2000 RAAF HERITAGE AWARDS

Dicing with Death

An airman's account of his training and operations against Japan

Arthur Sandell

ROYAL AUSTRALIAN AIR FORCE 1941-1946

AEROSPACE CENTRE

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FOREWORD

Group Captain (ret.) Sir Richard Kingsland AO CBE DFC
Commanding Officer No. 11 (Catalina) Squadron, Port Moresby 1941–42

When the Japanese speared south almost to Australia at the beginning of 1942 the Catalina squadrons, designed for a more passive role, assumed the unlikely role of Australia's Very Long Range Bombing and Minelaying Force. Crucial to the success of these operations were crews of high excellence in every facet of aerial warfare...dedication, efficiency, endurance and courage.

Strange to say, their spectacularly successful performance passed almost unnoticed in the war years and those following. One crew member out of the nine who carried very heavy personal responsibility in these slow-moving, frail shells was the navigator.

Let me explain. The slower and lower the path of an aircraft, the more onerous the task of the navigator, since each hour his aircraft is affected more by wind and weather than faster, higher-flying craft.

The longer the flight, the darker the night, the poorer the maps and charts, the more difficult the task of the navigator who lacks all external navigation aids. The absence of a relief navigator in the crew compounded the physical and mental demands on this vital crew member. This was the lot of the navigator in Catalinas.

And now the crunch line. If the navigator didn't guide the aircraft accurately to the target, the long dangerous

mission was wasted. This was a very heavy responsibility on every operation in the long hours of duty which were the lot of Catalina crews.

Mention military aircraft in World War Two and thoughts turn to the Spitfires or the Lancasters, never to the Catalinas. Mention aircrew and thoughts immediately turn to pilots, never to the navigator; one evidence of the cruel anomaly is that, compared with pilots, promotion was painfully slow and gallantry decorations rare.

Arthur Sandell records the changing reactions to war of a young person. He explains with great lucidity both the intricacies and finer points of air navigation. He traces with a fine pen many aspects of the Catalina story.

Dicing With Death is an important contribution to aviation history and both old and bold and coming generations are deeply in his debt.

PREFACE

This book would not have seen the light of day had it not been for two people, David Nance and his daughter Dita Harper. It was the enthusiastic urging of David that prompted me to begin it, and throughout the writing he has offered constant advice, suggested a better turn of phrase in many places, and generally made the text more readable. His frequent visits with his wife Helen to our home have been welcome highlights for my wife Rylice and for me. When I finished the text, David steered it through the design and printing stages. A designer, schooled in a previous age and still stubbornly fond of pencils, pens and brushes, he was pleased to have the sustained help of a contemporary book designer who is fully capable of exploiting the computer – his daughter. David and I have accepted that the miracle of computer technology is beyond our comprehension, and we can only sit back and admire the young ones like Dita for whom it has become routine. I can never repay Dita and David for their huge investment of time and skill in preparing this book for the printer.

Two writers have offered me encouragement and considerable assistance. They are David Vincent, author of *Catalina Chronicle*, and my one-time flight engineer, Jack Riddell, author of *Catalina Squadrons – First and Furthest.* The books by these authors have done much to make known the crucial part played by the Catalina squadrons in helping to hold back a potential attack on Australia's north from early 1942, and then, to the very end of the war in

1945, in assisting in the recovery of territory occupied by the Japanese, even as far west and north as the China coast. Both authors have been most generous in supplying photographs for this publication.

I have made frequent use of statistics in Douglas Gillison's official history of the RAAF in World War II, *Royal Australian Air Force, 1939–1942*, and have quoted from his account of the Coral Sea Battle.

Valuable help has also been given by Ms Monica Walsh and Ingrid Offler of the RAAF Museum, Point Cook, and Ms Glenda Lynch, whose professionalism as an archive researcher has retrieved from the Australian War Memorial and other sources in Canberra, information whose extraction would have been very time-consuming for me on my own. I am grateful for the assistance of Summer Blackman of the Aerospace Centre, RAAF Base Fairbairn, in the final stage of editing.

Lex McAulay, author of a number of books recording Australian military history, read the manuscript and returned it with useful annotations. He also suggested submitting the book to the year 2000 Heritage Awards and so is doubly thanked.

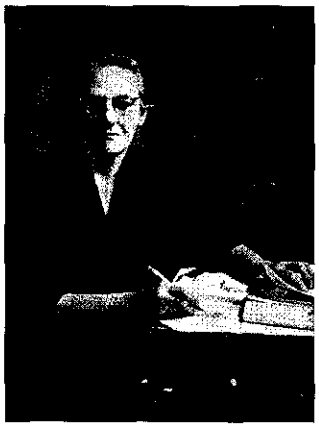
Finally, I thank my wife, Rylice. Because of her patience, I have been able to spend very many hours at my word processor, hours which might have been spent doing something less self-indulgent than recording memories of long ago.

CHAPTER ONE

Changing convictions

People of my age reached adulthood between the two bloodiest wars in history. I was born during the First World War. I was old enough to understand something of the Great Depression, the traumatic event which came between the two wars, and young enough to fight in the second of them. It is a mistake to think that the Depression lasted for only two or three years from 1929. In actual fact, its effects were still being felt when the second of the two wars came in 1939, and brought full employment either in the armed forces or in war-related work. My own younger brother, Eric, gained a good matriculation in 1935 but it was several years before he found employment in a bank in a small country town in western Victoria. During the brief interval between Depression and war I completed secondary education, joined the staff of the Commonwealth Bank for three years, and started a part-time Bachelor of Arts degree at Melbourne University where, in those days, evening lectures ended as late as 9.30 pm. Three years were enough to convince me that I did not want to make banking my career. My own schooling had been happy and the prospect of teaching appealed to me. I resigned from the Commonwealth Bank in early 1937 and became a 'junior teacher' in the Victorian Education Department. This was a routine way of entering the profession but has long since been abandoned, despite its merits. It was the means of having a year – sometimes more – during which the would-be teacher served a supervised apprenticeship, a year in

which he or she could decide whether teaching was to be a choice for life. It was also a year in which his or her supervisors could advise whether the choice was right for that person. The usual path thereafter was full-time training at Melbourne Teachers' College, but I took a different route. In 1938 I accepted an offer from my old school, Carey Grammar School, a private school for boys in Melbourne, to become a resident master in the boarding house, and to teach part-time while undergoing training at the Associated Teachers' Training Institute (later called Mercer House). The Institute trained teachers mostly for the independent schools. Like the method of recruiting junior teachers for the State education system, Mercer House has not survived.



Dorothy Jean Ross MBE
1892–1988
Dorothy Ross left an indelible mark on the history of education in Victoria. She herself had unusually broad intellectual interests. After an honours MA in French and German at Melbourne University, she added an honours BSc. Her Diploma of Education was gained at Oxford. From 1923 to 1928 she was senior botany mistress at Melbourne Girls' Grammar School, and then from 1928 to 1938 she was Supervisor of the Associated Teachers' Training Institute for the part-time training of teachers for the independent schools. In 1938 she became headmistress of the Melbourne Girls' Grammar School and during the next 17 years the school became quite renowned for educational innovation. Her love of children was the inspiration behind her concern to accommodate the differences in students' interests and their ways of seeking knowledge. The school ensured that every child's achievement, however humble and in whatever sphere, was recognised. Dorothy's second great achievement was to create a genuinely democratic community at the school in a way which has not been equalled since.

Part-time teaching, two to three half-days training at the A.T.T.I. under its remarkable senior lecturer, Miss Dorothy J. Ross, and evening lectures at Melbourne University made a heavy program, but I relished the stimulation and enjoyed life on a salary of fifty pounds a year plus my keep in the boarding house. However, there was little time to think about what was happening on the other side of the world.

I was still a schoolboy when Hitler rose to power in Germany. I don't recall that any of my teachers spoke of what might lie ahead for the world as a result, and certainly it was not a topic of conversation amongst us, the students. Life was pleasant and the future seemed secure, at least for those who had been untouched by, or had recovered from, the Depression. Nor, in the evening lectures I attended at Melbourne University, was there ever discussion about a threat to the world's peace.

My own schooling had been of a classical kind. I enjoyed and was successful in Latin; I also learnt basic Greek, as one of a small number of students who studied the language with the school's first headmaster, Harold Steele. At Melbourne University, as an evening student, I had as my Latin lecturer, Edward Cornwall, an elderly scholar whose devotion to Virgil never failed to intrude even when the immediate subject was Ovid, or even Cicero. Those were the days when Arts students did not often ask whether

what they studied had any conceivable vocational usefulness, except for those who proposed to teach. Most of us chose subjects with which we were already familiar, or liked the sound of, if they were new to us. I have a suspicion that, especially to someone earning his university fees in the somewhat sordid occupation of banking, as I was when I started my degree, the lack of relevance to the modern world was part of its appeal. It was a refuge from the burden of the contemporary. Perhaps also a student of a classical language makes that choice because it is a finite and virtually completed domain of knowledge – there is at least a possibility of achieving a mastery of it in a lifetime – whereas a discipline like science is vast, expanding and changing, so that no one can achieve a competency in more than a small part of it, and there is a good chance that what one understands of it today may be drastically revised tomorrow. That the study of classical civilisation has a limit may well have had an attraction for me. Our elderly lecturer probably came close to that limit, and it seemed he was far more familiar with ancient Rome than with the contemporary world which was about to erupt in war. It also seemed to us that he did not possess a watch, since his lectures often ran half an hour over time, until at 9.30 pm a janitor knocked on the door and said that he was about to lock the Old Arts Building.

In thinking about the difference between then and now, I recall that at Melbourne University there was no subject called 'Physics'; the name of that discipline then was one with which Galileo, the founder of modern science, would have been comfortable, namely, 'Natural Philosophy'. Today all universities have large departments of psychology; in pre-war Melbourne University, psychology was one-third of a year long subject called 'Psychology, Logic and Ethics' – 'P.L.E'. to its students. Before the Second World War, there was only one professor of psychology in Australia – at the University of West Australia.

As to the other parts of my life, little needs to be said. In 1938 my father was recalled to England and after our family home was sold, the Carey boarding house became

my home. The boarders, of whom at time there were about sixty, were mostly country boys, who accommodated easily to community life. They were always treated with respect and with as much comfort as the school's resources permitted. Regimented their life may have been, and the food not always to their taste, but most formed habits of punctuality, of cleanliness and regular evening study they were probably grateful for later. Most developed loyalty to each another and to their temporary home, a loyalty which day boys often lacked. One of them confessed to me much later in life that packing up to go home at the end of term was like leaving home. For the school, having boarders meant the community did not dissolve at the end of each day; its living heart continued to exist through all the hours for the thirteen weeks of term. Much has been said and written about boarding schools, and much of it has been critical. My own opinion remains that after boys – and, I presume, girls – have reached a certain age there is much for them to gain by sharing in a complete community life, given, of course, the institution has staff of high and humane quality.

The world situation

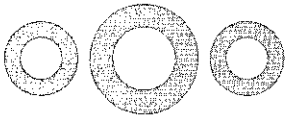
To return to the world situation, we read that Hitler had extraordinary ambitions in Europe, but that was the other side of the world, and in any case, in 1938 Neville Chamberlain had brought back from Germany a piece of paper which, he said, promised 'peace in our time'. We did not seem overly concerned that it was Czechoslovakia which had paid the price of that 'peace'. We also knew France had built the 'impregnable' Maginot Line, a chain of fortifications and heavy guns connected by underground tunnels across 320 kilometres of its frontier with Germany, which no enemy would dare to attack. (No enemy did; Germany simply outflanked it at both ends when it chose to advance on France.) But what was the relevance of all this to us in peaceful Australia?

Some of my close friends did not share my indifference to the situation that threatened Europe. Several of them

were already in part-time training for war, while I clung to a radical view common among university students in the late thirties, an intense hatred of war. For that reason alone we detested Hitler's marching legions, but we thought they must be overcome, though without sinking to their level of automatism and violence. I personally was a devoted admirer of Aldous Huxley who, in *Ends and Means*, first published in 1936, had argued aggression could be overcome by non-violent means. Huxley argued that man is unique in organising the mass murder of his own species. 'War is not a law of nature', he said, 'not even a law of human nature. It exists because men wish it to exist; and we know, as a matter of historical fact, that the intensity of that wish has varied from absolute zero to a frenzied maximum'. I found Huxley's plea for non-violence in human relations at all levels enormously compelling. 'Violence makes men worse; non-violence makes them better'. I also greatly admired Bertrand Russell, whose pacifism had put him in gaol in 1918. Along with many of my age, I applauded the celebrated resolution of the Oxford Union that Oxford students would under no circumstances fight for king and country. Moreover, I took no care to keep my convictions out of my teaching, though no student, fellow teacher or parent ever complained to me directly about the pacifist in the school.

My immediate family had no military traditions. My father did not serve in the First World War. His English firm sent him to Australia in 1913. Ironically, it recalled him to England in 1938, and he was in London all through the 1939-1945 years of bombing, and served as a volunteer air raid warden. My eldest brother, John, did join the Citizen Military Force in the late 1930s and trained for service in a medical unit. I recall that this required him to observe operations at public hospitals, presumably to harden him up for even grimmer realities if war came. Whether John's enlistment was inspired by a conviction that war was inevitable, imminent and justified, I don't remember asking; unfortunately it is too late to ask him now. When war did come he became a full-time soldier in the AIF. For me personally the broadcast to the nation by

Prime Minister Menzies on Sunday evening, the third of September, 1939, was a crucial turning point. In deeply moving tones, he broke the news that Germany had invaded Poland and that, true to its promise, Britain had declared war on the aggressor. As a consequence, he said, Australia was now formally at war with Germany. 'Where Britain stands', he said, 'there stand the people of the entire British world'. Not long before, I would have resisted the implication a declaration of war by Britain meant Australia was automatically committed to the same war, but not on that night. What had once been non-negotiable principle became easy prey to deeply disturbing emotion. It was so easy to be a patriot that night. Even before this, gradually and painfully, I was coming to acknowledge to myself that Hitler's conquest of Austria and Czechoslovakia, and the likelihood of similar treatment of small nations on Germany's west, made the prospect of success for the non-violent resistance which Huxley and Ghandi promoted, seem increasingly unlikely. Extremely significant for me was that Bertrand Russell renounced his pacifism and declared that Hitler's ambition to conquer Europe had to be resisted by force. Moreover, an affection for England, my parents' homeland, and the birthplace of many writers I admired, was deep within me. And close to me personally, my younger brother, Eric, had joined John in a field ambulance unit of the AIF. There could now be no turning back for me: early in 1940 at the age of twenty-three I enlisted in the Royal Australian Air Force Aircrew Reserve.



CHAPTER TWO

Training for aircrew

For the next few months it seemed little had changed in our peaceful existence. One heard of a few friends who had enlisted in the army, and one read that the mighty Maginot Line was holding back the German advance into France. As yet there seemed to be no panic in Australia. Many young men who wished to train as air crew enlisted as reservists but were faced with a long wait, their call-up usually delayed for as much as nine months, so limited were the facilities to cope with a huge expansion of Air Force training. In that period reservists were required to attend evening classes in mathematics, meteorology, aircraft recognition and other subjects in order, in my opinion, to keep their interest alive. By the end of 1940, 7000 reservists were receiving instruction from 1500 civilian volunteers at 400 centres throughout Australia [*Douglas Gillison, Royal Australian Air Force, 1939-1942, p.98*] By that time, rationing of petrol and some foods had been introduced, and there were severe restrictions on interstate travel, in order to reserve maximum transport capacity for military purposes.

I found the requirement I attend one class a week at Canterbury Post office for instruction in morse code tedious and boring. I never achieved a reasonable speed and after my call-up I hated this subject in the initial training program. It was obvious from the first that I would not be mustered as a wireless operator/air gunner.

Empire air training scheme: early 1940

The Empire Air Training Scheme was established early in 1940 when Australia, New Zealand and Canada

undertook to provide the complete training of air crew to help meet the needs of the RAF in Europe and the Middle East. Gillison wrote that the Empire Air Training Scheme required from Britain, Canada, Australia and New Zealand 2844 aircrew recruits *every month*, of whom it was anticipated that 2178 would complete training. Of this number it was anticipated that Australia's contribution would be a pilot output of 306 (from an intake of 432), navigator output of 186 (from an intake of 226), and that of 392 mustered as wireless operators/air gunners, 314 would graduate. Thus a heavier wastage of pilots in training was anticipated compared with other aircrew recruits. (These figures take no account of the other flying personnel – flight engineers, armourers and airframe fitters – who were vital crewmen in the aircraft in which I was to fly in squadron operations. *Their* training took place at various RAAF establishments around Australia. Most of them were ground personnel, but some joined the crews of aircraft like the Catalina, where their work has not always received the acclaim it deserved.) Potential pilots, navigators and wireless/air gunners were first given two months training at an Initial Training School in Australia. It was a kind of sorting process. Thereafter a proportion completed their training in either Canada or Rhodesia, obvious choices because in the early stages of the war it was assumed the fighting was to be in high Northern Hemisphere latitudes or in the Middle East. The first Initial Training School for aircrew was opened at Somers, on Western Port Bay in Victoria in April 1940, and thereafter separate schools for pilot, navigator and wireless/air gunner training were established in all States of Australia, mostly in small country communities which had existing air fields.

Having joined the RAAF Reserve I continued to teach through 1940 at Carey. My call-up came in November and at a farewell assembly I felt obliged to refer to my change of thinking about war. I remember repeating a sentiment which had currency at the time: it is better to die on your feet than live on your knees. I immediately regretted the silliness of that statement; I had no intention of dying if I could possibly avoid it.

I was amongst one hundred men who formed the intake known as Eleven Course – clerks, farmers, salesmen, teachers, public servants, students with unfinished degrees; some of us had mechanical expertise, most of us had none, but all of us were keen for the experience of flying, and, I presume, all imbued with a certain sense of patriotic fervour. My Air Force number was 401465, which indicated I was the 465th air crew recruit from Victoria. The two month course at No.1 Initial Training School, Somers, was designed to condition us to service life, teach us to obey sometimes unreasonable orders and to salute officers whenever they came within sight. Drill sergeants did their best to make us feel we were the lowest form of life, though we felt otherwise when we went on leave proudly displaying the white flash on the forage cap which indicated the wearer was an aircrew trainee. It was from some drill sergeants that many of us learned new expletives and new obscenities. They had acquired a reputation for roughness and crudity, and most of them did their best to live up to it.

No. 1 Initial Training School: Somers

There was no flying at Somers – not an aircraft in sight, though in classrooms there were plenty of silhouettes of aircraft, both enemy and friendly, whose recognition was supposed to become instant and accurate in our memories. Apart from the parade ground and the rifle range, the classroom was the arena of instruction. One of the subjects in the course was armaments. This held little interest for me. It was noticeable that the gun enthusiasts sat in the front row so that they could handle the one available Browning gun and the one Vickers, pull them apart and reassemble them. A few of us, who had no such interest, sat nearer the back and learned by heart from the manual how to clear a number one stoppage. Meteorology, however, attracted me a great deal, and that interest has lasted a lifetime.

So passed my first two months in the RAAF. I had not found the transition from civilian life at all traumatic. Even the food was bearable, at least to someone who, up to the time of enlistment, had lived in a boarding school. Every second weekend we were given leave, though I lost that

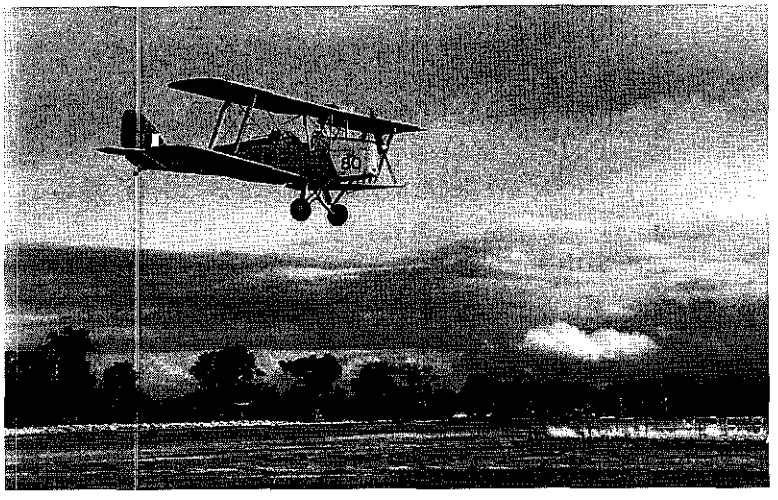
privilege on one occasion because, with others, (including one who many years later became a Minister in the Fraser Federal Government), I was late returning from a short leave in Frankston. The appeal of one of the town's hotels caused us to overlook the passage of time. For me, being a Leading Aircraftsman Class Two, the very bottom of the pecking order, was a change from a life of exercising a certain control over students to a life where the relationship was reversed. It was also a life in which we took no thought for the morrow, since others would decide what we would do tomorrow. We did not even have to choose what we would wear, because everything we wore had been issued to us, and the same was worn by everyone else. We slept in dormitory huts, on hessian sacks we had filled with straw ourselves, but so did everyone else. There was no privacy in the toilets and ablution huts, but whatever scruples one had on that score vanished within days. Even parade ground drill came to seem worth doing well, when a hundred men shed their individuality and gained a state of corporate unity, such as I imagine members of a corps de ballet must experience. Above all, sharing this confined, very focused life with a wide variety of young men from many different backgrounds, and finding interesting qualities in most of them, was a useful experience, especially for a teacher whose life, of necessity, is somewhat sheltered from the world outside school. Our reward? – five shillings per day *and the prospect of flying.*

Pay for trainee pilot: five shillings per day.

At the end of the course I was among the third of the group mustered for pilot training and was posted to No. 3 Elementary Flying Training School, Western Junction, Launceston. I was to learn to fly a Tiger Moth, that sturdy little biplane on which all Air Force pilots did their first fifty hours of flying. From the start my instructor left me in no doubt that teaching others to fly was not what he had chosen to do in the RAAF. It seemed to be his policy to scare the daylights out of the pupil on his first flight by demonstrating the complete aerobatic capacity of that little plane, including stall turns, a barrel roll, inverted flying and a loop the loop. Having shown that none of these gut-wrenching manoeuvres ripped the wings off the

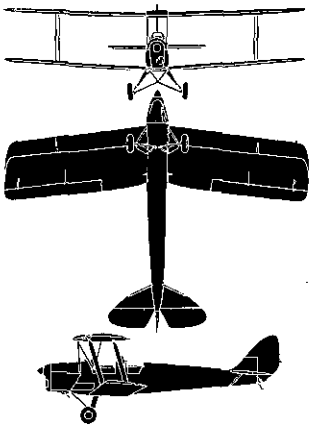
plane, he settled down in subsequent flying sessions to teach his pupil to fly straight and level and to execute three-point landings. The Tiger Moth had two separate cockpits, one behind the other and both open to the slipstream, with the instructor in the front one.

