

FOR APPLICANTS

FOR THE

WAR BIRDS

"ARCHIE"

by W. E. BARRETT

Booklet

No. 3

Archie Was Supposedly the Great Clown of the War. He Blipped 30,000 Shells Into the Air for Every Hit He Made. They Called Him "The Great Consumptive." Here for the First Time is the True Record of the Anti-Aircraft Branch. The Picture is a Little Different Than You Have Been Led to Imagine. Archie More Than Paid for Those Many Misses He Flung Into the Air.

ARCHIE

By W. E. BARRETT

ARCHIE" is the great unsung hero of the war. Tears and cheers have gone to the scouts and the observers, the bombers and the balloonists—but only sneers have been passed to Archie. In the great book of war, he is listed with the comedians. "Archie" was anti-aircraft and— He fired 30,000 shells skyward for every plane he brought down.

That is enough to damn him. In the eyes of those who read, Archie stands for the height of futility; an incredibly bad shot who wasted terrific sums of good money to no end. Story after story and book after book tells of his inefficiency. Always the hero flies his way through Archie with a laugh. When Archie strikes, it is an accident.

Well, maybe they are right, these cynics who scoff at A.A. But here, for the first time in print, including the Scandinavian and all other languages, is a sympathetic picture of Archie. I mean the article as a tribute to an unsung group of heroes; the men who were staunch and silent friends to their own airmen and greater enemies to the opposing air forces than is generally supposed.

Let us first take a look at "Archie" that fiercely growling creature of the air stories, as he appeared to the wartime flyers, grim and challenging and inhuman. Later we will look at him without his mask.

It is the afternoon of August 26, 1914, and Bleriot No. 387 of the Royal Flying Corps is making its second reconnaissance flight of the day. Lieutenant G. F. Pretyman is at the controls and Major L. B. Boyd-Moss is doing the observing. The battle of Le Cateau is in full swing and the Allies are being driven back toward Arras. The two airmen are patrolling back and forth above the advancing German horde at an altitude of 3,000 feet.

Suddenly, as they turn into the strong west wind which holds them almost stationary, a howitzer roars. Then another. The frail wing-warper is tossed by the concussion and falls out of control. Over the heads of the Germans, the pilot regains command of his ship, but the

ground forces are firing at him. His engine dies as he tries to climb out of danger and he dives frantically for his own rapidly retreating army.

Over a thick clump of trees and down into a group of French cavalry on a road. The Bleriot stands on its nose and then collapses. Archie has spoken for the first time in the world war—and the victory is his.

Oh, yes. Howitzers were archie in the early days of the war. Anything was anti-aircraft that would fire into the air, when aerial warfare was in the pinfeather stages of development. Specialized equipment was to come later.

England in the first year of the war, 1914, was in worse shape than was Germany. When the Zeppelins started raiding, the frantic defenders fired on them with six-inch howitzers, one-pounder pompoms and three-inch naval guns. This hobo aggregation of the Archie family did not bring down any Zeppelins. In December, 1914, however, it did bring down two of the defending naval pilots; a little mistake that caused Archie no end of embarrassment.

The English branch of the Archibald family was due to be further embarrassed. The pompom guns did it. They were employed in both England and France. They fired a one-pound shell that would have made any airplane hors de combat if it scored a direct hit. It never did score any direct hits and the shell would not explode in the air—it exploded only on impact—and it got all of its impact by collision with the ground after missing the enemy planes. Since the ground was usually occupied by English, this was not so good. Pompoms went out of style.

Then came the thirteen-pounders mounted on a motor chassis. These guns fired high explosive and shrapnel shells, the real archie stuff. But they had a bad habit of exploding and killing the crew when H.E. was used. When H.E. was not used the thirteen-pounders were not very effective. England worried around with this gun until the middle of 1916 and with all of its faults it did good work. It was replaced by the eighteen-pounder, which would fire a three-inch shell to 19,000 feet. That one was the one that the doctor ordered.

