



Laminated steel and plastic helmet

Radio transceiver inside helmet

Plastic armor choker

Plastic armor tunic (zippered on the sides and bottom with overlapping shielding at fastened points)

Ammunition pouches

Plastic deck, folded for wear on back of belt

Regular first-aid kit

Glass-steel-plastic grenades in pouches on front and rear of belt

Towel and toilet articles in pouch on belt in back

Extra socks

Emergency first-aid kit

Zippered plastic boots

Multi-lensed visor

Throat microphone and chin strap

Foxhole digger, a 10-inch bazooka-like device carried in a sleeve over the shoulder; blade portion of the armor tunic

Pocket for cigarettes or personal items

Emergency ration

Ammunition

Respirator mask

Container with hand-spade shell

Extra ammunition

Automatic carbine with emergency ammunition in gun stock

Personal items in thigh pocket

Telescopic sight

Magazine

Folded bayonet-knife

Survival ration

Wearing a scientifically designed helmet, plastic armor tunic, and ultra-light equipment this Futurarmy soldier will move and fight with greater ease and efficiency than any other soldier in modern history. The helmet visor will not only offer added protection but will provide the soldier with night vision and telescopic sight. Manning a variety of missiles and other weapons this Futurarmy soldier of the 1970s will be the best protected individual since knights wore steel armor.

SOLDIER OF THE FUTURARMY

Man will dominate the battlefield of the future and victory will depend upon bold and resourceful leaders and the disciplined skill of fighting men who are trained in the handling of complex weapons and equipment

LIEUTENANT COLONEL ROBERT B. RIGG

ILLUSTRATED BY THE AUTHOR

ANY war fought after 1974 will have some strange proportions. For example, enemy missile bases may be seized by men who will fire the captured missiles at the enemy's own military forces, other missile-launching sites, or other targets.

The pushbutton soldier will have worries. He will live and operate deep underground so as to be relatively safe from the blasts of opposing missiles. But this soldier-operator of long-range, even intercontinental, missiles will be living in a potential tomb that may be sealed by the enemy. And herein lies the pushbutton soldier's basic concern: whether other men will be possessed of better means of fighting man to man.

For every soldier who can press a pushbutton there will be several thousand enemy soldiers determined to liquidate him and his machine. These men will know no boundaries or barriers. Visored and big-helmeted, these future men of the electronic-missile era will look not quite like "men from Mars," but not like today's heavily loaded, foot-tired infantryman we know so well. They will be the land-spacemen—soldiers of the Futurarmy. And with them will come a new form of warfare—three-dimensional.

Because the Futurarmy soldier will be able to seize, neutralize, or exploit enemy missile bases in war, there could begin the "seizure campaigns"—the conflicts of

men out to capture the nuclear components of an enemy so as to prevent the outbreak or expansion of the war into total nuclear proportions. Even within a conflict where only small atomic weapons are employed, there could be a struggle—entire campaigns—waged for the single purpose of seizing the stockpiles of large-type nuclear weapons. But three-dimensional warfare has many other features as unique and striking as the soldiers who will fight it.

What will this Futurarmy soldier of the 1970s look like? How will he fight when mechanical spies and seeing-eye drones scout for him? What will make him the most elusive target in history—and the best protected? Here is the future man who will talk into his helmet radio and see in the dark to become a relative superman in combat.

The "Superman" Equipment of the Futurarmy Soldier

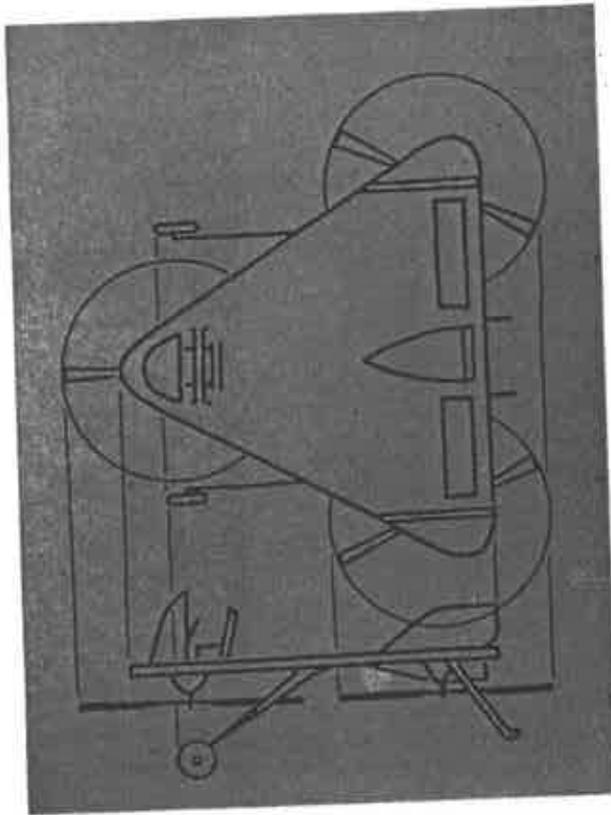
Anything but Sad Sack in appearance, this air-age trooper will look as if meant for war. His helmet, unlike the crude pots of the past, will be a scientific masterpiece laden with miniature electronic devices combining communications, comfort and protection in a degree unanticipated today. Other equipment and



clothing will be so compact and light that this future soldier will be much more efficient than today's. He will have greater chances of survival on the battlefield than any soldier up to this date. Furthermore, this American soldier of the 1970s will be a formidable fighter because he will have full confidence in his plastic body armor and apply greater combat skill by virtue of new weapons, modernized communications, and ultra-miniaturized equipment.

