

America's Aerial War Eyes Being Perfected Rapidly

Observation Balloons Play Essential Part in Modern Battles and This Nation Will Not Lag

By A CAPTAIN IN THE AVIATION CORPS.

HARDLY a train moves within five miles back of the German trenches or a squadron of men come up for relief or digging is begun on a new series of emplacements but a pair of keen eyes, steadily watching from great observation balloons just behind the allied front, takes notice of it.

Every movement, every activity is registered until a schedule of the usual enemy routine is built up and the average amount of motion known. Any departure from this schedule is suspicious. A train running late or with more cars than usual, men in the trenches being relieved too frequently, new roads or emplacements being built too earnestly, give the first hint that hints, across the line, is up to something.

A keen balloonist notes any of these changes, and at once telephones down to the ground. "An extra train of six cars passed — at 10:40." Half a mile further down the line another set of eyes reports, "Large convoy moving up to front, range so and so." Still a little further down another suspicious circumstance is noted, until the General Staff down below, assembling all these scraps, foresees the beginning of a big offensive across the line. Counter measures are taken, batteries directed, convoys and trenches smashed up, and the enemy's plans thrown askew.

Possibly, however, the offensive is to come from the balloonist's own side. The observer ascends with full knowledge of all the details of action, emboldened probably to move up much nearer the German lines than usual in the belief that the enemy's artillery will be driven off.

The opening bombardment is a time of ceaseless and vital work, spotting shot by shot, watching for new enemy batteries to open up, moving the barrage fire back and forth with the advance of the troops. Any error here may send the steel wall into the observers' own troops or cost scores of lives later by failure to make a complete demolition of the enemy's defenses.

Work of Vital Importance. "Hostile airplane overhead" is apt to break in through the telephone wires at any moment.

A German aviator more adventurous than his fellows is swooping down, perhaps under a protecting cloud. An attempt to put out the ever watchful eyes. The observer makes ready his parachute, the machine guns on the ground below click off a rain of lead at the intruder, and the aviator starts bringing the big envelope to ground with all possible speed.

Perhaps the intruder is driven off; perhaps the balloon is set afire and the balloonist forced to parachute to the ground. In either case it is all a part of the day's work which adds adventure and romance to the responsible work done by the balloonist.

Such is brief—very brief—the duty and work of the balloon observer. Calm, patient, ever watchful, he rides far above the ground as the great envelope sways on its long cable.

Hours pass faster, but finally, as inevitably as fate, the reward comes. A single flash, a slight movement across the line, and another tiny claw of the German eagle reveals itself for the allied artillerymen beneath.

The vital importance and the development of the work have hardly as yet been suspected in this country. "Over there" balloon observation has become a science which, while perhaps less spectacular than alpine observation, is none the less essential.

The balloonist, riding steadily for hours at a time with the German lines spread out before him and in direct telephone communication with the ground, with his batteries and with other balloons, amasses a maze of details and accurate knowledge which his longer winged air brother cannot hope to secure.

American's New Balloon Corps. The first use of balloons in warfare dates away back to the Napoleonic wars, when France employed them against Austria. So revolutionary was the procedure, however, that all captured balloons came into their own only by the enraged Austrians.

During the civil war in this country Northern observers looked out across the Potomac from near Washington at the Confederates and gained very valuable information though under very precarious circumstances. France further developed the art in the war of 1870 against Germany, who later took it up on a much more ambitious scale in her Zepplins. The science that upon such times, however, as did that of airplanes, and the War Department's reports of a few years back are full of evidence that the work was done in ballooning far back of funds.

The balloon services abroad, however, had been carefully if modestly developed for military purposes, and the moment that the war settled into the trenches came into their own again. It was at once discovered that work could be done with them which could be done in no other way.

Balloon observation began to assume vital importance, until now hardly a mile of the front lines is without its big clumsy envelope. A constant, ceaseless vigil is maintained over every move of the enemy, over every shell fired by either side, so that friends below may be saved from surprise and enemies across the lines may feel the weight of every shell hurled at them.

The United States is building up such a force literally from nothing. Last November the old field out West

cutties, though not so great as might be expected. Flies in thunderstorms is of course dangerous because of the lightning. Rainstorms, appreciably add to the weight of the balloon and thereby decrease its ascending power, while heavy winds put a strain on the cable and considerable wear and tear on the envelope.