In the meantime, the French were using the .75 with good results and Germany was really making anti-aircraft a respected weapon.

The German cousin was the one which got the family its name.

It would bark and hurl its frightfulness at any pilot daring enough to tempt it as early as 1915. The British pilots watched for the bursts and perfected the dodging, weaving and diving tactics used throughout the war to bother the aim of A.A. One pilot, delighted with his success in making the A.A. gunners miss, developed the habit of singing a London music-hall hit of 1914 when he eluded the bursts. The catch line of this song ran:

"Archibald? Certainly not."

The idea appealed to other British pilots and Germany's anti-aircraft was named. The name stuck to the whole family; French, English and American. Flyers who never heard of the song "Archibald," called A.A. "Archie" for the duration of the war.

But in those days the family had not been separated by a color line. German archie burst white as did the Allied archie. The white bursts of the Germans contained shrapnel and the spread was outward and upward. The area of danger from this early German shrapnel shell was greater than that of the black H.E. which replaced it, but the effect on a plane in the case of a hit was not as deadly.

In March 30, 1916, Second Lieutenant Malcolm Henderson, a raw-boned Scot who had transferred from the 4th Ross Highlanders to the R.F.C., was flying a reconnaissance patrol in an F.E. 2-b. Archie, the white-bursting brother, slapped at him and the flying shrapnel whistled about the F.E. Henderson felt a terrific thump in the leg and he became deathly ill. The F.E. went into a spin.

For 2,000 feet, the F.E. spun; then Henderson rallied his failing senses, called upon his native Scot grit and righted his plane. He looked down into the bloody pilot's office of the nacelle. A gaping hole showed where archie had drilled through. A piece of shrapnel had come up through that hole and had severed Henderson's leg at the knee.

Once again the pilot nearly lost control. His life blood was pouring out through the big artery of the leg and he was over 5,000 feet up and behind the German lines. But he had an observer to get home. He flew on.

The drome was 3,000 yards behind the British lines and Henderson, dying and minus the leg that had kicked left rudder on the take-off, set his ship in for a perfect landing. He died without leaving the nacelle of the F.E. but the ship and the observer were safe.

He wasn't the only one who got home after the German white archie unloosed its hate. The Germans took due note of this and changed the type of shell used. After that (early '16) all German archie burst black. The area of damage was less but the effect was deadly.

The English, in the meantime, had brought down a number of raiding Zeppelins with the white archie and had established a number of highly respected A.A. stations in France. The French archie had knocked down two Zeppelins in France that had lost their way on their return from a raid on England.

Then the battle of the Somme roared its way into history. The English sent their tanks over and Germany was not prepared for this new weapon. There was a hurried call for archie to show his versatility and, for a while, the anti-aircraft batteries became anti-tank. German A.A. guns mounted on trucks were shifted from point to point along the lines. One archie battery destroyed seven tanks between the Somme and the Avre (August 8, 1916).

During all of this time, archie was building up the score of "misses" which was to make his average read "one plane downed for every 30,000 shells fired." But archie was not amusing the flyers nearly as much as it would appear from the post-war writings.

For one thing, the A.A. batteries on both sides of the line had forced airplane patrols up to the higher levels. No longer did they cruise serenely back and forth 3,000 feet above the battle as they had done in August, 1914. They climbed high now to nullify archie's efforts and that hurt their effectiveness.

They called archie, "the great consumptive," because of his racking cough, but they did not regard him as an invalid. The dodging and zigzagging that he made them do, added to the difficulty of picture taking and observation. The climbs that he made them take used their petrol up and shortened their working time. The frightfulness that he hurled at them wrecked their nerves eventually, even if he missed them forever.

