NAVAL AVIATION
NEWS

F8F-2 GRUMMAN BEARCAT SETS WORLD SPEED RECORD

51st Year of Publication

DECEMBER 1969

NavAir No. 00-75R-3

NAVAL AVIATION NEWS

FEATURES

THE STAFF

Published monthly by the Chief of Naval Operations and Naval Air Systems Command to provide information and data on aircraft training and operations, space technology, missiles, rockets and other ordnance, safety, aircraft design, power plants, technical maintenance and overhaul procedures. Issuance of this periodical is approved in accordance with Department of the Navy Publications and Printing Regulations, NAVEXOS P-35. Send mail to Naval Aviation News, OP-05D, Navy Department, Washington, D.C. 20360, located at 3828 Munitions Building; telephone, Oxford 62252 or 61755. Annual subscription rate is $7.00 check or money order ($1.75 additional for foreign mailing) made payable and sent to the Supt. of Documents, Government Printing Office, Washington, D.C. 20402. A single copy costs $.60.

COVERS

The photo of Darryl G. Greenamyer's record-breaking F8F-2 on the front cover is used through the courtesy of Popular Mechanics. It was taken by Ralph L. Emerson of Van Nuys, Calif. JOC James Johnston photographed the T-38 Talon, above, at NATC Patuxent River. The NASA pictures on the back cover need no explanation.

ROARING RACERS

By Commander Ted Wilbur

NAVAL AVIATION NEWS LOOKS BACK

ON OCTOBER 9, 1919, the *Daily Aviation News Bulletin* began to follow the sporadic progress of the Marine Corps entry in the transcontinental Reliability and Endurance Test, the first of many subsequent competitions to be reported in the embryonic forebear of our present *News:*

> Lt. Newman and Capt. Page left Mineola at 11:59-54, and have reached Buffalo. There were eleven contestants ahead of them.

OF THE TWENTIES

CR-3 PAINTING COURTESY THE AEROMODELLER

First Lieutenant G. B. Newman, and Captain A. H. Page had entered the two-way, coast-to-coast race in an Army furnished DH-4. They departed Long Island 35th in a field of 48 starters.

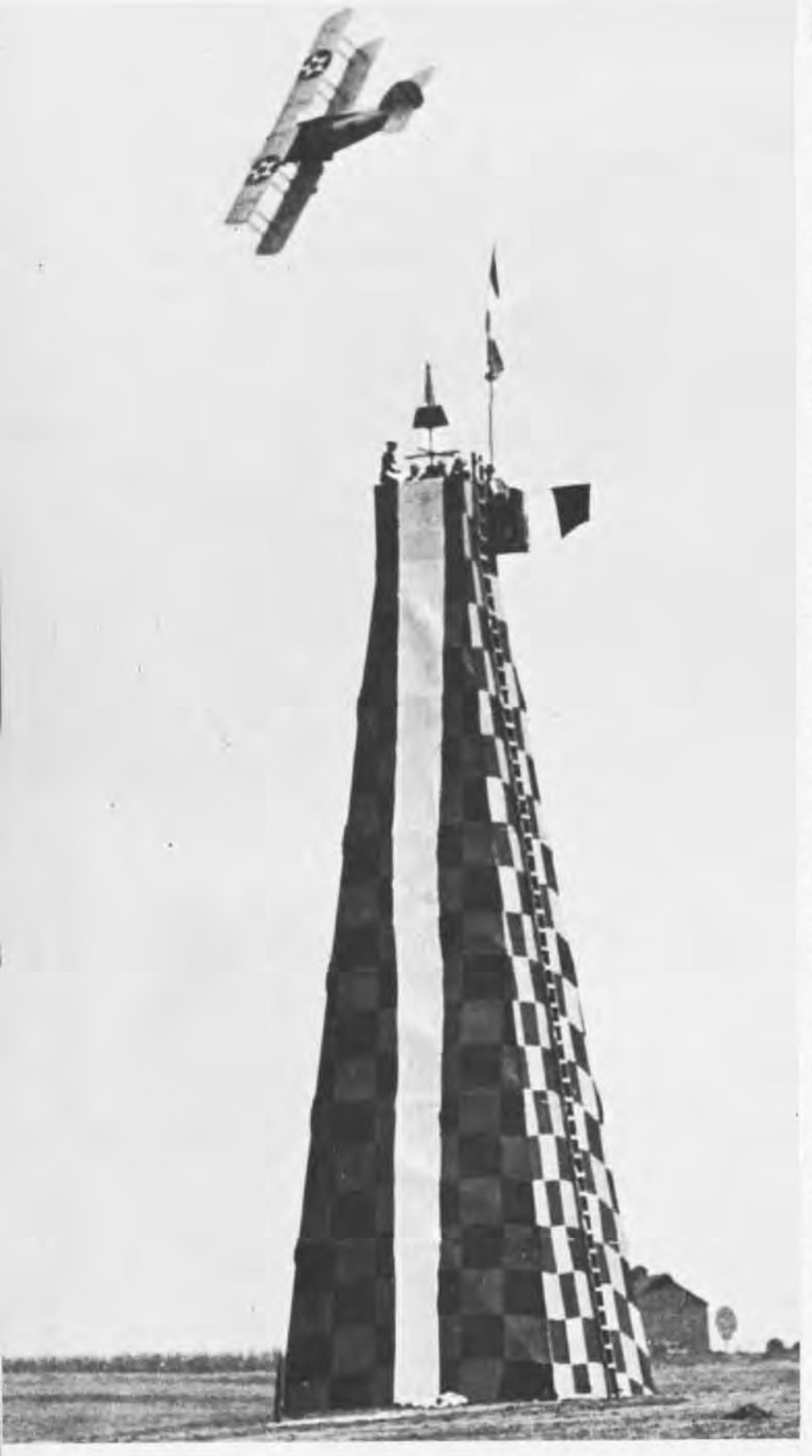
> Oct. 11 – Lt. Newman and Capt. Page left Buffalo at 8 o'clock. A terrific storm was encountered over the lake. They arrived at Cleveland at 11 o'clock with barely enough fuel to reach the field.
>
> Oct. 12 – The following telegram was received yesterday from the Marine Corps entrants in the transcontinental race: LEFT CLEVELAND IN STRONG GALE, BUT DECIDED TO PUSH ON; FLEW THROUGH SEVERAL STORMS ALL THE WAY TO CHICAGO; LANDED ON BALL PARK AND BROKE SHOCK ABSORBER; ONLY ONE OF SIX LEAVING CLEVELAND THIS MORNING TO REACH CHICAGO; READY TO LEAVE IN MORNING.

