

STRONG AGILE PROGRESSIVE

CV90



BAE SYSTEMS

CV90: THE VEHICLE THAT ADAPTS TO THE FUTURE

STRONG ARMoured FOR CREW SURVIVABILITY
AGILE PERFORMS ACROSS ALL TERRAIN
PROGRESSIVE DESIGNED FOR SCALABLE UPGRADES



The CV90 was designed with a clear vision: to create a vehicle that provides high tactical and strategic mobility, air defence, anti-tank capability, high survivability and protection in any terrain or tactical environment.

Initially created for the Swedish army, the platform has been embraced by forces all over Europe including Norway, Finland, Switzerland, the Netherlands and Denmark. The CV90 has successfully performed in live global operations including UN and NATO collaborations. Under the command of the Norwegian, Swedish and Danish armies, it has also been deployed as part of the International Security Assistance Force (ISAF) in Afghanistan.

Designed to provide maximum availability and cost-efficiency throughout its operational lifespan, the CV90's systems require straightforward, low cost maintenance. Through close co-operation with customers and continuous improvements, the platform's future proof design allows for new upgrades and variants.

ONE OF BAE SYSTEMS' LARGEST FAMILIES OF ARMoured COMBAT VEHICLES, THE CV90 IS THE WORLD'S MOST MODERN PLATFORM IN THE 25-40 TONNE CLASS.

PROTECTION

IN TODAY'S OPERATIONAL CLIMATE, PROTECTION NEEDS TO BE STRONG, ROBUST AND FLEXIBLE

The CV90 has the most advanced protection kits available in the world, providing flexible solutions for any mission requirements. The platform utilises a modular approach to armour. Its base structure is designed to carry any add-on armour without adding parasitic weight to the overall vehicle.

It provides crew protection from the latest heavy weaponry including:

- IEDs
- Anti-tank mines

It also protects occupants from Chemical, Biological, Radiological, and Nuclear (CBRN) threats with a specialised filter system.

To meet modern day battlefield threats, the vehicle can be fitted with further protection including:

- Different types of armour to protect against diverse threats, such as shaped charge warheads and RPG-7s
- A Defensive Aid Suite (DAS) that classifies targets, gives threat warnings via the Vehicle Information System (VIS) and supports the driver with speed corrections to reduce the risk of being hit
- Adaptive camouflage, which offers an active multi-spectral defence system, rendering the vehicle appearance to match its environment

The technology also takes on the textures of other objects, minimising the vehicle's radar and IR signature and further increasing crew survivability.



MOBILITY

EFFECTIVE PROTECTION NEED NOT MEAN REDUCED MOBILITY

Powered by a high torque V8 diesel engine, the CV90 can reach speeds of 70 km/h. The vehicle's road range is also constantly improving, with new variants capable of travelling up to 900 km.

While upgrades to the CV90's armour have seen the platform's curb weight rise from 23 to 35 tonnes, power-to-weight ratio has remained approximately the same thanks to stronger diesel engines.

The CV90's track suspension has also been improved. The new track system allows the vehicle to travel effortlessly through both snow and sand, enabling:

- Quieter movement and improved stealth
- Greater speed over rough terrain
- Higher ground clearance for protection against mines and improvised explosive devices

The platform's semi-active damping reduces the pitch accelerations of the vehicle by approximately 40 percent. For the crew this means:

- A smoother ride for reduced fatigue
- Reduced vertical motion (increasing the gunner's hit probability and ability to find targets)
- Higher all-terrain speeds
- Increased life expectancy for components in the drive line

ARMAMENT

THE FIRST TO FIRE

As a first class combat vehicle, the CV90 is compatible with a range of armaments to suit any mission requirements.

The vehicle is normally fitted with a two-man turret which is equipped with the well proven 25-35 mm Bushmaster cannon. This can be supplied in different configurations, including unmanned and uses programmable ammunition to meet precise lethality performance needs.

The CV90 MkIII incorporates a Munition Programmer for Air Burst Munition (ABM) and has a target-driven gunner Man Machine Interface (MMI). The Fire Control System also has the ability to choose:

- The type of ammunition
- Offset
- Fuse setting
- Burst pattern

This significantly decreases operator workload allowing the gunner to focus on the type of target that he wants to engage.

The vehicle's hunter-killer function features an independent sight system for the commander, enabling him to search, engage or hand over targets to the gunner. The CV90's state-of-the-art systems allow the crew to rapidly discover and identify targets in minimal time. This enables them to be the first to shoot, whether the target is on the ground or in the air.

CREW SURVIVABILITY IS OF PRIMARY IMPORTANCE TO EVERY FORCE. EACH ASPECT OF THE CV90, FROM ITS ARMOUR TO ITS DRIVING DYNAMICS, IS DEDICATED TO PROTECTING PERSONNEL.