But he didn't miss forever. The first time that Gothas raided England, two of them fell before archie. On subsequent raids, archie played a quietly effective part, besides knocking down more Gothas than the defending planes did. The Gothas were inclined to fly tight formation. It was suicide for a defending scout to attack a Gotha, when there was another one close by to protect the tail of the one

attacked. Archie reached up into the sky and scattered those tight formations so that the defenders could pick off single planes. Archie never got any medals for that. He was merely running interference while the scouts carried the ball.

All of the warring powers used observation balloons and the work that the balloons did was essential. No balloon could have stayed in the sky a half hour if it weren't for archie. Archie made balloon strafing the most dangerous job in the war. He wasted a lot of shells in laying a curtain of destruction between the attacking scouts and the big bags—but was that curtain wasted as long as the balloon stayed up?

Boyau, champion balloon-buster of the French, laughed at archie for a long while. He was one of the few men to consistently defy the protective ring of A.A. around balloons. He downed twenty-four *Drachens* and eleven German planes. Then on September 18, 1918, he laughed his last laugh at archie. He flew down on a balloon and disappeared. His fellow flyers say that it is a mystery. The archie gunners smile and tell you that a direct hit leaves no trace.

What about Guynemer and Dorme and MacGrider and the scores of other flyers who disappeared from the face of the earth? Archie wasn't credited with them when the books were balanced at 30,000 to 1, but—

Micky Mannock was as great an ace as any that the war produced. He won the V.C. and he scored seventy-three aerial victories. The German airmen couldn't touch him. On July 26, 1918, Archie ended his career. Captains Thayre and Cubbon and Rhys-Davids of the R.F.C. went as he did. They were all aces but Archie did not respect their reputations.

Lieutenant Hamilton Coolidge of the Hat-in-the-Ring Squadron won eight victories in a short fighting career; five German planes and three balloons. Archie had the last laugh on him. A direct hit tore his Spad to pieces near Grandpré on October 27, 1918.

Edmond Genet, first American flyer to die after America entered the war, was also written in the black book of Archie.

The list is long, but the figures still loom large. Archie missed 30,000 times for every one of those men who died. But did Archie miss that many times? Maybe it is a sign of hasty thinking to say that every shell Archie threw was a miss. Archie was not always a destroyer. He was also a great friend. Many of the shells went skyward with no hostile intent.

It was Archie's gracious custom to warn his own flyers when hostile planes were hovering above in the sun. Archie did this by sending up bursts on the side from which attack was to be expected. Many a flyer owes his life to such warnings and Archie used many shells in this manner.

No one will ever compute either, the lives saved by Archie's game of bluff. Many an air attack was averted by Archie when the attack would have been successful if pulled. By throwing his frightfulness into the air in great wasteful quantities, Archie often discouraged bombers or artillery spotters who were approaching a poorly protected position. Many shells were fired to no effect as far as direct damage was concerned—but were they wasted?

All through the war, the air services were subject to many calls. Munition dumps and factories and batteries and railroads and supply depots were constantly calling for aerial protection. To fill all of these demands the air services would have had to spread the available men and ships out so thinly that no offensive war would have been possible.

Archie, the great friend, stepped into the breach and satisfied the demands. The load was lifted off the air force. Archie's friendliness extended to his own infantry. They were helpless against an attack from the air and they knew it. A series of attacks ruined morale. Archie bucked up failing spirits by giving the ground troops visible assistance; aid that they could see and hear.

When the fighting scout got mixed up in a dogfight and downed an enemy or two, he wanted credit for it. Where were the confirmations coming from? Archie spoke up and helped build many a score. Archie always had his eyes on the sky and he saw many a fight. He was an unfailing source of confirmation.

Oh, yes. Archie did many things besides waste the taxpayer's money by shooting at the moon.

Maybe a word or two about Archie's queer relations would be in order. Every family produces its freaks and the Archibald family was no exception. By some quirk of circumstance—or perhaps a Teutonic genius for experiment—most of the freaks were German.