The primary magic of the Futurarmy soldier's actions will lie in his basic garment—a very light plastic tunic. Bulletproof and shell-fragment resistant, this body armor will be expensive—commercially, that is. One suit may cost as much as \$700. This will make it the most costly uniform since knights wore armor. Yet it will be a cheap uniform because its cost will be negligible compared with even today's costs for men in uniform. To train today's soldier sufficiently to qualify him to join a unit for more training, costs the Army \$3,200. When an American soldier is killed it costs the Government \$21,300. Far greater than the cold dollar cost of a casualty, is life itself—and this the U. S. Army seeks to preserve even within the grim framework of combat. Militarily there is the fact that when one man is lost the burden is greater on the remaining men. As casualties go up, the chances for survival for the remainder of the men go down.

One small item—not a weapon—will make this Futurarmy soldier act with unheard-of precision and aggression. He will gain independence and action from an ultra-small radio transmitter and receiver. This sub-miniature *transceiver*, set in the laminated sections of the helmet, will place the individual soldier in communication with all other members of his fighting team. These compact and miniature radios will provide a



new dimension to combat, binding men together—men in the air and on the ground—men who cannot see one another but men who will thus act together in combat concert. The Army is currently developing this concept of communications, and it has its first helmet radio in operation.

The future soldier's helmet will be visored. It will look like the *sallet* headgear of the ancient knight. This visor will have unique functions in addition to its face protection. For example, there will be knobs on the visor with which to rotate the various lens goggles. There will be a blackout lens to shield the eyes against the fire ball of a nuclear blast. The soldier will be able to switch on dust goggles, but more important, he can change darkness into day by

one flick of the wrist on the infrared dial and switch.

As darkness falls the Futurarmy soldier will emerge into the night with seeing eyes because this scientific helmet will place infrared lenses before his eyes. This will be the death knell for Communist guerrillas in the jungle. But elsewhere on land where men fight amid missiles in more formal combat, divisions of seeing American men can arise to advance and converge on enemy soldiers blinded by darkness. Penetrating darkness¹ in such a fashion will be tantamount to making the soldier a relative superman in combat. Only the nation maintaining technological superiority will attain this military advantage.

FURTHER piercing the American soldier's wall of darkness will be a pocket radar set to warn the individual of danger. A pocket radar set sounds remote. Actually, it is not. A new electronic device has been developed by the Army Signal Corps which promises pocket radar. This device is the world's smallest self-contained magnetron tube. The size of a golf ball, this device is presently visualized as the basis for the Futurarmy soldier's pocket-radar set which will warn him of the approach of vehicles or infiltrating enemy troops.

Binoculars, so important in combat, will be replaced

¹There is already progress in this direction. Helmet-mounted infrared binoculars are now under Army development. These binoculars, when used with a light source equipped with an infrared filter, may be used for night driving, vehicle maintenance, construction, and many other activities. The Army's new sniper scope designed to replace the one now in use will be considerably reduced in size and weight. It will also have greater range and reliability. A new image metascope, easily held in one hand, will allow the soldier to locate sources of infrared radiation. When used with an infrared filtered flashlight it will allow the soldier to see in the dark.

These versatile Flying Platforms of the era of Futurarmy here land a guided-missile battery which has already opened fire in support of 3-Dimensional Army units. These missiles of the 1970s will be lighter and more miniature than present ones. Launched from naval aircraft carrier or air transports, these aerial jeeps will carry land-space-men, missiles, and a large variety of other weapons to the enemy's doorstep. These flying platforms will also carry supplies from helicopter (Hercules)-landed breakdown points where the detachable crates are deposited.

by special distant-lenses in the visor. Even ordinary eyeglasses can be included in the visor goggles.

The new scientific helmet will combine steel and plastic armor² to give the head near-perfect protection. In the last two wars we have fought, forty to forty-five per cent of the deaths in action have been caused by head wounds. Science has a primary target in the head of man. We may expect that the future helmet will not just be gadget-laden; it will be scientifically designed to protect the head to a degree even the ancient knights never knew. Larger and thicker, it will be as light as today's helmet. The total magic of this futuristic helmet will be such that the individual will be physically and mentally reinforced to a degree of new aggressiveness in daylight and darkness.

Tailored super-comfort and protection for the Futurarmy soldier

Today's soldier will be happy to hear that tomorrow's man at arms will wear a combat uniform of superman comfort. In fact, he will be astounded at its lightness. He will be even more surprised over its many contents. There will be tiny capsules of survival rations tucked in the heels of the zippered plastic boots. Survival rations—small, hard flakes the size of a penny—will also be wedged into the outside edges of the plastic boot soles—soles that will wear beyond present-day comprehension.

Pockets on the outside of each boot will carry a compact self-medical-aid kit for emergency use. The demands of future war will be such that soldiers will be equipped and trained to administer limited medical assistance to one another in emergencies. Even today's soldier carries an atropine syrette in his gas mask with which to give himself a needle shot in the hip in case he is exposed to nerve gas. This is the first step toward self medical aid.

Every inch of space in the future soldier's gear and uniform will be scientifically measured and utilized to the last square fraction of an inch. Even

²The Army is already on the way toward combining other substances with steel for head protection. A laminated nylon helmet liner has been tested to replace the present one. It will provide a 60 per cent increase in ballistic protection at an expense of only two ounces additional weight over the present type liner.

War in its purest form—attack on enemy military forces only—is waged here by Futurarmy 3-Dimensional forces composed of intermediate range missiles, flying tanks, Centaur air-artillery, and flying platforms transporting land-spacemen who man a variety of weapons from short-range missiles to machine guns and rockets. An enemy convoy and command post burns after an attack as missiles interdict enemy reinforcements moving up to strike the 3-D forces now en route to a new target in a sea-launched blitz designed to destroy all enemy forces in a given area.

the stitched rows on back of the gloves will contain something of use: miniature capsules of vitamin pills!

"Glass grenades" will ornament the soldier's handsome belt. These miniaturized grenades will derive their deadly quality from their frangible plastic shells containing shreds of glass along with tiny missile-shaped steel needles. This type of grenade is designed to produce an unusual degree of shock and multiple wounds in the victim by virtue of the many flying fragments. On the belt will also hang the traditional canteen which will not look much different from today's canteen. But it will be made of lighter material.

