

Light Armor Units: An Italian Perspective

by Colonel Sergio Fiorentino

Light armor units are not new for the Italian Army. In fact, during the 1950s and 60s, the Italian Army had cavalry regiments equipped with light armored vehicles and armored cars. The main task of these units was ground reconnaissance and, due to their high mobility, they were also used as reaction forces or reserves during offensive and defensive operations. The increased importance of armor at the end of the 1960s resulted in a reorganization of cavalry regiments into heavy armored and mechanized infantry regiments, thereby eliminating the cavalry unit for more than 20 years.

More recently, with growing urbanization and cultivation all over Italy, especially of vineyards and corn, there have been fewer opportunities to use extended formations of heavy armor units. In many areas, movement has been strictly confined to roads. Moreover, limited lines of sight and fields of fire, due to crops and hilly terrain, also restrict the use of armor. As a result, we realized that we had a greater need for tank killers than tanks for counter-maneuvers. Furthermore, the continuous development of our doctrine, and the means necessary to support it, have been greatly influenced by NATO and internal defense requirements. To respond to these changing conditions, the Italian Army reconfigured armored and light infantry components several times.

In the new scenario, our Army will be focusing on "defense of something," rather than "defense against someone." In addition to the standard factors to be taken into account, such as natural environment, threat, resources, and technology, a new compelling factor will be both tactical and strategic mobility. Forces on the battlefield of the future will demand speed over long distances to rapidly concentrate, react, and dis-

perse. There is also an increasing requirement for power projection capability over long distances to support multinational coalition efforts. In average conditions, it is more effective to employ light-medium armored units for defensive, offensive, and other-than-war operations.

For the conventional threat, rather than employ only extended formations of armor, it is better to use a mix of artillery, combat helicopters, and light infantry (air assault). These types of forces have greater mobility and are more effective in rough and mountainous terrain.

Both the rapid increase in the lethality of high-technology and antitank weapons and the increased effectiveness of target acquisition for both day and nighttime systems makes it even more difficult to maintain a modern armored force.

The continuously expanding and rapidly evolving technology has made it more important than ever to optimize the cost-effectiveness of our Army's limited economic resources.

As technology has evolved, the Italian Army Staff thought it better to establish an armored cavalry brigade and seven armored cavalry regiments to be integrated with existing units (mechanized, mountain troops, and airborne). This effort, which was initiated in 1991 and will end in 1994, is aimed at producing units that can operate in diverse types of combat conditions. In this regard, our primary concern is in determining likely areas of potential operations, which nowadays are not always easily identifiable.

Another consideration is command and control organization. The C³I system must be responsive to the entire battlefield, both forward and rear. The contingent must be mobile and effec-

tive with the use of modern weapons and technology to engage objectives at great distances, and be able to concentrate maximum forces and firepower at the place and time of our choice.

Another aspect of the modern battlefield is the array of forces. Units are often highly dispersed, and battlefields are no longer linear. This results in areas that cannot be constantly controlled by forces, fires, or obstacles. Ultimately, we can see that future operations must be:

- Characterized by maneuvers that are highly synchronized. Elements of surprise will concentrate more on the "timing" than on a particular geographic location
- Aimed first at destroying enemy forces and then at securing specific objectives
- Conducted by resorting greatly to reconnaissance and deception
- Carried out with a higher degree of risk than in the past
- Able to transition, particularly at the tactical level, from defensive to offensive and vice-versa without hesitation.

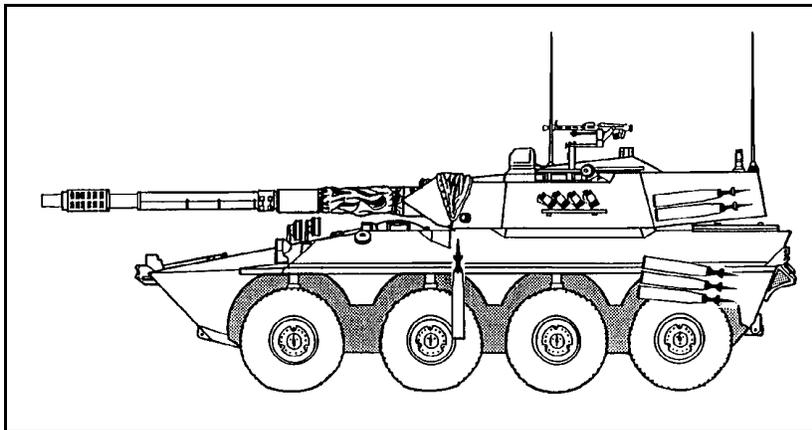
The modern battlefield, as defined above, increases the potential use of light armored units, which rely on increased operational mobility and flexibility. The light armor units, therefore, must be highly mobile and versatile, utilizing high-speed movement to rapidly react from one location to another and able to accomplish a multitude of combat missions.