The queerest of all was the Archie known in R.F.C. messes as "The Family Ghost." This phenomenon was only observed along the Ypres front. It appeared as a single white column rising to a height of sev-

eral thousand feet and staying motionless for ten or fifteen minutes at a time. It was described by one airman as a "gigantic celery stalk" and that seems to fit it as well as anything else, since it had a tendency to flower out at the top.

There is no record of this branch of the family causing any casualties and I have never learned its purpose or explanation. During the war it was rumored that this was a gas of peculiar composition sent up in the hopes of catching British patrols. If this is so, the experiment was a flat failure.

Another freak was the "Flaming Onion." There were two breeds of this. One appeared to be a string of flaming balls with red hearts. These were mildly incendiary. By "mildly" I mean that under certain circumstances they would set fire to a plane; but not invariably. The other variety seemed to have no excuse except perhaps some deep inner love of beauty in Archie's hard heart.

This second variety was fired into the air at all altitudes up to 6,000 feet and was used mainly in defending balloons and in firing at low flying bombers. This brand of "Flaming Onion" appeared as ropes of glowing jade; beautiful and awe-inspiring, but quite harmless. Many instances are recorded of pilots flying right into this fireworks display and emerging unscathed. There are no instances within my knowledge of these green balls harming any one. If this was "Archie" it was a distant relative.

While on the subject of green, we might mention that there was also a green archie burst which went skyward from German batteries. This was not commonly used and it was generally supposed that the Germans used it for ranging purposes.

Machine-gun fire from the ground was included by many pilots under the head of "Archie," although there is grave doubt that machine guns belonged to the family. It is true that they were consistently employed by the ground forces against aircraft and that they teamed with the A.A. guns in the defense of sausages and airdromes. Still, it seems wrong to include them in the Archibald family.

If we so include them, we have to chronicle the fact that, among other triumphs for the ground forces, there was the destruction of the indomitable Frank Luke who was forced down in Germany by the anti-aircraft group protecting a German balloon. We also have to mention Gunners Evans and Buic of the 53rd battery, Australian Field

Artillery who claimed that they—and not Roy Brown—shot down Baron von Richthofen. We also have to mention that these two men were decorated by the British Government on the strength of their claim.

Still, I am opposed to the idea of allowing the machine gun a place in the Archibald family tree. I am including it only because many flyers did and I want to keep the record straight.

At any rate, the machine gunners did not fire any of those 30,000 shells per plane. Let's take a look at the men who did.

If you were to visit an archie battery, you would probably go with the expectation of meeting a group of tough old campaigners, big, bearded brutes probably with deep, surly voices like the *wouff* of the great consumptive himself. You'd get a big surprise.

You would find young men, as young as the flyers themselves. In the first few minutes there, you would realize that the archie gunners had to be young men. It takes the keen eyesight of youth to spot planes high in the sky, identify them as friend or foe and guess at their probable mission from their type.

Oh, yes. The archie gunners did not content themselves with merely making sure that the planes above were hostile. They did identify and classify them. And in many cases where they could not inflict damage, they were able to phone along information on the flight going over to the point in the lines most likely to be menaced.

Within a few seconds after the archie crew spotted a plane, they knew whether it was a bomber, an attack plane, a scout, observation, photographic or artillery spotting plane.

The archie men could do more than that. They could point out two tiny specks in the distance, identify them as Spads, or as S.E.s, squint at them for a minute and then tell you that the two planes were Rickenbacker and Chambers or McCudden and Rhys-Davids. While you looked at them doubtfully, they would explain that they were familiar with the flying habits of the leading flyers on their Front, friend and enemy, and that every flyer has some flying characteristic that will identify him to an observant person.

The archie battery was strictly the place to get authentic information on planes. The gunners knew more about the different ships, their

speeds and all round performance, than any 99 pilots out of 100. The pilot knew his own ship and those with which he dealt in a friendly or hostile fashion most frequently, but his knowledge was miles behind that possessed by the archie crew.

A glance would be sufficient to tell an archie gunner the altitude of any plane flying over the lines.

