

# "GAS!"

by CAPT. EDWARD F. FITZGERALD

*United States Marine Corps*

"Whether or not gas will be employed in future war is a matter of conjecture, but the effect is so deadly to the unprepared, that we cannot afford to neglect the question."

*General of The Armies*  
JOHN J. PERSHING

Unfortunately the Marine Corps and its sister services of today have not been heedful of Gen. Pershing's message; the Armed Forces of the US have disregarded the possibility of chemical gases as a weapon which we could utilize or which could be directed against this nation and her fighting forces. I venture to say that it would be catastrophic if gas alarms echoed throughout our barracks or on our bases, homes and abroad, for reasons other than drill or rehearsal. We are not prepared for gas warfare nor have we developed our chemical weapons to a sufficiently high standard which would permit us to attack with gas or to retaliate against a determined enemy who chose to utilize gas. The effect which gas would have had against our forces during WWII and in Korea leave me somewhat timorous.

Gen. Omar Bradley made the following remarks concerning the possible use of chemicals during WWII:

"While planning the Normandy invasion, we had weighed the possibility of enemy gas attack and for

the first time speculated on the probability of his resorting to it. . . . I reasoned that Hitler, in his determination to resist to the end, might risk gas in a gamble for survival. When D-Day finally ended without a whiff of mustard, I was vastly relieved. For even a light sprinkling of persistent gas on Omaha Beach could have cost us our foothold there." The same remarks could well be applied to the Inchon landing and the results even more disastrous if nerve or blood gas had been used.

Why this apathy on our part towards gas, a weapon which—when analyzed with an open mind, one free of hysteria and exaggerated emotion—proves to be one of our best potential instruments of war? I make this assertion knowing full well that there are many men and women who will level a multitude of charges at me because of my seemingly immoral, cruel, unsportsmanlike tenets of war. I stand prepared to face the whole gamut of vindictiveness for I sincerely believe that this nation is attempting to bury its head in fear of gas as does the fabled ostrich when an unpleasant situation presents itself. The accusations are certain to be heard, for the anti-gas propagandists have been exceedingly successful in building a false picture of chemical warfare and stirring the inner fears of mankind. No military subject is so little understood

and has suffered as much vilification as gas. Sensationalistic writers have published literary condemnations of gas warfare—condemnations devoid of scientific fact. However, these writers are not alone for they have been joined by ultra-pacifists and military leaders who permit their imagination to run rampant as they expound on the subject of gas warfare. Winston Churchill has aptly described the ideas of these men as "terminological inexactitudes."

My purpose in writing this thesis is to separate the truth of chemical warfare from the sensationalism and fantasies which prevail today concerning this subject. It is not my intention to become engaged in an academic discussion or debate as to whether gas is a humane weapon of war, although in later pages I will dwell briefly on this aspect. Those who argue that being burned alive by napalm, torn limb from limb by high explosives, or destroyed by nuclear radiation or its intense heat are more humane ways of death, are not facing reality, nor is their criteria in judgment of weapons graphic or valid. My basis in determining humaneness of weapons, if they must be judged in such a light, is the degree of suffering, the percentage of deaths and disfigurements and the aftereffects. It is an established fact that the more "humane" an explosive weapon becomes, the less effective it there-

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fore is. However, I will show that those who strive for humaneness in armed conflict would best and logically become advocates of the use of chemicals in war, for gas is the most humane weapon we presently possess and can develop. War is the searching out and destroying of the enemy and in itself is the negation of humanity. A nation facing possible annihilation must consider in what areas and with what weapons it best can strike. Any other concept is delusion and fallacy. A nation at war or facing armed conflict cannot afford to make any military decisions based on such premises. Degrees of humanity best fade away in the light that war is a grim contest between states for national existence and it is not to be viewed as a sport confined to an arena. In view of this, there can be little room for any argument that a weapon is humane although if, for some, this condition must be met, gas does satisfy the requirement well.