Clouds are bothersome as a mask for lurking airmen, and fog, if regular through the atmosphere, render observations very difficult. Nevertheless, so essential is the news gathered by balloonists that they are sent up in all kinds of weather.

One of the most difficult and yet essential parts of the work is that of concealing the balloon "beds" especially from enemy airmen who like to

Duties of Observers. The work that this force will do will be invaluable. With the airplane operators and photographers, it will complete the vast air service which is expected to blind the German army and prepare the way for the artillery and infantry to break up the German military resistance. Its minute by minute observations will lead off all enemy surprises and will at the same time make it possible for American men and American munitions to secure the maximum of destruction of the other side of No Man's Land.

Few of us realize that the big envelopes commonly ascended as high as 4,500 feet and that they stay for hours poised in midair to perform the responsible duties assigned them. Usually the ascent is made anywhere from two and one-half to four and one-half miles from the enemy's front line trenches, depending on the power of its artillery, the direction of the wind and the activity of the salient.

In any case the observer has a circle of vision of about eight miles, and is able to pierce far back into the enemy's lines. The most detailed and up to the minute maps, the finest kind of field glasses, and instant communication with the ground make the balloonist a master of everything spread out before his gaze.

When the American troops are preparing to go over the top an unusually large number of balloons will be concentrated as secretly as possible in masked camps in order not to betray what is about to take place. At the appointed moment they will take the air and divide up every detail of the battle among them. Some will record the heavy artillery fire, shot by shot; others will see to it that the work of demolition behind the enemy's lines is effective; others will guard against any reinforcements or traps.

Keep Watch on Fees. As the troops go over they will check closely the German batteries, the shifting of their infantry and the assembling of supplies. As the American forces advance the balloons will move forward also in unison with them along routes previously prepared. Observations on the barrage will be sent back repeatedly, to that the men and details sent so that the enemy's guns setting up the destructive counter barrage may be silenced.

To do this the American balloonist must know the detail of the enemy's land opposite him, for a mistake on his part may cost the lives of scores of men below. No new battery should open up across the lines without its location being spotted on the detail map, the number and size of the pieces and their objective noted, and counter fire preparations made against it.

No new troops should move into the enemy trenches without being fully known, numbers as well as route—most difficult work of all—for the German has many wily devices for simulating, gunfire and camouflaging movements.

And the work also will not be without danger and difficulties, though the chances of a fatal outcome are not large. If it is not a swooping aviator bent on setting the big gas bag on fire, it may be a fall of the balloon, or the same object or of a shell striking the balloon, or a shell striking the balloonist below and set the big bag adrift in a wind blowing across the German lines. Naturally every precaution in the way of protecting airmen and anti-aircraft guns is taken, but even at that constant vigilance is essential.

Weather conditions also bring difficulties, though not so great as might be expected. Flies in thunderstorms is of course dangerous because of the lightning. Rainstorms, appreciably add to the weight of the balloon and thereby decrease its ascending power, while heavy winds put a strain on the cable and considerable wear and tear on the envelope.

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When a hostile airplane appears the observer gets ready to use the parachute if need be.

Backed up against the Old Schloss are tall and crumbling vestiges of the yet older residence of the Elector of Brandenburg, which the first Frederick had intended to remove. It is the one legendary and picturesque spot in Berlin the modern.

The Old Castle has 600 rooms, most of which are not inhabited. There is a grand staircase, dark, monumental halls of pillars, sculptures, fading frescoes and slippery floors.

And there is one crumbling tower, the heaviest, darkest, most abandoned part of all, which never served any purpose in the White Lady's time. It is the Tower of the Green Hat, where the Margrave Frederick of the Iron Tooth did his wickedness with the Iron Maiden.

It is a hollow statue, which opens like a window, and inside with steel armor. When the Iron Tooth caught him from behind he was a fair trial, then said, "Conduct him to the Maiden." Like a linged mummy case it opened. They pushed him inside, then pushed behind. That was all.

In the Tower of the Green Hat lives the White Lady, the family ghost of the Hohenzollerns.

