

CHAPTER 6

SEA LANE PROTECTION AND AIRCRAFT PRODUCTION

ITALY'S declaration of war against the British Commonwealth and France on 10th June 1940, and the submission of France to the Axis Powers on the 22nd, had had an immediate impact on Australian aviation both Service and civil. The additional naval challenge in the Mediterranean and military challenge in North and East Africa increased the difficulty in obtaining oversea supplies, notably aircraft, and this in turn placed a check on expansion of the R.A.A.F.'s capacity for trade protection and handicapped air communications between Australia and Britain.

One political reaction to this critical situation was noted when a special Commonwealth conference of the Australian Labour Party held in Melbourne on 18th and 19th June passed by 24 votes to 12 a resolution pledging "complete participation in the Empire Air Force Scheme". The resolution was described by its mover, Mr W. Forgan Smith, Premier of Queensland, as designed to give "a political charter to the Federal Parliamentary Labour Party and the Labour movement as to how a part should be played in the present crisis". A day later Mr Curtin, in the Federal Parliament, welcomed an announcement by the Prime Minister that volunteers for the defence of Australia would not be turned away, adding: "I ask once more, whatever be the explanation for the delays in the past, that the Government concentrate to the greatest degree upon strengthening the R.A.A.F." He referred, too, to the nation's obligation to make its own aircraft, declaring: "Let the Government get busy on this work, we may not have much time to spare."

Much of the limited operational strength of the home force of the R.A.A.F. was fully extended by this time with trade protection in the shipping lanes around the Australian coast. The prospects of increasing that strength had been reduced when, on 28th May, the War Cabinet, recognising the urgency of Britain's need, had released Hudson aircraft that were on order for Australia and offered a squadron of Hudsons for service at Singapore. On 13th June the War Cabinet was once more striving to find further ways in which to help. The three Chiefs of Staff made their contributions to this discussion and Burnett, for the air force, proposed that an additional Hudson squadron and a Wirraway squadron should replace R.A.F. units in India or the Far East, preferably at Singapore. After awaiting a further appreciation of the situation from the British Chiefs of Staff before making a definite decision, the War Cabinet, 12 days later, decided to send the two additional R.A.A.F. squadrons to Singapore.

Thus within about eight months after the Government had cancelled its previous decision to send a six-squadron force overseas, it had in

fact sent five squadrons overseas. If the original plan had been adhered to the expeditionary air force would have included a force headquarters and three wing headquarters, whereas the five squadrons were trickled more or less piecemeal into R.A.F. formations, though it will be seen that a station headquarters eventually accompanied the three squadrons to Malaya.

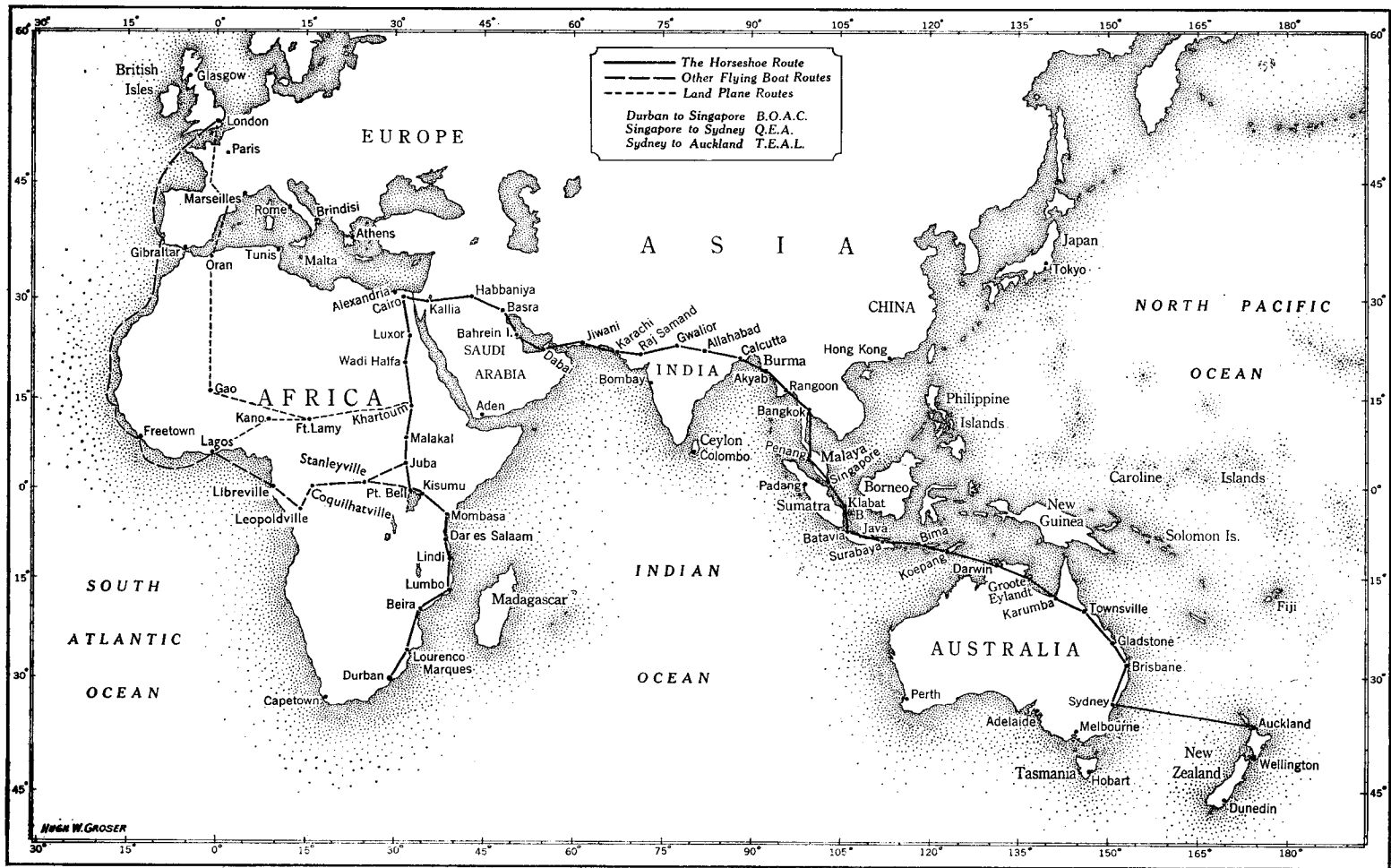
An immediate effect of the Italian aggression and the French capitulation was the interruption of the civil air services operating over the direct route between Britain and Australia. Plans to meet such a situation had been prepared in advance and the "Horseshoe" service was promptly put into operation. This linked Durban on the west with Sydney on the east. From Durban the course was north to Cairo, east-north-east to Habbaniya in Iraq, thence down the Persian Gulf and across northern India, along the Burma coast and Malayan Peninsula to Singapore and then through Batavia, Surabaya, Koepang and Darwin to Sydney and Auckland. Just before Italy declared war construction of an engine overhaul shop for Qantas Empire Airways was begun at Mascot, Sydney. Thirty-nine days later, in time for the opening of the Horseshoe service, it was in operation. Similar speed was demonstrated at the Durban end in erecting and staffing maintenance facilities. A weekly schedule was begun on 19th June and the service became twice-weekly in August. To link the top of the Horseshoe arc to Britain was not simple. The route between Britain and Cairo which the new Axis partnership had cut was replaced by a trans-Sahara route—south from Britain to Oran and then a grim 2,000 miles' desert flight to Fort Lamy, with refuelling at a tiny airfield at Gao and thence through to the Sudan and Egypt. But on 28th June flight across French colonial territory was banned and Britain was cut off entirely from the Empire air routes. But the Horseshoe route was maintained in full operation, the long stretch from Durban to Singapore being flown by aircraft of the British Overseas Airways Corporation and that from Singapore to Sydney by aircraft of Qantas Empire Airways. The lateral extension to New Zealand was operated by Tasman Empire Airways, which had been established early in 1940 by the New Zealand, Australian and British Governments in partnership, and the first regular flight on which had been made on 30th April.¹

