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ALE-39(V) - Archived 02/2008

Outlook

- ALE-39 – a dependable system likely to remain in service for many years, especially as importance of littoral operations continues to grow
- Programmable and ALE-58(V) BOL dispensers being installed in new U.S. and some upgraded aircraft
- The ALE-47(V) designed for use on next-generation aircraft, but also installed on selected F-16s, F-14s, F-15Ks, and F/A-18C/D/E/Fs, as well as some SH-60s
- No further production of the ALE-39 expected; this report will be archived in 2008

Orientation

Description. Formerly the standard U.S. Navy airborne chaff and infrared flare dispenser, the ALE-39 is being phased out of service and replaced by more modern systems, such as the ALE-47.

Sponsor

U.S. Navy
Naval Air Systems Command
NAVAIR HQ
47123 Buse Road Unit IPT
Patuxent River, MD 20670-1547
USA
Tel: + 1 (301) 342-3000
Web site: <http://www.nawcad.navy.mil>

Status. In service, ongoing logistics support.

Application. A-6, AV-8, F-14, and F/A-18A/B/C/D aircraft; AH1, CH-46E, CH-53D/E, HH-60, SH-2F, SH-60, and UH-1N helicopters.

Price Range. The unit cost is \$20,000-\$25,000, depending on installation.

Contractors

Prime

BAE Systems Sensor Integration

<http://www.ids.na.baesystems.com>, 6500 Tracor Ln, Austin, TX 78725-2070 United States,
Tel: + 1 (512) 926-2800, Fax: + 1 (512) 929-2381,
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Contractors are invited to submit updated information to Editor, International Contractors, Forecast International, 22 Commerce Road, Newtown, CT 06470, USA; rich.pettibone@forecast1.com

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Technical Data

Design Features. The ALE-39(V) dispenses flares or chaff to deflect heat-seeking and radar-guided missiles away from the aircraft. The system can accommodate a mixed load of chaff, flares, and expendable jammers, and is either mounted internally or attached to the side of an underwing hard point. The payload of up to 60 decoy rounds includes:

- RR-129/AL chaff cartridge
- RR-170/AL chaff cartridge
- RR-180/AL chaff cartridge

- MJU-7B flares
- MJU-10B flares

- M-260 flares
- POET active expendable decoy
- GEN-X active expendable decoy

The ALE-39(V) consists of:

- MX-9254 dispenser programmer
- SA-1874 sequencer switch
- ALE-29A Dispenser housings (2)

These controls are used with the D-27 dispenser and MX-7721 or MX-7829 dispenser housing. The square dispenser unit is usually attached to the side of an underwing hard point.

For retrofit applications, electronic controls may be used with any dispenser designed to eject payloads using electrically initiated gas generation squibs. The electronic controls can be programmed during flight, and may also be integrated with radar warning receivers for automatic operation.

Operational Characteristics. The ALE-39(V) interfaces with most radar warning receivers and does not require ground programming. It can dispense chaff, flares, and decoys in any combination.

The dispenser carries up to 60 cartridges of chaff, flares, and jammer loads in multiples of 10. Multiple loads can be added up to a full 300 expendables. The ALE-39(V) operates under manual or automatic control. Payloads may be ejected singly or in preprogrammed combinations, depending on the tactical situation. The ALE-39(V) is capable of simultaneously ejecting flares in response to differing threat and flight conditions.

Variants/Upgrades

ALE-39B. This is the latest version of the countermeasures dispenser. It incorporates a variety of internal changes and operational upgrades developed over the life of the system.

Program Review

Flexible Unit for U.S. Navy and Marine Aircraft

The ALE-39(V) is flexible and allows a pilot to dispense chaff, flares, or a combination of the two. Units have been supplied for most Navy and Marine Corps fixed-wing, and many rotary-wing, tactical aircraft. Other countries operate aircraft carrying the ALE-39(V). The Navy has been improving the interfaces between new missile warning equipment and the ALE-39(V) rather than updating the ALE-39(V) itself, although improvements have been made to the control unit. The ALE-39(V) is being replaced by the ALE-47(V) advanced countermeasures dispenser for most new and some retrofit applications.

