1607

A SCHOOL

# Grumman JF DTGG

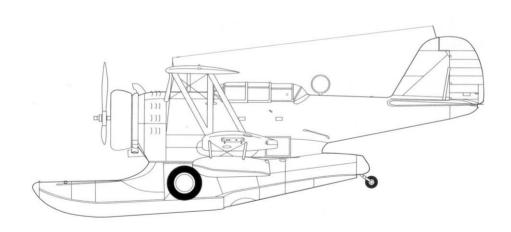


MINI Number 7
squadron/signal publications

# **Grumman JF Duck**

Mini in action

By Timothy Hosek
Color By Don Greer
Illustrated By Joe Sewell







A Columbian-built J2F-6 Duck flown by Ensign Joseph McCormick overflies a German weather station in Greenland. He was part of a Coast Guard mission that destroyed a number of these bases.

### Acknowledgments

Emil Buehler Naval Aviation Library,
National Museum of Naval Aviation
Cradle of Aviation Museum
U.S. Coast Guard Historian
USDAO Argentina
National Archives
National Air and Space Museum
U.S. Air Force Museum
Eleventh Air Force, Office of History
U.S. Navy Historical Center
U.S. Air Force Historical Center
United States Marine Corps Historical
Foundation
Warner Robins Air Logistics Center, Office
of History

Often overlooked because of the presence of the more glamorous fighters and bombers, the Duck operated quietly and efficiently. The versatile Duck got the grunt jobs, especially rescue work. Many a pilot, and a Philippine president, owe their lives to this ungainly but heroic aircraft.

Captain Gordon G. Stewart, USN

Josh Stoff

Paul Hosek

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### ISBN 0-89747-366-3

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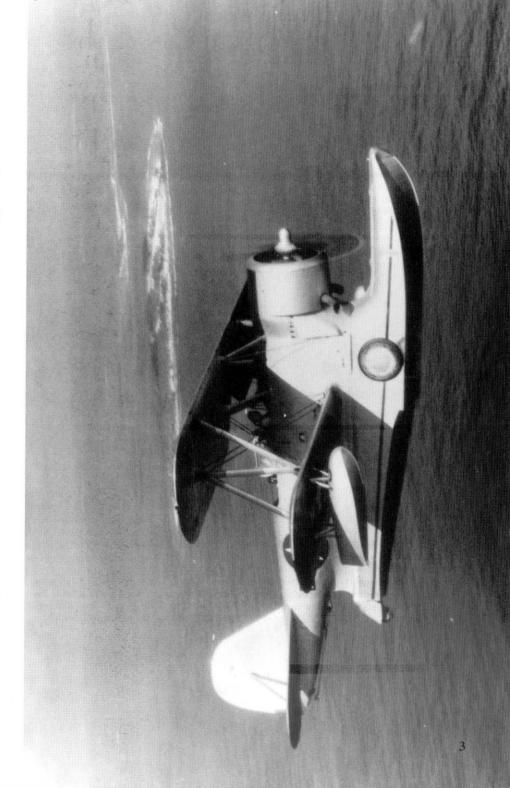
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Donna Hosek

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# Introduction

The Grumman JF/I2F Duck was the first amphibian aircraft from the still very young Grumman Aircraft Engineering Company. The aircraft was the design of Leroy Grumman and Bill Schwendler and was a direct descendent of the Loening amphibians of the 1920s.

In the 1920s, Loening Aeronautical Engineering Corporation amphibian aircraft designs held great sway with the rich and elite, earning them the appellation "air yachts." Likewise, these amphibians, procured by the Army Air Corps as the OA series and by the U.S. Navy as the OL series, defined the role of utility aircraft. These amphibians, during ten years of service, opened up new areas for aircraft in military operations. During the late 1920s, despite constant upgrades and improvements the U.S. Navy had begun looking for a replacement for their Loenings.

In 1929, following the Curtiss-Wright takeover of Loening Aeronautical, a small, talented group of Loening employees; Leroy Grumman. Jake Swirbul. William Schwendler, Julius Holpit and Albert Loening, left (not wanting to relocate to Pennsylvania) and formed the Grumman Aircraft Engineering Corporation. Grumman was completely and privately financed by Grover Loening, who also provided the manufacturing rights to the Loening retractable landing gear hull, and float designs. This led directly to the development of the Grumman Model A and Model B floats which equipped the Vought 02U and 03U observation aircraft, and provided Grumman with their first U.S. Navy contracts.

In 1931, the Navy reassigned the aircraft designator "J" from transport aircraft (such as the Ford JR-1 Trimotor Navy transport) to a new type of general utility aircraft. These utility aircraft would be purpose built for deployment with utility flights aboard aircraft carriers, at shore bases with the newly created Utility Squadrons and attached to aviation utility ships.

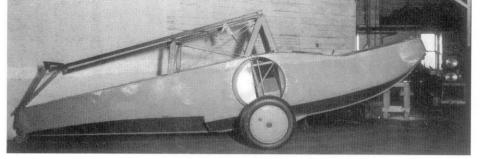
The Grover Loening Aircraft Company, formed in 1928 when the original Loening Aeronautical Engineering Corporation combined with Curtiss-Wright, submitted the privately developed XO2L-1 amphibian. This amphibian retained many of the Loening OL's features, but presented them in a more streamlined form.

Although the U.S. Navy had high praise for the XO2L-1 as it was being tested in 1932, Grover Loening had no production facilities. At the Navy's suggestion, Grumman began redesign work on the XO2L-1 with the idea of producing the redesigned amphibian. Preliminary work on Design 7 began at the Grumman plant in Baldwin, Long Island and a prototype was ordered as the XJF-1 during 1932. The first flight was made on 24 April 1933 from a grass field in front of Grumman's Farmingdale, Long Island plant with Paul Hovgard at the controls.