Things went better for a few days and Lt. Newman had moved up to eighth place overall when:

> Oct. 16 – Lt. Newman was forced to land ten miles from Salduro, Utah [a control station in the Great Salt Desert]. Mud and rain increased difficulties in getting out, but he expects to be on his way within the alloted time, two days.
>
> Oct. 17 – Lt. Newman has his plane out of the mud and partly repaired. He expects to arrive in Salduro today and continue the trip to San Francisco.
>
> Oct. 21 – Lt. Newman arrived in San Francisco around noon.

Lt. Newman's flying time was 31 hours. Of the 26 aircraft arriving at San Francisco, his was 23rd. Of the 15 planes starting back to New York, seven arrived. Of the 54 accidents that occurred, seven resulted in fatalities to one or more of the occupants. Both Lt. Newman and Capt. Page were destined to die of injuries sustained in airplane crashes: Lt. Newman as a test pilot and Capt. Page at the National Air Races.

CONTINUED



NEWS LOOKS BACK

RACING in the early days of powered flight had a far more functional purpose than pure public and pilot stimulation. High-speed flying was not merely a spectacular affair; the design and construction of the machine provided a mission for some of the best brains in the world of science and aviation: to find solutions to problems of future aeronautical development.

The 1912 international seaplane races at Monaco served to focus attention on a type of aircraft which could use the sea as a base of operations. From this early competition, which demonstrated the technical inferiority of waterborne planes to their land-based contemporaries, evolved the Schneider Trophy Races – international speed contests for seaplanes, the first of which took place in 1913.

Of all aeronautical competitions, the Schneider Trophy was undoubtedly the most enthralling of its time. The pursuit of speed had a peculiar fascination and the Schneider was regarded as the blue riband of the air. Rich in precepts and technical improvements, the Trophy responded handsomely to the wish of its founder, Jacques Schneider: a source of friendly rivalry between nations, a cause for heroism and sacrifice.

With hindsight, the true value of that remarkable series of competitions is apparent. Lessons learned from the speed contests of the Twenties were applied to the fighter designs of the Thirties and combat aircraft of WW II.

Noted Naval aircraft designer and constructor Dr. Jerome C. Hunsaker recalled that after the end of the first World War he proposed, as a means to stimulate high-speed fighter design, that the Bureau of Aeronautics try to bring the Schneider Trophy to America.

LT. G. B. HALL, *USMC, in Vought UO-1 turns pylon at Lambert Field, St. Louis, in 1923 Liberty Engine Builder's Race. Lt. Hall placed fourth in the popular event.*

MB-7

18-T

CR-1

BR-1

NW-1

NW-2

F2W

XF6C-6

EARLY NAVY RACERS

MB-7, ungainly Thomas-Morse racer, powered by 330-hp Wright H-3 engines, was USMC entry in 1922 Pulitzer.

18-T Curtiss "Wasp" triplane was WW I design powered by engines up to 450 hp, raced in both land and seaplane configurations, competed in Pulitzer, Curtiss Marine and Liberty Engine Builders Trophy Race.

CR-1 clean 400-hp Curtiss biplane was forerunner of line of successful high-speed designs, shown here with Lt. Harold Brow at 1922 Pulitzer race in Detroit.

BR-1 "Bee-Line" monoplane built by Aerial Engineering Corp. was flown in 1922 Pulitzer.

NW-1 Navy-Wright "Mystery" ship was sesquiplane mounting 650-hp Wright T-2 engine.

NW-2 was rebuilt NW-1, crashed during trials for 1923 Schneider Trophy Race.

