



No 41 Wing

Motto: Pass not Unseen

Battle Honours:

*Moresby 1943, New Britain 1943, Pacific 1943 – 1944, Markham Valley 1943 – 1944
New Guinea 1943 – 1944, Milne Bay*

No 41 Wing forms part of the Surveillance and Response Group and is headquartered at the Eastern Region Operations Centre RAAF Base Williamtown in New South Wales. The Wing's mission is to maintain the recognised air picture, conduct wide and focal area surveillance, manage the air battle, manage the assigned airspace, and conduct training. The Wing has four subordinate units, Nos 1 Remote Sensor Unit, 3 Control and Reporting Unit, 114 Mobile Control and Reporting Unit, and the Surveillance and Control Training Unit. Most units are based at Williamtown. However, No 114 Mobile Control and Reporting Unit is based at RAAF Base Darwin and No 1 Remote Sensor Unit is based at RAAF Base Edinburgh. No 41 Wing's badge incorporates a Kundu drum overlaying a lightning bolt and sword in saltire above a traditional New Guinea spear. The Wing's motto is: *Pass not Unseen*.

No 41 (Radio Direction Finding) Wing was formed on 16 February 1943 under the command of Flight Lieutenant Bertram F.N. (Bert) Israel at Razorback in Papua, near John's Gully about sixteen kilometres from Port Moresby. A similar United States Fifth Air Force element was on an adjacent ridge enabling constant communication with the Wing. No 41 Wing operated under complex command and control arrangements. It was under the direct command and control of RAAF Headquarters in Melbourne, Victoria. However, in theatre it was under the administrative control of No 9 Operational Group and under the tactical control of the American Fifth Air Force.

Given these circumstances, the selection of Flight Lieutenant Israel as the Officer Commanding was an excellent choice. Israel had played an important role in the development of the Air Force radar organisation. He helped promote the idea

of using Air-to-Surface Vessel (ASV) equipment sets on trucks to act as early warning of shipping movements, and contributed to the design of the Light Weight Air Warning (LW/AW) antenna. Under orders from Wing Commander Alfred G. Pither, Israel investigated conditions at forward Radar Stations including on New Guinea. He found that many members were very ill with malaria and some critically so, with no-one responsible for their welfare. Israel's report ultimately led to the creation of the three RAAF radar wings.

On formation, No 41 Wing comprised Flight Lieutenant Israel as Officer Commanding, two Radio Direction Finding junior officers and an airman mechanic, plus one light tender in very poor condition. However, personnel and technical equipment soon began to arrive almost daily. The Wing establishment also included an Anson aircraft for use in calibration flights and a Gipsy Moth aircraft for transport to outlying places. Neither aircraft were found to be useful and were transferred away. On the other hand, the Cabin Cruiser, MV *Oomobah*, and the MV *Punai*, a small motor boat also allotted to the Wing, were found to be very useful indeed.

Headquarters No 41 Wing had the important roles of administering and exercising technical control of their Radar Stations, including siting Radar Stations in consultation with local commanders. Additionally, the Wing provided staging facilities for stations in transit and had skilled teams and technical spares and equipment to assist with the installation and repair of radars and associated equipment.

On 7 March 1943, No 2 Mobile Installation Section from No 1 Radar Installation and Maintenance Unit arrived on detachment to the Wing to undertake the installations of Nos 304 and 305 Radar Stations in the D'Entrecasteaux Islands, situated near the eastern tip of New Guinea. While still understaffed, on 22 March 1943, the Wing Headquarters took command of Nos 29, 37, 50, 138, 303, 304, 305 and 306 Radar Stations. Flight Lieutenant Israel was promoted to acting squadron leader on 1 May.

From March through to August, the Wing Headquarters improved its camp by erecting a store

for spare parts, administrative buildings, a large workshop and barracks, and huts for kitchens and messes. They also constructed a small parade ground. On 31 March Major Bolton, the Wing's Defence Officer, held a parade, inspected arms and provided instructions on their use.

The Wing cooperated with Fifth Air Force elements based in the area. On 27 August, they delivered a LW/AW set complete with spare parts to the Americans. The Wing also deployed personnel on radio countermeasures duties on American bomber and reconnaissance aircraft. The Wing Headquarters' only battle casualty occurred on such a mission on 30 June 1943. While attached to No 63 Bomber Squadron, Wireless Operator Air Gunner Sergeant William A. MacKay was on a B-17 Flying Fortress that failed to return from a bombing mission to Vunakanau.

By 1 September, Headquarters No 41 Wing was fully manned, while the Wing's total strength was thirty-four officers and 549 other ranks. These numbers fluctuated over succeeding months. Personnel and new and relocating Radar Stations came and went continually, the latter staging through to repair equipment and receive their stores and spares from those maintained by the Wing Headquarters. Apart from the technical personnel at the Wing, various specialists such as civilian camouflage experts were based there and visited outlying stations.

During 1943 the Wing received visits from various groups studying the employment of radar equipment and its performance in forward areas and in the tropics. They were from the Radio Research Board, which was under the control of the Council for Scientific and Industrial Research, a forerunner of the Commonwealth Scientific and Industrial Research Organisation.