The XJF-1 was a compact, single-bay biplane which had a crew of two, seated in tandem under a fully enclosed canopy. The ungeared Pratt & Whitney R-1830-62 fourteen cylinder air-cooled radial engine drove a three-blade Hamilton Standard propeller. Armament consisted of a single .30 caliber flexible machine gun, operated from the rear cockpit, and provision for a single 100 pound general purpose bomb under each lower wing. Accommodations for two passengers, seated side-by-side, were also provided in the rear of the float. Access to this compartment was through a set of folding doors in the floor

This Loening Aeronautical Engineering Corporation Air Yacht comes ashore near Port Washington, Long Island, New New York during the late 1920s. The aircraft was similar to the Army OA and Navy OL series of observation aircraft. (Cradle of Aviation Museum)





A Grumman built Model A float, with retractable landing gear and non-retractable water rudder/tailwheel at the Grumman Baldwin plant ready for delivery to the Navy. (Cradle of Aviation Museum)

A Grumman Model A float installed on a U.S. Navy Vought 02U-4 amphibian. The use of this float doubled the utility of the Navy's Vought Corsairs. (Cradle of Aviation Museum)



of the rear cockpit The float was faired into the fuselage, similar to the earlier Loening amphibians. The main landing gear retracted into the float. The non-retractable tailwheel, which was mounted in the rear of the float, doubled as a water-rudder. The arresting





The Grumman XJF-1 at NAS Anacostia, Washington D.C. during Navy testing on 24 May 1933. (USN/National Archives)

The XJF-1, on its first flight, in its original configuration with a triangular shaped fin and rudder. (NMNA)



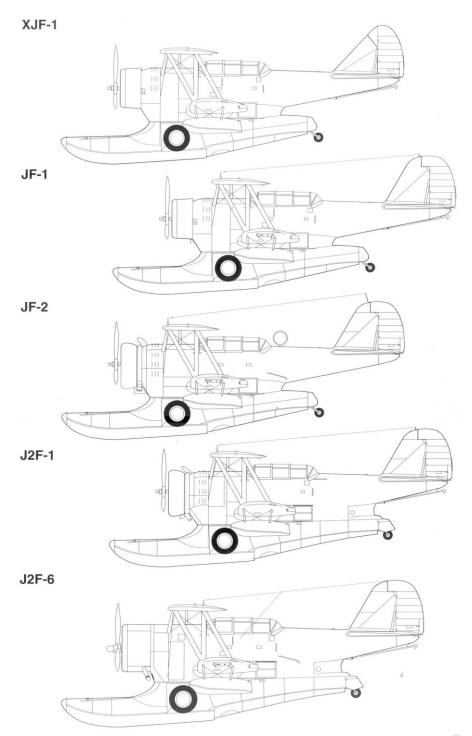
hook was mounted on the rear of the fuselage.

The XJF-1 was delivered to Naval Air Station (NAS) Anacostia, Washington D.C. for flight evaluations on 4 May 1933. The only minor redesign that resulted from the Navy's evaluations was to the vertical tail surfaces. The original triangular surfaces resulted in some longitudinal instability. The surfaces were redesigned to the broader, squarer vertical surfaces found on the production JF and J2F series aircraft. The XJF-1 was

redelivered and immediately accepted into service. The XJF-1 (BuNo 9218) crashed in the James River on 8 March 1934 while operating with VX-1D5 (a naval test and development unit at NAS Norfolk, Virginia).

The XJF-1 in its final configuration, with the modified fin and rudder, on the Grumman ramp during January of 1933. (Grumman via Paul Hosek)





# JF Duck Series

The Grumman Duck was ordered into quantity production in 1934. The production JF-1 differed from the early prototype in that the fin and rudder were more squared off, similar to the redeisigned prototype. The Navy issued Grumman a contact for twenty-seven JF-1s (BuNos 9434/9455 and 9523/9527). The first JF-1 entered naval service at Naval Air Station Norfolk, Virginia during May of 1934. The Marine Corps took delivery of their first Duck during February of 1935. The JF-1s served in VJ-1 (Utility

Squadron 1) attached to the USS WRIGHT, with utility units aboard the USS SARATO-GA, USS LEXINGTON, USS RANGER and aboard the USS HERON in the Asiatic Fleet. JF-1s were also present at the Fleet Air Bases at Coco Solo in the Canal Zone, at Pearl Harbor in Hawaii, and the Navy Yard at Cavite in the Philippines. The JF-1 was similar in appearance to the redesigned XJF-1, however, while the provision for armament was retained, the armament itself was usually deleted in the JF-1 and a third position added for a radio operator

The JF-2 (Design 9) was built in 1934-35 as an unarmed utility aircraft for the U.S. Coast Guard. JF-2s differed from the JF-1 in that they were powered by a 700 hp Wright R-

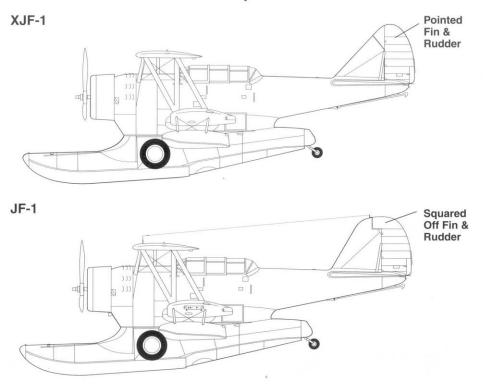


This JF-1 of VJ-1 carried Green tail surfaces and main float tip. VJ-I was the primary user of JF-1s and provided detachments to the seaplane tenders USS WRIGHT and USS RIGEL between 1935 and 1938, replacing Loening OL-9s. (Grumman via Paul Hosek)

A JF-1 (BuNo 9434) attached to the USS SARATOGA (CV-3) awaiting delivery at the Grumman plant in Farmingdale, Long Island, New York, during 1935. The aircraft's metal surfaces are Light Gray, the fabric surfaces are Silver Dope, and the upper surface of the top wing is Chrome Yellow. (USN/National Archives)



### Development



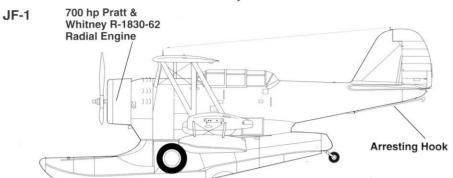
1820-102 nine cylinder engine with a narrow chord cowling in place of the 700 hp Pratt & Whitney engine used in the JF-1. Externally, the JF-2s were easily identified by the radio direction finder loop antenna installed on the fuselage spine behind the canopy, and the lack of arresting gear. The JF-2s received

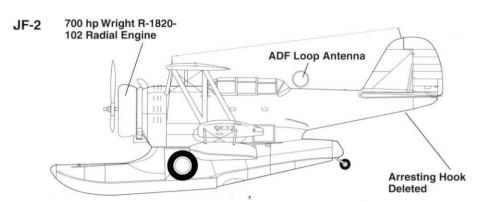
USCG numbers 161 to 174 and were later renumbered V135 to V148. The JF-2s served from land stations in New Jersey, Washington, Florida, North Carolina, South Carolina, Mississippi, and California The JF-2s also served aboard the USCG cutter TANEY in Honolulu, Hawaii, the USCG ice-

One of USS SARATOGA's JF-1s (BuNo 9434) during engine run-ups in 1935. (NMNA)



### Development





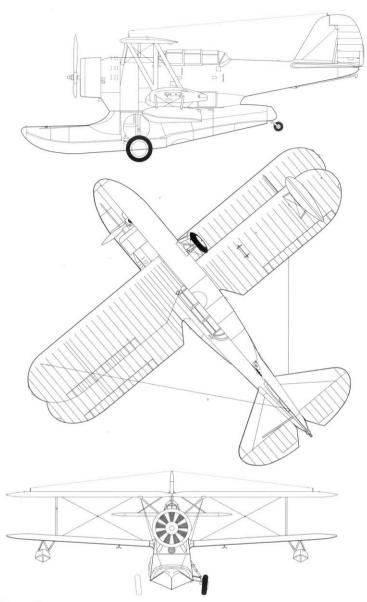
breaker SPENCER in Cordova, Alaska, and with the Bering Sea Patrol. Four JF-2s were later transferred to the U.S. Navy as BuNos 00266, 00371, 00372, and 01647.

