# FROM OIL SPILL DETECTION TO MARITIME SECURITY: 50 YEARS OF AIRBORNE SURVEILLANCE

## AS MARITIME SECURITY THREATS EVOLVE, AND ENVIRONMENTAL PROTECTION BECOMES INCREASINGLY IMPORTANT, AIRBORNE SURVEILLANCE HAS NEVER PLAYED A MORE CRITICAL ROLE

In 2026, **ST Airborne Systems** marks 50 years of providing Side-Looking Airborne Radar (SLAR) technology that has helped coast guards detect oil spills, monitor vessel activity, and protect some of the world's most environmentally sensitive waters.

The anniversary also marks 50 years since the Swedish Coast Guard first introduced SLAR-equipped aircraft to monitor the Baltic Sea. What began as a national capability has evolved into a globally recognised surveillance solution, with ST Airborne Systems supporting coast guards and maritime operators around the world through continuous innovation in airborne monitoring technology.

### PROTECTING ONE OF THE WORLD'S MOST SENSITIVE SEAS

The Baltic Sea is one of the world's busiest shipping routes, yet it is also one of its most environmentally vulnerable. Limited water exchange means that even relatively small oil discharges can have long-lasting consequences for marine ecosystems, making rapid detection essential.

Since 1976, airborne SLAR has provided coast guards with the ability to monitor vast areas of sea quickly and effectively. Today, the MSS 8000 Solid-State SLAR from ST Airborne Systems can survey swathes of up to 160 kilometres in all weather conditions, often providing the first indication of maritime pollution and enabling authorities to respond rapidly.

### MEETING TODAY'S MARITIME SECURITY CHALLENGES

While protecting the environment remains a primary mission, maritime surveillance has expanded to address a wider range of security challenges.

The increasing activity of the Russian "shadow fleet" has become a growing concern across the Baltic region. These ageing vessels, often operating with unclear ownership structures and inconsistent safety standards to circumvent international sanctions, present heightened environmental and operational risks as they transit between Russian ports and international waters.

Modern SLAR technology provides operators with a comprehensive picture of maritime activity, detecting vessels of all sizes, identifying smaller objects, and supporting wide-area surveillance. Importantly, it also assists in identifying vessels that are not transmitting Automatic Identification System (AIS) signals, providing an additional layer of maritime domain awareness for coast guards and enforcement agencies.

### SUPPORTING FASTER RESPONSE AND ENFORCEMENT

The role of SLAR has evolved far beyond oil spill detection. Today it forms an integral part of wider maritime surveillance operations, helping authorities build a clearer operational picture, monitor vessel behaviour, and support enforcement activities.

One recent example involved the tanker Flora 1, which was linked to a suspected oil spill extending more than 12 kilometres within Sweden's Exclusive Economic Zone. SLAR surveillance enabled operators to detect the pollution and correlate it with vessel activity, supporting further investigation. The vessel was subsequently found to be listed under EU sanctions, with additional irregularities relating to its operational status. The incident demonstrated how early wide-area detection can support timely intervention while helping reduce the risk of more serious environmental incidents.

### LOOKING AHEAD

After five decades of operational service, SLAR technology from ST Airborne Systems continues to evolve to meet the demands of modern maritime surveillance.

The latest MSS 8000 Solid-State SLAR combines extended detection range, higher operating altitude, improved image quality and advanced onboard processing with AI-supported analysis and Ethernet-based communications. Together, these capabilities provide coast guards, maritime patrol operators, and government agencies with faster, more accurate situational awareness across increasingly complex maritime environments.

As maritime security and environmental protection continue to rise up the global agenda, proven surveillance technologies remain essential for protecting both people and the marine environment.