

Navy's First Ace

By Izetta Winter Robb

The Allied aviators who fought the battle in the skies during World War I were "the younger set" of their day. As that war neared its end, a French infantry colonel on meeting Georges Guynemer, the French ace, asked, "How old are you?"

"Twenty," was the reply.

"And the gunner?"

"Twenty-two."

"The deuce! There are only children left to do the fighting."

Even younger than these two was Lt. David Sinton Ingalls, USNRF, for at 19 he made the record that secures his name in the annals of history as the only U.S. Navy ace in WW I. And where it took Guynemer six months to become an ace, Ingalls required a day less than six weeks. As Naval Aviator #85, he chalked up his record while flying with the RAF in a British plane, the Sopwith *Camel*. From August 13 through September 24, 1918, he succeeded, alone and in cooperation with others, in downing at least four enemy aircraft and causing one balloon or more to burst into flames.

Exploits such as Lt. Ingalls carried out in those early days of aviation recall the words of Euripides, "Danger gleams like sunshine to a brave man's eyes." The accounts he wrote reveal a taste for daring and a skill to match.

Lt. Ingalls went overseas in September 1917 where he was assigned to various aviation training units in Britain. During two weeks in July 1918, he flew with RAF Squadron 213 "for experience," going on bombing flights to Ostend, Zeebrugge, and Bruges, but he had no encounters with the enemy.

Just as he was beginning to feel a part of the RAF, he was ordered to France to tussle with flying field construction for the U.S. Navy's Northern Bombing Group. Unhappy at this turn of events, he succeeded August 9 in wangling permission to rejoin Squadron 213 which was stationed in Flanders and making regular raids on German installations. Two days later, Ingalls opened up on the enemy in a way that was to bring him renown.

On August 11, Ingalls and an RAF

officer in Sopwith *Camels* at an altitude of 14,000 feet, not far from Dixmude, sighted an enemy Albatros, a two-seater aircraft, as it came in at 10,000 feet toward the Allied lines. The Albatros apparently sighted the *Camels* at the same time, for he turned and dived toward Ostend. The *Camels* attacked, and the leader, firing about 150 rounds in short bursts at 150 yards range, followed the enemy down to 5,000 feet. Just as the *Camels* broke off combat, the Albatros plane went into a slow spin, and the two pilots saw it head for the ground, out of control.

Venturesome and eager for battle, Lt. Ingalls lost no time in scoring another, though different, success, for two days later, on the night of August 13, he flew over the German airdrome at Varsenaere. This was a low-level attack with a vengeance, for he flew so low his *Camel* nearly touched the ground. From this vantage point, he sprayed 450 rounds of machine gun fire into the facility while the surprised Teutons made desperate efforts to get him with their "Archies" (anti-aircraft guns). But undeterred, Ingalls swung in a wide circle and again headed for the hangars, letting loose four bombs and "putting out searchlights, scattering Germans, and musing things up generally."



LT. DAVID S. INGALLS, USNRF

Such a maneuver deserved an encore. Thus it was on September 15 that Ingalls repeated at the German airdrome at Uytkerke the same tactic he had used at Varsenaere. He made a low-level attack out of the clouds upon the German hangars and fired 400 rounds from his Lewis machine gun into the canvas structures. Then, as he swung up, he cut free four bombs upon the Fokkers parked on the field below.

On the return flight, Ingalls sighted an enemy two-seater Rumpler west of Ostend at 6,000 feet. With Lt. H. C. Smith, RAF, also flying a *Camel*, Ingalls went after the two-seater. The enemy turned and dived toward Ostend, but that did not save him, for Ingalls and Smith followed him down, firing 400 rounds at close range which sent the enemy crashing in flames just off the beach.

Getting back to his base was always exciting and usually hazardous. On one occasion, Lt. Ingalls described for his parents the flight back: "I turned and dove down to the ground...for when way over the lines and not high enough to be safe from Archie, the stunt is to race along just over the ground at about 200 to 300 feet.... The only danger in this low flying is from the machine guns. The Huns had these scattered all over their country to get aeroplanes in similar predicaments. I knew fairly well where they were thickest and went along for at least five minutes without a shot. Then suddenly I heard a rat-tat, my motor [faltered], gas poured out of the tank below the seat, and clouds of white vapor rose from it...."

"Evidently I had run into a bad place, for I was shot at till I crossed the lines. Usually one turns, zooms, etc., when in this predicament, but I expected the controls to go any second and even with what I had, I could not do any trick flying, so I sat still and by using the rudder kept going as fast as possible in little turns toward home. It was a big relief to get out of [range] across the lines. Then I had to land.... I came in slowly over the trees on the side and, using the

motor, managed to land.

"The machine was well shot up. One burst of several bullets had perforated the tank under my seat, and all but one strand of wires that cause one to go up were severed, as well as a number of strands in those to go down. One aileron had been hit at the hinge and, of course, there were a few holes in the wings. Hobson [his fellow pilot on this mission] had returned. He said that he had been back of and above me and had fired a lot from there and had seen the Hun burst into flames and crash, so we felt fine, and I got a new machine next day."

On September 18, Lt. Ingalls and two RAF officers, all three flying *Camels*, sighted a kite balloon at 3,500 feet in the La Barriere area. Crossing the coast, the *Camels* attacked, each of them firing about 90 Buckingham tracers. They followed the kite balloon down to about 900 feet and saw two observers jump with white parachutes just before the balloon burst into flames.

