



On 6 July 1928 the newly arrived Boeing Model 83 is lined up near the VF Squadron Office at North Island with two other Boeing veterans, F2B-1 and F3B-1, awaiting inspection by RAdm J.M. Reeves. Though not yet officially sold, "NAVY" shows on the fuselage. (Photo-Navy/Nat'l Archives)

TEETHING TROUBLES WITH F4B-1

By JESS C. BARROW

The author is AAHS Editorial Consultant for the Boeing F4B series aircraft because of his large collection of material begun in 1935. The following article is composed mainly from that collection. That chart of service life of the F4B-1's was compiled from the airplane record cards now in the National Air & Space Museum, Smithsonian Institution. Other official papers and photographs were contributed by former Navy airmen and squadron members from personal files.

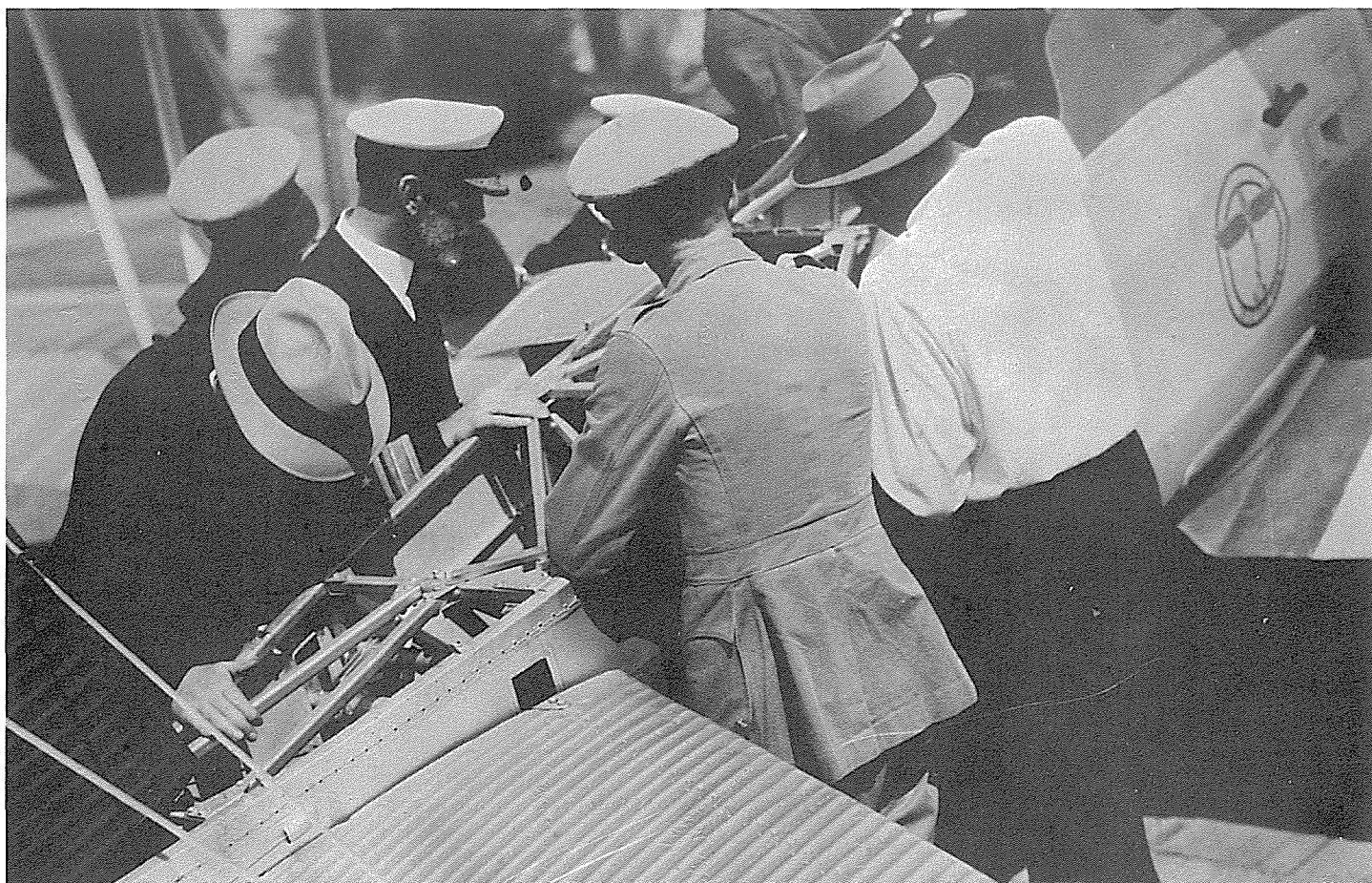
When the Navy signed a contract with the Boeing Airplane Company for 27 new Boeing F4B-1 fighters, no one could foresee that this series of airplanes, F4B-1 to F4B-4, would go down in history as one of the best loved types in the Navy between the two great wars. Neither did anyone foresee the problems that would be forthcoming with the first of the series, the F4B-1; throughout its service life there were constant changes and modifications to keep it operational.