There appears to be an attitude throughout the Armed Forces today that the only weapons which can be effective in this age of push buttons and electrons are those which still are on the drawing boards of our scientists and that this nation would be taking a step backward if any development was made on weapons utilized in the past. Such is the case with gas—many believe that since it was primarily a WWI weapon, this is evidence that it has no value in today's thoughts, and that any values which chemicals may have had, have been replaced more efficiently by nuclear weapons, electronic equipment and guided missile. The supposition above, coupled with the fact that gas was not used during WWII, has overshadowed the picture of actual warfare as it will be fought for many

years to come. This apathy concerning gas must not be permitted to continue and to flourish, for if it does this nation will be exposing its Achilles heel at which our enemy will aim his arrows.

The fact that gas was not used during WWII was not due to any humaneness or high moral fiber which permeated the world at that time. The ovens of Dachau and the Bataan march were the true indications of how the war was pursued then and how it will be fought again. Nor was it because of any international leagues or agreements that this weapon failed to see employment during WWII, for history has taught us well the value of a treaty or a "piece of paper."

The US has agreed not to employ chemical weapons with but one country—Panama. There is in existence today no other concordat which prohibits the use of gas on the part of the US. All attempts to place the name of this country on such agreements with European and Asiatic nations were defeated or never ratified by Congress or the ruling bodies of other countries. The nations which did choose to sign weapon-limitation pacts saw the value of such concerts when Italy used mustard gas against the bare-foot army of Ethiopia. Both nations had affixed their signatures to an anti-gas pact the very month Italian fliers sprayed the flanks of the battlefields on which they were engaged. It is no secret that nations have always lacked the willingness to sacrifice weapons and military advantages in the interest of disarmament. The Ethiopian War was only added proof of this international attribute. No, gas was not used in WWII or in Korea due to any moral reasons or international agreements but rather because it

CAPT FITZGERALD presently CO, MD, USS *Los Angeles*, wrote this article because he believes the Armed Forces are neglecting a weapon "which could change the tide of any war." He was commissioned in Sept. '52 via OCC after graduating from Dartmouth College. As an infantry officer in Korea (May '53 to Apr. '54) he served as a platoon leader, 60mm mortar section leader, and Bn S-4. Subsequently he attended the Artillery School at Ft. Sill and commanded a Btry at 29 Palms.

was not considered tactically advantageous to our enemies at the time. Vast supplies of gas were found in Germany and Japan after their defeat in 1945—an indication that if the proper opportunity presented itself gas might have been used.

For this Nation to agree with any major nations that gas will not be used by us in any future war would be sheer folly and would be a basically unsound military decision. Any such treaties or agreements would permit a potential enemy nation to limit our strength and to capitalize on his weaknesses. If it was to be accepted that we would use toxic gas only in retaliation we would be making a basic military decision on moral grounds only and it would be an unsound decree as such. Such an approach to chemical weapons would permit an enemy to choose the weapons he is best suited and prepared to fight with. Simply because we have engaged in conflict with a nation which has no suitable chemical industry to supply its

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needs does not necessarily mean that we should not or cannot utilize gas as a weapon. We have the best chemical industry in the world today and any agreements prohibiting the use of gas merely tie our hands and leave us at the mercy of the unscrupulous. Our superior chemical productiveness and scientific technology are our best weapons against the communistic masses.

