubes d'acier, d'ailes en bois, recouvert de toile, d'un train fixe et d'un moteur Menasco C68-5 de 275 hp. Le 10 juillet 1942, Curtiss reçoit un contrat pour la production de 3 prototypes, désignés XP-55. Ceux-ci devaient recevoir un moteur X-1800, mais les retards pris dans son développement (il sera en effet annulé) amènent Curtiss à lui préférer un Allison V-1710 de 1000 hp, puis la version V-1710-95 de 1275 hp. L'armement d'origine prévoyait deux canons de 20 mm et deux mitrailleuses de 12,7 mm. Les deux canons seront remplacés par deux autres mitrailleuses. Le XP-55 avait une configuration vraiment inhabituelle pour l'époque : des ailes en flèche couplées à des surfaces canards. Il disposait aussi d'une hélice propulsive, d'une double dérive et d'un train tricycle. L'hélice propulsive lui valut le surnom d'Ascender". L'hélice en question était largable en cas d'évacuation du pilote. Le XP-55 effectua son vol inaugural le 19 juillet 1943 entre les mains de J. Harvey Gray. La distance de décollage se révéla excessivement longue. Le 15 novembre 1943, lors de tests de décrochage, Gray perdit le contrôle de son appareil. Il parvint à sauter en parachute, mais l'appareil fut perdu. Le second appareil vola le 9 janvier 1944. Malgré des modifications, il évita la zone de décrochage. Le 3e appareil, lui, vola le 25 avril 1944 et était armé de 4 mitrailleuses. Les problèmes de stabilité furent résolus en réduisant le débattement des surfaces canards et en augmentant la surface des gouvernes en bout d'ailes. Le 2e appareil fut mis au standard du 3e et subit des tests officiels du 16 septembre au 2 octobre 1944. Les tests montrèrent que les performances n'étaient pas à la hauteur de ce qui était espéré. De fait, les chasseurs contemporains lui étaient supérieurs. Le 3e prototype fut perdu dans un accident le 27 mai 1945, lors d'un meeting devant 100000 personnes. Quant au deuxième, il est désormais exposé à l'Air Zoo à Kalamazoo, dans le Michigan. Il est prêté par le National Air and Space Museum. Une version à réacteur, le CW-24C, fut brièvement envisagée.



Version anglaise Wikipédia

The **Curtiss-Wright XP-55 Ascender** (company designation **CW-24**) is a 1940s [United States](#) prototype [fighter aircraft](#) built by [Curtiss-Wright](#). Along with the [Vultee XP-54](#) and [Northrop XP-56](#), it resulted from [United States Army Air Corps](#) proposal R-40C issued on 27 November 1939 for aircraft with improved performance, armament, and pilot visibility over existing fighters; it specifically allowed for unconventional aircraft designs. An unusual design for its time, it had a [canard](#) configuration, a rear-mounted engine, swept wings, and two vertical tails. Because of its [pusher design](#), it was [sarcastically](#) referred to as the "Ass-ender".^[1] Like the XP-54, the Ascender was designed for the [Pratt & Whitney X-1800](#) engine, but was re-designed after that engine project was canceled. It was also the first Curtiss fighter aircraft to use [tricycle landing gear](#).

Design and development



Curtiss CW-24B at Langley wind tunnel.