Describing this, Lt. Ingalls wrote, "Looking back, I saw a blaze flare up in the bag and then it crumpled in a great mass of flames and dropped directly on the three balloon sheds which promptly caught fire. It was a lovely sight."

In this sortie, all the *Camels* were struck by anti-aircraft and machine gun fire but returned home safely.

Ingalls did not have to wait long for his next big attack. On September 20, while on escort for a bombing squadron heading for Bruges, the formation sighted four enemy planes heading toward the de Havilland bombers at about 15,500 feet. The *Camels* immediately attacked. Lt. Ingalls' particular quarry was one of the Fokkers which was pursuing a DH 9. Ingalls fired 100 rounds at 100-yard range. That did it. The Fokker, diving vertically and leaving a white smoke trail, was last seen out of control, very low, near Bruges, still descending.

Ingalls then attacked another Fokker, this one at a 25-yard range, and the latter turned on its back, spinning as it dived. Whether it was knocked out is uncertain; it is believed to have flattened out very low down. The remaining enemy planes spun away.

On September 22, Ingalls and four other *Camel* pilots flew all over Flanders, seeking out German hangars and ammunition trains as their preferred targets. On this round, Ingalls dropped



FIRST NAVY ACE BECAME ASSISTANT SECRETARY OF NAVY (AIR)

four bombs on a German ammunition dump at Handezeame and blew up a number of wagons loaded with shells.

Later he landed four bombs on a large hut filled with explosives at Wercken. His next target was the railway station at Thourot where the Germans had an enormous supply dump. Ingalls scored two direct hits. On the way back after the fourth sortie for the day, he dropped four more bombs on a horse transport and, with his fellow pilots, got in enough bursts of machine gun fire to account for some 25 Germans and 45 horses.

But there was more to come. On a test flight September 24, Lt. Ingalls sighted an enemy Rumpler over Nieupport. Both Ingalls and the officer he was flying with attacked, each firing 200 rounds at 100 yards. They followed the enemy down to 600 feet and the Rumpler fell in flames.

The British Air Ministry honored Lt. Ingalls' gallantry with the Distinguished Flying Cross and ended his citation with these words:

"His keenness, courage and utter disregard of danger are exceptional

and are an example to all. He is one of the finest men [No. 213] Squadron ever had."

And from his own service, the United States Navy, he received the Distinguished Service Medal:

"For exceptionally meritorious service in a duty of great responsibility as a chase pilot operating with RAF Squadron 213, while attached to the Northern Bombing Group, Northern France, where, as a result of his brilliant and courageous work he was made an Acting Flight Commander by the British authorities over their own pilots."

Lt. Ingalls' career in Naval Aviation did not end with World War I. During President Herbert Hoover's administration, he served as Assistant Secretary of Navy for Air, and under his leadership, great strides were made in research and development. He returned to active duty in WW II, serving first as a commander, then as a captain. Of the medals in that conflict, he holds the Legion of Merit and Bronze Star. He was in the thick of Navy's war in the Pacific, retiring as a rear admiral in the United States Naval Reserve.

A SOPWITH 'CAMEL' OF THE TYPE LT. INGALLS FLEW IN WORLD WAR I



The Northern Bombing Group

The most ambitious operational project undertaken by Naval Aviation during World War I had as its objective the destruction of the submarine bases at Ostend, Zeebrugge, and Bruges by aerial bombing. These bases along the Belgian coast were to be subjected to continuous day and night bombing by Marine and Navy squadrons, collectively known as the Northern Bombing Group, based in the Calais-Dunkirk area. Had plane deliveries matched the readiness of the shore establishment and the assignment of trained personnel, the results might have been substantial. As it was, the operations of the Group were delayed and Allied successes on the ground brought the war to an end before the air offensive really began.

There are many interesting aspects in the background of the Northern Bombing Group which cannot be told here for lack of space. Conception of the idea or plan of operations, for example, has been attributed to different men by different writers, but it was actually the outgrowth of many individual and collective proposals that began in June 1917 when Lt. Kenneth Whiting selected Dunkirk as the site for an American air base. The heated controversy over service roles and missions created by the Navy's intention to use landplane bombers (this was ultimately resolved, the planes were procured with the complete cooperation of the Army) is also an area which has had only partial, and somewhat subjective, coverage. The delivery of Capronis from Italy, no small task for men without previous experience in that type of flying, is another untold story. But all these interesting accounts must be left for later writing, and it is the hope of *Naval Aviation News* that these may be included in some future issue.

Here, in the interest of presenting an authoritative account of a unit unique in the annals of Naval Aviation history, we present extracts from a report of the Northern Bombing Group made by its commanding officer, Captain David C. Hanrahan,

USN, on December 3, 1918. We have added a few details from an unidentified history filed with the basic report in the National Archives.

The Northern Bombing Group was originally planned to operate as one day wing and one night wing consisting of six squadrons each, and one assembly, repair and supply unit, to be known as Base B, located in the vicinity of these wings. The whole was to be under a group commander, each wing under a wing commander, and each squadron under a squadron commander. Squadrons of the day wing were subdivided into three flights, of six planes each, under flight commanders, while those of the night wing were subdivided into two flights of five planes each, also under flight commanders. By order of the Navy Department, cablegram 2416 of May 31, 1918, this force was reduced to four day and four night squadrons for the time being, owing to the inability to obtain sufficient planes.