When you get over your surprise at the things that these amazing young men can do, they will explain to you how they do it. They will explain in a language that no wartime pilot, with all of his knowledge of planes and of flying, could speak; the language of those whose business it is to know more about planes flying overhead than any one else; a language abounding in such terms as "cruciform tails," "knife-edge booms," "trapezoidal wings," "fluted trailing edges," etc.

More remarkable than their technical knowledge, however, is the manner of applying it. There is a definite formula to the working of their magic and the A.A. men were always willing to give away their trade secrets to those whose intent was friendly. In fact, they made light of the difficulties involved in their work.

"On a day when the clouds form a nice white background at about 20,000, our job is very easy," they will tell you. "Sometimes, though, the mist is pretty thick and the clouds are low. Then it is trying."

"Trying" is a nice mild way of expressing it. Imagine yourself in Archie's shoes with banners of mist waving in the sky and a streaky light making it possible to see a plane for only a second or two at a time. How would you tell friend from foe and one ship from another. Here is what you would have to do. Archie says that it is a bit trying.

You will first determine if the plane above you is a pusher or a tractor-type plane. There are comparatively few pushers and your job is not so difficult if the invader falls into that class. You will then further classify him as either single or multi-engined. The identification of the exact type is then routine.

Suppose, however, that the plane turns out to be a tractor type—as it probably will?

You will immediately drop it into one of three classes: biplane, monoplane or triplane. If it is either one of the last two named, you have an easy task. Monoplanes and triplanes are pretty rare and there

are marked differences in design which make identification simple. If it is a biplane, however, you earn your salt as an archie gunner. Most of the war planes are tractor biplanes and a great many of them fall into conventional patterns that make difficult a separation of type and style except to a trained eye. We will suppose that the plane above you is a biplane, make and nationality unknown.

First notice the undercarriage. Biplanes can be divided into two classes: those which have the V-type undercarriage and those which do not. By making the classification at the outset, you narrow the range of possibles fifty percent.

Next, notice the tail. It is here that startling differences in design are apparent. How many rudders has the ship? What is their position relative to the fuselage, and their shape? How many fins has it? What is the shape and position of the tail planes and elevators?

When you have answered these questions for yourself—and the archie gunner answers them in a glance—you have narrowed the field considerably. If you know your ships, you are now in a position to make a good guess as to the plane's make and identity.

Archie, however, does not guess. He next checks the main planes and notes the proportion of the span of the lower plane to that of the upper. He counts the number of struts on each side of the fuselage and notices whether the top plane is staggered or not. The shape of the wing has also been registered in his eye; whether rectangular, rectangular with rounded tips, trapezoidal, etc.—and whether the ailerons are flush or extending beyond the main plane.

From directly beneath a plane that is being observed, Archie relies upon his knowledge of wing-tips, tail planes, elevator and fuselage silhouettes. When his view is slightly from the side, he identifies the plane by the shape of rudder, fin and fuselage. His knowledge is exhaustive and he can make his check-up of a plane 12,000 or 15,000 feet above him in a small fraction of the time that it takes to read this description of his methods. He has to. A plane traveling 100 to 140 miles per hour does not tarry long in Archie's range.

Sometimes, however, the routine checkup does not completely identify a plane. Archie's senses tell him that it can be one of several possible German or Allied planes. His final test in these cases is (a) the proportion of wing span to length; (b) the position of the prop in proportion to the plane; (c) the type of engine.

Archie's ears are as good as his eyes. He not only knows what every flyer knows—that rotary engines give a continuous exhaust sound radically different from stationary engines—Archie knows the difference in beat between different makes of individual engine types. Very often the first report of the Germans using a new type of engine in an old ship came from the A.A. gunners.

Trying? Yes, I rather think it was.

To further an understanding of this phase of Archie's work, I am appending a chart of identifying marks which distinguished wartime planes to the alert eye of Archie. It is necessarily incomplete but it is accurately compiled, as far as it goes, from the logbooks of German and Allied A.A. gunners.

