

## Making Gunpowder Dangerous; Yet Safer Than Taking a Bath

Making gunpowder has been called the most dangerous job in the world. Yet there is a higher percentage of accidents in home bathrooms than in plants where death to the Axis is cooked like macaroni. A glance at one plant in the southern Appalachian mountains will explain this paradox.

Every worker is carefully searched on entering the plant, which itself is separated into many units so that one unit can blow up without taking the others with it. A worker caught carrying a safety match inside the plant is suspended for two weeks. Anyone found with an ordinary kitchen match is dismissed. Hundreds of signs remind workers of how close they can be to eternity.

Here is made much of our smokeless powder which is the propellant that drives the shell containing the explosive.

This slide is not for recreational purposes. It is an emergency exit chute. There are several of these chutes throughout the plant spaced only a few yards apart. All can be reached by workers in a few seconds. A plant worker demonstrates a quick departure.



As no matches are allowed, the management provides an electric lighter in the one place smoking is allowed—the "bull pen."



Workers' shoes are made so that there is no danger of striking a spark. Soles and heels are glued on. Coveralls are fire-proofed.



The basic ingredient of smokeless powder is usually short-fibered cotton, or wood-pulp.

When cotton is used it is mixed with acids in the nitrator house. Then it flows like a stream of froth to the boiling tub house. In this form it is known as "nitro-cellulose slurry." After several more changes the cotton looks like macaroni. In the last process the strands of smokeless powder are snipped into various lengths for different caliber shells.

Above: Raw cotton at the start of its death dealing transformation. Left: Nearing the macaroni stage, the strands are forced through this press to get them even and smooth.

A ballistics technician is shown at right ready to fire a shell to test the projectile's velocity, hence the efficacy of the new powder. A wire, finer than a human hair, is stretched across the framework and another target, set a distance away, is also wired. The time shell takes to travel between the two targets is electrically recorded by the wires.



## Historic Rainbow Division Is Born Anew

By ELMO SCOTT WATSON  
Released by Western Newspaper Union.

THE other day veterans of the 42nd Division of World War I held their reunion in Tulsa, Okla. Then they went to Camp Gruber near Muskogee, there to see the reactivation of their tradition-rich outfit, to pass on to the new 42nd Division of World War II their honored battle flags and to gaze proudly upon the shoulder patch adorning the uniform of each man in it—the red, yellow and blue striped quarter-circle which was the sign and symbol of a "First-class fightin' man," a member of the "Rainbow" Division.

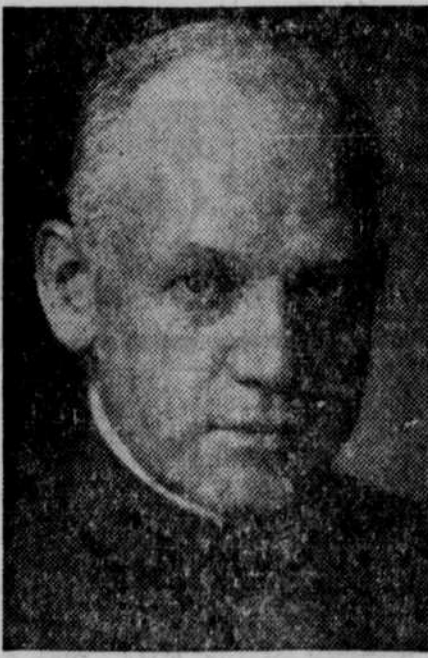
The reactivation took place at midnight—the "Champagne hour," so called because it was the hour when the last great German push of World War I, the Champagne offensive, began. That offensive, which started on July 14, 1918, broke to pieces against the stubborn resistance of those fighting Yanks of the Rainbow division and from that day the might of the Kaiser's armies ebbed until it reached low tide in a railroad car in Compeigne forest four months later.

Two Messages. Before the veterans of the Rainbow division of a quarter century ago adjourned their 1943 meeting, they sent two messages to widely separated parts of the world. One was flashed to Gen. Douglas MacArthur, "somewhere in the Southwest Pacific," because it was he who had given their division its nickname. The other was the traditional reunion greetings to one-armed Gen. Henri Joseph Eugene Gouraud, who commanded the Fourth French army, which included the American division, at the historic battle in the Champagne sector July 14 and 15, 1918. The message was sent to Gen. Dwight D. Eisenhower, commander-in-chief of the Allied forces in the European theater of war, to be transmitted to General Gouraud "somewhere in Occupied France."

In the early summer of 1917 a young colonel named Douglas MacArthur was serving as "censor" for news coming out of the war department in Washington. Visited by newspaper men one day, he told them of the forthcoming organization of a new division to be composed of units from 27 states and the District of Columbia. As the journalists were leaving, MacArthur remarked that the assembling of so many units from so many states into one division was somewhat like making up a rainbow. Struck by the aptness of the expression, the newspaper men used it in their stories and the nickname stuck to the division when it was organized on August 1, 1917, and concentrated at Camp Mills on Long Island in New York.