A further cable, in June, stated that it was thought inadvisable to establish a large supply base in northern France, because of the military situation at the time, and that sites should be investigated for this base in England. In view of this, an investigation was instituted to secure a site in southern England. The Air Ministry took the matter under advisement. The first week in July we were informed that the airplane acceptance park at Eastleigh, about four miles north of Southampton, could be turned over if it met with our requirements. On July 4, 1918, this was inspected by me and experts in the departments concerned, and the reports being satisfactory, it was decided to accept the British offer.

Construction was already in progress. Hangars were about 90 percent complete, storehouses about 30 percent complete, and living quarters for about 300 persons completed. The flying field was ready, roads were practically complete, and a light gauge railroad was running through the park.

We were informed that the Eastleigh station could be taken over on July 20. On that date, Lt. G. deC. Chevalier was appointed temporary commanding officer. He immediately took command, and a detail was sent to occupy it. Arrangements were begun to transfer all supplies of the Group from Pauillac and to divert all supplies en route from the United States to this station.

Owing to the location of Base B across the Channel, arrangements were made whereby the Royal Air Force depot, situated at Guines, France, could be used as a park for all minor repairs to planes and engines, and it became necessary to locate a supply base in the field to cart consumable supplies up to two month's requirement. It was also necessary to establish for purposes of transport a motor park in the field.

The following fields had originally been selected for the squadrons: St. Inglevert, Campagne, Spyker, Le Frene and Alembon. Because of the reduction in squadrons, rearrangement of the squadrons on the fields became necessary as follows: Night Squadrons 1 and 2 to Field A at St. Inglevert, Squadrons 3 and 4 to Field B at Campagne, and Field C at Sangatte became a dummy aerodrome. Day Squadrons 7 and 8 were assigned to Field D at Oye; Squadrons 9 and 10 to Field E at Le Frene, and a dummy and reserve aerodrome was set up at Field F at Alembon. Because the military governor of Calais objected to the proximity of the aerodrome at Sangatte to that city, this field was derequisitioned early in August. The Alembon facility was also used as a bomb dump.

The headquarters for the Group was at Antingues, a few miles south of Ardres. At these headquarters were also established the field supply depot and motor transport park. A site at Bois-en-Ardres was selected as day wing headquarters. Night wing headquarters were temporarily located at the chateau at St. Inglevert which was, in addition, squadron headquarters.

For night squadrons, the 600-hp Caproni biplane, equipped with three Fiat motors, was selected. These planes were manufactured at Milan, Italy, by the Caproni Company and were flown from the acceptance park there to the fields of the Group. The route decided on was from Milan to Turin, Italy, to Lyon, France, to Dijon, to Paris, and from there to Field A.

The agreement entered into with the Italian authorities provided that the material required for building these planes would be replaced by material sent directly from the United States to Italy. All planes completed were to be delivered to the U.S. Army representative and a certain allocation of the monthly production to be designated by him for U.S. Naval Aviation. The agreement called for delivery of 30 Caproni planes during June and July 1918, and 80 during August. The actual number delivered to us was nine during July and nine during August. The failure to deliver the number agreed upon was due entirely to the incorrect estimate of the firm's output.

As these planes were allocated after acceptance, they were further tested and then flown north by pilots who had been schooled in Caproni planes in Italy. During the latter part of July and the first part of August, a great deal of weather unfavorable for flying

was experienced. This caused considerable delay in ferrying these machines to the aerodrome.

It was found that these planes required considerable change to prepare them for active service over the lines. Base B not being sufficiently advanced to undertake this work, owing to the non-arrival of machines, tools, etc., the squadron was thus required to do acceptance work for which it was not organized nor fitted.

On the arrival of the first Caproni, it was immediately prepared for war flight by rigging of bomb gear, rearrangement of landing gear wires, rigging of required navigational lights, installation of additional instruments, and equipment of guns. The first plane was flown on an active war flight on the night of August 15; objective the Ostend docks.

It was found, as additional planes arrived at our aerodrome, that the Fiat engines were giving considerable trouble. Test after test, made in the hope of eradicating the cause of engine failures, proved unsatisfactory. To operate successfully over the region, engines would be required to run for a period of at least four hours. In no case was a successful running test of four hours with the Fiat engine achieved, after the first flight on August 15.

