

THE "WILDCAT" STORY

Member Frank L. Greene's story of the Grumman F4F's "The Wildcat Story", has received tremendous response by JOURNAL readers. And since its publication some very interesting bits of information have come to light, particularly concerning the glide-tow experiments. These are told herewith.

Also, to add a note about Frank Greene, he is a Founding Member and a Director of the Connecticut Aeronautical Historical Association and has, since 1957, been with Pratt & Whitney Aircraft, studying long range military requirements.

First, some errors need correcting in "The Wildcat Story", Volume 6, Number 4:

- Page 241 Performance Table - XR-1530-92 should be XR-1535-92
- Page 236 Grumman Plant picture was taken in early 1942, not 1943.
- Page 235 Photo shows F4F-4 with breakaway wing tips, and was taken from Reference (16).

WHERE ARE THEY NOW?

The following is just the beginning of a list of F4F/FM aircraft known to still exist. Members are asked

to send in information on additional aircraft so that a more complete tabulation may be printed at some later date.

AIRCRAFT	OWNER	LOCATION	CIVIL REG.	Serial No.	STATUS
F4F-4 (1)	Edison Tech. Sch.	Seattle		12114	Gnd.Instr.
FM-1	Nat.Air Mus.	Wash., D.C.		15392	Storage
FM-2	The Air Mus.	Claremont, Calif.		86744	Exhibit
FM-2		Windsor Locks, Conn.			Memorial
FM-2	E.Saviano	LaGrange, Ill.	N18PK	86960	Flying
FM-2	E.Saviano	LaGrange, Ill.	N19K	86741	Repair
FM-2	Sorenson	Mountain View, Calif.			Flying
FM-2 (2)	A.Whiteside	Jacksonville, Fla.			Flying
FM-2		Phoenix	N20HA		Sprayer
FM-2	F. Tallman	Calif.			"Flyable"
FM-2		Hagerstown, Md.			
Martlet I		Yeovilton, Eng.		AL246	Exhibit

(1) Possibly the only Grumman-built F4F now in the United States.

(2) Baggage compartment converted to seat four passengers.

ADDENDUM TO "The Wildcat Story"

By FRANK L. GREENE

In my article on the Grumman "Wildcat" in the last Journal, reference was made to the experimental air towing of the F4F. I am indebted to Captain Ralph S. Barnaby, U.S.N.(Ret.) and Mr. Lee Pearson of the Navy Department for further information on this little known phase of air operations. Since their reports are so graphic and succinct, I can do no better than to quote them directly. From Capt. Barnaby comes the following:

"During WWII, while I was Chief Engineer at the Naval Aircraft Factory here in Philadelphia, one of my duties was direction of the Navy's military glider development and test program. This, of course, involved the towing of large military gliders behind various military aircraft. During this period I received a suggestion that fighter aircraft might be towed as a means of extending their range. In those days the fighter planes did not have fuel capacity and range capability to accompany the long range bombers throughout their missions. The thought was that a limited number of the bomber types could be used as tugs, each towing one or two fighters. When air opposition occurred these fighters would cut loose and protect the bomber force. This required that the system be such as to permit release and hook-on in flight, and that the fighters be equipped as well to feather and unfeather their propellers when the engine was not running and to start their engines while in tow. Such a system we developed. The problem was complicated in those days because of the propeller and the necessity of keeping the towline away from it...Lt.Cdr. McClure made the first hook-ons, and was enthusiastic. Lt. Cdr. Denbo was the next convert. I also made hook-ons and releases.

Double tows were made in May 1942 at the request of the Navy Department....my flight log indicates that we carried out dual fighter tows behind an Army B-17 which I borrowed from Wright Field on May 6th 1942. On that occasion McClure and Denbo hooked their two F4Fs onto the B-17's towlines and were towed for 8 hours over a triangular course of about 180 miles. At the end of the eight hours, they restarted their engines, warmed them up, released and returned to Mustin Field. The F4Fs were used principally because they were equipped with Curtiss electric propellers which, by use of a storage

battery accumulation system could be feathered and unfeathered when the engine was stopped. Starting up was easy. You just unfeathered the prop until it started to windmill. After it had turned over a few turns, the ignition switch was turned on, and the engine started. After a short warm up, you could release the towline and away you'd go.

(In devising a hook-on and towing system), the propeller was the big problem. After a lot of head-scratching, the idea of the off-center tow occurred to me. It appeared that if we towed from the wing-root front spar connection the plane would ride out to one side "a la" a paravane, and that the towline would be well clear of the propeller disc. This proved to be the case. It turned out that when the towed plane was in proper position (which it tended to assume automatically) a very slight trim with the rudder tab relieved the pilot of having to hold the plane in position. For towing two planes, separate tow-lines were used, and the planes were towed from the opposite wing roots. This automatically guarded against their tending to close in on each other. In addition, one line was slightly longer than the other.

