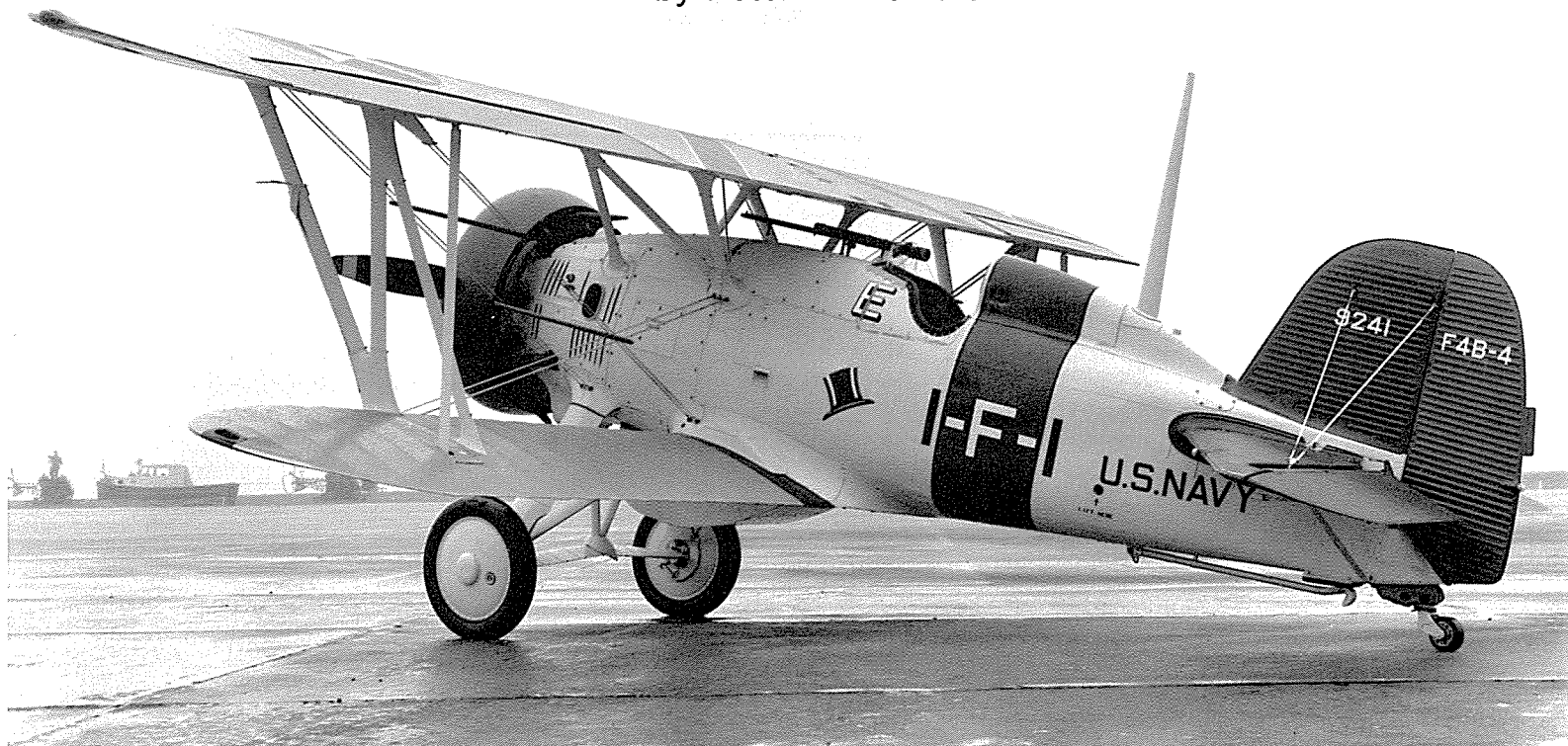


RECOLLECTIONS OF A BOEING F4B-4

by Peter M. Bowers



This is a follow-on to Jess Barrow's fine story about the last Boeing F4B-4 in the Fall 1979 Journal. This plane, BuNo 9241, had been donated to the Smithsonian Institution and was turned over to the U.S. Naval Air Materiel Center (the old Naval Aircraft Factory) in Philadelphia for restoration as part of the 50th Anniversary of Naval Aviation celebration to be held in 1961. Pete Bowers, charter member of AAHS and a frequent contributor to the Journal, was personally involved in the restoration project and provides some insider's firsthand details that Jess did not cover.

When the Navy's F4B-4 restoration project got under way early in 1961, the author was an employee of the Boeing Company. Since he was also an avid aviation history buff, especially relative to Boeing airplanes, he had managed to become an official consultant to the Boeing Historical unit and also helped the Public Relations Department in

matters of older Boeing aircraft. So, when the Navy advised Boeing of the restoration project and requested its assistance, he was asked to participate in the program. From here on, the story is in the first person.

ONE OF THE IMMEDIATE NEEDS was for some major missing parts, notably the crankcase cover/oil cooler assembly, hereafter called cowlings, a unique Boeing part. At the time, both the Navy and Boeing thought the solid-disc 30 x 5 wheels were also Boeing assemblies.

