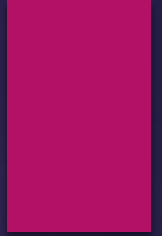


Fighting the War





Europe, 1914

- Central Powers
- Allied Powers
- Nations neutral or not yet aligned



A Bloody Stalemate

- ▶ Schlieffen Plan
 - ▶ Germany military plan
 - ▶ Attack France in the west and quickly defeat them
 - ▶ Then, attack Russia
 - ▶ Trying to avoid a two-front war
 - ▶ Did not go as planned
 - ▶ Stalemate ensued in the west
 - ▶ Trench warfare

Trench Warfare

<https://www.youtube.com/watch?v=UbWiaYEghPA>



Trench Foot



Changes in Technology

- ▶ Poison gas
- ▶ Machine Gun
- ▶ Tank
- ▶ Submarine
- ▶ All this new technology did was kill greater numbers of people
- ▶ <http://www.youtube.com/watch?v=c-LxzD6Luj4>



Changes in Technology

- ▶ Poison Gas
- ▶ Three primary types of gas were used in WWI:
- ▶ **Tear gas** –
 - ▶ temporary blindness and serious irritation to the nose and throat of the victims
 - ▶ used more for harassment of troops engaged in close fighting or operating machine guns. A gas mask offered good protection.
- ▶ **Sternutator** gasses
 - ▶ Chlorine gas mixes with moisture so it will attack the eyes and lungs.
 - ▶ Phosgene -much less coughing but more of it was inhaled causing a delayed effect. A soldier could be taken down up to 48 hours after the attack. It was later mixed with chlorine to cause the vapor to be spread more widely and more deadly