No 10 Operational Group was formed on 13 November 1943, with the role of a mobile strike force to support Allied naval and land formations as they advanced against the Japanese. No 9 Operational Group by comparison increasingly took on garrison duties. Operations moved progressively northward and further from Port Moresby. Given the high mobility of Allied operations, Radar Wing headquarters were

not considered sufficiently mobile and a decision was made to disband all three Radar Wings. On 31 July 1944, No 41 Wing was the first to disband.

Having exercised command of just eight Radar Stations in March 1943, at its peak No 41 Wing had thirty-seven Radar Stations under command. Their locations extended from the Trobriand Islands along the south coast of New Britain, along the northern coast of New Guinea to Aitape and north to the Admiralty Islands. Twenty-nine Radar Stations were under command at the time the Wing disbanded. On disbandment, No 41 Wing's Radar Stations were transferred to various Fighter and Mobile Fighter Control Units and to a Zone Filtering Centre. No 41 Wing Headquarters personnel formed the nucleus of No 3 Radar Installation and Maintenance Unit, which was raised at Milne Bay with a detachment at Port Moresby.

No 41 Wing was re-formed on 2 February 1987 under the command of Group Captain David T. Bowden, as part of a major reorganisation of the command and control structure of the Air Force Operational Command (renamed Air Command in October 1988). The reorganisation involved the formation of Groups and Wings and also included the restructuring of the Command Headquarters. Implemented initially on a trial basis on 2 February 1987, after a period of evaluation, the reorganisation was formalised from 1 June 1988 with some minor variations.

As part of the new Tactical Fighter Group, No 41 Wing took command of Nos 2 and 3 Control and Reporting Unit, No 114 Mobile Control and Reporting Unit and No 1 Software Support Facility (later renamed Software Development Unit). The Wing gained an additional unit on 1 July 1992 when No 1 Radar Surveillance Unit was formed at Alice Springs in the Northern Territory to take management responsibility for the Jindalee Facility at Alice Springs.

The size and responsibility of No 41 Wing expanded substantially on 20 January 1997 when the Air Force integrated the command and control arrangements of its operational air traffic control and

air defence ground environment elements. Under these changes, ten Air Traffic Control Flights located at all RAAF bases and at Naval Air Station Nowra transferred under the control of No 41 Wing. The Wing Headquarters was also augmented through the addition of an air traffic control staff. As the Air Traffic Control Flights were spread across the country, limited operational control was passed to their local Air Base Wing and to the Commanding Officer at HMAS *Albatross* at Nowra.

On 12 June 1996, the Chief of the Defence Force announced the transfer of Army air traffic control functions to Air Force. Accordingly, on 1 January 1998 the air traffic control element at Army Airfield Oakey in Queensland also came under operational command of No 41 Wing. With this change, the Air Force, through No 41 Wing, became the single-service provider of air traffic control services to the ADF. This latest change increased the elements under command of the Officer Commanding No 41 Wing to five independent units and eleven Air Traffic Control Flights, spread across the length and breadth of the Australian continent.

At about that time, an Air Command analysis of future operations found that command and control of surveillance and airspace control was unreasonably distributed across three force element groups. The study found that surveillance and airspace control should be managed as a capability rather than as a range of disparate functions and tasks. As a first step, on 1 September 1998, Air Force formed the Surveillance and Control Group, comprised of the then existing elements of No 41 Wing. The Group headquarters was formed at RAAF Base Williamtown. For the time being, the Commander Surveillance and Control Group also performed the duties of the Officer Commanding No 41 Wing, however, further restructure of the Group was flagged.

The diversity and complexity of roles being undertaken by the one headquarters combining the functions of Surveillance and Control Group and No 41 Wing was unsustainable. The major new capabilities planned to enter operational service within the next several years would have exacerbated

the situation further. These capabilities included new surveillance and electronic warfare sensors, the airborne early warning and control capability and the addition of further Jindalee Over-the-Horizon Radars, among others. The anticipated restructure came on 27 November 2000 when No 44 Wing was reactivated as a subordinate formation of the Surveillance and Control Group. No 44 Wing assumed control of the eleven Air Traffic Control Flights previously commanded by No 41 Wing.

In 2002, the Air Force began preparing for the introduction of the new Vigilare capability which was being acquired to replace the RAAF's ground-based air defence command and control systems as part of the transition to network centric warfare. To that end, No 2 Control and Reporting Unit relocated from RAAF Base Darwin to RAAF Base Tindal. Soon afterwards, the Unit was reduced to name only status and its core functions of routine wide-area surveillance and control were absorbed into No 41 Wing's overall rate of effort. No 2 Control and Reporting Unit was formally disbanded on 1 June 2010 as the Vigilare capability approached introduction into service.

In 2003 No 1 Radar Surveillance Unit introduced into service two additional Over-the-Horizon Radars at locations in Queensland and Western Australia, establishing the Jindalee Operational Radar Network (JORN). Anticipating the establishment of JORN, No 1 Radar Surveillance Unit had relocated to RAAF Base Edinburgh from Alice Springs in 1999.