JF-3s (Design 10) were built for Navy and Marine Corps reserve units in 1935. The five JF-3s (BuNos 9835 to 9839) differed from the earlier variants in that they were powered by

750 hp Wright R-1820-80 nine cylinder engines with narrow chord cowlings. Like the earlier JF-2, these aircraft also had the arresting gear deleted. A single JF-3 was delivered to each of the major reserve bases at NRAB Brooklyn, New York, NRAB Seattle, Washington, NRAB Long Beach, California and NRAB Opa-Locka, Florida.

A Coast Guard JF-2 fitted with an ADF lop antenna on the fuselage spine, the main identification feature of the JF-2. (Grumman)





### **Specification**

### Grumman JF-1 Duck

<b>Wingspan</b> 39	feet (11.89 m)
Length33	feet (10.06 m)
Height14	feet 6 inches (4.42 m)
Maximum Weight5,3	375 pounds (2,438 kg)

Speed......168 mph (270 km/h) Service Ceiling...18,000 feet (5,485 m) Crew.....Two

Empty Weight...... 4,133 pounds (1,875 kg)

Powerplant.....One 700 hp Pratt &Whitney R-1830-62 air-cooled radial engine

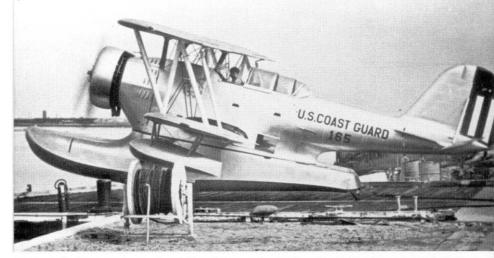
Armament......One .30 caliber machine gun in rear cockpit, two underwing bomb racks.



A U.S. Coast Guard JF-2 (170, later V-144) prior to delivery to the USCG station at Port Angeles, Washington during 1935. JF-2s were easily identified by the distinctive ADF loop antenna on the fuselage spine and lack of arresting gear. (NMNA)

This Coast Guard JF-2 has the ADF loop antenna on the fuselage spine deleted but is armed with a single.30 caliber machine gun in the rear cockpit. The aircraft was operating in a Greeland fiord during 1936. (U.S.Coast Guard)





JF-2 conducting engine tests at Coast Guard Air Station Cape May, New Jersey, during 1935. At this time Coast Guard aircraft were overall Aluminum Dope with the top of the wing and upper tail surfaces in Chrome Yellow. The top third of the rudder was Insignia Blue and the bottom was divided into five vertical stripes (three Red, two White). The aircraft model was in White on the Blue portion of the rudder, the serial was in Black under "U.S. Coast Guard" on the fuselage, USCG was on the underside of both wings, and the serial number was on the bottom of the float. The USCG emblem was forward on the hull near the pilot's cockpit. (NMNA)

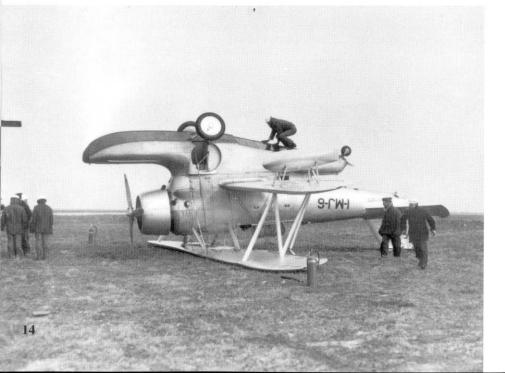
A JF-2 taking-off from CGAS Cape May, New Jersey. The aircraft has an ADF loop antenna on the upper fuselage spine. The Black USCG lettering is under each wing and the aircraft serial is just visible on the underside of the float. (U.S. Coast Guard)





This Marine Corps JF-2 (BuNo 0266) was formerly flown by the U.S. Coast Guard (V135 at CGAS Gloucester, Massachusetts). In December of 1935, this Duck, flown by a crew from VJ-6M at MCAS Quantico, Virginia, set an unofficial speed record of 191 mph in the single-engine amphibian class. (NMNA)

This USMC JF-1 of VMJ-I (formerly VJ-6M), which was flown by Sergeant B.F. Belcher, was flipped over by the wind during landing. A very rugged amphibian, the Duck apparently had a mind of its own when landing on a conventional runway with a cross-wind. The incident took place at Floyd Bennent Field (CGAS New York), on 7 December 1937. (Rudy Arnold Collection via National Air and Space Museum)





Groundcrews work to right the flipped JF-1 using a fire truck and man power. The damage appears to be confined to the upper portion of the vertical stabilizer and rudder. (Rudy Arnold Collection via National Air and Space Museum)

Righted, and with no apparent damage to the float, propeller, or cowling (in spite of the brute force and unique tie-off positions used to right the aircraft). The Duck will be moved to the maintenance hangar for repairs. (Rudy Arnold Collection via National Air and Space Museum)





An overall Light Gray JF-1 Duck (BuNo 9440) assigned to the USS RANGER (CV-6). The aircraft carries pre-war markings with the ship name on the fuselage side in Black and full rudder stripes. (Grumman)

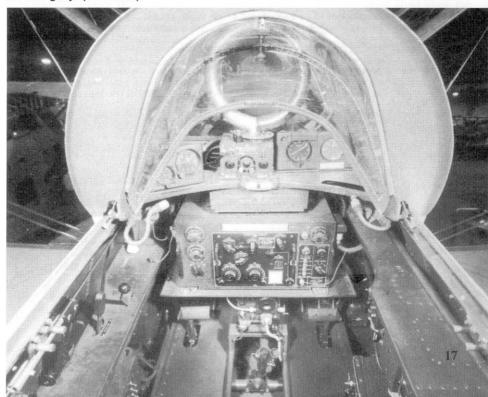
This JF-1 (BuNo 9450), side number 6, was assigned to Naval Air Station Pensacola, Florida during 1937. (NMNA)