Communication between instructor and pupil was by means of microphone and headphones attached to the



The Tiger Moth was the sturdy little biplane on which all pilots in the Empire Air Training Scheme first learned to fly at one of several Elementary Flying Training Schools. Most went solo after about eight hours of dual instruction. At the end of two months, during which they logged fifty hours of flying, they were assigned to further training either on single-engined Wirraways or on twin-engined Ansons or Oxfords, at separate Service Flying Training Schools in various parts of the country. The former became fighter pilots, the latter bomber pilots.
Photograph kindly supplied by Kevin Hanrahan.

flying helmet. After an average of about eight hours of dual instruction there came the day when, after a session of 'circuits and bumps', the pupil saw his instructor climb out of the front cockpit and wave that it was time for the pupil to do it on his own. It was a moment of mixed feelings for the learner – relief that for the next circuit no one was going to castigate him for mistakes; on the other hand, fear that he might not be able to get the plane safely back on the ground. To my great disappointment, my pilot training was subsequently terminated when I failed a flying test along with a number of others. Had Air Board got wrong its prediction of the numbers likely to be required in the three categories of air crew – wireless/air gunner, navigator and pilot – and decided to transfer some partly trained pilots, no doubt the more marginal prospects, to one of the other categories? We consoled ourselves with that thought. I was remustered as a navigator trainee and posted to Thirteen Course at Cootamundra, NSW. Disappointed at first, I subsequently did not regret the change when I discovered



that navigation posed a more intellectual challenge than the tasks of other crew members, although I also discovered the rate of promotion was slower than for pilots, and in comparison with pilots, Distinguished Flying Crosses were a rarity.

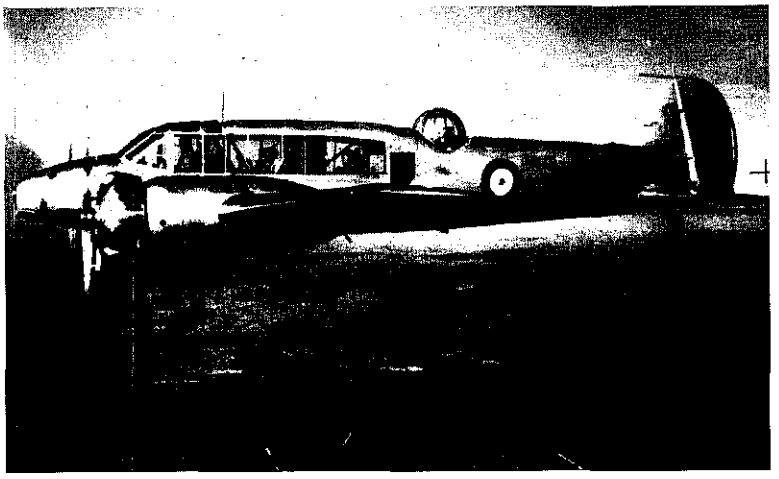
Cootamundra Air Navigation School

Cootamundra was a good choice as a navigation school. It possessed a suitable aerodrome, a short walking distance from the centre of town. It was on the Melbourne to Sydney railway line, and was situated on the eastern edge of the extensive Riverina plains, whose farms might afford emergency landing opportunities if the need should arise. By early 1941 this prosperous town was alive with men – and some women – in Air Force uniforms, and homes and churches, clubs and pubs – especially pubs – made the visitors welcome.

Cootamundra Air Navigation School was where trainees learned the fundamentals of what is called navigation by dead reckoning, that is, navigation with what can be done within the aircraft, and from map reading where that is possible, without assistance from external aids such as radio beacons. If the air is still, the track of an aircraft in relation to the ground is the same as its heading by magnetic compass (calculated after allowance for two complicating factors which I do not go into here, namely the known variation in the earth's magnetic field from place to place, and secondly the idiosyncrasy of each individual aircraft caused by magnetic properties of its construction, known as deviation). But the air is rarely still, and an accurate assessment of wind speed and direction at the chosen flying altitude is essential if the aircraft is to maintain a required track. If, for example, this is to be due north (360 degrees to the initiated), and there is a wind of 40 knots from due west (270 degrees), then unless there has been compensation for that wind, an aircraft whose speed in relation to still air is 150 knots will, after one hour, be 40 nautical miles east of its hoped-for destination, and its track over the ground will be in error by 15 degrees.

1 Nautical mile = 1.15 statute miles
= 1.85 kilometres

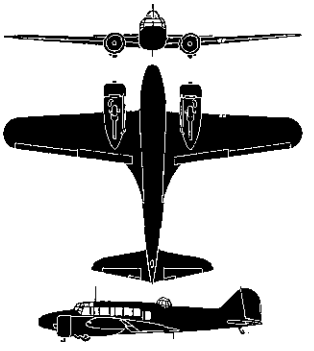
1 knot is a unit of speed = 1 nautical mile per hour
The nautical mile is the obvious choice for measurement of distance on the surface of the earth because it is one-sixtieth of the distance between two consecutive parallels of *latitude* measured anywhere on the earth along a meridian of longitude. No such convenience applies to the distance between consecutive meridans of longitude, which is sixty nautical miles at the equator and diminishes to zero at the poles.



Arvo Ansons, built in England by A.V. Roe, were used by the RAAF for the second stage of training of pilots destined to graduate to twin-engined aircraft in bomber and reconnaissance squadrons, and for the training of navigators. In early 1942 the Anson was also used for anti-submarine patrols of the coast of Australia, as mentioned in the text. To meet the needs of the Empire Air Training Scheme, Australia's estimated requirement in early 1942 was 591 Anson airframes and 1576 engines (Gillison, p.86).

The Anson had a maximum speed of 290 kph at an altitude of 2100 metres, and a service ceiling of 5500 metres. It had a great reputation for reliability and its sturdiness was amply demonstrated when two Ansons from No 2 Service Flying Training School, Wagga, New South Wales, collided in mid air and became locked together, one above the other. The trainee pilot of the aircraft on top successfully landed the two aircraft in a paddock, using the ailerons and flaps of his plane, with one engine of the lower one still operating.

The photograph clearly shows the dome through which the trainee navigator used his sextant. *Photograph by courtesy of the RAAF Museum, Point Cook.*



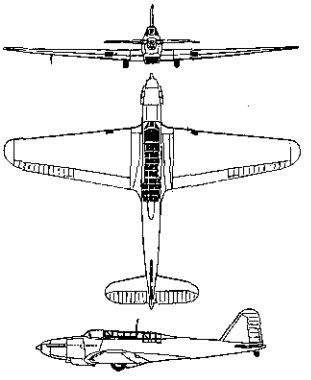
Anticipated wind speed and direction is provided by the meteorologist at the point of departure, but no guarantee can be given that the forecast will be accurate over the course of any long flight. Thus it is essential that the navigator must be able to determine wind velocity while in flight. This is done by measuring the aircraft's *drift* (the difference between the aircraft's heading and its track over the ground) in three different directions, a task which took about ten minutes and required the cooperation of the pilot who needed to fly straight and level on each of the three headings. Most of the pilots at Cootamundra were young sergeants recently graduated and longing for a posting to war operations, and almost all the aircraft were Avro Ansons, 590 of which were ordered by Australia in 1940 (Gillison, p.86) for the training of both pilots and navigators. For that purpose they were superb, although slow, but without any unpleasant characteristics, apart from the fact that the retractable undercarriage had to be raised and lowered by very many turns of a handle beside the second pilot's seat. It was hard work, and with no second pilot, the task was usually given to an idle navigator trainee immediately after take-off. Estimates of the number of turns varied widely – up to 500!

At Cootamundra we passed three pleasant winter months, with a lot of flying. There was frost on the ground every morning, but sunshine streamed through the Anson's spacious windows at 6000 feet, at which height most of the

flying was wonderfully free of turbulence. Who could fail to love flying on one of those afternoons in winter when a high pressure blanketed the sun-drenched earth and caused the wind to die away to nothing? While the engines hummed happily to themselves, a lovely part of the world was spread out below and we seemed to hang motionless above it. But not quite motionless, since little by little what was below us was changing; fields and farmhouses passed very slowly under us, as did occasional wooded hills and the course of some meandering waterway. And every now and then two roads would intersect, and there a tiny cluster of houses had been built. Whatever did the people who dwelt there do for a living? If I looked up, an occasional fluffy cumulus cloud passed close by, momentarily causing the Anson to shudder a little, only to resume its smooth progress towards the west, where the sun would soon set. It seemed so unlikely that ours was a nation at war, or that some of us on the course would certainly not survive it. My companions were agreeable men, and as with all Air Force groups, they came from widely scattered parts of the country, some from as far away as Queensland, which to us southerners was remote indeed. We noticed some verbal idiosyncrasies. No Queenslander ever called a suitcase a 'suitcase'; it was always a 'port'! Did we think of death as a possible consequence of what we had committed ourselves to? The possibility certainly did not seem to drive my colleagues to embrace the consolations of religion, and in my experience chaplains did not play a significant role in the life of either training establishments or combat squadrons as they apparently did in the army. An exception occurred when some airman had to be buried after a flying accident in training; but mostly, if death was mentioned at all by any of us, it was in light-hearted language. The very expressions used – 'buying it', 'they bought it' – was probably an unconscious device to conceal the reality. Someone else might *buy* it, but not us. The term cries out for an explanation, but I am at a loss even to guess at its origin.

As a city dweller, I found the country around Cootamundra possessed great charm and tranquility. Whenever classes or flying were cancelled for any reason,

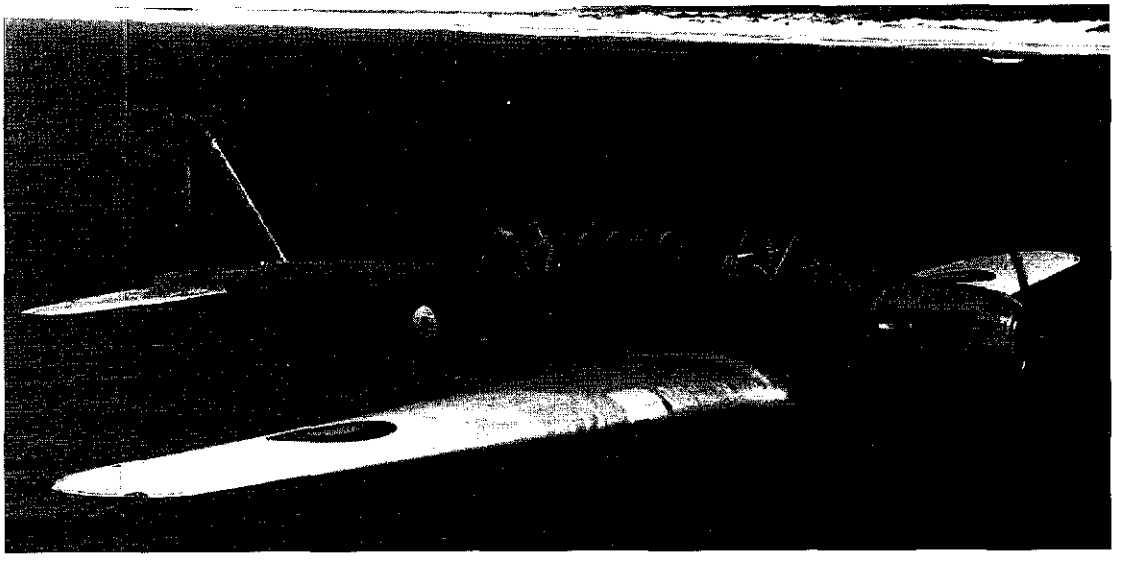
I liked to walk long distances along the road to legendary Gundagai, with a friend who later lost his life in Bomber Command over Europe. We shared similar interests, discovered one day when I revealed to him that I carried in my kit these slender volumes: Bertrand Russell's *Religion and Science* and the same author's *Problems of Philosophy*, Clive Bell's *Civilization* and Bernard Shaw's *The Intelligent Woman's Guide to Socialism, Capitalism and Fascism*, both the latter being among the first publications of Penguin at a price of six pence. All these books survived the war and I have them today.



A Fairey Battle, low-winged monoplane, used by the RAAF for bombing and gunnery training at Evans Head, New South Wales, and Port Pirie, South Australia. This aircraft had a maximum speed of 410 kph at an altitude of 4600 metres. In early 1942, Air Board estimated Australia's requirement for the plane to be 336 airframes and 448 engines (*Gillison, p.86*). It is interesting that pilots complained that the Fairey Battle was "too easy to fly".
Photograph by courtesy of the RAAF Museum, Point Cook.

Bombing and gunnery training

The next step was a month of bombing and gunnery training at No. 1 B.A.G.S. at Evans Head on the north coast of New South Wales, flying in Fairey Battle aircraft. These were vastly different machines from the gentle Ansons, with a crew of pilot and trainee gunner only, faster, noisier and heavier, with maximum exposure to the slipstream for the gunner. The Fairey Battle was a low winged monoplane, extremely robust and described by pilots as 'too easy to fly', which meant they did not present much of a challenge. They had been used by the RAF in



the early stages of the war in Europe as a light bomber, with a range of 1000 miles. It was a Fairey Battle which claimed the first German aircraft of the war, shot down on September the 30th, 1939, but the type was withdrawn from operations in 1940 and a number of these A-22's were shipped to Canada and Australia for training purposes. The gunner's cockpit was six feet behind the pilot. It featured a tilting hood which was intended to give the gunner shelter from the slipstream. Unfortunately, it only did half the job, for although it successfully screened the gunner's back from the slip-stream, it did not prevent the backdraught from curling in and slapping him full in the face.

Gunnery exercises consisted of flying beside, but slightly behind another aircraft towing a drogue – like a long white banner – which the trainee gunner aimed to hit with as many of his 200 rounds as possible on each exercise. The instructional staff counted the number of holes in the drogue after landing. At this distance in time I do not know whether the numbers recorded in my log book as 'vector errors' were good scores or not, but I certainly hope the two entries marked 'No score' meant the exercise was called off for some reason. I disliked gunnery. At least I did not shoot down the towing aircraft!

Bombing I found more interesting. We bombed with ten pound practice bombs from 10000 feet. The bombs were painted white and the aimer could follow each one all the way down to its explosion on the range. Ground staff plotted the position of each strike and one's accuracy, or otherwise, was duly recorded in the navigator's log book. This was good fun. What I did not know then was how important a skill it would prove to be later.

Fifty years later I visited Evans Head with my wife and discovered how impermanent had been the memory of the wartime bombing and gunnery school in that pleasant coastal town. Not even at the large and prosperous Returned Servicemen's Club did we find a picture of a Fairey Battle, or anyone who had even heard of the thousands of rounds of ammunition which had been fired near the town, or of the great number of practice bombs which had burst on its bombing range.

December 1941: astronomical navigation—Parkes, NSW

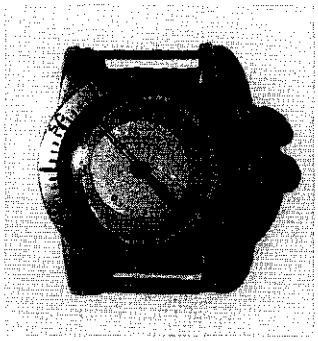
Probably I would find the same collective amnesia if I visited Parkes, in central western New South Wales, which for four years hosted No. 1 Air Navigation School. Here during the last months of 1941 we learned how to find our way in the air by the stars.

Astronomical navigation is something which sailors have used for several centuries. The first step is to measure the altitude of the chosen celestial object above the horizontal, and at sea this means above the sea horizon. To make this clearer, the reader should imagine that above the navigator is a hemisphere on which the stars are fixed, and the boundary of the half sphere is the sea horizon, a circle at the centre of which the navigator is situated. Then the altitude of a heavenly object is the *angle* between the horizon and the object, *measured at right angles to the horizon*. However, this measurement is only possible when both the celestial object and the sea horizon are seen simultaneously. Thus it is easy for the mariner to determine his *latitude* by measuring the altitude of the sun at noon, but knowing latitude alone does not determine precise position. For this to be known, at least two position lines intersecting one another are necessary, and these may be obtained from a star, or the moon, if either is visible at the same time as the sea horizon. This means that the sailor's opportunities for fixing position other than latitude by astronomical means is somewhat limited.

For astronomical navigation in an aircraft a hand-held bubble sextant became the means of measuring the altitude of an identified stellar object – moon, planets, stars. Norrie's tables provided a choice of twenty-one stars other than planets. Many of these the navigator learned to identify, though in practice he had his favourites, and some were not visible in his part of the world. The chosen star, or other stellar object, was sighted through the eyepiece while the bubble was kept centred in the bubble chamber. An altitude reading was thereby obtained. The Greenwich Mean Time of the reading had to be recorded exactly, for an error of four seconds meant an error of one nautical mile

For a more detailed explanation of Astronomical Navigation, see Appendix page 115

in the position line. Knowing the altitude and the exact time, by means of two sets of tables (Norrie's tables and the current air almanac) the navigator calculated a position line and laid it off on his chart. Three such observations on three well-spaced stars gave him three different position lines. Ideally the three lines intersected at a point; in practice they usually provided a 'cocked hat', the smaller the better because the aircraft's position was somewhere inside the cocked hat. The process required some manual dexterity and considerable calculational skill, and was of no value unless it could be done quickly. Turbulence made the task much more difficult. Each navigator was issued with an accurate Longines chronometer which most navigators kept set on Greenwich Mean Time to save having to make any adjustment, and which they regularly checked from radio time signals.(In case the reader is curious to know why the versatility of the bubble sextant is not available to the sailor, the answer is that the platform from which a star altitude is measured by a bubble sextant must be fairly stable – attracting a minimum of what are known as turning and acceleration effects – and this is provided in smooth flight, but only rarely on board a ship. Be it noted also that the conceptual framework for astronomical navigation is no more advanced than that of Ptolemy – second century AD – but it works.)



This is a lifesize photograph of the Longines chronometer. It was *issued* to a navigator, not *given* to him, but no one asked me to return mine on discharge. What they didn't ask for they didn't get, and it still keeps good time more than fifty years later.

The month at Parkes was spent learning this skill, first on the ground, then on cross country flights at night in Anson aircraft. It was a skill which later I was glad to have on very long flights, much of the time over featureless sea at night, with only the stars to guide.

With the end of this course came graduation, following an interview with a very pleasant RAF Group Captain. It was my first heart to heart talk with a very senior officer, who reflected not only on my performance at various stages of training, but obviously seemed interested in me as a person, and in my attitude towards the war. I said to him I regarded it as a weakness of the training course that there was no deliberate attempt to discuss why we were at war, or what sort of world we hoped might result from winning it. What influence this interview had on my appointment as a

commissioned officer I can only guess. About twenty per cent of the course were commissioned as Pilot Officers, and the rest became sergeants. Some readers may be confused about Air Force ranks. The lowest commissioned rank was 'Pilot Officer', conferred equally on accounting officers, equipment officers, engineering officers, intelligence officers, meteorologists, navigators, wireless operator/air gunners and others, as well as pilots. This meant, of course, that only a small percentage of 'Pilot Officers' were actually pilots. The rank corresponded to the Army's Second Lieutenant. The next Air Force rank was 'Flying Officer', corresponding to the Army's First Lieutenant, and the third rank was 'Flight Lieutenant', corresponding to the Army's Captain.

Air Force ranks

Thus at the end of nine months of noncompetitive comradeship, the appointment of some of us to commissioned rank, while the rest became sergeants, had introduced an element of class distinction rarely noticed in the collection of men who made up the crew of an aircraft in operations, in which the captain might be a squadron leader and the rest of the crew non-commissioned. By contrast in the operational squadrons in which I was to serve, it was not uncommon for a sergeant to be the captain of the crew by virtue of his being the first pilot, while the navigator was a commissioned officer. Confusing? Yes, but it worked. At the end of my course, this symbolic separation by rank, of people who for many months had developed close friendships, revived in me thoughts I had as a teacher about the nature of leadership, and the justification of awarding prizes to those already rewarded by being gifted.

Appointments

A few weeks later, while in a Sydney street, in my brand new officer's uniform, a pair of 'other ranks' drew a salute from me by simply scratching their right ears!

Graduation also meant separation of newly acquired friends, since sentiment played no part in one's posting, only the strategic needs of the Air Force at the time. Our dispersal as a group coincided with the bombing of Pearl Harbor on the seventh of December, 1941, and the outbreak of war with Japan. After I was given final leave, I waited a short time in Bradfield Park Embarkation Depot.

Posting to England

First came a posting to England on the first available ship, which happened to be the *Queen Mary*, This was exciting, and we certainly did not think of it as the death sentence which it subsequently became for very many air crew in Bomber Command over Europe. Then two days later the order was cancelled and I was posted to No. 67 Squadron, hastily assembled at Amberley to patrol the south Queensland coastline in Avro Anson aircraft, looking for Japanese submarines. In the weeks between Christmas Day, 1941, and the third of March, 1942, my crew carried out twenty-one sweeps to sea, armed with depth charges.

Posting cancelled

Coastal patrols to combat Japanese submarine activity

A considerable number of Japanese submarines operated along the east coast of Australia from the time of Pearl Harbor and onwards through 1943, but during my brief attachment to 67 Squadron their attacks on Australian and American shipping were further south than the area we patrolled. In two years a total of thirty-five ships were attacked, nineteen sunk and 467 lives lost on the coast between Brisbane and Gabo Island, a statistic that seems to have escaped much attention, although the unsuccessful attack by midget submarines in Sydney Harbour is well known. (I am indebted to *The Secret Battle* by Robert Wallace for these statistics.)

CHAPTER THREE

First tour of operations in Catalinas

On the fourth of March 1942 a signal arrived urgently posting me to No. 20 Squadron based at Port Moresby. Knowing nothing about the aircraft which was to play a major part in my life for the next twelve months, and nothing of the part which the two Catalina squadrons, 11 and 20, had so far played in shadowing the advance of the Japanese fleet to the northern shores of New Guinea, a small group of us, meeting for the first time, made our way by train from Brisbane to Townsville. No praise would be too high for that railway line and those who operated it through the dark days of 1942 and 1943. On the narrow gauge of three feet six inches, with ancient rolling stock and elderly steam locomotives, through day and night the trains carried thousands of military personnel and a huge tonnage of war equipment 1007 miles from Brisbane to Cairns with few, if any, mishaps. Although the journey took a long time and there were sometimes long stops because traffic in both directions had to be scheduled on the single track. In addition to the overworked train crews and the men who maintained the ageing rolling stock and locomotives, the other unsung heroes were the hundreds of volunteer women who served in the canteens at each of the major stops.