The Boeing Company, gambling that the Navy would buy its new high performance fighter, built two at its own expense and delivered the two prototypes, designated models 83 and 89, for evaluation. Model 83 went to North Island Naval Air Station, San Diego, California on 28 June 1928 and model 89 was shipped by rail to Anacostia Naval Air Station, Washington, D.C. arriving there 2 August 1928.

After conducting a few brief test flights at North Island, the Navy was so impressed with the new model 83, now designated XF4B-1, that a trial board was ordered by Rear Admiral J.M. Reeves on 9 July 1928 for a complete service evaluation.¹

The trial board consisted of three prominent naval aviators of that time; Lieutenants D.W. Tomlinson, T.P. Jeter, and W.V. Davis, Jr.² During the next six weeks, these three men subjected the airplane to all possible naval operations, with the exception of trial dropping a 500 lb. bomb, proposed to be carried under the fuselage. Four other Navy pilots, one each from squadrons VF-1, VF-2, VF-3, and VB-1, were assigned to fly and submit detailed recommendations or criticisms. The final test, three carrier landings aboard the U.S.S. LANGLEY, were made by Lt. Jeter and found to be satisfactory.

On 21 August 1928, the trial board submitted its report to the Commander of Aircraft Squadrons United States Fleet, outlining the procedure it used in testing the XF4B-1. The report also consisted of 36 recommendations and changes to be made by the Boeing Airplane Company before the airplane could be accepted by the Navy. In summation of the report signed by Tomlinson, Jeter, and Davis, paragraph five stated: "Subject to the above recommendations, the trial board is of the opinion that the XF4B-1 is a very desirable airplane for either carrier fighting or light bombing squadrons. No opportunity has been had to test this plane with a 500 lb. bomb, however, from general experience it is believed that the airplane is satisfactory for



Close inspection by Adm. "Chisel Whiskers" Reeves. ("Chisel Whiskers" was affectionate term used widely by the Admiral's friends.) He was so impressed with the new fighter that he immediately ordered the formation of a trial board to evaluate its performance. (Photo-Navy/Nat'l Archives)

A NEW FIGHTER JOINS THE FLEET

light bomb dropping except for the tendency of the engine to throw oil and render the bomb sight ineffective." Paragraph two had mentioned excessive oil escaping from the engine clam shells during steep dives thus rendering the gun sight ineffective during gunnery runs and stated; "*This difficulty must be corrected.*"

Meanwhile, at Anacostia, after assembly of model 89 and the installation of a new engine, tests got underway by the Navy on 9 August.

Tests were somewhat different on the model 89, being confined mostly to performance in various loaded conditions. Comparisons were obtained in maximum climbs, high-speed runs, service ceilings, etc., with the XF3B-1, XF7C-1, FB-5, and F6C-4. The XF4B-1 was superior in all respects. Several fuel mixtures were tried, along with various propeller settings. Engine problems caused some delay and a second engine was installed before tests could be completed. Repairs were made to the gasoline tank, fuel lines, and a change made in the landing gear. These repairs were only a forerunner of things to come.

On 15 October 1928 the Flight Test Section at Anacostia submitted its report on the model 89 to the Bureau of Aeronautics. It included 38 recommended changes, but stated that the XF4B-1 was superior to all other aircraft of its type. It was signed by Lieutenants S.W. Callaway, W.G. Tomlinson, and H.F. MacComsey. Signing for the Bureau of Aeronautics was Mr. E.W. Rounds, who concurred with the findings of the report.

Contract 10258 was awarded the Boeing Airplane Company on 28 November 1928 for 27 Production F4B-1 airplanes, stating that Boeing was to include all of the recommendations and changes proposed by the Trial Board plus, reworking the two XF4B-1 prototypes (Boeing models 83 and 89) to production standard.

Bombing Squadron One (VB-1B) stationed aboard the U.S.S. LEXINGTON, received their first two Production F4B-1's at North Island on 8 August 1929, followed by seven more on 13 August. Flying any new airplane was always a happy occasion — like a child with a new toy and familiarization flights began almost immediately for all of the squadron pilots.

From the first, operational problems began to appear. Within a few days of flying, several pilots reported that the new planes were hard to steer on the ground, with a tendency to ground loop; in some instances, ground loops were experienced resulting in wing tip damage to the lower wing. The squadron commander thought this should be overcome as the pilots became familiar with the narrow tread of the landing gear and the short stubby fuselage. However, upon examination by the Engineering Officer, it was found that the tailskid oleo tubes on several airplanes were bent rearward and in some cases a slight deforming of the fuselage stern post had occurred. The sternpost failures caused deformation of the swivel tube, thus limiting the pilot's ability to maintain directional control on the ground and especially during landing rollouts.