SELECTED VARIANTS

THE CV90 HAS GENERATED A FAMILY OF SPECIALIST VARIANTS DESIGNED FOR SPECIFIC MISSION AND CUSTOMER REQUIREMENTS.

CV90120

EQUIPPED WITH SENSOR-BASED PROTECTION

The CV90120 provides crews with greater lethality, higher mobility, advanced identification capability and state-of-the-art stealth protection.

With its lightweight design, the CV90120 is more manoeuvrable on the battlefield than traditional tanks; however it can still match them in terms of firepower.

The CV90120 is also equipped with a modern 120 mm anti-tank gun – the Rheinmetall 120 LLR L47 – which enables it to handle any contemporary battlefield threats.

The CV90120 is also fitted with modern sensor-based protection. Unlike traditional armoured steel, the defence system works to increase the vehicle's stealth capability, keeping the crew hidden from potential threats.

CV90 IFV VARIANTS

READY FOR ANY MISSION

CV9030 – The CV9030 features a 30 mm Bushmaster II cannon and an add-on armour kit.

CV9035 – Designed for performance in the toughest terrain, the CV9035 features a 35 mm Bushmaster III cannon and a commander's independent hunter-killer sight.

CV9040 – Sweden's main battle tank features a 40 mm Bofors cannon and a stabilised turret.

Wherever they are deployed, turreted CV90s provide cutting edge tactical and strategic mobility, anti-armour capability and high survivability.



THE CV90 ARMADILLO

THE CV90 ARMADILLO IS THE LATEST PLATFORM IN THE CV90 FAMILY

Built from a modular design, the CV90 Armadillo platform provides straight-forward adaptability to meet any mission requirements. It has gained acclaim due to its increased levels of protection, greater flexibility and high-payload capability.

The modular design includes:

- A rear roof section that can be unbolted depending on mission requirements
- Mine blast and horizontal protection
- An external fire suppression system
- A sensor-based active protection system

The CV90 Armadillo can be modified to become a personnel carrier, an ambulance, a command and control centre, a recovery vehicle and many other non-turreted variants.

Examples of non-turreted CV90 Armadillo variants

CV90 ARV – An Armoured Recovery Vehicle designed to perform all forms of recovery and field maintenance operations.

Command and Control Vehicle – A vehicle equipped with communication and sensor systems so commanders can assess the battlefield situation and achieve information superiority.

Example of a CV90 Armadillo based variant

CV90 AMOS (Advanced MOrtar System) – A state-of-the-art system that provides troops with increased firepower wherever they may be.

Whatever the mission, the CV90 Armadillo can be modified to the situational requirements.



A VEHICLE THAT IS HIGHLY MOBILE, COST-EFFICIENT AND HAS A LOW LOGISTICAL FOOTPRINT.

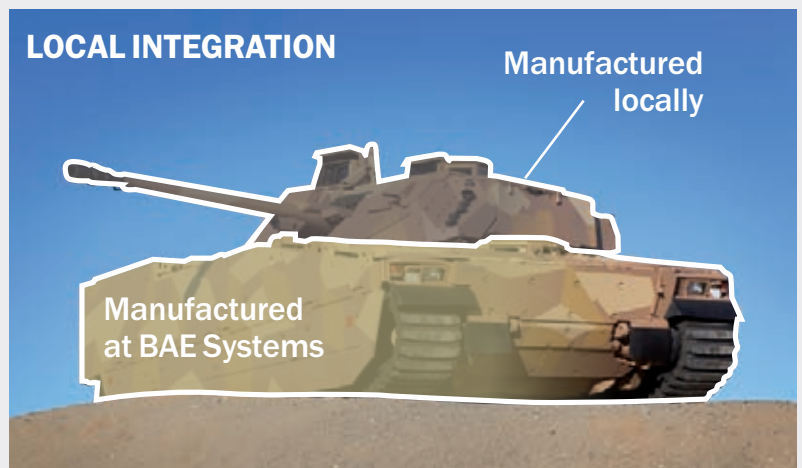
INDUSTRIAL CO-OPERATION

We're proud of our track record in industrial co-operation and offset. We use a proven concept to build long-term, mutually beneficial relationships.

As one of the most modern armoured vehicle systems in the world, the CV90 requires advanced production capabilities. Among our many local industrial co-operation projects is our Complete Turret Assembly (CTA). In this programme, we outsource the construction and integration of the turret to suppliers from within the customer country.

Using a thorough selection process, we examine the knowledge, skills, scale and facilities of local suppliers to find the best possible fit. As part of each CV90 contract, we seek a local partner who can take overall responsibility for the CTA programme.

Our technology transfer agreements provide our customers with economic benefits as well as a leading and future-proof combat solution.



AT BAE SYSTEMS, OUR CUSTOMERS ARE OUR PARTNERS.

CASE STUDY: DUTCH ARMY CONTRACT

From 2004-2011, BAE Systems delivered an extensive offset package to the Netherlands as part of a contract for 184 CV9035 MkIII vehicles. It is currently the largest offset contract from the country, amounting to more than EUR 800 million.