There are no monuments to Archie. He is the great unsung hero of the war in the air. The blighter heaved 30,000 good shells into the air for every plane he brought down. Still and all, I have an idea that Archie earned his salary.

ARCHIE'S NOTEBOOK

ARMSTRONG-WHITWORTH—Early models not V type undercarriage. Later models V type. 120 Beardmore engine enclosed in cowling. Upper and lower wings equal span.

AVRO—Rotary engine. Undercarriage not V. Long narrow fuselage. Two bays of struts each side.

AVIATIK—Two-seater. Benz engine completely enclosed in special cowl.

A.E.G.—Trapezoidal wings. Fluted trailing edges.

ALBATROSS D-3—Outer edges of wings oblique. Shovel-shaped, fixed tail planes. Projecting fixed engine. V-struts.

ALBATROSS C-3—Planes of equal span. No sweep back to wings. Front row of struts vertical. Back row slightly inclined backwards. Triangular fin. Semi-circular rudder.

CAUDRON R-4—Pusher. Multi-engined. Three-bay interplane struts outside each engine nacelle.

CAUDRON G-6—Pusher. Multi-engined. Distinguished from other Caudrons by small lower plane.

D.H.2—Pusher Scout. Tail booms attached to internal after struts. Rear center bay interplane struts. Small nacelle. Monosoupape Gnome engine.

FARMAN (MAURICE), 1913 type.—Long-horn landing gear. Pusher.

FARMAN (MAURICE), 1914 type.—Short-horn landing gear. Pusher.

FARMAN (HENRI)—Short lower main plane. Monoplane elevator supported by booms which taper to vertical knife edge. Pusher.

F.E. 2-b—Pusher. Small triangle above elevators and tail planes. Tail booms taper to vertical knife edge.

FOKKER D-1—Cabane like Nieuport. Two bays of struts each side. Center section of upper plane raised to allow guns to clear engine cowl. Comma-shaped rudder.

FOKKER D-2—Rotary engine edition of D-1. Oberursel rotary.

FOKKER D-7—Deep section wing. No external bracing. Ailerons projecting beyond ends and trailing edges. N struts. Plane between wheels.

HALBERSTADT D-3—External rudder post stays—without fixed fins. Slab-sided fuselage with rounded top. Square cut planes. Projecting ailerons.

HANDLEY PAGE—Multi-engined tractor. Biplane tail. Balanced ailerons projecting beyond the ends and trailing edges of wings. Bulky fuselage. Round nose.

LETORD—Multi-engined. Back staggered main planes.

S.E. 5—Dihedral angle of wing 171 degrees. Undercarriage far back. Long nose. Hisso engine.

SOPWITH CAMEL—Length 18 feet, 9 inches against span of 28 feet. Hump in front of cockpit. Upper and lower planes equal span. Trapezoidal wings and tail plane.

PFALZ SCOUT—V Struts. Lower ends not meeting at point but connected by short horizontal member. Tail plane with flat top surface and convex bottom surface. 160 h.p. Mercedes engine enclosed in streamline cowling.

ROLAND, C TYPE—Whale-shaped fuselage. Biplane—Pilot and observer above upper plane. I struts. Aileron upper plane only.

VOISIN—Pusher. Cruciform long span, short-chord tail. Main planes with very long span.

VICKERS—Pusher. Round, bullet-shaped nacelle well raised from main planes.



Questions for your entrance examination to the *War Birds* are based on information in this and pamphlets Nos. 1, 2, 4.

No one will wear the *War Birds* wings or carry the *War Birds* card who does not know of, and respect, the things that make up the life of a sky warrior. There is an examination to be passed before you qualify—and it is not an easy examination. But, when you have passed it, you will know the glory of really "belonging." Your wings will not be a mockery—they will stand for something tangible and you will have won the right to wear them.

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