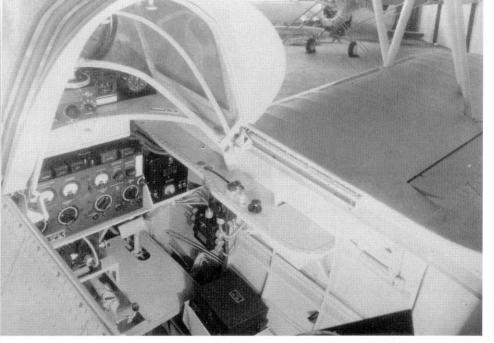




The pilot's cockpit of a Grumman JF-3 Duck, showing the left side console, throttle, tail wheel lock, trim controls, forward instrument panel, and radio headset. With minor changes, this simple cockpit layout was to carry through all models and variants of the Duck. (National Air and Space Museum, Smithsonian Institute)

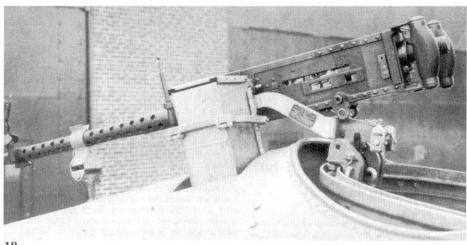
The observer's cockpit of a JF Duck with a DF loop antenna installed. Under it are the radio sets. The rear cockpit was also equipped with flight controls for use in the event of an emergeny. (Grumman)





The rear cockpit of a JF-3 showing the right side console, forward panel, and radios. The socket in the floor is for a control stick, which could be used by the rear crewman in the event of an emergency. The aircraft in the background appears to be the Curtiss XF12C-1. (National Air and Space Museum, Smithsonian Institute)

The Duck had provision for mounting a Browning .30 caliber air-cooled machine gun in the rear cockpit for use by the observer/radio operator. The gun was mounted on a ring type gun mount and was fed from an ammunition box on the port side of the gun. (Grumman)



## J<sub>2</sub>F

When the last JF-3 (BuNo 9839) was delivered on 18 October 1935, Duck production was halted until March of 1936 when an entirely new series was ordered. The revised design, Grumman Design 15, was given the Navy designation J2F. The J2F differed from the earlier JF series in a number of ways. The 700-750 hp engines and long chord cowlings used on the earlier variants was changed to the 750 hp Wright R-1820-20 air cooled radial, with a short chord engine cowling. The float was extended forward one foot, for an overall length of thirty-four feet instead of the thirty-three feet for the earlier JF series.

The J2F series Duck carried additional equipment to make it more of a multi-mission aircraft capable of target towing, smoke-laying, photographic survey and reconnaissance, and medical evacuation (a stretcher could be carried in the passenger compartment in place of the two seats normally installed), in additional to its usual light transport role. With the exception of the new float, the airframe remained basically the same as the earlier JF

series, and the wing remained unchanged with a span of thirty-nine feet.

The first J2F-1 flew on 3 April 1936 and was delivered to NAS Anacostia, Washington D.C. that same day. The J2F-1 was equipped with fittings for a flexible dorsal .30 caliber machine gun, bomb racks on the lower wings, and a tailhook. One year later, the production run of twenty-nine J2F-1s was completed.

The first J2F-1 (BuNo 0162) was retained at NAS Anacostia for experimental purposes. One of the tests involved the installation of full span flaps on the trailing edges of the upper wings in an attempt to lower the landing speeds to sixty-five mph. This aircraft may have been unofficially known as the J2F-1A.

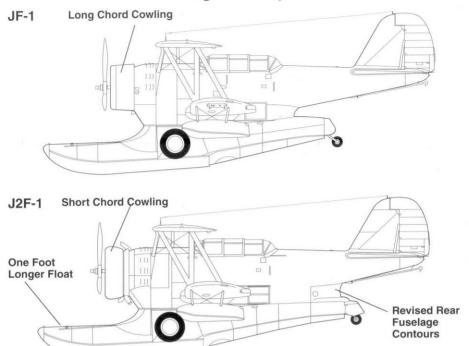
During 1938, Grumman received an order for thirty J2F-2 Ducks. These aircraft were built largely for the U.S. Marine Corps and were powered by a 790 hp Wright R-1820-30 engine driving a two position adjustable pitch Hamilton Standard propeller. Armament included a forward firing .30 caliber machine gun and a flexible .30 caliber machine gun in the rear cockpit

During 1939 and 1940, nine J2F-2s were

The first J2F-1 Duck (BuNo 0162) at Grumman's Farmingdale, Long Island plant when the aircraft was rolled-out on 3 April 1936. With the exception of the extended float (one foot longer) and equipment changes, early J2F models were basically the same as the earlier JF series. (Cradle of Aviation Museum)



### **Fuselage Development**



stationed at Charlotte Amalie, Saint Thomas, Virgin Islands, to participate in the Neutrality Patrol over the Caribbean Sea. Assigned to VMS-3, these J2F-2As (BuNos 11948-1206) were modified with twin, versus single, rear cockpit guns, and two additional bombs racks

under the lower wings.

Twenty unarmed J2F-3s were ordered in January of 1939 for U.S. Naval Attaches and the Commandant of the U.S. Naval Academy. Outfitted for VIP use, these "Admiral's Barges" were plush and painted Dark Blue

Following acceptance of the J2F-1 by the Navy, BuNo 0162 was retained at NAS Anacostia for modifications to attempt to lower the landing speed below 65/70 mph. The J2F-1A, as it was unofficially known, was fitted with full span flaps on the trailing edges of the upper wings during 1937. Following evaluations, this Duck was returned to its original configuration. The modification was not incorporated on subsequent Ducks. (NMNA)





The J2F-1A on the ramp at NAS Anacosita with the upper wing trailing edge flaps fully deployed. (NMNA)

and Silver. Improvement included a 790 hp Wright R-1820-36 engine driving a three blade constant speed propeller.

In late 1939/early 1940, as war loomed closer to America's borders, new military outpost were established. More Ducks were needed to support the extended patrol areas, mandated by this added vigilance. The Grumman Duck was ideal for operations from these improvised outposts, which were usually shallow inlet facilities or single ramp docking facilities. In September of 1939, production of thirty-two J2F-4 Ducks began at

Grumman. This Duck variant was the same as all previous variants with minor modifications in cockpit instrumentation and engine operation.