Late in 1940 the War Cabinet received an offer from Captain Taylor,² associate of the late Sir Charles Kingsford-Smith in his pioneering Pacific and Tasman Sea flights, and a notable air pilot and navigator, to undertake an air survey of a new Pacific route.³ Air Chief Marshal Burnett, who was present at the meeting, suggested that Taylor should offer his services to Qantas Empire Airways who were preparing to ferry Catalina

¹ For a detailed account of British Commonwealth civil aviation 1939-44 see Air Ministry publication, *Merchant Airmen* (1946); for specifically Australian operations see E. Bennett-Bremner, *Front-line Airline* (1944).

² Sir Gordon Taylor, GC, MC. (1914-18: 66, 94 and 88 Sqns RAF.) Served with RAF Transport Cdn. Air pilot and navigator; of Sydney; b. Mosman, NSW, 20 Oct 1896.

³ The route was to be via Suva, Cook Island, the Marquesas and Clipperton to Honduras. This could be linked with Canada by way of the Bahamas.



The Horseshoe Route

flying-boats from the United States to Australia. Alternatively he would be willing to offer Taylor an appointment in the R.A.A.F.

In September the Department of Civil Aviation had approached Qantas Empire Airways with the request that the company should organise a ferrying service across the Pacific. Eighteen Catalinas had been ordered for the R.A.A.F. and their delivery had very high priority. Qantas had sufficient trained pilots for such a program of long-range flying. There was a diplomatic aspect to the undertaking, too, for the United States was not at war and delivery would be simplified if it was undertaken by a civil organisation. A condition of purchase was that the aircraft should be flown under United States command to Honolulu where they would become Australian property. The company agreed to the ferrying proposal and early in December Mr D. H. Wright, a senior Qantas engineer, went to the factory of the Consolidated Aircraft Corporation, manufacturers of the Catalina, at San Diego, to arrange maintenance and other delivery details. Already a small Australian party was in San Diego, headed by G. U. ("Scotty") Allan,⁴ a former Qantas captain who was accompanied by two technical non-commissioned officers, Warrant Officers Richmond⁵ and Bemrose.⁶ Allan, having been very recently commissioned, held only the probationary rank of pilot officer, but his temporary lack of seniority was not obvious, for at least the letter of the American neutrality law was being strictly observed and he and his Service companions were in civilian clothes. At the end of the month Captain Brain, Qantas' operations manager, accompanied by Taylor, who had accepted Burnett's suggestion and whose services were particularly welcome not only because of his exceptional experience in trans-Pacific aerial navigation, but because of his knowledge of the Catalina flying-boat,⁷ flew by Pan American clipper to Los Angeles and then went to San Diego to initiate the ferrying program. On their flight to the United States they surveyed bases for the route over which the Catalinas would be ferried. On 25th January 1941, Brain, Taylor, Allan, and their party, took off on the first ferry flight to Sydney. Another Qantas pilot, Captain Denny,⁸ joined the aircraft at Honolulu. The flight, which was made by way of Canton Island and Noumea in 60 hours, 16 minutes flying time (seven days elapsed time), was only the third direct trans-Pacific flight to Australia in history.⁹

⁴ W Cdr G. U. Allan, CBE, AFC, 261374. (1918-19: 71 Sqn RFC and 11, 47, 58 Sqns RAF.) 23 Sqn and SPTF 1941-42; Trans Pacific Air Ferry Service and comd FBRD 1943; comd 1 FBRD 1943-44. Commercial pilot; of Sydney; b. Forgandenny, Scotland, 2 Feb 1900. (Allan had been co-pilot of the aircraft *Faith in Australia* on the first official airmail flight to New Guinea in April 1934.)

⁵ W Cdr W. D. Richmond, OBE, 2984. 10 Sqn 1940-41; liaison and ferrying duties, RAAF Fwd Echelon, AAF, SWPA 1942-45. Regular airman; of Kew, Vic; b. Ballarat, Vic, 15 Nov 1906.

⁶ F-Lt G. S. Bemrose, 3715. 10 Sqn; Northern and Western Areas HQ; Instructor, Seaplane Training Flight, Rathmines, 1941; comd 1 TAF WT Sqn, Morotai, 1945. RAN telegraphist later regular airman; of Cottesloe, WA; b. Croft, Lincolnshire, Eng, 20 Dec 1904.

⁷ Taylor made a survey of the Indian Ocean route from Australia to Mombasa, Kenya, in 1939, flying the Catalina "Guba" of the Richard Archbold Expedition.

⁸ Sqn Ldr O. D. Denny, 1396. RAAF Reserve and Qantas Merchant Air Service 1939-45. Commercial pilot and former regular airman; of Roseville, NSW; b. Northcote, Vic, 13 May 1899.

⁹ Final delivery of the eighteen Catalinas was made on 23rd October 1941. In completing the ferrying program practically every senior Qantas captain and first officer took some part as did seven RAAF officers and six technical non-commissioned officers with the added assistance of F. W. Stevens, a former Qantas first officer then serving with the Department of Civil Aviation, who acted as a radio officer. Bennett-Bremner, pp. 19-28.

Increasing emphasis was now being placed on the importance of Darwin, a port which, despite the recent development of international civil aviation, was still very much Australia's "back door". In 1938 Jones, then a wing commander, had inspected the area and reported on it in terms of air defence but little or nothing had been done beyond preliminary planning. When Germany declared war the nucleus of No. 12 Squadron had settled in at its new base on the Darwin civil aerodrome with Wing Commander Eaton,¹ who had accompanied Jones on his visit of inspection, as its commanding officer. But by June 1940 Darwin was receiving more attention. No. 12 Squadron was partly "cannibalised" to provide two flights of Ansons from which No. 13 Squadron was formed and a station headquarters was established. A third flight, which had received Wirraways, remained to form the basis for the reorganised No. 12 Squadron as a general purpose unit, the command of which went to Squadron Leader Glasscock² while Eaton became station commander. Later in the same month No. 13 was re-equipped with Hudsons, which greatly increased its value, and Squadron Leader Balmer³ was given command. At the end of this month there were 30 officers and 212 airmen on the R.A.A.F. strength at Darwin. By 27th July the station headquarters and the two squadrons had received 182 reinforcements between them. By this time, too, the need for ancillary services had become apparent and the erection of a replenishing centre at Katherine, 212 miles south-east from Darwin, was begun to provide accommodation for men, munitions, fuel and stores. In August the station headquarters were moved to an exclusively R.A.A.F. aerodrome at Darwin where No. 13 Squadron was also based, while No. 12 Squadron remained at the civil aerodrome. Both squadrons were working hard, chiefly on shipping escort, seaward reconnaissance and coast-wise patrols, which included keeping a watch on the Japanese pearling luggers, significantly still based in Australian or adjacent waters. Staging bases had been established at Drysdale and Port Hedland to the west and at Millingimbi to the east. Though sparsely manned these bases permitted an extension of the coastal patrols. Flying hours mounted and the servicing of aircraft presented difficulties; all aircraft requiring overhaul after 240 hours' flying had to be sent to Richmond, New South Wales, and thus remained off squadron strength for periods of up to three weeks.