While the division was still at Camp Mills, many different kinds of rainbow designs were used as divisional insignia. They were irregular in size but nearly all were a half circle with the three colors of red, yellow and blue in them. It was not until the division was engaged in a major action in the Meuse-Argonne that the final, official design was conceived and adopted. Col. William N. Hughes Jr., who had succeeded Col. Douglas MacArthur as chief of staff of the division, determined the measurements, reduced the original design to a quarter circle and telegraphed the description, with the approval of Maj. Gen. Charles T. Menoher, then division commander, to corps headquarters.

It is one of the cherished traditions of the 42nd that General Menoher, acting on an omen of a rainbow in the sky,



GEN. CHARLES T. MENOHER . . . he saw a rainbow on the eve of battle



THE RAINBOW . . . became the insignia of the 42nd division

sent the division into action in the Champagne operation. From the time that he told of seeing the rainbow in the sky from his bivouac in the Baccarat sector, rainbows kept showing up at decisive hours in the division's history, as if to justify its selection as the 42nd's talisman.

Before long veterans of our regular army as well as veteran French and British troops were joining in proclaiming the Rainbow division as one of the hardest fighting outfits in France. Here is its record, as given in a series of articles on "AEP Divisional Insignia," written several years ago by Sgt. Herbert E. Smith for the United States Recruiting News:

### First Taste of War.

It trained veteran French soldiers in Lorraine, and elements of the Rainbow division entered the front line trenches for the first time February 21, 1918. This was along the Luneville sector, at a point north of Celles-sur-Plaine, through Neuveville, Ancerville, the eastern edge



GEN. HENRI GOURAUD . . . to him, each year, a greeting

of the Bois Banal, to the eastern and northern edges of the Forêt de Parroy. Elements of the 42nd's artillery brigade entered the Dombeval sector, also on the night of the 21st, to receive their first taste of combat warfare affiliated with the French 41st division.

From March 31 to June 21 the division occupied the Baccarat sector in Lorraine, moving from there to Chatel-sur-Moselle in the Vosges. Then came July, with its heavy fighting in the Champagne and Champagne-Marne areas. The highlight of the 42nd division's activities at this time would seem to be the battle of La Croix Rouge Farm.

This farm was a low, widespread group of stone buildings connected by walls and ditches. The Germans had made an enormous machine gun nest of this natural stronghold, and had defied several earlier determined efforts of Allied troops to dislodge them from this key position. The 167th and the 168th infantry regiments, old Alabama and Iowa troops respectively, struggled all day, July 26, against this nest of horrors. It was practically impossible to rush this enemy stronghold across the open; endeavors to work around the edges were thrown back by flanking fire; an accurate punishing shell fire from the German artillery ripped through the wet underbrush; gas, made doubly dangerous by the moisture, swirled about in terrible gusts.

At last, two platoons of assembled casuals—volunteers, all, from the 167th and 168th—led by two lieutenants, squirmed their way forward, Indian fashion, and closed upon the farm buildings with grenades and bayonet. The raid, staged at dusk, was successful. The 42nd possessed La Croix Rouge farm at nightfall, but at a fearful cost in dead and wounded.

Less than a week later these same regiments, with their sister outfits of the Rainbow, were pressing forward toward the Ourcq river. Upon

the 42nd fell the chief burden of the main attack. It was ordered to storm the heights on both sides of Sergy and, in conjunction with the French on the left, to take Hill 184 northwest of Pere-en-Tardenois.

### A Deadly Hall of Fire.

The 168th infantry crossed the stream under a deadly hail of fire, to climb by slow stages to the crest of Hill 212, between Sergy and Cierges. The 167th meanwhile, had made its way down the Rue de la Taverne, crossed the Ourcq, and swept on up the northern slope of the hilly country.

New York's "fighting Irish" of the 165th infantry emerged from Villers and secured a precarious lodgment on the slopes on either side of Mercury Farm. Subjected to the same raking fire that had made this push so costly, this fine regiment still carried on, plunging forward to the sunken road north and west of Sergy.

By midafternoon the weary doughboys of the 42nd division were battling in mortal, hand-to-hand combat with the Germans in the streets of Sergy. The enemy troops were of the 4th Prussian Guard, grim and spirited fighters embittered by recent German setbacks, veterans all and determined men.

Twice the Americans were rushed out of Sergy, but thrice the Yanks returned, and the third time the Americans captured the entire village. Again the men of the Rainbow division had proved to be of heroic mould.

In the St. Mihiel drive, launched in mid-September, the 42nd, with the 1st and 2nd, formed the spearhead of the attack which penetrated deepest into the enemy positions. In the main attack, the 2nd division captured Thiaucourt, the 1st took Nonsard, and the 42nd division drove through to Pannes.