By train from Brisbane to Townsville

In Townsville we boarded an elderly Australian coastal steamer which was seeing out its last days as a troop ship. I don't remember much of that short voyage, and what I do remember seems trivial. In the ship's crew was an AIF. doctor, one of whose duties was to give a lecture on tropical

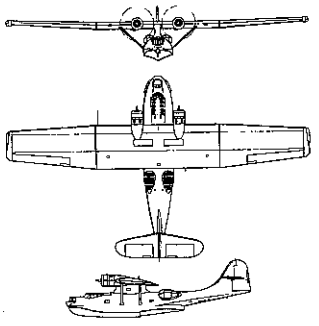
hygiene to all troops on board. Of all he said I recall only one remark – his warning to us not to get carried away by the sight of bare breasts. 'They come in all sizes', he said, 'from lemons to razor strops'. Surely he must have said more important things, like warning us that failure to take our daily dose of the anti-malarial drug Atebrin could lead to a charge of attempting self-inflicted injury. There is no trace of this in my memory of that lecture, and yet I clearly recall the bare breasts.

Within hours of arrival in Port Moresby I knew what it was like to crouch in a slit trench during a raid by Japanese bombers, while the SS *Canberra* which had brought us there performed amazing manouvres in the harbour to avoid the bombs. Port Moresby was under almost daily air attack, with barracks and shipping the chief targets. Anti-aircraft defences were active but too few in number, and there were neither Australian nor American fighter squadrons to offer resistance. The town had suffered considerable damage and its inhabitants, both permanent and visiting, wore a dispirited air. Looting had become a way of life for some, including a chaplain who freely talked to me about the number of volumes he had 'acquired' from the library of the local Anglican priest after the latter had been evacuated to Australia. A day after my arrival I was ordered by my commanding officer to supervise the unloading from a newly arrived freighter of a consignment of beer for the officers' mess. Pilfering of such precious cargo had recently occurred at the wharf. As I went on board the ship a wave of Zeros attacked the town and harbour. The ship, whose engines apparently never stopped during any stay in Port Moresby, was immediately steered into open water and its captain carried out astonishing twists and turns, while a sailor with a small gun at the stern made unsuccessful attempts to hit the low flying enemy. With other visitors who had come aboard for their own purposes I lay prone on the deck while bombs and cannon fire were directed at us. Miraculously we were not hit, but the noise was terrifying. After about fifteen minutes the attack was over and relative calm returned. As soon as the Zeros disappeared, natives from around the shore put to

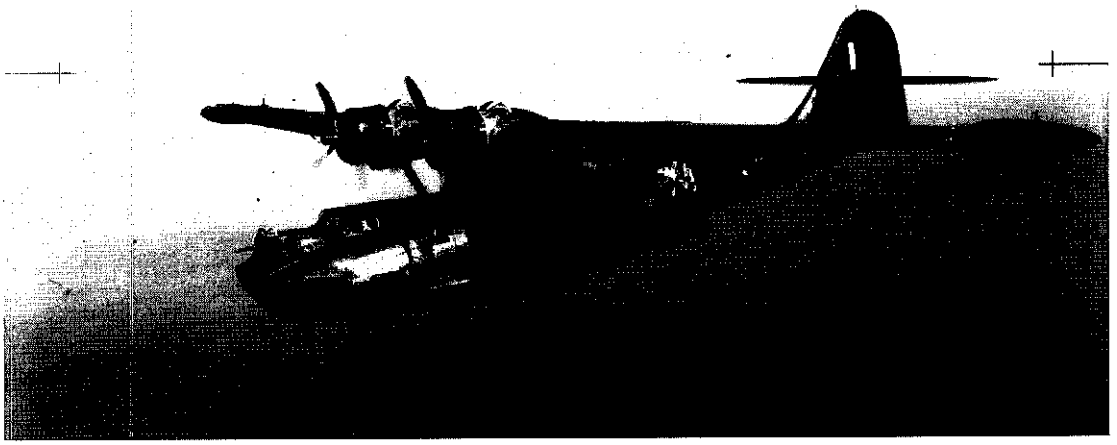
sea in their canoes to collect the harvest of fish floating on the surface, either killed or stunned by the bombs which had burst near them.

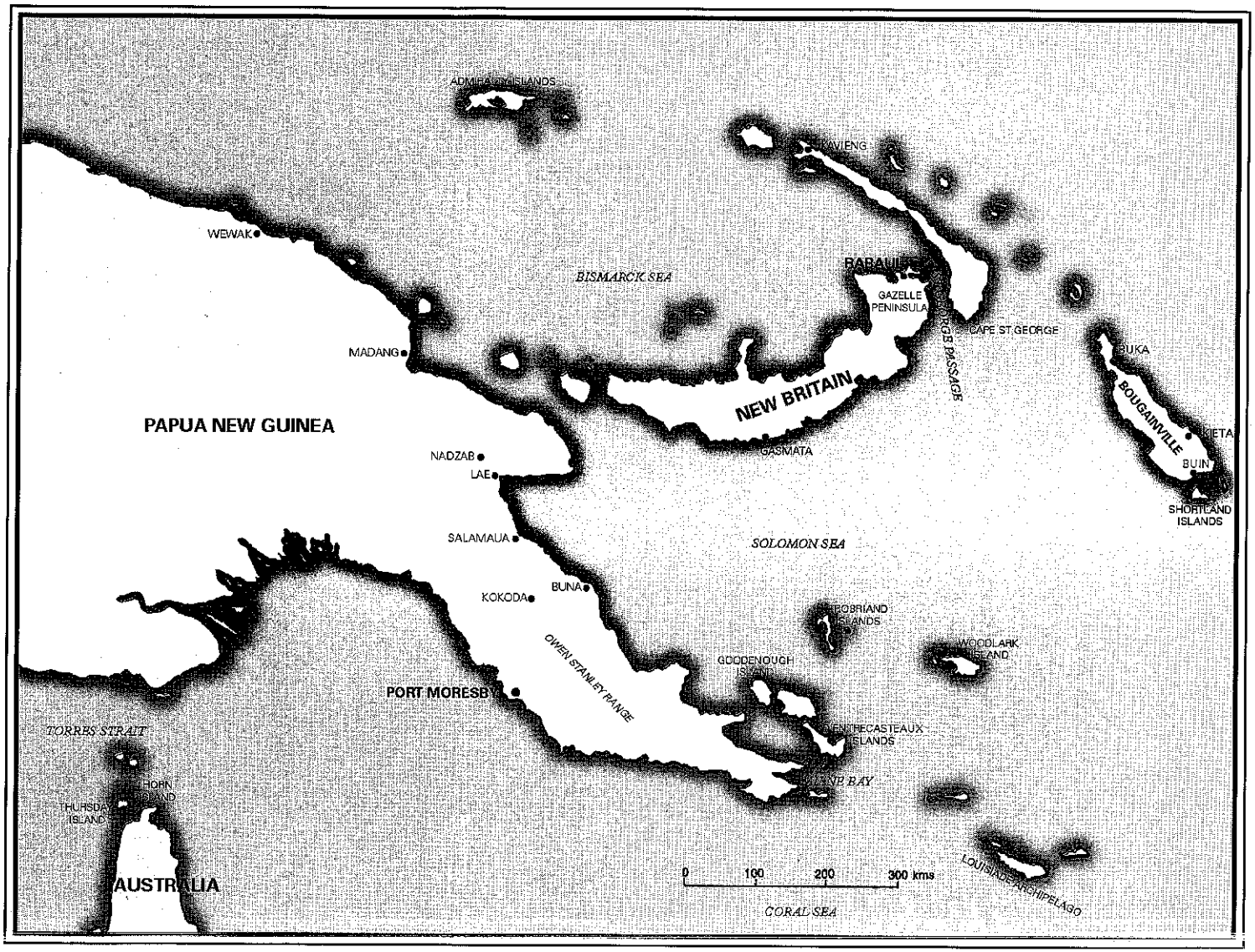
RAAF acquires Catalinas

At this point it is appropriate that I give some history of the introduction of Catalina flying boats into the RAAF. Given Australia's geographical situation, in the event of an attack by any enemy from the north, a long-range patrol bomber was recognised as a strategic necessity well before the outbreak of war. Any long-range land-based aircraft would require airfields scattered amongst the islands, and these did not exist, nor was such a land-based aircraft available for purchase anywhere at the end of the 1930's. However, there was a flying boat with an immense range, the PBY built by the Consolidated Aircraft Corporation at San Diego, California, and first flown in 1935. Two hundred PBY-5's had been ordered by the RAF in 1939. In fact, it was the RAF which had given the aircraft the name 'Catalina'. This aircraft could alight in almost any sheltered harbour where a marine section with refuelling capacity could be established. With foresight the Commonwealth Government in June 1940 placed an order for the first



Consolidated PBY–5 Catalina
Photograph by Gordon DeLisle via David Vincent.




ADMIRALTY ISLANDS
KAVIENG
WEWAK
BISMARCK SEA
RABAUL
GAZELLE PENINSULA
CAPE ST GEORGE
DAMPIER STRAIT
BUKA
MADANG
NEW BRITAIN
BOUGAINVILLE
PAPUA NEW GUINEA
ARAWA
BUIN
NADZAB
LAE
GASMATA
SHORTLAND ISLANDS
SALAMAUA
SOLOMON SEA
BUNA
KOKODA
TROBRIAND ISLANDS
WOODLARK ISLAND
OWEN STANLEY RANGE
GOODENOUGH ISLAND
PORT MORESBY
TORRES STRAIT
ENTRECASTEAUX ISLANDS
MILNE BAY
THURSDAY ISLAND
0 100 200 300 kms
LOUISIADE ARCHIPELAGO
AUSTRALIA
CORAL SEA

seven PBY-5 Catalina patrol bombers. It had been designed to have a range of 3000 miles at a cruising speed of 100 miles per hour, and a maximum speed at 7500 feet of 196 miles per hour. It had a length of 64 feet, a wing span of 104 feet, two Pratt and Whitney engines rated at 1200 horse power at take-off, and fuel tank capacity of 1460 imperial gallons. It could carry a bomb load of 4000 pounds. It had four guns and initially these could each fire 1000 rounds of .303 inch ammunition.

The first one, bearing civilian registration because America, not yet at war, preferred not to be seen as supplying military equipment to Australia, was subsequently given RAAF identification as A24-1, arrived at Rose Bay, Sydney, on 2nd February, 1941, with the famed colleague of Kingsford Smith, P.G. (Percy) Taylor as navigator. It was only the third aircraft flight across the Pacific in history. Like other early deliveries, the aircraft had been flown to Honolulu by a Consolidated crew, and from there by a Qantas crew to Sydney. (Later, all of the many delivery flights from San Diego to our new flying boat Operational Training Unit at Rathmines, on Lake Macquarie north of Sydney, were flown by RAAF crews seconded for the purpose from their operational duties.)

The first seven Catalinas formed the nucleus of Squadrons 11 and 20 and were given the task of patrolling the northern approaches to Australia. To make this possible, advanced operational bases with marine sections and refuelling capacity for flying boats were set up at Port Moresby, Manus Island, Kavieng in New Ireland, Rabaul in New Britain, Samarai at New Guinea's eastern tip, Tulagi in the Solomons, Vila in the New Hebrides and as far south as Noumea in New Caledonia. Apart from the Catalinas, the only protection against an enemy attack from the north was provided by a squadron of Lockheed Hudsons at Port Moresby, and at Rabaul a squadron of Wirraway fighters, an aircraft which even then was regarded as a training plane.

By the time we who were new navigators joined Catalina crews, the war against Japan had been in progress for three

One reason why civilian motorists were severely rationed for petrol was that a Catalina required 1460 gallons of fuel for just one mission – the equivalent of 33 of these 44 gallon drums.

1460 gallons = 6640 litres

months, and we soon heard what the squadrons had been doing in that time. The two Catalina squadrons had been the first Australian fighting units to be engaged with the enemy. Six Catalinas based at Port Moresby had flown to Truk in the Caroline Islands on sixteenth January 1942 to attack a concentration of Japanese shipping. The target was over 1000 nautical miles north of Port Moresby and required that the aircraft be refuelled at Kavieng, not yet in enemy hands. Unfortunately, shocking weather, with visibility down to half a mile, rendered the attack a failure. But Catalina crews had also made a number of successful attacks on Rabaul after the Japanese occupied the town in mid January, and Catalina crews had carried out many missions to rescue civilians only just ahead of the enemy advance.

What did little to cheer us was to hear that three crews had already been lost in these operations. One had crashed soon after taking off from a refuelling stop at Kavieng, with all crew lost. The other two had sent signals to say they were on fire after attack by enemy fighters. We learned much later that most of the crew captained by Flight Lieutenant Paul Metzler, who incidentally had been one of my instructors at Cootamundra, had escaped from the crash of their aircraft and spent the rest of the war in prison camps in Japan. They were fortunate to have been captured by a unit of the Japanese army whose commander recognised international conventions regarding prisoners of war.

March 1942

The strategic situation in March 1942 was as follows: Singapore had fallen on the fifteenth of February, and a large force of British and Australian troops – Australia's Eighth Division – had been taken prisoner. It was one of the most bitter and humiliating defeats ever suffered by forces of the British Commonwealth, just one week after HMS *Repulse* and HMS *Prince of Wales*, pride of the Royal Navy, had been sunk off the coast of Malaya. Even before Singapore fell, the Japanese had moved a strong task force of warships and troop carriers eastwards, apparently to cut off

American aid to Australia, and it was probable they planned an attack on mainland Australia itself. Before the fall of Singapore, on the fifteenth of February, 1942, Japanese bombers and Zero fighters, the latter operating from a newly occupied base at Koepang in Timor or perhaps from aircraft carriers, in two waves a short time apart, had made their first surprise and devastating attack on Darwin, only days after evacuation of women and children from the threatened outpost. The raids resulted in massive damage to property and the loss of eight American and Australian ships in the harbour, as well as many aircraft on the ground. About 250 personnel, civilian and military, lost their lives, while the enemy sustained only minimal loss of aircraft. This was the first of sixty-six raids on Darwin. Later, on the third of March, Japanese Zeros had attacked Broome harbour and destroyed sixteen unprotected flying boats of various sorts and nationalities, which had transported refugees, mostly women and children evacuated from threatened parts of the Netherland East Indies. Not long afterwards the Australian General Staff accepted as inevitable the conclusion that Northern Queensland and the Darwin area would be overrun by the Japanese and accordingly had drawn up a plan to establish a defence line approximating to the Tropic of Capricorn (*Gillison p.573*), a decision which has gone down in the history books as the 'Brisbane Line'.

On the seventeenth of March General Douglas MacArthur, by order of President Roosevelt, had arrived in Darwin after a daring escape in a patrol boat shortly before American forces were forced to surrender the Philippines at Corregidor. He had, soon after, been appointed by the President as Supreme Commander, Allied Forces, South West Pacific Area, with the ready concurrence of Australia's Prime Minister, John Curtin. In Australia General MacArthur proposed to establish a springboard from which he vowed he would retake the Philippines.

General Douglas Macarthur arrives in Darwin: 17-3-42

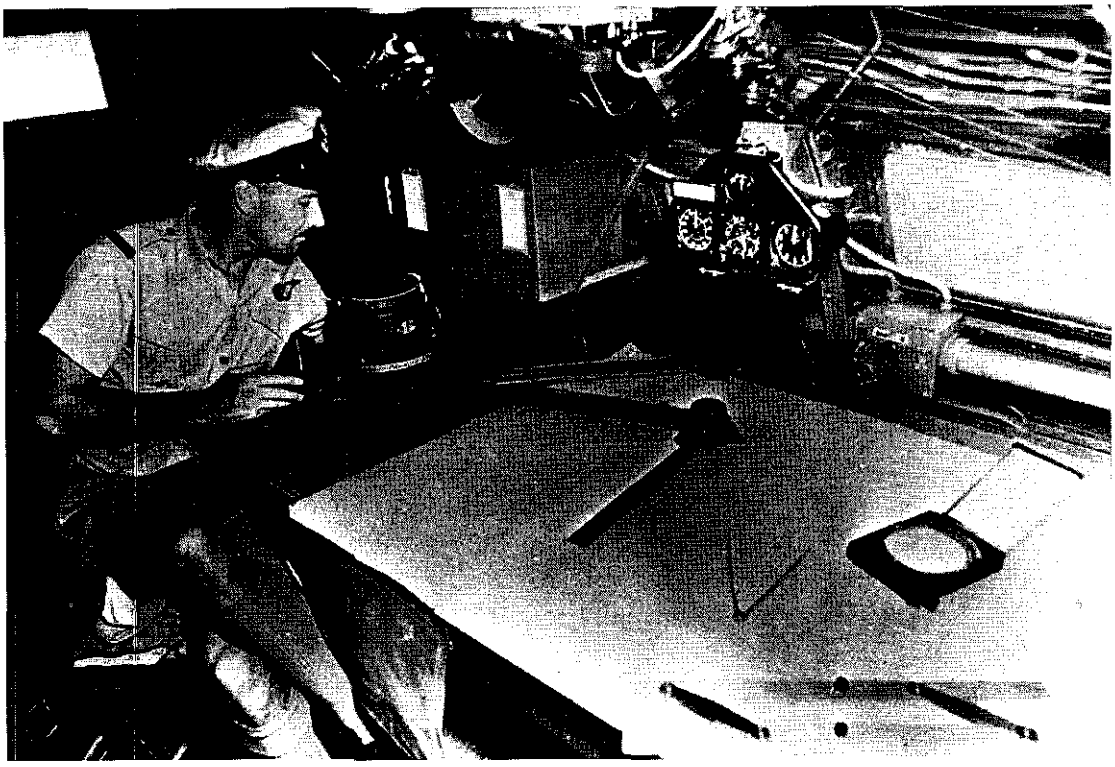
In Port Moresby we knew nothing of a plan to surrender Northern Australia temporarily to the enemy, and possibly few residents of North Queensland even guessed at the possibility. What we *did* know was that the Japanese navy and army were capturing bases in a relentless drive south-

eastwards, and that almost daily raids by Zeros were making life uncomfortable in Port Moresby. Rabaul, at the northern end of New Britain, our strongest base, fell to the invaders on the twenty second of January – thirty-seven days *before* the fall of Singapore be it noted – and it was possible that the next Japanese move would be southwards to Milne Bay, at the eastern end of Papua New Guinea, whose capture would threaten Port Moresby itself, then eastwards through the Solomon Islands, from which they could threaten the supply of American men and military equipment en route to Australia. In quick succession, the Japanese captured weak Australian positions on the north coast of New Guinea – Wewak, Lae and Salamaua, the last two both falling to the invader on the same day, the eighth of March.

Disappointed at first not to have been posted to the European theatre of war, by early 1942 it was obvious that *our* war was very real. The speed of the Japanese advance was extraordinarily rapid, and as a result there was a strong possibility we could soon be required to fight off an invasion of Australian soil itself. We were painfully conscious of how feeble our resources were in comparision to the Japanese in naval and air power.

Our small group of navigators were reinforcements for Catalina crews. Up to this stage navigation had been performed by pilots, of whom there were often three in a crew, one of whom had been trained in navigation. We were to do something which subsequent navigators did not have to do – take over a demanding task in an unfamiliar aircraft without the benefit of a conversion course at an Operational Training Unit, and to do it on missions which usually encountered enemy opposition.

Some of the things we soon found out were that many of our flights would be of more than sixteen hours duration, that we would often fly many hundreds of miles into territory which the enemy controlled, that the cruising speed of a Catalina was between 95 and 130 knots depending on load, (causing some wit to remark that it was the only Allied aircraft to have suffered a bird strike from behind.) The armour plating had been reduced to a

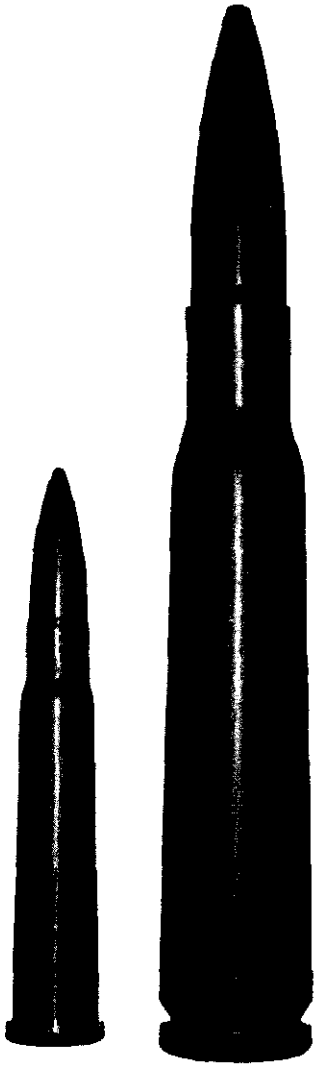


Flying Officer Bob Burne (mentioned in the text) at work at a Catalina's navigation table in the compartment immediately behind the pilots. Bob is glancing at the compass; ahead of him are the dials indicating air speed, altitude and heading; his Dalton computer for converting drift readings into wind velocity is on the table on his right. The small window was the navigator's only outlook on to the world below; if he wanted to see more he had to stand between the pilots in the cockpit.
Photograph from John Moline, made available by David Vincent.

minimum, and self-sealing fuel tanks had been replaced in order to increase the range and the capacity to carry a 4000 lb. bomb load. We also discovered the Catalina, because of its size, was difficult to camouflage while moored on the water, and so was as vulnerable there as in the air.

The new navigators had to learn fast. Certainly they had a satisfactory work station, for the navigation compartment was commodious compared with anything experienced in training. The chart table was large, and the magnetic compass and air speed indicator were close at hand. Star sights were obtained by taking the hand held bubble sextant to the back of the aircraft and opening one of the blister canopies. For the measurement of drift the navigator opened a hatch behind the last bulkhead door, which enabled him to look down at the sea. At night he dropped a canister which flared for about twenty minutes after hitting the water. If prudent, the navigator attached himself by a cord to the aircraft to prevent falling through the gaping

open hatch. He kept contact by intercom with the pilot to order the necessary triangular changes of course.



Above is a .303 inch cartridge. The much larger round is a .5 Browning. Both are actual size.

Initially our Catalinas were fitted with four WWI Lewis guns, firing .303 inch ammunition; only one of which was likely to be able to engage an enemy aircraft at any one point of time.