After looking at the drawings for the cowlings, Boeing had second thoughts about the cost and labor involved in tooling up to make one. I suggested an easy solution to that problem—borrow the one on Ed Maloney's P-12E (Army equivalent of the F4B-4) in his "Planes of Fame" Museum in Southern California, and make a fiberglass copy. The

The finished restoration in the markings of Navy Squadron VF-1B, the "High Hats."
(Photo by Warren D. Shipp)

assembly wouldn't have to be airworthy or even operable—the plane was not going to be flown.

No sooner said than done. After Ed agreed, the Boeing Field Service Representative in Los Angeles got the cowlings from Ed and shipped it to Seattle. Casts were made of the outer shell and the inner rotating assembly and fiberglass layups were made from those. The casts and layups were so precise that the number 6, painted thickly on the cowlings at the museum, showed up slightly raised on the finished fiberglass copies!

Further, Boeing made the assemblies operable, with the rollers being turned from micarta rather than aluminum.

Boeing didn't make just one of those assemblies for the Navy; it made at least seven. Once started, it was easy to keep going after the first couple were pulled

Pete Bowers of Boeing and Lt. Cdr. Frank Peterson, Restoration Project Officer, check Boeing's fiberglass copy of the F4B-4 nose cowl. Note the Pratt & Whitney logo between the two lower cylinders. (U.S. Navy Photo)

Bowers and Peterson check drawings in this Navy Public Relations photo, taken April 14, 1961. The engine has not yet been installed in the plane and much painting still has to be done.

F4B-4 BuNo 9241 served initially with Marine Squadron VF-10M at San Diego. Note the very light appearance of the gray. VF-10M sent its F4B-4s to VF-9M and became bombing squadron VB-4M using F4B-3s.

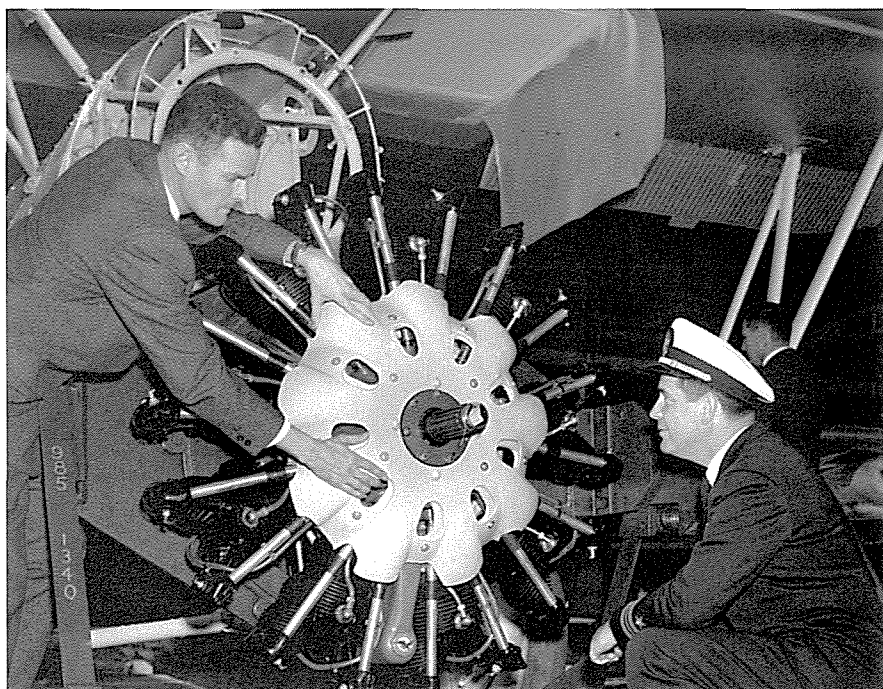
(National Archives 80-CF-423-8)