The final model of the Grumman-built Ducks appeared in July of 1941, when the first of 144 J2F-5 Ducks was delivered to the Navy. The J2F-5s (the first wartime production Duck) were powered by a 950 hp Wright R-1820-50 engine housed in a broad chord cowling which incorporated the oil cooler. The aircraft was also modified with stronger bomb racks (capable of carrying 325 pound

This J2F-1 of VMJ-1 came to grief after a rough water landing near Parris Island, South Carolina during 1939. The engine has been ripped from its mount and oil has been thrown back along the fuselage. (NMNA)





Aircraft number 8, 9, and 10 of the Fleet Air Base, Pearl Harbor, Territory of Hawaii, in flight over Oahu, during 1940. There are passengers visible through the window above the floats of both Aircraft 8 and 9. (NMNA)

depth charges), and the standard rear cockpit .30 caliber machine gun mount. Although most J2F-5s (and later Columbia-built J2F-6s) were retained at bases in the United States or away from the front during the Second World War, other Ducks distinguished themselves in the Pacific, being used by the Marines and Navy to recover downed flyers from the sea and Japanese held islands.

It was J2F-5s assigned to the Fleet Air Base at Cavite that provided supplies and medical evacuation for the Bataan garrison at the out-

break of the Second World War. On 8 April 1942 a J2F-5 left Cabcanen in the Philippines carrying six men, including Carlos Romulo, who would later become President of the Republic of The Philippines.

To free Grumman for production of fighters and torpedo-bombers, the U.S. Navy had Grumman transfer J2F production to \*Columbia Aircraft Corporation in Valley Stream, Long Island. Under the designation J2F-6, Columbia built 330 Ducks during the Second World War. The only difference

A J2F-1 assigned to VX-2D1, based at the Torpedo Station Newport, Rhode Island, during 1937. (Cradle of Aviation Museum)





Santa Claus visits the Fleet Air Base Coco Solo, Panama Canal Zone, as a passenger aboard the station's J2F-1 Duck, during 1938. (NMNA)

between the J2F-5 and J2F-6 variants was the introduction of the 1,050 hp Wright R-1820-54 air-cooled radial engine on the J2F-6.

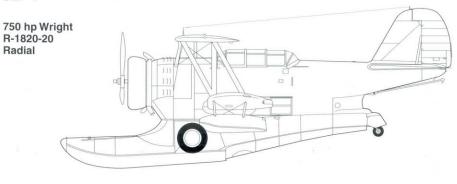
The final mission for the Duck in Coast Guard/Navy service, came in 1946 and 1947. A J2F-6, assigned to the Coast Guard icebreaker NORTHWIND, participated, as part of Navy Task Force 68, in the Antarctic Expedition dubbed Operation HIGH JUMP, with Rear Admiral Richard E. Byrd, USN (Ret.) as Officer-in-Charge of Scientific Programs. This Duck was responsible for

making reconnaissance flights over the South Pole region, liaison and supply flights, weather reconnaissance, and acting as standby rescue and medical evacuation aircraft. The J2F-6 and the crew of the NORTHWIND, under the command of Captain Charles W. Thomas, USCG, won the praise of Byrd and Commander Task Force 68, receiving much of the credit for the success of supporting operations for the scientific programs.

A J2F-1 of VJ-2, Hawaiian Detachment, in flight during 1940. (NMNA)



### J2F-1



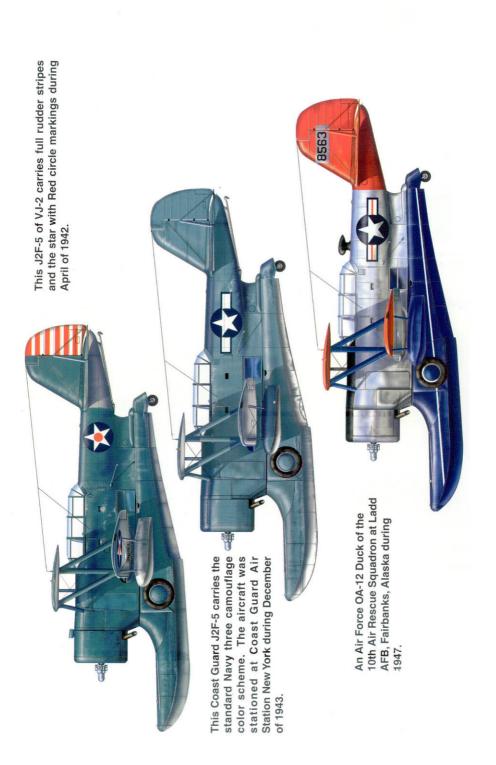
J2F-2

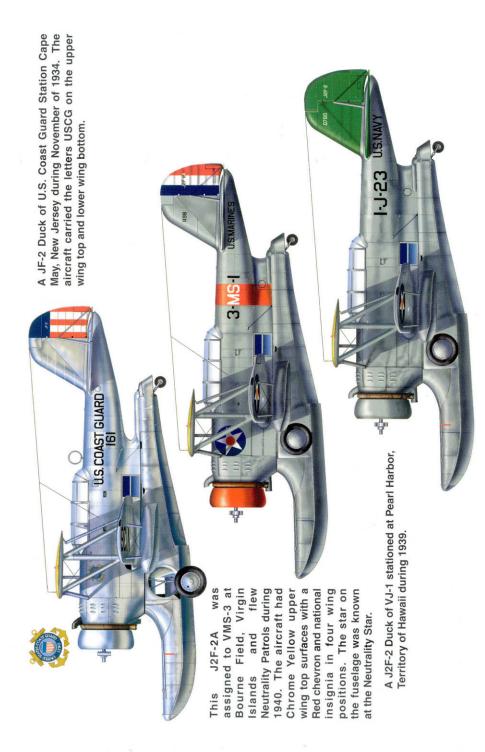
790 hp Wright
R-1820-30
Radial

.30 Caliber Machine
Gun Firing Through
Engine Cylinders

A J2F-3 recovering alongside the USS WASP (CV-7) on 25 August 1940. The large insignia on the forward fuselage was known as the Neutrality Star and was carried by aircraft involved in the Neutrality Patrol in the Atlantic. (USN/National Archives)







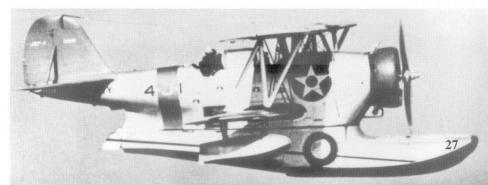


A J2F-3 assigned to the USS HERON (AVP-2), in the Asiatic Fleet. The landing gear has been lowered in preparation for hoisting the aircraft up to the deck. (Walter Woodward, via U.S. Naval Historical Center via NMNA)

This J2F-3 (BuNo 1569) was serving as an "Admiral's Barge" for Rear Admiral Wilson Brown, U.S. Naval Academy Superintendent during 1939. (USN/National Archives)