The history of gas warfare dates back two thousand years when burning pitch was used to gain a military advantage. It was used frequently by the Roman legions and burning sulfur became one of the primary weapons of any siege. During the war which drove a temporary wedge between the North and South there appeared a number of advocates of chemical warfare. There is little doubt that had their ideas been adopted, the war would have been less lengthy, and perhaps fewer casualties would have occurred. The world witnessed the most widespread use of chemical weapons shortly after the Germans released the gaseous clouds against the entrenched Allies at Ypres in April of 1915. The use of this weapon resulted in confusion among the ranks of the thousands of men who manned the Allied lines. The 1500 casualties, a result of the surprise, unpreparedness and lack of gas discipline among the troops, gave the Germans a potential tactical advantage the like of which they would never have again. The effectiveness of this new weapon was underestimated by the Germans and they failed to realize the opportunity which was before them and that the doors to Paris were then open wider than ever before. Shortly after this chemical attack the Allies again closed these portals and never again were they opened; they were that fateful day of April. Throughout the remainder of WWI the Allies resorted to gas weapons to strike at the Germans and to inflict casualties on an enemy which had been driven into trenches and tunnels by bullets and high explosives. Gas was not seen again after WWI until the Italians used it in Ethiopia in 1936 and the Japanese found chemicals to be such an effective weapon against the Chinese in the Thirties.

It was during the years which followed WWI that gas was the topic of heated discussions at the international conference tables. The nations which had fought the "war to end wars" were now attempting to

conflict. These conferences brought with them the pacifists, pseudo-militarists and sensationalists who condemned gas as being the weapon of the devil. Many of these men had failed to see the real intent of British propaganda in 1915-1917 concerning chemicals—propaganda designed not to show gas as it truly was but to bring world opinion against the Huns. The Allied accusations that the Germans violated the Hague Conference of 1899 by using gas was in itself a falsehood which was promulgated by the Allies. The few men who attempted to inject factual tactical and medical statistics concerning gas used during WWI were shouted down. The many conferences failed to unite the Allies in agreeing which weapons would be utilized in future wars and as the delegates returned to their capitals it was evident that few countries were willing to limit themselves to specific classes of weapons. The US had not affixed her signature to any weapon limitation agreements which included any of the major nations of the world.

The unlimited advantages of chemical warfare practically insure that another war in which gas will be utilized is not a mere dream. Nations faced with survival must turn to the weapons which will provide victory with the least expense in terms of both men and material. The development of "modern" destructive weapons has brought forth a number of men who speak strongly in favor of the use of chemicals in war. They argue that gas would provide the ways and means to a military victory at the conclusion of which casualties would not be counted in figures of millions of deaths and countries would not be faced with smoldering ruins to rebuild at costs which exceed that of the war itself. Some foresee that nations such as the US cannot economically continue to carry the burden of financing a rehabilitation program at the conclusion of each armed conflict. No longer is military victory enough—economic stability must be provided as well.

Military effectiveness should be the criterion of all weapons, conventional, chemical, nuclear or otherwise; ethical considerations are not of primary concern. As the purpose of all weapons is to disable or destroy the enemy's potential to wage war, then it holds that the more swiftly, surely and economically that this result can be accom-

plishing the enemy does not necessarily mean that the enemy's armies and men must be blown to pieces or his country ravaged. The purpose of war is not to massacre but to merely subdue the enemy. No greater degree of force should be employed in any war than is necessary to achieve victory. Ruthless destruction of life and property is not a necessity of armed conflagration nor is it even warranted when other means present themselves. Any other concept of war is not a valid one.

Chemicals provide an army with the weapons which can bring an enemy to submission without killing or maiming the youth of the country—the very men who are so sorely needed when political adjustments to insure future peace are made. Gas offers us the means by which we can select our targets, thereby confining it to the battlefield, if we so desire. By choosing the type of gas we wish to employ we can temper and adjust it either to kill, harass or temporarily disable an enemy. Our selection varies from simple laceration to quick death. We can wage such a war without destroying the economy of a nation. A nation could emerge from a war and not be faced with the task of rebuilding its churches, homes, factories and without the loss of cultural monuments which could never be replaced. More importantly, the man who is gassed comes out a whole man, unmangled by gun powder if the proper selection of the chemical is made. A man re-enters civilian life ready to shoulder his portion of responsibility in a new nation.