F2W was prepared for abortive 1924 Schneider Race, could not compete with faster Curtiss planes in 1925.

XF6C-6 700-hp Curtiss "Hawk" was fast, powerful craft in which Capt. Page lost his life in 1930 National Air Races. Page was well in lead for Thompson Trophy when apparently overcome by carbon monoxide.

"Then we did take it from the British at Cowes (1923) with a radical design of plane and engine which profoundly modified future progress. At Baltimore (1925), we won again; and later the Italians took it only to lose it to the British. The original Trophy challenger made for the Navy by Curtiss introduced the thin wing, surface radiator and a small-displacement liquid-cooled engine of high revolutions. This plane and engine became the basis for later fighter designs, although the U.S. dropped out of international competition.

"However," continued Dr. Hunsaker, "the British were awakened. They took the Curtiss D-12 engine to England, which stimulated Rolls-Royce to redesign their engine. The work culminated in the Merlin engine. The U. S. Navy Schneider Trophy airplane was the legitimate grandparent of the *Spitfire* and its Merlin engine."

To a post-World War I public, resistant to the seemingly dubious proposition of spending large sums of money necessary for the expensive pursuit of aircraft development, racing provided a means of satisfying both the sporting-blooded citizen and the visionary engineer. Financiers, newspaper publishers and wealthy individuals added welcome monetary and prestigious inducements to the participants, but it was apparent that successful competition and the distinctive status of *winning* could only be achieved through government organization and backing. As for the pilots themselves, the desire to be *first* was sufficient.

Up through the mid-Twenties, U.S. Navy racing planes and pilots were prominent in major trophy competitions. Newspaperman Ralph Pulitzer sponsored a series of races which were inaugurated at Mitchel Field in November 1920. In a mixed bag which included such diverse types as the DH-4, a Thomas-Morse MB-3, Italian

BLAZING A TRAIL OF RACING SUCCESSES UP THROUGH THE MID-TWENTIES AMERICA MOVED TO THE FOREFRONT OF HIGH-SPEED AIRCRAFT DEVELOPMENT. THEN, IN 1925, GOVERNMENT SUPPORT VANISHED

SVA's, a French Morane-Saulnier, the British SE-5 and the American Verville-Packard, the U.S. Navy entry, a Vought VE-7, placed fifth overall but was first in its class. The next year civilian pilot Bert Acosta flew a Navy Curtiss R-1 to first place. In 1922, Curtiss racers swept the field and, in 1923, Navy planes and pilots took the first four places in the Pulitzer events and first and second in the Schneider Trophy Race.

In November of that year, Navy Lieutenants Alford J. Williams and Harold J. Brow took turns raising the world speed record. With diving starts from altitude, they flew their Curtiss racers over a 3-kilometer course at Mitchel Field until, on complaint of the base commander, the Secretary of War called a halt to the dangerous duel.

Lack of challengers to the Navy machines for the 1924 Schneider Race cancelled the contest, but they were back in force the following year. The Curtiss planes won both the Pulitzer and Schneider in 1925.

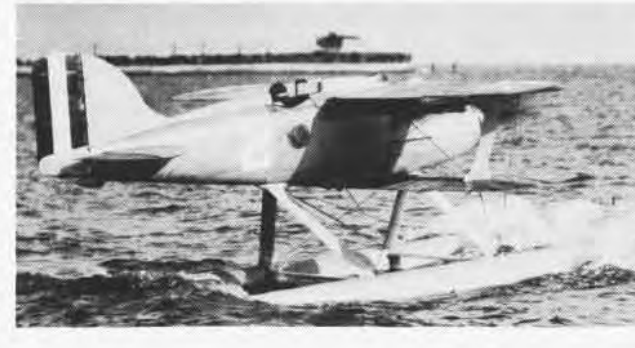
Then suddenly, government support was withdrawn. The Pulitzer vanished and 1926 saw the last of the Curtiss racers in the Schneider event. Valiant efforts by Lt. Williams to personally carry the flag with the Kirkham plane in 1927 and with the Mercury racer in 1929 met with bitter failure. The tide had turned and the international arena was left to the French, English and Italians.

Lt. Harold Brow and Ltjg. Alford Williams with R2C at 1923 St. Louis Pulitzer Race. Note flush wing radiators. At right, Williams starts takeoff run, placed first in event, Brow came in second.

T4M turns pylon at NAS Anacostia, D.C.