The Role of Armor

In the configuration to be outlined, the Italian light armored unit can be effectively employed for many types of operations on the modern battlefield. In

Italy's Centauro

This 26-ton armored car has a maximum road speed of over 60 miles per hour and mounts a 105-mm gun on its eight-wheeled chassis. Ammo storage locations (for 40 rounds) are seen at right. The cannon fires standard NATO ammunition, including APFSDS rounds, with the help of a long-recoil mount and muzzle brake. The front two axles and the rear axle all move to steer the vehicle, allowing a turning radius of less than 30 feet.



SPECIFICATIONS

- Crew of four
- Power: V-6 520-hp diesel
- Power/Weight Ratio: 21hp/ton
- Range: 500 mi.
- Hull Length: 24 ft.
- Hull Width: 10 ft.
- Overall Height: 8.8 ft.



particular, it is well suited for defensive and offensive operations, as well as internal defense and peacekeeping missions. In offensive and defensive operations, the units can conduct reconnaissance and security missions of a selected position or area, deep operations in enemy rear areas, as well as diversionary or supplemental operations. Planned future missions for light armored units include the defense and security of particularly sensitive areas and positions, rapid reaction against infiltration, and military support for internal emergencies. Finally, for peacekeeping missions, light armored units can perform border patrol, area security under international direction, and security of routes and key locations.

To best carry out these duties the brigade is organized as follows:

- Brigade headquarters and headquarters battalion. The headquarters battalion includes a support company, a

signal company, and an engineer company.

- Three armored cavalry regiments. Each regiment includes a support troop and a cavalry squadron. Each cavalry squadron should include four light armored troops (two troops on Centauro wheeled armored cars and two troops on light personnel carriers).

- An artillery regiment that includes an artillery battalion, three batteries of 155-mm howitzers, and an anti-aircraft battery. (We are considering the possibility of installing the 155-mm gun on the armor car hull and of adding a battery with FIROS rocket launchers);

- The support battalion.

This configuration lends the armored cavalry brigade some unique characteristics. The most important include the capability to conduct sustained operations. This is possible due to the large number of units and different types of weapons systems that may be

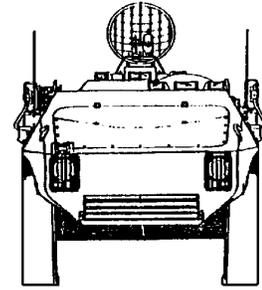
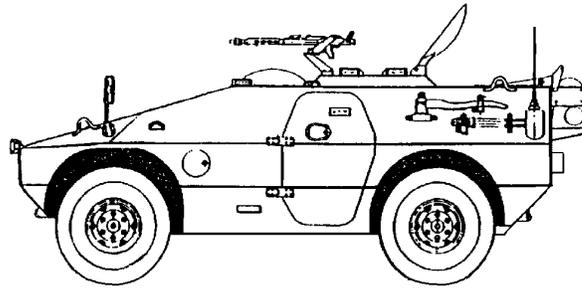
employed, and the capability to develop dynamic combat operations over large areas, supported by the extended range and high speed of combat vehicles over all types of terrain.

Another characteristic of the armored cavalry brigade is the interoperability of each component and the ability to reconfigure the force to support any kind of mission. Furthermore, the brigade has effective antitank capability at extended ranges, due to the guns of the armored cars and other TOE-authorized antitank weapons. In addition, there is TOE anti-aircraft capability adequate for the brigade to operate autonomously.

