

In a desert arena nearly the size of Rhode Island, they exercise the AirLand Battle in realistic fashion.

All Together at Fort Irwin

BY JEFFREY P. RHODES, AERONAUTICS EDITOR

PHOTOS BY GUY ACETO, ART DIRECTOR

THREE hours after the dawn battle began, the fight is coming to a close. The 2d Brigade of the US Army's 2d Armored Division has made a valiant stand, but now it is being overwhelmed by the Soviet 32d Guards Motorized Rifle Regiment.

Both sides are suffering heavy casualties. On the US side, the 2d has lost eight of its original eleven M1 Abrams tanks, twenty-six of forty-one M2 Bradley Fighting Vehicles, and most of its ten M901 Improved TOW antitank vehicles. The Soviet unit also is getting mauled, having lost twenty-one of forty-eight T-72 tanks, sixty of 106 BMP infantry fighting vehicles, and five of nine BRDM-2 antitank vehicles.

In spite of their losses, however, the Soviet troops move within reach of their objective—a facility that houses the 2d Brigade's fuels and supplies. Then, having punched a gaping hole in the US line with help from MiG-29 aircraft, Soviet attackers pour through the gap, advancing rapidly.

"OK," a voice crackles on the radio. "Change of mission." Forces on both sides grind to a halt.



Above, the battle begins: At first light, a Blue Air OA-10 pilot (one of the "good guys") prepares for takeoff at George AFB, Calif., a short hop away from the training ranges at Fort Irwin. At right, the battle ends: After a hard morning of engaging BLUFOR tanks, OPFOR "bad guys" Capt. Robert Byars (commander), Pvt. Ronald Thomas (gunner), and Sgt. Andrew Speer (driver) keep a wary eye on the battle's progress. OPFOR is the home team at Irwin.



'A PRETTY typical battle out here," says Lt. Col. James Etchechury, the Deputy Regimental Commander of the "Soviet" 32d Guards. The Colonel, who is actually Commander of the US Army's 1st Battalion, 63d Armored, means that it is a typical battle at the National Training Center at Fort Irwin, Calif.

Fort Irwin, home of the National Training Center (NTC), covers nearly 640,000 acres of the blistering Mojave Desert, an area nearly the size of Rhode Island. The NTC is the Army's ultimate training experience, the closest the participants can come to war without firing a shot in anger. Units spend up to a year preparing for their fourteen days in the field at Fort Irwin. Though the NTC's main task is to give highly realistic training to Army brigades and regiments, the Center also plays an important role in Air Force training plans.

"The NTC provides pilots and ALOs [Air Liaison Officers] with the most realistic CAS [close air support] environment in the US," says Lt. Col. Duane Knight, Commander of the 4443d Tactical Train-

ing Squadron at George AFB, Calif. "All the players are in place to provide that environment, both in concert and separately, like no place else."

The Starting Lineups

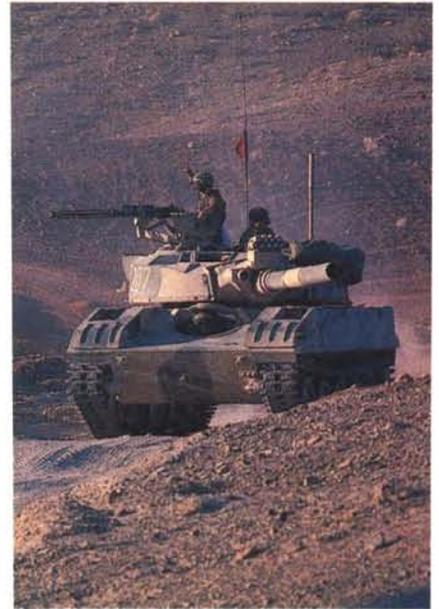
Two Army battalion task forces, their brigade headquarters, and accompanying combat support forces are the "good guys" in each of the fourteen training periods (called "rotations") held annually at the NTC. The 3,500 to 5,000 troops being trained (known as the Blue Force, or BLUFOR) usually fly to nearby Norton AFB, Calif., and are bused to Fort Irwin. Some airborne units make a flashier entrance, dropping in by parachute.