Gas has the further advantage of being a weapon which can be controlled in any weather, for chemicals are governed by specific laws of physics. Winds of determined speed, temperature and humidity all can be measured before the gas is released and the user knows almost certainly what the result will be. Gas is able to "shoot" around corners, inside buildings; it seeks low ground, goes in foxholes into which bullets have driven the enemy; it is effective for as long as desired—the length of time is limited only by the choice of gas and the amount released. Whereas high explosives provide only a one-time, one-shot effect and great accuracy is needed to be effective, such is not the case with gas. Furthermore, a bullet is useless after it strikes the enemy, whereas gas has a continuous effect. It stays active even after having in-

flicted a casualty. Gas, unlike a bullet, follows no narrow trajectory; it permeates the air, penetrates tanks and pillboxes and overcomes all incidental obstacles to stalk its quarry relentlessly.

Chemicals satisfy two principles of war—surprise and simplicity—very well. In the offensive our forces could utilize gas by harnessing the enemy and causing him to mass and prepare in his defenses under the handicap of protective equipment. We could prevent the enemy from occupying strategic ground by using a persistent gas on that particular area, timing its effectiveness so that upon our arrival our troops could occupy the same terrain. Sealing off our flanks by use of gas would be a commonly accepted tactic and this would permit greater concentration to the front and fewer men would be needed to give all around defense.

The employment of a gas provides the means to neutralize areas and causes an enemy to evacuate and abandon materials which could be destroyed or used by advancing armies. True, high explosives in destroying materials weaken an enemy but in turn prevents their use by others.

In the defense chemicals can prove to be extremely desirable weapons. With gas, avenues of approach can be sealed off by persistent agents. An enemy attempting to utilize the approach must then either mask or don protective equipment which would slow and hinder his movements and make him more susceptible to other weapons. Gas gives us this advantage without the time consuming effort of laying barbed wire and mines. It would not hinder our advance as to mines and wire if we choose to move forward after the gas becomes ineffective.

Areas which command views of friendly units and front lines can be made untenable by chemicals. The savings in lives would have been tremendous if gas had been used on some of the Korean hills and the Chinese prevented from occupying this high ground. Again, gas could have been utilized to capture prisoners of war simply by selecting a type of gas which would make a man unconscious for a period of time and permit our patrols to move forward to carry him back for interrogation.

When opposing forces reach a stalemate due to equal fire power there can be no advance except by numerical superiority. Gas would prove to be the weapon which would restore mobility to the situa-



Gas Casualties WWI

tion. The force which resorted to this weapon first would gain the tactical advantage which could well spell victory. This consideration becomes of great concern and more poignantly important to us when we consider that the nations opposing us today are those very countries which have this numerical superiority which could prove so helpful.

Chemical warfare provides the advantage of permitting the user to select the type of casualty he desires. This advantage offers the possibility of selecting a gas which would cause casualties only and thus engage a larger percentage of manpower in the care of these injured. Men put out of action are liabilities to the effectiveness of any military organization; every casualty would engage other personnel in caring for him and thus keep these potential fighters from the front lines where they could take up arms against our forces.

The value of gas is even more striking when we review the statistics which came out of the last major war in which chemicals were used. WWI figures—free now of hysteria, the desire or necessity to falsify them in an effort to appease specific groups and made more valuable by the lapse of time we have had to appraise and study the after effects of the chemicals used—give us valuable information.

From the time the Germans launched their first chemical attack to the Armistice, chemical agents accounted for one-third of the 274,-

000 casualties suffered by the American Expeditionary Force: 37 out of every 100 US casualties. These are very remarkable results when we note that chemical warfare was not introduced until the end of the first year of the war, it then went through a period of experimentation for the next two years and was not developed to a degree even remotely approaching its possibilities until almost the last year of the war when mustard was utilized in July 1917. New methods of delivery such as the airplane, missiles and artillery would make these figures even more convincing. Out of the American chemical casualties, death resulted in only 1.5 per cent, while on the other hand, 28 per cent of those casualties caused by high explosives died. In other words, a man had a 12 times better chance of living if struck down by gas. These figures become even more interesting when we learn that the Germans had a mere 6,000 troops assigned to chemical units throughout the war. For a unit of such a small size, its record of causing casualties is indeed a fine one.

