

8. US SOSUS Stations

The US Navy was interested in Japanese locations for its SOSUS (sound surveillance system) stations from the beginning of its SOSUS program, initially called Project *Caesar*, which involved running cables out on continental shelves and connecting them to hydrophones suspended above the sea bottom at optimum signal depths. An 'experimental station' was established at the north-western tip of Hokkaido in 1957, with the cable extending into the Soya (La Perouse) Strait. It monitored all the submarine traffic going in and out of Vladivostok and Nakhodka in the Sea of Japan.¹ What was heard, however, 'didn't make sense because the collection of ship and submarine signatures was in its infancy at that time. It was a jumble of sounds'.² The jumble of sounds 'was largely undecipherable by existing signal processing'.³

Undersea surveillance systems and associated shore-based data collection stations code-named *Barrier* and *Bronco* were installed in Japan in the 1960s. These were reportedly similar to the *Caesar* system installed around the coasts of the United States but were 'located in coastal waters of friendly nations'. Acoustic data collected at these sites was transmitted by US defence communications satellites to US Navy processing and analysis centres in the United States.⁴ According to a former US Navy intelligence officer:

In the mid-1960s we offered to extend the CAESAR system to friendly countries – those that would allow CAESAR terminals to be installed as part of the Navy's overall world network. In Great Britain and Japan, systems were installed in the shallow coastal areas which had proven over the years to be the favorite exit points for Soviet submarines proceeding to the high seas. In 1967 there was congressional debate about extending CAESAR overseas, but testimony allayed Congressional fears that control of the system would slip beyond the Navy's reach.⁵

1 Jim Bussert, 'Computers Add New Effectiveness to SOSUS/CAESAR', *Defense Electronics*, October 1979, pp. 59–64; Larry Booda, 'Overview of ASW Systems and Their Capabilities', 13 March 1979, transcript.

2 Larry Booda, 'ASW: A Holding Action? Technical and Political Decisions Intermingle', *Sea Technology*, November 1978, p. 12.

3 Jim Bussert, 'Is SOSUS an Underwater Maginot Line?', *Military Electronics/Countermeasures*, July 1982, p. 43.

4 'Sonar – Sub-surface: Caesar', *DMS Market Intelligence Report* (DMS Inc, Greenwich, Connecticut, 1981); *Defense Electronics*, June 1983, p. 80.

5 Thomas S. Burns, *The Secret War for the Ocean Depths: Soviet-American Rivalry for Mastery of the High Seas* (Rawson Associates, New York, 1978), pp. 157–58.

The arrangements for assuring United States control evidently included stationing of US Navy personnel at the shore stations as well as the provision of satellite communications (Satcom) systems for the transmission of the acoustic data back to the United States.

There have been numerous reports about the locations of the US SOSUS stations in Japan. For example, a report prepared for the Committee on International Relations of the US House of Representatives in 1978 referred to a SOSUS array 'between Japan and Korea'.⁶ An article on US and Allied SOSUS systems in 1980 identified three stations, at Wakkanai (designated JAP-4), Tsushima (JAP-108) and the Ryukyu Islands (RYU-80);⁷ by this time the United States no longer had any SOSUS system in the Soya Strait, but relied on the Japanese station at Wakkanai to provide relevant information about the passage of Soviet submarines in that area. A map published in *Scientific American* in February 1981 also showed SOSUS shore facilities in the Tsushima Straits and the Okinawa area.⁸ The existence of old cables at Horonai Point in north-west Honshu, which during the Cold War led out to SOSUS arrays in the Sea of Japan, has been widely described by scuba divers.⁹ A study of US technical intelligence systems published in 1986 claimed that SOSUS hydrophone arrays stretched 'from southern Japan to the Philippines, covering the approaches to China and Indochina'.¹⁰ The presence of SOSUS arrays sited off Okinawa was also reported in 1990.¹¹

After the collapse of the Soviet Union and the decline of the submarine threat to the United States in the early 1990s, the US Navy allowed its SOSUS systems in the north-west Pacific to atrophy, although some arrays were retained in working order so as to support civilian scientific research (such as tracking whales and monitoring undersea volcanic activity). According to a navy directive issued in August 1994, all 'fixed arrays' in the Pacific were supposed to be placed on 'hot standby'; personnel would 'not be routinely assigned to monitor fixed array

6 Foreign Affairs and National Defense Division, Congressional Research Service, *Evaluation of Fiscal Year 1979 Arms Control Impact Statements: Toward More Informed Congressional Participation in National Security Policymaking* (US Government Printing Office, Washington, DC, 3 January 1978), p. 110.