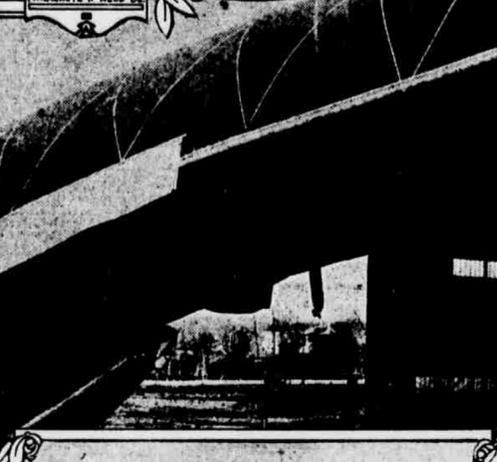
At midnight she slides through the 300 rooms of the Old Castle, through grand apartments, Hall of the Chivalry, through the white and yellow suites of state and the great and lesser banquet chambers, but never crossing the threshold of the royal apartments proper, except—

Except on the eve of the death of a Prince of the family!

The White Lady is supposed to haunt an unknown room invisible to all, and only walks or shows herself when a Hohenzollern Prince is about to die.



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OBSERVATION BALLOON PREPARING FOR AN ASCENT



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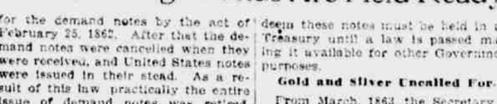
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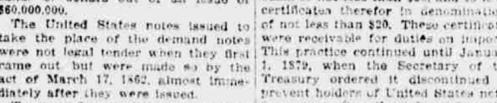
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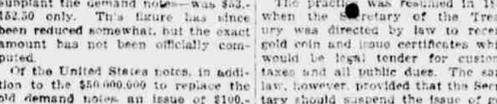
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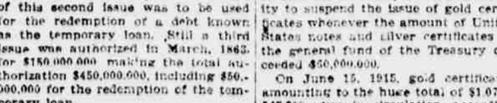
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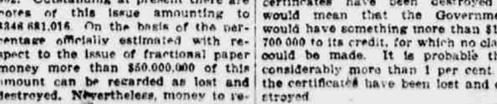
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The White Lady of Berlin, Fatal Hohenzollern Ghost

Singular Legend Bears Many Marks of Authenticity and Is Generally Believed Throughout Germany

It is a singular legend, old, authentic, mentioned by all the historians, and still has vogue and credit in Prussia. So, once again they ask in these bad times: "Has the White Lady walked?" By STERLING HEILIG.

THE enormous and gloomy pile which they call in Berlin the Old Castle is a sort of mountain of stone, a third of a mile round, surmounted by a heavy dome. The first King of Prussia, Frederick, began its construction in 1695 to rival Versailles, when Berlin was a rustic burg with plenty of space for gardens, alleys and fountains, which no longer exist.

Everybody believed that Joachim had a first instalment, then he died suddenly. The alchemist disappeared, and the new Elector, Johannes-Georg, imprisoned Anna Sidow at Spandau to discover if possible the facts of the case. She died there miserably, and her ghost, unwilling to quit earthly splendors and having a good feeling for the family, wanders in the high halls of the old Electors' residence and the palace added to it by her Joachim's descendants.

Some say that she was a beautiful young widow, mother of two children, the Countess Agnes of Orlamunde, a historical character. She fell madly in love with one of the ancestors of the Hohenzollerns, the Margrave Albert the Handsome. He was heard to say: "I would gladly marry the widow if it were not for four eyes that bother me."

Agnes imagined that he meant her children, so she killed them with a gold needle. What the Margrave really meant was his own father and mother, who opposed the match. On learning her mistake, the cause of her double crime, beautiful Agnes went crazy with remorse and killed herself.

A third version is more awe inspiring, cloudy, vaporous with Margrave Albert the Handsome, the Iron Maiden, which crushed and cut up so many human beings in the Tower of the Green Hat, body of iron and wood, without a soul, came, in the course of time to have a kind of elemental spirit of its own, composed from the souls of victims it tortured.

Whoever she is, she has been seen; therefore she exists. The White Lady of the Old Schloss of Berlin is no vulgar myth. Punctually she does her mission of warning. She warns Hohenzollern Princes when about to die.

Many princes who beheld the White Lady never told of it. In the night she stood beside their beds in the castle. In camp, across an evening fog, she showed herself—and the Prince fell. These were they of sudden deaths, who never told; or proud men who kept their own counsel. Some merely gaped out: "The White Lady!"

Others who beheld her, simple functionaries, humble valets, dared not ask her any explanation. She glides past such, vaporous, impalpable, saluting with an inclination of her head, content in the White Lady's large, heavy, black, velvet, and reaches waxing floors at cockcrow.