All these characteristics of light armor units, combined with the high "esprit de corps" and traditions of the cavalry, contribute to the brigade's ability to perform on a dynamic battlefield. The cavalry brigade can be used as a single combat unit or task-organized into smaller units. As a separate brigade, it can conduct operations includ-

The Puma

The Puma light armored scout vehicle weighs approximately 5 tons, and has room for six men, including the driver. It has a maximum speed of 100 km/h and a range of 800 km.



ing reconnaissance (to establish and maintain contact with the enemy), area security, and deep operations in enemy rear areas.

The brigade can also be task organized for smaller missions, such as reconnaissance (for the brigade itself), area security, mobile reserve, mobile reaction force, point security, support for internal emergencies, and peace-keeping missions.

Light Armored Vehicles

The most important armored vehicle of the light armor unit is the Italian-made armored car, the Centauro, that equips cavalry regiments of the brigade.

The Centauro is a new type of wheeled combat vehicle that will have an important role in increasing the operational capabilities of units on the modern battlefield. The performance of the Centauro places it between the light tank and the main battle tank. The primary characteristic is the Centauro's high mobility, nearly the same as that of tracked vehicles on all types of terrain. This is due to the four drive axles, the centralized tire-inflating system, and its range of approximately 800 km. Another capability is the Centauro's high road speed (100 km/h), which is achievable because the vehicle is relatively light (24 tons). Furthermore, the vehicle has increased armor protection achieved by a composite of high resistance steel and plastic. The armor will resist shrapnel, automatic-arms fire, or heavy weapons. This armored protection is believed to be adequate considering that the Centauro is to be used for hit-and-run-type missions, due to its high mobility. Another key characteristic of the vehicle is its high survivability in NBC environments and in case of internal fires. This is made possible by a pressurized NBC filter system and an internal fire-extinguisher system. The Centauro also has suffi-

cient firepower to engage the most modern main battle tank, with its primary 105-mm gun and battle load of 40 rounds. Naturally, the Centauro is continually evolving with the newest technology. Even though 90 vehicles will be in service at the end of this year, we are already looking at improvements that can be applied to future models. The first improvement will be the capability of transporting 2-4 combat soldiers in addition to the vehicle crew. This will extend the vehicle's possible mission profiles. We are also studying the possibility of adding a laser warning device, which will intercept emissions of enemy laser range-finders and react by pinpointing the enemy vehicle location and activating a protective smoke shield within one second. Finally, we are considering the installation of a new system to electronically control the turret. This would consist of two brushless motors, similar to those in the Leopard 1, but with improved electronics. The motors are also smaller and consume less energy.

In the context of this project, we are considering an entire family of vehicles that would utilize the basic hull of the Centauro. In each vehicle model, such as the command-and-control vehicle and the self-propelled, 155-mm howitzer version, there would always be trade-off capability to rapidly incorporate new technology. For the light components of armor cavalry units (each squadron would be organized with two Centauro platoons and two platoons on light recon vehicles), we are considering possibly buying a light armored recon vehicle, the Puma made by IVECO. The main specifications of this vehicle are a weight of approximately 5 tons, room for six men, including the driver, with light armament of various types. The Puma has a maximum speed of 100 km/h and a range of 800 km. The vehicle must initially be built as a troop carrier. Later modifications would include versions to carry mortars or antitank missiles, and command-and-control and evacuation vehicles.

Conclusion

I have tried to present the Italian perspective on light armored units and the changes being made by the Italian Army to increase flexibility and mobility of these newly organized units. Combined with air-assault units, light armored units are at the forefront of current doctrine, particularly in relation to the many requirements of non-traditional national and international operations, such as peacekeeping, peace-enforcing, and security missions.

Colonel Sergio Fiorentino is a 1968 graduate of the Italian Army Military Academy, commissioned in artillery. As a second lieutenant, he attended the School of Applied Military Science, and was later assigned to the 5th Mountain Artillery Regiment as battery executive officer. As a captain, he commanded an artillery battery, and was later assigned as staff officer to the Landsouth Operations Division. He attended the Italian Army War College and was appointed Vice Section Chief of the Italian Army General Staff Information Systems Division. From 1986-1989, he commanded the 8th Self-Propelled Artillery Battalion of the "Vittorio Veneto" Cavalry Brigade. Subsequently, he was assigned to the Italian Army General Staff as Section Chief of the Information Systems Division. In 1991 Colonel Fiorentino was appointed Assistant Military Attache of the Italian Embassy - Office of the Army Attache in Washington, D.C.