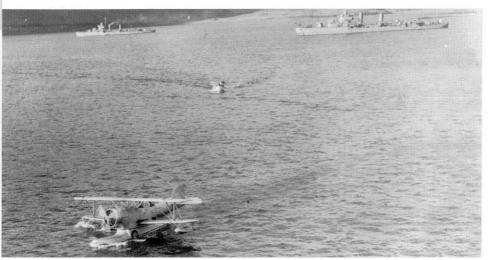


A J2F-4 of VJ-4, at NAS Squantum, Massachusetts, on a photographic survey exercise, during 1940. Most pre-war J2F-4s used a heavy Black water line on the float. (NMNA)





An overall Light Gray Marine Corps J2F-4 assigned to VMO-151 (formerly VMO-I) on the line at Marine Corps Air Station Quantico, Virginia on 3 November 1941. The aircraft in the background is a SBD Dauntless dive-bomber. (Rudy Arnold Collection via National Air and Space Museum)



A J2F-4 from NAS Anacostia was operating with fleet ships during 1941 when it suffered an accident that damaged both starboard wings. Later, the aircraft was hoisted aboard a repair vessel for inspection. The aircraft was configured with bomb racks beneath the lower wings. (NMNA)

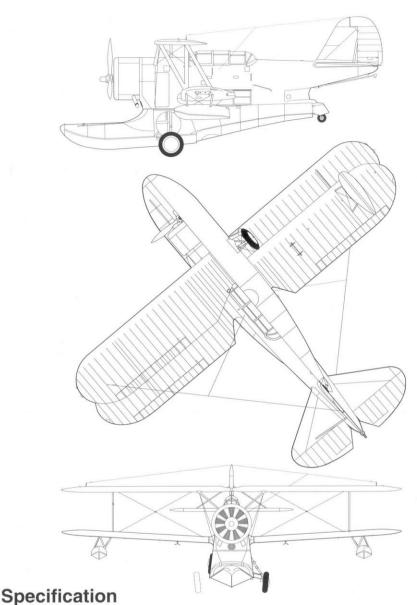




A J2F-5 of the Fleet Air Photographic Unit Atlantic Three, on patrol during 1941. The aircraft is Intermediate Blue-Gray on the uppersurfaces over Light Gray on the undersurfaces. (NMNA)

A J2F-5 after a wheels-up landing on the runway at Elizabeth City, North Carolina, during March of 1942. The sturdy Duck had little damage, except for the loss of the hull-bottom center strip. After lowering the landing gear, the Duck was towed off. It was repaired and back in operation the following day. (Ray Robertson via NMNA)





Grumman J2F-6 Duck

Wingspan......39 feet (11.89 m)
Length......34 feet (10.36 m)
Height......14 feet 6 inches (4.42 m)
Empty Weight......5,445 pounds (2,470 kg)
Maximum Weight...7,290 pounds (3,307 kg)

**Speed......**190 mph (306 km/h) **Service Ceiling...**26,700 feet (8,140 m) **Range......**850 miles (1,370 km) **Crew......**Two

Powerplant......One 1,050 hp Curtiss R-1820-54 air-cooled radial engine

Armament.....One .30 caliber machine gun in rear cockpit, two underwing bomb racks.



Three aviation machinist's mates pose for a typical Second World War recuriting ad taking care of "their" Duck. You have to wonder what the seaman on the wing is doing to the target sleeve tow ring with a paint brush. (NMNA)





A J2F-5 Duck catches an arresting wire aboard USS CHARGER (AVG-30) during operations in the Chesapeake Bay, Virginia during August of 1942. The aircraft is painted Intermediate Blue-Gray over Light Gray. (USN/National Archives.)

Amid bellows of White smoke, a J2F-5 starts a rocket assisted take-off (RATO) from the deck of an escort carrier on 18 March 1944. The RATO bottles were attached to the sides of the fuselage above the float window. (NMNA)





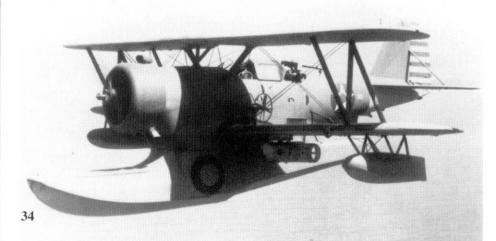
(Above & Below) A Coast Guard J2F-5 Duck is hoisted aboard a USCG cutter and is stowed on its cradle during 1944. USCG cutters that operated Ducks did not have the capability to make cataput launches so the Duck (a single aircraft was carried) was stowed on a special cradle amdiships near the after gun turret. The cradle design was unique to the Duck. For flight operations, the Duck had to be hoisted over the side for take off. The aircraft carries a standard Navy three-tone camouflage scheme. (NMNA)





A three-tone camouflaged J2F-5 on the ramp at CGAS New York (Floyd Bennent Field) during December of 1943. There are covers in place over the engine exhaust stacks to keep out salt spray. (CGAS New York, via NMNA)

A J2F-5 of VJ-2 in the Intermediate Blue-Gray, Light Gray camouflage scheme and early 1942 style markings flies an anti-submarine patrol on 23 April 1942, with a 350 pound depth charge under the wing, a .30 caliber machine gun in the rear cockpit and a tow target winch mounted on the fuselage side. (NMNA)

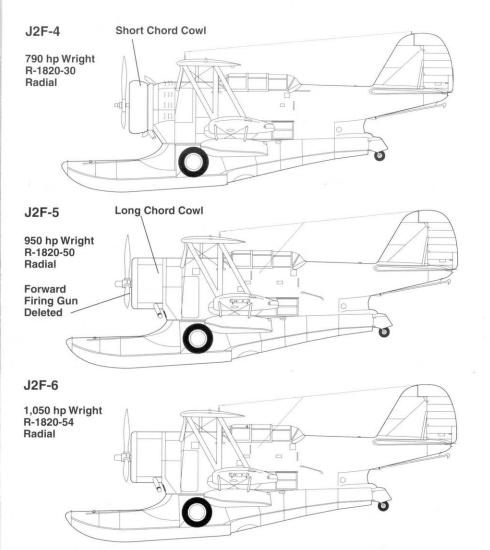




A Coast Guard J2F-5 at rest in its cradle on the cutter SPENCER out of Cordova, Alaska. The J2F-5 is in the overall White with Dark Blue upper surfaces scheme carried by some Ducks that operated in the extreme northern latitudes. The proximity of the bow of the other ship and the absence of a wake from the SPENCER indicates that some sort of a replenishment is underway and a collision is not about to happen. (U.S. Coast Guard)

A White and Blue Coast Guard J2F-5 is towed by a motor whale boat back to the USCG cutter NORTHLAND, near Greenland, during September of 1944. (NMNA)





A J2F-5 Duck in the White and Dark Blue scheme aboard the USCGC NORTHLAND (PG-49) in Arctic waters during 1943. (U.S. Coast Guard)