Hooking-on in the air was the big problem. By experiment, however, we found that if a towline trailing behind a tow-plane were stabilized by some sort of a drogue or just a strip of tape trailing from its free end, it rode very smoothly, and that it was simple to bring a plane in alongside the line near its end and lay the wingtip on it.

A short cable pendant was developed with a specially designed hook at one end. The hook was secured in break-away clips under the wing tip. The pendant was secured along under the leading edge of the wing with break-away clips, and ran in to the wing-root towing fitting. This fitting was equipped with a pilot-operated release mechanism so the pendant could be turned loose when the pilot wished to cut loose from tow.

The pilot in the plane to be towed would close in laterally on the towline, lay his wing in it inboard of the hook, and then draw away slowly to the side until the line engaged the hook. The pilot then slowed down slightly, dropping back until the hook engaged the stopper near the end of the line. As the hook took on the load, it and the pendant were stripped from their retaining clips, and the tow was then complete from tow-plane to the wing-root fitting of the towed plane. The pilot could then feather his propeller and shut down



The author of "The Wildcat Story", Franke Greene, had submitted several Imperial War Museum photos with his original manuscript, but permission to use them in this publication was not received until February. We are indebted to the IWM for permission to use the following photos.

Upper - I.W.M. No. A24529. A "Wildcat V" of the Royal Navy, S/n JV579, in D-day markings.

Lower left - I.W.M. No. M45093, "Martlet V", S/n JV337, June 1943

Lower right - I.W.M. No. A14209, "Martlet IV's"

his engine.

In a two-plane tow, the second towline was not deployed from the tug until the first airplane was in tow. This prevented any tow-line fouling.

With this system, of course, when a plane released from tow, his pendant and hook were left on the towline. If he wanted to make two hook-ons he had a hook and pendant on the other wing also. He shifted to the other side for the second engagement. In the meanwhile the tow-plane had reeled in the line and retrieved the pendant, and re-deployed the line for the next engagement.

In most any military operation two hook-ons would be needed; one, the initial hook-on at the start of the mission, - the second, in the battle area after the fighter had carried out his mission and wanted to be towed home.

In practice, it was found that towed flight is an easy and relaxed operation. It is considerably easier than flying wing position in a formation. In the long B-17 tow, the pilots of the F4Fs spent the time reading 'paper-backs'."

Lee Pearson submits the following information (note particularly the fine tribute to Capt. Barnaby):

"The source of our information was Admiral Fahrney's manuscript History of Guided Missiles. The actual genesis of interest in gliders as military vehicles is not included in Admiral Fahrney's account. Other students have related U. S. interest in gliders to the successful use of gliders by the Germans in the invasion of Crete. Admiral Fahrney in his introductory material said that in December 1940 he proposed that gliders be used as guided missiles and that they be towed to the proximity of the target, and that the Bureau of Aeronautics by 19 April 1941 directed the Naval Aircraft Factory to determine the feasibility of this approach. Admiral Fahrney then says:

'As a result of the glider testing at the NAF it soon became apparent that a large, powerful multi-engined plane could tow one or more fighter aircraft. Late in 1941 actual flight tests were carried out in which fighter planes

hooked on to a tow cable streamed from the aerial tug. The fighter plane's pilot could then cut the engine of his plane and ride for hours until he wished to start his engine, disengage from the tow line and return to his base.

The towing plane, acting as a "tug" was a TBF. An F4F fighter aircraft was the towed aircraft. A 300 foot length of 3/16 inch galvanized plow steel wire with a steel stopper attached on one end, was used as a tow line. To this was attached on one end, was used as a tow line. To this was attached 50 feet of 5/8 inch manila line, which dampened the whipping of the towline. The towed airplane was equipped with a quick release fitting which was secured to the lower forward right wing root fitting.

The "tug" maintained a straight course at 100 knots with the fighter plane engaging the line by flying close to the towline, then dipping its right wing under the tow line, allowing the towline to lay loosely across the top of the right wing. By application of left rudder on the towed airplane, the plane skidded to the left which caused the tow line to fall into the hook. The fighter plane then maneuvered slowly to the left to permit the towline to pay through the hook to the stopper. After the stopper was snug against the hook the fighter climbed to a position on a line 45° to the left and above the TBF plane. When all the slack was taken out of the towline, the fighter pilot eased his throttle to allow the plane to be taken into tow. This operation approximated formation flying. When the effect of the tow was felt in the towed airplane, the throttle was eased further. When successful, the fighter plane cut its ignition and shifted its propeller pitch to full high pitch. The towed airplane then maneuvered to drift back to a position behind the tug.

As a result of these successful operations, the

(Continued on Page 68)