The first three days of a rotation are spent in the Dust Bowl, an area where the BLUFOR troops set up tents and draw food, ammunition, tanks, and other gear and supplies. Rather than waste time and money bringing their own assigned vehicles, BLUFOR units use a "rent-a-tank" operation at the post, similar to drawing on prepositioned war-time stocks that are held in Europe.

Day 4 marks the start of the action

and first contact with the Soviet-style opposing force, or "OPFOR."

"The kindest thing you can say about [troops of] the OPFOR is that they are an uncooperative sparring partner," says Colonel Knight. Indeed the "bad guys" are the home team at the NTC. It is a rare occasion when they lose a battle, although keeping track of wins and



The OPFOR takes the offensive: M551 Sheridan tanks modified to look like Soviet T-72 main battle tanks (top) and BMP armored personnel carriers (above) roll out to take on the defending BLUFOR. In many of the battles, the OPFOR has a large numerical advantage, a situation US tank commanders could face in a European war.

losses is not deemed important. The OPFOR is actually the 177th Armored Brigade, but for the purposes of the units that train at Fort Irwin, it is a Soviet Motorized Rifle Regiment.

The OPFOR is thoroughly trained in Soviet tactics and doctrine. Troops even wear Soviet-style uniforms. They ride into battle on American M551 Sheridan light tanks modified with fiberglass and aluminum panels to resemble Soviet T-72s, BMPs, and ZSU-23-4 mobile antiaircraft guns. The units also use "Hummers" (M998 high mobility multipurpose wheeled vehicles, or HMMWVs) modified to represent the Soviet BRDM-2.

Army training doesn't take place just on the ground. Units with aviation assets such as Bell OH-58 Kiowa scout helicopters, Bell AH-1 Cobra gunships, and McDonnell Douglas AH-64 Apache attack helicopters regularly take part in the BLUFOR combined arms team. The OPFOR uses a pair of visually modified Bell UH-1H Hueys to simulate the actions of Mi-24 "Hind" assault helicopters.

USAF involvement at NTC takes

two forms—in the air and on the ground. The flying program is called "Air Warrior." During each rotation, three Air Force units deploy aircraft to George to provide air support during the battles. Typically, the Blue Force at Irwin will be supported by crews flying seven A-10s for close air support and four OV-10s or OA-10s as forward air controllers (FACs). The OPFOR's air support comes in the form of five pilots whose F-16s are used to represent MiG-29s.

The Air Force ground element in the training at Fort Irwin comes in the form of ALOs assigned to specific armored units. The ALOs are the eyes and ears of the fighter pilots and are the ones who plan for and call in air strikes or provide last-minute targeting information to the incoming fighters.

"I have to have a good understanding of the maneuvers and the battle as it takes place," says Capt. Dave Brown, a 24th Tactical Air Support Squadron OA-37 pilot who, as an ALO, is assigned to the 2d Armored. "I am talking to the pilots all the time. Because I am a pilot, I can go right from hearing what the

Army commander orders to saying what the pilots need to hear."

Some participants in the battles are not really participants at all. They are the observer controllers (OCs), who play several roles. There are at least three groups of OCs at any battle. One group (radio call sign "Scorpion") monitors the infantry, while the "Cobras" monitor the armor. The third group, the "Ravens," is the second Air Force element in the ground war. The Ravens, members of the Air Force's 4445th TTS, serve as air operations monitors.

During engagements, OCs act as referees and have the power to declare a tank or vehicle "dead" if the crew strays out-of-bounds or suffers a malfunction of scoring equipment. They also help ensure the safety of the operations. After the battle, the OCs coach the crews and help them evaluate their performance.