The LAU-138/A BOL chaff dispenser system was selected for installation on the F-14. The Swedish-designed, high-capacity chaff dispenser mounts inside a

missile launch rail and can dispense up to five times more chaff than current dispensers. This frees up existing dispensers for all-flare operation. BOL chaff dispensers were selected through the Foreign Comparative Testing Program, which evaluates foreign off-the-shelf systems for their ability to meet U.S. needs. The system was selected for the F-15 and tested for use on the F-16. It has been given the ALE-58(V) nomenclature.

In February 2000, *Commerce Business Daily* published a requirement to develop a Kinematic Decoy Flare compatible with the ALE-39(V) countermeasure dispensing system.

The February 9, 2001 issue of *Commerce Business Daily* carried a Potential Sources Sought announcement from the Crane Division, Naval Surface Warfare Center, that the Program Manager for Advanced Tactical Aircraft Protective Systems was conducting market

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research to determine the commercial availability of an advanced airborne infrared expendable system with demonstrated capability against advanced, two-color, infrared missile threats when dispensed from tactical aircraft. The system would have to be compatible with the ALE-39(V) and ALE-47(V) countermeasures dispenser systems.

U.S. Navy Adds IRCM to ALE-39

A March 20, 2002 notice in *Federal Business Opportunities* announced that the Navy had entered into a Basic Ordering Agreement (BOA) with BAE Systems to procure, via individual job orders, advanced infrared countermeasure (IRCM) capability and modeling and simulation capability for those fleet aircraft utilizing the ALE-39(V) countermeasures dispenser system. The

period for the BOA was expected to be three years from the award date, which was February 15, 2000.

In April 2004, the Naval Surface Warfare Center, Crane Division, Program Manager for Advanced Tactical Aircraft Protective Systems, announced that the Navy was again conducting market research to determine the commercial availability of an advanced airborne infrared expendable system with demonstrated capability against advanced two-color infrared missile threats. They would be dispensed from tactical aircraft such as the F-15E or the F/A-18. The system, like the system sought in 2001, would need to be compatible with the ALE-39(V) and ALE-4X countermeasures dispenser systems. The expandable system was required to be in production and available for delivery by November 15, 2004.

Timetable

<u>Month</u>	<u>Year</u>	<u>Major Development</u>
Oct	1973	Initial production release
	1985	Selected for SH-2F
	FY93	ALE-47(V) dispenser enters service
	FY05	End of production

Worldwide Distribution/Inventories

The system is in widespread use throughout the world on a variety of aircraft.

Forecast Rationale

ALE-39 is Dependable System

The ALE-39 is a dependable system that is likely to remain in service for many years. Despite its popularity, the system is being phased out in favor of more advanced systems, such as the ALE-47. The ALE-39 continues to support a market for spare parts, but that market is slowly drying up as new systems replace old ones.

As naval operations move to the littoral environment, surface-to-air threats are an even greater concern, so the ALE-39(V) will remain in frontline service on older aircraft and helicopters that do not receive the newer ALE-47(V) dispenser. Confidence in the ALE-39(V), along with budgetary constraints, makes it necessary for planners to seriously evaluate which platforms will receive the advanced dispenser and which will keep the older but adequate protection. The ALE-47(V) was

designed for use on next-generation aircraft, but is also installed on selected F-16s, F-14s, F-15Ks, and F/A-18C/D/E/Fs, as well as some SH-60s.

ALE-47 Improvement over ALE-39

The ALE-47(V) is considered a “smart” threat-adaptive dispenser system, responding automatically to inputs from the aircraft’s radar warning receiver, other sensors, or the pilot. It computes and ejects a chaff or flare that is pattern-tailored to the specific type of threat identified. To be truly effective, the threat-adaptive dispenser must be integrated with advanced radar and missile warning systems – equipment not typically installed on older aircraft using the ALE-39(V). Some aircraft (because of their mission) and many helicopters (because of their performance envelope) do not need the more advanced dispensers.

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Ten-Year Outlook

No further production of the ALE-39 is expected. This report will be archived in 2008.

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