Within a short time most of the F4B's were laid up for



Fighting Squadron Five's Number 1 and 2 airplanes taxi out for takeoff (past familiar tail assembly of Sikorsky S-38, showing at rear, possibly the Navy's XRS-2). At this time the arrestor hooks had not been installed, but the Boeing designed tail wheels were in use. Engine cylinder fairings had long since been removed as cooler engine temperatures could be maintained without these. (Photo - Fred C. Dickey, Jr.)

similar failures. A few had the tail skid break off completely causing extensive damage to the bottom of the rudder and the hinges on both the rudder and vertical fin.

The Boeing Company was notified immediately of the failures and were asked to modify the F4B's not yet delivered on the contract, but by the time this could be done, most were delivered or were in transit. With the exception of two that crashed while being flown to North Island, the balance were delivered in the month of August.

In the meantime, VB-1B's Engineering Officer, working with the Assembly and Repair shop at North Island, came up with temporary modifications to keep the planes in service.³ A new, heavier-gage swivel tube and oleo tube were made, and new spoon-type shoes were attached to the bottom of the tail skid, making it much easier for the pilot to steer. This in turn, helped to reduce the high side loads imposed on the tubes, thought to be the main contributing factor in the failures.

Fighting Squadron Two (VF-2B), based aboard the LANGLEY, was having similar problems with their seven new F4B-1's. The following excerpts from a confidential letter to the Navy Bureau of Aeronautics on 28 August 1929 by Captain A.B. Cook, Commanding Officer of the LANGLEY, best describes the squadron's problem.

"On 26 August, 1929 twenty-one landings were made by VF Squadron Two-B pilots in seven F4B planes. Of the twenty-one landings, five resulted in damage to the planes. F4B No. 8143 in its first landing made a tail high engagement, bounced about four feet, and landed on the left wheel breaking the left forward landing gear strut. A new landing gear was installed and the plane made three more landings later in the day. F4B No. 8148, in its first landing, engaged number one wire near the starboard side so that the right wheel passed outboard of the pie on number two wire, collided with the pie which does not yield inboard, and tore off the right wheel. The left side of the landing gear then collapsed. The right lower wing fabric was torn and several ribs were broken. F4B No. 8145 and 8151 each made five successful landings. F4B No. 8150 made two landings and on the second

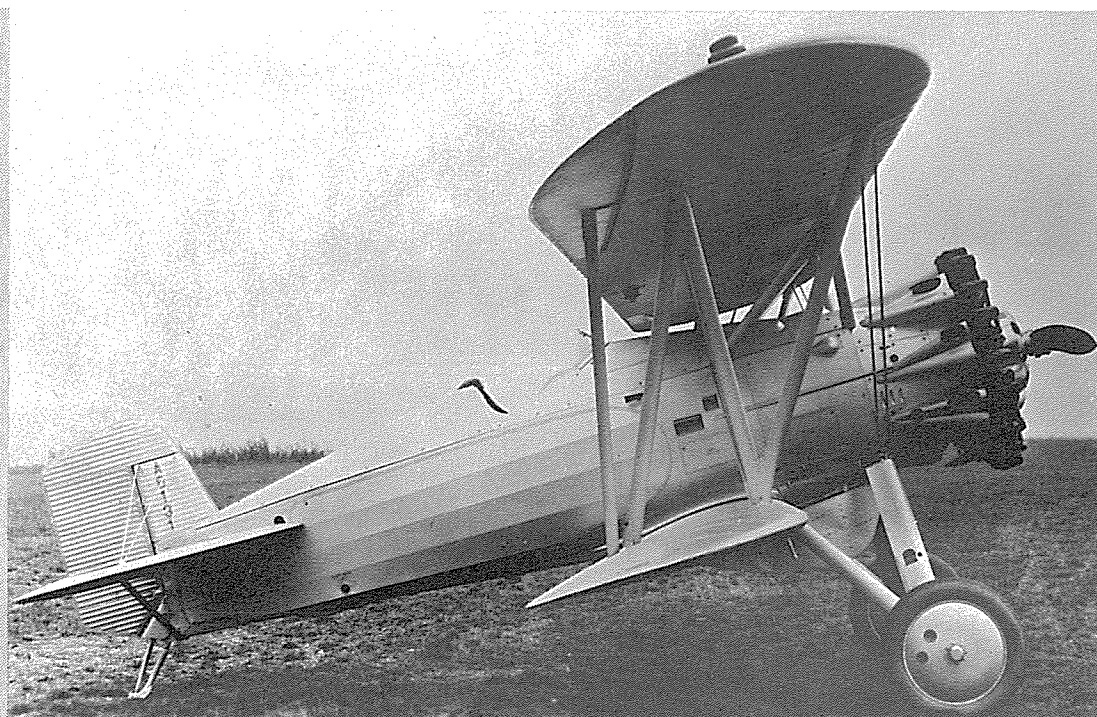
landing damaged the tail skid and stern post. F4B No. 8149 and 8144 each made two landings, the second landing in each case resulting in damage to tail skid and stern post. F4B No. 8143 with a new landing gear made three more landings, the third one resulting in damage to the stern post.