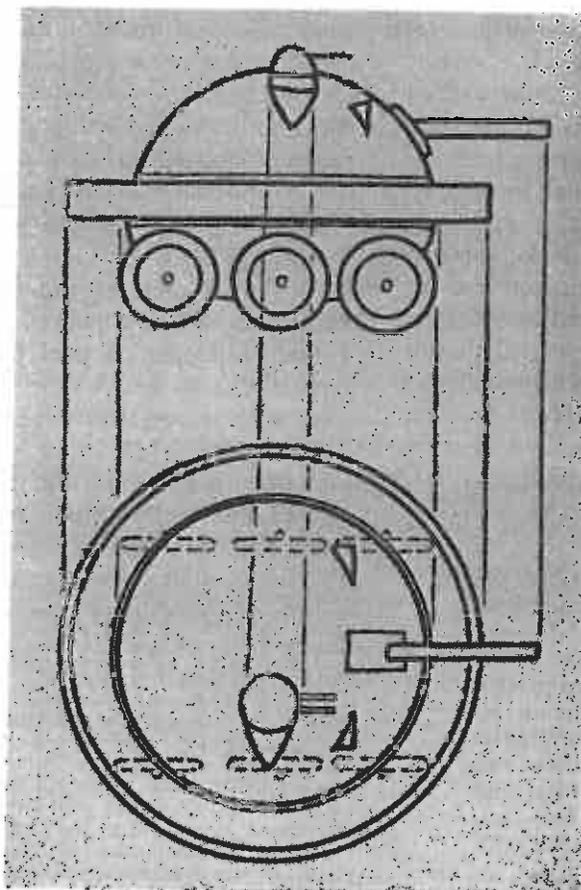
FOR defensive protection against the blast and fragmentation of missiles and the larger weapons of destruction the Futurarmy soldier will still have to dig in. And he will have to do this much faster than in the past. For this reason he will be equipped with an automatic foxhole digger³—a miniature bazooka that propels an explosive charge into the ground. This will result in a hole that can be quickly improved by a light hand spade. This spade will be a detachable shell that will fit around the canteen.

On the belt will hang a lightweight gas mask that will have no eyepieces because the mask will be made of transparent plastic. Breathing will be made much easier through the use of an improved pad-type gas-aerosol filter.⁴

Against the perennial enemy—rain—the Futurarmy soldier will carry a transparent plastic cloak that will fold into a cigar-sized capsule when not in use. But the true magic of this rain cape will not be

³Army Engineers have developed and tested a prototype foxhole digger. By 1957 the Army hopes to have an improved experimental model of this device weighing not more than 3.5 pounds. A current investigation is being made of two additional approaches to this problem, both employing shaped charges.

⁴This type of filter, featured on today's new field protective mask, eliminates the bulk and bothersome canister; it also permits the soldier to wear it for longer periods than were common to the canister.





in its compact size. The real magic will be that the cape will be impregnated and have the special quality of initially protecting the individual against radioactive fallout.

The problem of soldier warmth can always be solved if the weight and bulk of blankets and overcoats are accepted. The future soldier's essential warmth will come from a garment that combines the functions of both blanket and overcoat. This will be a light cloak. The miracle of this cloak will be that it can be folded into a package the size of a book and be carried by the rear portion of the soldier's belt. Made from several layers of ultra-thin synthetic fabrics of new quality, the cloak will be cross-stitched in strange fashion but not quite like Chinese padded clothing. This cloak will be designed for durability as well as air-layered warmth of multiple form. This cloak can be inflated like an air mattress by the soldier, and thus provide thin layers of air for protection against the cold.

Another model of this cloak will be electrically heated for use in colder climates. This cape can be plugged into the circuit of any vehicle or into soldier-carried batteries of ultra-miniature size. Carried on the belt or in a pocket, these long-life batteries will supply enough current to heat the hair-line wires imbedded in the cloak. This cloak will not produce "bedroom warmth," but it will create a degree of comfort to help the soldier exist through subzero temperatures and keep him from becoming a victim of sheer cold discomfort and frostbite.

RREAL comfort is uncommon to combat. Comfort is relative in war. The dry rock is comfortable compared with wet mud. The soldier—even the future one—cannot deny that he must live and act within the brutal elements of the earth's atmosphere. The soldier must live with exposure. The moment that the soldier is insulated in a complete cocoon of comfort, he will simply be a regimented creature in uniform. Therefore, there are practical limits to which we can safely insulate the soldier to his ordeal and mission of fighting. The best form of protection that can be given the fighting man is adequate protection against enemy weapons. This the Futurarmy soldier will have in his tunic armor. But unlike the clumsy and cumbersome shielded knight of old, the new soldier's armor will be ultralight as a result of the new fabrics and plastics yet to come.

For too many generations our troops have been cluttered with cumbersome gear and grossly overloaded. In fact, the individual soldier still labors under a total load that has hardly varied in weight and bulk since Napoleon's legions fought at Waterloo. In World War II our own troops were known to abandon individual equipment as they marched into combat. It is fine to give a soldier all he needs for all times, but you can overload him to the point of slowing him up and grossly tiring him out. Science can, and will, modernize the military man by miniaturizing everything from the

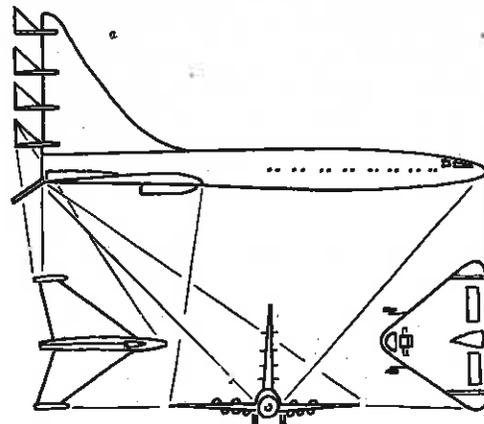
equipment he carries to the toilet articles he uses. Only by saving ounces and fractions of ounces in *all* items can the total soldier load be perceptibly lightened to give him more freedom of action, endurance, and less fatigue.

