

A look at NATO ally Spain

Cordoba Cats: Ejercito de Tierra's Leopard 2E Main Battle Tank

by Stefan DeGraef

In mid-February of this year, Spain's Ministry of Defense and the *Ejercito de Tierra* (Spanish army) decided to send soldiers, six Leopard 2E main battle tanks (MBTs) and 15 Pizarro II armored infantry fighting vehicles to Latvia as part of the North Atlantic Treaty Organization's (NATO) enhanced forward presence (EFP) initiative in the Baltic States (Lithuania, Latvia and Estonia) and in Poland. This multinational military force reinforces NATO's northeastern flank from invasion.

The Spanish deployment – part of a Latvia-based multinational battalion under Canadian leadership – not only illustrates Spanish willingness to participate in NATO-member-supported operations but also to continuously invest in a capable, deployable and credible Leopard 2E MBT force. At the same time, *Ejercito de Tierra* initiated internal reform to become a more organic, deployable force able to respond to any threat scenario.

Leopard 2A6 variant

The Spanish army's Leopard 2E (*E* for *Espana*) is based on Germany's capable Leopard 2A6 variant in service with the German army. The 2A6 MBT was developed as a *Kampfwertsteigerung* of the existing Leopard 2A4 model by replacing its Rheinmetal 120 L/44 by a more potent and longer-barreled Rh120 L/55 cannon and to improve the tank's armor protection and survivability on the "classic" battlefield. Additional add-on wedge "arrow-shaped" armor was installed on the turret's frontal arc and roof to make it less vulnerable to kinetic-energy penetrating munition like armor-piercing sabots. To give the MBT more protection against mines and improvised explosive devices, more belly-armor plates were also incorporated into the design and manufacturing process.

Armed by the potent Rheinmetall L/55 120 mm, the Leopard 2E and its four-man crew (tank commander, gunner, loader and driver) are able to engage targets at an effective range of about 4,000 meters. For battlefield observation, target identification and elimination, the tank commander uses a turret-mounted 360-degree rotatable day/night PERI-R 17A2 stabilized panoramic periscope. The gunner, seated in front and below the tank commander, uses a dual-magnification stabilized sight with an integrated laser-rangefinder and thermal imaging unit. The stabilized gun allows the tank commander and gunner to individually detect, target and attack (hunter-killer) enemy tanks and armored personnel carriers while moving over rough terrain in all weather conditions. A backup telescope is also available to the gunner.



Figure 1. A Leopard 2E assigned to *Brigada el Guzman X* moves through the terrain of the training area at Spain's CerroMuriano Barracks, located near Cordoba, Spain. (Photo by Edwin Borremans)

All systems are integrated into the Leopard Information and Command Equipment (LINCE) command-and-control system, developed by Rheinmetall Defense Electronics and Spain's Indra Company. The LINCE-battle-management system also allows each tank commander to optimize his battlefield situation awareness using a multi-color display indicating the exact position of his tank, his company's tanks and the enemy's MBTs.

The loader, standing left of his commander, manually loads the L/55 gun using munition stored in the back of the turret (15 rounds) and left of the driver in the body of the MBT (27 rounds). A blast door separates the back of the turret from the crew compartment and, when hit, this turret section will explode upward without danger to the crew.

Standard munition used by the Leopard 2Es are the German-made DM43 kinetic-energy penetration anti-tank sabot-round and the DM12 multipurpose anti-tank projectile. The DM43 is able to penetrate 56-centimeter steel armor when fired at a range of two kilometers. When its ammunition is manually loaded by an experienced loader, a Leopard 2E can fire up to nine shots a minute, with some of its ammunition (especially kinetic-energy penetrators) reaching velocities up to 1,800 a second. Able to shoot the Rheinmetall L/55 on a nine-degree downward angle and to climb obstacles up to 1.1 meters, the Leopard 2E can use terrain concealment to target and attack enemy MBTs without exposing its bulk to the opponent.