Economically, too, gas proves its worth when we discover that there was one casualty for every 60 pounds of chemicals used. For high explosives to attain the same results 500 pounds of HE were required. The cost of gas is far less than that of HE and the results far better. In support of these statements I offer for consideration the results of a study conducted shortly after the  
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Iwo Jima invasion. In February 1945 Iwo Jima was one of the last milestones of resistance on the road to Tokyo. Its 8 square miles were honey-combed with tunnels, caves, and bunkers which provided a high degree of protection on a 24-hour basis to the 22,000 Japanese defenders. Six thousand tons of HE bombs were dropped in pre-invasion bombardment and 8,000 tons of HE were fired into defensive positions during the 2 days preceding the assault. These 14,000 tons of explosives delivered as preparatory fire actually had little effect on the defense capabilities of the troops holding the island. It therefore became necessary to storm Iwo the expensive way—24,000 American casualties. Data available at the time of the invasion gave reasonable assurance that approximately 5,000 tons of mustard gas, properly employed, would have killed or incapacitated a major portion of the defenders and would have permitted our forces to go ashore essentially unopposed. I need not dwell on comparisons of the cost of mustard and HE, and there can be no price tag on 24,000 casualties.

Medical records of both Great Britain and the United States conclusively indicate that the after effects of gas are far less horrible than those of other weapons. The much circulated stories that men who were victims of gas were prone to become bedridden with tuberculosis have no sound medical basis, for the truth is that the percentage of lung disease in men untouched by chemicals is comparable in every respect with those soldiers who were gassed. The vast majority of veterans confined to government medical centers are victims of high explosive injuries—not chemical. The same situation holds true with those confined to psychopathic wards—they are predominantly "shell-shocked" victims of high explosives—not gas. Furthermore, statistics indicate that those men who were gassed and who required hospitalization spent 50 per cent less time in the hospitals than the victims of high explosives. Gas, while it can cause casualties, permits a vast percentage of men to return to normal life as whole men free from artificial limbs and metal plates.

The medical statistics of WWI are proof that if any weapon of war is humane, gas is that weapon. Paragraphs above have indicated my opinion that humanitarian considerations in weapons should not be the primary concern of those who

an attempt to bring gas into the proper perspective which it deserves I find I must defend chemicals in part in the very light I find objectionable. If I am successful in helping to raise gas warfare to its proper level by showing that it is not a dreadful weapon then I am not reluctant to defend it on the basis of humanity.

The humaneness of gas is indicated in part by the movement in this country to adopt gas as the means of inflicting capital punishment upon our criminals and the increased use of gas by law enforcement agencies to quell civil disturbances and riots. Surely if gas was the cruel, barbaric weapon many wish us to believe, then civilized people would not resort to it as a means of controlling their own neighbors and countrymen.

Are we as a force prepared to enter combat to meet an enemy which utilized a chemical weapon? I fear that we are not and that, in spite of the high discipline in the Marine Corps, we would have many unnecessary casualties which could be prevented if we undertake a realistic approach to the possibility of gas attack. Like most Americans we labor under the conception that gas is a weapon of our forefathers and that if we do not think about or prepare for a chemical war, then one will not occur. It is unnecessary to explain the folly of such rationalization. We have an unjustified fear of gas because to many it is a mystery which is not understood. Out of our ignorance an unjustified fear has grown. Gas has become a subject most Americans do not wish to discuss. We as a Nation would do well to apply the words of Franklin D. Roosevelt to the subject of chemical warfare—"the only thing we have to fear is fear itself."