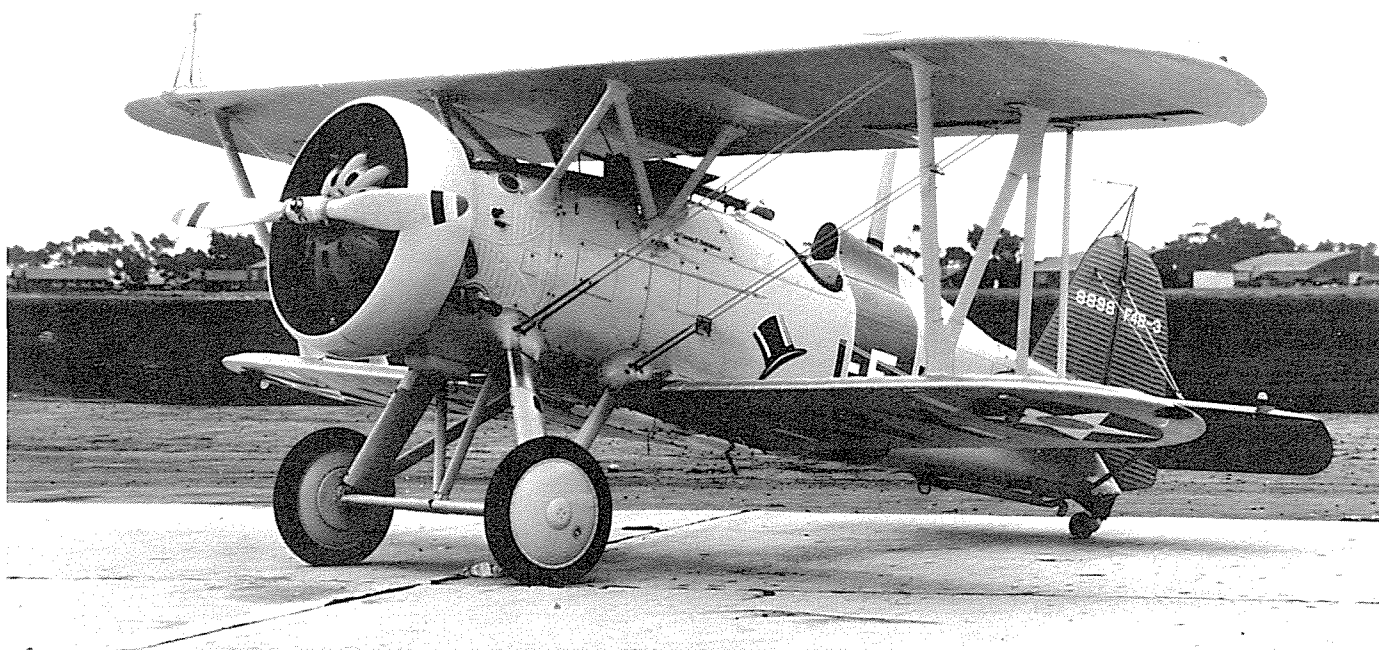
off for practice. The Navy got two and Boeing kept one, which is now on display in the History Room. Boeing gave one to me, since I was then drawing up plans for a lightened and structurally simplified P-26A replica that I wanted to build. The cowls on the F4B-4/P-12E and the P-26 were identical.

The other three were interesting extras. A year or so before Boeing's involvement in the F4B-4 project, a group of enthusiasts at North American Aviation decided to build a full-scale replica of the tube-fuselage Boeing P-12C biplane. Rather than make up their own construction drawings they bought a full microfilm set from Boeing for about \$450, this in 1960 money. Feeling generous while the cowlings were being made, Harl V. Brackin, Jr., then the Boeing historian and coordinator of the F4B-4 project, sent the would-be builders a telegram, telling them that the cowlings were being made and would they like to have one as a gift. Although this isn't the exact wording, the reply was essentially "Hell yes! We'll take three!" It turned out that they had acquired taper-shaft *Wasp* engines, disc wheels, and other materials for building *three* P-12 replicas!

Nothing came of that project, however; it seems the guys all got laid off and the parts eventually sold. I came across all three cowlings a few years later when I got a ride in Moxon's Ford trimotor at an annual Merced, California antique airplane fly-in. They were installed on the Ford and were fully functional. I regret that I did not take a closeup photo at the time.

The problem of the high-pressure 30 x 5 wheels was easily solved. They weren't Boeing wheels at all but were





built by the Navy. They were standard items not only for the F4B-4 but for Grumman FFs and F2Fs, Curtiss F11C-2/BFC-2, and Naval Aircraft Factory N3Ns, which were the last models to use them. Of course, the Navy had none in stock in 1961. A couple of phone calls to organizations that advertised N3N spares in *Trade-A-Plane News* quickly located two pairs. Most crop-dusting outfits that used N3Ns preferred later wheels from war-surplus Vultee BT-13s, so removed the old 30 x 5s. Things like that don't just get scrapped, just shoved off in a corner. Remember that, you who are looking for 30 x 5 wheels for restored antiques.

A major project that Harl and I undertook at Boeing was preparation of a master marking drawing from which the correct colors and markings of any Navy or Marine Corps F4B-3 or F4B-4 could be duplicated for the years that those models were in first-line service. This covered basic aircraft coloring, national marking sizes and locations, unit colors and markings, and the correct proportions, sizes, and locations of unit and service lettering, even the Bureau Number and model number

placement (don't try to get one from Boeing; the vellum has long since disappeared).

We goofed slightly in trying to name the shade of gray used on the fuselage and other metal parts from the data available. We couldn't come up with the proper name, so from memory called it "Pearl Gray" at first, later changed to "Light Gray." Actually, the original color was mostly an off-white, but more of that later.

As the project got down to the wire, the Navy hinted to Boeing that it would be nice if some old-timer who was familiar with the airplane could be sent to Philadelphia to help out with the final assembly and sort of add a little manufacturer's authenticity to it all. It turned out that Lysle Pierce, the Project Engineer on the F4B-4, was still working for Boeing. However, all he remembered about it was that it was the last biplane that he had anything to do with, and didn't remember any details of 28 years before. It was the same with some other old-timers who were contacted.