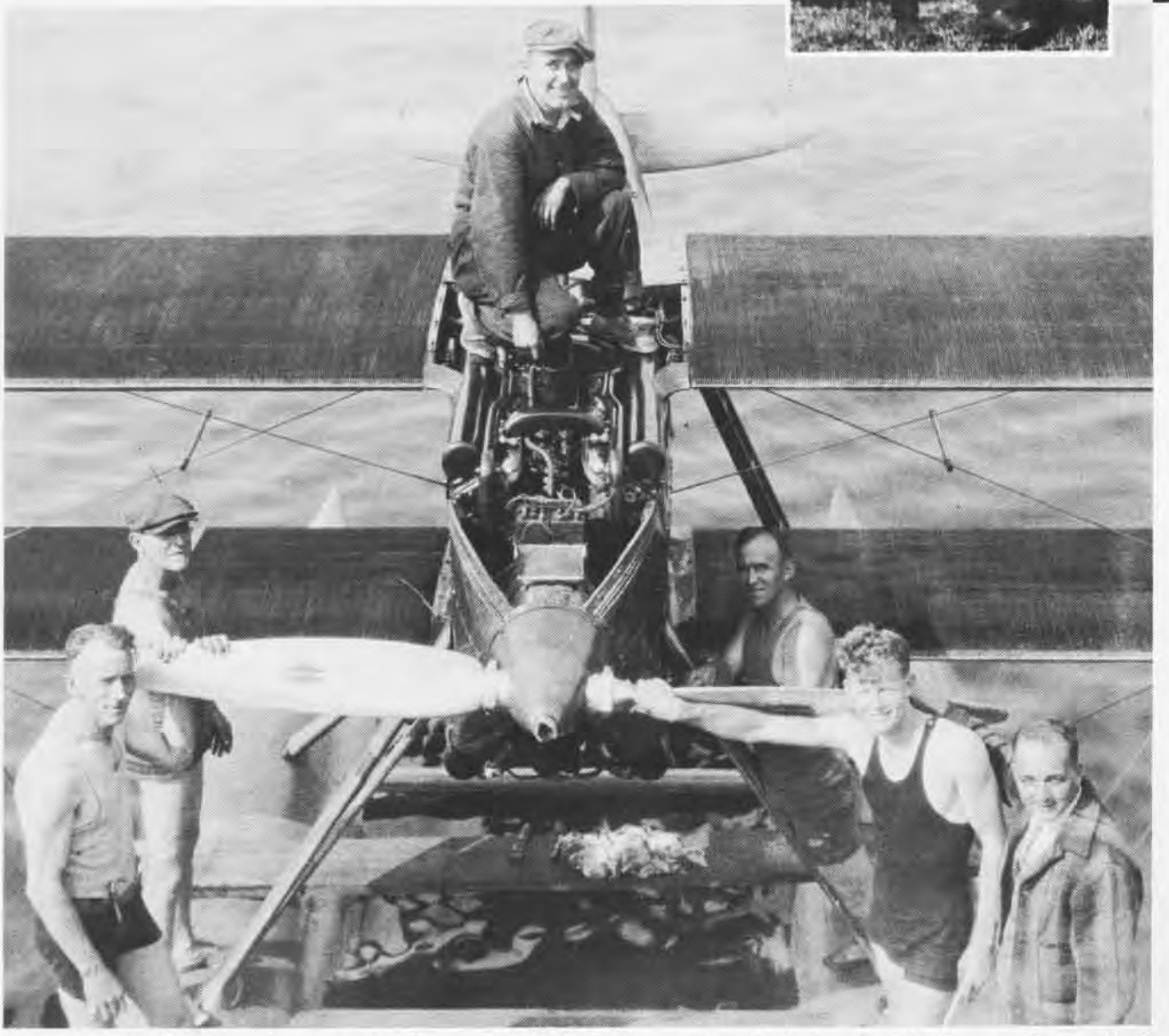
Lt. Irvine and CR-3 raced in England.

Curtiss R3C-4, above, is readied for 1926 Schneider Trophy Race at Hampton Roads, Va. Lt. George Cuddihy, pilot, raced the year before in Baltimore Schneider, right. Well-flown victory went to Italian team in 1926, the final year of Navy participation in the international speed contest.



Sailor observes T3M from vantage point.

THE HEROIC EFFORTS OF ONE MAN, OPERATING ALMOST SINGLE-HANDEDLY, WERE INSUFFICIENT TO COMPETE WITH THE RESOURCES OF NATIONS. BUT LT. AL WILLIAMS TRIED.



KIRKHAM-WILLIAMS *racer, above, was privately sponsored 1927 venture of Al Williams in effort to win permanent possession of the Schneider Trophy for America. Built by Kirkham Products on Long Island, the plane, originally configured as a seaplane, was powered by 24-cylinder Packard X engine developing 1,250 hp. Craft was not ready in time for Schneider, was flown as landplane to unofficial speed record of 322 mph. Mercury racer, opposite page, was 1929 effort of Williams to keep the U.S. in the running. The monoplane was built at the Naval Aircraft Factory, Philadelphia; overweight, reportedly flew only one time.*

Williams' "Mercury" on the move . . .

. . . spray problems

. . . another bent propeller

BY EARLY 1931, the Navy Department was under fire. Well publicized foreign racing achievements, coupled with the lack of an American entry in the upcoming Schneider, nurtured an attitude probably best exemplified by a letter to the Assistant Secretary of the Navy for Aeronautics, David S. Ingalls, from Representative Fiorella H. La Guardia of New York. La Guardia, an aviator in World War I and eventually one of New York City's most dynamic mayors, was characteristically direct in his questions about the state of aeronautic affairs.

Ingalls, who also happened to be the Navy's first ace (*NANews*, September '68) was equally forthright in his reply.

Q. Can you inform me why it is that the governments of England, France and Italy have developed higher speed seaplanes than we have been able to?

