

# Overview of Customs Coastwatch

*Customs Coastwatch gives an overview of its roles, goals and objectives*

*By Customs Coastwatch*

Customs is responsible for providing a civil maritime surveillance and response service to a range of government agencies. Customs Coastwatch, a division of the Australian Customs Service, provides this service.

Coastwatch uses a combination of assets in order to manage and coordinate this responsibility. This includes contracted aircraft, seagoing vessels of the Customs National Marine Unit and Australian Defence Force patrol boats and aircraft. The activities of Coastwatch are determined by the surveillance and response needs of the various government agencies that form its client base.

Coastwatch vessels patrol the Australian coastline, Australia's offshore territories, the Australian Fishing Zone and the Exclusive Economic Zone surrounding these areas.

Australia's offshore maritime area amounts to approximately 37,000km of coastline and an offshore maritime area of over nine million square kilometres. Increasingly, Coastwatch is being called on to investigate incidents beyond the Exclusive Economic Zone.

Coastwatch plays an important role in supporting Australia's Oceans Policy by identifying and

responding to illegal fishing in Australian waters. Coastwatch detects and reports environmental incidents such as marine pollution and contributes to marine species protection through reporting sightings of marine animals. Coastwatch also provides support to Australia's search and rescue authorities.

Surveillance flights are undertaken to detect and report activities as diverse as people smuggling, attempts to import or export prohibited goods, illegal trafficking in flora and fauna and human incursions on coral reefs and other protected areas. These represent potential threats to quarantine, health and marine habitat.

The key to Coastwatch's effectiveness is an operational method that is client-driven, threat-based and risk assessed. Coastwatch's effectiveness is directly related to the quality and timeliness of available information and the intelligence assessments that are derived from this information.



*Reims, F406 twin engine combined electronic and visual surveillance aircraft*

## History

Civil surveillance in Australia began in the late 1960s using Royal Australian Air Force aircraft to patrol the newly declared 12 nautical mile fishing zone. In addition, Royal Australian Navy patrol boats assisted with surveillance and acted as a response force.

During the early and mid 1970s, a number of issues began to focus the Government's attention on Australia's civil surveillance needs. These were as follows:

- increased activity of foreign fishing vessels during 1973 and 1974
- traditional fisherman landing in the Kimberley coastal area
- the first 'boat people' arrived in Darwin in 1976
- the Government announced its intention to declare a 200 nautical mile Australian Fishing Zone around Australia in 1977
- the Government made the Department of Transport responsible for coastal surveillance in the late 1970s. This moved Australia closer to a coordinated civil surveillance effort.

In 1983, responsibility for managing and coordinating civil surveillance transferred to the Australian Federal Police (AFP). This followed a review by the Minister assisting the Minister for Defence, Kim Beazley. In 1987, the Australian Government commissioned a review of civil surveillance arrangements. Conducted by Sir Hugh Hudson, the report, *Northern Approaches*, was handed to the Government in 1988.

This provided the foundation for future civil maritime surveillance activity and the development of Customs Coastwatch. In that year, the term 'Coastwatch' was coined.

Responsibility for civil surveillance programs was allocated to the AFP. However, funding for the program was divided among client agencies. This was seen as a major flaw and it was subsequently recommended that the funding and administration be streamlined. This brought together policy, operational control, contract administration and funding in one autonomous agency.

This recommendation resulted in the transfer of all administrative and operational responsibility for civil surveillance operations to the Australian Customs Service. This decision was reaffirmed through a series of government and inter-departmental reviews between 1988 and 1999.

In early 1999, two undetected arrivals of suspect illegal entrant vessels were discovered. A review of coastal surveillance was ordered in April 1999. The review developed 18 recommendations that were fully accepted and funded by the Government. This resulted in an influx of new resources,

among them marine and aircraft crews, new aircraft, increased staff and a National Surveillance Centre. It was through this that the existing operational and planning capability was combined with a new analytical role.

## Organisation

Customs Coastwatch is an operational division of Customs headed by the Director-General Coastwatch. Since July 1999, serving rear admirals from the Australian Defence Force have filled this position. The Director-General Coastwatch is responsible for:

- delivering effective and efficient civil maritime surveillance and response services.
- determining national surveillance planning priorities
- administering the contractual and overall financial aspects of the national surveillance program.