So, who was sent to Philadelphia for two weeks? Bowers, the hobbyist, who

was only 15 years old when the last F4B-4 was delivered but who had dug deeply into the details and history of that model and was the only Boeing employee who could in any way be considered "current" on the F4B-4. (This status stuck; I was called in again later when Boeing leased Paul Mantz' Boeing 100 and had it painted as an F4B-1 for Boeing's exhibit at a Navy League convention and I helped Lew Wallick and Bob Mucklestone with their 1977 restoration of another Boeing 100 as an Army P-12.)

I got there a day early and went out to the facility in the afternoon. There was no one in the front office that was connected to the project that I could report to, so I wandered out into the shop to look at the airplane. I found the wings but the fuselage was nowhere in sight. A few inquiries led me to the paint shop and a horrifying sight! The fuselage was being painted Pearl Gray, as called for on our drawing, but the official Light Gray of 1961 was not an off-white—it was dark—*very dark*—almost a Battleship Gray.

I screamed like an eagle and got the painters to stop. After identifying

The VF-1B plane that actually carried the 1-F-1 marking was a Boeing F4B-3, not a -4. Note slight difference in size and placement of the High Hat insignia. Pilot's rank and name, Lt. Cdr. F. Sherman, is lettered on the fuselage ahead of the cockpit. (U.S. Navy Photo)

When VF-9M received its F4B-4s, they had the light gray, almost off-white, fuselage. This is BuNo 9016, carrying the fuselage number 15 and all-white tail surfaces. (Photo by Jack Binder)

Later, VF-9M repainted its F4B-4s with a darker shade of gray. Here is No. 15 again, with red tail, cowling, and wheel discs. Note that No. 25 has a white tail; others in the unorthodox 24-plane squadron had blue tails. (Photo by Jack Binder)

The restored F4B-4 after repainting as No. 21 of Marine Squadron VF-9M, on display in the Naval Aviation Museum in Pensacola. Fuselage number slightly undersize and fuselage painted a darker gray. (Photo by Robert F. Pauley)

myself and showing them some F4B-4 photos I had with me, I convinced them that the color was indeed wrong and that the fuselage, struts, and other parts would have to be repainted in order to be authentic. They agreed to make up some paint samples and bring them to the project office the next morning.

After lengthy conversation and bringing in a few old-timers who agreed that the F4B-4s were essentially white, we selected the final shade and the paint shop got back to work. I won that battle, but I lost another.

The squadron that Officialdom picked for the F4B-4 to represent was VF-1B (B meaning that it was attached to the Battle Fleet, not that its planes doubled as dive-bombers, which they actually did). This was the famous "High Hat" outfit, with the distinctive high hat insignia and all-red tail surfaces. The services seem to have an obsession with commemorating "Command" in historical commemorations, and in this case chose the Squadron Commander's airplane number, 1-F-1.

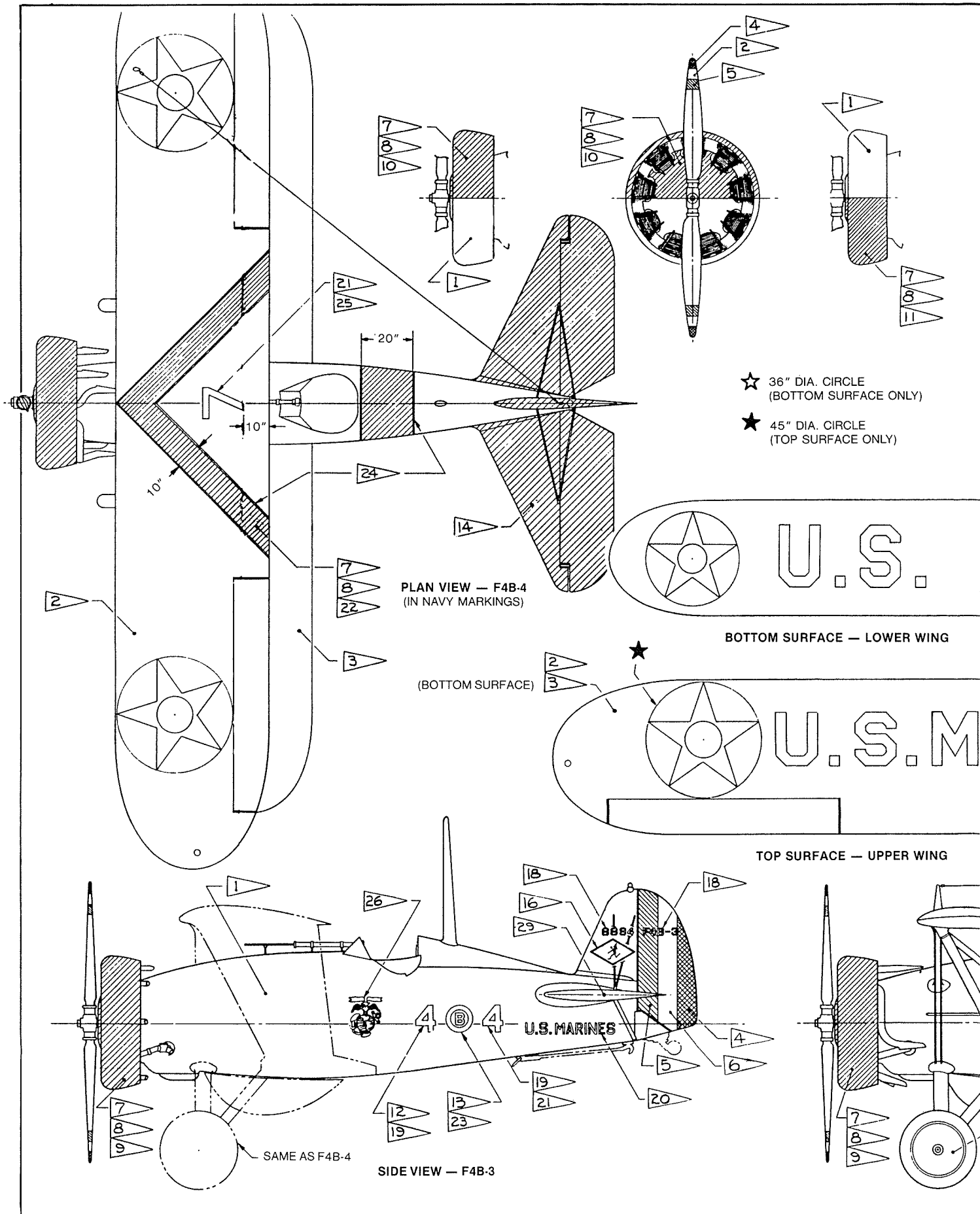
This put a lot more red on the bird—red engine and crankcase cowling, wing chevron, and fuselage Section Leader band. I tried to hold out for 1-F-7, leader of the third section in the squadron, which would have replaced the additional red items with blue and even looked more patriotic—Red, White, and Blue! They held their ground, however, even after I pointed out that when VF-1B was flying F4B-4s (and briefly) it also had F4B-3s, and the *-F-1 marking