Eating Dust

During a rotation, the two BLUFOR battalion task forces are trained separately and as a group. While separated, one task force moves to the NTC's northern cor-



When their vehicle's amber strobe light goes on (under the machine gun), a crew has gone from being participants to being spectators with front-row seats at the battle. This BLUFOR M1 crew has been "killed" (as scored by the Loral MILES equipment) and is watching and waiting until "change of mission" is called. The MILES gear emits and receives laser pulses to simulate live rounds, and it has a "kill" hierarchy: an M16 can only "kill" infantry, while a main tank gun can "kill" nearly anything.



ridor, where it participates in a live-fire exercise. Meanwhile, the second task force is involved in force-on-force engagements against an OPFOR with vastly superior numbers in the southern and central corridors. After four days, the task forces switch assignments. The remaining six training days of the rotation are spent with both task forces combining to engage the OPFOR.

The OPFOR is a formidable opponent. Soviet attack doctrine, though rigid, does provide commanders with two or three options in any given situation. Detailed knowledge of the terrain, of the OPFOR Commander's options, and of how he uses them allows the OPFOR to bedevil the BLUFOR.

On the battlefield, virtually any tactic is legal. On one occasion, an OPFOR Scout team in a BRDM sneaked into a BLUFOR convoy at night. About the time that the BLUFOR discovered what was going on, the Scout team (members of which had dismounted, except for the driver) launched a surprise attack on the BLUFOR tactical operations center.

The live-fire range consists of more than 1,000 solar-powered, computer-controlled targets. The targets, sited in open pits, mount frontal or lateral silhouettes of Soviet equipment. They pop up in sequence to simulate the movement of the Motorized Rifle Regiment. Tank gunners get a chance to use their thermal sights, as heat collectors are built into the targets.

The targets can also "shoot back" through the use of Hoffman charges that produce a flash and smoke similar to the firing of the main tank gun. Other targets really do shoot back. Styrofoam GTR-18 Smokey SAMs—or, in the words of the troops, "Nerf Rockets"—are actually fired up and in the direction of the BLUFOR vehicles to simulate the Soviet AT-3 "Sagger" antitank missile.

The deployed Air Force units also make use of the live-fire range. In fact, many of the east coast fighter units expend a large part of their yearly allocation of live ordnance during Air Warrior training. The crews launch 2.75-inch rockets and AGM-65 Maverick missiles, using both electro-optical and imaging-infrared seekers. They also get to drop both Mk.82 (500-pound) and Mk.84 (2,000-pound) bombs. A-10 pilots routinely fire their GAU-8/A 30-mm cannon and often destroy two or three targets per rotation.

Even so, the land battle is the NTC's stock-in-trade. Six basic engagement scenarios are conducted: movement to contact, hasty attack, deliberate attack, defend in sector,

defend from battle position, and meeting engagement. Force ratios between the OPFOR and the BLUFOR imitate, in numbers and types of equipment, what one might expect to see in a European conflict.

Battles tend to flow from one day to the next. After the battle in which the 2d Armored was defeated, for instance, the OPFOR stopped, regrouped, moved to another part of the central corridor, and dug in to defend its position. The 2d Armored, bolstered by a second task force that had just completed live-fire training, staged a massive counterattack two days later. When change of mission was called nearly five hours after that battle began, the BLUFOR was only about 3,000 yards from its objective.

In joint Air Force/Army AirLand Battle doctrine, one cardinal tenet is that the Air Force must support the Army. That task gets harder to accomplish as the battle progresses. The speed at which events move in these battles points up the need for the airborne FAC. "There is great value in having that guy up there," says Lt. Col. John Higgins, the Director of Operations for the 27th



The Air Force's Air Warrior program shows forward air controllers and tactical aircrews how complex and difficult the close air support mission is. At top, an OA-10 pilot prepares to fly over the battle and "direct traffic." Another key Air Force element in the ground battle is the Air Liaison Officer. Above, from an M113 armored personnel carrier, Capt. Dave Brown, an ALO assigned by name to the 2d Armored Brigade, calls in an air strike. Captain Brown is an OA-37 pilot except when "his" brigade is deployed.