All cases of damage to tail skid and stern post were caused in the same manner, as follows first, the 1/8 inch locking bolt in the tail skid to keep it from swivelling sheared at both ends; then, the tail skid being free to swivel from left to right, allowed the control horns for steering the tail skid to swing against the sides of the stern post, thus buckling the flanges of the post. The tail skids then failed either by bending or parting of the spindle inside the spring of the oleo unit or by partial fracture of the tail skid tube.

It is recommended that the strength of the tail skid and oleo assembly be greatly increased; that a positive stop be incorporated on each side of the post flanges; that the landing gear be considerably strengthened; that a spoon type of tail skid shoe be mounted for carrier landings.

The last two recommendations are made for these reasons. It appeared very definitely in both cases of damage to the landing gear that the F4B type was weaker than other fighter types which have been landed aboard. The first landing by No. 8143 was a so-called 'dive into the gear' but not at all pronounced and no more severe than any number of similar landings with other fighter types which have resulted in no damage. The landing of No. 8148 was bound to result in loss of the right wheel because of collision with an unyielding type of pie but, complete collapse of the landing gear subsequent to the loss of the wheel was wholly unexpected and cannot be explained on any other grounds than general weakness. The present tail skid shoe, while rounded fore and aft, is straight sided and bites into the deck. This is a particularly undesirable condition where there is any side motion of the tail especially at the end of a run. A well rounded spoon shaped shoe of

A-8131 was the second airplane in the Boeing F4B-1 contract but it was the last to be delivered to the Navy. It had crashed on the way to North Island in its first delivery flight, and was returned to the factory for rebuilding, finally arrived with the Navy on 9 Jan. 1930. This view shows its original configuration, with tail skid and engine cylinder fairings. (Photo - Author's collection)



ample size is the most suitable type for carrier operations.”

(signed) A.B. Cook

A modification for the tailskid problem was jointly solved by the Navy and Boeing with the installation of new swivel tubes of heavier gage metal and installation of a new type tailskid shoe with a casehardened 2½” diameter steel wheel rotating in a bronze bushing. In addition, a reinforcing beam was added to the tail post to further strengthen this area.

Before this modification was completed on all aircraft, a new and more serious problem began to show itself. Two airplanes from VF-1B were grounded because of ruptured gasoline tanks and within a week five more were grounded for the same reason. VF-2B reported the loss of one to a fire because of a ruptured tank. Immediately, all were grounded for installation of new tanks. The new tanks were made of heavier gage metal and incorporated revised internal baffling to help distribute loads imposed during accelerated squadron maneuvers.

While waiting for the new fuel tanks a thorough inspection was made of the oil tanks. Several were found to have small cracks in the area where the filler spout joins the tank. It was determined they could be safely repaired at this time and changed at a later date. Also, while the airplanes were laid up, it was decided to modify the lower wing on each side of the fuselage by installing a piece of plywood, six-inches wide and parallel to and outboard of the wingwalk because of damage to the fabric in this area by empty shells ejected during gunnery practice. The Assembly and Repair Shop was put on a 24-hour a day work schedule and all repairs and modifications were made to the F4B-1's in record time.

As the airplanes returned to the fleet, tailskid failures again plagued both squadrons. VB-1B found that the threads on the oleo tube had stripped at the upper end where it fastened to the piston rod on nine airplanes. Tubes of a new design were hastily made and installed. It was also recommended by Boeing that the oleo tube be filled with a higher viscosity oil to help prevent “bottoming,” thought to be a contributing factor to the failures.

During this repair of nine airplanes, four were found to have lower main longeron failures at Station Ten. Two of them had both left- and right-longeron failures, with bending of the diagonal braces in between. It was a very serious structural failure, and demanded an immediate modification. To keep operational all those airplanes which did not yet have bent longerons, a “Rube Goldberg” fix was hastily made. Wire straps were installed around lower Station Nine gussets and cross member, through the fabric and under Station Ten reinforcement plates. Turnbuckles on the straps were then tightened. This was calculated to take most of the landing strain imposed at Station Ten, transferring some to Station Nine. It was a temporary measure to prevent further failures until a permanent repair could be accomplished.

By now, Rear Admiral H.V. Butler, Commander of Aircraft Squadrons, Battle Fleet, was becoming apprehensive of the operational problems with the new fighters and showed grave concern about their further use in Naval operations. Time was important and further delay would greatly hinder the upcoming Fleet maneuvers, scheduled to commence in a few weeks. Further, the squadrons were getting behind in all phases of tactical exercises designed to prepare themselves for these maneuvers. Fourteen separate changes and modifications had been made because of operational failures within two months time. Up to this point the F4B-1's had spent most of their time in the repair shops and the Navy was beginning to take a dim view.