Through the thick of the heaviest action of the Meuse-Argonne operation, the Rainbow carried on. It penetrated the Kriemhilde line, swooped up the fire-swept slopes about Romange and Cote Dame Marie; it seized Cote de Chatillon by skillful infiltration behind its protective wire, and early in November, on the extreme left flank of the American attack, it began to fight through Bulson, Thelonne and Bazailles, on the Meuse, to gain the cherished final objective—Sedan.

The taking of Sedan, for sentimental and historic reasons, however, was left to the French 9th corps, on the left of the Rainbow. On the night of November 10 the 42nd division was relieved, and assembled in the area of Artaise-le-Vivier and Les Petites-Armoises.

### The Full Tide of Victory.

The 42nd thus shared in the full tide of victory, on the morning of November 11, 1918. The American Second army was even then preparing for a general assault in the direction of Metz, in an offensive with the famous Mangin and 20 French divisions. The Meuse had been crossed, French troops in Sedan in retaliation for the terrible French defeat there in 1870; the Germans were on the run, almost in utter rout.

Naturally, the Rainbow was one of the crack divisions of the AEF chosen to be a part of the American Army of Occupation. Concentrating near Stenay, it began the long hike into the Rhineland on November 20. On December 14 it took its station in Germany in the Kreis of Ahrweiler. Training continued there, on the steep hill of the Rhineland, through the winter and spring of 1918-1919, until April 5, when the division began entraining for Brest. On April 9 the first element to sail for the United States, the 117th Trench Mortar Battery, boarded a transport for an American port. By May 12, demobilization had been completely effected at Camps Upton, Dix, Grant and Dodge.

"After the storm, the rainbow!"



GEN. DOUGLAS MacARTHUR . . . he named it the "Rainbow" division

## Forty-Second Division Added Many Names to Our Roll of Heroes

Besides Gen. Douglas MacArthur, who has become one of the outstanding heroes of World War II, the Rainbow division included in its personnel others who were marked for future fame. Among these were Col. William J. ("Wild Bill") Donovan, Brig. Gen. Charles P. Summerall, Father James P. Duffy, chaplain of New York's "Fighting Irish" (the 165th infantry), and Sgt. Joyce Kilmer, destined to be remembered not so much for his exploits in war

as a peacetime accomplishment—his writing the poem "Trees."

The 42nd division was made up of the following outfits:

83rd infantry brigade; 165th infantry, 166th infantry, 150th machine gun battalion.

84th infantry brigade: 167th infantry, 168th infantry, 151st machine gun battalion.

67th field artillery brigade; 149th field artillery (75's), 150th field ar-

tillery (155's), 151st field artillery (75's), 117th trench mortar battery.

Divisional troops: 149th machine gun battalion, 117th engineers, 117th field signal battalion, headquarters troop.

Trains: 117th train headquarters and military police, 117th ammunition train, 117th supply train, 117th engineer train, 117th sanitary train (ambulance companies and field hospitals 165-168).

## PATTERNS SEWING CIRCLE



**Little Belle**  
ANY little girl would be happy as a lark in a dress like this. Note the sweetheart neck and perky sleeves.

Barbara Bell Pattern No. 1796-B designed for sizes 6, 8, 10, 12 and 14 years. Size 8 requires 2 1/2 yards 35-inch material. Due to an unusually large demand and current war conditions, slightly more time is required in filling orders for a few of the most popular pattern numbers.

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YOUNG set favorite—the basque topped dirndl that will be seen everywhere this summer. Gay, cool, becoming.

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## Household Hints

Give geraniums fresh air every day; do not allow them to become too dry; fertilize them with a commercial fertilizer and give them plenty of sun.

Eggs for home use should be stored in the refrigerator as soon as they are gathered or purchased.

Using a brush will loosen more dirt from a stubborn spot than scrubbing on the board.

If door and window screens are painted with aluminum paint it gives a clear vision out, yet makes it difficult to see in from the outside during the daytime.

Should the wooden handle of a crosscut saw break, temporary bolt on a worn-out horseshoe. This will serve quite well until a new handle can be had.

When the soldier talks about "the skipper" he means his captain, the head of his company. And that's just what the title "captain" means. It comes from the Latin word "caput" meaning "head."

Another leader high in the Army man's favor is Camel cigarettes—they're first choice with men in the Army. (Based on actual sales records from service men's own stores.) When you're sending gifts from home, keep in mind that a carton of cigarettes is always most welcome. And though there are Post Office restrictions on packages to overseas Army men, you can still send Camels to soldiers in the U. S., and to men in the Navy, Marines, and Coast Guard wherever they are.—Adv.

NO ASPIRIN FASTER  
than genuine, pure St. Joseph Aspirin. World's largest seller at 10¢. None safer, none surer. Demand St. Joseph Aspirin.

Most Men Stammerers  
Although no one seems to know why, more than ten times as many men as women are given to stammering, research shows.

Paint Drying  
It took six weeks to paint grandfather's carriage, but the drying time on an automobile paint job has been reduced to an hour and the latest furniture finishes will dry in ten minutes. Now comes the army with war tanks, the paint on which is dried in four minutes by infra-red rays.

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