A Coast Guard J2F-6 Duck from the USCG cutter NORTHLAND flies the rugged country surrounding a Greenland fiord during 1945. At this time, the Coast Guard was operating its ice patrols under the operational control of the U.S. Navy. (U. S. Coast Guard)



A disassembled USCG J2F-6 Duck on the after deck of the USCG cutter STORIS with its engine and cockpit covered with protective canvas covers during operations in Greenland waters in 1944. (U.S. Coast Guard)

Columbia-built J2F-6 Ducks on the run-up line at Curtiss Field, Valley Stream, Long Island, New York awaiting delivery to the U.S. Navy, during 1945. The aircraft appear to be overall Aluminum lacquer. (Cradle of Aviation Museum)

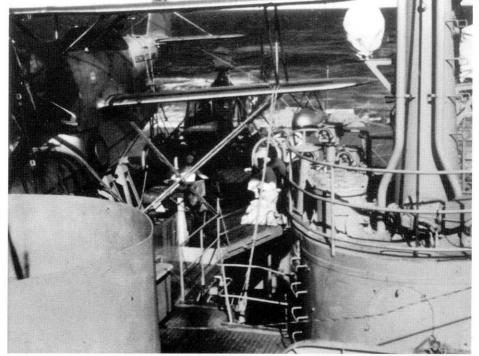




A USCG J2F-6 Duck (BuNo 33585) being towed alongside the USCG icebreaker NORTHWIND. The aircraft was hoisted aboard and the NORTHWIND sailed to join Navy Task Force 68 in Operation HIGH JUMP, the Byrd exploration of the Antarctic during 1946 and 1947. (NMNA)

J2F-6 (BuNo 33585) being hoisted aboard the USCG NORTHWIND. The aircraft lifting point is in the center of the upper wing, a feature common to all Duck variants. The aircraft has been outfitted with new communications suite, as evidenced by the new antenna behind the rear cockpit. (NMNA)





Underway with Task Force 68, the J2F-6 (foreground) and HNS-1 helicopter (background) are stowed aboard the cutter NORTHWIND. The HNS-1 was brought for resupply and rescue missions for the groups on the ground while the Duck was brought to provide reconnaissance support. (NMNA)

Towed to a safe position by a whaleboat and with the pilot in the cockpit, the rear-seat radio operator/observer inspects the engine prior to start. The new ADF football antenna is visible just behind the cockpit. The transport ship in the background is unidentified. (U.S. Coast Guard)





J2F-6 (BuNo 33585) prepares to taxi out for its take off run. The observer is moving back along the fuselage trying to make it to his position. (U.S. Coast Guard)

The Duck turns into the wind, the mixture is set to rich, the throttle full forward, and the Duck begins its takeoff run. The particular mission of the Duck was South Pole region reconnaissance, weather and ice-flow monitoring. (U. S. Coast Guard)





This Operation HIGH JUMP veteran BuNo 33585 was sold as surplus and placed on the civil register as N1214N. At one point, it was located on Long Island, New York during the 1960s. Its current fate is unknown. (NMNA)

A late production J2F-6 Duck in the late war color scheme of overall Silver Dope with a Olive Drab anti-glare panel and star and bar national insignia. This aircraft is unusual in that it does not display a BuNo/serial number on the fin or any other markings. It was probably an aircraft retained at Grumman for test work. (Grumman)





A Grumman OA-12 Duck (serial 48-563) on the 125th Fighter Squadron, Oklahoma Air National Guard ramp in Oklahoma while in transit to Alaska. The tail and float were Red, in keeping with regulations concerning aircraft operating in Arctic regions. (AFM)

### **OA-12**

The Duck entered Army Air Force service when a single naval J2F-5 (BuNo 00660) was transferred to the Army Air Force during 1942. Designated as the OA-12 (serial 42-7771) it served mostly in the North Atlantic, stationed at Newfoundland and Fort McAndrews, Nova Scotia. It returned to the U.S. in 1945 and was disposed of as surplus at Bush Field in Augusta, Georgia on 15 June 1945.

Later OA-12s were drawn from surplus U.S. Navy stocks and overhauled at Warner Robins AMC, Georgia for Arctic operations. Five OA-12As (serials 48-563 through 567)

were assigned to the 10th Air Rescue Squadron (later 10th Air Rescue Group). As part of the Alaskan Air Command. The Ducks operated from Elmendorf AFB in Anchorage and at Ladd AFB in Fairbanks from 1948 into the 1950s.

One of the OA-12As (serial 48-563) crashed on landing on Lake Chekatna in August of 1948. It was recovered by collectors during the 1970s and is now being rebuilt.

Five ex-Navy J2F-6 Ducks were acquied by the U.S. Air Force during 1947 and modified for Alaskan search and rescue operations. The first J2F-6 to be converted to an OA-12A at Warner Robins AMC in Georgia was serial 48-563. (11th Air Force)





This OA-12 Duck (serial 48-563) crashed in Chekatna Lake, Alaska during August of 1948. The OA-12A was recovered by collectors during the 1970s and is currently being restored by Ketchem Aviation. The remaining OA-12As were withdrawn from service by the Air Force during 1953. (AFM)

An OA-12A (serial 48-566) of the 10th Rescue Squadron, Alaska Air Command tied up to its pier on Chekatna Lake in Alaska. The five OA-12As were based at Elmendorf AFB in Anchorage and Ladd AFB Fairbanks for search and rescue missions. (AFM)





This J2F-6 was painted to resemble OA-12A (serial 48-563) and is currently residing at the USAF Museum in Dayton, Ohio. The word RESCUE on each side of the fuselage was done during restoration and was in very non-standard lettering. Although not visible, the center section of the upper wing was painted with RESCUE in black near the leading edge and AR563 underneath it. (AFM)

# Foreign Service

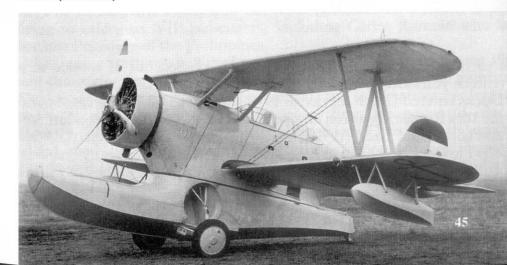
A number of foreign air forces operated the Duck including, Argentina, Colombia, and Mexico

#### **Argentina**

During 1937, the government of Argentina purchased eight Grumman Model G-20 Ducks directly from the Grumman plant. This marked the first direct export of assembled aircraft by Grumman.