Coastwatch headquarters and the National Surveillance Centre are located in Central Office in Canberra. This ensures effective liaison with the head offices of its major clients.

Coastwatch has regional bases in Cairns, Darwin, Broome and Thursday Island. Regional

Coastwatch staff undertake liaison and provide operational planning and flight briefing for contractor aircraft assigned to the regional base.

## Operation Relex

In August 2001, the Australian Government instituted new arrangements for the detection and response to suspect illegal entrant vessel (SIEV) arrivals. Within the Operation Relex area of operation, the Australian Defence Force has the lead role in all SIEV-related activity. Within this area, Customs Coastwatch operate in support of the Australian Defence Force. Coastwatch retains the lead for other activities within this operation and in all civil maritime surveillance and response matters. Customs Operation Eddington complements Operation Relex.

## Clients

The activities of Customs Coastwatch are determined by the surveillance and response needs of the various government agencies that form its client base. Coastwatch primary clients are:

- Australian Fisheries Management Authority
- Australian Quarantine and Inspection Service
- Department of Immigration and Multicultural and Indigenous Affairs
- Environment Australia
- Great Barrier Reef Marine Park Authority
- Australian Customs Service

## Surveillance and response resources

The main components of Australia's current civil maritime surveillance and response effort are:

- visual and electronic aerial surveillance using contracted fixed-wing aircraft
- Customs Coastwatch surveillance, response and logistical support from



*Bombardier de Havilland Dash 8 – offshore electronic surveillance*



*Bombardier de Havilland Dash 8 – offshore electronic surveillance*

contracted helicopters based in the Torres Strait

- support from the Royal Australian Air Force's P3-C Orion offshore patrol aircraft
- eight Customs Bay-class sea-going vessels of the National Marine Unit
- support from the Royal Australian Navy patrol boats
- additional charter air or surface resources as required.

The Customs Coastwatch aircraft fleet comprises:

- six Pilatus Britten Norman Islanders and one Shrike AC 500 Aero Commander for visual surveillance
- five de Havilland Dash 8 – 200 series aircraft fitted with digital radar and opto-electronics sensors including a Wescam infra-red turret and advanced satellite technology
- three Reims F406 aircraft equipped with radar and night vision equipment for both visual and radar work adjacent to the shore
- one Bell 412EP helicopter with an infra-red detection system
- one Bell Longranger IV helicopter.

While contractors supply aircraft, aircrew, administration and engineering support, Coastwatch controls the operational aspects of tasking and performance management, including training and monitoring programs.

## Operations

### Wide area planned and targeted surveillance

The civil surveillance program is comprised of wide area planned surveillance and targeted surveillance operations.

### Wide area planned surveillance

This forms the majority of the flying program. It involves the translation of planned, risk-assessed taskings submitted by client agencies and translated into flying programs. These are developed two to three months prior, allowing the Customs Coastwatch Regional Offices and the contractor to determine the general resource requirements.

The Coastwatch Monthly Surveillance Program is flexible. This allows it to be varied to suit emerging threats. More precise flying programs are developed leading up to each flight. The surface assets of the Royal

Australian Navy and Customs National Marine Unit are dovetailed into these programs to support these strategic areas of client interest. Vessel programs are also planned several months in advance.

### Targeted surveillance

Targeted surveillance comprises flying which is the result of specific operational intelligence. This intelligence is usually received with little notice and normally presents a more demanding situation than wide area planned surveillance. By nature, these operations are usually given absolute priority in both manpower and funding until they are concluded or cancelled. Marine assets are drawn from the strategic program to support tactical operations as required.

## Planning of Surveillance Operations

### Introduction

The Coastwatch Planning section is responsible for the coordination of resources and client tasking requirements to generate the Civil Maritime Surveillance Plan (CMSP). The CMSP is the authoritative source for the planning, conduct and analysis of Coastwatch air surveillance activity.





Bell helicopter – Longranger IV – conducts operation in the Torres Strait region

#### **Wide area surveillance tasks**

The nature of the Coastwatch model requires that regional staff from client agencies submit tasking through their head office to Coastwatch Central Office and state-based agencies submit tasking through a related federal agency.