Working with our suppliers, we evaluated more than 200 local companies to work as part of the system. More than 50 of these were eventually awarded contracts related to the agreement.

Local companies took direct involvement in the assembly and integration of the turret. The contract also included a substantial indirect offset agreement, with investment in other industry sectors and marketing support for local enterprises.

Working closely with the Dutch Ministry of Economic Affairs (MEA), BAE Systems delivered on the contract well ahead of schedule.

“BAE Systems is an outstanding supplier of offset projects which adds value to the Dutch industry,” said a spokesman for the Ministry of Economic Affairs. “The company has so far fulfilled and exceeded our expectations and the offset contract is 2-3 years ahead of schedule. All of this has helped to make BAE Systems one of the best offset suppliers MEA has dealt with.”





MILITARY AND TECHNICAL SERVICES

With our knowledge and experience as a leading provider of military systems and services, BAE Systems has developed a range of innovative and tailored Military and Technical Services.

These 'Smart Services' ensure that our clients obtain maximum value from their assets and that all costs are kept to a minimum.

Our Smart Services embody BAE Systems' years of experience, allow us to understand our customer's business and deliver solutions that truly reflect their ongoing needs and budgets.

No matter where our clients are in the world, they can trust and depend on our Smart Services. From preparation and training programmes that ensure military personnel and equipment are ready for deployment, to maintenance and modernisation services, BAE Systems will be there.

WE OFFER A THROUGH-LIFE SUPPORT COMMITMENT TO OUR CV90 CUSTOMERS.

CASE STUDY: NORWEGIAN ARMY SUPPORT

The CV90 has been deployed in Afghanistan since 2007, however we're constantly developing new ways to adapt and improve them.

Recently, two Norwegian Army CV9030s were fitted with new rubber tracks that have been partly developed by BAE Systems.

The new rubber track system reduces the vehicle's weight by more than one tonne, as well as cutting noise levels by 10 dB and vibration levels by 65 percent. By replacing the steel tracks with rubber ones, the CV9030s have a longer life expectancy due to the reduced vibration levels benefiting electronics, optronics and ammunition. This in turn has brought down running costs. The new tracks also give the CV90 improved stealth, reduced crew fatigue and increased mobility in many environmental conditions, such as on snow and ice.

The rubber track system has been praised by a spokesman for the Norwegian Defence Logistics Organisation: "Our vehicle crews were a little sceptical of the rubber tracks at first, but once they used them, they became big fans and really appreciate the reduced vibration and quieter operation."

Trials by the Norwegian Army in late 2010 were so positive that two vehicles were sent to Afghanistan before the planned schedule.



TRACK RECORD

1993

Production of the CV90 begins.

1994

Norwegian contract signed for 104 vehicles.

2004

Finland orders more units, bringing the overall quantity to 102. As part of a UN contingent, 13 Swedish CV90s are sent to Liberia.

2007

The CV90 is engaged in combat operations for the first time when the Norwegian Army deploys units with 2nd Battalion. The vehicles are used during Operation Harekate Yolo and when Norwegian commandos respond to a Taliban attack on Afghan National Army forces in the Ghowrmach district.

2002

The CV9030 MkII, also known as the Grenadier Tank, is delivered to the Swiss Army. Between 2002 and December 2005, over 186 vehicles are supplied.

2000

Finland orders 57 CV9030 vehicles.

Denmark orders 45 CV9035 vehicles. The Netherlands later orders 184 combat units plus 8 instruction CV9035 vehicles.

2005

2008

CV90s are used by ISAF forces of the Norwegian Army's Telemark Battalion during Operation Karez in the Badghis Province.

2009

Sweden deploys CV9040s to Afghanistan.

2010

Denmark deploys 10 CV9035DKs to Afghanistan as reinforcements in Helmand Province. The units are from the Danish Royal Lifeguard Regiment, based in the Northern part of Seeland.

A new variant of the CV90 is unveiled – the Armadillo.



**THE CV90 PROVIDES HIGH
TACTICAL AND STRATEGIC
MOBILITY IN ANY TERRAIN
OR ENVIRONMENT.**

SPECIFICATIONS

Top speed	70 km/h
Range	900 km
Payload	16 tonnes
Protection level	(STANAG)
Ballistic	> 5
Mine	> 4a / 4b
Trench crossing	2.6 m
Step climbing	1.1 m
Fording	1.5 m
RWS	7.62 - 40 mm AGL
Turret	25 - 120 mm
No. of operators	3 + 7
Gradient	60 %
Power to weight ratio	17.1-24.2 kW/ton
Electrical power	570 A
Engine	Scania V8
Operating temperature	C2-A1
Driveline	
	Steel or rubber tracks: ≤ 28 (tonnes)
	Steel > 28 tonnes
	Semi active dampening

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