The Zero, on the other hand, travelling three times faster, could simultaneously deliver concentrated fire from two 7.7mm machine guns

A crew of nine men

From March 1942 a Catalina crew consisted of nine men – first and second pilot, navigator, two wireless operators, two engineers, an armourer/air gunner and an airframe fitter/air gunner. En route to and from a target there was need for only one pilot in the cockpit to see the automatic pilot, 'George', did not stray from the required heading. Even if that was not noticed by the pilot he was soon reminded by the navigator. The pilot maintained contact with whichever engineer was at the engineer's panel, high up between the two 1200 horse power Pratt and Whitney engines, monitoring engine performance and fuel consumption. From his cockpit the pilot was in the best position to sight enemy activity and the first to advise a course alteration to avoid the cumulo- nimbus clouds, with 'anvil heads', which caused extreme turbulence. The navigator, poor devil, was on duty for the whole flight, sometimes for more than twenty hours. The wireless operators relieved one another, one always maintaining a continuous listening watch, recording all incoming signals, but only in emergency transmitting in morse code, or, in extreme emergency, in plain language. On approaching the target, or, in the event of attack by fighters, a hooter activated by the pilot was the signal to don parachutes and for crew members to go to their allotted stations. What these stations were might vary in different crews, but a typical disposition was for armourer and fitter to man the blister guns, for the second engineer to use a gun through the previously mentioned hatch near the tail of the aircraft, and for the second wireless operator to operate a gun in the bomb aimer's compartment in the nose of the aircraft. Thus there were four guns in all, one firing forward, but only upwards, a blister gun for each flank and a tail gun which could only aim downwards. When I first joined the squadron the guns were First World War .303 Lewis guns, later replaced by .5 Brownings. On a bombing raid, the

navigator became bomb aimer and operated at a bomb sight in the nose compartment.

The aircraft had four bunks on which off-duty crew members might snatch a little sleep during the hours of inaction, and one crew member with self-proclaimed culinary skills made the coffee and cooked the toast and baked beans.

Apart from the enemy, the other hazard of tropical flying was weather. Sometimes the build up of cumulus cloud reached 35000 feet and could not be avoided when flying through the inter-tropic front. When such cloud was unseen at night, the aircraft was submitted to quite frightening strain and the crew to extreme discomfort. In severe squalls rain water often entered the aircraft. Any attempt by the navigator to locate position or to expect constant speed on a set course during a long period of turbulence was hopeless. Only after passing beyond the front into calmer air could an effort be made, by star sights at night, to define a new position. Fortunately for the new navigators, our baptism occurred during the south-easterly season, and the worst monsoonal weather was not to come for several months, by which time we had acquired enough expertise to cope with severe weather conditions.

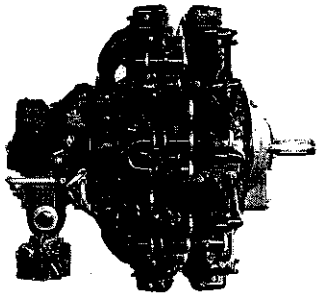
Crews quickly became bonded into closely knit fellowships. Each member knew his own safety and survival depended on the others. There was little consciousness of rank, yet in each emergency there was instant respect for the orders of the aircraft's captain. Crews developed great regard for the daring and courage of individual captains – courage that was demonstrated when, despite searchlights and anti-aircraft fire, and sometimes night fighters, he accepted the advice of his navigator, now turned bomb-aimer, that a bombing run needed to be aborted because the course being flown would not ensure that the released bombs would fall on what was often a small or narrow target, a judgment which only the bomb-aimer could make; courage when the captain decided to return to a hostile target to try to release a bomb which had hung up on the previous runs and courage when he decided before setting course for home he would finally harass the enemy with a

and two 20mm cannons; thus ensuring an extremely unequal engagement.

Later, the Lewis guns were replaced with .50 inch Browning machine guns and wise enemy pilots would thus need to exercise a little more caution when attacking us.

Of all the losses of Catalinas, not many were due to attack by Zeros, despite the latter's superiority in speed and fire power. It was our opinion, whether true or not we didn't really know, that Japanese fighter pilots were inefficient at night. Since the majority of our attacks on enemy targets were at night, we feared their fighters less than we feared their searchlights and anti-aircraft fire.

low level straffing run in the hope the blister gunners would hit parked aircraft or an ammunition dump. These captains, some of whom had seen service on Sunderlands in Coastal Command in the Atlantic, had opportunities which they readily took to display individual initiative quite different from what was required in the European raids of Bomber Command, in which large numbers of aircraft took part, so that strict operational patterns had to be adhered to. Such captains were Frank Chapman, Tom Price, Dick Cohen (later Sir Richard Kingsland), Keith Bolitho, Norm Robertson, Terry Duigan, Bob Hirst, Clem Haydon, Bill Miller, Bill Clark, Gordon Stilling, Alan Norman, Mike Seymour, 'Goff' Hemsworth, Geoff Coventry, John Daniell, Geoff Havyatt, Dave Vernon, Athol Wearne, to name a few. Of these few, ten perished, and with one exception, their crews died with them. Seven of these captains reached the senior rank of Wing Commander.



Pratt & Whitney R-1830 Twin wasp 14 cylinder Radial Piston Engine 1200 horse power.

What an amazingly complex engine compared to a modern jet engine!

We, the new members of Catalina crews soon felt comfortable in what became our 'home' on very long flights. We grew to have great faith in the two Pratt and Whitney engines. When Catalinas first came into service in the RAAF, engine changes were carried out after 240 hours of flying, but such was the reliability of the Pratt and Whitney engines, and so great was the pressure to keep the aircraft flying, the engine hours were extended, first to 360, later to 480 and finally to 720 hours. An engine change was a major service; minor servicing was performed at more frequent intervals, and the dedication of engineers, both flying and ground crew, gave Catalinas a remarkable record of reliability. With a crew of nine, with a bomb load of 4000 lbs., usually consisting of sixteen 250-pounders, hung from racks under the wings, frequently with up to forty small incendiary bombs to be thrown over the target from the blisters, and with 1460 gallons of 100 octane fuel, those engines were under severe test at take-off. Sometimes their overheating required a take-off attempt to be abandoned and a new attempt made, but rarely did a fully loaded Catalina fail finally to stagger into the air, although some wit has suggested this was only due to the curvature of the earth!

First air engagement with the enemy

My first sight of the enemy was on the twenty-ninth March 1942, on the third of six consecutive days of flying in A24-16, captained by Flight Lieutenant Thompson. (All operational Catalinas in the RAAF were numbered serially after the identification of type, namely A24-.) The orders for the first two days were to patrol the Torres Strait, and both nights were spent at Horn Island, near Cape York. The third day, March twenty-nine, the mission was more ambitious. At this time intelligence reports always had an element of uncertainty. One account was that advanced units of a Japanese task force had reached the southern end of Bougainville, but a more hopeful view was that there was an American force in that area. Our orders were to investigate Treasury Island, just off the Buin Faisi tip of southern Bougainville.

After about seven hours flying, and a few miles from the destination, we did indeed sight a collection of naval vessels. We took the hopeful view that what was almost below us was part of an American task force. I passed up the Aldis signalling lamp to the captain and he flashed the letter of the day several times. If these were American vessels we expected a similar reply. What we saw from several of the ships was a series of flashes which hardly looked as though they were morse code letters from signalling lamps, and when the air around us became pock-marked with puffs of black smoke, the truth dawned on us. We were flying into a heavy concentration of ack-ack fire. and the enemy had calculated our altitude perfectly. I had read accounts by soldiers of the 'bliss' induced in them to have bullets whistling past their ears, creating for them an intensified awareness of being alive to an exhilarating level. Nothing like that was happening to me at that moment. To this day I can recall my feelings as I stood in the cockpit between the pilots, FltLt Charles Thompson on my left and Sgt Arthur Lunnon on my right, to survey the scene: surely we could not possibly escape the intense fire from those ships and one of their shells must certainly hit us. Quite recently I'd had experience of deaths in my family, my mother from cancer and my only sister from a climbing

accident, but I had formed no views about death and what might come after, if anything did. At that moment, as I stood there, fear was not the emotion I felt; rather it was a strange sort of detachment, a kind of surrender, almost a comforting feeling that my future was now out of my hands. It could not possibly be described as a religious experience and was never repeated in subsequent dangerous situations, perhaps because all the bombing raids still to come were at night, when shell bursts were not seen, only felt.

With that element of good fortune to which all flyers are entitled, we flew out of range of the enemy guns quite unharmed. We had observed there were three destroyers, one larger naval ship which we presumed was a cruiser, and three vessels which were probably troop transports. Since we had been sighted by the enemy, there was no point in maintaining radio silence, and we reported the position and composition of the Japanese force. We then flew to Port Moresby, pleased with ourselves for having obtained vital intelligence information.

The next day from first light we repeated the exercise with instructions to investigate the Shortland Islands, the area in which the enemy force had been sighted the previous day. This time armed with bombs, so that if opportunity presented itself without too serious risk an attack might be made. To our surprise there were no signs of the enemy force which had presumably continued its south-easterly course. Our orders were to proceed to Tulagi, on Florida Island in the Solomons, the last of the RAAF's advanced operational bases not yet captured. It was a lonely outpost, with a marine section for refuelling flying boats and overnight accommodation for air crews. The base continued to transmit vital intelligence information right up to the time of its capture a few weeks later.

On four consecutive days we had flown forty-six daylight hours, which was quite a baptism for a new navigator in an unfamiliar aircraft. Then during the first nine days of April, using Tulagi as base, we carried out almost daily reconnaissance of the southern end of Bougainville, thereby

adding another thirty-nine hours. On the tenth April A24-12 required an engine change, and for this we flew south to Rathmines on Lake Macquarie. This was my first visit to what had become the Operational Training Unit for Catalina crews, whose irreverent style had prompted some character to set up this permanent notice: 'Catalina Officers' Mess: Officers of the RAAF Welcome'. Such playful lack of regard for service decorum became a trademark of Catalina air crew, whose mode of operation was very clearly individualistic. Quite early in the war they had become known as the RAAF's 'web-footers.' Two of the squadrons' intelligence officers in 1942 – Harold Moschetti, a well known Melbourne dance band leader, and Stuart King, Victorian cricketer and St Kilda footballer – wrote music and words respectively for rather bawdy songs, one of which I remember being sung enthusiastically whenever a senior officer from Victoria Barracks made an inspection of the Catalina squadrons.

Aint it a pity she'd only one titty,
To feed the baby on!
The poor little bugger could never play rugger;
He was not sufficiently strong.
And when he grew older and bigger and bolder
He'd take himself in hand;
The reason why, the reason why
We could not understand.
They took him to the Admiralty,
And tried him out on land and sea;
But he was never a great success,
And they kicked him out of mess after mess,
And so they made him a member of Air Board.
(the last line sung slowly and with great gusto).

The immaturity of these words will seem abysmally crude, especially to those who once sang them, but there was never much sophistication about the impromptu, and very male entertainment in an officers' mess in the dark days of 1942. My memory is that this particular ditty was only sung on the occasions for which it was written. It was a bullying tactic, we knew, us against them, the airborne

The flying boat base at Rathmines on Lake Macquarie, just south of Newcastle, became the RAAF's No 3 Operational Training Unit (previously known as the Seaplane Training Flight). It was here that the final training of the crews of Nos 11, 20, 42 and 43 Squadrons was conducted. As at the repair base at Lake Boga in northern Victoria, major overhaul of aircraft could be carried out at Rathmines. Bowen, in North Queensland had capacity for less major maintenance.

against the chairborne, but never seemed to be resented by the victim or victims.

Some of Stuart's songs were about Catalinas. Of one rather long one I can remember the first two verses.

They fly through the sky with a nonchalant air
With Zeros they play like the tortoise and hare;
And word gets around for the Japs to beware;
The Cat-Boats are flying tonight.
They've hung on the bomb racks a dozen or more
And twenty pound frags litter the floor.
So start up the donks and we're off to the war:
The Cat-Boats are flying tonight.

Stuart King was a great favourite. As an intelligence officer his duties did not include flying, though he often persuaded a captain to take him along for the ride. This Stuart did once too often; in February 1943 he went on an anti-submarine patrol with Wing Commander Daniell. The aircraft failed to return. No distress signal was received from it and no trace ever found.

My trip south to Rathmines brought me two weeks leave in Sydney. At the end of the month (April) I flew north in A24-17 with a new captain, Sgt Bill Miller (soon to be commissioned) and we teamed together for many months. We did not know then we would soon 'briefly tiptoe round the margins of history' (words of a much admired Catalina captain, Terry Duigan).

Two bases – Port Moresby and Tulagi – were now under severe threat. 'Initially it had been intended that, in the face of invasion from the sea, the ground forces would defend Port Moresby from the coastline. When news of the approach of the enemy fleet was confirmed, the Army Command decided the forces available were too few to be effective for such a defence plan and so, with the enemy only about twelve hours' steaming away, a contracted line was prepared seven miles inland.' (*Gillison 1962, p518*)

May 1942: Coral Sea Battle

The Coral Sea Battle, which was to save Port Moresby, but not Tulagi, took place between the fifth and eighth of May, 1942. We flew on eight of the first ten days of May, so desperate was the need to report Japanese naval movements. On the first of May we sighted five well-armed merchant vessels and we were fired on. It was the Japanese task force heading for Tulagi and Guadalcanal. On reporting, we were denied permission to bomb, but asked to shadow from a safe distance. Our alighting at our base Tulagi after sixteen hours in the air was the last by any Catalina. The following day, the second of May, we had just taken off when enemy bombers swept over the base. Their aircraft failed to detect us, and for two hours our wireless operator listened to a coast watcher, one of a heroic group of civilians of whom more will be said later, report further assaults by both bombers and fighters. Fortunately the base had been completely evacuated; twenty-seven RAAF personnel, ninteen members of the AIF and a few civilians made their escape first to Guadalcanal and subsequently to the New Hebrides in a lugger. A Catalina navigator, Bob Burne, a good friend of

Flight Lieutenant Terry Duigan DFC

Terence Lawless Duigan, born at Kyneton, Victoria, enlisted in Melbourne at the end of May, 1940, at the age of 24 years. After leaving Geelong College he spent a year as a jackeroo, then studied architecture at Melbourne University, graduating in 1939. He practised architecture for two years before joining the Royal Australian Air Force.

Terry's training was at No. 1 Initial Training School, Somers, at No. 2 Elementary Flying School, Essendon, and at No. 1 Service Flying Training School, Point Cook. He graduated as a Sergeant Pilot in January, 1941, and began a conversion course on flying boats at Rathmines in the same month. He was posted to No. 11 Squadron, then based at Port Moresby, in April, 1941, and flew as a second pilot before completing a captain's course in November. He had been commissioned Pilot Officer in July.

Terry's courage and his unflappable personality endeared him to every member of the two Catalina squadrons. His record – 2240 hours on Catalinas, much of that time over territory controlled by the enemy – made him one of the RAAF's most experienced and skilful flying boat captains. The citation of his Distinguished Flying Cross, gazetted on the 29th of April, 1943, *for gallant and distinguished service in North Eastern Area*, conveyed a fitting tribute to him:

Flying Officer Duigan enlisted in the Royal Australian Air Force as an aircrew trainee on 27th May, 1940, and

mine in the squadron, was amongst the evacuees because his aircraft had been damaged. Being the only member of the party with some skill in the art, Bob became a marine navigator for the journey. Older than the rest of us, Bob was a civil engineer in peace time. He had a marvellous, self-deprecating and dry wit. After a nasty mission he would say: 'I know why I am doing this. I got in the wrong queue at recruiting depot. I thought I was in the queue for aerodrome constructors.' Bob and his captain, Terry Duigan, were a perfectly matched team. They could see a funny side even in the most serious situation. They both survived the war but Bob lived too few of the years that followed. Terry Duigan was the epitome of the free spirit which characterised those who flew Catalinas. During much of the time that he was based with 20 Squadron in Cairns, his charming wife Gwynne also lived there, despite the ban on non-essential interstate travel by civilians. She even flew with him on at least two occasions. On one of these Terry took Gwynne on a test flight from Bowen; she sat in the second pilot's seat and during the flight Terry invited her to fly the aircraft. She later related to the author of *Lake Boga at War* that she found flying level was very difficult and 'keeping the artifical horizon where Terry told me'. On another occasion Gwynne accompanied Terry and his crew on a travel flight from Cairns to the Catalina repair base at Lake Boga in northern Victoria. It was Terry Duigan who carried out the first of many RAAF Catalina air-sea rescues when he picked up the American crew of a B26 bomber shot down in a raid on Rabaul. He was a great favourite in the squadron, not only because of his daring, but also for his droll sense of humour. We all applauded when he was decorated with the DFC.

On the third of May Japanese troops went ashore and took possession of our Tulagi base. For many months after that, our visits there were to bomb the new occupants, usually at a full moon.

The Coral Sea battle coincided with a relocation of the two Catalina squadrons. Already, in one raid by Japanese Zero fighters, three Catalinas had been destroyed while moored on the water at Port Moresby, since there was no

chance of camouflaging a flying boat moored on the water. To prevent a repetition of that catastrophe, it became necessary to add many hours to each bombing and reconnaissance mission by operating from the relative safety of Cairns, which from that time became the only Australian town with residents almost daily engaged in the war against Japan. Officers were accommodated in Hides Hotel, then the best hotel in Cairns. Other crew members lived in various hotels in the town, until, late in the year, premises were leased on the waterfront near Cairns Hospital to accommodate all personnel and the administration of the two squadrons. For the first time ever, the local swimming pool remained open through the winter because so many southerners found winter in Cairns no different from summer in the south.

Rarely at full strength, the squadrons had, on the 4th of May, lost A24-18, captained by Pilot Officer Alan Norman. He reported being attacked by enemy fighters south of Bougainville and no further message was received; A24-18 had become the first Allied casualty of the Coral Sea Battle.

On the sixth of May two Catalina crews, our own in A24-12 and Goff Hemsworth's in A24-20, were ordered to take off together at first light from Port Moresby, with full bomb loads and fuel to search the Louisiade Archipelago area, a group of islands east of New Guinea, where part of the Japanese fleet which was soon to be engaged in the Coral Sea Battle was known to be. The water was flat calm and we had trouble getting airborne. After two attempts we jettisoned 300 gallons of fuel but still failed in another take-off attempt. After a further 300 gallons were jettisoned we became airborne, but received instruction to abandon the mission, since the remaining fuel would have been insufficient for the operation. We were ordered to fly to Cairns. Goff Hemsworth in A24-20 had no trouble in getting airborne in the flat sea. Some hours later a signal from his aircraft reported seeing two destroyers south-east of Misima Island in the Lousiades. The message was then interrupted by a report in plain language that the aircraft was being attacked by enemy fighters. No further word was received and A24-20

was appointed to a commission on 13th July, 1941.

Since 7th December, 1941, he has been engaged in constant operations against the Japanese during which he has flown 1220 operational hours including 26 bombing raids, 30 reconnaissances, 26 shipping proctection patrols, 3 supply dropping flights in enemy territory, and 2 rescue missions in the Trobriand Islands. He also acted as a guide pilot in U.S. aircraft on 3 day bombing operations.

On 3rd February, 1942, his aircraft was attacked and damaged by fighters over Rabaul as a result of which his wireless operator was wounded. On 9th October, 1942, he carried out an attack on Rabaul township carrying 94 25-lb. Incendiary bombs in the hull, probably one of the most vulnerable unjettisionable loads ever carried. These bombs had to be thrown out by hand.

This officer has excelled as a night bomber pilot, and has gained a reputation for low level attacks and for particularly accurate reconnaissances on the target after each attack, displaying at all times the utmost determination and inspiring all members by his calm and courageous bearing in the face of the enemy.

Terry had previously been awarded a Mention in Despatches.

From April 1943 to June 1944 Terry was a flying instructor at Rathmines. He then extended his experience by flying land planes in Northern Command during the rest of the war. This included a conversion to B-24 bombers, and flying with an Australian crew on operations with an American squadron. From September 1944 to July 1945 Terry piloted Liberator bombers of 21 Squadron. His total flying hours were 3380; 2240 of those were on Catalinas and 600 on Liberators. His offensive operations against enemy opposition numbered 107 on Catalinas and 46 on Liberators.

After discharge in December 1945, Flight Lieutenant Terrence Duigan DFC, MID, resumed his architectural career in Geelong.

5473....

Date	Hour	Aircraft Type and No.	Pilot	Duty
		CATALINA		
1·5·42	0600	A24-17	SGT. MILLER	RECONAISSANCE
2·5·42	0600	A24-17	SGT. MILLER	RECONAISSANCE
4·5·42	0600	A24-12	SGT. MILLER	RECONAISSANCE
6·5·42	0600	A24-12	SGT. MILLER	RECONAISSANCE
6·5·42	1900	A24-17	SGT. MILLER	RECONAISSANCE
9·5·42	0630	A24-12	SGT. MILLER	RECONAISSANCE
10·5·42	1315	A24-12	SGT. MILLER	TRAVEL FLIGHT
2·6·42	0635	A24-12	P/O MILLER	TRAVEL FLIGHT
2·6·42	1150	A24-12	P/O MILLER	RECONAISSANCE
3·6·42	0500	A24-12	P/O MILLER	RECONAISSANCE
4·6·42	0625	A24-12	P/O MILLER	RECONAISSANCE
5·6·42	0500	A24-12	P/O MILLER	RECONAISSANCE
5·6·42	1515	A24-12	P/O MILLER	TRAVEL FLIGHT
6·6·42	1420	A24-12	P/O MILLER	TRAVEL FLIGHT
14·6·42	0630	A24-12	P/O MILLER	RECONAISSANCE
14·6·42	1225	A24-12	P/O MILLER	RECONAISSANCE

5478....

Remarks (including results of bombing, gunnery, exercises, etc.)	Flying Times Day	Flying Times Night
Time carried forward :—	283-20	21-35
PORT MORESBY - WOODLARK Is - TULAGI	14-00	
TULAGI - KIETA - PORT MORESBY	13-00	
PORT MORESBY - MISSIMA - PORT MORESBY	14-30	
PORT MORESBY - CAIRNS	4-50	
CAIRNS - MISSIMA - CAIRNS	5-00	9-50
CAIRNS - ROSSEL Is. - CAIRNS*	10-55	
CAIRNS - BOWEN	3-00	
TOTAL TIME FLOWN IN MAY	65-15	9-50
PROGRESSIVE TOTAL TO 31·5·42	348-35	31-25
COMMANDING R.A.A.F. PORT MORESBY, N.G.		
BOWEN - CAIRNS	2-30	
CAIRNS - MORESBY	6-05	
MORESBY - CAIRNS	7-00	
CAIRNS - MORESBY	11-35	
MORESBY - CAIRNS	6-50	
CAIRNS - TOWNSVILLE	1-55	
TOWNSVILLE - BOWEN	1-20	
BOWEN - CAIRNS	2-10	
CAIRNS - MORESBY	5-00	
TOTAL TIME ..	393-00	31-25

did not return. A24-20 and its crew had become the second casualty of the Coral Sea Battle. Our own instructions had been to search the same area, and had we not been forced to abort the mission through engine trouble, we might well have shared the fate of Hemsworth and his crew. After a brief rest at Cairns, we took over another aircraft, A24-17, and took off for the Louisiade Archipelago to search the area in which A24-20 had been lost. We found neither wreckage nor survivors and, to our surprise, no sign of units of the Japanese navy. Flying time was eighteen hours. Douglas Gillison in *Royal Australian Air Force, 1939-1942* has this to say about the Coral Sea Battle, fought during the 5th to 8th May. 'Though in actual loss and damage the honours in this battle were fairly even; the Allied forces had in fact achieved their most important success since the war in the Pacific began. It was unique as the first naval-air battle in which there was no aircraft-to-aircraft or ship-to-ship combat. The opposing ships neither sighted each other nor fired a single shot at each other. Yet the result was that the Japanese were forced to postpone their frontal attack on Port Moresby and delay their drive down through the Solomons.' (p. 522).