June 1940, the Curtiss-Wright company received an Army contract for preliminary engineering data and a powered [wind tunnel](#) model. The designation **P-55** was reserved for the project. The USAAC was dissatisfied with the results of these tests. Accordingly, Curtiss-Wright built a flying full-scale model they designated **CW-24B**. The flying testbed was powered by a 275 [hp](#) (205 [kW](#)) [Menasco C68-5 inline engine](#). It had a [fabric-covered](#), welded steel tube [fuselage](#) with a wooden wing. The [undercarriage](#) was non-retractable. July 1942, the [United States Army Air Forces](#) issued a contract for three prototypes under the designation **XP-55**. Serial numbers were 42-78845 through 42-78847. During this time, the [Pratt & Whitney X-1800 H-block sleeve valve](#) engine was delayed, and was eventually canceled. Curtiss decided to switch to the 1,000 hp (750 kW) [Allison V-1710](#) (F16) [liquid-cooled](#) inline engine because of its proven reliability. Armament was to be two [20 mm \(0.79 in\) cannon](#) and two [0.50 in \(12.7 mm\) machine guns](#). During the [mock-up](#) phase, engineers switched to the 1,275 hp (951 kW) V-1710-95. The 20 mm cannons were also replaced by 0.50 in machine guns.

One feature of the XP-55 was a propeller jettison lever inside the cockpit to prevent the pilot from hitting the propeller during bailout. The jettison device was invented by W. Jerome Peterson while working as a design engineer for Curtiss-Wright

Operational history



The first XP-55 following a testing crash.

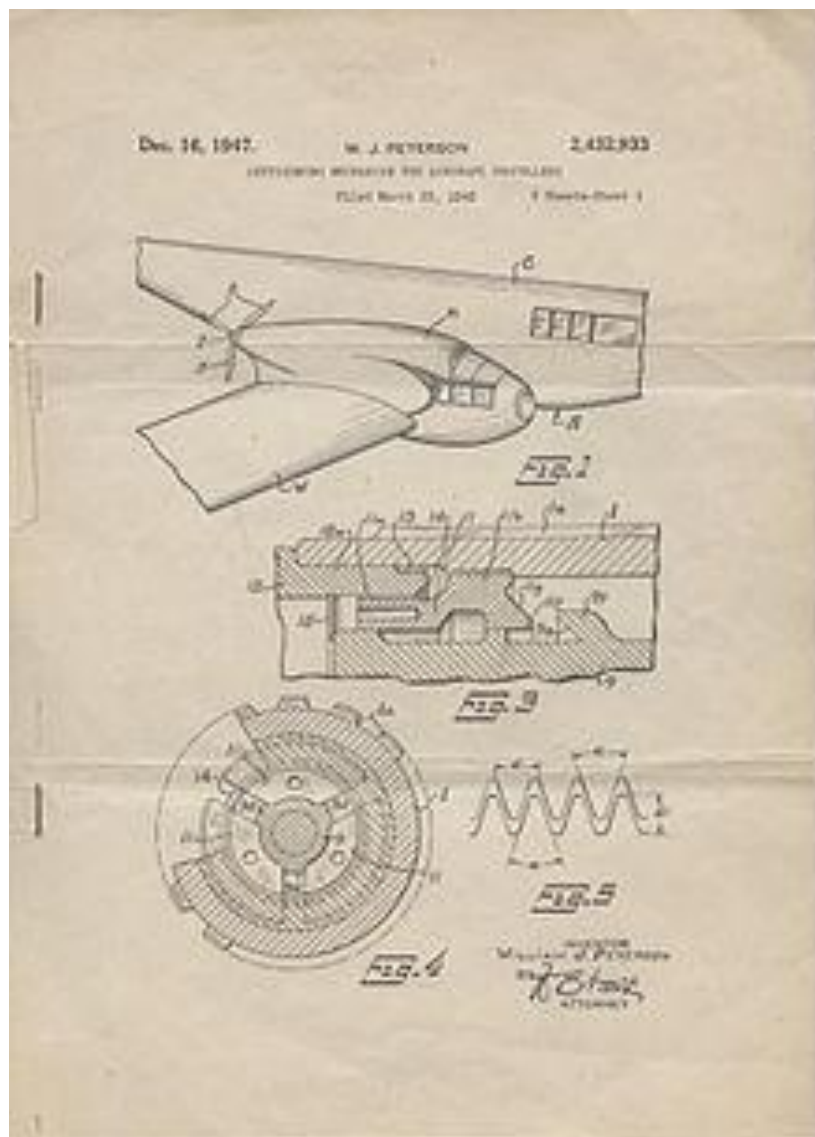
The first XP-55 (42-78845) was completed on 13 July 1943 with the same configuration as the final prototype CW-24B. The aircraft made its first flight on 19 July 1943 from the Army's Scott Field near the Curtiss-Wright plant in [St Louis, Missouri](#). The pilot was J. Harvey Gray, Curtiss' test pilot. Testing revealed the takeoff run was excessively long. To solve this problem, the nose [elevators](#) size was increased and the [aileron](#) up-trim was interconnected with the [flaps](#) so it [operated](#) after the flaps were lowered. November 1943, test pilot Harvey Gray, flying the first XP-55 (S/N 42-78845), was testing the aircraft's [stall performance](#) at altitude. Suddenly, the XP-55 inverted into an uncontrolled descent. The pilot was unable to right the airplane, and it fell out of control for 16,000 ft (4,900 m) before Gray was able to parachute to safety. The aircraft was destroyed. The second XP-55 (S/N 42-78846) was similar to the first, but with a slightly larger nose-elevator, modified elevator-tab systems, and a change from balance tabs to spring tabs on the ailerons. It flew for the first time on 9 January 1944. All flight tests were restricted so the stall-zone was avoided.^[2] The third XP-55 (S/N 42-78847) flew for the first time on 25 April 1944. It was fitted with four machine guns, and incorporated some of the lessons from the loss of the first XP-55. Engineers discovered the aircraft's stall characteristics could be improved by the addition of four-foot wingtip extensions, and by increasing the limits of the nose elevator travel. Between 16 September and 2 October 1944, the second XP-55 (42-78846), modified to the standards as the third aircraft, underwent official USAAF flight trials. The performance of the XP-55 was inferior to conventional fighter aircraft.^[3] Sealing its fate, by 1944, jet-powered fighters were in development; that terminated development of the XP-55.