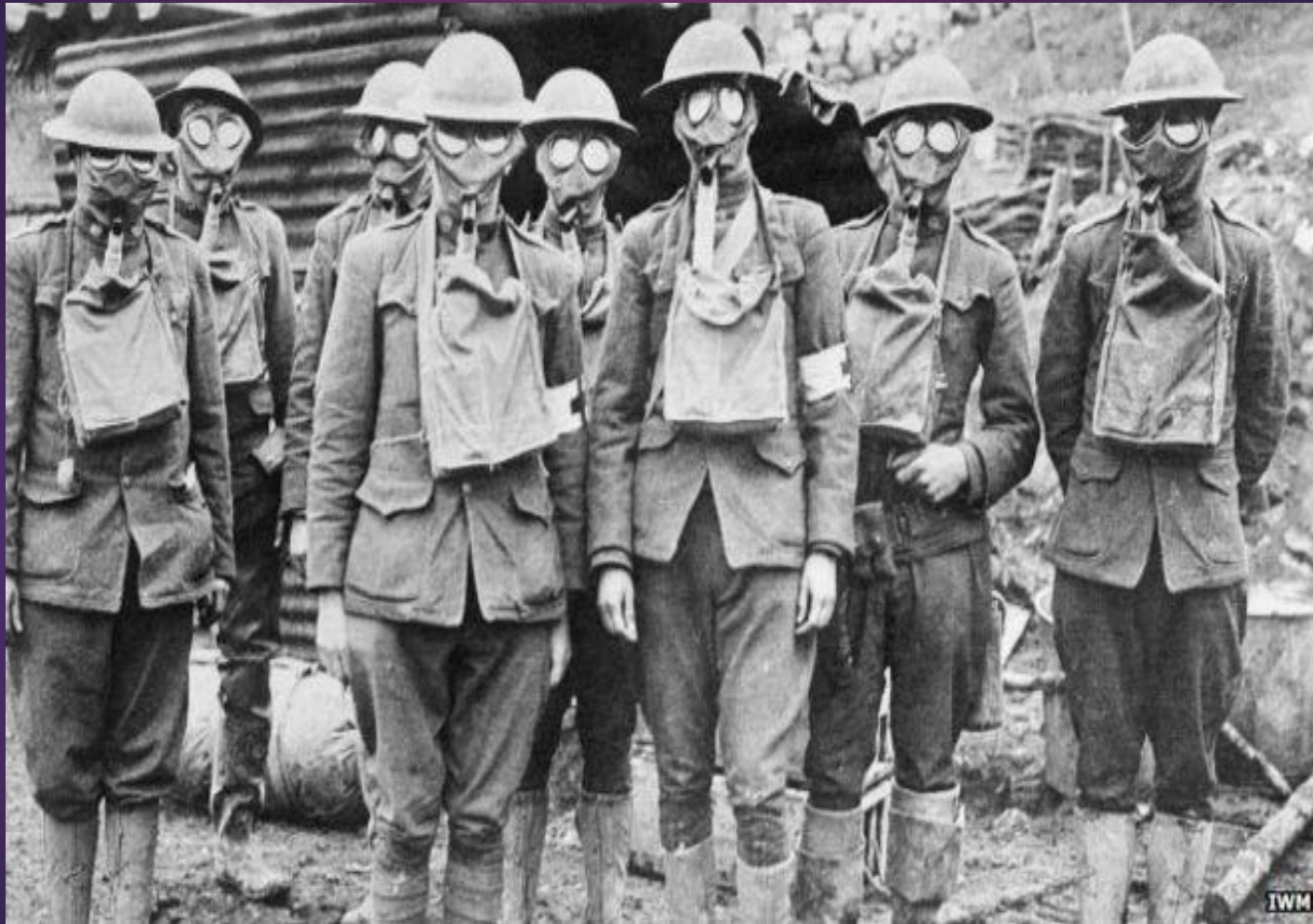
Changes in Technology

- ▶ It was usually delivered in high explosive shells leaving the troops unable to immediately recognize its presence.

Suffocating gasses –

- ▶ Caused severe edema of the lungs
- ▶ almost odorless and caused serious blisters both internally and externally.
- ▶ death from asphyxiation could come within hours.
- ▶ No mask could protect a soldier from mustard gas.
- ▶ Penetrated all clothing
- ▶ Remained on the soil or foliage
- ▶ increased its effectiveness
- ▶ Impaired the morale of troops

Changes in Technology



Changes in Technology

► Poison Gas –

The Daily Mirror

CERTIFIED CIRCULATION LARGER THAN ANY OTHER PICTURE PAPER IN THE WORLD

No. 3,611.

Printed at the M.P.A.
and Newington.

FRIDAY, MAY 21, 1915

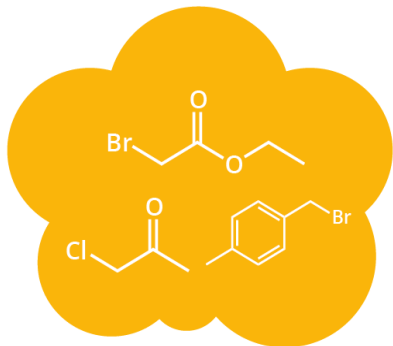
One Halfpenny.

**"DEVILRY, THY NAME IS GERMANY!": SOLDIERS, TRAPPED BY
A GAS CLOUD, LIE UNCONSCIOUS IN THE TRENCHES.**



CHEMICAL WARFARE WORLD WAR I

WORLD WAR I IS SEEN AS THE DAWN OF MODERN CHEMICAL WARFARE, WITH A VARIETY OF DIFFERENT CHEMICAL AGENTS BEING EMPLOYED ON A LARGE SCALE, RESULTING IN APPROXIMATELY 1,240,000 NON-FATAL CASUALTIES, AND 91,000 FATALITIES. A VARIETY OF POISONOUS GASES WERE USED THROUGHOUT THE CONFLICT, WITH EACH HAVING DIFFERING EFFECTS UPON VICTIMS.