By October 1940 the Air Board was reviewing active service plans and Burnett inspected the area. The establishment of a satellite base at Batchelor, 50 miles south from Darwin, was a major proposal. An exercise to test the planning was held in December, aircraft moving from Laverton

¹ Gp Capt C. Eaton, OBE, AFC, 24. (1918-19: RAF.) Comd RAAF Stn Darwin 1940-41, 2 SFTS 1941-42, RAAF Stn Ascot Vale 1942-43, 72 Wing 1943, 79 Wing HQ SWPA 1943-44; AOC Southern Area 1945; Aust Consul, Dili, Portuguese Timor 1946-47; Acting Consul-General Indonesia 1947-49. Regular air force offr; of South Yarra, Vic; b. London, 12 Dec 1895.

² W Cdr C. P. Glasscock, DFC, 260092. Comd 12 Sqn 1940, Paratroop Training Unit 1942-43, 30 Sqn 1943. Agrostologist; of Penrith, NSW; b. Goulburn, NSW, 3 Feb 1912. Killed in action 19 Sep 1943.

³ Gp Capt J. R. Balmer, OBE, DFC, 68. Comd 13 Sqn 1940-41, 7 and 100 Sqns 1942, 467 Sqn 1943-44. Regular air force offr; of Maldon, Vic; b. Bendigo, Vic, 3 July 1910. Killed in action 12 May 1944.

to Darwin by way of Alice Springs and from Pearce to Darwin by way of the west coast. To make the exercise reciprocal and to avoid leaving the south-western and Bass Strait areas depleted, No. 13 Squadron moved from Darwin to Pearce and aircraft were sent from Richmond to Laverton.

In November 1940 the situation in the Pacific was regarded so seriously that the War Cabinet approved plans for the evacuation of civilians from Darwin. Movement by air was to be regarded only as a possible auxiliary to movement by road.⁴ The Government, on the advice of the Chiefs of Staff, would be responsible for declaring that evacuation should be undertaken, but in extreme emergency the decision would be made by the Darwin Defence Coordination Committee. Consciousness of the probability of war with Japan also prompted some measure of preparation for ground defence—slit trenches were dug and air raid and anti-gas drills were introduced—but, mainly because equipment was lacking, there was little aerodrome defence organisation and training, and, as reinforcements arrived, there were insufficient rifles for them.⁵

By April 1941 all units were based at the R.A.A.F. aerodrome, with a total strength of 60 officers and 634 airmen; by May advanced operational bases had been established at Port Hedland, Broome, Derby, Drysdale River Mission, Wyndham, Bathurst Island, Millingimbi and Groote Eylandt. Batchelor was given preference over Katherine as the base subsidiary to Darwin. In May also control of all units in the area passed to Northern Area Headquarters at Townsville. By December 1941 37 operational bases had been established on the Australian mainland—8 in Queensland, 5 in New South Wales, 4 in Victoria, 5 in South Australia, 10 in Western Australia, 3 in the Northern Territory and one each on Flinders and King Islands in Bass Strait.

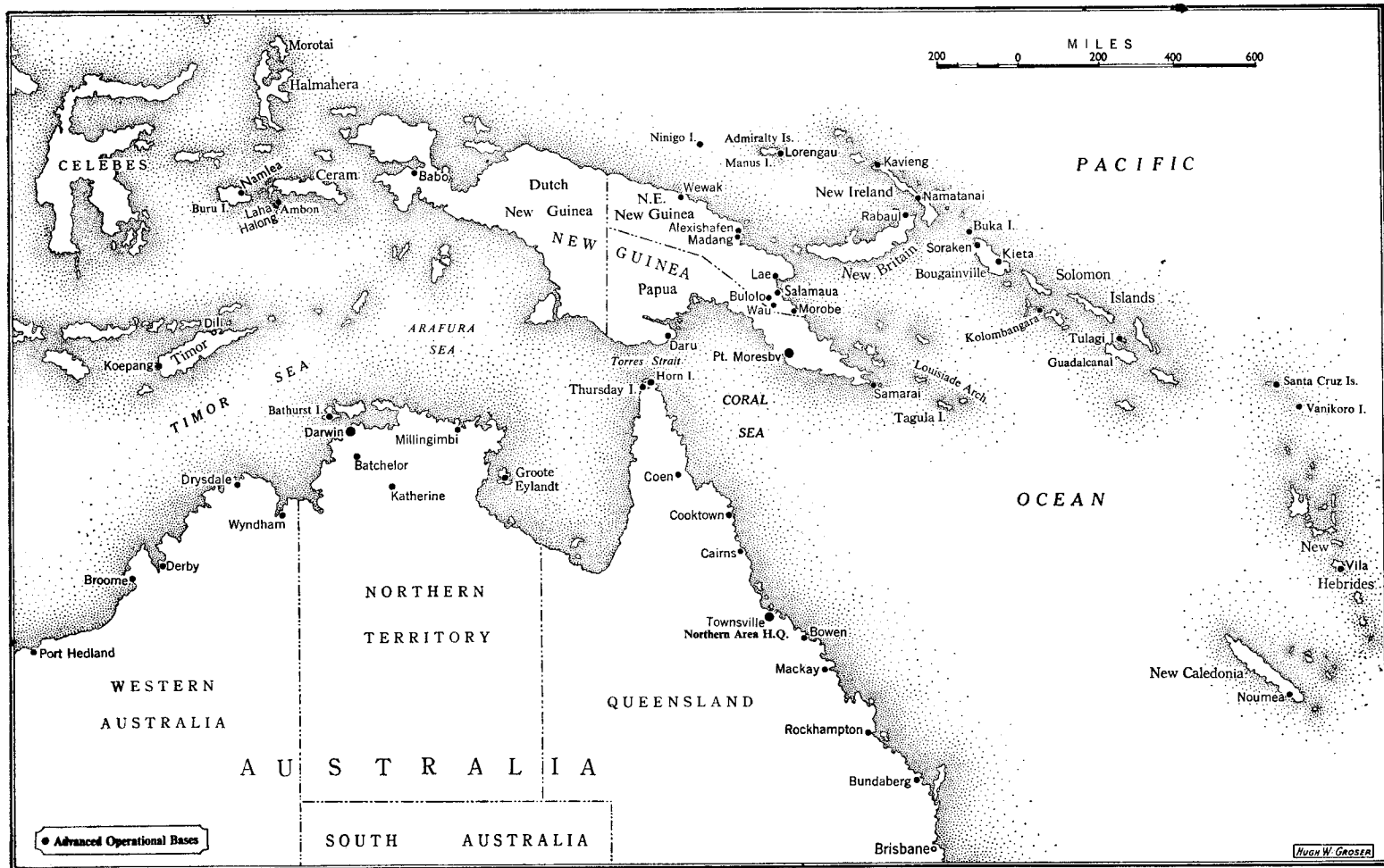
Australia in collaboration with the New Zealand Government had initiated steps in 1939 for the formation of a line of advanced operational bases in the Pacific islands as an outer defence ring. From this time surveys for suitable sites and the development of bases were undertaken. The object was to form a chain extending through the islands north of Darwin, New Guinea, Admiralty Islands, Bismarck Archipelago, Solomon and Santa Cruz Islands, New Hebrides and New Caledonia.⁶ Facilities at the bases were to include flying-boat moorings, landplane and W-T facilities, and bomb and fuel supplies. Port Moresby was to be the main rearward operational base in the chain.