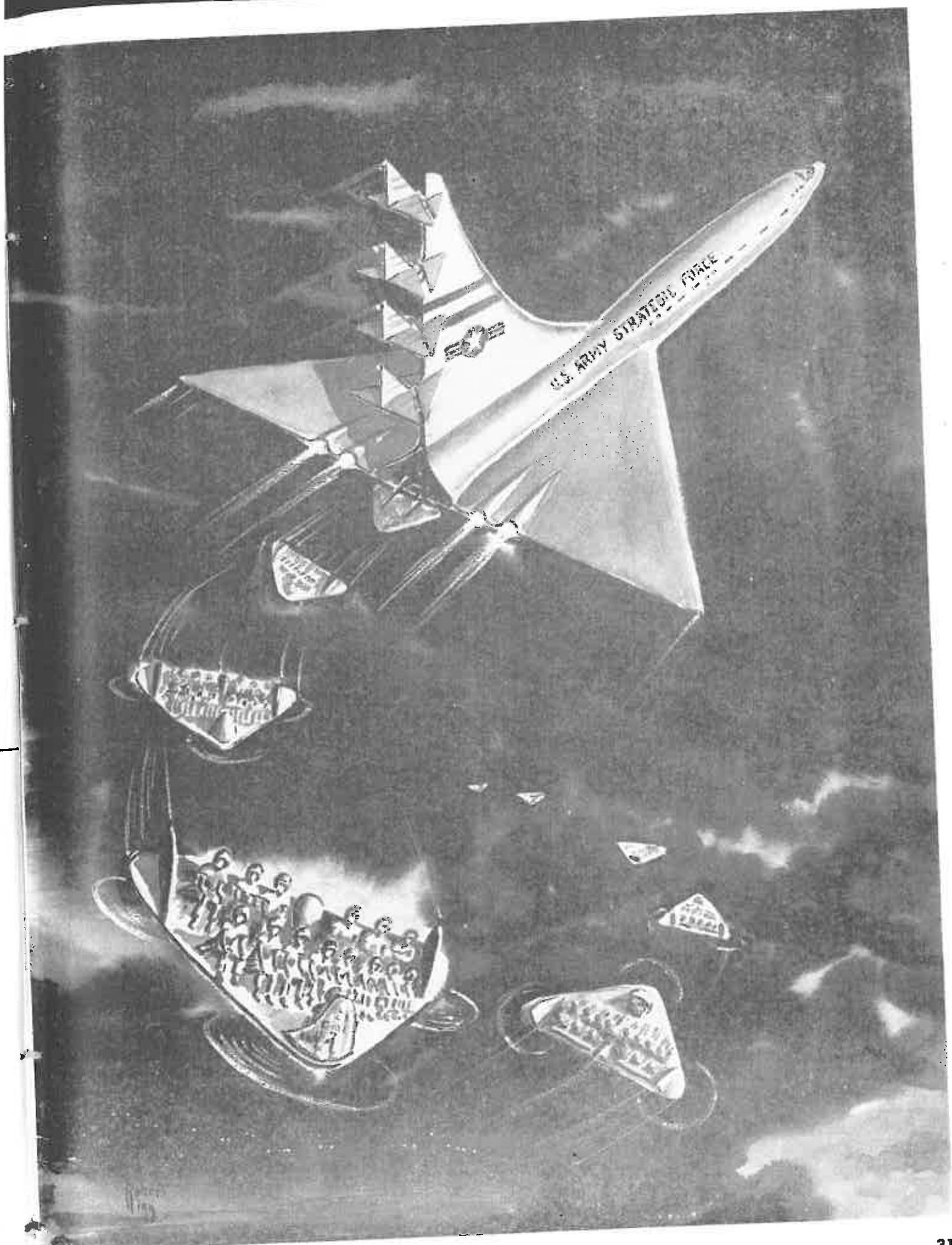
Automation comes to weapons, but bullets still kill