OPPOSITE PAGE: This is a page from the author's log book at the time of the Coral Sea Battle, during which two Catalinas A24-18 (Alan Norman captain, see p. 51) and A24-20 (Gough Hemsworth captain, see p. 51) were shot down in daylight by Zero Fighters. On the operation of A24-12 on the 2nd of May, a daylight reconnaissance from Tulagi to Port Moresby, we reported the position of the Japanese task force which was to be engaged two days later by American naval ships and aircraft. The operation on the 9th of May was the one in which our A24-12 was attacked by fighters, as described in the text (pages 53-55).

Attacked and damaged

On the ninth of May, the day after the Allied and Japanese task forces had broken off the engagement, we were ordered out on reconnaissance over the Coral Sea to locate the retreating enemy. Once again we flew A24-12 which for many months we came to regard as 'our' aircraft. The following comprised the crew: Sgt Bill Miller (captain), Sgt Arthur Lunnon (second pilot), Pilot Officer Arthur Sandell (navigator), Sgts Jack Riddell (first engineer), Gordon Dunn (second engineer), Bill Lawless (first wireless operator), Lindsay Rundell (second wireless operator), Cyril Stott (rigger), Lionel Johnson (armourer). Take-off was at 0630 and the flight appeared to be uneventful, with nil sightings, when suddenly in early afternoon we were attacked by several float plane versions of the Japanese Zero fighter. Gillison's account says: 'One member of the crew

was wounded, but the navigator, Pilot Officer Sandell, gave him first aid and then manned his gun. Though it was perforated by bullets, some of which had damaged the elevators and almost severed one rudder cable, Pilot Officer Miller (sic: Bill was commissioned shortly afterwards) brought the aircraft safely back to Cairns. After alighting, the crew counted ninety-two bullet holes in the fuselage and wings' (*Royal Australian Air Force, 1939-1942 p527*).

Ninety-two bullet holes

A fuller account is as follows.

We were flying in what seemed an almost cloudless sky at about 2000 feet when the totally unexpected attack occurred. Jack Riddell recalls that he and Bill Miller were sitting on the bulkhead between the engineer and bunk compartments eating a lunch of baked beans, when the alarm was sounded by Arthur Lunnon, second pilot. Alerted by the alarm hooter, crew members raced to gun positions, and Bill Miller to the captain's seat in the cockpit as bullets were crashing into the aircraft. Bill immediately jettisoned the bomb load and he and Jack Riddell applied emergency power. The rubber dinghy was pulled from under the lower port bunk and the emergency rations prepared for loading into it. Unfortunately, the dinghy had been rendered useless because it was perforated with bullet holes. Bill Miller had managed to climb into some cloud which ten minutes earlier we had not even noticed. When I was told that Gordon Dunn, second engineer, had been hurt I went to the blister compartment to investigate. He had been hit in the hand and the upper arm while operating the tail gun and due to the draft from the open blisters his blood had splattered the sides of the compartment. He had obviously lost a good deal of blood. I helped him to one of the bunks, bandaged his hand and arm, and put a ligature on his upper arm. I then went to the rear tunnel, where the hatch was still open, and took hold of the gun. I don't recall there was another attack, because we were mercifully hidden from the enemy by cloud, but I do remember as I looked downward through a temporary opening in the cloud beneath us, a Japanese aircraft passed under us flying parallel to our course but in the reverse direction. I fired the gun, but with what effect will never be known because

of the cloud. I do not claim to have hit, let alone shot down, an enemy fighter. Meanwhile, Gordon was made comfortable and given an injection of morphine, after which he fell asleep.

When the emergency was over I returned to the navigation table. The wireless operator had reported the attack and asked for an ambulance at Cairns wharf. I calculated an estimated time of arrival, which was transmitted. Unfortunately, whether shaken by Gordon's injury or carelessness, my calculation was exactly two hours in error, and those waiting for us at Cairns wharf spent an anxious time fearing we had come to grief without being able to transmit a further message.

Actually I could not have been greatly shaken by the event because Bill Miller, in a letter in 1987 to Jack Riddell, our first engineer, who was then writing *First and Furthest: Catalina Operations May 1941 to March 1943*, told him: 'After the float planes that attacked had disappeared, Arthur Sandell passed up to me an apparently fair dinkum message from Control, that an enemy aircraft carrier was believed to be in position so and so, and we were to locate it. Needless to say, that didn't impress me at all, and when I asked Arthur for the course to pick up the carrier, he admitted that he was pulling my leg.'

The ninety-two bullet holes were mostly above the water line because the attacks were from above, and the following day we were able the to take off for the repair base at Bowen, where on alighting we beached in shallow water.

The previous night, when visiting the patient in hospital, I was taken aside by a doctor and told in a kindly way that I should have released the pressure on the tourniquet on Gordon's arm more frequently.

My first tour of operations on Catalinas had only just begun, but I now felt myself to be a competent navigator. My service in No. 20 Squadron was to continue for another nine months, until February 1943. In that time I flew almost exclusively with three captains. My experience was that a strong bond developed between a captain and his navigator, often stronger than that between a captain and his second pilot, because the association usually lasted

longer, since second pilots were regularly lost to crews through conversion to captain status. Another relationship that was often long lasting was between captain and first engineer. More than what he did during a flight – after all he only sat in a little cockpit and watched an instrument panel on which engine performance was displayed – it was his preparation before a flight and his great engineering knowledge, far exceeding that of the rest of us, and his good relationship with the engineering ground crews, that made him a person on whom a captain relied heavily. On much of this first tour we had Jack Riddell DFM as first engineer. He had a fine reputation for his courage and technical skill.

Following the Coral Sea Battle I continued to fly with Bill Miller on twelve more occasions, until the end of June. I admired Bill greatly. He was a quiet, respected captain, and a very fine pilot. He was fond of beer, and loved a good mess party, though he never drank if there was the slightest likelihood he might have to fly. He could have been the original in the story of the junior officer who was offered a drink by a senior officer. In refusing the invitation, the junior officer quoted King's Regulations: there must be at least six hours between the bottle and the throttle. 'Well I'm damned,' said the Group Captain. 'I always thought it said *six feet*'. Bill survived the war with the rank of Flight Lieutenant and a Distinguished Flying Medal, which he accepted with typical humility. In the peace that followed he returned to his former occupation in the administration of the Victorian Railways, eventually becoming Secretary to the Commissioners. Bill became something of a recluse and rarely attended any reunions. I last saw him in 1988 when, in the company of another of our pilot colleagues, Norman Robertson DFC, I visited his home in Ringwood and found he was moving that day to the RSL Park Hostel in Frankston. The house was empty of furniture, but Bill was still able to offer his former navigator a glass of whisky. He was obviously not well, and did not live long after that.

From time to time there were changes in crew membership, brought about because one or more were due for relief from operations, or because a crew needed an

infusion of experience in some area, or a change was necessary because of injury or illness. I do not recall a single case in which a change was made because of incompatability of temperament, though that could have happened. (There were one or two members of 20 Squadron I would have found difficulty in serving with in the close confines of the same crew, but simply because they talked too much!)

With Bill Miller's temporary release from operational flying at the end of June 1942 I became Keith Bolitho's navigator. He was a tall, well-educated South Australian with an imposing presence, the sort of person who stood out in a crowd and seemed to demand respect. He was already a Flight Lieutenant and with a long list of operations in his log book. In slightly less than two months we flew together twenty-seven times, including several raids on Tulagi, Lae and the dreaded Rabaul. During his first tour of operations on Catalinas, Keith was awarded a Distinguished Flying Cross and a Mention in Despatches. After a period as a flying instructor at Rathmines Operational Training Unit, Keith returned to operational flying as Commanding Officer of 20 Squadron based in Darwin in early 1944. During this second tour he was awarded the American Distinguished Flying Cross with the following citation:

For heroism and extraordinary achievement in aerial flight during operations conducted in collaboration with the United States Navy on 22nd and 24th February, 1944.

Flying approximately 2000 miles, much of the distance in daylight, from a seaplane base in Australia over waters patrolled and protected by enemy aircraft, Squadron Leader Bolitho handled his slow, highly vulnerable plane, making his accurate runs on the target at perilously low altitude in the face of intense anti-aircraft fire from hostile shore installations and anchored ships.

By his superb airmanship and indomitable courage in carrying out these hazardous missions, Squadron Leader Bolitho contributed in large measure to the losses inflicted upon enemy shipping and to the uniform success of vital operations in the area.

Keith Bolitho finished the war with the rank of Wing Commander.

My next and last permanent captain on this tour of operations was Clem Haydon, with whom I flew thirty-four times. I joined his crew because he requested it. Clem was another South Australian, a graduate of Roseworthy College of Viticulture, of which his father was principal. Our association lasted from September 1942 until my posting from the squadron at the end of February 1943 and in that time nineteen of our operations were bombing raids. Working with Clem was a joy. If he was ever afraid, he never showed the slightest signs of it to me. Perhaps his passion for low flying was a blemish. This passion could have had disastrous consequences for all of us when, on December the eighth 1942, on a travel flight from Cairns to Bowen in A24-27 which needed servicing, he decided to excite the residents of Innisfail with a demonstration of a Catalina avoiding searchlights. The town and its hospital were separated by a river across which were connecting power lines. Unfortunately these were unseen by the intrepid stunt flyer and on Clem's last pass along the river, A24-27 ploughed straight through them. We were all startled by a crunching sound and later wondered why we had not been electrocuted. The second pilot's window had been shattered, the port blister had disappeared, and strands of copper wire dangled from various parts of the airframe. Otherwise the aircraft was in normal flight, although, as we later learned, there was nothing normal about Innisfail, much of which suffered a blackout that night. At Bowen, the second pilot's window and the port blister were quickly replaced, and both propellors removed in order to cut away the wire wound around their hubs. There was little damage to be seen on the aircraft when 20 Squadron Commanding Officer, Wing Commander Geoff Hartnell, arrived from Cairns a day later to investigate the incident. He walked around the aircraft on the slipway several times and, although he knew that it had been rebuilt, reported there was no damage. To our relief, there was no court martial for Clem Haydon for his love of flying at roof top height, but perhaps the incident accounts for the

Clem Hadon's passion for low flying

fact that he did not ever receive any decoration for his magnificent service – not even posthumously.

After the Coral Sea Battle

After the Coral Sea Battle, the strategic situation in the South West Pacific was as follows: the Japanese had established bases at Wewak, Lae, Salamaua and Buna on the north coast of New Guinea and were threatening our vital position at Milne Bay at the latter's eastern end. They did in fact land there in August, despite opposition from two Australian Kittyhawk squadrons, Nos. 75 and 76, and units of the AIF. Further to the north they had occupied Kavieng, on the south coast of New Ireland, and established themselves in New Britain at Gasmata, and most powerfully at Rabaul, the strongest base in their great equatorial front. They also controlled Bougainville, having built a fighter strip on Buka Island in the north, occupied Kieta on the east coast, then Faisi in the Shortland Islands to the south, and, in early April, Buin at the very southernmost tip of the island. I have already recounted that at the beginning of May the Japanese fleet had forced the abandonment of our base at Tulagi. From the latter in June their troops landed on Guadalcanal. Thus, in the first half of 1942 they had established themselves on a huge arc extending from Singapore to the Solomons, the length of which was finally to be their undoing.

Coastwatchers

A word needs to be said about the coastwatchers, those brave men, mostly civilians, who had refused to be evacuated with their families from their threatened plantations, and volunteered instead to take to the bush with portable radio transmitters, with which they could transmit vital intelligence about enemy movements. They were located in many parts of the occupied islands. They had to keep moving base because their radio transmissions were always heard by the Japanese, who could easily pin-point the location of the transmitter. They were totally

reliant on the loyalty of the native population, but their trust in the latter was sometimes misplaced, when bribery by the invader caused their location to be revealed. They also relied heavily on air drops of supplies and radio parts and this was mostly done by the Catalina squadrons. We never considered it an easy operation, having to be performed at a pre-arranged, very precise location, often difficult to find, and at very low level. One of my friends, Flight Lieutenant Bill Clark, crashed on a supply drop mission on Buka Island at the northern end of Bougainville. We learned the circumstances later because several of the crew who were at the back of the aircraft survived the crash, though injured. Some of these died from their injuries, one was shot after capture by the Japanese, and two found their way to freedom, rejoined their squadron's flying operations and survived the war. From their account we know that after the third and last run over the strip, either Bill or his co-pilot banked the wrong way and hit a hillside.

Slow, vulnerable but very effective

Slow and vulnerable though it was, the Catalina's supreme asset was its great range, an asset which was exploited to the very end of the war. A Catalina from Cairns could bomb all the bases which the Japanese occupied from New Ireland, north of New Guinea, to the Solomons, and patrol all the sea lanes used by the enemy in that great arc. A single aircraft's bomb load of 4000 lbs, plus whatever incendiaries and anti-personnel bombs it carried in its blister compartment, may sound paltry compared with the saturation bombing by hundreds of RAF and American aircraft in single raids on targets in Europe, but large bombing raids, even if they had been possible, would have been uneconomical in the islands. Our Catalina targets were small and quite specifically military, such as runways, parked aircraft, ammunition dumps and shipping. A single Catalina would remain near a target for several hours, defying search lights and anti-aircraft fire, dropping one bomb at a time at varied intervals, giving enemy personnel a disturbed night. This loss of sleep was confirmed after the

war in Japanese diaries (*Riddell 1992, p32*). The tactic was used on the nights before the attacks on Lae and Salamaua by the Australian Army.

In the four months from the first of December 1942 to the thirty-first of March 1943, the last months of my tour, No. 11 Squadron flew 10523 hours and dropped 253 tons of bombs and No. 20 Squadron flew 9629 hours and dropped 227 tons (*Gillison 1968, p 678*).

The 'Milk Run'

Then there was the 'milk run'. This was a nightly patrol, regardless of weather, of the north coast of New Guinea and of the Solomon Sea between New Guinea and New Britain. The purpose was to locate enemy attempts to reinforce their bases under cover of darkness. On these nightly patrols we made use of ASV (air to surface vessel radar), although the equipment was often temperamental, particularly in bad weather. Although the basic purpose of a milk run was intelligence gathering, bombs were usually carried and captains permitted to harass when opportunity presented. Milk runs were fairly routine operations: four hours out of Cairns we would reach Milne Bay, then turn north westwards through the strait between New Guinea and the D'Entrecasteaux Islands, past the remarkable Goodenough Island, small and practically circular as I remember it, rising to over 8000 feet, so that careful navigation was required at night or in bad weather for an aircraft flying at 2000 feet. This was the point at which the serious search began along the north coast of New Guinea and across the Solomon Sea to the coast of New Britain. Often this nightly routine in all weathers revealed no enemy activity and we needed reassurance that although uneventful, the milk run was still worthwhile.

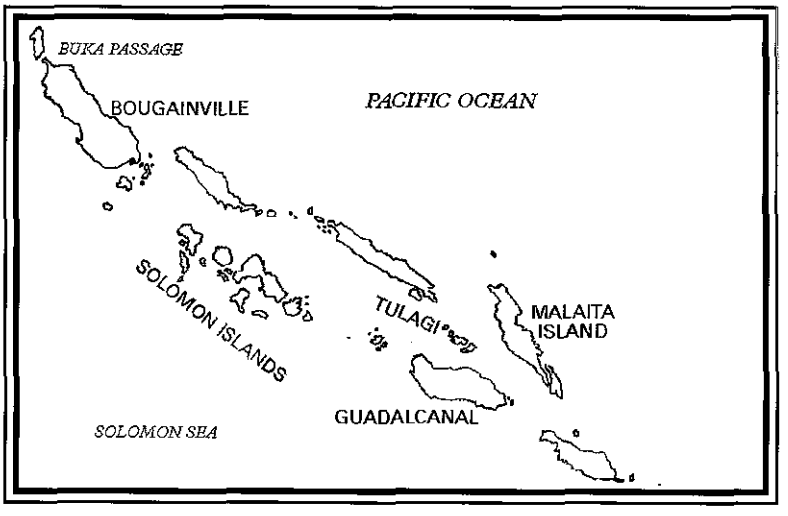
However, milk runs were not always uneventful. On one occasion we had instructions to spend four hours in the Lae area, to keep the enemy out of bed by releasing a single bomb at irregular intervals. Why the Japanese did not launch night fighter attacks against us we could not even guess. Having spent so long over Lae we realised we would not be able to return the way we came before daylight made us rather vulnerable. We decided to cross the Owen Stanley Range at a point where it was possible at about 9000 feet,

even though it meant flying blind in a considerable amount of cloud. What trust crews placed in the skill of the navigator to correctly identify the point on the coast where this plunge into a cloudy unknown commenced. What a relief it was when daylight arrived and occasionally the cloud parted to reveal that the craggy peaks were beneath us and not in front of us!

It would weary the reader if I described every one of twenty-seven bombing raids and a similar number of milk runs during the remainder of my first operational tour, and such recall would be impossible at this distance in time, even with my flying log book to prompt me. Moreover, one bombing raid was much like any other. Only weather conditions and the strength of the enemy's resistance varied.

Nearly all the raids and the milk runs were single flights from Cairns to Cairns, though a small number required flying into Port Moresby for refuelling or re-arming. The raids on the most distant target, Tulagi, necessitated refuelling at Noumea or Vila, or at Havannah Harbour on the island of Efate, so as to allow several hours over the target for maximum discomfort for the new inhabitants. One of my raids with Keith Bolitho – on Rabaul – was my longest flight: 21 hours 50 minutes. Take-off from Cairns was at 1545 hours in A24-12 on the afternoon of August the eighth and the return to Cairns was at 1235 hours on

My longest flight: 21 hours 50 minutes



Aerial view of Lakunai airstrip, Rabaul, looking south east, 1943. *Reproduced with permission of the Australian War Museum.*

the following afternoon. Three of those hours had been spent at the target. We then had one night's sleep, and on the tenth we were required to make another attack on Rabaul. This operation was completed in faster time, in 18 hours 45 minutes. It was not often two such gruelling tasks were required of the same crew with only 24 hours between them, but this was an emergency. It was believed the Japanese were assembling a strong task force at Rabaul for a new push southwards, and it was a time when few experienced crews were available in the squadrons. On both raids we encountered strong anti-aircraft opposition, but successfully unloaded our bombs on Lakunai, the main airstrip at this Japanese fortress, in the hope their fighters could not use the runway next day to intercept a daylight raid by American planes.

I can still recall my feelings the moment news broke my crew were listed for a raid. It has to be admitted fear was part of the reaction. Other crews had been lost; maybe this time would be our turn. After all, the slow Catalina flying at low levels ought to be a sitting duck against half a dozen destroyers, several well-armed troop transports, well-defended shore installations, and fighter aircraft, when the enemy had the inclination to get them airborne. Despite the

black painted hull and the darkness of night, those radar-guided searchlights seemed to have little trouble finding the lone intruder. On the occasion referred to, it did seem like tempting fate to tackle Rabaul twice within 72 hours.

But the mood always changed once we were flying. Fear dropped away and we became a kind of brotherhood. Our strength was somehow more than the sum of the strengths of individuals. Even with all the diversity of backgrounds, we were a family with unspoken respect for one another, and the Catalina was our temporary home, so often for us the charmed A24-12. (It was later destroyed in a storm while on the water at Rathmines.) We could even think we were the fortunate fighters in this war. Sometimes flying near the New Guinea coast in the dead of night, a light might be seen in the inky blackness below. Maybe Australian troops were camped there, condemned to struggle with the jungle, with all its humidity and mud, as well as the Japanese, required to fight the malarial mosquito as well as the often unseen enemy sniper, cut off from civilisation and sometimes for long stretches deprived of letters from home. We, on the other hand, if we survived this raid, would have a real bed to sleep in, with clean sheets; we would have normal food cooked for us and served to us, and even the local swimming pool in which to relax. But we still had to survive this raid.

A typical mission

The following is an account in some detail of a raid in one of the new Catalinas, A24-27, on the eighth of October, with Clem Haydon, recently commissioned and not long out of his captain's course at Rathmines. The events of this raid, about which I made some notes at the time, were fairly similar to other raids with Clem Haydon – four more on Rabaul, five on Kavieng (New Ireland), three on Tulagi (Solomons), three on Lae (New Guinea), four on Buka, two on Kahili and one on Ballale, these last three being Japanese bases on Bougainville. Rabaul, Kavieng and Buka were usually the tough ones.

The two pilots and the navigator attended the briefing in

Five early Catalina navigators photographed in the Cairns operations room around March 1943. Standing, left to right: Paul McLaren, Bob Burne, Alec Shand, Arthur Sandell, and sitting: John Moline. (from John Moline, courtesy of David Vincent)

the operations room at 1430 hours. The latest intelligence was discussed, particularly information provided by other crews who had recently attacked the target. The latest photographs were examined, these having been obtained by American daylight reconnaissance flights. The best direction from which to attack shipping or runways or installations was decided. I was provided with all the necessary charts. Since I would be doing the bomb aiming, it was useful I had been to Rabaul a number of times before and was fairly familiar with the target. The available weather information was noted. The three of us then boarded motor transport, collected the rest of the crew from their quarters, and drove to the wharf where the marine section had a tender waiting. Having inspected the aircraft, the two engineers were already on board.

A24-27 had been given its full capacity of 1460 gallons of high octane fuel. The armament section had fastened sixteen 250 lb bombs to the racks under the wing, and left about forty small incendiary bombs in the bunk compartment for unloading by hand on the target. There

was also a box of empty beer bottles, not the remains of a party on board, but the means of adding a bit of extra terror to enemy hearts, because, we were told, they emit a horrifying scream as they hurtle towards the earth. The four guns had been checked and the ammunition belts replenished. We scrambled into the aircraft through the opened port side blister. Wearing only light clothing for the humid conditions at sea level, we each carried a flying suit, flying boots and something warm to put on because the tropic night would become cold at 6000 feet. Each man carried a revolver, holster and ammunition pouch, his parachute pack and parachute harness, and his Mae West flotation collar, much more important than the parachute in the event we needed to ditch in the sea. Also carried by each of us were a first aid kit, a tin of emergency rations and a signalling mirror to attract the attention of a friendly aircraft if disaster should befall us. Much of the navigator's equipment was already on board – the sextant and Dalton

Mae West was a famous American actress endowed with an impressive chest.