Towards the end of 1941 some progress had been made with the development of these operational bases and facilities had been provided for the normal operation of flying-boats from Rabaul, Tulagi, Vila and

⁴ In August 1940 the War Cabinet approved expenditure of £200,000 for the reconstruction of the Alice Springs-Birdum road.

⁵ A warrant officer stationed at Darwin from June 1940 to November 1941 recorded later that he could recall only two rifle practices in the whole of that period.

⁶ It is interesting to recall the advocacy 23 years earlier by W Cdr Maguire, of a comparable string of advanced island bases, and that, at a defence conference held at Wellington, NZ, in April 1939, Australia accepted responsibility for air reconnaissance and action in New Guinea, the Solomon Islands and the New Hebrides.



Development of Advanced Operational Bases, November 1939-December 1941

Noumea, while moorings were laid down for flying-boats at some Timor bases, and at Samarai, Lorengau and Vanikoro. Facilities for amphibious type aircraft (Seagulls) were established at Daru, Cooktown and Thursday Island. Since the number of land-based aircraft was very limited, aerodrome development was restricted to defended bases from which it was proposed to strike. Thus Port Moresby and Rabaul were extensively developed, while Lae, Kavieng and Buka were given only an emergency base status.⁷

In Papua progress was being made with the Port Moresby base where the main new aerodrome known as the "Seven Mile" had been constructed with a good surface and ample width though its length, 3,600 feet, was not adequate for modern heavy bombers, as the pilot of an American Liberator (B-24) which landed there on 21st October carrying a Lend-Lease mission to Moscow noted. The length, he said, should be at least 5,000 feet. The operational base at Port Moresby also lacked adequate facilities for night operations and night flying training. Most operational aircraft therefore took off at dawn and landed before dusk.

In the Mandated Territory of New Guinea aerodrome development had been approached with caution because the terms of the Mandate forbade construction of "fortifications". Lae and Salamaua, which were used extensively by civil aircraft, had both landplane and seaplane bases, as had Wewak. They were almost completely unguarded and unobstructed. Other air operational bases were established at Wau, Bulolo and Alexishafen.

Most of the coastwise and seaward operations undertaken by the R.A.A.F. in the first two years of war were concerned with guarding the shipping lanes. From the very earliest days of the war R.A.A.F. reconnaissance squadrons were kept on the alert by reports of sightings of possible enemy submarines and sea raiders. False alarms were inevitable. One such was a report of what was believed to be a submarine surfacing in Broken Bay, 20 miles north of Sydney. An air sweep 70 miles to seaward and diligent naval searches provided no result. At this stage submarine attacks on shipping in the Australian sea lanes were not probable;⁸ attacks by enemy surface raiders were much more likely.

A "strange warship" reported only 10 miles off Gabo Island on 10th October 1939 was responsible for another arduous and negative search. When in mid-November a British tanker, the *Africa Shell*, was reported to have been sunk off the coast of Portuguese East Africa there was considerable speculation on the possibility of the raider responsible crossing the Indian Ocean and attempting a meeting with one of the German ships

⁷ In December 1941 the motor vessel *Wanaka* (2,559 tons) was chartered by the R.A.A.F. to carry men and supplies to advanced operational bases, a task she performed for the remainder of the war.

⁸ In January 1941 the Minister for Air (Mr McEwen) told the War Cabinet that though aircraft flying over Australian waters had reported eight separate submarine sightings since 13th December 1940, the presence of enemy submarines in the localities named in these reports had been doubted by the naval authorities. The Chief of Naval Staff (Admiral Colvin) replied that the reports mentioned by the Minister were not as numerous as those received by the navy from other sources. All such reports were investigated and none was regarded lightly.

that had taken refuge at Padang on the west coast of Sumatra. In consequence R.A.A.F. aircraft were ordered to patrol over the Timor Sea, a task which provided No. 12 Squadron with its first major operational duties from Darwin; aircraft from No. 14 Squadron based at Pearce also undertook extended reconnaissance.

Departure of the first echelon of the A.I.F. and the N.Z.E.F. for the Middle East gave R.A.A.F. patrols a variation on the same theme. For 10 days, from 10th January 1940, when the convoy left Sydney Harbour, until it passed beyond aircraft range of Fremantle, these crews aided the naval escort in tending the formation of eleven great ships carrying 13,000 men. From that time on all troop convoys were given similar cover.

Reports received in Australia on 12th March that German ships known to be sheltering in Netherlands East Indies ports might attempt concerted departure called for increased naval and air force vigilance in adjacent waters. Again, without incident, aircraft patrolled between Darwin and Timor. As the days passed the demand for reconnaissance work increased so much that a general reconnaissance school was formed at Point Cook on 29th April. When this school was fully established its crews were given occasional coastal patrols, partly as exercises but also to relieve the overtaxed operational squadrons from some of the less responsible but still essential duties.

An operation that held promise of a share in taking an enemy vessel as prize was ordered in June. Italy's entry into the war seemed practically certain and the Italian liner *Romolo*, then in Australian waters, was being closely watched. *Romolo* left Brisbane on 5th June carrying a Torres Strait pilot. The armed merchant cruiser *Manoora* overtook and shadowed her until midday on 9th June when, with Italy's intentions still doubtful, the Naval Board ordered *Manoora's* captain to take off the pilot and allow *Romolo* to proceed unaccompanied. But by the evening of the same day, when there was no longer any doubt that Italy would go to war, the shadowing instructions were renewed, the two ships by this time being about 160 miles apart. No. 11 Squadron, based on Port Moresby, was given orders to take part in the search. Only one of the squadron's two Empire flying-boats was available (the other was undergoing overhaul at the Rose Bay base at Sydney) and its searching capacity was restricted by the doubtful condition of its oil tanks and the limit set by the lack both of refuelling facilities and of aviation fuel itself at suitable outlying island bases.

Early on the next day, with Italy at war as expected, the squadron received its operational instructions and the flying-boat, commanded by Flight Lieutenant Sims,⁹ took off for Tulagi while one of the Seagulls took off for Rabaul but was forced by stormy weather to return. Stopping in the Louisiade Archipelago to refill its oil tanks the flying-boat flew

⁹ Sqn Ldr E. C. Sims, 260158. 11 and 20 Sqn; Qantas Merchant Air Service 1941-45. Commercial pilot; of Sydney; b. Kalgoorlie, WA, 30 Nov 1907.

against strong headwinds and in weather too thick to make searching practicable. At Tulagi, where the fuel was brought out by boats in 44-gallon drums and 4-gallon tins, it was found that an auxiliary oil tank was cracked which prevented the flying-boat from remaining airborne for longer than about 5 hours and a half. Searches were made to the north and east of Tulagi on 11th June in the course of which the aircraft sighted and communicated with *Manoora* but there was no sign of *Romolo*. By this time the flying-boat had taken in all the aviation fuel Tulagi could provide, and when Sims was ordered to fly to Gizo, westward of Kolombangara Island, he was obliged to blend motor spirit with the aviation fuel in some of his tanks—using this mixture only after having gained an altitude of 5,000 feet. Unable to complete the whole of the prescribed search, in which he was further hampered by a misinterpretation at Port Moresby of the operational instructions from Melbourne—an error which was not corrected until too late for effective action¹—Sims failed to intercept the Italian ship which, on 12th June, was again overtaken by the *Manoora* in a position to the north-east of the Solomon Islands, but by this time the *Romolo* had been abandoned by her company after they had set her on fire.