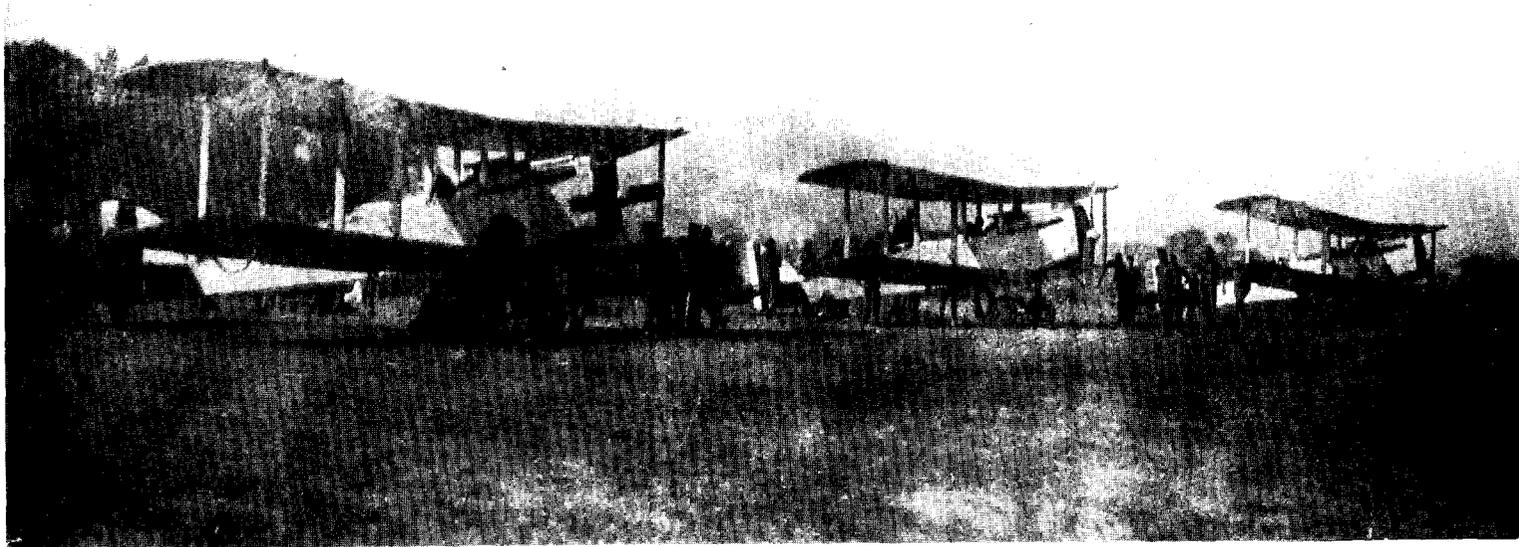
Examination of the engines showed poor workmanship and poor construc-

tion in practically all engines, which necessitated their being completely taken down and rebuilt. After a long series of tests and overhaul this was finally decided upon, and these planes were taken out of active operation until the satisfactory four-hour test in the air could be accomplished.

Owing to the troubles experienced with this motor, inquiries were made as to the possibility of procuring a substitute. It was found that the Isotta-Fraschini motor could be secured in small numbers, and tests having proved them to be considerably superior to the Fiat, arrangements were made with the Italian government to equip future deliveries of Capronis with these motors and to box the planes for rail transportation. The same action was taken by the U.S. Army. The first Caproni fitted with Isotta-Fraschini motors arrived at Eastleigh about November 8, too late to be assembled before the cessation of hostilities.

During the latter part of August, because of the unsatisfactory performance of the Capronis, attempts were made to procure Handley-Page machines for the night squadrons as personnel were on the field ready for operations. By an arrangement with the U.S. Army and British authorities, an agreement was effected by which *Liberty* engines were exchanged for 20 Handley-Page planes to be equipped

MARINE DH-4'S OF DAY WING, NORTHERN BOMBING GROUP, AT PAULLAC, FRANCE





CAPRONI 450: *The type in which Navy pilots, destined to operate with the night wing, received their training in multi-engine landplanes at Malpensa, Italy (Pete Bowers' photo).*

with *Liberty* engines; ten to be delivered to this Group, the Army taking the other ten. The first of these Handley-Page planes were being tested at the time hostilities ceased.

During this period, owing to the fact that the pilots and ground personnel were inactive, opportunity was taken to allow them to operate with active British squadrons over the lines, this to continue up to a time when their services would be required for operating our own planes. In this way, creditable results were achieved in spite of the lack of planes for this group.

For day squadrons, the DH-4 with *Liberty* motor, as manufactured in the United States, was selected. These planes were obtained from the U.S. Army and were packed and shipped to France. Four of these planes were assembled at Pauillac and from there flown to the field. As future shipments arrived, they were transferred to Eastleigh, but due to non-delivery of DH-4's from the States, by the middle of August, the Commander, U.S. Naval Aviation Forces, Foreign Service, obtained by concession of the British Government, in exchange for *Liberty* motors, 54 DH-9a planes. As these were delivered to Base B at Eastleigh they were assembled and flown to the field. The first DH-4 arrived from Pauillac on September 7, 1918. The first DH-4 arrived from Base B on October 2, 1918.

Considerable delay in the assembly of the American DH-4 planes was caused by the fact that the technical committee, composed of American and British officers, who inspected the planes on arrival, reported that a number of alterations should be made

before these planes were safe for flying. These alterations necessitated the use of considerable extra material, and further delay was experienced in obtaining it as it was a priority type. In spite of this and the late arrival of machinery and equipment for Base B, the alterations were made as the planes arrived. The machines were then flown to the field and put into active operation.

The majority of construction material for the building of camps, roads, etc., plus tents, provisions, and a number of portable and accessory buildings, were obtained from the British depots in northern France by permission of the Air Ministry. This placed us on practically the same footing, in this respect, as other British squadrons in this district, and we continued so up to the date of demobilization. This allowed the Group to start operations at a much earlier period than would have been possible had we had to wait the arrival of shipments from the United States.

Shipments of stores, material, etc., to the field from Pauillac were accomplished by the use of steamers, docking at Calais, by military train, and motor transport. A small amount of motor transport was obtained from the French stations, but it was entirely inadequate for our use. The lack of motor transport considerably handicapped us in the rapid transportation of material and supplies after arrival by water or rail. Motor transports ordered in the United States for this Group did not commence to come into French ports until August 1 when the USS *Pensacola* arrived at Pauillac.