was on an F4B-3, not a -4. As far as Bill Larkins, myself, and others can determine, no VF-1B F4B-4 except the restoration was ever marked 1-F-1. VF-1B kept its F4B-3s after giving up its F4B-4s and for a while operated a mix of F4B-3s and Curtiss F11C-2s before going all F11C-2 (later redesignated BFC-2).

Later, the restoration would be re-

painted as a Marine Corps plane, No. 21 of VF-9M, a unit notable for unorthodox markings as well as unorthodox flying. After flying its F4B-4s for a while in the standard off-white, VF-9M went to a notably darker gray for the fuselages, but still not as dark as that so-called "Pearl Gray" that was initially applied to 9241 in Philadelphia. VF-9M got its first F4B-4s straight from the



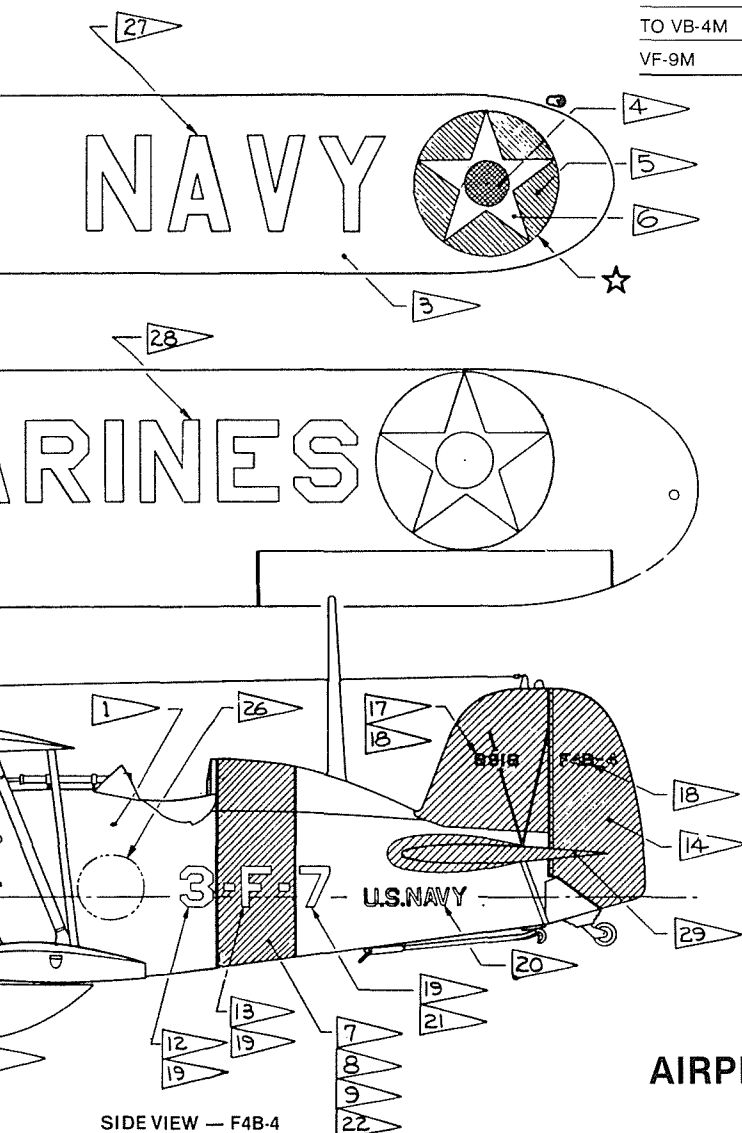
- 1 METAL AREA PAINTED LIGHT GRAY
- 2 AREA PAINTED CHROME YELLOW
- 3 FABRIC AREA PAINTED SILVER
- 4 INSIGNIA RED
- 5 INSIGNIA BLUE
- 6 INSIGNIA WHITE