Boeing Airplane Company immediately responded by sending C.N. Monteith to North Island, instructed to do whatever necessary to resolve the many problems.⁴ The results of the visit can best be told by quoting several paragraphs from his lengthy report to Boeing Airplane Company.

“I found, much to my surprise, that the attitude toward the F4B' airplane was one of enthusiasm. They naturally were disappointed at having so many failures and, found it irritating to have their programs interfered with by the necessity for laying the planes up, even for minor repairs. LCdr. J.D. Barner and LCdr. J.H. Chapman both were emphatic in stating



A-8133 was the first of the production F-4B-1's to be delivered, and went to Anacostia on 29 June 1929, there to become the personal airplane of Asst. Secretary of the Navy David S. Ingalls for a short time. It went back to the factory later and returned again to Anacostia in early 1930 where it was used as a test and utility airplane. Berliner-Joyce XFJ-2 in background.

(Photo—W. T. Larkins)

that the F4B-1 is the best gunnery airplane and the best for maneuvering that they have ever had.

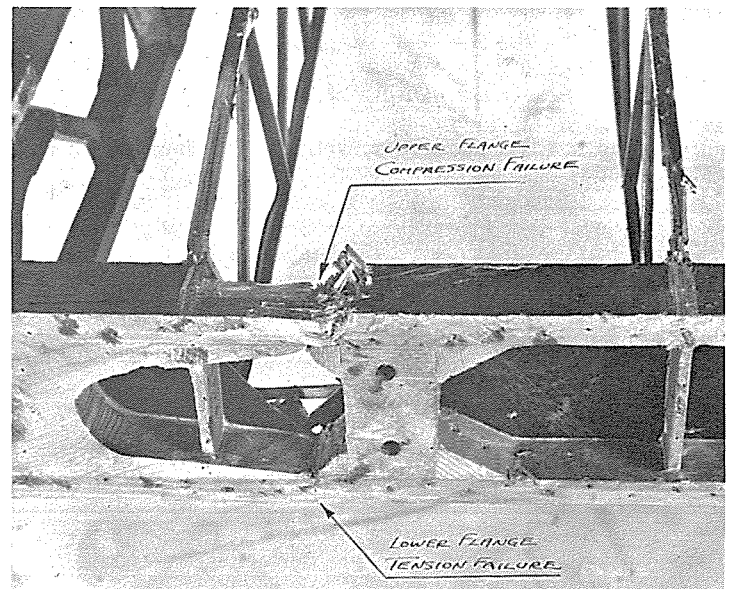
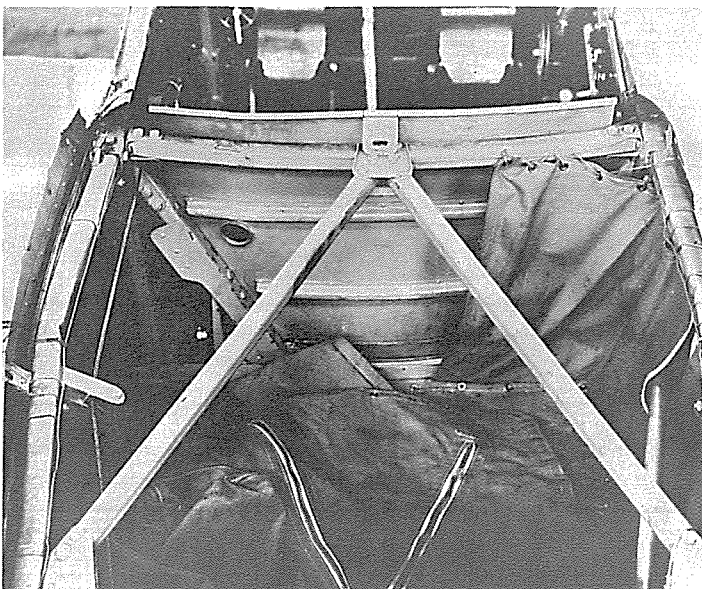
Regarding the longeron failures, we were too optimistic in peeling weight out of the fuselage. From examination of the failures it is apparent at once that with the square tubing, a wall-thickness of .035 is too thin. Instead of failing in bearing as is assumed in the calculations, it tends to fold under and start a tearing failure, particularly when the sides of the square tubing have been pulled together a bit under the action of tightening the nuts. It appears that we are going to be obliged to make our limiting wall thickness .049 or .058. Where they had actually broken out the longerons, the breaks generally were on one side of the body and it appeared that they

were caused primarily by side loads. They are splicing in some .049 tubing which we supplied them using a splice outside the longerons consisting of two channels, one outside the other with the edges riveted together to form a square tube. The splice is apparently being made in a satisfactory manner.

