

Building Sustainable Machines

While the Army is developing its weapons to defend our nation in the 21st century, modern technology allows efficient designs that are more friendly to the environment as well as more lethal to our enemies. The impact of new weapons systems on Soldiers and the land where they train and work is now considered at every step of the life cycle of a weapon system, from concept to disposal.

CH-47 Chinook cargo helicopter

About 380 of these Army work-horses, first introduced in the early 1960s, will be completely remanufactured — including a new fuselage — over the next 17 years. Approximately 50 more will be built.

- Replacement of worn components - minimizing fluid leakage
- New digital avionics - safer flight, reduced crash risk
- Reduced amount of hazardous chromium used during aluminum pretreatment
- Engine air filter - prolongs engine life, reducing maintenance and associated waste disposal
- Active vibration reduction system - less vibration wear on parts, improved component life
- More powerful and fuel-efficient engines with fewer hazardous components
- Highly leak-resistant extended range fuel tanks

Joint Common Missile

The Joint Common Missile is an extended range, precision guided, air-to-surface weapon for use by joint service and allied manned and unmanned aircraft. About 49,000 will replace the Hellfire, TOW, and Maverick over the next two decades.

- Modular design extends service life and reduces the amount that must be disposed. Obsolete and expired parts, rather than the whole missile, can be replaced
- Upgradable to safer munitions
- Seamless lower hull contains fuel spills and leaks
- Computer models and simulators reduced live fire during development
- Weapon station catch bags used during training hold shell casings for recycling or disposal

Stryker combat vehicle

The Stryker joined the Army inventory in 2002 and is already seeing action in Operation Iraqi Freedom. With more than 2,000 of the vehicles in 10 configurations on order, the light armored vehicle is changing the way the Army fights.

- Ozone-depleting compounds removed from the fire suppression system in the engine and crew compartments
- Hazardous hexavalent chromium eliminated from paint primer, zinc plating, and aluminum parts
- Oil exchanger mixes used engine oil with diesel to reduce the possibility of waste oil spilling during changes
- Ozone-depleting compounds eliminated from the air conditioning system
- Technical manual revised to cover safe disposal of contaminated water in the hull

Legacy Missile System (Hellfire)



FOR MORE INFORMATION ABOUT BUILDING SUSTAINABLE MACHINES, contact the Environmental Support Office of the Assistant Secretary of the Army for Acquisition, Logistics and Technology at <http://www.environmentalsupportoffice.com> or responsibleforpollutionprevention@iac.army.mil. The U.S. Army Environmental Center, at <http://aec.army.mil>, is the Army's point of contact for implementing programs that enhance Army training while protecting the environment.

Legacy Combat Vehicle (M113 Armored Personnel Carrier)



THE ARMY ACQUISITION LIFE CYCLE - Environmental considerations

