

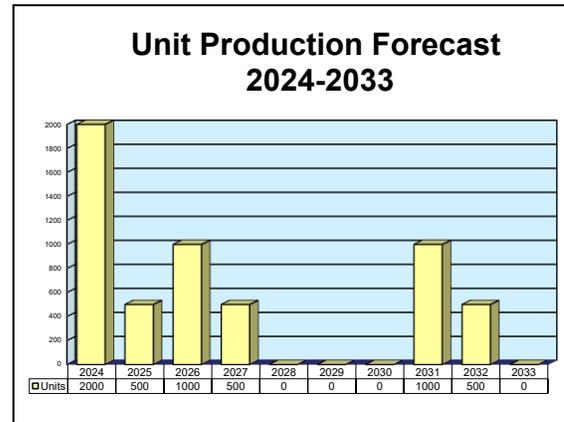
ARCHIVED REPORT

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SSQ-981(V)

Outlook

- Replenishment contracts likely in the near future
- Increasing submarine activity by China in Pacific and Russia in Arctic spur growth in sonobuoy market
- Joint Venture ERAPSCO sonobuoy manufacturer dissolved
- Lockheed Martin makes market inroads



Orientation

Description. The SSQ-981(V) is a family of passive broadband directional sonobuoys.

Status. In service.

Sponsor

U.K. Ministry of Defence Procurement Executive
 Contracts Branch
 St Georges Ct
 14 New Oxford St
 London WC1A 1EJ
 United Kingdom

Application. The SSQ-981(V) sonobuoy is designed to locate submarines.

Price Range. Based upon comparable systems, the unit price is estimated to be \$3,500.

Contractors

Prime

Ultra Command & Sonar Systems (CSS)	http://www.ultra.group/ultra-css/ , 418 Bridport Rd, Greenford, Middlesex, United Kingdom, Tel: + 44 20 8813 4567, Prime
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Contractors are invited to submit updated information to Editor, International Contractors, Forecast International, 75 Glen Road, Suite 302, Sandy Hook, CT 06482, USA; rich.pettibone@forecast1.com

SSQ-981(V)**Technical Data****Characteristics**

Operating Depth	22 m, 60 m, or 120 m
Operating Life	From 1 to 4 hr
RF Channels	99 (136 MHz - 173.5 MHz with 375-kHz spacing)
RF Output	1 W (min)
Channel Separation	750 kHz
Acoustic Frequency Range	10 Hz - 2.0 kHz plus any 400-Hz band within 10 Hz - 4.5 kHz
Transmission	Narrow-band frequency shift keyed modulation

	<u>Metric</u>	<u>U.S.</u>
Dimensions		
Length	914.1 mm	35.988 in
Diameter	12.8 mm	0.5 in
Weight	9.1 kg	10 lb

Design Features. The SSQ-981E (latest variant) is configured as a conventional "A" size sonobuoy that can be launched from either a helicopter or a fixed-wing aircraft, with the rate of descent being controlled by parachute. It operates with an Autonomous Function

Selection (AFS) microprocessor system that presents any one of 50 RF channels and its operating depth and life settings. The SSQ-981E becomes operational immediately upon entering the water.



Ultra Sonobuoys

Source: Ultra Electronics

Variants/Upgrades

SSQ-981A (Barra). Considered by some to be a second-generation descendant of the original SSQ-801; produced by Marconi Underwater Systems Ltd. It utilized state-of-the-art technology to lower unit costs while maintaining existing performance levels. This system also had 25 hydrophones arranged over a large acoustic planar array. The spectral and broadband energy was digitized and sent by telemetry to the overhead ASW aircraft.

SSQ-981B (Barra). Reportedly a re-engineered version of the SSQ-981A.

SSQ-981E (Barra). This is believed to be the latest version, said by some in the industry to be a further re-engineered version of the SSQ-981 family with fully digital electronics and an improved array suspension system.

Program Review

In 1990, the original SSQ-801 Barra sonobuoy was being upgraded – so much so that this upgraded variant was designated the SSQ-981A. Half a decade later, technological advancements led to the creation of the SSQ-981B model.

In 2004, the SSQ-981E became operational with the U.K. Ministry of Defence. It equips the Merlin HMA.1 helicopter.

In May 2012, Australia placed an AUD2.889 million (\$3.052 million) order with Avalon Systems (a business unit of Ultra Electronics) for the SSQ-981E version.

Japan may be using a sonobuoy based on SSQ-981 technology, but this remains unconfirmed.

Elbit's Sparton Acquisition May Bring Needed Competition to Overall Sonobuoy Market

It appears that Sparton found its forever home with the announcement in December 2020 that it would be acquired by Elbit Systems of Israel in a \$380 million deal. This is the latest in a series of merger and acquisition moves undertaken in the past few years.

Following the failure of an earlier merger attempt by Sparton to combine with Ultra Electronics, Cerberus Capital Management swept in and bought Sparton. Cerberus successfully acquired the company in March 2019 for \$181.5 million and quickly focused the company as a purely defense firm, divesting the more commercial-oriented Manufacturing & Design Services operations.