TEAR GASES

(ethyl bromoacetate, chloroacetone & xyllyl bromide)

SMELL & APPEARANCE

Both ethyl bromoacetate and chloroacetone are colourless to light yellow liquids with fruity, pungent odours. Xyllyl bromide is a colourless liquid with a pleasant, aromatic odour.

EFFECTS

Tear gases are what is known as 'lachrymatory agents' - they irritate mucous membranes in the eyes, mouth, throat & lungs, leading to crying, coughing, breathing difficulties, and temporary blindness.

FIRST USED

1914 In August 1914, the French forces used tear gas grenades against the German army, to little effect.

ESTIMATED CASUALTIES

0 fatal These gases were used to incapacitate enemies rather than to kill; symptoms commonly resolved within 30 minutes of leaving the affected area.



CHLORINE

SMELL & APPEARANCE

Chlorine is a yellow-green gas with a strong, bleach-like odour. Soldiers described its smell as 'a distinct mix of pepper and pineapple'.

EFFECTS

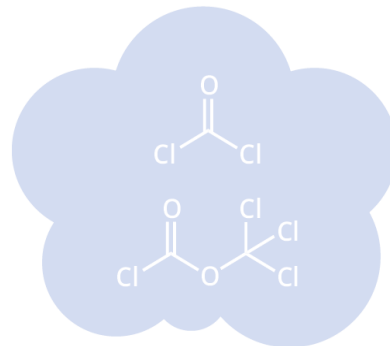
Chlorine reacts with water in the lungs, forming hydrochloric acid. It can cause coughing, vomiting, and irritation to the eyes at low concentrations, and rapid death at concentrations of 1000 parts per million.

FIRST USED

1915 Used by German forces at Ypres in April 1915. British forces used it for the first time at Loos in September.

ESTIMATED CASUALTIES

>1,100 number of fatalities in first use of chlorine at Ypres
Chlorine was devastating as troops were initially unequipped to deal with it. Later, gas masks limited its effectiveness.



PHOSGENE & DIPHOSGENE

(carbonyl dichloride & trichloromethane chloroformate)

SMELL & APPEARANCE

Phosgene is a colourless gas with a musty odour comparable to that of newly mown hay or grass. Diposgene is a colourless, oily liquid.

EFFECTS

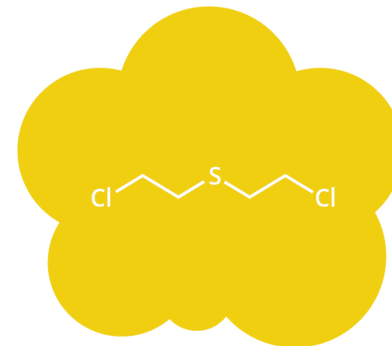
React with proteins in lung alveoli, causing suffocation. Cause coughing, difficulty breathing and irritation to the throat & eyes. Can cause delayed effects, not evident for 48hrs, including fluid in the lungs & death.

FIRST USED

1915 In December 1915, the German forces used phosgene against the British at Ypres.

ESTIMATED CASUALTIES

85% of all gas-related fatalities in WWI
It's estimated 85% of all gas-related fatalities in World War I resulted from phosgene and diposgene, which were both used to fill artillery shells.



MUSTARD GAS

(bis(2-chloroethyl) sulfide)

SMELL & APPEARANCE

When pure, mustard gas is a colourless and odourless liquid, but it's used as a chemical agent in impure form. These are yellow-brown in colour and have an odour resembling garlic or horseradish.

EFFECTS

Powerful irritant and vesicant (blistering agent) that can damage the eyes, skin, & respiratory tract. Causes chemical burns on contact with skin. Forms intermediates that react with DNA leading to cell death.

FIRST USED

1917 On 12th July 1917, German forces used mustard gas against the British at Ypres.

ESTIMATED CASUALTIES

2-3% mortality rate of mustard gas casualties
The mortality rate of mustard gas casualties was low, but its effects were debilitating, and patients required elaborate care.