Squadron Leader Tom Stokes sitting in the blister compartment of a Catalina, nursing a 30 pound incendiary bomb.
Photograph from Dick Vardon, courtesy of David Vincent.

computer (this was a mechanical device to aid calculation of wind velocity from drift readings and was certainly not electronic). Pelorus tail drift sight, bomb sight in the bow compartment, the magnetic compass and air speed indicator at the navigation table were permanent installations in the aircraft, as was an early model ASV (air to surface vessel) radar. In my bag I brought with me the maps I needed for this operation, together with dividers, parallel ruler, slide rule, Douglas protractor, my own copies of Norrie and the Air Almanac, star identifier chart, and, of course, on my wrist my reliable Longine chronometer.

It took about twenty minutes to stow everything securely, to start the engines and slip the buoy. Trinity Bay was in its usual placid state near the end of the south-easterly season, a bit too placid for an easy take-off for a fully loaded Catalina. Clem taxied for what seemed much more than a mile before turning into a slight wind and giving the engines full power. This was not quite full power, because there was an emergency override which would pump fuel into the engines at a rate which would set the propellers screaming. I had heard the noise many times before, but could never relax while it lasted. A24-27 shook and shuddered and everything loose inside it rattled. Waves and spray obscured any view through the navigation window. Lift off was slow in coming, but just as it seemed that all hell was breaking loose, almost imperceptibly we felt ourselves losing contact with Trinity Bay, and the propellers ceased to appear to be clawing at the air. We were airborne, and as the throttles were slowly eased back, the noise became more tolerable. The floats at each end of the wing were retracted and the angle of climb increased. As we gained height, familiar objects around the Bay became smaller as we turned our backs on Cairns and the comforts it provided. What one pilot had described as his two best friends, Mr Pratt and Mr Whitney, had done well. Many people think an aircraft's piston-driven engines must be most efficient – least likely to fail – at the start of a flight. The reverse is true. There is more risk of engine failure at the start of a flight than at the end, perhaps twenty hours later, after the propellers have turned many millions of

Two of our best friends: "Mr Pratt" and "Mr Whitney".
Photograph by courtesy of David Vincent.

times. As the aircraft relaxed, so did the crew; the first major hurdle had been crossed, and my log book records the time as 1545 hours.

Before take-off I had given Clem the course for the first leg of the operation from Cairns to the strait just east of Milne Bay. It was to be flown at low altitude to conserve fuel, and because the route was over sea, the navigation was by dead reckoning, with several wind velocity calculations and a possibility of a star fix after dusk. The average air speed was slightly under 100 nautical miles per hour, but wind assistance raised that to about 110. The estimated time of our first landfall was 2155 hours local time.

Soon after setting course the automatic pilot was engaged, which relieved the pilots of the strain of flying manually, and increased their usefulness as observers of weather to be avoided and made them valuable for identifying a landfall when the time came. While 'George' was flying, there was no need for both pilots to be in the cockpit, until we came within range of enemy controlled territory. Unfortunately, in those days 'George' was not totally reliable, since it had the nasty habit of slowly altering course and of not reacting to changes of air speed brought about by the movement of crew members in the aircraft. Unless a fairly constant course and air speed were maintained, a navigator's dead reckoning could not be accurate, and accuracy was essential if a landfall was going to be in complete darkness. Whenever a pilot had not noticed an alteration of course or air speed, the navigator pretty quickly asked for a correction.

Over a distance of 600 nautical miles wind velocity often changed significantly, perhaps several times, and therefore a new wind speed and direction needed to be found. This I did twice on this first leg of the journey, once in daylight by sighting on the white wave caps, and once after it became dark by dropping a flame float. An hour before ETA at Milne Bay I obtained a good star fix and this showed we were on track and on time. This part of the operation had been uneventful, with none of the strain on physical and mental resources sometimes experienced in bad weather. My constant companion on the other side of the navigation

compartment was one or other of the wireless operators, whose reveries were occasionally interrupted by the need to record a morse code message which had somehow got into the airwaves, but usually had nothing to do with us. Our resident chef had twice brought each of us a welcome cup of coffee.

Our description of a dark night: "as black as the inside of a cow."

Even on the darkest night, experienced eyes can usually detect land is being approached, and at low altitude a sudden increase in turbulence will confirm that the margin between sea and land has been crossed. On this night there was some moon and we had no difficulty in picking our way visually through the wide strait between Milne Bay and the Louisiade Archipelago, so familiar was the area to us now from long acquaintance on other raids and on milk runs. If this had been a milk run, our course would now have been north-westerly through the Ward Hunt Strait between New Guinea and the D'Entrecasteaux Islands, past the remarkable Goodenough Island. But tonight we were not spying on enemy movements. We had a more deadly intent – to blast the enemy's strongest base, Rabaul.

From the north-east tip of Normanby Island a course was set across the Solomon Sea, which would give us landfall at Cape St George, at the southern end of New Ireland, a distance of about 350 nautical miles. This was the most direct route to Rabaul. An alternative was to cross the Gazelle Peninsula of New Britain at Wide Bay, and to approach Rabaul from the west. This route was believed to avoid most of the Japanese radar, but required extra flying time and increased fuel consumption. From Cape St George we normally followed the coast of New Ireland and approached Rabaul from the east, and that was our plan on this occasion, although it was well known enemy radar operated efficiently along that coast.

All seemed to be going well for an hour, with our course bisecting a line between Woodlark Island and the Trobriand Islands, when the weather suddenly deteriorated. We had flown into a violent tropical storm. Turbulence became severe, so that anything loose on the navigation table dropped on to the catwalk, or worse still, into the bilge. There was no hope of flying around the

storm and it was decided to descend and try to fly under it. At the lower level there was less turbulence but we were lashed by heavy rain squalls. Of course the aircraft had to be flown manually, but any hope the pilots would be able to maintain even a semblance of constant course or air speed was vain. They were frequently blinded by lightning. In such storms winds vary chaotically. The only hope was that, at something near my original ETA, the aircraft's never very reliable radar would indicate the approach of land, or that soon we would fly clear of the storm front into calmer conditions and be able to see the stars.

The latter *did* occur, about an hour before we expected to be at Cape St George, and in calmer conditions, I obtained three star sights which gave me the best cocked hat ever. We had indeed been driven off course and were heading for Cape Orford, behind which rose ominous mountain country we would not have avoided if we had still been in the storm. We had endured an hour of horror, and were thankful for some calm as we thought about what sort of storm the enemy might have in store for us. The weather

This photograph was taken from the bombaimer's compartment and so is looking to the rear of the aircraft, through to the navigator's compartment. The pilot on the right, in the captain's seat, is Sergeant-Pilot Arthur Lunnon, who was second pilot in our crew when we were attacked in the Coral Sea in A24-12 on the 9th of May 1942. The other pilot in this picture, using an Aldis signalling lamp, is Sergeant Pilot Frank Rowson.
Photograph supplied by courtesy of David Vincent.

having cleared, with the help of an almost full moon there was no problem at all in following the coastline on the western side of St George's Channel, though as we did so, we knew full well that our approach was being watched by enemy radar and that preparations were being made for our reception.

The object of this raid was first to drop all the 250-pounders on Lakunai, the fighter strip on the edge of Simpson Harbour, to prevent Zeros using it the following day when an American daylight heavy bombing raid on shipping was scheduled. The second objective was to throw out the tewnty pounders along the edge of the alternative airstrip, Vunakanau, in the hope of hitting enemy bombers in their parking bays. Even on a dark night, and this was not a dark night, Vunakanau was easily identified because it was surfaced with coral.

The planned bombing height on Lakunai was 6000 feet, and before the steam from the active volcano Matupi was reported from the cockpit, we had climbed to 7000 feet. As zero hour approached each man's thoughts became more focussed. By the time the 'action stations' hooter had been sounded, all lights had been turned off except one over the navigation table, and all crew had climbed into their parachute harnesses and were walking about in a slightly crouched manner. Parachutes were hardly ever discussed by Catalina flyers, but before reaching a target the pack was routinely clipped to the harness at the chest. We all knew it was something of a futile gesture. There was an escape hatch above the navigator, but using it while the propellers were still turning could have easily resulted in decapitation. The only feasible exit route was through the blisters, but nine men trying to get out that way would have caused considerable congestion. If an aircraft were on fire – as happened to many – the most reasonable course was for the pilot to attempt to ditch in the open sea. Some who did this, after sending out a signal that they were on fire, survived at least for a time, until the inevitable capture by the enemy.(David Vincent, in *Catalina Chronicle* has recorded that Corporal Tom Keen, the only surviving member of the crew of A24-9 which was attacked and set

on fire by no fewer than twelve Japanese Zeros while on patrol near Salamaua on the twenty-first of January, 1942, parachuted from the doomed aircraft, then escaped capture and somehow made his way to Port Moresby within ten days. This was a short time before I joined the squadron but I don't remember knowing about it at the time.)

By the time the target was reached each crew member was at his own action station – the navigator at his bombsight in the nose compartment, two men at the guns in the blisters, whose canopies had been rolled back, and one at the gun which fired through the opened hatch in the rear tunnel. Through our headphones and microphones we were each in communication with all other crew members, whose usual lighthearted chatter had become deadly serious. In the nose compartment I threw the switch to arm the bombs which to this point of the flight could have been dropped 'safe', that is without exploding, if, in an emergency at low level, it was necessary to jettison the load.

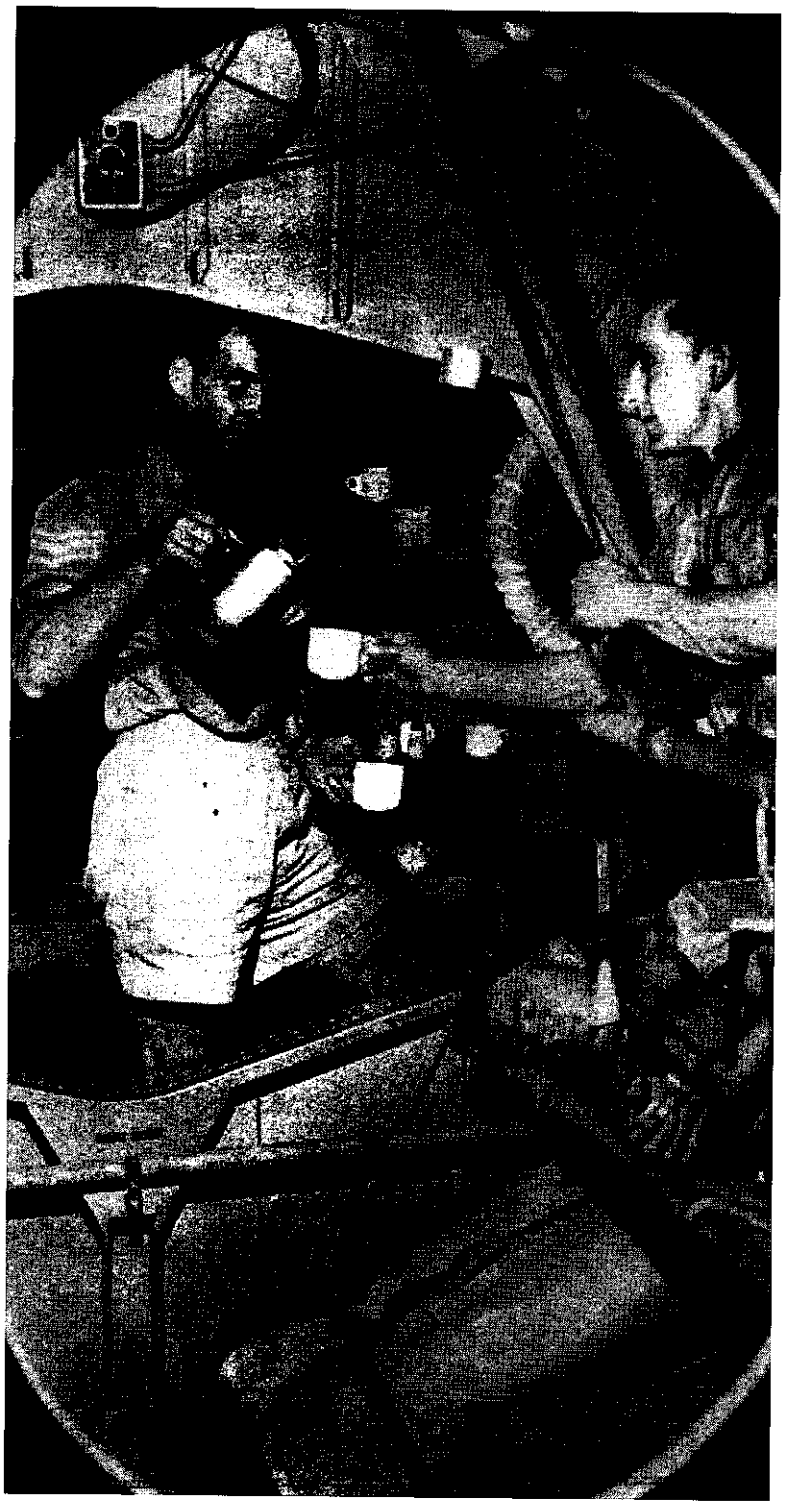
Simpson Harbour was fairly crowded with shipping, but ships were not our target that night. Hunched over the bomb sight as I was, all seemed peaceful until we turned to run over Lakunai in a gentle glide with engines idling. Then suddenly six or eight searchlights pierced the sky and we were trapped in a cone of light. Tracer shells began heading towards us from both shore and ships, and we knew many other shells were aimed at us, since the Japanese were thought to use one tracer in every seven shells. The aircraft shook each time one exploded near us. I was blinded by the lights and had no option but to request the bombing run, which had looked quite promising, be abandoned. Clem Haydon put the aircraft into a steep turn to evade the blinding beams of light. Low speed gave the Catalina the advantage of short radius turns, which was very useful in searchlight evasion. In fact, in a test over Darwin, it was found a Catalina could easily turn inside the turning radius of a Spitfire.

Since the pilots cannot see the target once it is close, it is the bomb-aimer who controls the direction of the aircraft by giving orders over the intercom – 'left; left; steady; a little right; hold it'. The accuracy with which the bomb load was

delivered depended entirely on his instructions, and often in the face of fierce enemy fire, he needed courage to order the bombing run be aborted if he was not satisfied with it, not that the rest of the crew found it easy to thank him – for the bomb-aimer pride was at stake. He and the two men in the blisters will certainly see where the bombs burst – on the target or not – and there was no point in coming a long way only to drop them in the bush. Nevertheless there was always great relief when finally crew members heard the magic words: 'Bombs away'.

Our first attempt having been called off, once free of the lights, we regained some height and turned towards the airstrip again, though this time with increased power and speed. I needed to give few instructions to alter course, as Lakunai strip lined up nicely on the bombsight, and I pressed the release button. All sixteen bombs dropped away just as the searchlights found us again, and the fireworks display of tracer shells re-started. Evading the beams of light was easier now that the 4000 lb bomb load was gone. The crew members in the blisters reported seeing the flashes of bursting bombs and vowed most had landed on the runway. We had started no fires, but runways don't burn.

The other task for that night was to unload the incendiaries on the edges of Vunakanau. As we flew some distance away, all forty twenty-pounders were lifted into the blister compartment, together with the crate of beer bottles. The plan was to fly over the strip several times at the low height of 1200 feet, thereby hoping to avoid radar detection. Two crew members took great delight in arming and then dropping the incendiaries over the side. They had acquired such expertise from previous raids that only three passes were needed to get them all out. Whether the beer bottles were quite as terrifyng when dropped from low altitude, as we believed them to be when released from higher up, we will never know. The first pass obviously took the enemy by surprise, and we failed to draw any fire. We flew away for fifteen minutes before making a second run. This time the Japanese had worked out our plan and were firing at us with their equivalent of Bofors guns. We



All part of the service: bunks for the weary and a waiter to pour the coffee. *Photograph by courtesy of David Vincent.*

suspected we had been hit twice, though we did not know where. The whole base was probably awake by now and we delayed our last run over Vunakanau for twenty-five minutes. If the enemy had been awakened, they might as well be kept out of bed for as long as possible. On the third pass the remaining incendiaries were despatched. The crew members in the blisters reported two parked aircraft were on fire, and that a third, more aggressive blaze could have been a fuel depot fire. As Clem banked in a steep turn, all of us could examine our handiwork. We were not dissatisfied; and who will ever know whether the lack of interception by night fighters was because we had disabled Lakunai with our heavy bombs?

We lost no time getting away from Rabaul. It was now 3 am local time and daylight would soon be heralded in the east. Parachute harnesses were soon discarded, coffee was served by our versatile second engineer, and a little later came warmed baked beans on toast. All signs of the storm over the Solomon Sea four hours earlier had disappeared. As the eastern sky grew lighter we could see that the leading edge of the starboard wing had been hit perilously close to the fuel tank, and that the retracted port float had been damaged. One pilot, an engineer and a wireless operator took over three of the bunks. There was no such luxury for the navigator. In full daylight we flew quite close to the Trobriands, the flattest islands I had seen, such a contrast to Goodenough, not far away, and I remembered their inhabitants had been the subject of study by a celebrated anthropologist whose name I could not recall.

From Milne Bay, three and a half hours lay ahead of us over featureless sea, featureless except for a sighting of Middleton Reef, time in which I had to fight off sleep. The first sign we were approaching the coast of North Queensland was smoke, for this was the time of the burning of the sugar cane stalks during harvest. From more than fifty miles out we could also home-in on a Cairns radio station. After alighting with one float inoperative, the two engineers climbed on to the wing to inspect the damage to A24-27. Nothing that could not be fixed at Bowen was their report.

How disappointing; we hoped we might have to fly the aircraft to Rathmines! We collected our belongings, dropped into the tender and came ashore. At the de-briefing we reported, without exaggerating what had been a fairly routine job. After a raid in which more than one aircraft took part, the report of the first crew could be confirmed by those who arrived at the target subsequently, but that night we were a lone raider. What a pity the fire we thought was a fuel depot blaze could not have been confirmed as having destroyed half the enemy base!

Another nineteen hours and fifty minutes went into our log books.

I have told how my first sight of the enemy was at the southern end of Bougainville. My last two raids were in the same area, one on Kahili and the other, two days later, on Ballale Island.

The Japanese were known to be creating a strong air base at Kahili, thereby threatening the U.S. position on Guadalcanal. During February 1943 a number of Catalina raids were made against the airfield. Ours was one of two crews which raided Kahili on the seventh of February, the other was captained by Eric Townsend. We both bombed from high level. One twenty-pound fragmentation bomb from Townsend's aircraft hit an ammunition depot and caused an explosion his crew felt at 10000 feet. How I would have liked to have claimed *that* success!

On the seventeenth of February North Eastern Area Headquarters ordered that Kahili be attacked by five Catalinas. The purposes were to render the runway unusable with 500 pounders carried by one of the aircraft, and to attack enemy planes parked in revetments, and hit fuel and ammunition dumps with 250-pound 'daisy cutters', as well as the usual inboard cargo of incendiaries. A 'daisy cutter' was a 250 lb bomb with a nose extension which caused it to explode without first burying itself in the target, so it scattered shrapnel outwards rather than upwards.

'daisy cutters'

Take-offs were at half hour intervals and it was hoped that arrivals over the target, 1000 miles away, would be similarly spaced. We had the good fortune to be first in the

Buka Passage, northern Bougainville, 1943.
Reproduced with permission of the Australian War Memorial.

View across Karavia Bay, Rabaul. Both peaks were periodically active volcanoes.
Reproduced with permission of the Australian War Memorial.

queue. There was always some reassurance in knowing we had company on a raid, rather than flying in lonely isolation. The weather was good and we had no trouble finding the target, which we bombed from 8500 feet with minimal searchlight opposition. We experienced some anti-aircraft fire, but thought that we dropped the eight 500-pounders with good accuracy. My log book records that instead of returning to Cairns we flew to the repair base at Bowen, but my memory does not tell me why. It may be we suspected damage we could not see below the waterline. It could not have been severe because we returned to Cairns next day, and that afternoon we took off in the same aircraft on a raid on Ballale Island, where the Japanese were thought to be dispersing aircraft from Kahili. We saw some results for our seventeen hours and fifteen minutes in the air on this occasion – at least three aircraft ablaze on the ground. It was my last operation of my first tour.

At the de-briefing after the raid on Kahili on the seventeenth, we realised after talking to the other crews that it was our good fortune to have been first on the target. They all reported intense searchlight attention and very heavy anti-aircraft fire. Many of their bombing runs had to be aborted because bombaimers were blinded by the searchlights. One aircraft, that of Squadron Leader Reg Burrage, spent fifty-five minutes over the target before his navigator was satisfied it was well placed on his bombsight. It seemed as though our contribution had aroused the enemy to a frenzy of activity. Dawn was approaching as the last of the aircraft left the target area. Considerable damage had been inflicted on enemy aircraft and installations during the two hour raid, and some crews reported flames rising to 500 feet were visible from fifty miles away. At the de-briefing we also learned that Terry Duigan and Tom Stokes were both over the target at the same time, and Terry, having dropped his bombs, realised that Tom was having trouble evading searchlights. In typical Duigan style, he decided to divert attention from his friend *by switching on his own navigation lights* and buzzing the strip.

I had navigated with Clem Haydon from the twenty-fourth of September to the nineteenth of February, 1943,

for a total of thirty-four operations, most of which were bombing raids, with a few milk runs. We had a mutual respect for one another's skills and developed a friendship both in the air and on the ground. We parted with considerable regret when, at the end of February, after more than eleven months of operations in 20 Squadron, I was posted south for instructional duties. The parting would have been poignant if I had known then that he and the other crew members I was leaving had less than two months to live.

Three Catalina captains, all Flight Lieutenants, are from left to right, Clem Haydon, Eric Townsend and Terry Duigan. The photograph was taken after the raid on Ballale Island on the 17th of February when five Catalina crews claimed, with a trace of poetic licence, *to have set this* Japanese base alight "from coast to coast". It was my last operation with Clem Haydon and the end of my first tour.
Photograph supplied by courtesy of David Vincent.