On the day *Romolo* was abandoned a second Seagull from No. 11 Squadron, piloted by Flying Officer Hampshire,² made an unsuccessful search between Woodlark Island and Buka Passage.

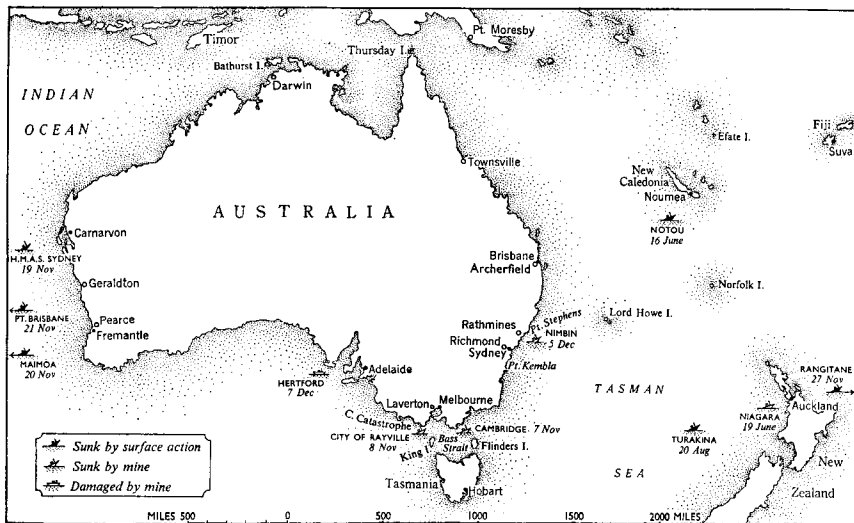
Although the failure of the oil system of Sims' aircraft shortened a reconnaissance which should have intercepted *Romolo*, the Chief of the Naval Staff subsequently reported that the operation had in fact assisted considerably by covering a large part of the search area.

Reports from the Naval Board that an enemy minelayer was operating off the New Zealand coast prompted special search operations in Australian waters, notably the entrance to Bass Strait. Grim proof of the accuracy of these reports came with the news of the sinking of the passenger liner *Niagara* shortly before 3 a.m. on the 19th June—the first ship mined in the Pacific since war began. The crews of all ships and aircraft in the area were keenly on the alert, but the minelayer evaded detection. From 20th August the responsibilities of the reconnaissance squadrons increased. On that date a signal from the steamer *Turakina* reported that she was being attacked by an enemy raider approximately 800 miles east-south-east from Sydney and 360 miles from Auckland. Flying-boats from No. 11 Squadron were ordered to deploy in the hope that if the raider turned northwards she might be intercepted, and the reconnaissance force in Bass Strait was temporarily strengthened. The considerable movement

¹ In eastern Australia at this time joint naval, military and air operations were controlled from South-Eastern Area Combined Headquarters at Melbourne and from North-Eastern Area Combined Headquarters at Port Moresby. Orders for the search originated at Melbourne where the Chiefs of Staff exercised joint authority over the Central War Room, but communications between Melbourne and Port Moresby were slow and several hours elapsed between the dispatch and receipt of signals.

² W Cdr J. MacL. Hampshire, DFC, 256. 11 and 33 Sqns; comd 41 Sqn 1942-43, 461 Sqn 1944; HQ Coastal Cd RAF 1944-45. Regular air force offr; of Cottesloe, WA; b. Port Macquarie, NSW, 27 Feb 1916.

of troopships in Australian waters at this time intensified the anxiety, and for a week aircraft from Richmond, Laverton and Archerfield searched to seaward to a depth of 300 miles along the east and south-east coasts but without result. Meanwhile a search was undertaken for the French ship *Notou* which was reported more than a week overdue at Noumea. The Sydney-Noumea line was searched for 300 miles from the Australian coast again without result. Relations with the French administration in New Caledonia were so touchy at this time that permission to use Noumea as a flying-boat base and thus extend the area of search was refused.



Attacks and sinkings by enemy surface raiders and mines, June-December 1940

Yet less than a month later the position had improved sufficiently for Mr B. C. Ballard, the Australian Official Representative at Noumea, to request that R.A.A.F. aircraft should fly over French ships steaming between New Caledonia and the Australian coast to improve the morale of the native crews; the *Notou* had been sunk on 16th August.

In November a newspaper report attributed to the Minister for Air, Mr McEwen, a statement that the aircraft available were inadequate to maintain continuous patrols over the shipping lanes. This led the Waterside Workers' Federation to protest to Mr Beasley, who brought the matter before the Advisory War Council. At this meeting Air Commodore Bosstock outlined the measures taken by the R.A.A.F. in cooperation with the R.A.N. in defence against enemy raiders. McEwen, on 21st November, answered the waterside workers' protest in the House of Representatives, saying that one newspaper in reporting him had misinterpreted his statement by condensation and paraphrasing. He had made the point that mine-

laying would most certainly be done at night. Daylight patrols were necessary not merely over the actual trade routes but over an area of ocean from 150 to 200 miles to seaward from any coastal trade channel. It was true that Australia lacked sufficient aircraft suitable for continuous reconnaissance over such an area. The R.A.A.F. was making the maximum use of its aircraft which, it was hoped, would soon be supplemented with aircraft on order from the United States and, later, from local manufacture.

Mr Curtin, as leader of the Opposition, took up the debate and questioned how far the air force was equipped to ensure that enemy vessels were not operating in Australian waters. It was clear that there had been too wide a dispersion of the ships of the R.A.N., he said. There was apprehension that an enemy raider had been in the vicinity of the Australian coast before the mines had been discovered. That same day he had questioned the Minister for the Navy (Mr Hughes) about a report on the presumed activities of an enemy vessel off the coast of Western Australia. Better use of the navy should help to make up for the inadequacy of the air force. It was plain that New Zealand and Australia were being singled out for enemy attention.

That this was so was borne out by Allied losses in Australian and adjacent waters. On the night of 7th November the British steamer *Cambridge* had been sunk by a mine six miles east of Wilson's Promontory, one member of the crew being lost. Aircraft from Laverton and Richmond searched without success. On the evening of the next day the American ship *City of Rayville* struck a mine six miles south of Cape Otway and sank, again with the loss of one crew member. Air searches again failed to detect minelayer or mines. On 20th November the steamer *Maimoa* signalled that she was being attacked by a surface vessel approximately 750 miles west from Fremantle. Reports of attacks by surface raiders on the *Port Brisbane* in the Indian Ocean and the *Rangitane* in the Pacific Ocean came late in November, and on 5th December the Australian steamer *Nimbin* struck a mine off Port Stephens, New South Wales. Seven members of her crew were lost and a flying-boat from the R.A.A.F. station at Rathmines found survivors clinging to a raft and directed a rescue ship to them. On 7th December the British steamer *Hertford* was damaged by a mine 40 miles south-west of Cape Catastrophe, off the South Australian coast. From 14th to 17th December aircraft from Richmond, Laverton, Pearce, Darwin, Townsville, and Archerfield engaged in seaward patrols—some of them to a depth of 400 miles—covering an area of 1,020,000 square miles, but still the enemy evaded them.