Ingalls noted a false premise: That the government had made a recent serious and earnest effort to compete with the high-speed seaplanes of those countries. Not true. When the government, particularly through the Navy, had competed, it won the Schneider Cup Race. But since 1925, the Navy Department had found it impossible to continue in any kind of a racing program with the appropriations at hand. Under a mandate of Congress to complete and maintain a five-year program of building up and maintaining 1,000 airplanes and two large airships, it had been necessary to limit experimental costs. High-speed plane development was estimated at $220,000.

Q. I would like to be informed also why it is that with the millions we have appropriated we have not one ship fit or capable to enter in the International Schneider Cup.

No funds had been appropriated for the construction of a Schneider Race entry. The millions appropriated had been devoted to development of a naval aerial fighting force second to no other in the world. Ingalls quoted a statement made by England's Lord Beatty the year before:

> The Navy [English] today is the most up-to-date and efficient navy in the world, except in one respect, and that is in its air equipment. The air wing of the U.S. Navy, owing to the single control exercised over the U.S. Navy, is far ahead of our Fleet Air Arm. They carry out exercises on a scale quite impossible in our fleet. Cooperation between their ship-borne and shore-based aircraft has reached a high state of efficiency; with us it is non-existent. (Statement made April 30, 1930.)

It was the Assistant Secretary's firm conviction that important though the development of high-speed seaplanes might be, it was not as important as providing the fighting air force as prescribed by Congress.

Q. What has happened to American Aviation since 1925?

Ingalls pointed out that, generally speaking, aviation had been developed and maintained to a greater extent in America than abroad. The military forces were well organized, equipped and manned: small perhaps, but at least affording an excellent groundwork which could readily be enlarged and strengthened in the event of war. Commercially, aviation had gone ahead until it surpassed that of other countries. The fact that foreigners had produced a few racing planes capable of higher speeds than domestic models was no more conclusive of our general aviation situation than the fact that the British had built and driven an automobile at a speed far greater than that of American cars was indicative of the general automobile industry in America.

Q. I would also like to know if the Navy has now a plane of sufficient speed to enter the next Schneider Race.

There was no such plane.

Q. If not, is the Department able to obtain such a ship if appropriations are made immediately available?

There would not be sufficient time to produce an adequate machine for the next Schneider Cup Race. The Navy had been out of racing for five years; construction of a craft capable of competitive speed would require development of both plane and engine almost from the ground up, a matter of many months.

'Leadership can be lost by stopping . . .

IN 1931, the British permanently won the Schneider Cup Trophy which, according to the rules, would go to the first three-time victor out of five consecutive tries. It is interesting to note that the United States could have qualified for permanent possession, had it desired, in 1925. Lt. David Rittenhouse won in 1923 in a Curtiss CR-3. In 1924, American entries were unchallenged. The United States won again the next year, but in true sporting fashion declared the 1924 event "no contest." The situation was parallel in 1931 when the British found themselves alone on the course. They elected to declare a "win" and added it to their previous two. Had they not, the future development of high-speed seaplanes might have been even more provocative, especially in the light of forthcoming Italian concepts.

The British situation prior to the 1931 race was similar in another way. Great Britain, too, felt that the cost of further participation had become prohibitive. The need for national economy was such that the British government did not feel justified in meeting the cost of defending the Trophy further. The circumstances are obscure to us now, but only through the generosity of a private individual was preparation of suitable British aircraft made possible.

Dame Fanny Lucy Houston, described as a philanthropist and eccentric, whose third husband had bequeathed to her four-fifths of a sizeable fortune, guaranteed the personal expenditure of 100,000 pounds to insure that the Supermarines flew. This patriotic action enabled Great Britain to go into the 1931 contest with a fully representative team to uphold British prestige. It is regrettable that Lady Houston had no American counterpart.

The early races had served their purpose. Perhaps Navy withdrawal from official competition was a keen disappointment to many – especially men like Al Williams who felt compelled to continue on his own – but the lessons had been learned. They were best summarized by Commander Paul E. Garber in 1946, writing in respect to the Schneider Cup.*

"The Schneider Trophy contests exerted a powerful stimulus to high-speed seaplane design and were an important influence on military types. The effect on the first world war was hardly felt because hostilities opened before any outstanding type had been developed, but for the period between the two wars, the effect on design trends was marked. The Curtiss racers influenced military designs for at least a decade.

"Engineers eagerly watched the efforts of rivals, not only to take advantage of promising developments in construction of their own racers but also to incorporate advanced ideas into their warplanes. Great secrecy was maintained, up to the day of the race, to guard the features which were counted on to give supremacy. Probably one of the subtle reasons for the discontinuance of the contests was to bring to a close these opportunities for revealing a nation's most prized military secrets to its potential enemies, who were even then girding their loins for the expected encounter. In this connection, it is significant that Germany and Russia did not enter these contests, where engineers with their slide rules were almost as prominent as the timers with their stopwatches. The reason given out officially, not only by the United States when it retired from this competition, but also by England when the resumption of the contests was proposed, was that the expense of preparing these highly specialized craft caused a serious inroad into the funds allocated for military planes and reduced the numbers of service craft which could be manufactured for the annual quotas.