There is strong reason to believe that there are nations today which are giving gas another look. They base this new approach to this controversial weapon upon the fact that their national budgets will not permit extensive development of expensive nuclear weapons and costly guided missiles. Gas is one weapon which can be mass produced at comparatively low cost and this in itself is appealing to many nations which must provide a defensive system on depleted treasury funds. They base their new interest on the premise that in armed conflict during which nuclear weapons are utilized against them they too must find a weapon which outmodes conventional high explosives.

the use of atomic weapons, these smaller countries believe gas may be the alternative and that they will be in an advantageous position in the event of an attack.

The time has come when we must approach the subject of gas warfare and the possibility of a chemical attack with a realistic outlook—one which is based on mature military thinking, void of fear and hysteria. We must include gas training in our military maneuvers; condition our troops with the fact that they may be forced to wear gas masks; teach that with practice the handicap which is an inherent disadvantage of any mask can be overcome and that they as fighting men can become more efficient in work and in war while donning such a mask. It would be wise to require that our troops wear protective masks for long periods of time—for periods as long as a day. We must utilize harassing chemicals, both the tear and vomiting gases, against our own troops in training periods, maneuvers, demonstrations and at unexpected times to condition them to gas, to instill speed in detection and in protecting themselves, to teach them through experience that gas used against disciplined troops is not certain death. The use of vomiting gases will make many men sick for a short period but such a vivid experience would pay tremendous dividends if the gas were ever used in actual combat. We must teach first aid and individual protection for, unlike conventional weapons, gas does not spill blood to warn of injury and even if a man becomes a victim of gas he need not necessarily be required to lay down arms to receive medical attention. It will be necessary to teach our troops that the value of chemicals is not derived from their deadlines per se or casualty producing effects, but rather from the direct influence they have upon tactical situations by affecting military units as a whole rather than individuals. However, success in preventing entire units from being effectively removed from combat lies solely with each individual and how he responds when the gas alarms are sounded or when he detects the presence of chemical agents.

We have no guarantee that gas will not be used again; it is too effective a weapon for all nations to simply discard as obsolete and outmoded. We have had proof that nations who choose to use chemicals

concerning this weapon. While I do not maintain that gas could or would make any other weapon obsolete, it in itself is far from being antiquated and replaced as an instrument of war. If our government does choose to adopt a policy that this Nation will not resort to gas, our best insurance against it being used against us is that we study it, develop it and train for an armed

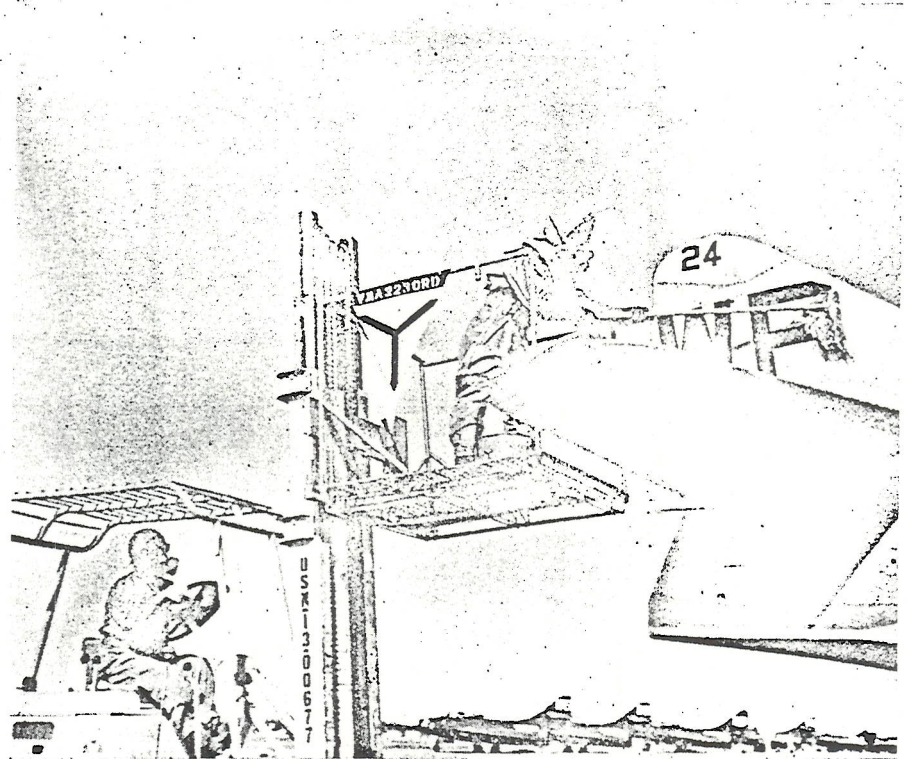
use again.