First 'tour' ends

The termination of one's 'tour of operations' in RAAF service in the Pacific had not the same fixed formula that applied to service in Bomber Command in Europe, where aircrew personnel were relieved after flying thirty missions over enemy territory and transferred temporarily to other duties, usually training. The case with Catalina crews in the Pacific seemed rather more haphazard, with decisions made by squadron commanders, who were in a good position to understand the problem of fatigue, perhaps prompted by someone at North Eastern Area Headquarters responsible for monitoring each individual's flying hours.

For a time at least there would be no more orders to me to prepare for an operation, no more long, slow, lonely,

overloaded flights to a target, no more battling with monsoonal weather, no more anticipation of the hostile reception that inevitably awaited those who penetrated enemy defences, no more acting as an Aunt Sally for their searchlights and guns, no more long hauls back to base while overcome with weariness, no more wondering if the bombs so carefully aimed had inflicted real damage, no more late afternoon attempts to sleep after an all-night flight, with the drone of engines still in one's head hours after leaving the aircraft. I should have felt relieved, and I was, although it meant leaving friends. Yet, like others who had been posted, I hoped to return at some time in the future. 'Dicing with death' had got into our blood.

Squadron Leader Frank Chapman

My eleven months in 20 Squadron had built up my flying hours to 1290, of which 442 were night flying hours and 787 had been flown on operations north of the latitude of Port Moresby. My log book was signed on the twenty-second of February 1943 by Squadron Leader Frank Chapman, then commanding officer of 20 Squadron. I greatly value the signature of one of the finest men I have known. A little older than most of us, Frank was an officer of the Permanent Air Force. I doubt whether the service has ever had a finer, more competent and courageous, or more revered leader. His influence on 20 and 11 Squadrons was inspirational.

On the eighth of March 1943 Frank Chapman and his crew were on a milk run in the Solomon Sea. A message was received from his aircraft near Gasmata, on the southern coast of New Britain, that the plane was on fire and Frank was preparing to ditch in the sea. There was no further word from the crew, although somehow it has become known that many, if not all, survived the ditching and managed to swim ashore. What happened to them as Japanese captives does not bear thinking about. Chappie's loss caused great grief in the squadrons.

Six weeks after my posting from the squadron, Clem Haydon and the crew I had just left were lost. The

Frank Chapman (left) in discussion with Fl. Lt. Vic Hodgkinson.

Wing Commander Frank Chapman DFC

Francis Blomfield Chapman was born in November 1911. He was a sheep station mechanic in Queensland when he enlisted as a cadet in the Royal Australian Air Force in July 1932. He graduated as a pilot and commissioned at Point Cook in the following year. He resigned from the RAAF at the end of 1933, but was appointed to the Citizen Air Force in 1939. In June 1940 he was transferred from the Reserve to the Active Force.

From May 1942 Frank was appointed to command No. 11 Squadron and from January 1943 he took command of 20 Squadron. Always interested in mechanics, Frank, with the support of Jack Riddell, produced evidence which justified a considerable extension of hours between major inspections and engine changes. This greatly increased availability of RAAF aircraft and consequently the workload which could be undertaken by the squadrons.

All those who served under Frank loved the man, whose quiet gentleness concealed an extraordinary courage. The members of both Catalina squadrons were devasted when on the 9th of March 1943 a signal was received from Chappie, now a Wing Commander, that, in the vicinity of Gasmata, his aircraft was on fire and he was making an emergency alighting in the sea.

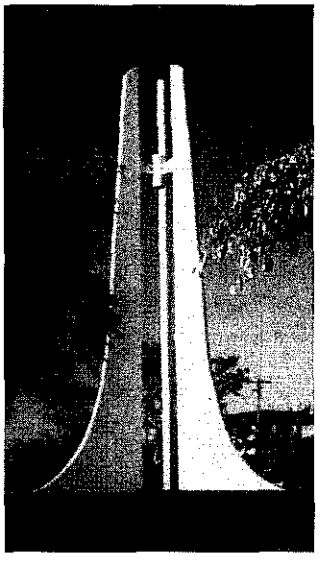
The citation for his Distinguished Flying Cross was as follows:

Squadron Leader Chapman has been actively engaged in operational flying against the enemy since February 1942. In November he led a raid by Catalina aircraft against an enemy aerodrome causing extensive damage to fuel dumps and stores, and destroying eight enemy aircraft and damaging others in a low level attack on the dispersal area by machine gun fire. A few days later he was responsible for creating extensive damage to an enemy air base. During all of these raids his aircraft has been subjected to heavy anti-aircraft fire, but he has, by his determination, carried out his allotted tasks with the utmost success. As Commanding Officer, Squadron Leader Chapman, has shown outstanding qualities of leadership which have proved an inspiration to all members of his squadron.

navigator who had replaced me was Flying Officer John Lancaster. While carrying out a radar search, a signal from A24-41 stated the aircraft was on fire and no more was heard. It is thought that A24-41's position at the time was the Gulf of Carpentaria, so that the fire was unlikely to have been caused by enemy action. The most probable explanation is a mishandling of an incendiary carried inboard, an ever-present danger.

Cairns remembers

By the time I started my second operational tour at the beginning of 1945, Cairns was no longer the base from which Catalinas attacked the enemy threatening Australia. By 1944 their targets were far to the west and we required a base closer to Asia. But the people of Cairns did not forget the drama that was once played out in their midst in 1942 and 1943. On the shores of Trinity Bay they have erected an imposing memorial to the 320 men who lost their lives in Catalina operations. It was dedicated by the Governor of Queensland, Air Marshal Sir Colin Hannah, on the ninth of October 1976. A bronze plaque carries the following words: *During the early critical months of the Pacific War, Catalina Flying Boats of 11 and 20 Squadrons, Royal Australian Air Force, played a significant part in slowing the initial Japanese advance, operating from northern island bases as emergency bombers and reconnaissance aircraft. Although deficient in speed, arms and armour, they exerted an influence out of all proportion to their limited numbers as these inexorably dwindled and their bases were overrun or became untenable. The survivors withdrew to mainland Australia, and – briefly licking their wounds – renewed the fight from the waters which this memorial overlooks.*



Armed with bombs, depth-charges, mines and torpedoes, they reached out from here in single flight to the Solomons, New Britain, New Guinea and the Netherlands East Indies and by stages and in increasing strength to the Palaus, the Philippines, Formosa and China.

In January 1942, the two squadrons attacked Truk, the great Japanese naval base in the Caroline Islands; by June the enemy

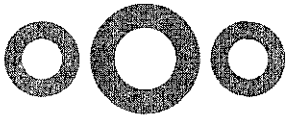
flood had reached the Solomons and the Catalinas were bombing Tulagi the centre of the group; three years later in May 1945 with the reinforcement of 42 and 43 Squadrons, they were mining the South China Coast and in July, as the test atom bomb exploded in New Mexico, they were at full stretch mining the Banka Straits off Sumatra.

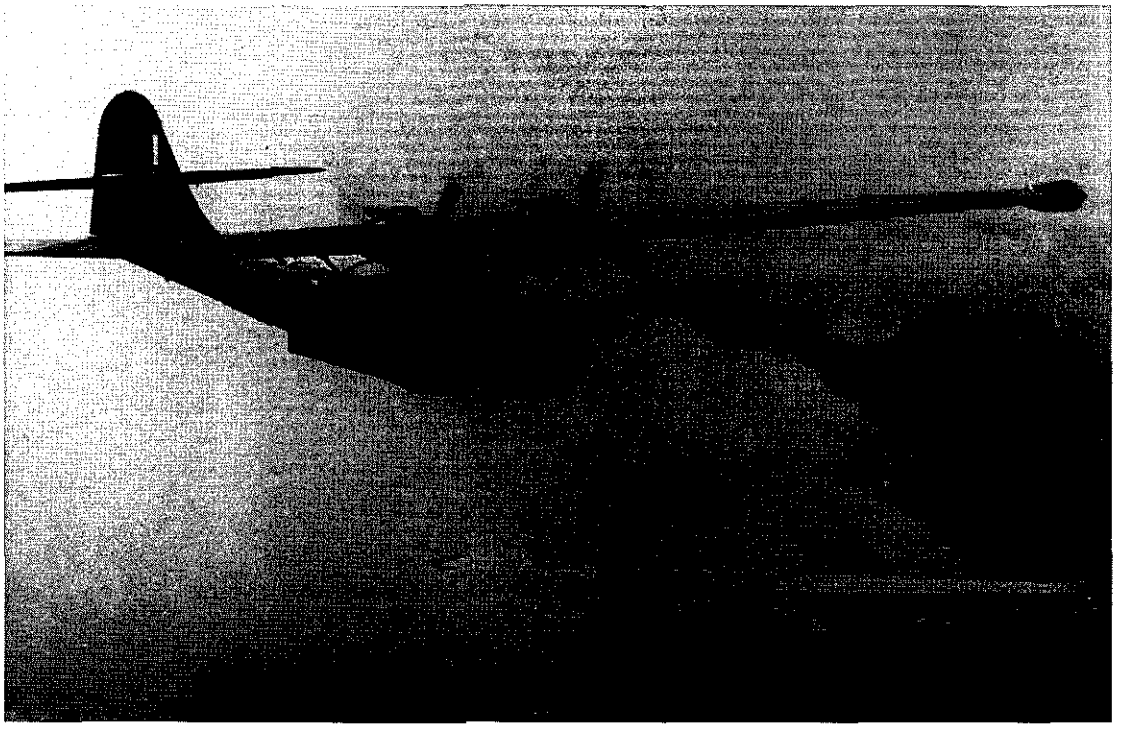
In the years between, these four squadrons attacked most of the enemy strongholds within this great rectangle; many of them many times. By night Catalinas bombed them and mined their harbours, swept their sealanes with radar eyes and, parachuting supplies or setting down on unlit beaches, maintained our Coastwatchers in their midst, and at all times in the role they were designed for, the flying boats escorted armadas of ships, harried submarines and plucked from the sea, soldiers and sailors and many aircrew – some from within rifle shot of the enemy.

Not all of these missions were mounted from Cairns, neither the first strikes nor the last took off from here, But from the attacks on Tulagi onwards for two years, this city was the Catalinas' operational base and its people the refuge and strength of those who flew them. It was perhaps unique among settled communities of Australia in having a fraction of its population in almost daily contact with her enemies and in pulsing night and day to the passage of armed aircraft directly attacking them.

In those far-off years this placid spot resounded some 3000 times to the labouring take-off of a loaded Catalina and a day later heard its whispered return – but not all 3000 times. From all Australian Catalina operations in the South West Pacific theatre 320 airmen failed to return.

Nearly all those who died were temporary citizens of Cairns. Their resting places are mostly unknown. This is their memorial. It was built by the people of this city in 1976, and by the surviving members of the wartime Catalina squadrons.



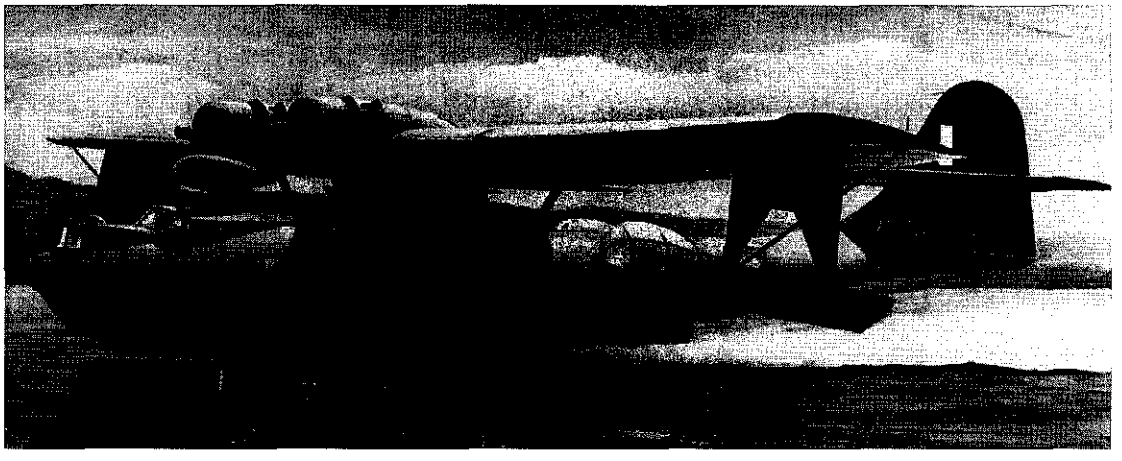


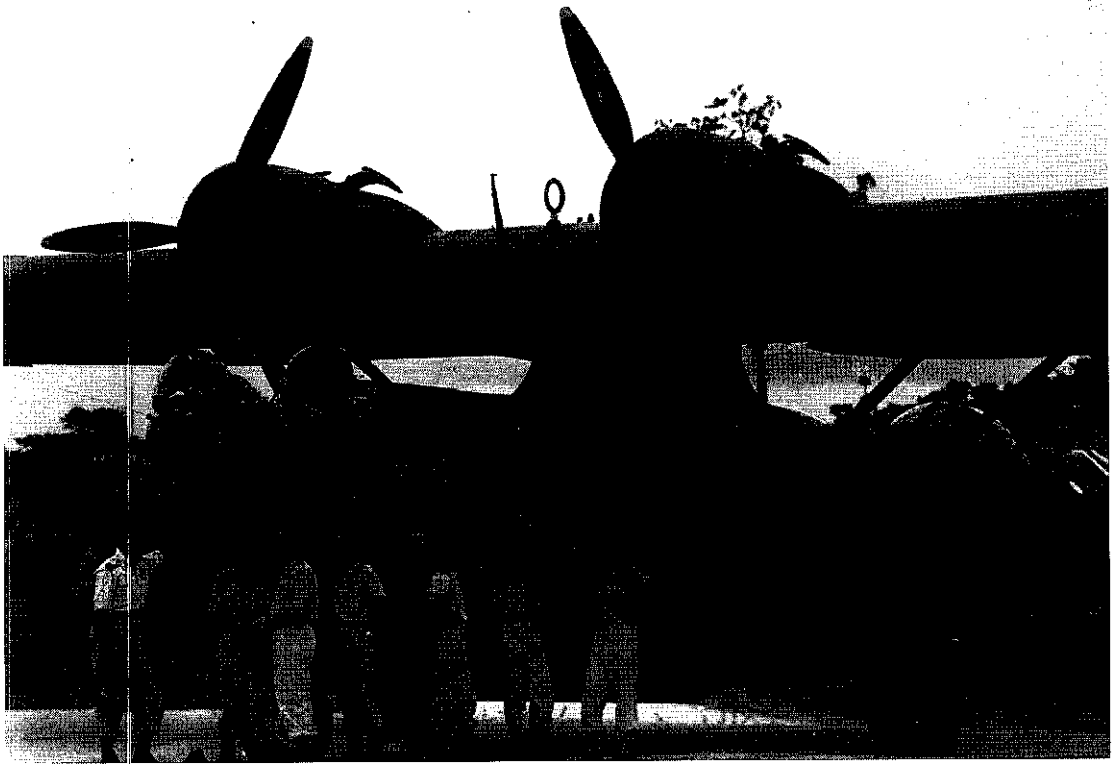
ABOVE: This was an unusual sight: three Catalinas flying in formation. *Photograph supplied by the RAAF Museum, Point Cook, and reproduced with permission.*

BELOW: A Catalina taking off without bomb load from Trinity Bay, Cairns. This picture was taken after the aircraft reached the altitude known as "on the step". After leaving the water the wing tip floats were retracted. During the take-off run, the floats did not touch the water once the aircraft was on the step. In fact, if the aircraft was balanced, they rarely touched the water, except in choppy seas or when turning during water taxi. This aircraft, A24-35, was fitted with a search radar housed above the navigatiopn compartment. The following are the statistics of a PBY5 in imperial units:

Wing span	104 feet
Length	63feet 10 inches
Height	18 feet 10 inches
Wing area	14,000 square feet
Maximum speed	196 miles per hour (This is the manufacturer's figure; most pilots said: "Only in a steep dive")
Cruising speed	90–100miles per hour according to load
Service ceiling	18,000 feet.

Photograph supplied by RAAF Museum and reproduced with permission.





ABOVE: This is the amphibious version of the PBY5 Catalina, a PBY5A, of which the RAAF had a small number. It had retractable undercarriage but in all other respects it was identical to the standard seaplane version.
Reproduced by permission of AWM, photograph No OG1986; courtesy of David Vincent.
LEFT: Armourers of No. 43 Squadron attach bombs under the wing of A24-64 from a bomb scow in Darwin harbour.
Photograph from Gordon De Lisle, courtesy of David Vincent.
BELOW: Doctor's Gully, Darwin, where the squadrons' aircraft could be beached for inspection and servicing. Living quarters were on the hill behind the slipway and near Darwin Hospital.
Photograph by Ivan Clempson, courtesy of David Vincent.

5473....

Date	Hour	Aircraft Type and No.	Pilot	Duty
		TOTAL	NUMBER OF	RAIDS - 27
		TOTAL	NUMBER OF	SJY's - 8
		TOTAL	NUMBER OF	RECCOS - 25
		TOTAL	CATALINA	HOURS - 1099.55
		TOTAL	HOURS ON	OPERATIONAL
MENTION IN DESPATCHES "ARGUS"		14/8/43		Arthur Kenneth Sandell, of First av, ~~31 Kensington~~, V. Since being posted to a squadron as a navigator and bomb-aimer, Sandell has completed many hours' operational flying, including bombing raids, reconnaissances, and shipping protection patrols. He has displayed courage, determination, and outstanding ability.
22/3/43	0030	ANSON WJ 430	SGT CROWE	NAV. INSTRUCTOR
24·3·43	1000	ANSON W2598	W.O. MACKIE	NAV. INSTRUCTOR
24·3·43	1130	W 2598	W.O. MACKIE	NAV. INSTRUCTOR
24·3·43	1840	W 2598	W.O. MACKIE	NAV. INSTRUCTOR

5473....

Time carried forward :- 809-30 | 386-35

Remarks (including results of bombing, gunnery, exercises, etc.)	Flying Times Day	Flying Times Night
TOTAL TIME FLOWN IN FEBRUARY	38-00	55-25
PROGRESSIVE TOTAL TO 28-2-43	847.30	442.00
TOTAL HOURS FLOWN 1289.30		
SORTIES NORTH OF LATITUDE OF PORT MORESBY 677-35		
W. L. Chapman S/L 22 FEB 1943 20 SQUADRON		
NHILL - SWAN HILL - PINNAROO - NHILL		3.30
NHILL - BEULAH - NHILL	1.10	
NHILL - HAY - COOTAMUNDRA	3.25	
COOTAMUNDRA - SHEPPARTON - NHILL		3.35
TIME FLOWN IN MARCH, 1943	4.35	7.05
PROGRESSIVE TOTAL TO 31/3/43	852.05	449.05
TOTAL TIME ..	852.05	449.05

CHAPTER FOUR

Temporary peace and quiet

From March to July 1943 I became an instructor at No. 2 Air Navigation School at Nhill in western Victoria, one of two schools for instructing trainees in astronomical navigation, the other being at Parkes, where I trained. I enjoyed the duties. I became a teacher again, with a classroom on the ground and another in the air, the latter being any one of a dozen Avro Anson aircraft flying over much of Victoria's finest wheat country. It also fell to me to supervise some of the physical training of the student navigators, and I enjoyed taking them on rather long cross-country runs. Some of them did not like this; it did not seem to them to have much to do with their reasons for joining the Air Force. Their enthusiasm for star recognition and for obtaining fixes with their sextants, however, could not be faulted, though I wondered at times how many would use this skill, so precious to Catalina navigators, when very many of these men would be posted to squadrons whose missions would be short flights and predominantly in daylight. I also wondered how many would live to see the war end.

Teaching again

Mentioned in Despatches

While at Nhill I was informed I had been awarded a Mention in Despatches. The Melbourne *Argus* on the fourteenth of August 1943 printed the citation: *'Flying Officer Arthur Kenneth Sandell of First Av., Kew V.: Since*

being posted to a squadron as a navigator and bomb-aimer, Sandell has completed many hours operational flying, including bombing raids, reconnaissances, and shipping protection patrols. He has displayed courage, determination and outstanding ability'.

In four months my duties as an instructor involved thirty-nine flights, mostly of about three hours and the majority at night. If the pupil could not find his way home, he needed my help, and I rather quickly learnt my way about that territory, even though the country towns were blacked out at night. Mostly 'black out' meant no more than 'brown out'. Why even brown out was thought necessary so far from the war was hard to understand.

A student again

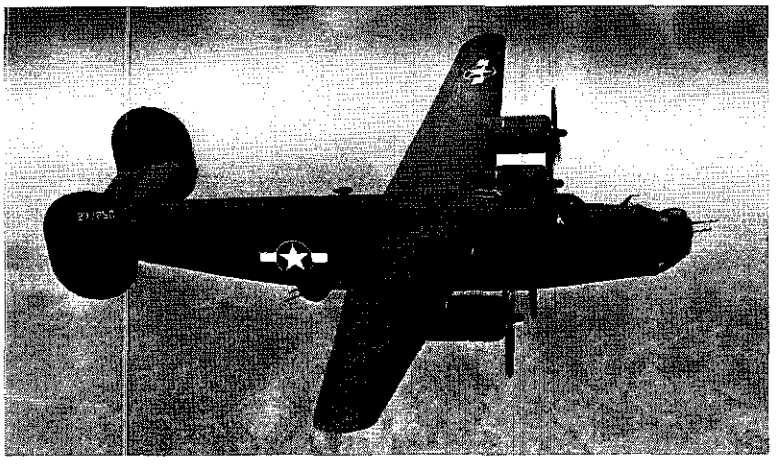
Then for six weeks from the first of September I was a student again, posted to No. 1 Staff Navigation Course, located at Nhill. I was glad not to be moving from Nhill because I was hopelessly in love with a very beautiful girl. 'Hopelessly' is appropriate, because she was already the

Flying instructors at no 3 Operational Training Unit, Rathmines, New South Wales, in mid 1943. All of them had completed a tour of operations in either 11 or 20 Squadron during my time in 20 Squadron. Rear, left to right: Mike Seymour, Bill Miller, Terry Duigan, Bob Hirst, Norman Robertson, John Shields, and front, left to right: Norm Fader, John Costello, Hugh Birch, Dick Cohen, Dick Atkinson, Vic Hodgkinson.
From Mrs Betty Martin, courtesy of David Vincent.

wife of a fellow navigation officer. The Staff Course brought me unexpected reward, because at the end of it I was posted to the Link Trainer Corporation in Binghamton, New York State, to study the use of a recently designed trainer for simulating navigation by the stars while the learner remained on the ground, just as the long-familiar Link Trainer simulated instrument flying for pilots while they sat safely in a cubicle on the ground. The posting was considered quite a prize.