#### **Availability of surveillance assets**

Coastwatch Planning, in conjunction with Coastwatch Resources, monitors aircraft usage rates on an ongoing basis.

#### **Coastwatch planning Standard Operating Procedure (SOP)**

The Coastwatch Planning SOP has been developed to provide a higher level of consistency, accountability and transparency in the planning of the Coastwatch Monthly Surveillance Program (CMSP). The CMSP is developed from tasks contained within the Coastwatch Command Support System (CWCSS).

Coastwatch Planning in Canberra issues to all regional offices, a planning matrix for each month of the year outlining planned training days, special events and aircraft usage rates, etcetera.

#### **Flight briefs and reporting**

##### **Flight briefings**

Detailed flight briefings are issued for all flights. Customs Coastwatch Regional Offices provide the flight brief for operations in northern Australia. Flights in southern Australia, from Brisbane to Perth, are briefed by Coastwatch Operations in Canberra.

##### **Post mission reports**

These reports record flight outcomes. These are forwarded electronically to the National Surveillance Centre where the information is automatically entered into the Customs Coastwatch database (CWCSS) and forwarded to the relevant client agencies and Coastwatch Regional Offices.

#### **National Surveillance Centre**

In 1999 the *Prime Minister's Task Force on Coastal Surveillance* recommended that a National Surveillance Centre be established within Customs Coastwatch in Canberra. The National Surveillance Centre became operational on 26 January 2000 and was formally commissioned by the Prime

Minister on 5 April 2000. It was anticipated that this would better manage the national effort through enhanced communication links and an internal capacity to analyse information from a variety of agencies.

A range of electronic systems supplied from a range of government agencies supports the surveillance centre. Intelligence analysts provide an internal capacity to analyse and disseminate information. These analysts use the electronic systems to assist client agencies with risk assessments and to support Coastwatch activities by providing intelligence that allows more effective deployment of surveillance assets.

All of Coastwatch's operational activities are monitored in the National Surveillance Centre in Canberra. When a Coastwatch aircraft detects an incident that the crew considers to be a potential or actual breach of Australia's laws, it reports to the National Surveillance Centre. The centre consults the relevant client agency to determine the requirement for follow up action. If a surface response is

requested, the National Surveillance Centre arranges for the most appropriate vessel, usually a Customs vessel or a naval patrol boat, to respond. Coastwatch aircraft often provide forward air support to the response vessel until it reaches the scene.

## Concept of operations

The Customs Coastwatch Concept of Operations has continued to evolve over the 14 years of its existence. In more recent years, the process has been informed by the outcome and recommendations of a number of detailed reviews of Australia's civil maritime surveillance arrangements.

The overriding objective has always been to try to achieve and maintain an operational solution that meets the needs of client agencies and represents an effective and cost-efficient use of resources. The flexibility of aircraft has helped overcome barriers including the size of the surveillance area and the diversity of Coastwatch client interests. To ensure maximum effectiveness, surveillance planning takes account of the aggregated needs of all clients and the combined effect of all flights.

Depending on clients' interests, response requirements differ. A viable maritime capability is central to most successful responses. Most responses are mounted with the Customs Bay-class vessels or the Royal Australian Navy Fremantle-class patrol boats.

## Operating principles

Underlying the Concept of Operations are several key principles and parameters.

## Service provider to clients

As a service provider, Customs Coastwatch is responsive to client needs and requirements.

Coastwatch does not determine threat areas or clients' surveillance interests. Each client agency is responsible for the development

of its own threat assessments and for assessing its surveillance requirements. It is the role of Coastwatch to translate identified client surveillance needs into timely surveillance outcomes.

When a client agency requests a response action to a surveillance sighting, Coastwatch coordinates all activities for that response until the client agency is able to assume control of the situation.

## National perspective

The National Surveillance Centre determines the direction and focus for surveillance activities in accordance with priorities and requirements identified by client agencies. Regional Offices are responsible for carrying out the surveillance plan and for local liaison with client agencies to ensure requirements are fully satisfied.

## Concentration of resources

Due to the extent of the Australian coastline, surveillance effort should ideally be concentrated in the right place at the right time. Customs Coastwatch uses client agency threat assessments to plan airborne surveillance missions that have the greatest likelihood of achieving an operational result. Coastwatch operational planners and client agencies continually reassess threat areas so that emerging threats can be adequately addressed.