Squadron 1 of the night wing was organized about the middle of June 1918, and a number of men were

dispatched to the field on June 20 under the command of Lt. C. R. Johnson, relieved in August by Lt. Robert A. Lovett, who also commanded the night wing. The first week in August three Marine squadrons of the day wing, commanded by Maj. A. A. Cunningham, arrived from the United States and were dispatched to the field. (The fourth Marine squadron arrived in the field October 6.) By August there were sufficient officer personnel to staff group headquarters, and its organization was about complete on September 1.

Personnel on board upon the signing of the Armistice, November 11, 1918, approached authorized allowances: 130 officers in group headquarters in the night wing and 164 officers in the day wing, including 88 and 80 pilots in the respective wings. Enlisted men totalled 1,336 in the night wing and 818 in the day wing. Aircraft on hand on the same date were: 6 Capronis (2 in commission), 12 DH-4's (8 in commission), and 17 DH-9's (7 in commission), considerable under the planned 40 Capronis and 72 DH-4's.

Two types of training were designed to equip flying personnel for active work against the enemy: (1) primary training in flying, aerial gunnery, formation flying, and bombing at aviation schools, and (2) final training with active service squadrons at the front. Advantage was taken of the aviation schools in England, France, and Italy to accomplish this training, and pilots were therefore detailed to Italy for training on Caproni night planes, to Clermont-Ferrand for day bombing planes, to Moutchic for preliminary training and to Stonehenge, England, for day and night bombing. Final training was accomplished by placing pilots, observers, and ground personnel in active British squadrons at the front, operating in the same area in which the Northern Bombing Group contemplated operations.

Since the early part of June 1918, U.S. naval personnel of the night wing have been attached to Number 214 Squadron, 5th Group, RAF, for training and for actual war service. Six pilots were originally transferred, and after this squadron was bombed out of Coudekerque and shifted to our aerodrome at St. Inglevert, additional personnel were accepted. Since the

personnel under training with Number 214 Squadron was constantly changing and gradually increasing, by August 10 there were attached for training and service seven pilots and about 40 enlisted men. During October, two of the Handley-Page machines, attached to 214 Squadron and manned almost entirely by personnel from our night wing, participated in night bombing raids under the direction of the squadron commander.

On August 11, 1918, the first Caproni arrived in the field. On August 15, this plane, piloted by Ens. Leslie R. Taber, with Ens. Charles Fahy as copilot and D.C. Hale as gunlayer, made a successful night raid on the submarine shelters in Ostend. Two other raids were subsequently attempted, but were unsuccessful, owing to trouble which developed with the engines and the planes. After August 15, no war flights were made with Caproni planes. Work was constantly carried on with the view to rendering these planes fit for service, but until the cessation of hostilities, the only war activities carried out by the night wing were those of the personnel attached to Number 214 Squadron.

The war activities of the Marine squadrons constituting the day wing are considered to have started on August 9, 1918, when three pilots with observers were transferred temporarily to Number 218 Squadron, RAF. These pilots and observers were put into service immediately, and, after participating in three bombing raids, were relieved by other pilots and observers from the day squadrons. On August 21, 1918, three pilots with observers were temporarily transferred to Number 217 Squadron, RAF, and were relieved as above after participating in three bombing raids. Commencing September 5, 1918, six pilots were maintained continually at the RAF pilots pool, Audembert, for practice flights. After successful qualification, they were transferred, as needed, to either Number 217 or Number 218 Squadron, and from there, after actual bombing experience, were sent back to our day squadrons.

On September 7, 1918, the first day-bombing machine arrived in the field, DH-4, Navy A-3295. From that date on, DH-4 and DH-9 aeroplanes were arriving in the field spasmodically. Until such time as enough planes were available for our opera-



CRASHES marked the route flown from the Caproni plant in Italy to St. Inglevert, France. At Dijon, France, pilot and copilot were injured but survived this landing on soft ground.

tions as a unit, we offered to the 5th Group, RAF, all day-bombing planes then in commission. This offer was accepted, and our planes made several raids with Number 217 and Number 218 Squadrons.

On October 14, 1918, Number 9 Squadron, day wing, with eight DH-4's and DH-9's, carried out the first Northern Bombing Group day raid on the railway sidings and yards at Thielt. This objective was given us by the 5th Group, RAF, a policy which was adhered to in all our subsequent work. From that date until October 27, when operations were suspended to permit establishment of an advanced aerodrome at Knesselaere, eight raids were made, either by Number 8 or 9 squadrons, day wing, or by a combination of pilots from the two squadrons. The raids were carried out with a view to hindering, as much as possible, the retreat of the enemy in this sector. In general, the objectives were railway junctions, yards, canals, and canal docks, at Thielt, Steenbrugge, Eekloo, Ghent, Deynze, and Lokeren. During these raids, when contact was estab-

lished with enemy aircraft, it is reasonably certain that four enemy aircraft were destroyed, and one shot down out of control. Against this we lost one plane, which was shot down near the Belgian lines, and a second plane which was struck by anti-aircraft fire, but was able to glide safely into Holland. In addition to the above combat, pilots of the day wing, operating with Number 218 Squadron, shot down three other enemy aircraft.