Army coast defences in New South Wales provided a variation in these disappointing and tedious patrols when, on 17th December, they reported that an unidentified, single-engined, high-wing floatplane had flown over Bondi and Sydney Heads, turned eastward and disappeared. One of five searching aircraft from Richmond later reported having sighted a submarine off the coast, but another aircraft which searched the locality

brought back another "nil" report. Next day 11 Hudson aircraft conducted an intense search from dawn to dusk without result. A safety perimeter patrol was flown round the liner *Queen Mary*, now a troopship, as she lay in Sydney Harbour. At 1.20 p.m. on this day a high-winged monoplane, similar to the one reported on the previous day, was reported heading north over Port Kembla at 15,000 feet. Interception was attempted from Richmond but no enemy aircraft, sea raider or submarine was sighted. The anxiety was such that all large liners serving as troopships, including the *Queen Mary*, *Queen Elizabeth*, *Aquitania*, *Mauretania* and *Ile de France*, were given almost continuous air cover while in port or in Australian coastal waters. As an example of the endurance required in completing the "clearing searches" covering the movements of such troopships there is the record of four Hudson aircraft of No. 2 Squadron, Laverton, which were flown 3,452 miles and actually searched 52,000 square miles of sea in 24 flying hours.³

On Christmas Day 1940 the most expressive evidence of the activities of enemy raiders yet obtained came with the news that 496 survivors from 10 merchant vessels⁴ had been landed by three enemy ships at Emirau Island, north of New Ireland. A flying-boat from No. 11 Squadron at Port Moresby took off seven ship masters and others who could provide important Intelligence and brought them to Townsville, whence they were taken to Melbourne for interrogation by naval and air force officers. The others were brought to Townsville in the liner *Nellore*. No. 11 Squadron's two Empire flying-boats and three aircraft from No. 24 Squadron were stationed temporarily at Rabaul as a precautionary measure. On 27th December the phosphate works on Nauru Island were shelled by enemy vessels which were still able to use the vast expanse of ocean in which they were operating as "cover" and continue to evade detection.

Lack of success in these air searches was due in some part to the inexperience of the crews and of the air staff directing their operation. This was recognised as an important factor and in 1941 the navigation section at R.A.A.F. Headquarters undertook a complete revision of a basic Service publication "Standing Reconnaissance Instructions". This revision was based on the system adopted by the R.A.F.'s Coastal Command. But by far the most important reason for the failure of the air searches in this period to detect enemy raiders, minelayers, submarines and such aircraft as these vessels might be able to operate, lay in the simple mathematics of the problem. It was depressingly clear that the vastness of the area in which the enemy operated its few surface vessels computed against the quite inadequate number of suitable aircraft available for the searches showed the odds to be heavily in favour of the enemy.

The appearance of Japanese luggers in north Australian waters from June to November 1941 was regarded by Intelligence officers as particu-

³ In the first year of war nine reconnaissance squadrons flew more than 1,700,000 statute miles and searched approximately 22,500,000 square miles of coastline and sea.

⁴ *Rangitane*, *Ringwood*, *Noiou*, *Holmwood*, *Turakina*, *Triona*, *Vinni*, *Triaster*, *Komatu* and *Triadic*.

larly significant since the luggers had been recalled to Japanese waters in the previous August; since then the pearling season had almost ended and trade restrictions imposed on Japan suggested that the pearl shell trade was no longer profitable. Yet, on 4th June, 39 luggers were sighted on the various fishing grounds between Broome and Darwin. On 30th June 30 were reported in Cook's Shoal, 70 miles north-west of Thursday Island, and on 31st July 22 were on grounds to the west of Bathurst Island. A pearling "mother" ship, the *Kokoku Maru*, sought and was granted permission to enter Darwin Harbour on 29th October. The task of keeping watch on these craft fell largely to the air force formations in Northern Area, which made long reconnaissance flights for the purpose.

There was new cause for anxiety about this time because H.M.A.S. *Sydney*, which had been patrolling in the eastern Indian Ocean, was overdue at Fremantle. This anxiety increased until, on 24th November, an extensive air search was ordered. All available Hudsons from Nos. 14 and 25 Squadrons based on Pearce, three Hudsons from Darwin, two Catalinas from Port Moresby, and eight Ansons from a service flying training school at Geraldton, joined in these operations. On 25th November a Hudson from No. 14 Squadron sighted three ship's boats to the north of Carnarvon. The squadron's commanding officer, Wing Commander Lightfoot,⁵ directed the detention and initial interrogation of 45 seamen from these boats. They proved to be German sailors from the raider *Kormoran* which, they disclosed, had blown up at sea at midnight on 19th November after an engagement with "a first-class cruiser" (later known to have been H.M.A.S. *Sydney*). When last seen *Sydney* was burning amidships and astern and the German seamen believed that she had sunk. They said the cruiser had approached rapidly and, after a challenge which the raider did not answer, *Kormoran* had opened fire and with her opening salvos put the cruiser's forward turrets out of action. The battle between the two ships had lasted from 5.30 p.m. to 6.25 p.m.

Kormoran was then burning fiercely amidships and later her captain ordered abandon ship. On 27th November the crew of an Anson sighted a lifeboat with about 40 German seamen in it; they were flying a white flag on which were inscribed the words "No water". A naval patrol vessel took their boat in tow and they were detained along with the other survivors.⁶

These air operations, which ended on 29th November, had been conducted from Carnarvon in conditions of great difficulty. One small power pump and three almost unserviceable hand pumps were all that were available for refuelling the aircraft, and the ground staff laboured throughout the night to service 11 Hudsons, 5 Wirraways and from 8 to 13 Ansons. After morning operations aircraft could not be refuelled in time to fly again in the afternoon. Fuel supplies were inadequate and two road

⁵ Gp Capt I. J. Lightfoot. 50. Director of Armament RAAF 1942-44; Armament duties in ETO and USA 1944-45. Regular air force off; of Shenton Park, WA; b. London, 9 Sep 1908.

⁶ At 6 p.m. on 24th November the British steamer *Trocas*, bound from Palembang to Fremantle, had picked up a raft on which there were 25 Germans, in position 20 degrees 16 minutes south, 111 degrees 40 minutes east.

convoys were needed to replenish them. It all amounted to bitter, if valuable, war experience in which the men of the R.A.A.F. learned of the loss of a gallant ship's company.

In mid-1940 three organisations were engaged exclusively in aircraft production in Australia—De Havilland Aircraft Pty Ltd, the Commonwealth Aircraft Corporation, and the Government-owned factory group with one factory at Fishermen's Bend, near Melbourne, and another at Mascot, New South Wales (the main assembly works for the Beaufort project). These were working under pressure that had been intensified in May when the British Government was obliged to place an embargo on the export of aircraft materials and equipment. This embargo seriously affected the Beaufort production plan which had included importation of the Taurus engines until these could be built in Australia. The answer was found in a decision to standardise on the American Pratt and Whitney twin-row Wasp engine, for the local manufacture of which keen-sighted Mr Essington Lewis had been the chief prompter in November 1939. But the change to these more powerful engines for the Beaufort enforced the modification of the airframe and practically every part of the control system. One compensation was that the Australian Beaufort would be a faster aircraft than its British counterpart.

In a survey of the war effort which he had given to Parliament on 18th April 1940, the Prime Minister spoke of the relief afforded by the virtual removal of the embargo on the export of aircraft from the United States⁷ and of the Government's anticipation of this important change which had prompted the appointment of Mr F. B. Clapp as Australian representative in Washington.⁸ This had permitted immediate deliveries so that practically the whole of the original order for 100 Lockheed Hudson aircraft had been fulfilled.