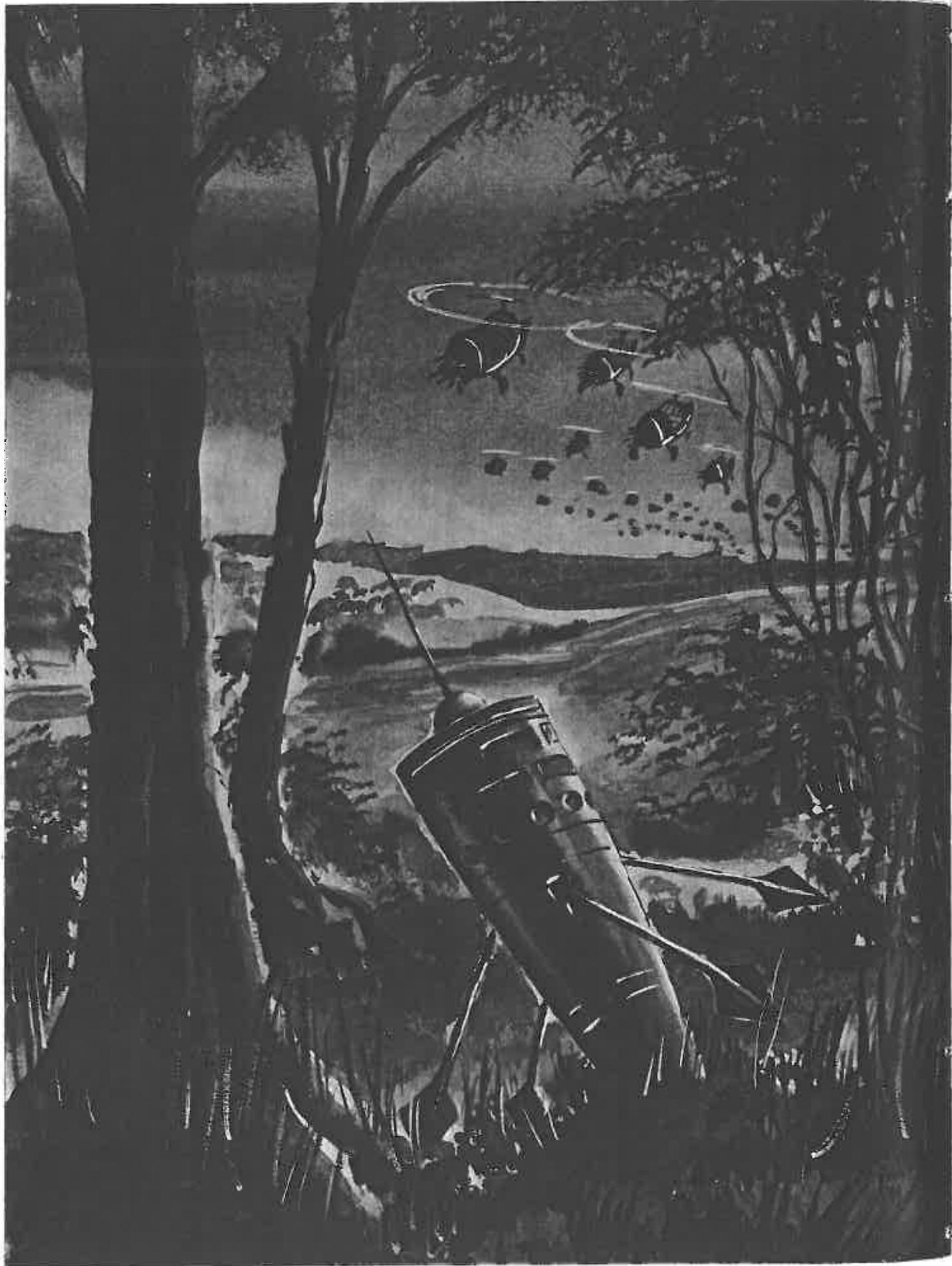
What weapons will these future soldiers use? They will man a variety of weapons, the majority of which are known in form today, and a minority of which are on the secret drawing boards of Army research and development projects. The individual weapon of the Futurarmy soldier will be an automatic carbine which will replace at least four of today's weapons: the M1 rifle, the carbine, the AR, and the submachine gun. It is likely that the ammunition will be lightened. Perhaps the shells could be made of plastic. In general, Futurarmy soldiers will be manning crew-served weapons ranging from machine guns and mortars to tank-destroying missiles like the Dart and a wide range of guided missiles. The final targets in any future conflict will be men. Even the enemy soldier pressing the push-button of a future missile can be killed by a bullet!

Protection for the soldier of the 1970's will not lie in his tunic alone. This soldier and his machines will move with dexterity in all dimensions, thus providing the most elusive military targets in history—and one of the most offensive forces known to blitzkrieg. Because his forces will be elusive and thus destructive in consequence of their mobility, the new type of war will be built around man and not the missile. This three-D

Aerial Blitzkrieg is launched by vertical envelopment. A nuclear-powered transport unleashes flying platforms carrying land-spacemen to attack an enemy missile base or similar strategic target. Still moored to the transport's rudder are the Centaurs—flying artillery—which can land or take off vertically from the ground or aircraft carriers. The Centaurs can also reattach themselves to the transport after attack against ground targets. Armed with multiple rockets the Centaurs may also double as fighters to protect the atomic-powered transport.







The mechanical Mata Hari of the 1970s, this basket-sized robot, called the Owl, will be dropped in large numbers by missiles and aircrafts. Once on the ground these robot spies will upright themselves and begin periodic transmission of data on enemy concentrations of troops, tanks, and aircraft. This Owl, among many dropped, is pictured picking up the course of a flight of enemy rocket-copters.

technique will be born of nuclear stalemate, yet it will be readily and immediately adaptable to atomic conflict.

TWO extreme ideas will breed the new three-dimensional type of conflict. Idea No. 1 is largely a Communist theory that will be long in dying out despite new weapons developments. But the Reds, especially Communist China, still believe that masses of men make for military success. They also feel that these masses need only be marched and parachuted into battle to win. Idea No. 2, also a mistaken view, is shared mostly in Western quarters. It holds that future military success may be quickly attained largely by missiles and machines. Both myths are due to be shattered.

New forms of space travel are blossoming: the Conventiplane, the Aerocycle, the Flying Platform, the Aerodyne, and the Flying Barrel. Advance these and related developments by two decades and there will be created a new and more sanitary form of war. Guided missiles will, of course, play an important role in this future type of conflict. But ballistic missiles will probably be too expensive to allot to anything but nuclear weapons. So they will probably be on the shelf.

The Futurarmy soldier will be better protected and projected in combat than any soldier in history because science will modernize him and his environment. He will live, move and fight amid amazing weapons and machines—nuclear-powered helicopters, flying tanks, flying platforms, flying artillery, missiles, drone devices, and even mechanical spies. Where the missile can only be destructive, the Futurarmy soldier can be both destructive and possessive. Projected into battle zones by three-dimensional transport devices, this future soldier will be able to arrive and surprise his enemy with a force and suddenness never before known. His will be "doorstep warfare."