- 7
- 8
- 9
- 10
- 11

Section No. (3 A/C Each)	Color	No. One Airplane	No. Two Airplane	No. Three Airplane
1	Royal Red	1	2	3
2	White	4	5	6
3	True Blue	7	8	9
4	Black	10	11	12
5	Willow Green	13	14	15
6	Lemon Yellow	16	17	18

SQUADRON, SERVICE AND MARKINGS

Squadron	No.	Letter	Dates	Tail Color	Carrier or Sta.	Squadron Insignia
F4B-3						
VF-1B	1	F	10/32-6/33	Royal Red	Saratoga	High Hat
VB-4M	4	B	11/33-2/35	Striped	USMC San Diego	Devil in Diamond
F4B-4						
VB-5	5	B	11/34-6/35	Willow Green	Ranger	Diving Winged Horse
VB-5	5	B	11/35-6/37	Willow Green	Lexington	Diving Winged Horse
TO VB-2	2	B	7/37-11/37	Lemon Yellow	Lexington	Diving Winged Horse
VF-2	2	F	11/34-6/35	Lemon Yellow	Lexington	CPO Insignia
VF-6	6	F	10/32-6/36	White	Saratoga	Felix the Cat
VF-3	3	F	10/32-6/34	Willow Green	Langley	Diving Eagle
VF-3	3	F	11/34-6/35	Willow Green	Ranger	In Star
VF-1	1	F	4/35-6/36	Royal Red	Langley	(Unknown)
TO VF-8	8	F	6/37	True Blue	Enterprise	(Unknown)
TO VF-6	6	F	7/37-11/37	True Blue	Enterprise	Comet
VF-10M	10	F	1932	Striped	USMC San Diego	Devil in Diamond
TO VB-4M	4	B	1933	Striped	USMC San Diego	Devil in Diamond
VF-9M	9	F	1932-1938	Striped	USMC Quantico	None



- 15 VF-9M adopted special non-standard markings in 1934—no tail stripes, squadron no. or letter.
- 16 Marine Corps squadron insignia on vertical fin.
- 17 Navy Serial Nos. F4B-3 — 8891-8911.
F4B-4 — 8912-8920, 9009-9053, 9226-9263, 9719.
- 18 3" high, 4x3 block figures, color black except white when applied to red, blue or black surface.
- 19 10" high, 4x3 block figure, color black except white when applied to red, blue or black surface.
- 20 5" high, 3x4 block figures, color black.
- 21 Number and position in section.
- 22 Used in Navy only.
- 23 Used in Marines only.
- 24 1/4" wide black line to divide colored areas from light gray and chrome yellow.
- 25 16" high, 4x3 block figure, color black.
- 26 Squadron insignia on Navy planes—USMC emblem on Marine planes.
- * 27 24" high, 3x2 block (NAVY), "U.S. MARINES" was in condensed lettering, color black.
- * 28 21" high block letters, color black, Marines only—not used when section chevrons applied.
- 29 Top surface chrome yellow—bottom surface light gray when solid colors not used.
- * Deleted May 1932 except on some specially marked airplanes of VF-9M, 1932-1938.

REFERENCE BOEING DRAWINGS
15-2198, F4B-3 GENERAL ARRANGEMENT
15-2474, F4B-4 GENERAL ARRANGEMENT

AIRPLANE MARKINGS & COLOR DIAGRAM BOEING F4B-3 & F4B-4



The finished F4B-4 restoration on April 20, 1961, with Vice Admiral Pirrie, who used to fly F4B-4s in the early 1930s. (U.S. Navy Photo)

F4B-4 BuNo 9241 with VF-10M at San Diego in April 1933. It is second from the right in the front row. The second row is made up of Vought SU-2s, Curtiss OC-2s, and a Ford RR-2. Note that one SU-2 and one OC-2 are both marked 8-0-6! (Marine Corps 528119)



factory but 9241 was one of a batch transferred in from VF-10M, based in San Diego.

While at Philadelphia I found some other very interesting things about the restoration. The old-time craftsmen who were still working in the shop when the F4B-4 was turned over to them were tickled pink to get their hands on that kind of airplane again as a change of pace from the heavy all-metal types they were then working on. Old skills,

no longer used on latter-day iron birds, were enthusiastically revived.

