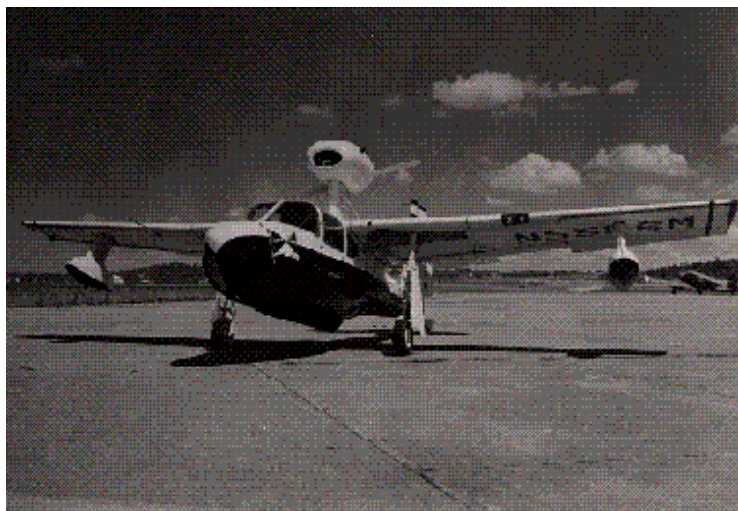


# Goodyear Drake

## GA-2 Duck



**Role** Three-seat light amphibian

**Manufacturer** Goodyear Aircraft Corporation

**First flight** 1944 (GA-1)

**Number built** 19

The **Goodyear GA-2 Duck** was a 1940s American three-seat light amphibian built by the Goodyear Aircraft Corporation. The design team included David Thruston, who later developed several other light seaplanes including: the Colonial Skimmer, Lake Buccaneer, Thruston Teal and Seafire. Only 19 aircraft were built and these were used as only for testing and as demonstrators.

## Design and development

The Goodyear Aircraft Corporation began to design a small and light amphibian before the end of the Second World War. The prototype designated **GA-1** first flew in September 1944. It was a cantilever high-wing monoplane with under wing stabilizing floats. The GA-1 had an all-metal fabric-covered wing, an all-metal single-step hull, and a

cruciform tail unit. It had a retractable tail-wheel, accommodation for two, and a pylon-mounted piston engine with a pusher propeller.

## Operational history

After successful testing of the prototype, 18 demonstration aircraft were built. These differed from the prototype in that they had room for the pilot and two-passengers. Two versions were built, the **GA-2** with a 145 hp (108 kW) Franklin 6A4-145-A3 piston engine, and the **GA-2B** with a more powerful 165 hp (123 kW) Franklin 6A4-165-B3 flat-six piston engine. Although the aircraft were successfully tested and demonstrated, the costs involved in producing the aircraft prevented it being sold at a price that private pilots could afford, and the project was abandoned. In 1950 a revised four-seat variant the **GA-22 Drake** was flown followed in 1953 by the **GA-22A Drake**, only one of each was built.



## Goodyear Drake (GA-22A)



The Drake was designed and built by engineers at Goodyear Aircraft in the late 1940s and was completed on March 10, 1953. The maiden flight recorded in the Drake's logbook occurred on March 11, 1953 and lasted a total of 15 minutes. Goodyear used the prototype Drake for company business and demonstrations at many airports around the

country. The Drake remained based in Akron, Ohio for its entire career.

The GA-22A was a four place, all metal aircraft, powered by a 225 hp Continental E-225-8 six cylinder engine, driving an all-metal Hartzell propeller. The center wing of the Drake was covered with Bondolite, a special structure developed by Goodyear for its amphibious airplanes.

The Bondolite structure consisted of aluminum sheeting and a honeycomb core. Fully retractable landing gear and cross wind landing wheels were installed in the Drake, enabling the airplane to touch down on land or in the water.

After comparative flight tests of earlier Goodyear Duck models, the NACA planning hull was selected to be used on the GA-22A. This hull was characterized by a deep pointed step faired to the smooth afterbody. Goodyear also conducted tests with a wooden fairing fitted to the earlier Drake model GA-22 that simulated the faired step of the GA-22A. This modification improved the water stability characteristics in the GA-22A such that hands-off landings and take-offs were not difficult.