When forced to fight at close range (such as in urban areas), two 7.62mm machineguns can be used: one turret-mounted and one coaxially mounted. Two groups of four side-mounted 76mm Wegmann smoke mortars on the turret can be electrically fired to create smokescreens within seconds. An internal overpressurization system protects the Leopard 2E's crew from nuclear, biological and chemical threats.

For training purposes, all Leopard 2E regiments use a high-tech dynamic turret simulator, designed by Indra. This simulator can be used to train MBT commanders, gunners and loaders during various simple and more complicated tactical scenarios and operational environments. To boost the realistic value of this crew training, simulated iron munition, similar in size and weight, can be handled by the loader and "fired" by the gunner.

Organization

Since its introduction by the Spanish army, several brigades – all belonging to Spain's Division San Marcial – have been equipped with the new Leopard 2Es. Each of these brigades has one *Regimiento de Infanteria Acorzado* with one *Batallon de Infanteria de Carros de Combate*, which are each composed of three companies (*companias*) of Leopard 2E MBTs. Three individual platoons (*primera, segunda and tercera seccion*) all have three MBTs in each *seccion*, augmented by two "staff" Leopard 2Es. On paper the Spanish army has a combined force of 42 MBTs, joined by Leopard recovery tanks.

One of these battalions, *Batallon de Infanteria Carros de Combate Malaga IV/10*, is based at the Spanish army's CerroMuriano Barracks, located 15 kilometers north of Cordoba in southern Spain. The unit is part of *Regimiento Acorazada Cordoba No. 10*, joined by *Grupo de Caballeria Acorazada Alamansa II/10*. This mechanized-cavalry unit operates Austrian-Spanish Cooperation Development Pizarro II *Vehiculos de Combate de Infanteria* (VCI) armored infantry vehicles in support of the Leopard 2E fighting force. Armed with a 30mm Mauser Mk-30/2 cannon, the Phase II Pizarro is an updated version of the initial version, with a small increase in overall length but with improved armor, interior design, control handling and, more importantly, new tactical displays for the VCI commander and gunner.

Frequent joint operations with MBTs, Pizarro II VCI and command vehicles – and even M125A1 120mm heavy mortar carriers – are simulated in the CerroMuriano Barracks' training area.

In 2015 the Spanish army initiated a in-depth reorganization, transforming its brigades into eight *brigadas organicas polivalentes* (BOP) (polyvalant organic brigades), allowing these units to respond, adapt and deploy in a more flexible and adaptable reaction to any type of (inter)national humanitarian, peace-keeping and peace-enforcing mission. To be more deployable as a unit, the *Brigada Guzman el Bueno X* BOP received two more fighting companies. If needed, each BOP will be supplemented by more companies/battalions to boost its overall capabilities (in other words, heliborne capability by one of the army aviation units).

'On stage' in Latvia

In reaction to Russia's annexation of Crimea and invasion of Ukraine, NATO decided during its 2016 summit in Warsaw to deploy four multinational battalion-sized landforces/battlegroups as EFP to Poland and the Baltic States. The battlegroup at present is a six-nation military force: Canada, Albania, Italy, Poland, Slovenia and Spain.

The Spanish army deployed some 350 military personnel, six Leopard 2E MBTs and 15 of the Pizarro IIs to the Latvian army's Adazi military barracks, close to Latvia's capital Riga. Initially personnel, tanks and vehicles of *Brigada Extramadura XI* were sent to Latvia, with rotations of personnel planned among the various MBT-equipped BOPs. The Spanish Leopard 2Es are joined by a company of Leopard 2A5 MBTs of the Polish armed forces.

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Acronym Quick-Scan

BOP – *Brigada organicas polivalentes* (Spanish) or polyvalant organic brigade (English)

EFP – enhanced forward presence

LINCE – Leopard Information and Command Equipment

MBT – main battle tank

NATO – North Atlantic Treaty Organization

VCI – *Vehiculos de Combate de Infanteria*