The G-20 was similar to the JF-2 used by

An Argentine G-20 parked on the grass at the Grumman Plant at Farmingdale, Long Island before delivery to Argentina during February of 1937. Argentina purchased a total of eight G-20s. (Grumman)





A G-15 on the grass at the Grumman Facility prior to delivery to Argentina. Argentina was the largest user of the Duck, taking delivery of a total of forty-three aircraft (Grumman)

the U.S. Coast Guard. The first Argentine G-20 flew in December of 1936 and all were delivered by February of 1937. The Argentine Ducks replaced Vought 02U-1As in the Naval Aviation Observation Squadron. This squadron operated from BAN Commandante Espora and the aircraft were often sent on detachment aboard the cruisers ARA ALMIRANTE BROWN and ARA VEINTICINCO DE MAYO. The G-20s were powered by Wright R-1820 engines. They served with the *Aviacion de la Flota de Mar* 

and initially carried the serials M-O-1 through M-O-8 on the fuselage sides.

During 1939, the G-20s were augmented by four Grumman Model G-15s. The G-15s were similar to the J2F-4s with the tailhooks removed. These Ducks were distributed among two observation units -- one at BAN Commandante Espora (Squadron 2) and the other at BAN Punto Indio (Squadron 3). Few of the G-20s and G-15s remained airworthy by the end of the Second World War.

In 1948, Argentina took delivery of twenty-

The first of four Grumman G-20s destined for the Argenitne Navy at Grumman during 1939. (Grumman)





Aircraft number 7 of Naval Aviation Squadron Two, Argentine Navy. This J2F-6 operated from Puerto Belgrano in support of the blue-water component of the Argentine Navy. (Base Aeronaval de Punta Indio, Argentine Navy via Captain.Gordon G. Stewart, USN, U.S. Naval Attache, U.S. Embassy, Argentina)

two J2F-5s and nine J2F-6s from surplus Navy stocks. Some of these Ducks took part in the 1955 operations that ousted Juan Peron. Although Naval Observation Squadrons were disbanded during 1956, a number of Ducks flew on in Argentina until 1959.

The acquisition of the Ducks had facilitated the creation of the first, true naval aviation observation squadrons in the Argenine Navy. The Ducks were the eyes of the fleet during times when radar equipped ships did not exist or, later, when they were absent. The Ducks also served in the general utility role and were used to direct naval gunfire, as torpedo spotters, as aerial photographic platforms, target towers, medical evacuation aircraft, search and rescue and in the submarine support operations role. For a period of time (1946 - 1950), at least one Argenine Duck was painted in an overall Flat Black color scheme for night operations with the fleet and for undisclosed "special missions."

#### Colombia

After becoming a signatory to the Inter-American Treaty of Reciprocal Assistance ("Rio Pact"), Colombia took delivery of three ex-USAF OA-12Bs during 1948. They carried U.S. Air Force serial numbers 48-1373 through 48-1375, while being overhauled at Warner-Robins AMC, Georgia.

There are no details available of their service in Columbia after their delivery.

#### **Mexico**

Two Columbia-built J2F-6 Ducks were acquired by Mexico during 1947 for use with *Aviacion Naval Mexicana* Carrying side codes MV-07 and MV-08 they operated in the Vera Cruz area from 1947 to 1951. MV-08 survived and was sold in the U.S. during 1951.

#### **Civil Ducks**

A number of J2F-5s and -6s went to the U.S. civil register after the war. The best known J2F-6 was N67790 (ex-BuNo 33587) which starred in the 1974 movie "Murphy's War." A Duck was also used in the television series "Baa Baa Blacksheep" (aka "Blacksheep Squadron" in syndication). Ducks were also used by the Dawn Patrol Seaplane Base to ferry businessmen from Long Island to Wall Street. Still other Ducks have been used as firefighers. Most surviving Ducks are now in civilian/military museums.

# XJL-1

Design 42 was to have been a monoplane follow-on to the J2F-2. Although design work had begun at Grumman as early as June of 1939, the project lay dormant while Grumman was occupied with the demands of more necessary wartime fighter and bomber production.

When Columbia Aircraft Company began manufacturing the J2F-6 Duck, the Navy and Grumman believed it was an opportune time to resurrect Design 42 and turn development efforts over to Columbia. As a result of this decision, all work associated with Design 42 was passed from Grumman to Columbia during 1943.

Although Design 42 retained the Loeningstyle faired float-fuselage that characterized the JF/J2F Duck series, that is where the similarity stopped. Designated XJL-1 by the Navy, this amphibian was a monoplane, fitted with a fully retractable tricycle landing gear. The main gear retracted into the wings (after the struts were compressed) and the nose gear retracted into the front of the float.

. The crew of two sat in tandem and accommodations for four passengers were provided

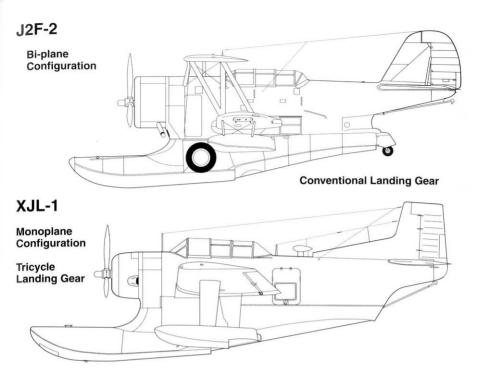
in the rear portion of the float. The XJL-1 was powered by a 1,350 hp Wright R-1820-56 nine cylinder air-cooled radial engine driving a three-blade propeller. The wingspan was fifty feet, the length was forty-five feet eleven inches, and the height was sixteen feet. The aircraft weighed 7,250 pounds empty and had a loaded weight of 13,000 pounds.

Two XJL-1s were completed by 1946 (BuNos 31399 and 31400) with the first flight of BuNo 31399 taking place on 25 October 1946 at Columbia's facilities in Valley Stream, Long Island. BuNo 31400 was flying shortly before the end of 1946. Tests confirmed that the XJL-1 had a top speed of 200 mph, a cruising speed of 119 mph, a rate of climb of 1,110 feet per minute and a range of 1,070 miles.

The aircraft were evaluated during 1947 at the Naval Air Test Center, Patuxent River, Maryland and then stored at NAS Norfolk, Virginia. The XJL-1s were sold as surplus during 1959, registered as N54205 and 54207 and then faded into obscurity.

The first XJL-1 (BuNo 31399) parked on the ramp after its roll-out at Columbia Aircraft's Curtiss Field facility during October of 1946. Although unique in appearance, it still retained the characteristic Duck faired in float/fuselage combination. (Cradle of Aviation Museum)





BuNo 31399 on the ramp at NAS Patuxent River, Maryland, on 17 September 1948, shortly before being sent to Naval Air Station Norfolk for long term storage. Both XJL-1s were later sold as surplus and registered on the civil register as N54207 (BuNo 31399) and N54205 (BuNo 31400) no use of the XJL-1s ever materialized. (USN/National Archives)



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