The reinforcing plates we supplied did not suit their conditions so they made up a modification which I think will be satisfactory. They are using the steel sections we sent them but, they are using a modified plate in channel form, catching all bolts at lower Station Ten except those in the bottom diagonal and, all bolts at lower Station Nine except the longeron bolts. The channel section will give additional lateral stiffness and the large area of the plate should

The structural failure of the longerons in the bay aft of the cockpit was due to use of very lightweight tubing and required many manhours to modify. Similarly, a weakness of the wing structure at

the junction of lower rear N-strut and aileron control-rod roller block required requent repair and, later, modification to "beef it up," which was done on all F4B-1 wings. (Author Collection)



adequately relieve the longerons and distribute the fore and aft loads to Station Nine and to the two tubes supporting the arresting gear rack.

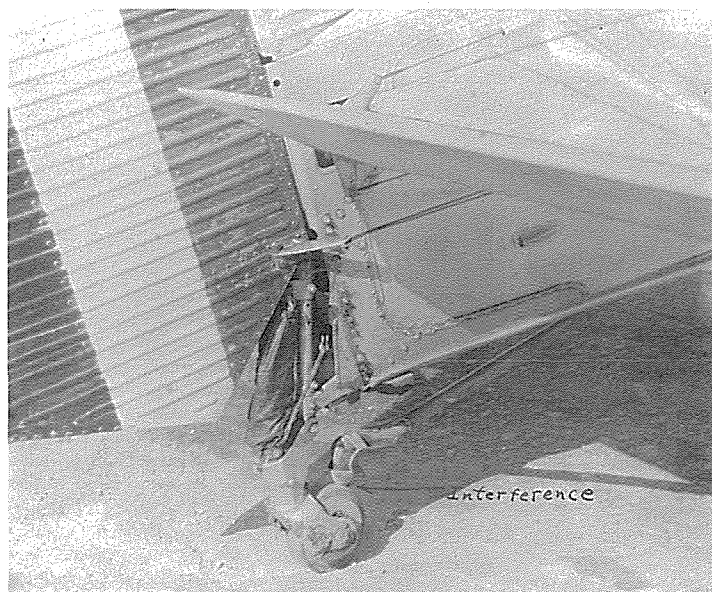
The use of the channels do not require so much disassembly of the fuselage and, as man power in the shops is one of the items in which the Air Station is somewhat shy, this is a big item in speeding up the work. Our man, Mr. Lechner, is doing an excellent job. He has a couple of helpers and I heard someone express an opinion that, in view of his familiarity with the work, he could accomplish the job with the equivalent of one-fourth the man hours that the station personnel would require. Everyone from the Admiral on down expressed themselves as being highly gratified with the cooperation extended by the Boeing Company and, leaving Mr. Lechner here until the job is finished will be worth far more to the company in goodwill than the cost of keeping him here.

On Tuesday morning (October 29th) Commander Pennoyer took me to see Admiral Butler and Captain Whiting. The admiral expressed his appreciation for the cooperation of Boeing in taking care of their troubles. I told him we were to blame for the longeron failures, in that we had gone too far in eliminating structural weight for lightness of the whole airplane. The admiral appears to be fully aware of the problems involved in producing rugged airplanes of weight sufficiently light to give satisfactory performance. It was suggested that I come down when the F4B's return aboard the LEXINGTON, prior to going on the winter cruise, and watch operations for a few days. The Admiral stated that he wished to afford us all the facilities for studying their problems of carrier operations."

C.N. Monteith

During Mr. Monteith's visit it was made clear that a tail wheel was absolutely assential for Naval operations and that they were to submit a design as soon as possible for test. Almost immediately, Boeing responded with a tail wheel design they had been working with. Parts and blueprints were sent to NAS Hampton Roads and installed on F4B-1, A-8129, for test. It was given project number HR-41.

Later installation of the tailhook brought an interference problem with the tailwheel as the airplane was pushed backwards on the deck. It was overcome by lengthening the swivel tube. (Photo -



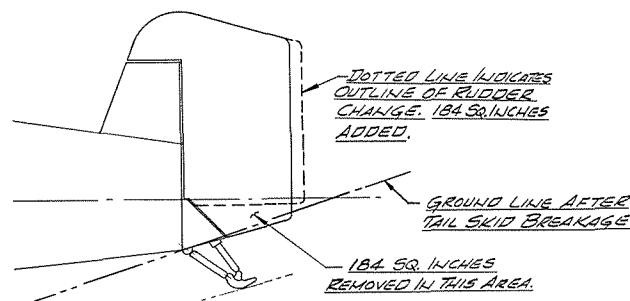
Barely had Navy testing got underway when, Boeing submitted an improved tailwheel. It too, was installed on A-8129 and project number HR-50 was assigned. The latter design proved to be somewhat better in ground handling characteristics and in addition weighed almost two pounds less. As a result of the tests, tailwheels were ordered for installation on all remaining F4B-1's.