It takes a certain amount of guts to be a "Nail" (forward air controller) when your only armament is white phosphorus rockets (stored in the wing-mounted canister just over the crew chief's head, above). The OA-10s retain the use of their 30-mm guns, though. The turboprop OV-10 Bronco (below) is still used as a FAC aircraft in lower-intensity conflicts. The 27th TASS's OV-10s at George play a key role at Fort Irwin. They play in every other rotation and clear the fighters in during live-fire operations.

TASS, an OV-10 unit based at George. "He can see how the battle is going, and he can react to what he sees."

The highly dangerous battlefield of today has pushed the slow and somewhat vulnerable OV-10 and its crews into the secondary role of communications relay or airborne command post. The Bronco can still do the job in a lower-threat area. The 27th TASS plays in every other rotation and is frequently called on to clear the fighters in during airborne live-fire operations.

The heavily armored A-10 has now been pressed into the role of fast FAC. "The OA-10s operate the same way we do," notes Colonel Higgins. "They are faster, better armored, and have a bit more maneuverability, and they are a little better suited for self-defense." The only difference between an OA-10 and an A-10 is in their employment. A-10s fly into combat fully loaded. OA-10s are armed only with white phosphorous target-marking smoke rockets and a 30-mm gun.

Safety regulations rob the "air war" over Fort Irwin of a bit of realism. But the tradeoff is fair. Aircraft

have to perform "dry CAS," that is, without armament, for the obvious reason that it is dangerous to drop bombs. Also, unlike in war, no aircraft are allowed to fly below 300 feet, and no helicopter can fly above 200 feet. A major task of the Ravens is to resolve conflicting demands for the airspace over the battle.



"Intelligence Sets the Stage"

"Without their 'eyes,' the OPFOR is just as blind as the BLUFOR, and they'll do dumb things," says Capt. Gary Cleland, a former OC who now works in the administrative section at Fort Irwin.

In the darkness before the OPFOR's regimental attack on the 2d Armored, the latest intelligence reports were read under the eerie, luminescent glow of chemical lightsticks. A key scout had been "killed" at about 0100 hours, and the OPFOR did not know the location of a particular BLUFOR element. That element, it turned out, had moved to a strategic location, and the dug-in M2, along with two concealed Bradleys and an M1, took out a sizable portion of the OPFOR as it came through.

"Intelligence sets the stage," says Capt. Greg Stanley, an Army ground Liaison officer permanently assigned to 4443d TTS at George. Captain Stanley briefs both Blue Air and OPFOR Air pilots, one group at a time with the other side's maps concealed. By using the same map that Army forces use and by studying a three-dimensional model

board, pilots get a good mental picture of what they will likely find in battle. Captain Stanley and the Air Force intelligence staff also gets reports during the course of a battle to update later flights.

The Army's firing of artillery and launching of battlefield missiles are simulated. Fire-support teams simulate artillery by driving their Hummers to the spot where shells would have fallen had they been fired; once there, the teams drop flash charges to show the results of the barrage.

Small flash charges at the rear of the two main antitank missiles in use, the FGM-77 Dragon and the BGM-71 TOW, and of the FIM-92 Stinger anti-aircraft missile, simulate the blowback the missileer would experience. Main tank-gun firings are simulated by Hoffman charges, and the rapid rate of fire on the Bradley's 25-mm Bushmaster chain gun is simulated by a strobe light.

The realism continues well after the battle. "Casualties" are given cards that describe their "wounds," and the medics have to treat them accordingly. Some "wounds" must be treated within a certain length of

time or the soldier will "die." Curiously, the most common wound in one recent battle was getting shot in the backside.

Another set of cards that is handed out describes what "maintenance" actions must be taken. Tank mechanics have to go to their supply area and get the "part" needed to fix the problem. The Army has charts that detail how long a repair is supposed to take, and the tank or vehicle is out of action for at least that length of time. A "disabled" vehicle can only be "towed" (driven behind) a vehicle that is capable of towing it. For example, a Hummer can't be used to "tow" an M1 tank.