Once a sunny page perceived her in a corridor close to the Green Hat (it was in the days of Elector Johannes-Sigmund, father-in-law of Gustave Adolph), the Elector's daughter, who had been in the room, saw her and said: "Lovely mask, water goes!" The White Lady did not reply, did not seem shocked, but passed across his arm like a fog, and, passing, tapped him on the forehead with a large key which she held in her right hand, which she held the key with which she opens the 500 doors of the Old Castle.

The Elector Johannes-Sigmund died the next morning at 0:30, but the sunny page lived on to tell his adventure a hundred times. Only it began to be noticed that the complexion of white rose maids, who became banquet chamberlains, but never crossing the threshold of the royal apartments proper, except—

Except on the eve of the death of a Prince of the family!

The White Lady is supposed to haunt an unknown room invisible to all, and only walks or shows herself when a Hohenzollern Prince is about to die.

Three Versions of Her. Some say that she was Anna Sidow, a beautiful girl of the people, who in the sixteenth century turned the head

of Elector Joachim II. He ruined himself financially for his favorite, and to cover her with greater splendor applied to an alchemist, the Philosopher's Stone, who with a single grain of the Philosopher's Stone contracted to manufacture 200,000,000 gold thalers.

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UNITED STATES GAINS MILLIONS BY DESTROYED BANK NOTES

Accident Aids in Reducing Redemptions, Though Funds Are Held Ready

Every time a national bank goes out of business it is necessary for the bank to deposit with the Treasury sufficient money to redeem all the notes it has issued. It is an extremely rare occurrence for all of the notes to be presented for redemption, even years after the bank has gone out of existence. However, until a law is passed fixing a time limit for the redemption of notes these funds must remain on call and cannot be utilized for any other purpose.

Every big fire, such as those which occurred in San Francisco, Chicago and Baltimore, destroys enormous quantities of paper money of all sorts. For all of this paper money there is money deposited in the Treasury which can never be claimed. As a result the United States Government is considerably richer, although it can do nothing with the money but let it remain waiting for use for redemption purposes. Treasury officials are unable to estimate the amounts in paper money lost through fires, floods and similar calamities.

The first paper money issued in the civil war by the United States was authorized by Congress in 1861. The notes were termed demand notes, because they were payable on demand at certain designated sub-treasuries. The Secretary of the Treasury was empowered to reissue these notes, but this privilege was to expire December 31, 1862. The first two acts authorized issues amounting in all to \$50,000,000. In February, 1862, an additional issue of \$10,000,000 was authorized and there were also reissues.

One Item of \$50,000,000. The notes were paid in gold when presented for redemption, and they were receivable for all public dues. These two qualities of the notes are officially credited with preventing their depreciation in value when all other United States notes slumped between 1862 and the resumption of specie payments sixteen years later. United States notes were substituted

for the demand notes by the act of February 25, 1862. After that the demand notes were cancelled when they were issued in their stead. As a result of this law, practically the entire issue of demand notes was retired. There is a small amount of them outstanding, but it is only a few thousands of dollars out of an issue of \$50,000,000.

The United States notes issued to take the place of the demand notes were not legal tender when they first came out but were made so by the act of March 17, 1862, and immediately after they were issued. Treasury figures show that on June 30, 1915, the total of United States notes outstanding—the notes issued to supplant the demand notes—was \$32,162,300. This figure has since been reduced somewhat, but the exact amount has not been officially computed.

The United States notes, in addition to the \$50,000,000 to replace the old demand notes, an issue of \$100,000,000 was authorized in February, 1862, and a second issue of \$150,000,000 in July of the same year. One-third of this second issue was to be used for the redemption of a debt known as the temporary loan, \$111,111,111. The general fund of the Treasury expended \$36,600,000.

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On June 15, 1915, gold certificates amounting to the huge total of \$1,072,847,819 were in circulation, according to the figures of the Treasury Department. If only 1 per cent. of these certificates have been destroyed, it would mean that the Government would have something more than \$10,700,000 to its credit, for which no claim could be made. It is probable that considerably more than 1 per cent. of the certificates have been lost and destroyed. Nevertheless, money to re-

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On June 15, 1915, gold certificates amounting to the huge total of \$1,072,847,819 were in circulation, according to the figures of the Treasury Department. If only 1 per cent. of these certificates have been destroyed, it would mean that the Government would have something more than \$10,700,000 to its credit, for which no claim could be made. It is probable that considerably more than 1 per cent. of the certificates have been lost and destroyed. Nevertheless, money to re-