## Economy of effort

Each sortie is planned to gain the maximum possible benefits for the cost incurred. Optimal economy of effort is achieved through multi-tasking, including aircraft undertaking tactical operations. For example, an aircraft conducting a fisheries surveillance task would also undertake surveillance tasks for all other agencies with interests in the area being covered.

## Common risk assessment methodology

The Australian National Audit Office report, *Performance Audit*

*Report Number 38: Coastwatch*, recommended that Customs Coastwatch implement, in association with its client agencies, a common risk-assessment process for use as the basis for ranking client taskings.

Customs agreed with the recommendation and Coastwatch has made significant progress in the development of a common risk-management methodology. The process operates on the basis of segmentation of Australia's maritime zones into a number of geographic areas. Within these areas, clients identify each of the threats relevant to their individual interests and Coastwatch allocate each a numerical risk rating. The range of scores allocated to clients' various tasks informs surveillance planners and underpin the flight programming in the Coastwatch computer application. Common risk-assessment methodology will be fundamental to the development of future surveillance contracts.

## International cooperation

Since 1988, Customs Coastwatch has developed and improved procedures for conducting and coordinating civil surveillance. In many parts of the world governments conduct, or would like to conduct, operations similar to all or parts of the Coastwatch task. Requests for information are received from a range of overseas countries. Conversely, Coastwatch is aware that there are other organisations in the world from which it can learn.

Customs has strong information links with the Australian Department of Defence, the Oceania Customs Organisation, the World Customs Organization, and the United States CoastGuard. This has expanded Coastwatch boundaries in terms of information sharing and facilitating an information exchange with other countries that have mutual interests with Coastwatch.

## The future

### Use of technology

The current surveillance contracts are based on aircraft using visual, radar and electro-optical systems. In order to provide high-level service to clients, Customs Coastwatch is investigating new and emerging technologies that may be applied to surveillance.

### Satellites

Trials of commercial satellite information gathering have been conducted. The trials used both radar and optical satellites. It focused on evaluating the benefits the satellites might provide for coastal surveillance activities. Of particular interest is their capacity to detect and track vessels of interest in Australia's maritime zones. The trials also assessed the impact of this technology when it is used in conjunction with other surveillance options. For example, whether the satellite data can be used to eliminate whole areas from the need for aerial surveillance. Alternatively, it could be used to direct an aircraft to a specific target requiring further investigation. This reduces the need for surveillance aircraft to carry out more extensive, and potentially less productive, searches.

### High frequency surface wave radar

In conjunction with the Department of Defence, a trial of high frequency surface wave radar is being undertaken. This will assess its potential to provide continual long-range/wide-area tracking of vessels. High frequency surface wave radar is a long-range/wide-area radar system that can detect targets beyond the horizon. The Australian version is a derivative of the Jindalee (over-the-horizon radar) research and has the potential to provide detection and tracking of surface vessels and aircraft out to 300 km and over an arc of 120 degrees.



Torres Strait region Bell 412 EP helicopter

### Communications

Customs Coastwatch communications capability is being enhanced through the use of the Inmarsat satellite system. Current systems have limited bandwidth and are restricted to voice communications. In addition to voice transfer, the Inmarsat satellite system allows reliable, high-speed transmission of data and imagery between fitted surveillance aircraft, the Coastwatch National Surveillance Centre, the Department of Defence and client agencies. This capability supports the National Surveillance Centre and mobile command centres in their analysis of situations and operational decision-making.

The provision of a common communications capability allows the exchange of surveillance information. In particular, communications capability between Coastwatch aircraft and those similarly fitted surface assets that might be required to respond to a sighting.

### New civil maritime surveillance contracts

The current civil maritime surveillance contracts start to expire from June 2004. Customs Coastwatch has commenced a project to develop and implement

future civil maritime surveillance and response capability.

This project is considering the threats and risks facing the Australian border and how it may respond. The project seeks, through industry consultation and a tender, to establish civil maritime surveillance contract(s) for the supply of up-to-date capability to support Coastwatch's Concept of Operations strategy.

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