In addition to the activities outlined under the operations of the day and night wings, we had several pilots in active war flying with the French Escadrille de St. Pol, and with Number 213 Squadron (Chasse), RAF. These pilots would have been considered available for a Navy day squadron, either chasse or bombing, if one had been organized. One of them, Ltjg. David S. Ingalls, while attached to Number 213 Squadron between August 9 and October 3, 1918, personally and in conjunction with other planes shot down eight enemy aircraft, drove down one out of control, and destroyed one observation balloon.

Summary of Operations

Total pounds of bombs dropped	155,998
While operating with the Northern Bombing Group:	
Night wing	2,670
Day wing	11,614
While operating with RAF units:	
Night Wing—pilots	17,200
— observers	121,984
Day wing — pilots	1,905
— observers	625

THE END

Forty-two days of war remained, but action against the U-boat continued at the pace of previous months. Another station was commissioned; several under construction neared completion. As the end came into sight, some cutbacks were initiated in training, and plans for an orderly demobilization were discussed. Otherwise, the momentum gained by months of hard effort showed no sign of slackening until the Armistice abruptly shut off further need.

OCTOBER 1918

1—The airship AT-13, on convoy patrol out of Paimboeuf, approached a suspicious object which opened fire and quickly put 13 bursts near the airship. Being unable to return fire because her only gun was out of action and having alerted escorting ships to the presence of a submarine, the airship gave up the chase and resumed coverage of the convoy.

1—Some of the earliest recorded food-dropping missions were flown by Marine pilots Capt. Francis P. Mulcahy, Capt. Robert S. Lytle, and Lt. Frank Nelms. On this day and the next, they made repeated low-level runs in the face of enemy fire and delivered 2,600 pounds of food and supplies to a French regiment surrounded by German troops near Stadenburg.

4—First of the NC flying boats, NC-1 made its initial flight at NAS Rockaway with Commander Holden C. Richardson and Lt. David H. McCulloch as pilots.

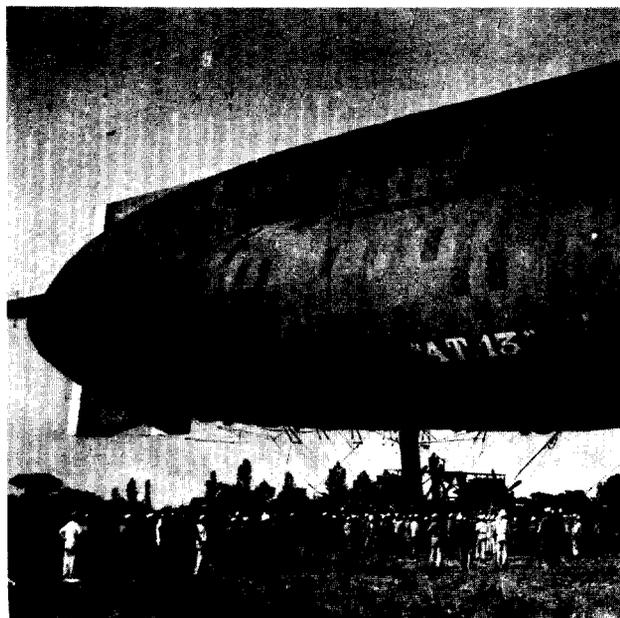
6—Squadron D, relabeled Ten, arrived at La Fresne, France, bringing the Marine day wing to full strength.

14—The first raid in force by the day wing of the Northern Bombing Group was made by eight planes of Marine Squadron Nine which dropped 17 bombs, totalling 2,218 pounds, on the railroad junction at Thielt. For extraordinary heroism on this and an earlier raid in engaging the enemy at great odds, 2nd Lt. Ralph Talbot and his observer, GySgt. R. G. Robinson, were awarded Medals of Honor.

15—The Bureau of Steam Engineering reported that five Hart and Eustiss variable-pitch propellers were under construction for use on twin-engine airships, and that two variable-pitch hubs were on order for test on the F5L.

16—A seaplane on patrol from NAS Wexford, with Lt. John F. McNamara as first pilot, Ens. J. R. Biggs as second pilot, and Ens. George W. Shaw as observer, dropped bombs on a submarine which then surfaced at irregular intervals and eventually disappeared. Search of the area revealed large quantities of oil and some debris on the surface. Although destruction seemed certain, Admiralty assessment was "probably seriously damaged."

17—A pilotless N-9 training plane, converted to an automatic flying machine, was successfully launched at Copiague, L. I., and flown on a pre-set course, but the



distance gear failed to land the plane at its pre-set range of 14,500 yards. It was last seen over NAS Bay Shore headed due east at an altitude of 4,000 feet.

19—While escorting a 32-ship convoy in the Lough Foyle sector off Northern Ireland, Ens. George S. Montgomery sighted and successfully attacked an enemy submarine stalking the convoy. His bombs hit within 30 feet of the periscope and brought heavy turbulence and oil to the surface. For "probably damaging" the submarine and saving the convoy from attack, he was officially commended.

22—Ens. Edwin S. Pou, with QM2C H. F. Duffy as observer, took off in an HS-1 from NAS Ile Tudy to investigate the area in which an attack had been made earlier in the day and sighted a mine which they exploded by bombing.

22—The twin-engine airship C-1, commanded by Maj. Bernard L. Smith, USMC, with a Navy crew of Ens. Warner L. Hamlen, Lt. R.A.D. Preston, Ltjg. Donald T. Hood, Ens. M. H. Estorly, and two civilian mechanics, was delivered at NAS Rockaway after a one-day flight from Akron, Ohio, which included a stop at Washington, D.C. The Aero Club of America later awarded Smith and Hamlen its Medal of Merit for this flight.

