

[2.1] 1940-1945: CW IMPASSE

* As the war turned against Nazi Germany and Allied bombers pounded German cities to rubble, the incentive to use CW increased. By 1944, the Nazis had enough tabun to kill everyone in London, as well as large stockpiles of more traditional chemical agents. They did not use them, not even at Normandy, where the Allied invasion forces were almost completely defenseless against gas attack. Partly this appears to be due to the fact that having been gassed himself, Hitler had some distaste for gas. More significantly, there was a peculiar complementary misunderstanding between the two sides.

British intelligence proved much more competent in World War II than its German counterpart, but German security concerning nerve gases was very tight, and the Allies did not know such weapons existed. Rumors and sketchy intelligence concerning nerve gases were lost in the noise of the war.

On the other hand, German researchers knew that papers on organo-phosphate toxins had been published in the international scientific press for decades, and so there was good reason to believe the Allies had nerve gases of their own. This belief was reinforced by the fact that all mention of organo-phosphate toxins had disappeared from the American scientific press at the start of the war. The Germans assumed it was due to military censorship. The assumption was right as far as it went, but the organo-phosphate toxin the Americans were trying to deemphasize was the insecticide "DDT", which had been developed in Switzerland just before the war and was strategically important, particularly for military operations in malarial tropical regions.

The principle British researcher on organo-phosphate toxins, Bernard Saunders, did discover a nerve gas, known as "diisopropylfluorophosphate (DFP)", but it was much less deadly than tabun or sarin. However, DFP could be mixed with mustard agent, forming a combination that was nastier and also had a much lower freezing point than mustard by itself, creating an effective winter weather agent.

In any case, British Prime Minister Winston Churchill made it very clear to Hitler that if Britain were attacked with poison gas, the British would saturate German cities with gas in retaliation. The Allied strategic bombing force was much stronger than Germany's; the Allies were gaining air superiority over Germany; and Hitler had every reason to believe that if he used nerve gases on Britain, the Allies would strike back ten times as hard. Both the Germans and the British believed they held parity in gas warfare, and neither Churchill nor Hitler realized that Germany had the upper hand.

* In fact, Churchill himself almost gave away the game. Although Britain had signed and ratified the Geneva Protocol, he had little squeamishness over poison gases. To him, they were just another weapon. During World War I, he had been so enthusiastic about gas warfare that his wife Clementine had jokingly called him the "Mustard Gas Fiend". During the desperate days of 1940, when Britain was facing a German invasion, Churchill had energetically built up an arsenal of chemical weapons to greet German troops landing on England's shores. Even after the threat of invasion faded away, the British continued heavy production of chemical weapons.

In the summer of 1944, the Germans began firing their V-1 flying bombs, small jet-propelled missiles armed with conventional warheads, at London. The guidance system of the flying

bombs was very crude and they came down almost anywhere. Most of those killed and injured were civilians who just had the bad luck to be where a flying bomb happened to fall. Churchill was enraged at the blatantly indiscriminate nature of the attacks and wanted to retaliate by plastering German cities with gas bombs.

Churchill's outrage was understandable, given the deaths and injuries of British civilians, but a little illogical. The British Royal Air Force's Bomber Command had been pounding German cities in generally indiscriminate night raids for several years. The V-1 flying bomb, and the V-2 ballistic missile that followed the V-1 in the fall of 1944, were frightening and destructive, but their effect did not compare to the devastation heavily dealt out to German civilians by Allied thousand-bomber raids.

While Churchill was very strongly in favor of performing gas raids, British military planning staffs investigated and recommended against it. Their objections were not on grounds of humanity, but simply because the relatively crude gases available to the British would have required so many bomber payloads to have been effective that the conventional bombs then in use could do more damage.

Churchill reluctantly gave up the idea. Incidentally, the Germans had actually designed chemical warheads for the V-1, but it is unclear if such a weapon could have been put to effective use. Tabun of course is hideously toxic, but it is also volatile, and large concentrations of it are needed to be really effective. Such concentrations would have been difficult to achieve with the V-1, since they could not be launched fast enough to provide a heavy bombardment, and they fell all over the city at scattered, near-random locations anyway. Mustard gas, being persistent, would have been a bigger nuisance, but high explosive was probably more destructive, intimidating, and effective.

As the Allies closed in from west and east, Germany's position became increasingly desperate. The pressure on the Germans to use anything they could to fight back increased tremendously, but even under those conditions they did not use gas on the Allies. Use of gas might have gained the Germans a short-term advantage, but the overwhelming retaliation that Hitler had every reason to expect would likely only have accelerated defeat.

* The United States was the "arsenal of democracy", in President Franklin Delano Roosevelt's phrase, and American war production included chemical weapons, in large quantities. In fact, even before the US formally entered the war, the Americans were discreetly shipping phosgene to the British.

Once war was formally declared, the US Army's CWS received massive new funding, reaching a billion USD in 1942. Huge new production facilities were built, most notably at Pine Bluff Arsenal in Arkansas and the Rocky Mountain Arsenal near Denver, Colorado. The CWS also opened a huge test range in Utah, named the "Dugway Proving Ground", where there was plenty of space to test chemical and biological weapons on duplicates of German and Japanese buildings.