"Looking back on the individual efforts of the competing nations, there are several striking and significant facts apparent. From the viewpoint of U.S. Naval Aviation, our outstanding accomplishment was in 1923 when we demonstrated the great superiority of the racers which had been developed in the Pulitzer contests. Other nations eagerly adopted from them such features as the wing radiators, powerful engines, metal propellers, high-speed airfoils and elimination of parasitic resistance. Much of our leadership at that period could be attributed to the impetus of our war efforts. Subsequently we saw to our chagrin that we could not rest on our oars and, although the Curtiss racer type maintained its leadership through 1924 and 1925, it was surpassed in 1926 by the Italians who had eagerly copied the best features not only of our planes but also those of the British. Everyone admired the patriotic effort of Lt. Williams who tried to keep our nation in the running in 1927 but who, by his heroic failure, demonstrated that one man, operating almost single-handedly, could not compete with the resources of nations.

"The French efforts were persistent but unavailing; their forced landings were often due to last minute hard luck which, of itself, could perhaps be traced to failure to pay strict attention to little details. This emphasizes the truth that success comes only when all possible sources of fault are eliminated.

"The Italians were doggedly unceasing in their wish to acquire the Trophy, and, particularly toward the close, brought out designs which were ingenious and radical, often embodying features whose merit later was ac-

* Dr. Garber is now Historian Emeritus of the National Air and Space Museum, Smithsonian Institution.

for in that period others more progressive will overtake us.'

Lady Houston, whose generous gift of 100,000 pounds to the Royal Aero Club made British victory in the Schneider possible.

knowledged. Their winning of the world speed record in 1934 can be attributed to the background of skill in design and construction which they had acquired through their Schneider entries.

"The final series of wins by England, resulting in permanent possession of the Trophy, was the logical result of her determination and planning. This was manifest not only in the constant improvement of her planes and engines but also in the establishment of a school in which her racing pilots were perfected in the many details of stamina and skill which must be mastered in order to fly high-speed craft. The dividends were not limited to retention of the Trophy; but just as Wellington had said a century before that the battle of Waterloo had been won on the playing fields of Eton, so could England attribute the excellence of her fighting planes in World War II to the basic design work of the Schneider entries.

"The lessons to be learned are of permanent value: leadership can be lost by stopping, even momentarily, to admire what has been done, for in that period, others, more progressive, will overtake us. Lost ground cannot be regained by last minute sporadic efforts. The inherent excellence of wings and engine can be frustrated by careless assembly and the failure of a loose bolt or a faulty wire. Success comes as the logical result of steady scientific progress."

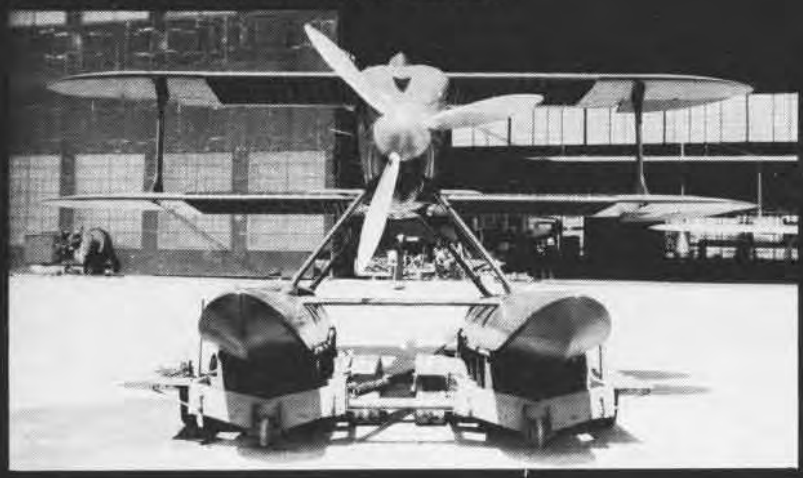
Thus, while the glamor, color and adventure of the early Navy racers may now represent to some only a fond memory of an exciting past, the same underlying stimulations of the Pulitzer, Schneider, Curtiss-Marine and other Trophy competitions may yet be found today in an examination of our current motivations. Whether in reminiscence of the Schneider events or in consideration of the manned space program, Dr. Garber's summary offers equal validity.

Supermarine S-6B

Bold Italian concepts found form in such unorthodox designs as the 1929 Piaggio P7, top, a combination boat and aircraft. Small rear propeller provided sufficient thrust for hydrofoil-finned fuselage nose to rise clear of water as 1,000 hp was applied to front propeller. Aircraft never flew. Macchi MC-72, below, attained 440 mph in October 1934 for world speed record.