Surveillance and Response Group was formed on 30 March 2004 by amalgamating the Maritime Patrol and the Surveillance and Control Groups. Both of the former Groups were disbanded on the same day. Surveillance and Response Group assumed command of Nos 41, 44 and 92 Wings. In a further organisational change, on 02 May 2015 No 1 Radar Surveillance Unit was renamed No 1 Remote Sensor Unit. While the Unit's role of conducting effective wide area surveillance operations did not change from the time it was formed in 1992, its capabilities expanded significantly. This capability expansion occurred in both the high frequency radar environment and more recently into space situational

awareness using space surveillance equipment which was being introduced into service. The new title became necessary to reflect the Unit's expanded roles, however the unit's acronym, 1RSU, was retained in order to maintain recognition.

Since it was reactivated and through the various structural and organisational changes it has been subject to, No 41 Wing has maintained a strong mission focus, performing vital roles on several important operations. In 2002, the Wing played a key role when the Air Force put armed fighter aircraft in the active defence of Australian airspace for the Commonwealth Heads of Government meeting that was held in Coolool Queensland in March 2002, five months after the 2001 terror attacks against the United States. Operation *Guardian II* was mounted for ten days during which the Wing deployed No 3 Control and Reporting Unit and No 114 Mobile Control and Reporting Unit. These units established reporting posts in the countryside around Coolool and a Controlling and Reporting Centre at RAAF Base Amberley. The Centre operated on a war-like footing, employing air defence procedures that it would use in combat operations. No 44 Wing air traffic controllers, also working in the Controlling and Reporting Centre, operated on a similar basis.

No 41 Wing again deployed various elements in support of homeland defence during Operation *Acolyte* mounted by the ADF in support of the Commonwealth Games held in 2006 in Melbourne, Victoria. This was one of the earlier operations on which the Wing's new AN/TPS-77 Tactical Air Defence Radar System was deployed. Purchased in 2005, it became the linchpin in No 41 Wing's surveillance air and battlespace management operations from that time.

In April 2007, No 41 Wing became the only Air Force unit to deploy as a whole to Afghanistan on Operation *Slipper*. When the Wing deployed the AN/TPS-77 Tactical Air Defence Radar to Afghanistan, it was the first time RAAF had deployed a radar on operations in sixty years. The Wing deployment comprised seventy personnel



Number 41 Wing personnel deployed on Operation *Accordion*. Source: Department of Defence

based at Camp Palomino, Kandahar Airfield in Southern Afghanistan, where they established and operated a Control and Reporting Centre. The Centre's role was to exercise tactical command and control of airborne assets engaged in close air support of Australian and Coalition troops on the ground. In August 2007 the Centre took over tactical command and control responsibility in southern Afghanistan from the USAF. Camp Palomino came under rocket attack from time to time, and while specialist defence personnel were present, as was the case in World War II, members working in the Control and Reporting Centre joined active / passive defence teams. The teams underwent defence training once a week. No 41 Wing members remaining in Australia were also busy, again contributing to homeland security during Operation *Deluge*, security of the Asia

Pacific Economic Cooperation Meetings in Sydney, held in August and September 2007.

The Wing's capabilities were again significantly enhanced with the potent Vigilare system becoming operational in 2011. In May it was put through its paces during Exercise *Aces South* where it showed the value it brings as the Air Force further progressed down the path to network centric warfare. Vigilare can network air battlespace information in near real-time from many platforms and sensors to build a comprehensive air picture, which can then be communicated widely over secure communications links. Some of the information sources that Vigilare engages include JORN, E-7A Wedgetail aircraft operated by No 42 Wing, civil and military microwave radars, fighter and maritime aircraft, Royal Australian Navy air warfare capable ships and various intelligence sources. On 26 February

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2013, the Minister for Defence announced that Vigilare had reached final operating capability, when ground-based air combat officers were able to control the air battle.

In 2016 internet protocol chat capability was introduced into Vigilare, enabling No 41 Wing's battle managers to communicate in a flexible way with their counterparts in E-7A Wedgetail aircraft and with Headquarters Joint Operations Command. Further Vigilare enhancements and updates were programmed that make No 41 Wing an even more potent addition to Air Force and ADF capabilities.

No 41 Wing units again combined in establishing a Control and Reporting Centre at Exercise *Red*

Flag at Nellis Air Force Base in the United States in 2019. During the COVID-19 restrictions, Exercise *Virtual Pitch Black 20* was used to hone skills. For the first time, the No 36 Squadron's C-17A simulator successfully integrated in the virtual network with No 41 Wing, ground-based command and control of air assets, and No 2 Squadron 'airborne' command and control via its virtual E-7A Wedgetail. Moreover, members from Number 41 Wing deployed on Operation *Accordion*, serving in 'Kingpin' alongside a coalition of air forces from the United States, United Kingdom, Denmark, Canada and Belgium. 'Kingpin' is the tactical Command and Control Centre for the entire Middle East area of operations.