U.S. Army Acquisition Support Program

Success Stories

AH-64D Apache Longbow Helicopter

Environmental Quality Life-Cycle Cost Estimate

AH-64D Apache Longbow Helicopter

The Environmental Quality Life-Cycle Cost Estimate (EQLCCE) for the AH-64D Apache Longbow Helicopter, completed in June 2000, represents the Army's continuing effort to identify and quantify environmental quality costs over the entire life-cycle for this weapon system. The EQLCCE was prepared in accordance with the U.S. Army Cost and Economic Analysis Center's (CEAC's) *Cost Analysis Manual.* The EQLCCE information can be used to identify areas of improvement such as material substitution, process changes and/or recycling, and potentially reduce the overall cost of the weapon system. An environmental Work Breakdown Structure (WBS) format was used to compile individual environmental quality cost elements and total costs for the entire program. The WBS includes all weapon system cost elements associated with environmental and regulatory compliance.

Benefits

The significant benefits of performing an EQLCCE for a weapon system are:

- Improving visibility of proven and potential environmental impacts and costs of the weapon system
- Providing opportunities for the Program Manager (PM), developer and fielding installations to identify and reduce environmental quality costs and determine alternative decisions associated with the weapon system
- Reducing the potential risk of remediation/restoration of environmental impacts with potential cost savings to the Army
- Providing an independent cost estimate acceptable to CEAC for validation
- Assisting the PM in defining compliance issues with federal environmental regulations and DoD acquisition requirements.

The AH-64D Apache Longbow is the Army's next-generation version of the combat-proven AH-64A Apache. The AH-64D is a twin-engine, rotary wing aircraft manned by a crew of two. The AH-64D is designed as a stable manned aerial weapon system to deliver aerial point target and area target fires. The AH-64D is modified to integrate effectively and efficiently the Longbow Fire Control Radar and Longbow HELLFIRE Modular Missile System.

These modifications provide the AH-64D with a true fire-and-forget capability, greatly increasing weapon system effectiveness and aircraft survivability.

EQLCCE Results

The EQLCCE for the Apache Longbow program identified $107.3M (constant $FY98) in environmental quality costs. Of this total, $52.2M were costs previously identified in the Army Cost Position. As a result of conducting the EQLCCE, an additional $55.1M of environmental quality costs were identified.

Program management benefits of the Apache Longbow EQLCCE include:

- Identification of hazardous material and waste disposal cost at the installation level
- Identification of cost data that can be used to support funding proposal development; update Pollution Prevention, Environmental Management, and Hazardous Material Management Plans; and prepare National Environmental Policy Act documentation
- Assistance to the PM Apache in developing demilitarization/disposal costs by facilitating discussions with the PM Blackhawk and Blackhawk environmental subject matter experts.

Background

In response to the 1995 Defense Appropriations Act requirements, the DoD was tasked to develop methodologies and databases for the analysis of environmental quality costs of major defense acquisitions/ programs. Responsibility for performing environmental quality costs analysis of Major Defense Acquisition Programs in the Army is borne by the responsible Program Manager's Office, CEAC and various DoD agencies. PMs who acquire, fund, produce and maintain weapon systems must in accordance with DoD 5000.2-R determine environmental quality costs and impacts of weapon systems from conception through disposal.

Because of rising concerns about hidden environmental quality costs associated with Army weapon systems, a number of studies, including audits performed by the DoD Inspector General and the Army Audit Agency, have examined the Environmental, Safety and Health aspects of weapon systems acquisition. An Office of the Assistant Secretary of the Army (OASA) for Installations, Logistics and Environment briefing to OASA Research, Development and Acquisition on 9 September 1997 stated that over 75 percent of all Army pollution is caused directly or indirectly by weapon systems. Approximately 1.8 percent of the Army's Total Obligation Authority is spent annually on restoration, conservation, compliance and pollution prevention. Consequently, every effort should be made to reduce the various costs when possible.

EQLCCE Handbook

The U.S. Army Environmental Center (USAEC) Acquisition Support Team is working with CEAC and PMs to develop and verify environmental quality life-cycle costs for various Army weapon systems. The team is developing a systematic approach, or methodology, to calculate these costs. The information will be compiled in an EQLCCE handbook for materiel acquisition that provides guidance for applying the methodology and conducting an EQLCCE for weapon systems. The handbook will also serve as a guide for PMs to estimate their program's environmental quality life-cycle costs.

In addition to the AH-64D Apache, USAEC has completed EQLCCEs for the RAH-66 Comanche and CH-47F Chinook helicopter programs and the M2A3/ M3A3 Bradley Fighting Vehicle System. The results from these EQLCCEs will be incorporated into the EQLCCE handbook.