CONTINUED

NAVAL AVIATION NEWS LOOKS BACK ON EARLY RACERS

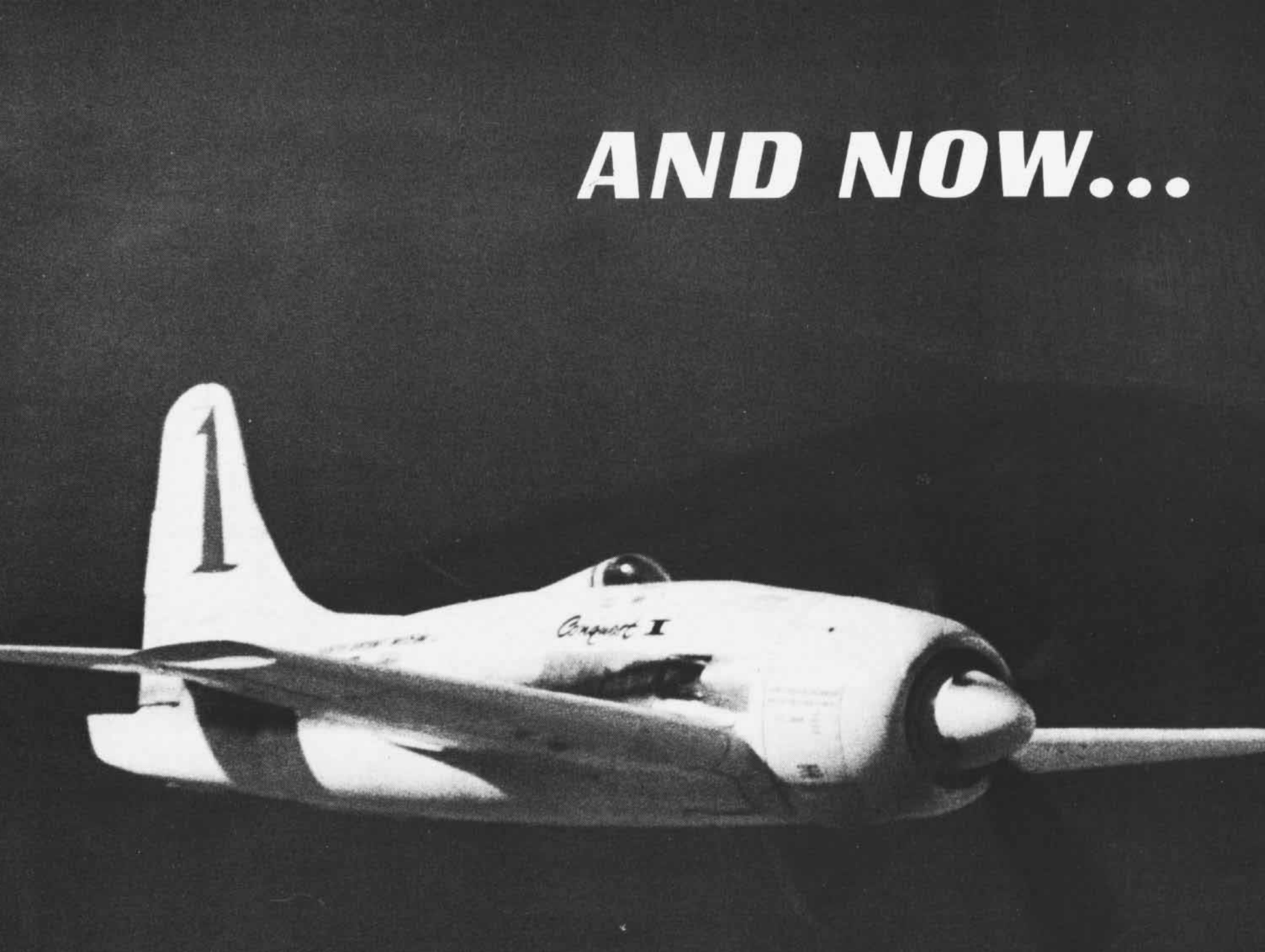


Wright F2W-2, a promising contender for the 1924 Schneider, was seaplane conversion of 1923 Pulitzer land-based racer. It crashed while undergoing tests.

Lt. Harold Brow, above, with classic CR-2 of 1922 Pulitzer Race. On opposite page, Lt. Al Williams taxies the Mercury into the twilight of American Schneider ambitions. Frustration and controversy surrounded the 1929 effort after which Williams resigned from the service and the privately financed $140,000 seaplane was purchased by the Navy Department for one dollar.

Curtiss R3C-2 flown by Lt. Ralph Ofstie, above, was one of two Navy entries in 1925 Schneider at Bay Shore Park, Md. The R3C-2's were powered by 565 hp. Curtiss V-1400 engines. Both Navy planes dropped out of the race prior to the finish, but Army Lt. Jimmy Doolittle went on to win (setting four new records in his R3C 2). It was the last American victory in international speed competition. England eventually won the trophy outright.

AND NOW...



A NEW AMERICAN RACING VICTORY

Shattering the 100-degree desert air on August 16, 1969, Darryl Greenamyer's modified Grumman F8F-2 Bearcat established a new world's speed record for piston-engined aircraft at an average of 483.041 mph. The ex-Navy fighter easily exceeded the 30-year-old absolute mark of 469.22 mph set by a German plane in April 1939 and the 1947 American record of 412.002 which was set by Jacqueline Cochran in a P-51 Mustang. Greenamyer, who had worked at smashing both records for more than five years, was clocked at speeds as high as 510 mph. Then, in September, he took the glossy white machine out for one final race before the Cat's retirement. Shown above, he thunders over the course at Reno as he wins the National Air Races for the fifth consecutive year, setting yet another world's record. At an average speed of 412.321 mph during the closed pylon race, he surpassed the 1947 mark of Captain Cook Cleland's 397.07 mph F2G Corsair.