26—A plane piloted by Ens. W.G. Sprague with H.A. Ropke as observer sighted an oil wake four miles southwest of Penmarch Point and dropped two bombs. Four minutes later, a plane piloted by Ens. Elbert Dent, with Bailey as observer, dropped two bombs on the same spot. A third plane piloted by Ens. Harold J. Rowen, with Bailey again the observer, returned to bomb the same place. Advice from the French credited Sprague with the sinking.

NOVEMBER 1918

1—The night flight instruction program at NAS Pensacola was discontinued.

1—The former French station at Treguier was commissioned as a Naval Air Station with Lt. A. M. Baldwin in command.

5—To reduce numbers being assigned to flight instruc-



THE FRENCH *Astra-Torres, AT-13, a twin-engine airship featuring a tri-lobe envelope, was delivered for operations at NAS Paimboeuf on August 30. The letter "T" identifies these HS boats as from NAS Treguier, France, last of our stations placed in commission overseas prior to the Armistice. First of the NC flying boats, NC-1, made her first flight from NAS Rockaway in October, 1918, and in November took 51 persons into the air.*

tion, a special board was convened at the MIT Ground School to re-examine the qualifications of men on board the Receiving Ship. On the basis of its recommendations, some 400 men were later transferred to inactive duty or other assignment.

11—The Armistice ended the conflict.

With the signing of the Armistice, the hostilities of World War I were over. In the nineteen months of United States participation, the strength of Naval Aviation had grown to a force of 6,716 officers and 30,693 enlisted men in Navy units and 282 officers and 2,180 men in Marine Corps units, with 2,107 aircraft, 15 airships, and 215 kite and free balloons on hand. Of these, 18,000 officers and men and 570 aircraft had been sent abroad.

Sixteen men received their designation as Naval Aviators on the first Armistice day. The assignment of fractional and duplicate numbers to some men and the failure to assign numbers to others who had qualified make it impossible to state how many aviators were trained during the war period, but the total was about 1,600.

Antisubmarine patrols continued after the Armistice until it was certain that all U-boats had left the high seas. Planes from NAS Le Croisic, from which the first overseas combat patrol had been flown in November 1917, were also in at the finish. The last patrol was flown on December 13, 1918, over ships carrying President Wilson and the American delegates to the Versailles Peace Conference.

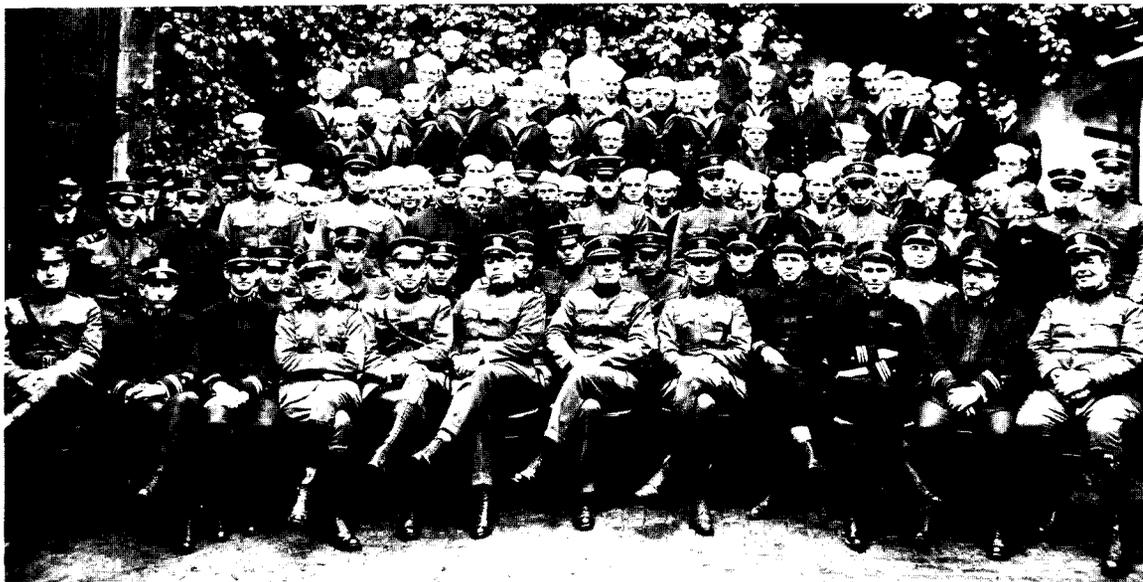
In the 19 months between the declaration of war and the Armistice, the expansion of Naval Aviation had been rapid and phenomenal. From a single air station at the beginning, the aviation shore establishment had grown to 27 in France, England, Ireland, and Italy, one in the Azores, two in Canada, one in the Canal Zone, and 12 in the United States in full operation. Others were under construction. More than 3,000,000 nautical miles of war patrols had been flown. The submarine had been challenged from the air for the first time, and at least 30 of them had felt the concussion of exploding bombs dropped from aircraft. Large numbers of aircraft had been built, raising the total on hand from a mere 54 at the beginning to over 2,000 at the end. Of these,

570 had been sent to stations overseas. The design of flying boats had progressed through the HS-1 and H-16 to the F5L, the latter an adaptation of a British original. The culmination of this effort, as well as a mark of its progress, was the NC boats which arrived too late to take part in the war, but one of them demonstrated their capability in a trail-blazing flight across the Atlantic in May 1919.