If war comes after 1974, Futurarmy soldiers will fight it, and end it. A thermonu-

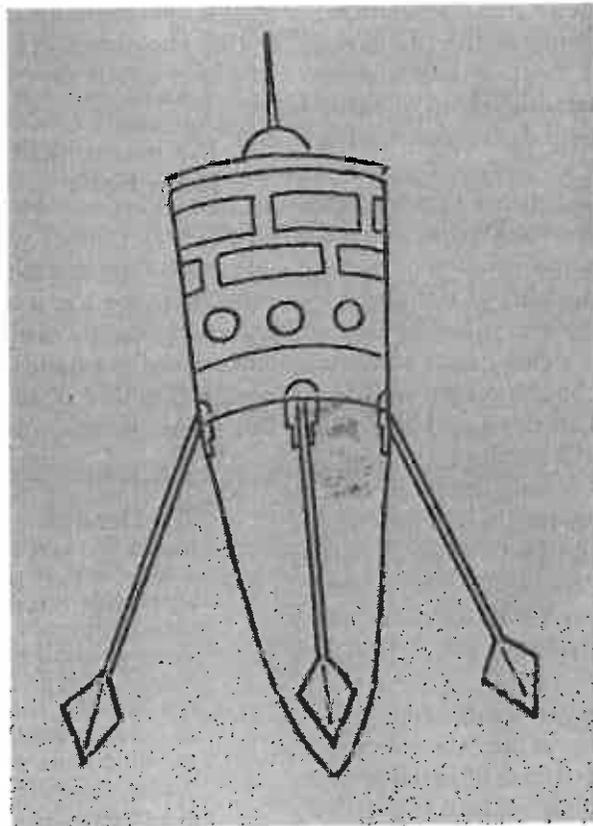
clear conflict is unlikely by this future date because there will be cheaper means of conquest for the aggressor. By 1974 missiles will be almost as versatile as the airplanes of today. While they can carry nuclear warheads, they will carry other things just as effectively. Low-yield atomic weapons *could* be restricted to the battlefield in two more decades. However, they will probably not be used. Two reasons will account for this. First, the difficulty of defining "low yield." One can never count on an aggressor adhering to a signed agreement in war. Thus both sides will probably refrain from using atomic weapons, just as gas has been a non-used weapon since World War I. Secondly, the newly perfected form of three-dimensional war will be more effective in terms of results achieved. It will offer cheaper and more lasting victory. The three-D technique of conflict will be more final and possessive—and less destructive—than any previous forms of war since the Chinese invented the "silver bullet"—a cash inducement to surrender with honor.

If you were to wear the uniform and gear of a Futurarmy soldier in war you would find your duties involved strange vehicles and three forms of blitzkrieg. You might be carrying a spy in your arms—a mechanical spy to be loaded into a missile or aircraft. Or you might be strapping yourself into the most rugged air vehicle yet ridden by man—a triangular-shaped flying platform. You might find yourself ready to take off in a nuclear-powered helicopter, or a flying tank. You could also be the gunner-pilot of a strange tri-delta-winged craft, the Centaur—the future substitute for a battery of artillery. The Centaur's three wings will be

honeycombed with rockets fired out of wing tubes. This jet craft will be capable of vertical take-off and landing, and it will be able to attach itself to nuclear-powered aircraft in flight for automatic resupply of fuel and ammunition.

When you first go into action the public will be confused. Blame this on the fact that the war correspondents will be initially confused over the complex patterns of three-dimensional war.

You will enter action in three general ways. First, you can rise up in flying tanks and platforms from naval aircraft carriers several hundred miles offshore to launch land blitzkrieg deep inland. Second, you can slide out of giant nuclear air transports on flying platforms to spill out on targets a continent away and conduct aerial blitzkrieg. Here



you might land to seize an enemy government, or just destroy enemy reserve forces. Third, you could go with the land-air blitz force to conduct the tornado battles that would sweep and swirl across large areas of land. Wherever you are, you will not be in one place long because three-D conflict will be fast-moving.

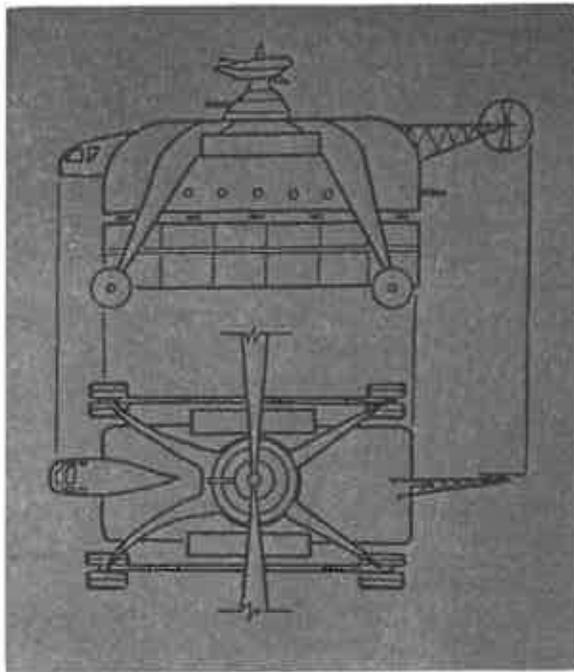
There will be no bloody beach assaults when Futurarmy soldiers take off from scattered Navy carriers to converge on hostile forces. Enemy shore defenses, even inland ones, will be as obsolete as Chinese Walls in this warfare of no boundaries or barriers.

Swarming in by air from several hundred miles at sea, your flying tanks, platforms and helicopters will descend like locusts on enemy troop units, airfields, missile bases, and key installations. Your mission: destroy all military forces within a given area. To help you do this, flying artillery and guided missiles will bracket the region and seal it off by striking any aggressor reinforcements moving to the scene.

About fifteen soldiers and a driver will ride in each flying platform. A cloud of these aerial jeeps will land with surprise and take off likewise to strike several targets in one day. Small TV screens on the platforms will serve to orient commanders as their forces skim the ground to approach targets, because ahead of them will be reconnaissance platforms and drone planes with TV cameras.

The tactical and time-space patterns of this conflict will tax commanders in a manner unknown in past wars. Commanders who cannot think in jet-pilot terms will not last long. The fighting will be on the ground—a series of short battles taking place in different areas, as the lightning force moves and swirls across country like a tornado. Battles will shift about the vortex of the ever-moving blitz force as tanks leap rivers and barriers. The vertical take-off Centaurs will combine the functions of present-day artillery and close-support aviation to help blast targets. In addition, medium-range missiles can be called in. This sea-launched campaign will aim to accomplish, in about two weeks, the destruction that has in the past required eight months of combat. This blitz could be over in one week!