The third prototype XP-55 (s/n 42-78847) was lost on 27 May 1945 during the closing day of the Seventh War Bond Air Show at the Army Air Forces Fair at [Wright Field](#) in [Dayton, Ohio](#).^[4] After a low pass in formation with a [Lockheed P-38 Lightning](#) and a [North American P-51 Mustang](#) on each wing, its pilot, William C. Glasgow, attempted a slow roll, but lost altitude and crashed, sending flaming debris into occupied civilian ground vehicles on a highway near the airfield. The crash killed Glasgow and four civilians on the ground.

Specifications (XP-55)



Curtis XP-55 Ascender side view.



Patent for the propeller jettison system used on the XP-55.

General characteristics

- **Crew:** One (pilot)
- **Length:** 29 ft 7 in (9.02 m)
- **Wingspan:** 40 ft 7 in (12.37 m)
- **Height:** 10 ft 0 in (3.05 m)
- **Wing area:** 235 sq ft (21.8 m²)
- **Empty weight:** 6,354 lb (2,882 kg)
- **Gross weight:** 7,710 lb (3,497 kg)
- **Max takeoff weight:** 7,930 lb (3,597 kg)
- **Powerplant:** 1 × [Allison V-1710-95](#) liquid-cooled [V12 engine](#), 1,275 hp (951 kW)

Performance

- **Maximum speed:** 390 mph (630 km/h, 340 kn) at 19,300 feet (5,900 m)
- **Range:** 635 mi (1,022 km, 552 nmi)
- **Service ceiling:** 34,600 ft (10,500 m)
- **Wing loading:** 32.8 lb/sq ft (160 kg/m²)
- **[Power/mass:](#)** 0.16 hp/lb

Armament

- **Guns:** 4 × 0.50 in (12.7 mm) machine guns in the nose



Source : https://en.wikipedia.org/wiki/Curtiss-Wright_XP-55_Ascender