An unprecedented number of pilots, ground specialists, and mechanics had been trained in a relatively new art. Increase in pilots alone was over thirty fold. Colleges, universities, and industry were drawn into the training program. Aerologists and air intelligence officers made their respective bows and became an integral part of the aeronautical organization. The lighter-than-air arm achieved its first successes. A Naval Aviation detachment was the first military unit from the United States to reach France, arriving only two months after declaration of war. At the Armistice, Navy and Marine squadrons stood ready to launch a round-the-clock campaign that would have been the first strictly American air offensive.

At the war's end, demobilization was rapid. Liquidation of overseas bases began in December 1918 in Italy and ended in mid-April 1919 with the closing of those in England. Some, along with much rolling stock and material, were turned over to the U.S. Army for use as assembly centers for doughboys returning home. Some were used by the Committee for the Relief of Belgium. But all were eventually returned to the government of the country in which they were located.

In the training program, men under instruction were allowed to complete their course, but the assignment of new students stopped. Elementary flight training at NAS Bay Shore stopped immediately, and the station became a demobilization center. Miami, Key West, and San Diego continued training until those on board qualified, then reverted to the patrol mission. The LTA school at Akron was readied for abandonment. Ground Schools at MIT (Boston), Washington, and Dunwoody (Minneapolis) began closing. Post-war plans were approved calling for the return of all flight training to Pensacola and the concentration of technical training at Great Lakes.



THE AVIATION STAFF IN FRANCE AT THE CLOSE OF THE WAR. CAPTAIN T. T. CRAVEN, CENTER FRONT

Contracts for over 1,400 aircraft and aeronautical equipment were cancelled, and manufacture of only such items as would be less expensive to complete than discontinued was permitted. Public sale of surplus aircraft was initiated. Ex-Naval Aviators desiring to continue their flying could buy an F-boat for \$1,800 – and many did. The HS-2, originally costing \$18,480 was offered at a discount price of \$6,160, and H-16's were reduced from \$33,159 to \$11,053. Many aviators, once out of the Navy, started flying schools or operated flying boat passenger service in resort areas along the coast.

On the fiscal side of the picture, recovery of unexpended funds was an early objective of the Congress. Of over \$281 million appropriated for Naval Aviation during the war, better than \$180 million had been spent or obligated at the Armistice. As the accounts were finally balanced in mid-1919, about \$97 million were returned to the Treasury.

Officers and men of the Reserve Flying Corps were released to inactive duty as rapidly as possible. By mid-December, a large proportion of those overseas were on their way home. When Captain T.T. Craven became Director of Naval Aviation in May 1919, only 669 officers and 7,100 enlisted men remained in Naval Aviation, Navy and Marine Corps combined, and the number was still dropping. Some chose to remain in the service, later transferring to USN as provided by law. Many who went home became active in the Naval Reserve when it began organizing in the 1920's, and many, whether in the Reserve or not, returned to active duty to serve with distinction during World War II – a few still in flying status.

The war was over. For the time being at least, the world had been made "Safe for Democracy." At the end, Capt. Craven, who had had over-all command of stations in France, wrote the introduction to a history of his command. In it he paid tribute to his men in terms that also must have been applicable to men of Naval Aviation everywhere. He wrote: "The credit for carrying on and the completion of the work of aviation in France belongs essentially to the young men who joined the service from civil life. Unfamiliar with Navy methods and entirely unaccustomed to the curious existence which, in many cases, became theirs in

isolated districts, their efforts everywhere provoked the most enthusiastic acclamation. Breaches of discipline were very rare, and it is believed that the personnel of the aviation service quit France, retaining everywhere the admiration and respect of the French people with whom they were associated.

"To the flying personnel the highest commendation belongs. No instance of flagging or failure in attempting the dangerous work assigned them was ever noted. Many paid the supreme sacrifice in their devotion to duty, and the skill and courage with which all acquitted themselves everywhere were praised by the older flyers of the Allied services with whom our young men were associated.

"Aviation left the scene of its activities with pride in its work born as a result of successful achievement, of having been a part of the Navy, and of having assisted it to bring to a conclusion the considerable problem assigned to the Navy during the World's War."

There can be no doubt that the men of the Naval Reserve Flying Corps met the challenge of war and contributed their fair share in carrying Naval Aviation through its first test of strength. Although there were heavy seas ahead, the course was clear.

In some respects, the war interrupted the direction of the initial growth of Naval Aviation, but the interruption was only temporary. From the beginning, its development had followed a course toward the integration of aviation in Fleet operations, and, by the time the country went to war, experiments with aircraft operating from ships were in full progress. When war came, however, all Naval Aviation effort was diverted to immediate needs. Experiments with shipboard operations came to an abrupt halt, and, although naval aircraft carried out Navy missions on the sea, operations with the Fleet were the exception rather than the rule. But the experience of war had clearly demonstrated the potential of aviation as an arm of seapower. Although some skeptics remained, many had been convinced by war-time accomplishment that the future of aviation lay with the Fleet. Time would prove the wisdom of their thought as post-war effort again stressed integration and another world war found Naval Aviation spearheading the attack.