The Marine Corps perhaps will be the first military organization to be gassed if an enemy does make the decision to utilize this weapon. This assumption is based on the fact that Marines generally are the first troops to be committed in any war and the enemy would use his gas then to give him the initial military advantage before nuclear weapons

We must be prepared. Facing this possibility it would be wise for us to re-examine our present training program to include a realistic approach to chemical warfare and the consequences of such a war. We must be ready to continue aggressively in combat if gas is used against us and we must also be prepared to affectively deliver chemicals upon our enemy.

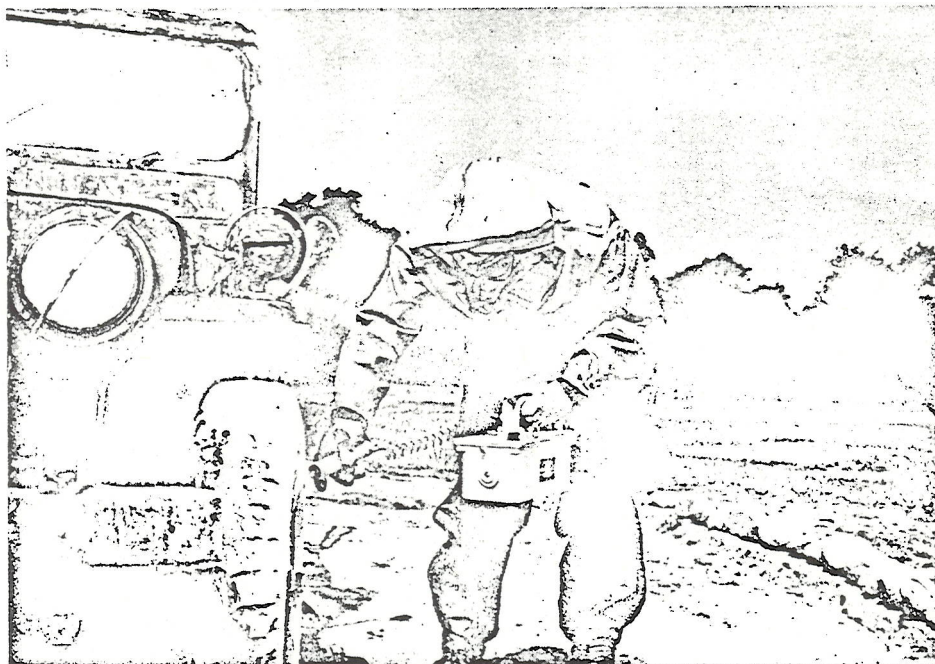


Marine carrying a light flame thrower and wearing experimental atomic, biological, and chemical (ABC) protective clothing looks like he might have dropped in from another world.



Decontamination Drill at El Toro Marine Corps Air Station.

Marine uses a radiac instrument to take a reading to determine the extent of radiological contamination of jeep.



MOVE OUT!—Marines prepare to charge an "objective" seconds after an explosion at the Atomic Proving Grounds, Yucca Flat, Nevada.