

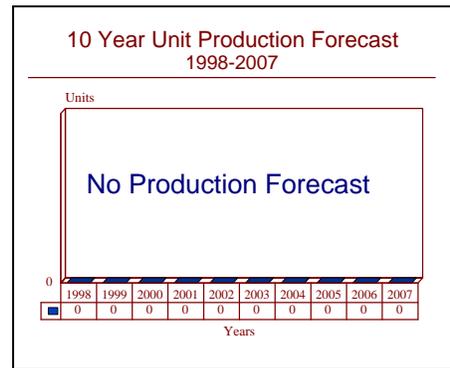
# ARCHIVED REPORT

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## ASN-92(V) - Archived 8/99

### Outlook

- Production complete
- Superseded by ASN-130A, then ASN-139 CAINS II system
- Support activity through decade to support older aircraft
- **THIS REPORT WILL BE DROPPED NEXT YEAR, 1999**



### Orientation

**Description.** A multi-unit Carrier Aircraft Inertial Navigation System (CAINS).

**Sponsor**

US Navy  
 Naval Air Systems Command  
 Arlington, Virginia (VA)  
 USA

**Contractors**

Litton Guidance & Control Systems  
 5500 Canoga Ave  
 Woodland Hills, California (CA) 91367  
 USA  
 Tel: +1 818 715 4040  
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**Status.** Production complete; support activity continues.

**Total Produced.** An estimated 1,223 units were produced.

**Application.** A-6E, EA-6B, E-2C, F-14A, RF-4B and S-3A aircraft.

**Price Range.** Previous editions of this report have indicated a unit price of approximately US\$170,000. This figure is likely based on contracts dating from the late 1970s.

### Technical Data

**Design Features.** As the airborne portion of the first-generation CAINS, the ASN-92(V) consists of the ASN-90 inertial measurement unit, the Litton LC 728 navigation computer, a data converter amplifier (ASW-25 or ASW-27), a control indicator and a power supply unit (PSU). The ASN-92(V) receives its initial orientation information on position, velocity, and heading through a microwave link from the Ships Inertial Navigation System (SINS). The ASN-90 senses

and measures rotation about each of the aircraft's axes, plus horizontal, lateral and vertical accelerations. The ASN-90 is the basic three-axis inertial measurement unit (IMU) for the A-7D/E and TA-7C aircraft. The IMU, mount and the PSU were procured as direct replacements of the older ASN-31 Inertial Navigation System, which went out of production in 1974. The entire ASN-92(V) system weighs 55.4 pounds and occupies one cubic foot of space.

The provision of an A/C converter modified an existing converter to adapt the ASN-92(V) signals to the A-6E avionics with no weight or space penalty. The MU-603/ ASQ-133A Auxiliary Core Memory Unit (ACMU) provides an additional 8,000 words of core

storage to meet the CAINS software requirements. The ACMU is interchangeable functionally and electrically with the original computer memory, which weighs 39 pounds.

## Variants/Upgrades

No variants or upgrades could be specifically identified.

## Program Review

**Background.** Development of the ASN-92(V) began in 1975, with production starting the following year. At that time, modifications to older aircraft centered upon updating earlier versions of the A-6E Intruders with initial models of the ASN-92(V). The update decreased the quantity of spares and unique test equipment needed to support the system, and thus, the overall volume of the components. A total of 204 kits were procured over an eight-year period at an estimated cost of US\$418.2 million. This program was completed in 1986.

In 1985, the US Navy began its CAINS Readiness and Overhaul Warranty for the Navy (CROWN) program

aimed at updating those older carrier-based aircraft. No mention of this program was found in Navy RDT&E or aircraft modification documents, but at least a half-dozen related contracts were issued through April 1994. The program centered upon upgrading A-6E (retired from service in 1997), F-14A, and E-2C aircraft, as all other applications were either modified with newer INS systems or were scheduled to exit service in the near future. ASN-92(V) production was completed in 1993, yet support activity as a result of CROWN and foreign users has maintained a steady ASN-92(V) repair/logistics effort.

## Funding

Funding has not been identified within current US budget documents.

## Recent Contracts

<u>Contractor</u>	<u>Award (\$ millions)</u>	<u>Date/Description</u>
Litton	41.3	Jan 1996 – Requirements contract for repairs and logistics support of AN/ASN-92(V) CAINS. Completion date was Feb 1998. Contract value will reach 95.2 million if all options are exercised. (N00383-95-D-011G)

## Timetable

<u>Month</u>	<u>Year</u>	<u>Major Development</u>
	1975	Development begins
	1976	Initial production begins
	1978	A-6E CAINS/CNI upgrade begins
	1985	US Navy begins CROWN program
	1986	A-6E CAINS/CNI upgrade completed; ASN-130 successor procured for USN tactical aircraft
	1993	Production of ASN-92 completed
Late	1997	A-6Es retired from US service
	1998	Repair and other support activities continue

## Worldwide Distribution

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The ASN-92(V) CAINS has equipped **Egyptian, Israeli, and Singapore** E-2Cs; and **US** Navy/Marine Corps A-6Es, E-2Cs, F-14As, and RF-4Bs.

## Forecast Rationale

The ASN-92(V) CAINS was superseded by the ASN-130A CAINS aboard most Navy tactical aircraft in the late 1980s. A newer ring-laser-gyro-based system, the ASN-139 CAINS II, entered service in late 1990 as a form/fit/function replacement for the ASN-130A. It entered service with F/A-18C/D, EA-6B, F-14D and AV-8B aircraft flown by the US Navy, as well as foreign customers of the F/A-18. Another application for this system is the S-3 Viking; the ASN-139 is replacing the ASN-92(V) as part of the S-3B avionics upgrade.

As evidenced by the contracts provided to Litton over the past several years, repairs and logistics support are

ongoing concerns as long as some first-generation CAINS remain in use with older US Navy aircraft and foreign customers. The E-2C Hawkeye, for example, is expected to retain its ASN-92(V) equipment for the time being because funding restrictions will likely prohibit the near-term procurement of the CAINS II. The last (1996) support award included options with a significant dollar value; none of these have been exercised as of this writing, but the possibility that one may appear is not sufficient cause to continue updating this report.

## Ten-Year Outlook

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Production of the ASN-92(V) ended in 1993. Support for the ASN-92(V) is the only activity expected for the remainder of the decade. **THE REPORT WILL BE DROPPED NEXT YEAR, 1999.**

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