7 'Militarisering av Haven: USA's Vapen Utveckling Rubbar Grunden for "Terrorbalansen"', *Kommentar*, October 1980, p. 22.

8 Joel S. Wit, 'Advances in Antisubmarine Warfare', *Scientific American* (Vol. 244, No. 2), February 1981, pp. 36–37.

9 Ronald F. Stark, 'Scuba Diving Sites: Popular Locations in the Aomori Prefecture', at divinewindadventures.com/Dive-Sites.htm; 'Sound Surveillance System (SOSUS)', *Discovery of Sound in the Sea (DOSITS)*, at www.dosits.org/gallery/tech/pt/sosus1.htm.

10 William E. Burrows, *Deep Black: Space Espionage and National Security* (Random House, New York, 1986), p. 179.

11 Jane Dibblin, *Day of Two Suns: U.S. Nuclear Testing and the Pacific Islanders* (New Amsterdam Books, New York, 1990), p.195.

data' unless that data was required for operational purposes, but in practice the probability of being able to reconstitute them to full operational status was 'extremely low'.¹²

A decade later, however, in the early 2000s, facing an increasing Chinese submarine force and more aggressive Chinese submarine activities, the US Navy decided that it needed a new, more modern chain of fixed arrays designed primarily to monitor the movement of Chinese submarines between the East China Sea and South China Sea on the one hand, and the Pacific Ocean on the other hand. Described by an officer of the Taiwanese Military Intelligence Bureau in 2005 as the US Navy's 'Fish Hook Undersea Defense Line', it would stretch from Japan southwards to South-East Asia, with key nodes at Okinawa and Guam, another Cold War SOSUS site, and would utilise Allied undersea surveillance systems (most importantly, those of Japan and Taiwan) for key sections. Beginning from near Kagoshima in the south-west part of Kyushu, it would run down the Osumi archipelago to Okinawa, then to Miyako-jima and Yonaguni in the southern part of the Ryukyu Islands, past Taiwan to the Balabac Islands in the Philippines, to Lomkok in the eastern part of the Indonesian archipelago, across the Sunda Strait between Java and Sumatra, and from northern Sumatra to the Andaman Islands. Three major gaps, between Yonaguni and Suao in north-east Taiwan (120 kilometres), between Kaohsiung in south-western Taiwan and the Dongsha (Pratas) Islands (450 kilometres) where the East China Sea meets the South China Sea, and across the Bashi Channel (220 kilometres) between Hengchun at Taiwan's southernmost tip and Luzon Island in the Philippines, were identified around Taiwan (see Map 4).¹³

It seems that the US Navy installed a new SOSUS system, stretching from Sasebo down to Okinawa, in 2006, when the US cable-laying ship USNS *Zeus* operated together with oceanographic survey vessels and nuclear submarines in this area.¹⁴ In July 2013, Beijing media reported that the United States and Japan had recently jointly established 'very large underwater monitoring systems' at the northern and southern ends of Taiwan. One of these stretched from Yonaguni to the Senkaku Islands (about 150 kilometres), while the other covered the Bashi Channel down to the Philippines. In addition, large numbers of hydrophones had been installed 'in Chinese waters' close to China's submarine bases.¹⁵

12 Dawn M. Maskell, 'The Navy's Best-Kept Secret: Is IUSS Becoming a Lost Art?', (Master's thesis, Marine Corps Command and Staff College, Quantico, Virginia, April 2001), at www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA401150

13 Liao Wen-chung, 'U.S. Navy's Fish Hook Defense Line Submarine Monitoring Network in the West Pacific', *Defence International*, August 2005, at www.diic.com.tw/mag/mag252/252-74.htm

14 「ケーブル敷設艦・測量艦の佐世保入港増加の意味は？」[What is the Significance of an Increased Number of Sasebo Port Visits by Cable-laying Ships?], Rimpeace, 1 September 2006, at www.rimpeace.or.jp/jrp/sasebo/sasebobase/0608ssbzeusags.html

15 'U.S. and Japan Work Together', *Beijing Daily*, 10 July 2013, at dailynews.sina.com/bg/chn/chnmilitary/sinacn/20130710/00164728365.html



Map 4. The US 'Fish Hook' Undersea Defense Line

Source: ANU CAP CartoGIS

This text taken from *The Tools of Owatatsumi: Japan's ocean surveillance and coastal defence capabilities*, by Desmond Ball and Richard Tanter, published 2015 by ANU Press, The Australian National University, Canberra, Australia.