AS THIS sea-launched conflict rages, a new scene will begin. A continent away, a fleet of nuclear-powered planes will take off to launch a new form of aerial blitzkrieg deep in the enemy homeland. Unlike today's



bombers, this fleet will not have to converge on the targets under attack and face heavy anti-aircraft fire. These future transport planes will unleash Futurarmy soldiers in flying platforms, dropping them from fairly high altitudes, well outside the target area. There will be no bombing or bailing out over the target. There will be no mass formation of aircraft—only widely scattered groups of planes. Secret, sudden, and strategically subtle, this vertical attack will allow the unleashed platforms to come on target from all directions of the compass.

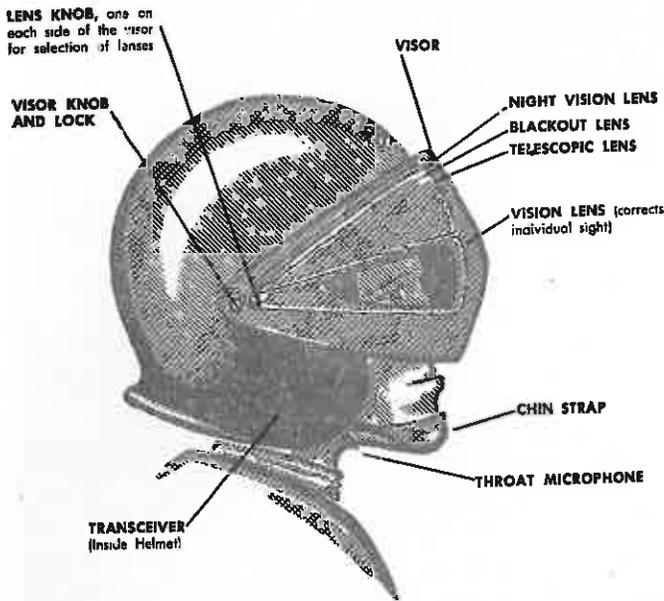
If you rode in one of these aerial blitzes you would be in one of a hundred transports disgorging about 1,200 platforms carrying 14,000 men plus some heavy weapons and supplies. Sliding down rails inside the transport, your platform would spill out of the rear of the plane into the slipstream. Dropping down to hedgehopping level, the platforms would sweep in over treetops to converge on the target. Once engaged, you would not stop moving after your initial strike. Mobility and rapid movement would be your protection. Supplies would come in by long-range missiles and by airdrops from planes loaded up a continent away. However, you would quickly rendezvous on the evacuation target. Capturing one or several airfields, your force would hold them for the arrival of the evacuation transports. The cheap flying platforms would be destroyed just before your departure.

The mechanical Mata Haris

Unusual rumors will spread in enemy towns and villages as missile warheads and airplanes scatter strange cargoes in the air. Thousands of basket-sized capsules will plummet to earth, upright themselves, and then automatically extend their antennas. Many of these machines will be discovered. Strange reports will follow. But many of these gadgets will not be discovered.

The Hercules helicopter of the Futurarmy will be nuclear-powered and used for aerial transport of a wide variety of loads. Here they are depositing detachable cargo crates of supplies for 3-D combat units. They will also serve as flying hospitals, division command posts, mobile repair shops and such. Armed with guns, multiple rockets or miniaturized missiles, the Hercules will fly close to the ground to evade enemy jet aircraft. One of these atomic-powered craft will do the work of forty or more trucks and will virtually eliminate overland supply routes.





Combining steel and new plastics this helmet will offer unusual protection and at the same time project soldier vision. The visor will contain various lenses in goggles that can be switched by the lens knob. Inside the helmet will be a transceiver for voice communication. The blackout lens will protect the eyes against nuclear blasts.

Elsewhere, thousands of Futurarmy soldiers will wait by their machines of war as these fantastic robot spies, called Owls, report on the location of enemy concentrations and installations. How will these Mata Haris work? Reacting to densities of metal vehicles, and the operation of engines, radios, and electronic equipment, these devices will transmit positive and negative information on the general location of enemy military units. The data these robot agents obtain will be automatically transmitted by radio. Thus, large and elusive military targets such as tanks and armored units, three-D helicopter squadrons on or near the ground, and densities of enemy aircraft can be located in short order. A unit, marching or flying into an area for bivouac, could be automatically picked up by these Owls. Delivered in belts as well as in saturation patterns, these electronic-laden Mata Haris will operate twenty-four hours a day for a full year.

This future Owl seems fantastic until you look at the U. S. Navy's robot weather station, the Grasshopper. Air-dropped, the Grasshopper erects itself by automatic legs upon impact with the ground. Then the antenna shoots up. The parachute has already detached itself. This robot station takes weather information at predetermined intervals—wind speed, direction, temperature, barometric

pressure, and humidity. The Grasshopper transcribes these observations automatically into Morse code and transmits at the rate of seventeen words per minute by radio.

The Grasshopper operates from batteries for up to sixty days. The Navy is actually using this robot weather station in Operation Deep Freeze in the Antarctic. It promises to be the prototype of the mechanical spy which, among other things, will divert enemy effort into the biggest spy hunt in history.

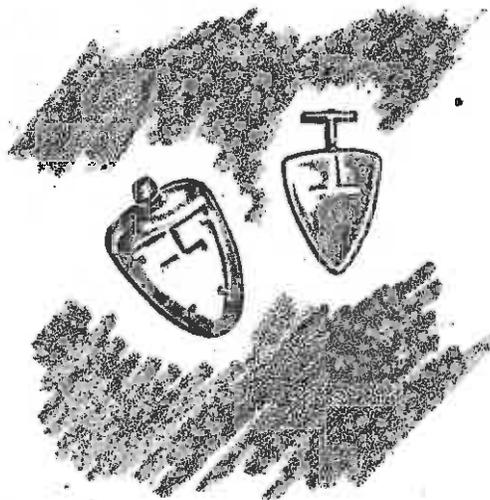
Owls may be captured, but then thousands of others will not. Many will have done their work before capture. However, none will confess to anything when captured, because each Owl will have a "heart" booby-trapped with TNT!