There were many missing small parts, so the old-timers set out to make them, and they started to make them air-worthy. Take a part like the carburetor sump cover under the nose. On the original, this was stamped from sheet metal. Without the dies, the metal workers were bumping the curved ends out of soft aluminum and then welding up the box as a single unit. When the

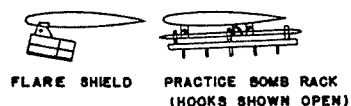
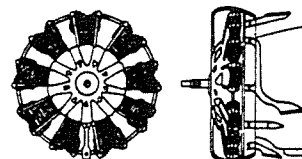
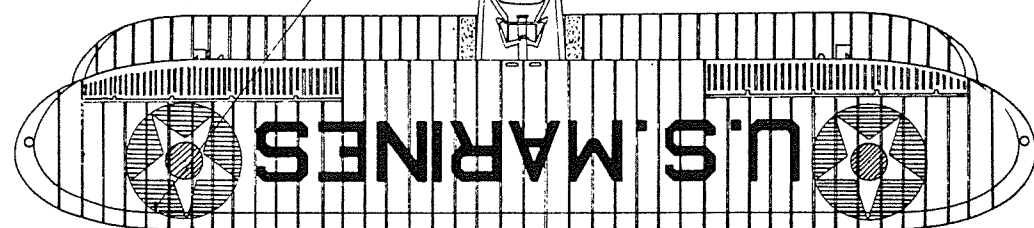
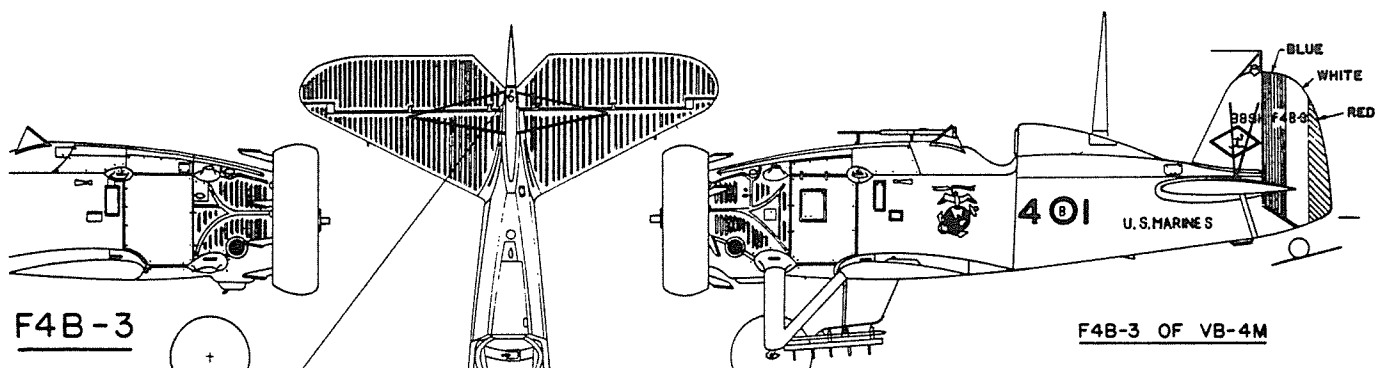
accounting department got wind of this kind of work it blew the whistle. Henceforth, such parts would be carved from wood! This was done for a lot of small parts and even missing engine intake and exhaust manifold sections. Dents and flattened corrugations were filled in or built up with auto body putty instead of being hammered out.

One part that was missing from the engine was the famous Pratt & Whitney logo, an enameled metal plate about the size of a silver dollar. Later engines used a different size. Since Pratt & Whitney couldn't find one in stock, it put a notice in the company newspaper, telling the employees of the F4B-4 restoration project and the need for a particular sized logo. The old-timers came through in fine style with several of the right size and in mint condition.

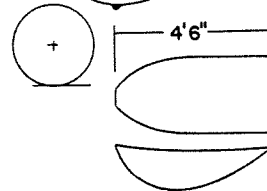
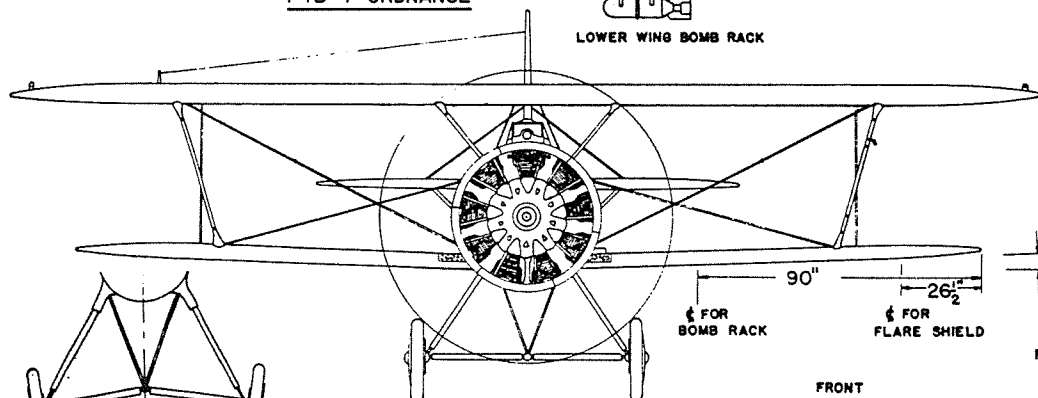
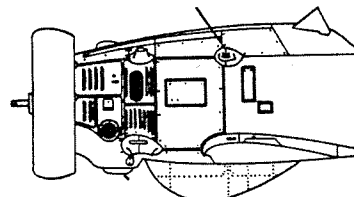
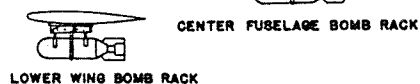
A similar situation prevailed at the tire manufacturer's—Schenuit, I believe. They still had molds for the old 30 x 5 smooth tires, but they wanted a bit more for authenticity—their old trademark embossed on the casing as in the old days. The die was not available, so they did what Pratt & Whitney had done—put the story in the company paper. One quickly turned up—an executive had been using it as a paper-weight on his desk.