Another serious problem that was never resolved with the F4B-1 was, its poor recovery from spins. This had been reported by several pilots during the first few weeks of its operations but, due to many other problems with the airplane at that time, the point was not stressed. As a result of spin test conducted by the Navy and N.A.C.A. a Technical Order was issued – prohibiting intentional spins – which was not rescinded until 20 February 1935. Later to aid in recovery where involuntary spins might be expected, such as single aircraft battle practice (S.A.B.P.), night operations and intersquadron tactics, larger fins and rudders of the F4B-4 type were installed in the latter part of 1933 on all F4B-1's and F4B-2's.

Many more problems were to plague the F4B-1's before their service life ended. Among the more significant ones were landing gear failures during carrier landings. There were many instances of vapor lock and fuel starvation. Top and bottom deformation of the horizontal stabilizer was thought to be caused by excessive loads imposed during dive pull-outs. Lower wingspar failures at the junction of the lower rear "N" strut fitting block and the aileron control-rod roller block were frequent.

Bending of the top main longerons in the bay just aft of the cockpit was a most serious structural failure that commanded attention. To eliminate the necessity for replacing the main longerons completely, two "U" channels were formed and bolted to each longeron in the area, carried forward to include the cockpit bay. In all, 25 new fittings had to be manufactured for each airplane, comprising attachments for fairings, turtledeck, cowling, throttle supports, stabilizer controls, electrical wiring and so on. This required many man hours of labor per airplane and kept the Assembly and Repair Shop busy for some time. Even so, this was a more practical "fix" than was advocated by the Bureau of Aeronautics under change 25, Rev. 1 which called for the complete replacement of all

One proposal put forth to prevent damage to the rudder from collapse of the tailskid was to remove the lower portion and transfer it to the trailing edge. The proposal was never carried out.



NOTE:- THIS IS A PROPOSAL ONLY.
EXACT SHAPE, CONSTRUCTION,
AND MATERIAL SPECS TO BE
DETERMINED BY TEST.

DRAWING RECONSTRUCTED BY JESS C. BARROW

four main longerons in the fuselage. More than 200 new oversize bolts and fittings would have been required per airplane, and, in a letter to the Bureau, Cdr. R.R. Paunack, C.O. at North Island, pointed this out, and Change 25, Rev. 1 was never carried out.

On 13 May 1931 complete modernization of all existing F4B-1's was ordered by the Navy to bring them up to the new F4B-2 standard which had incorporated most of the major design changes found necessary in the F4B-1's. Identified in Navy records as change No. 22, it specified the installation of new engines, ring cowls, a new fire wall, new engine controls, all new flight controls, complete new fuel and oil systems and tanks, exhaust heater and stacks and complete overhaul of airframe. Though it was a major undertaking it seemed to be justified, as the Navy could then consider them equivalent to new F4B-2's.

Of the original 27 production F4B-1's only 11 survived, to be relegated to Pensacola for fighter training. The last surviving F4B-1, A8138, was retired on 17 July 1937.

The Boeing F4B-1 to this day remains a classic type, and brings back many memories to the early Naval Aviators who flew them. In conclusion it must be said that the F4B-1, with all of its problems, served its purpose very well indeed; not only in pioneering a new design but by serving as a test bed which later resulted in the end product – the greatest and best loved biplane fighter in the Navy – the Boeing F4B-4.

NOTES:

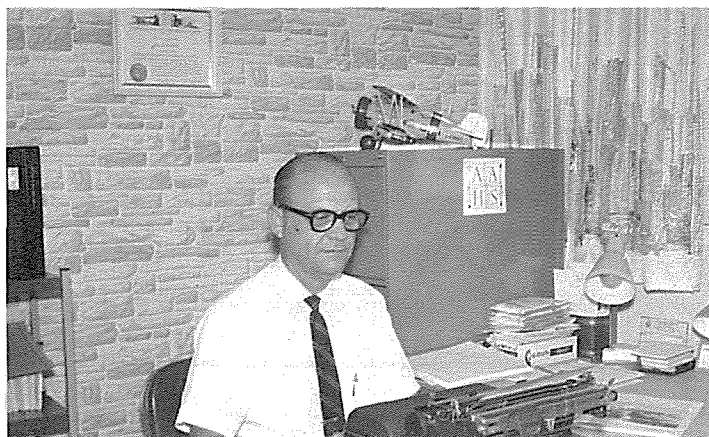
1. Adm. Reeves was anxious to obtain the new fighter to implement the new carriers LEXINGTON and SARATOGA, as a proponent of naval aviation, did not want to wait for the red tape to clear for a service test.
2. Tomlinson and Davis were both members of the Three Sea Hawks, the Navy's aerobatic team of the late 1920's, and both Tomlinson and Jeter commanded VF-2 at times. See Riley, William A. "The Chiefs of Fighting Two," JOURNAL of AAHS, Vol. 14, No. 3. Jeter, later a Commodore during WWII, died in 1970.
3. Engineering Officer, VF-2B, Lt. Bridgett.
4. C.N. Monteith had been Lt. Monteith, U.S.A.S. of the Air Service Engineering Division, McCook Field, from which he resigned to join the Boeing Airplane Company, later became Chief Engineer at Boeing.
5. The implementation of Change 22 took place over about fifteen months, performed in the A&R shops of NAS North Island. Each time an airplane came in for major overhaul it was brought up to Change 22 status, thus giving the Navy airplanes of the F2B standard.