The Drake was designed to be a passenger amphibian, but it was capable of being used as a light cargo carrier by removing the rear seat and left front seat. The pilot and passengers of the GA-22A experienced excellent visibility and a hinged right windshield gave ready access to the anchor compartment and forward mooring cleats.

Among the more notable flights recorded in the aircraft logbook are a flight to Lakehurst, New Jersey in May of 1954 and to New York City in July and August of 1954. In January of 1955, the Drake took its longest tour starting on January 10<sup>th</sup> and lasting until January 30<sup>th</sup>. The flight originated from Akron with the first leg to Springfield, Ohio. The flight continued to Wichita, Kansas; Amarillo, Texas; Albuquerque, New Mexico, Phoenix, Arizona, San Francisco, California and Los Angeles, California. The flight returned to Phoenix then traveled to Oakland, California; Crescent City, California; Portland, Oregon; Kelso, Washington; Tacoma, Washington; Seattle Washington; Helena, Montana; Philip, North Dakota; Sterling, Michigan and return to Akron. The total flight time recorded was 60 hours and 20 minutes.

The Drake also made demonstration flights for military audiences at Wright-Patterson AFB (March 1955); Fort Knox, Kentucky (April 1955); Dobbins AFB (April 1955); Fort Benning, Georgia (June 1955 & May 1956); Fort Rucker, Alabama (May 1956); Fort Belvoir, Virginia (June 1957) and Annapolis, Maryland (June 1957).

The last recorded flight of the Goodyear Drake occurred on December 6, 1961 that lasted 1 hour and 35 minutes. On July 19, 1966, Goodyear Aerospace Corporation donated the prototype GA-22A Drake to the EAA Air Venture Museum where it was placed in storage.

The Goodyear Drake (N5516M) arrived at the MAPS Air Museum on May 23, 1020 from the EAA Air Venture Museum in Oshkosh, Wisconsin. The Drake at the MAPS museum is the only example of this model (GA-22A) of the Goodyear flying boat ever to be produced.

## **Variants**

### **GA-1 Duck**

Prototype two-seater originally powered by a 107 hp (80 kW) Franklin 4ACG-100-H3 piston engine, and later fitted with a 125 hp (93 kW) Franklin 6A engine, one built.

### **GA-2 Duck**

Demonstration three-seat aircraft with a 145 hp (108 kW) Franklin 6A4-145-A3 engine, 16 built some later modified as GA-2Bs.

### **GA-2B Duck**

Demonstration three-seat aircraft with a 165 hp (123 kW) Franklin 6A4-163-B3 engine, six modified from GA-2s in 1949.



GA-2B

### GA-22 Drake

Revised larger variant with four-seats, two built (one as a GA-22A with a revised hull) with the first flight in 1950.

### GA-22A Drake

Revised larger variant with four-seats powered by a 225 hp (167 kW) Continental E-225-8 and converted into a flying boat with a revised hull; first flight in 1953.

### General characteristics (GA-2B)

- **Crew:** One
- **Capacity:** Two passengers
- **Length:** 26 ft 0 in (7.92 m)
- **Wingspan:** 36 ft 0 in (10.97 m)
- **Height:** 9 ft 6 (on wheels) in (2.90 (on wheels) m)
- **Wing area:** 178.20 ft<sup>2</sup> (16.55 m<sup>2</sup>)
- **Empty weight:** 1600 lb (726 kg)
- **Gross weight:** 2300 lb (1043 kg)
- **Power plant:** 1 × Franklin 6A4-163-B3 flat-six piston engine, 165 hp (123 kW)

### Performance

- **Maximum speed:** 125 mph (201 km/h)
- **Range:** 300 miles (483 km)
- **Service ceiling:** 15,000 ft (4570 m)

### GOODEARD GA-22A DRAKE – Specifications

- **Wing Span:** 37 ft. 11 in.

- **Length:** 29 ft. 8.5 in.
- **Height:** 10 ft. 2 in.
- **Wing Area:** 209 sq. in.
- **Empty Weight:** 1964 lbs.
- **Gross Weight:** 3000 lbs.
- **Maximum Speed:** 146 mph
- **Cruising Speed:** 135 mph
- **Rate of Climb:** 900 ft. per min.
- **Service Ceiling:** 15,500 ft.
- **Range:** 575 mi.
- **Engine:** 225 hp Continental E-225-8