Vortex collision and battle climax

The military showdown will be sudden and savage. Owl reports will bring long- and medium-range missiles on some targets, Futurarmy forces will descend on other new targets in air- and sea-launched blitz strikes.

Finally, a vortex of conflict will develop in one chosen region. This is the final strategic blow. It will be land blitzkrieg by a three-dimensional field army. This army is *not* going to be able to take off *en masse* and hover in the air. In fact, the better portion of it will not fly at all—because there will be a need for some real slugging power in the final combat phase. But a quarter of this army—the sky cavalry combat brigades—will be completely three-dimensional; this element will leap ahead as well as outflank by vertical envelopment. It will set the pace for final kill, and kill with finality. All this is fine. But serious questions arise: What has happened to the logistical tail which provides food, ammunition, and fuel? How do the supplies get in and the wounded men get out? The primary answer to these and a multitude of other military questions is a future helicopter called Hercules.

With nuclear-powered engines and carrying up to thirty tons in detachable cargo pods, three of these machines will do what forty-eight to sixty trucks do today. Traveling at a hundred miles an hour, these independent monsters of war will serve as supply carriers, repair shops, division and corps field headquarters, flying ambulances, and evacuation hospitals to get the wounded out of the battle areas in a hurry. These giant helicopters will virtually eliminate trucks, reduce supply depots, and eliminate the need for stocking large amounts of gasoline and oil. The long logistical tail as we know it today will become so shortened as to be



named the "bobtail." Thus will atomic energy serve us.

THIS is but a simple index to future techniques in war. Actually, such a conflict would be a very complicated one to manage and direct. It will also demand communications of an order unknown today. It would require the concerted effort of all armed forces. But it is a technique that will decisively answer aggression because it is ultra-swift, and responsive. Because it is both mobile and possessive, it will invoke the minimum of destruction and provide the best basis for a peace.

LIKE the author of the new "biographical novel," *King of Paris*, LIEUTENANT COLONEL ROBERT B. RIGG has "relied on research without being bound by it" in "Soldier of the Futurarmy." The novelist's purpose was to extend the bare facts of the life of Alexander Dumas into a clearer, larger, more life-like figure. Colonel Rigg's self-evident purpose is to create a picture of the battlefields of the last quarter of the Twentieth Century by putting imagination and creative thought to work on the products of research and development, current and foreseeable.

Such an attempt demands a high order of creative work. It requires an imagination unfettered by the past, but disciplined to work within the bounds of



the possible. It is only when this is done, as Colonel Rigg has done it, that we can begin to see the problems of the future and to prepare ourselves mentally and morally for the world our ingenuity and material resources are in the process of creating.

A quiet, slow-speaking and modest man, Colonel Rigg can't be labelled as a scholarly intellectual, although he is both, nor can he be called the artistic type, although he both paints and writes with a high degree of artistic skill. He is an active man whose military career has had more elements of the stuff of historical novels and Alfred Hitchcock thrillers than is vouchsafed most soldiers.

He began it in the Illinois National Guard as a member of the hard-riding Chicago Black Horse Troop which went in for Cossack style riding—a form of Russian roulette played with horseshoes firmly nailed to flashing hoofs. This experience became

Even an aggressive government will be liable to sudden capture.

It is only a question of time until this technique and this mobility will be developed. In less than twenty years we may have to keep Communist soldiers off our doorsteps. If we develop a three-dimensional warfare capacity we can prevent the next form of war—the three-D. This we can do, if we retain technological superiority in all fields of endeavor, especially in the scientific projection and perfection of man—the real target in conflict, and the ultimate instrument of war.

useful to him in 1943 when he served as a G2 observer with the Soviet Army Cossacks. Other G2 assignments during the war years were with the Soviet Army in Europe and Manchuria. During these assignments he incurred the displeasure of the NKVD and was twice arrested by them.

Late in 1945 he was sent to China to observe the civil war, and eventually was awarded the Commendation Medal for the excellence of his reports on Chinese Communist tactics. As a member of General George C. Marshall's staff on the mission to China, Colonel Rigg accompanied several Chinese Nationalist armies into combat, and he and then Captain John W. Collins were captured in Manchuria in 1947. They spent thirty-four days in a Chinese Communist prison, courtesy of Mao Tse-tung, and were tried for espionage. Failing to extract a confession, they were found guilty of "reconnoitering Communist lines" and released. His distilled experience in China, coupled with sound scholarship, resulted in *Red China's Fighting Hordes*, the first knowledgeable book on the tactics and methods of the Chinese Communist Army. In 1951 he participated in the Eniwetok atomic tests on the staff of Task Force III. After that he was able to get back to troop duty, commanding in succession a tank training battalion, and the Armor Leadership Battalion at Fort Knox, and then the 15th Constabulary Squadron and the 1st Battalion, 6th Armored Cavalry, in Germany. His imaginative approach and creative zeal resulted in the development of realistic training methods that he later had published in a book called *Realistic Combat Training*. This book came to the attention of General Gavin, and Colonel Rigg was assigned to VII Corps under him. Later Colonel Rigg was ordered to duty in the Pentagon.

A few months ago one of his magazine articles attracted the attention of a group of scholars who are investigating the sources of creative thought, and they invited him to participate in their eggheaded deliberations. When they read the present article, which is part of a book Colonel Rigg is writing, they'll probably make him either their principal guinea pig or their chairman. His versatility is such that he would be good at both.

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The Month's Cover

The Futurarmy soldier will dominate the battlefield of the future, despite the presence of the wonderful and weird instruments and weapons. LIBUTENANT COLONEL ROBERT B. RIGG, Armor, pictures on this month's "wrap-around" cover. For more about the soldier of the Futurarmy see page 24 and for a glimpse of Colonel Rigg turn to page 37.

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