Continued

graphed by Jim Larsen

A WORLD BEATER

Greenamyer accepts the accolades of his crew after winning the 1969 Reno National Air Races. Below, the "Bearcat" as it appeared breaking the world's speed record for piston-engined aircraft. —Photos by Ralph Emerson

On April 26, 1939, a young Luftwaffe test pilot named Fritz Wendel stepped into the Messerschmitt Me. 209V1 and proceeded to establish a new world's speed record for propeller-driven airplanes. Flying the volatile 4,000-pound racer back and forth over the three-kilometer course at less than 300 feet, Wendel achieved 469.22 mph, a speed made more incredible by the fact that for over 30 years no one seemed able to officially beat it. In spite of the significantly improved performance of piston-engined fighters during the course of World War II, Germany's 1939 record remained the ultimate statistic on the international ledger.

Perhaps the postwar emphasis on jet aircraft dampened enthusiasm which might otherwise have been channelled towards surpassing Wendel's achievement. Over the years, a few private individuals harbored notions of upsetting the title, but it was eventually discovered that this was no easy proposition. Whereas the German record was the result of an all-out governmental effort culminating in the design and construction of a new and unique aircraft, the money and manpower required for an adequate challenge along similar lines was now prohibitive, if not unwanted, from a corporate standpoint. If anyone wanted to bring the honor back to America, the only chance lay in modifying an existing prop fighter. This was tried – with little success.

Then Mr. Darryl G. Greenamyer bought a *Bearcat* and took a long hard look at it.

Greenamyer, a Lockheed test pilot at Edwards AFB, had acquired an ex-VF-62 F8F-2 (BuNo 121646), one of the last of the production Grumman *Bearcats*. After a few weight-saving modifications, Greenamyer placed fourth in the 1964 Reno National Air Races, his *Cat's* first time out in serious competition. Then he really went to work. With the help of a handful of friends, most of them Lockheed employees, Greenamyer had the Navy fighter's wingspan reduced to 28 feet and fitted with special low-drag wing tips. The hydraulic system was removed and the flaps sealed off. A tiny *Cosmic Wind* bubble canopy was installed over the cockpit which was now lined with heat-reducing fiberglass. The wing root oil coolers were replaced by a liquid submergence system behind the pilot's seat. A 13½-foot A-1 *Skyraider* propeller, capped with a P-51 *Mustang* spinner, was fastened to an AJ *Savage* reduction gearbox mounted on the Pratt & Whitney R-2800-34W engine, from which, among other things, the original three-stage, high-altitude supercharger had been amputated. Special fuels were examined, some rated over 180 octane. With water injection (ADI) the horsepower could now exceed 3,100. Drag reducing skin filler was applied wherever necessary. The plane was

JIM LARSEN

painted with white epoxy and Greenamyer was ready to roll.

In 1965 the *Cat* was back at Reno and from then on, never placed less than first in the National Air Races. The world's record attempt, however, was met with a series of frustrations and failures compounded by the constant need for more money. On one occasion the P&W seized and had to be replaced. When considering that a stock R-2800 can cost about $10,000, Greenamyer's problems become more apparent. Fortunately, he had friends, but it was not until the summer of this year that everything seemed right.

On August 16, the shiny white *Cat*, now named *Conquest I* and sporting an American flag on her vertical fin, was wheeled into position on a runway at Edwards AFB. The day was hot enough to thin the air to Greenamyer's liking, and he took off on his mission with a feeling of confidence. Keeping the nose high to provide ground clearance for the huge propeller, he blew up the gear on the one-shot nitrogen system (gravity would bring it down for landing) and quickly accelerated out to position for the first run. Within a few minutes, he established, to the satisfaction of the FAI official timers, an average speed of 483.041 mph, flashing over the 1.86 mile course in four passes.

Later, Greenamyer chalked up his fifth consecutive Reno win and the *Cat* was retired to a museum.

Well, now that Greenamyer is "top cat," we see that someone is out to do him in. Being prepared for an assault on the new record is – what else? – another *Bearcat*. Only this one has an R-3350 (from a *Skyraider*) under the cowl, driving a DC-7 propeller. Its name? The *Able Cat*, of course.

The plane to beat, opposite page, was the diminutive 1939 German racer erroneously referred to as the Me. 109R. It was touted as a version of the Luftwaffe's first-line fighter and the scheme succeeded in startling the aviation world. Actually it was a special design of 1,400 hp and suited only to its propaganda mission. Other models such as the Me. 209V3, above, lacked features necessary for the fighter role.

AL CHUTE

Comparison of the "new" and the "old" shows some of the obvious refinements Greenamyer made to the wartime Grumman design. Though now less agile and far more uncomfortable, the 24-year-old "Bearcat" brought home the bacon.