The US had never ratified the Geneva Protocols, but President Roosevelt considered poison gas a barbarous weapon. He had no intention of authorizing its use, much to the disappointment of the CWS. The American chemical weapons program only thrived because of fear of Japanese CW

efforts. Newspapers often printed reports of Japanese use of CW against the Chinese, and Roosevelt issued stiff public warnings that if the Axis used poison gas on American troops, they could expect massive retaliation in kind.

As noted earlier, the Japanese do seem to have used CW in China before the outbreak of war in the Pacific, but the newspaper reports that appeared in America during the war are hard to take at face value. Chiang Kai-Shek wanted to encourage the Americans to continue to provide military assistance to the Chinese Nationalists, and stories of atrocities were an encouragement. Chiang was also hoarding American military supplies and making little attempt to resist the Japanese. He wanted to wait until the Americans had dealt with the Japanese, and then use his military stockpiles to deal with his rivals, Mao Tse-Tung's Communists. Claiming the Japanese used gas to win battles when in fact the Chinese hadn't even put up a fight was a convenient excuse. The Chinese Communists would later carry on such accusations against the Japanese, but the Chinese Communists also made similar and clearly false accusations against the Americans during the later war in Korea.

* With so much gas stockpiled, accidents were likely to happen. On 2 December 1943, the merchantman SS JOHN HARVEY was waiting its turn to be unloaded at the harbor of Bari in southern Italy. Unknown to almost everyone, JOHN HARVEY was carrying 2,000 45 kilogram (100 pound) bombs full of mustard gas. Even most of the JOHN HARVEY's crew did not know about the gas bombs.

A few days earlier, the Allied high command announced they had obtained complete air superiority over southern Italy. They hadn't informed the Luftwaffe, and that evening a hundred Ju-88 bombers swept in and raised hell for 20 minutes. The German raid was a stunning success, a little Pearl Harbor: they sank 17 ships, badly damaged 8 more, killed a thousand men, and injured 800. Gas bombs on the JOHN HARVEY ruptured, and as the ship sank a layer of mustard gas and oil spread over the harbor, while mustard gas fumes swept ashore in a billowing cloud. Many civilians died during the raid and later.

The officers in charge of the gas bomb shipment on the JOHN HARVEY had been killed while they frantically tried to scuttle the vessel, and nobody else knew about the gas bombs. Sailors were taken ashore to a hospital where they were wrapped in blankets and given tea. The next morning 630 of them were blind and developing hideous chemical burns. Within two weeks, 70 of them died. The crew of a British escort vessel, the HMS BISTERIA, picked up survivors during the raid and escaped to sea. During the night almost the entire crew went blind, and many developed burns. The vessel managed to limp into Taranto harbor with great difficulty.

At first, the Allied high command tried to conceal the disaster, since the evidence that gas was being shipped into Italy might convince the Germans that the Allies were preparing to use gas and provoke the Germans into preemptively using gas themselves. However, there were far too many witnesses to keep such a secret, and in February the US Chiefs of Staff issued a statement admitting to the accident, emphasizing that the US had no intention of using gas except in retaliation to Axis gas attacks.

* The Japanese never used CW on American troops, and so the Americans never used CW on the Japanese. In fact, the Japanese had given up development and production of chemical weapons in 1941. Their stockpiles of poison gas were puny compared to the mountain of agents that the

Americans had produced, which exceeded by a comfortable margin all the gas used by all sides in WW1.

Information on Russian gas warfare development during WW2 and after is sketchy. The Russians presumably manufactured their own substantial stockpiles of chemical weapons, but if so they kept it a tight secret. One thing is known. When the Soviets advanced on the Nazi nerve gas plant at Dyenfurth in August 1944, large quantities of liquid nerve agents were poured into the Oder and the factory was set up for demolition, but the Red Army got there before the charges could be set off. The Dyenfurth plant was dismantled and carted off to Russia to begin production for Stalin instead of Hitler. The Russians now had the secret of tabun, sarin, and a new, even deadlier nerve gas named "soman" that the Germans had discovered a few months earlier but had not yet brought to production.

In April 1945, the British captured a German ammunition dump that contained 105 millimeter shells marked with a single green ring and the legend "GA". They were filled with tabun. Other dumps were found, with a total of about a half-million shells and 100,000 aerial bombs filled with nerve gas. The British and Americans also interrogated captured German chemists, most of whom fled west to avoid capture by the Russians. The discovery that the Allies had been almost completely ignorant of the existence of nerve gas was a shock to Allied intelligence and leadership.

* The failure of any combatant to use CW weapons in World War 2 remains puzzling. All the major combatants had large stocks of chemical weapons, and some of the chemical agents available in quantity were vastly nastier than those used in World War I. Most believed that CW would be used, and most had incentives to use it at one time or another. Reluctance to use such weapons out of distaste for them or fear of retaliation in kind played a part, but it seems likely that the deciding factor was that circumstances were never quite right to push any of the combatants over the threshold. In hindsight, it seems to have been a very near thing.