Previously, in early 2018, the U.S. Department of Justice had put the kibosh on Ultra Electronics' \$234 million acquisition of Sparton. According to the U.S. DoJ, the merger would have created a monopolistic supplier of sonobuoy systems to the U.S. Navy.

The ruling went even further – opening an investigation of the two companies' sonobuoy joint venture, ERAPSCO, which they formed in 1987. Ideally, the U.S. DoJ would like to see the companies build up their own individual abilities to produce sonobuoys, eventually dissolving the ERAPSCO joint venture. This acquisition by Elbit Systems could see such a plan come to fruition.

In terms of defense contracting, sonobuoys represent Sparton's fundamental strength (as well as its weakness) in that they are pretty much the company's sole product

line. Ultra Electronics and Sparton (including their joint ventures ERAPSCO and Sonobuoy TechSystems) dominate the sonobuoy production market, where they hold an almost unassailable position – putting them under the gaze of anti-trust authorities.

This put the government in a quandary, as the U.S. needs a domestic source for sonobuoy systems. In early 2019, a Presidential Determination was signed authorizing the sustainment and expansion of SSQ series sonobuoys under the Defense Production Act Title III. The Department of Defense has been working with the industrial base to address this capability. So far only Lockheed Martin appears to have shown interest and entered the A-size sonobuoy market as a minor competitor.

Sparton anticipated -- at that time -- that should the navy push for dissolution of the ERAPSCO joint venture, the service would, in turn, assist in funding the company's transition to independently developing, producing, and selling sonobuoys. However, as evidenced by the shipbuilding industry, when there are only two manufacturers, each one tends to get a piece of a contract in order to keep the production lines and facilities viable.

Despite these misgivings from the service, ERAPSCO scored a major sonobuoy contract in July 2019 when the Navy purchased thousands of sonobuoys of various types for some \$1 billion. These systems will be delivered through 2024 and are aimed at dealing with increased production of submarines by China and undersea warfare activity in the South China Sea.

ERAPSCO Dissolved as a Joint Venture

Sonobuoy manufacturer ERAPSCO (a joint venture between Sparton and Ultra) announced on its website that it was dissolved as of September 30, 2023. The two companies will continue to produce sonobuoys individually under their own names.

ERAPSCO continued fulfilling existing contracts through the end of 2023.

Sparton and Ultra (part of Ultra Group, once more commonly known as Ultra Electronics) have produced sonobuoys for the U.S. Navy in this joint venture for over 35 years. Another joint venture between the two, Sonobuoy TechSystems, which produces another model of sonobuoys, is also being disbanded.

SSQ-981(V)**Funding**

Reported to have been originally developed with funding from the U.K. Ministry of Defence.

Contracts/Orders & Options

No recent contracts have been identified.

<u>Contractor</u>	<u>Award (\$ millions)</u>	<u>Date/Description</u>
Avalon Systems	3.05	May 2012 – Order from Australia for SSQ-981E sonobuoy.

Worldwide Distribution/Inventories

Operational with the **United Kingdom** and **Australia/New Zealand**. **Japan** may be using a similar sonobuoy based on SSQ-981 technology.

Forecast Rationale

Once again, the submarine has become a major threat to naval and allied ships, with today's modern diesel submarines equipped with faster torpedoes a particular case in point. Not only can the presence of potentially hostile submarines delay naval combatant action until they are located and neutralized, but submarines can also disrupt the seaborne logistics supply for any ground campaign as well as maritime commerce. Anti-submarine warfare forces must be effective in all operating environments, ranging from the deep open ocean to the littorals, and are key to countering adversarial anti-access and area denial strategies.

Anti-submarine warfare is experiencing a resurgence of interest following years of neglect when the focus of

military funding was on airborne and land-based operations. This renewed attention is being driven by China's increasing aggression in the South China Sea around the Spratly Islands, Russia's renewed interest in the Arctic, and the usual aggressive rants coming out of North Korea. In response, existing sonobuoy inventories will be replenished, and new models will be developed.

No specific sales of the SSQ-981E sonobuoy have been recently identified but replenishment contracts (probably for several hundred per production run) are likely to start appearing around 2024-2025 as Chinese threat in the South Pacific continues to grow.

Ten-Year Outlook

ESTIMATED CALENDAR YEAR UNIT PRODUCTION												
Designation or Program	High Confidence					Good Confidence			Speculative			Total
	Thru 2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	
Ultra Command & Sonar Systems (CSS) (Prime)												
SSQ-981 E <> Australia <> Navy												
	900	1000	500	0	500	0	0	0	0	500	0	2,500
SSQ-981 E <> United Kingdom <> Navy												
	10,000	1000	0	1000	0	0	0	0	1000	0	0	3,000
Subtotal	10,900	2000	500	1000	500	0	0	0	1000	500	0	5,500
Total	10,900	2000	500	1000	500	0	0	0	1000	500	0	5,500