In May 1940 the first Tiger Moth trainer was delivered from the De Havilland works. At the end of this month at a conference at which members of the Air Board and of the Aircraft Production Commission conferred with Essington Lewis in his role as Director-General of Munitions Supply, the whole question of the aircraft requirements of the R.A.A.F. was reviewed. For E.A.T.S. and home defence force training until 1943, 649 elementary trainers would be needed (including provision for estimated wastage). This meant that current orders with De Havilland for 350 Tiger Moths should be increased by 300.

Procurement of supplies sufficient for the production of 811 Wirraways was approved by the War Cabinet in June, but the Commonwealth Air-

⁷ On 25th March 1940 the United States adopted a more liberal foreign release policy which authorised the sale to foreign states of certain stipulated modern types—including the Flying Fortress (B-17), Liberator (B-24), Mitchell (B-25), Marauder (B-26), Havoc (A-20A) and Kittyhawk (P-40)—as soon as a superior type could be provided for the USAAC. See Craven and Cate (Editors), *Army Air Forces in World War II*, Vol I, p. 129.

⁸ The Prime Minister explained that Mr Clapp had undertaken this responsibility in an entirely honorary capacity. *Commonwealth Debates*, Vol 163, pp. 115-19. (Mr F. B. Clapp and Sir Harold Clapp were brothers.)

craft Corporation was still restricted to a production total of 232. Experience was proving that Wirraway airframes could be produced more rapidly than single-row Wasp engines and that the potential production was greatly in excess of R.A.A.F. needs for that aircraft. Therefore Britain offered to take all Wirraways that could be produced in excess of R.A.A.F. orders, with the provision that any shortage of Wasp engines for these aircraft would be met from British orders placed in the United States. The result was an order for 245 Wirraways to be delivered to Britain by the end of 1942.⁹

Meanwhile the corporation's designers had been at work on a twin-engined light reconnaissance bomber project. This was designed for construction from locally-produced materials and was to be fitted with twin-row Wasp engines. The Air Board, impressed by the claims made for this aircraft at the drawing board stage, recommended that a prototype be built not only to permit performance trials of a promising aircraft, but to keep the corporation's design staff together. The War Cabinet authorised the construction of this prototype bomber,¹ and at the same time approved an order for 200 Wackett Trainers, aircraft which were the result of another local design project which had been developing since 1938 under the direction of the man whose name they bore and who continued to be the mainspring in the mechanism of the only Australian organisation that was originating aircraft. The War Cabinet's decision on this training aircraft was influenced by Britain's difficulty in delivering Ansons, but there was added encouragement in the fact that approximately 30 per cent of the exercises in the service flying training schools could be performed with the Wackett Trainer and the fact that the two prototypes so far built had completed their service trials satisfactorily. Another order, placed by the War Cabinet on the same date in June, was for seven Catalina flying-boats to replace the Empire type flying-boats with which No. 11 Squadron was equipped; at the same time the order for 300 additional Australian-built Tiger Moths was also approved, but subsequently, since 200 Wackett Trainers had been ordered, the order was reduced to 100.

The Chief of the Air Staff told the War Cabinet on 5th June that, when the 100 Hudson bombers and the seven Catalinas had been placed in service and the production of Wirraways had been increased as planned, "a sufficient striking force would be available to make an aggressor think seriously before attacking". This rather optimistic statement was countered to some extent when Burnett reported at the end of June that training was still being retarded through lack of spare parts for Hawker Demons,

⁹ The order was increased in October 1940 to 500 with further orders for 300 for 1943 delivery. In November 1940 the rate of output of Wirraways was 34 a month. Further Australian orders raised the total for the RAAF to 481. The number was increased in November 1941 to 564 which was expected to suffice for RAAF needs until June 1943.

¹ This prototype was built and successfully flown, but development of the Beaufort project and the comparatively liberal deliveries of Hudsons from America promised to provide the RAAF's requirements in medium bombers. The Commonwealth Aircraft Corporation therefore concentrated next on designing a fighter aircraft for which the need was urgent, and its first aircraft designed specifically for combat barely passed beyond the prototype stage.

Wirraways and Ansons. By this time the 100 Hudsons from the United States had been delivered, but of more than 1,300 aircraft promised from Britain, chiefly for the Australian E.A.T.S. program, comparatively few had been received and shipments had ceased because of the embargo on the export of all British aircraft. Local production of Tiger Moths had just begun,² and the delivery of Gipsy Major engines by General Motors-Holden's Ltd, one of the principal sub-contractors to the aircraft industry, was still some months off.³ Of 300 of the same engines ordered from Britain, 80 had been delivered and of 150 single-row Wasp engines ordered from the United States only two had been delivered.

By the end of 1940 there was a welcome change in the aircraft situation. The British embargo had been brief and 92 Ansons had been delivered. Britain had also undertaken to supply 189 Oxfords in place of Ansons for Australian service training schools. Fairey Battle deliveries had risen to 88, and 200 Australian-made Tiger Moths and 204 Wirraways had been delivered. Though no Gipsy Major engines had come from Britain local production had reached 84—20 in the last week of December. Fifty single-row Wasp engines had arrived from the United States and 175 had been delivered from the local factory.

New Zealand's troubles in obtaining aircraft were brought before the War Cabinet in January 1941 by a request from the New Zealand Prime Minister that Australia should release to the R.N.Z.A.F. three of the Catalina aircraft it had on order. Alternatively the Empire flying-boats in service with No. 11 Squadron were sought when that squadron was re-equipped with Catalinas. The request was made because New Zealand had failed to obtain five Catalinas through British orders in the United States. The War Cabinet replied that the Catalinas on order could not be released but it "might be possible" to release two of the Empire flying-boats if they were not essential for Empire communications.

The latest details known of the performance of Japanese aircraft which might be brought into the Australian operational area on Japanese warships or aircraft carriers were given to the War Cabinet by the Minister for Air in January. Of chief interest was a reference to a new naval air service single-seater fighter put into production in 1940, which "appeared to be a development of the naval type 96".⁴ Its armament was said to be two 20-mm cannon and two 7.7-mm machine-guns and its top speed was given as 300 miles an hour.

Several days later the Minister for the Army, Mr Spender, at a meeting of the War Cabinet, referred to the impression that the Wirraway would

² At 30th June 1940 the delivery rate was one each working day. In March 1941 this was doubled and maintained at that rate until the contract was completed.

³ The first of these engines was delivered in September 1940.

⁴ In designating aircraft the Japanese used the last one or two digits of the year of production. In the Japanese calendar the year 2600 corresponds with 1940 in the Christian calendar: thus aircraft produced in 2596 (1936) were designated Type "96", those in 2599 (1939) Type "99" and those in 2600 (1940) Type "00". At first only the Mitsubishi Type "0" fighter was widely known to the Allied forces and it merited the obvious pseudonym "Zero". Later, when other Japanese Type "0" aircraft were encountered, easily pronounced code names were adopted by the Allies for all Japanese aircraft. Type "0" or "Zero" became known, for example, as the "Zeke". For further details see Appendix 4.

generally be able to counter Japanese seaborne aircraft. The information given on Japanese aircraft performances suggested that the Wirraway would not be able to compete with them. Burnett, who was present, replied that he thought the high-powered Japanese aircraft referred to would be relatively few in number. Having regard to the type of Japanese aircraft that would be used in an attack on Australia he believed that the Wirraway would be able to make "quite a good show". It was an obsolete type, but it had some fighting value.