Changes in Technology

- ▶ Tanks
 - ▶ Came about as a response to the stalemate
 - ▶ Mechanically unreliable
 - ▶ Couldn't move over heavily shelled terrain
- ▶ Submarines
 - ▶ Used by both sides
 - ▶ **German Unterseeboot – “under sea boat”**

Effects of the War on Soldiers

- ▶ Shell Shock
 - ▶ Symptoms included fatigue, tremor, confusion, nightmares and impaired sight and hearing. It was often diagnosed when a soldier was unable to function and no obvious cause could be identified.
 - ▶ Many thought of it as cowardice
 - ▶ Massive psychological casualties
- ▶ https://www.youtube.com/watch?v=dOJ_2NaydE0

The Battles

Battle of Tannenberg

- ▶ Major battle on the Eastern Front
- ▶ Aug. 1914
- ▶ Complete destruction of the Russian Second Army and suicide of its commanding general, Alexander Samsonov
- ▶ Showed Russia was ill-prepared for war
- ▶ Failed to mobilize their troops quickly because railroads were lacking
- ▶ Huge defeat for Russia

Eastern Front

- ▶ More mobile
- ▶ Battle of Tannenberg
 - ▶ Germans crushed Russians
 - ▶ 30,000 Russians died
- ▶ By 1916, Russia's war effort was near collapse
 - ▶ Not industrialized
 - ▶ One asset – soldiers
 - ▶ Germany could now focus on the west

Battle of Somme

- ▶ Lasted five months – July 1916 – “Big Push” across the river Somme
- ▶ Symbolized the horrors of warfare
- ▶ One of the biggest slaughters in military history
- ▶ Troops ordered to march across No-man’s land
- ▶ High casualties
 - ▶ 420,000 British; 200,000 French; 500,000 Germans – over 1.2 million men killed
 - ▶ <http://www.history.com/topics/world-war-i/world-war-i-history/videos/1916-battle-of-the-somme>

Second Battle of Ypres

- ▶ First use of chemical warfare
- ▶ The stunned Allied troops fled in panic towards Ypres, the heavy gas settling and clogging the trenches where it gathered.
- ▶ The gas affected 10,000 troops
- ▶ half died within 10 minutes of the gas reaching the front line
- ▶ Death caused by asphyxiation
- ▶ Men who lived were temporarily blinded and stumbled in confusion, coughing heavily.
- ▶ 2,000 of these troops were captured as prisoners of war.
- ▶ <https://www.youtube.com/watch?v=EKgHtYBr7IE>

Battle of the Marne

- ▶ Sept. 14, 1914
 - ▶ France panicked by the rapid advances of German army through Belgium and northern France
 - ▶ With British Expeditionary Forces (BEF), troops are rushed from Paris in taxis to halt the advance
 - ▶ Germans eventually halted
- ▶ May 1918
 - ▶ Germans had again reached the Marne
 - ▶ Last German offensive of the war
 - ▶ Allied counter attack successful
 - ▶ Marked the beginning of the gradual retreat of the German forces
 - ▶ <http://www.history.com/topics/world-war-i/first-battle-of-marne/videos>

Battle of Verdun

- ▶ Feb. – Dec. 1916 - German attack to weaken the French
- ▶ “greatest” and most demanding battle in history
- ▶ German wanted to inflict mass casualties
- ▶ 600,000 casualties on each side
- ▶ “Rain, combined with the constant tearing up of the ground, turned the clay of the area to a wasteland of mud full of human remains. ”
- ▶ "Humanity is mad. It must be mad to do what it is doing. What a massacre! What scenes of horror and carnage! I cannot find words to translate my impressions. Hell cannot be so terrible. Men are mad!" <http://www.history.com/topics/world-war-i/battle-of-verdun/videos>

World War I – A New Kind of War

- ▶ <https://www.youtube.com/watch?v=VNFnqeCSo2U>