The pace of planning and fighting the battles takes a toll on BLUFOR commanders. Many times, brigade commanders have had to order their subordinates to get some sleep. That's how realistic the training gets.

The Ultimate Classroom

Though fighting the battles is a valuable learning tool, the keys to effective training at the NTC are the mechanical and human debriefing systems.

The traditional "I-shot-you-first-no-you-didn't" argument during training battles is resolved by the use of the Loral MILES (Multiple Integrated Laser Engagement System) equipment. MILES transmitters, attached to every rifle, machine gun, and missile in use at NTC, emit invisible, eye-safe pulses of laser radiation to simulate live rounds. Each MILES set has its own code, arranged in a hierarchy, so a rifle can "kill," say, an infantryman, but not an M2. A 102-mm main tank gun, on the other hand, is effective against anything.

Receivers are attached to a band wrapped around the helmet and on a vest the soldiers must wear at all times. When hit, the receivers sound a strident tone that can only be turned off with a key. Once "keyed," the soldier is out of the battle.

On vehicles, receivers are attached to exposed areas and vulnerable points. The equipment calculates "near misses," "hits," and "kills" by taking distance and firing angle into account. Results are announced by a bright, flashing, amber light on top of the vehicle.



At the Operations Center at Fort Irwin, every action, movement, and shot fired is recorded. The Center, which the troops have dubbed "The Star Wars complex," records the battles graphically (as shown onscreen above), on videotape (there are two permanent and five mobile cameras), and on audiotape. This information is packaged so that ground troops like the M2 Bradley Fighting Vehicle crew at right can take it home, study it, and learn from their battles in the desert.



After every battle comes an After-Action Review (above) for all participants, including infantry, artillery, intelligence, and armor, then for both forces' senior commanders. Both Blue and Red Air Forces have their own AAR as well. The end-of-rotation AAR involves everybody. The OPFOR crew below will be back for the next battle in a few days.

MILES data and real-time position data on every vehicle on the range are fed back to the Operations Center (or, as the troops call it, "the Star Wars complex"), where they are displayed on terminals and recorded. Ten to fifteen monitors are needed to keep tabs on each task force. At the end of the battle, the system can print a complete, chronological, shot-by-shot record of the action, as well as a list of other significant events.

Atop Tiefert and Granite Mountains, the NTC has installed permanent TV cameras, which tape every battle. Five mobile TV trucks are placed in strategic locations to capture the battle during the fighting. Technicians in the Operations Center also monitor and record transmissions from eighty of the ninety available radio nets, including secure ones. All data from all of the battles are assembled into a take-home package the units can study at their home post.

The human debriefing system is nearly as elaborate as the mechanical one. After a battle, both the OPFOR and the BLUFOR commanders hold sit-down, no-holds-

barred After-Action Reviews (AARs) with their subordinates.

First, intelligence gives a full report on the other side's battle plan. Then all the company commanders, including those of support forces, such as the engineers, talk about what they think they did right, what they did wrong, and how they can improve. The senior commanders



and OCs then meet with their opposite numbers and repeat the process. A final AAR is held at the end of the rotation with all of the players, including the Air Force, present.

At George, the aircrews have their own AARs, get briefed by Captain Stanley, and talk by phone to the Ravens to get an evaluation of how they did. Because there is virtually no MILES equipment for the aircraft, the Ravens play a key role for the pilots. The aircraft OCs determine which aircraft were in a position to get shot down, which ones got shot down, and how effective their bomb runs were. The crews are not always perfect, but they gain knowledge with every sortie.

At the NTC, there are many different levels of learning. From the screech of MILES gear in his ears, the infantryman learns that he can be killed if he sticks his head out of his foxhole at the wrong time. The Army lieutenant who will one day be a general sees the ability of Air Force pilots and aircraft to lend him support, and the pilots get to see firsthand how important their help is to the ground forces. ■