And so it went—short-cuts, scrounging, and just plain luck. As with so many historical projects, it seemed to be under-budgeted and under-scheduled, to where was a lot of panic to get everything done on time. As a result of it all, the Restoration Project Officer, Lt. Cdr. Frank Peterson, suffered a heart attack just after the finish and had a long stay in the Philadelphia Naval Hospital.

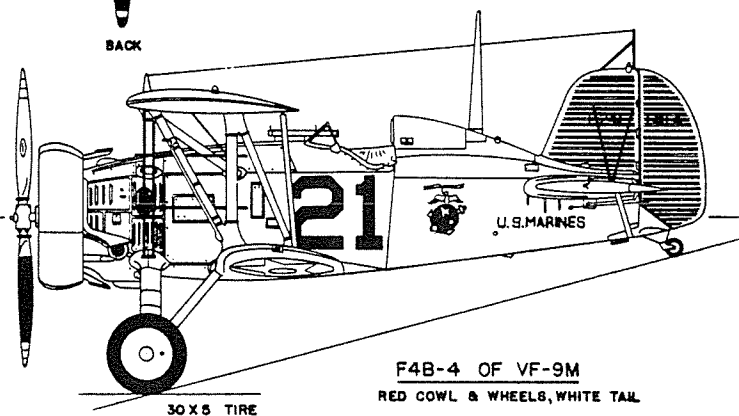
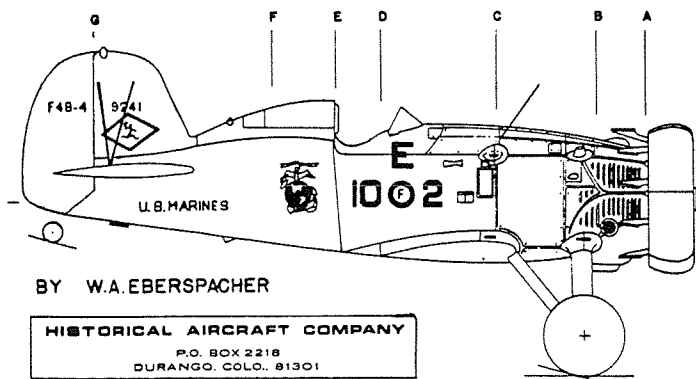
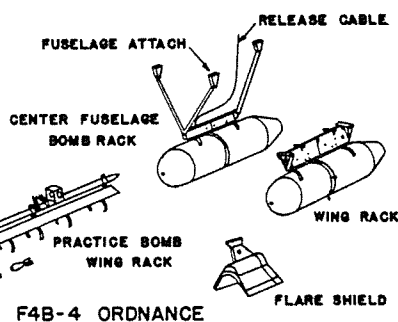
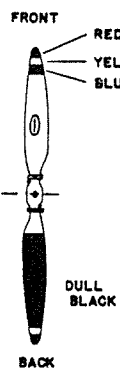
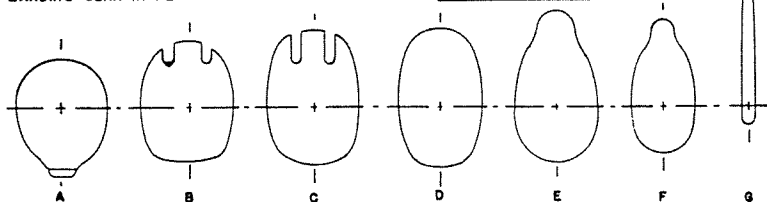
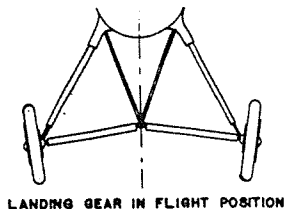
After a long sojourn at the Naval Aviation Museum in Pensacola the F4B-4, still in its slightly inaccurate VF-9M markings, is now on display in the National Air and Space Museum in Washington, D.C. □



F4B-4 ORDNANCE



**ORIGINAL PENCIL DRAWING BY
R.W. PETERSON**



HISTORICAL AIRCRAFT COMPANY
P.O. BOX 2218
DURANGO, COLO., 81301