When the War Cabinet reviewed aircraft production in February there were questions as to why the Commonwealth Aircraft Corporation had not fulfilled its program. The chairman of the Aircraft Production Commission, Sir Harold Clapp, said that it appeared that the delays were largely due to failure on the part of United States manufacturers to deliver tools and equipment and to the fact that engine parts were not being received from overseas as promised. Local production was now meeting these needs. The Minister for Air, Mr McEwen, said he had doubts about the promised production of 360 Wirraway airframes for the year. The corporation had not lived up to its promises in the past and he thought it was still too optimistic.

There was also criticism at this time of the "failure" of the Government aircraft factories to produce Beauforts.⁶ At a meeting of the Advisory War Council in February the explanation was given that the delay was due chiefly to the sinking of ships by enemy action, causing loss in materials and components. An increase from 180 to 270 in the number of Beauforts to be built in Australia, thus making 180 available for the R.A.A.F., was approved by the War Cabinet on 12th February 1941. Later, on learning that 52 Hudsons could be obtained,⁷ the order for 90 additional Beauforts was reduced to 38, and even this was cancelled when the number of Hudsons to be purchased from the United States was increased to 146—a purchase which disposed of the question of Australia taking over Britain's initial order for 90 Australian-made Beauforts.⁸ This reduction of the Australian orders for Beauforts might well have represented a serious setback to the Government aircraft factories but for the decision of the British Air Ministry to order an additional 90 Beauforts from Australia, thus restoring the production program to 270 aircraft.

The decision to increase the Hudson order from 52 to 146 had been prompted by a cablegram from Mr Menzies, then in Britain, stating that these aeroplanes might be obtained earlier than the Australian-made Beauforts. The War Cabinet gave its final approval to this order on 20th May

⁶ The first Australian Beaufort, an experimental aircraft assembled largely from parts supplied from Britain, made its first flight (from Fishermen's Bend to Laverton) on 5th May 1941. Five more of these aircraft were then being assembled. The first production Beaufort was completed in August 1941.

⁷ Since the United States Government would not permit the export of engines in excess of 5 per cent of completed aircraft, the War Cabinet had amended its current order from 39 Hudsons and 42 engines to 52 aircraft and 16 engines.

⁸ In July 1941 War Cabinet decided that the RAAF should form three air transport units equipped with nine Hudsons each (including reserves). Subject to British approval these aircraft were to be included in the delivery program for the 146 Hudsons on order.

when it authorised expenditure to cover the cost of the Hudsons and of 243 general purpose two-seater Brewster Buffaloes, sought from the United States as replacements for the Wirraways, and 54 long-range two-seater fighters, the new British Beaufighter,⁹ of which 12 were to be delivered by December 1941 and the remaining 42 in instalments by March 1942.

It was noteworthy that, despite Britain's urgent need for operational aircraft, Australia's needs were being given a high priority by the British Government. Of Australia's imports of American aircraft a substantial proportion came from the transfer of British orders to the Commonwealth. To meet Australia's need for Buffaloes, the British Air Ministry undertook to allocate one-third of the total Britain received in the first three months of delivery (Buffaloes were then expected to reach Britain from America almost immediately) and one-half of the subsequent monthly deliveries until Australia had received a total of 243. Similarly with Hudson deliveries, the first 100 received by the R.A.A.F., 98 of which were delivered by 20th June 1940, had come from orders placed by Britain.

Early in 1941, in his capacity as an executive member of the Aircraft Production Commission, Mr John Storey,¹ an eager advocate of Australian production, accompanied the Prime Minister on his visit to Britain. In May, about the time when the Beaufort was making its trial flights in Australia, Mr Storey returned with a conviction that was stronger than ever about Australia's potential capacity for building aircraft. In his report he recommended the local manufacture of the Bristol Beaufighter and of the Avro Lancaster, Britain's latest long-range bomber which promised quite remarkable bomb-carrying capacity and endurance. These aircraft, he said, should be built in the Government factories simultaneously with the Beaufort program. As he saw it Australia needed the Beaufighter for reconnaissance and fighter operations in support of ground forces. There was comparatively little emphasis on fighter aircraft needs for home defence, but fighter escort for striking forces, particularly against aircraft carriers, was a most probable need. The Beaufort and the Beaufighter had about 75 per cent of their components and production technique in common, and extension from Beaufort to Beaufighter production was logical. The argument favouring production of the Lancaster, for which a non-stop flight from, say, Brisbane to Perth, would be quite practicable, took into account the contention that the air defence of the Commonwealth and its territories must depend largely upon the mobility of a limited number of operational squadrons; the greatest value lay in a type of aircraft that was suitable for both long seaward reconnaissance flights

⁹ The Beaufighter, a fast, twin-engined, long-range "intruder" aircraft developed by the Bristol Aeroplane Company in England from the Beaufort for coastal reconnaissance and night fighting, had been ordered after the War Cabinet had noted (on 9th May 1941) that it "appeared to be the only type of aircraft meeting the Australian Air Staff's needs for a high performance, two-seater fighter".

¹ Sir John Storey, Director Beaufort Division, Dept of Aircraft Production, 1942-46; Chairman, Joint War Production Cttee, Defence Dept; Chairman, Immigration Planning Council, 1949-55. B. Sydney, 1 Nov 1896. Died 3 Jul 1955.

and for strikes against enemy seaborne forces. The heavy bomber, Storey argued, commended itself for these roles—increased reconnaissance range could be gained at the expense of bomb-load and effective long-range striking power could be obtained with the same aircraft. But to counter this impressive argument there was the fact that the relatively small number of aircraft such as the Lancaster which the Australian industry could produce within a practical time would not meet the requirements of the R.A.A.F. with its huge geographical commitments nearly as effectively as a larger number of medium bombers like the Beaufort. Further, the Lancaster was then regarded as being less vulnerable when employed in night operations against land targets and in conditions favourable for level bombing. The R.A.A.F. would still need other aircraft for torpedo and dive-bombing attacks for which the Lancaster was unsuitable.

Acknowledging these disabilities in the Lancaster for the purposes of Australian defence, in addition to the important fact that its production would seriously restrict the output of Beauforts, the War Cabinet decided that at this stage its production would be premature. It did agree that a limited Beaufighter program should be incorporated in the Beaufort project so as to produce aircraft at the rate of 40 a month (plus the equivalent of 8 additional aircraft in the form of spare parts) on the basis of 34 Beauforts and 14 Beaufighters, and that a second engine factory should be established to build 1,600 horsepower Wright Cyclone engines for the Beaufighters. On 24th July these proposals were submitted to Mr Bruce for discussion with the British authorities.

Bruce's reply brought a new aircraft into the picture. On 18th September he informed the Australian Government that prototype tests with the De Havilland Mosquito, a long-range fighter of great promise, suggested that this aircraft, with a range and speed substantially greater than those of the Beaufighter, with an equal endurance and heavy fire-power, might well replace that aircraft. It was suggested in Britain that Australia should concentrate on the projects in hand, both for airframes and engines, and refrain from planning for the production of new types; the recent excellent performance of the Beaufort in combat operations was taken as evidence that there was no other yet designed that could replace it in its class. Beaufort requirements "east of Suez" (including Australia's needs) were estimated at 40 a month until at least the end of 1943. If Australia could produce this aircraft complete for service at that rate the British Government would accept the difference between Australia's needs in this aircraft and that monthly total. On the other hand Britain's operational requirements in Beaufighters were covered by her own production program and, as large orders for Mosquitos were expected, Australian-built Beaufighters would not be required by the R.A.F. The Beaufighter production plan was therefore deferred, and on 3rd October Menzies informed Bruce that the Australian industry would increase Beaufort production to the rate of 40 a month immediately, in full confidence of British aid in procuring additional machine tools and supplies.