SERIAL NUMBER	DEL. DATE	SQUAD. ASSIGNMENT*	HOURS FLOWN**	DATE STRICKEN	DISPOSITION AND REMARKS
A-8128	5-24-29	Anacostia	430	6-29-35	Worn out. Test and Utility hack. Former model 89.
A-81-29	6-24-29	Anacostia	391	10-31-33	Forced landing at sea 4-13-33.***
A-8130	8-13-29	VB-1B	1014	2-28-35	Former model 83. Worn out, Pensacola. ***
A-8131	1-09-30	VB-1B	1380	6-30-37	Worn out. Had crashed enroute to delivery, repaired at factory.
A-8132	8-08-29	VB-1B	40	10-31-29	Crashed at sea, destroyed 9-25029
A-8133	6-24-29	Anacostia	792	7-31-34	Worn out. Personal airplane of Asst. Secy/Navy Ingalls.
A-8134	8-19-29	VB-1B	424	12-28-31	Crashed 12-1-31, beyond repair.
A-8135	8-13-29	VB-1B	1203	7-31-36	Crashed, destroyed, Pensacola, 6-2-36
A-8136	8-08-29	VB-1B	1240	2-28-35	Worn out.
A-8137	8-13-29	VB-1B	1733	6-30-37	Worn out.
A-8138	8-13-29	VB-1B	1731	7-31-37	Worn out. Last one in service.
A-8139	8-13-29	VB-1B	490	1-30-32	Worn out.
A-8140	8-13-29	VB-1B	1144	2-28-35	Worn out.
A-8141	8-13-29	VF-2B	192	10-30-3	Crashed 8-19-30. Parts salvaged.
A-8142	8-13-29	VF-1B	1353	5-29-37	Worn out.
A-8143	8-30-29	VF-2B	408	2-29-32	Crashed at sea, destroyed, 2-1-32.
A-8144	8-20-29	VF-2B	34	9-30-29	Crashed, destroyed by fire, 9-11-29
A-8145	8-20-29	VF-2B	1552	6-30-37	Worn out, Pensacola.
A-8146	8-26-29	VF-1B	84	12-30-29	Crashed, destroyed, 11-15-29.
A-8147	8-26-29	VF-1B	439	1-30-32	Crashed at sea, destroyed, 11-18-31.
A-8148	8-20-29	VF-2B	642	12-30-32	Crashed at sea, destroyed, 11-8-32.***
A-8149	8-20-29	VF-2B	1766	6-30-37	Crashed, beyond repair, Pensacola, 6-3-37.
A-8150	8-20-29	VF-2B	255	6-30-31	Crashed at sea, destroyed, 4-28-31.
A-8151	8-20-29	VF-2B	157	10-30-30	Crashed, destroyed by fire at Chicago Air Races, 8-27-30.
A-8152	8-30-29	VB-1B	1494	2-01-37	Crashed beyond repair, Pensacola, 12-23-36.***
A-8153	8-26-29	VB-1B	322	4-30-32	Landed in water, 2-10-32, parts salvaged.
A-8154	8-26-29	VB-1B	365	1-31-31	Crashed at sea off Pt. Loma, 11-24-30.
A-8155	8-30-29	VB-1B	184	1-31-31	Collision, A-8154 and A-8155.
A-8156	not	VB-1B	3	10-31-29	Crashed at Eugene, Ore., 8-24-29, enroute to North Island. CAP J.J. Demshock killed.

* First assignment only.

** Fractional hours omitted.

*** See Schwartz, Max R. "News & Comment," this issue.



ABOUT THE AUTHOR

Jess C. Barrow became sold on aviation at an early age, worked at the old Stickney Airport in Toledo, selling tickets, washing airplanes, and other odd jobs to get flying lessons. During World War II he became Engineering Officer in Naval Intelligence, compiling flight and performance data on enemy aircraft, rejoined auto parts manufacturer after the war. An opportunity came to exercise his commercial ticket by becoming chief pilot for a carburetor manufacturer, a position he left in 1963 to join Ford Motor Co. as engineer. He had piled up 7,500 hours' commercial time, served five years on the staff of the Commander of the Ninth Coast Guard District as aviation officer. Jess has been collecting material on F4B airplanes since 1935 and is currently compiling data for a book on Marine Fighting Squadron Nine (VF-9M). He is married, has three daughters.