Three months in the USA

Accompanied by a warrant officer, who was highly qualified in the kind of static instrumentation which Link Trainers were, we were flown by a Liberator of American Transport Command from Brisbane to San Francisco via Fiji and Honolulu. We were the only two passengers, and



This is a B-24 Liberator bomber, also used by American Transport Command which flew freight and personnel — the latter in absolute minium comfort — regularly between Brisbane and San Francisco, with stops at Plaines de Gaices (New Caledonia), Nandi (Fiji), Canton Island, and the longest at Honolulu, where I tried the surf at Waikiki. On our delivery flights of Catalinas we managed to cross the Pacific with only two stops for refuelling. *Photograph by courtesy of Pratt and Whitney.*

very little comfort was provided. We sat on piles of mail bags and froze at 20000 feet. By the time we reached San Francisco I was suffering from a recurrence of dengue fever which I had contracted in the islands, but, to my amazement, the fact that I had a high temperature and felt quite ill was not discovered in the obligatory medical examination on arrival. I was passed fit enough to enter the United States. I lay low in a hotel in the city and recovered without medication after three days.

Our journey across America was by train. It was a good introduction to a vast continent and included a short stay in Chicago, which even then had skyscrapers which made

Melbourne's tallest buildings seem like dwarfs. One learns a lot about strangers on a long train journey and I was glad of that opportunity. I had already come to know several American pilots when, after one of our raids on Tulagi, in which we sustained some damage, we had to spend a week at a United States air base at Vila while repairs were done to our aircraft. I enjoyed the company of those flyers, and found them, despite all their superiority in military equipment, neither brash nor boastful. In fact they were keen to learn what they could from us, whom they regarded as hardened veterans who were mad because we fought the Japanese in the slow, frail, rather ungainly Catalina. By contrast, on this train journey I met civilians who were not simply patriotic but extremely boastful about the exploits of their armed forces. In the dining car I got into conversation one day with a well educated doctor. He remarked to me that without the Australian Army in North Africa Rommel would not have been defeated. My reply, that this was the impression our newspapers were giving and might not be correct, astonished him. No American, he said, would ever express such caution if similar praise were made of the exploits of American troops.

My immediate destination was Washington and the office of Air Marshal Dickie Williams, a First War flyer and founding father of the Royal Australian Air Force. He was now the somewhat elderly Australian Air Attache to the United States. We had a pleasant conversation about nothing much at all. It was obvious astronomical navigation was something of a mystery to him.

I have very pleasant memories of Washington – the noble Congress building, the great simplicity of the Lincoln Memorial, and Washington's beautiful hinterland in the District of Columbia. I also had a surprise. By chance I came across a row of pots along a much frequented sidewalk placed there as cash receptacles for some charity unknown to me. Each pot had on it the name of one U.S. state, all forty-eight of them, plus a forty-ninth which I expected would bear the name of Hawaii, not yet incorporated into the Union. I was wrong: its label was Australia.

I had to get used to some new language – sidewalk not footpath, streetcar not tram, gasoline not petrol, railroad not train, and I remember the embarrassment of a mixed audience for an Australian friend when he mentioned that in civilian life he was on a pretty good screw, meaning, of course, a substantial salary.

There was no point in reporting to the Link Trainer Corporation until after the holiday, and so, now alone, I spent Christmas in New York. It was a magical few days. There was deep snow on the ground, but the city was in festive mood, both by day and by night. Except for the uniforms, war seemed quite remote. I filled the time with sightseeing, saw New York from the top of the Empire State Building, listened to Toscanini conduct at the Rockefeller auditorium and Bruno Walter at Carnegie Hall. I sat through more than three and a half hours of Moussorgsky's *Boris Godunof*, starting like all concerts and plays in New York at 9 pm and delighted in Paul Robeson's performance in *Othello* in one of the many theatres in Times Square. I thought the sight of hundreds of graceful ice skaters at the foot of the Rockefeller building was fairyland when I came across it one night. Many of these wonders I shared with a Polish girl I met in the New York Public Library on 42nd Street. I recall her utter delight when one evening in a restaurant we sat near two diners who were both sailors and obviously close friends. What fascinated her, and she assured me this was extremely unusual, was that one was black and the other white.

A number of Australian airmen had converged on New York on brief leave from their training in Canada for Christmas. American matrons were generous with their hospitality and especially sympathetic to any who appeared homesick. There was never any doubt about the popularity of Australian servicemen in America during the war, but there were few of us there in comparison with the invasion of G.I.s in Australia, which had led to the oft repeated complaint they were 'over-sexed, over-paid and over here'.

From my very first acquaintance with it at Binghamton, I thought the Link Celestial Navigation Trainer was an expensive and unnecessary monster. It was shaped like a

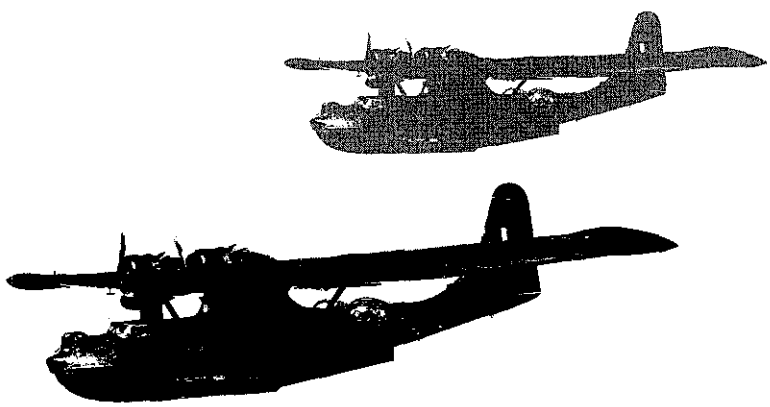
small wheat silo. Above the navigator's head was a hemispherical representation by small lights of appropriate intensities of the stars seen from various parts of the earth, in their correct relationship to one another. The hemispherical dome could be set for a particular latitude and longitude and then it moved at the rate at which the stars at night appear to rotate to an observer on the ground. Some of the stars used in navigation could be identified and their altitudes, determined with the bubble sextant, while the student's seat vibrated more or less as it would in real flight, with appropriate sound effects. No attempt had been made to represent any planets. After all, their erratic movement had defied explanation from the time of the early Greek astronomers until Copernicus (1473-1543) and Kepler (1571-1630).

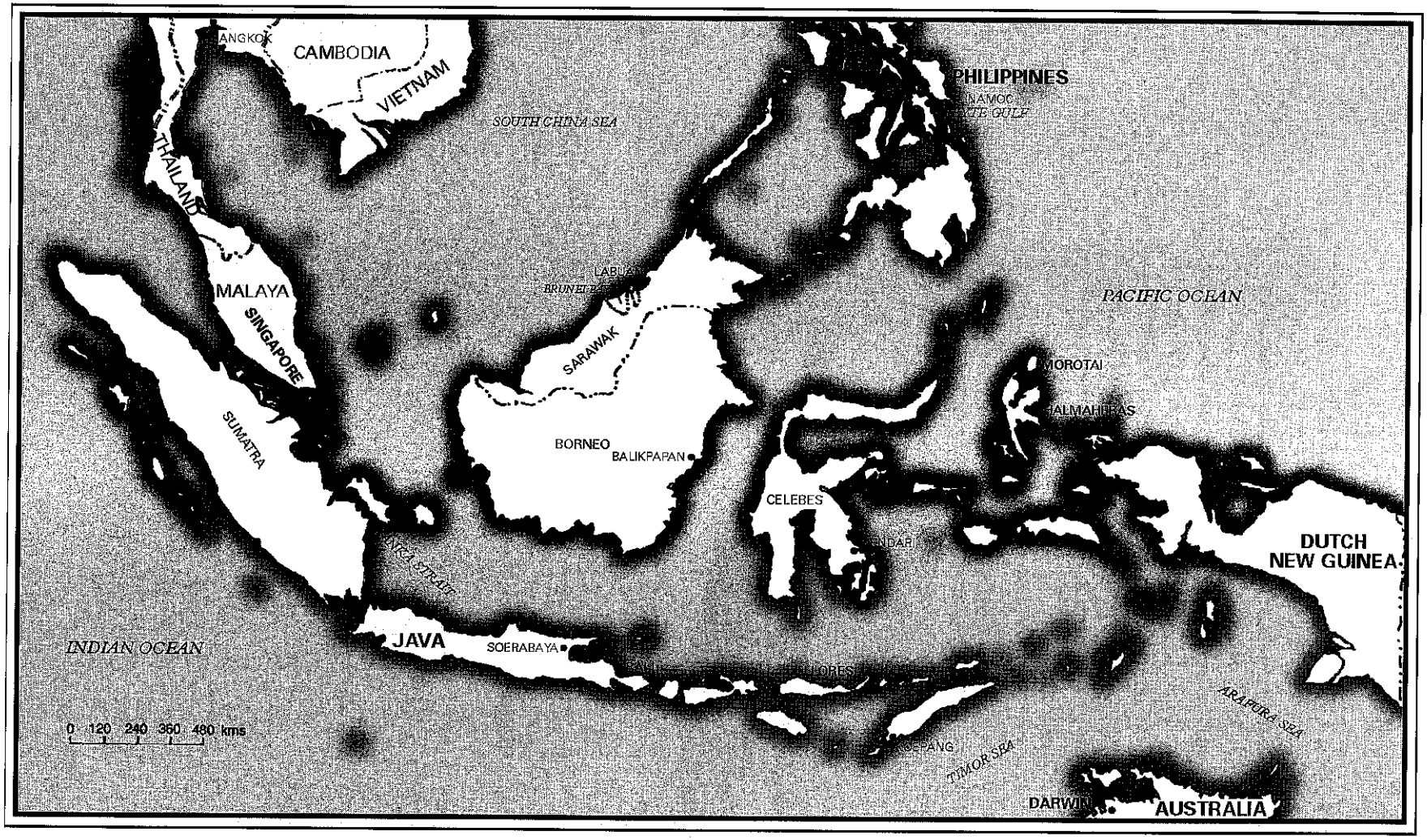
Below the navigator the moving ground was represented by rear projection on to a horizontal screen and was adjustable by the instructor for a pre-set wind velocity. By measuring drift on three different headings, the wind speed set for the exercise could be found by the navigator in the usual way. It was, without doubt, an ingenious, though contrived, artificial and cumbersome teaching aid for which there seemed to me to be no need. I thought it a very poor substitute for what could be practised first on the ground and then in actual flight. It seemed that, having produced a universally accepted and extremely useful device for teaching instrument flying to pilots, the company had a designer who thought the same sort of thing ought to be done for navigation training. But the situation which the celestial navigation trainer hoped to simulate was far more complex than the one which the pilot trainer had succeeded in doing quite spectacularly.

RAAF purchases three Link Navigation Trainers.

The RAAF purchased three of these trainers, though, fortunately, not on my recommendation, and when I returned to Australia in early 1944 one was being erected at East Sale, the operational training unit for Beaufort bomber crews. I spent many months trying to make the Link Celestial Trainer a useful teaching aid. They were very frustrating months. I could not become enthusiastic about the project for two chief reasons. Firstly, this one was in the

wrong place. I doubted whether any Beaufort navigators would ever use celestial navigation in operational flying, especially as their operations would be predominantly in daylight. The only obvious unit at which one of these trainers might be of some use was Rathmines, where a later one was scheduled to go, or at one of the two training units where astro navigation was taught. Secondly, I badly wanted to have a second tour of operations in a Catalina squadron, and I spent much effort pestering the people in charge of postings.

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PACIFIC OCEAN
MOROTAI
HALMAHERAS
BORNEO
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CELEBES
BANDA SEA
DUTCH NEW GUINEA
ARAFURA SEA
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CHAPTER FIVE

With 43 Squadron in North Western area

My repeated application to return to flying was finally successful in early 1945 when I was posted to No. 43 Squadron, one of two – 42 and 43 – Catalina squadrons which were added to Nos. 11 and 20 during 1944. I was to fly with an old friend from my previous tour, Squadron Leader Mike Seymour, who had been a flying instructor at Rathmines since *his* first tour, and was now in command of 43 Squadron based at Doctor's Gully in Darwin. It was the dry season, when Darwin's climate is pleasant. On nights off, we each carried a chair to an open-air picture theatre where quite recent films from 'down south' were projected, courtesy of Red Cross, I imagine. There was even the company of Army nurses, for Darwin hospital was close by our flying boat base.

Our role had changed

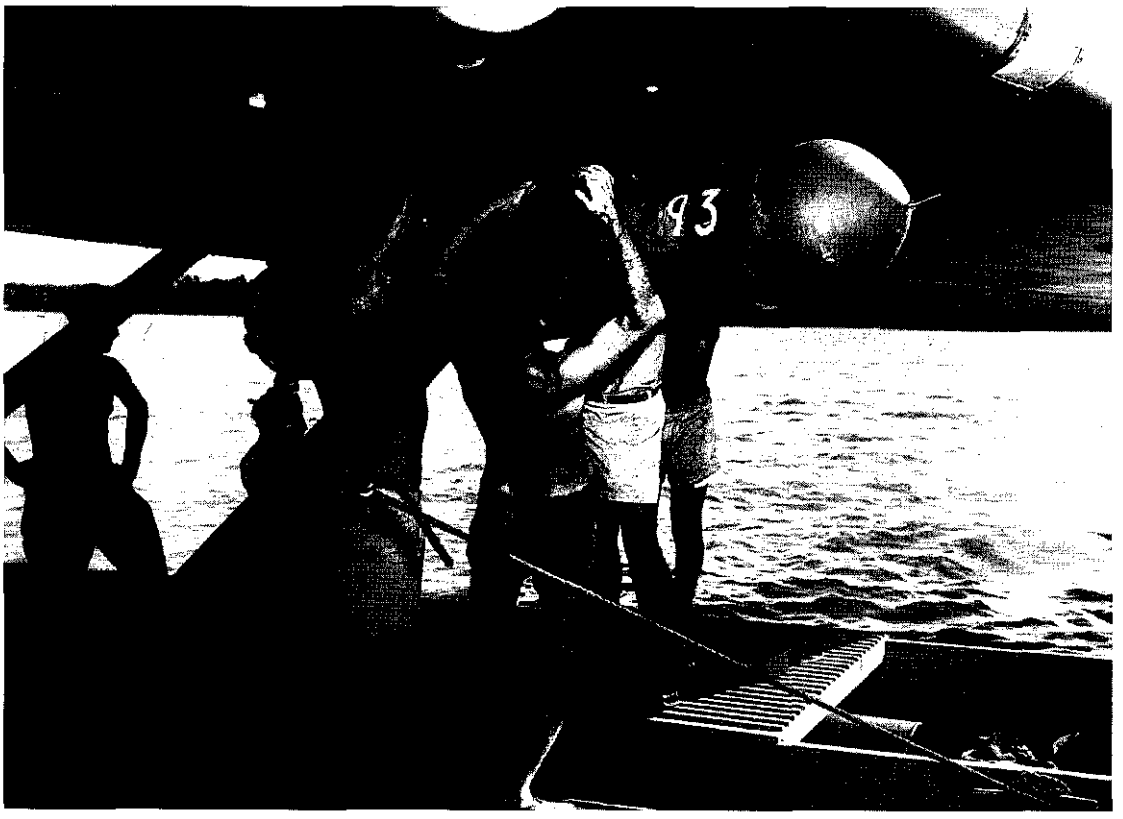
A great deal had changed for Catalina operations. Soon after my first tour ended in 1943, a new role for Catalinas began to be developed, much of the initiative and all the experimentation coming from flying personnel actually engaged in operations within the squadrons. American heavy bombers were now plentiful enough and obviously capable of taking over the task of destroying airfields and installations. What was needed was an effective way of making the sea routes unsafe for the shipping the Japanese depended on for supplying troops and equipment to their

Flying with 'popsies'

far-flung outposts. Mines were the obvious answer and Catalinas the obvious means of delivering them.

Magnetic mines, nick-named 'popsies', in fact code-named that way because mine laying required considerable secrecy, were first made available to the RAAF Catalina squadrons about the middle of 1943, and the operation of delivering them was, rather appropriately, called 'courting'. The mines were cylindrical in shape and of two sizes, one of over 1600 lbs weight and a smaller one of about 1100 lbs. A Catalina carried four of the smaller variety, or two of the larger, from the bomb racks under the wing. Each mine could be set to ignore up to thirteen contacts with a ship before being activated by the next one, so that the enemy was always left guessing about the location and the number of mines dropped after each incursion by a Catalina. The capacity to postpone detonation was the case with both the magnetic mines and the acoustic mines, which were developed after the

Flight Sergeant J.W.N.Stretton of Hawthorne, Qld, and other members of the RAAF load a mine under a Catalina aircraft of 43 Squadron in Darwin.
Reproduced with permission of the Australian War Memorial.



Japanese started using smaller, wooden-hulled vessels for supplying their bases. An acoustic mine was activated by the noise of a ship's engine.

By late 1943 Catalina crews had passed the experimental stage of mine laying and it became the means of doing great damage in Japanese harbours and waterways. They had repeatedly mined enemy bases in the Celebes, Java and southern Borneo, particularly Balikpapan. The technique had been perfected: mines were dropped from a height of 300 feet in a straight line in fairly shallow water, shallow because Japanese vessels feared interception by American submarines in deeper water, and submarine commanders had a distinct dislike of shallow water. The laying of mines required extreme accuracy; otherwise they might as well have been left at home. In a post-war interrogation, a Japanese Rear Admiral at Soerabaya said that between April 1943 and the end of the war, mining counter-measures involved the use of 1500 men and thirty vessels in the area under his command, but in spite of this, about forty per cent of all vessels over 1000 tons entering Balikpapan and Soerabaya were sunk or damaged by mines (*Black Cats p.xx*).

So successful were these Catalina operations in the southern parts of the Netherlands East Indies that General MacArthur, once American forces had begun to retake the Philippines, requested the mining by RAAF Catalinas of Japanese-held ports and shipping lanes further west as far as the China Coast, Hong Kong and Formosa. For this to be done, the RAAF, whose Catalinas – now numbering three squadrons based at Darwin, No. 11 Squadron having been withdrawn to Rathmines for anti-submarine surveillance in the south Pacific – needed an advanced base. The choice of Jinamoc Island in Leyte Gulf was made by several experienced Catalina captains. The base was still in very primitive condition when MacArthur requested the mining of the entrance to Manila Bay by twenty-four Catalinas in one operation. On the fourteenth of December 1944, twenty-four Catalinas from the three Darwin – based squadrons, reinforced by some from 11 Squadron flown north for this one operation, refuelled and armed with mines at Jinamoc and carried out what was for Catalinas a

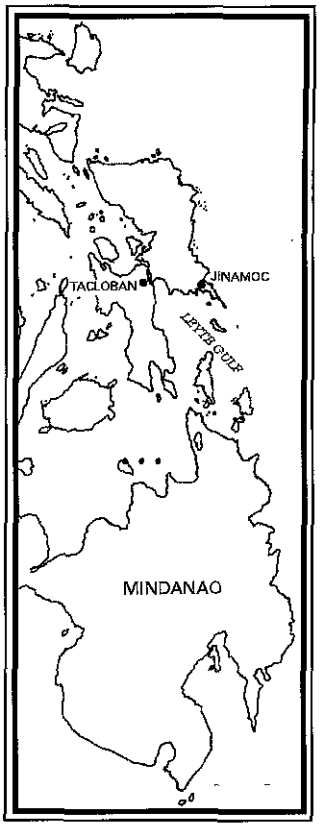
mass attack on the entrance to Manila Bay by night. It was an operation which required intricate planning and very long flying hours, and reflected tremendous credit on both air crews and ground staff. All but one of the aircraft returned safely. After such success, the 11 Squadron crews were very reluctant to fly back to Rathmines.

Soon after this, Jinamoc became a busy flying boat base, shared by American Martin Mariners, alias 'Martin's Mistakes', of ungainly appearance. By the time of my first arrival there, the base had become quite comfortable, with a large wooden-floored tent as its operations room, right on the beach, with a meteorological section, civilised living quarters and excellent American food. As the Jinamoc base developed, Catalinas were sent there from Darwin on short detachments, each involving several sorties. From this advanced base they mined many places on the China coast, Hong Kong, Macao and ports on the coast of Formosa. All this had been happening before my posting to No. 43 Squadron, in which I commenced operational flying again in March 1945.

My second operational tour was much shorter than the first, thanks to the collapse of Japan after the dropping of atomic bombs on Hiroshima and Nagasaki on their mainland in early August. It included four long operations to mine Banka Strait, a narrow strip of water between Banka Island and the large island of Sumatra, a much used sea lane for Japanese ships supplying bases throughout the Netherlands East Indies. Each mine laying detachment involved several stages. We flew first from our Darwin base to our advanced base at Jinamoc Island in Leyte Gulf, a part of Luzon, a flight of 14 to 15 hours, to load American mines. After a night's rest it was safe for us to fly in daylight to Labuan Island in Brunei Bay, North Borneo, for refuelling and another night's rest. The serious stage was to fly to Banka Strait, arriving late at night, to lay the mines from low level in a very precise location, and then to return to Labuan. This operation took 17 to 18 hours. The following day we would fly back to Leyte Gulf to reload with mines and repeat the operation. The first time we performed this double mine-laying sequence was over the

fifteen days between the fifteenth and thirtieth of June. The aircraft was A24-357 and the total flying time from Darwin to Darwin was just over 92 hours, 44 of them at night.

I will never forget my first flight into Leyte Gulf just after dawn on the sixteenth of June and being astounded at what we saw. As far as the eye could see there were aircraft carriers, battleships, cruisers, troop transports and supply ships of all sizes. No more dramatic demonstration of the awesome might of American power could possibly have been provided. Not with any deliberate intention of turning our backs on this display of mind-boggling power, our crew spent that day and night at a nearby mainland village called Tacloban, where our presence and that of many American servicemen failed to disturb the local inhabitants' absorption in cock fighting. Perhaps this obsession had been their consolation while their homeland was under Japanese occupation; at any rate they seemed indifferent to the fact one lot of foreign invaders had been replaced by a different kind. The new ones had money to spend, but we did not see much to spend it on.



Success required stealth

The success of mine laying depended on stealth, on not advertising one's presence. With the obvious exceptions of targets like Hong Kong, we rarely attracted searchlight and anti-aircraft fire, and certainly not night fighter interceptions, any or all of which marked practically all my bombing raids of 1942 and early 1943. In that sense the flying seemed safer; safer, yes, but less satisfying because we never saw any results. I found my task of aiming the mines troublesome because of the absence of definite landmarks to guide me on the final straight flight over nothing but sea, in the course of which mines were released at pre-determined and precise intervals. All my mine laying operations were on moonless nights and although we flew parallel to and not far from the shore, that shoreline was often difficult to see. It seemed it would have been better if we had been picked up by searchlights, as one or two crews reported. At least that would have indicated we were

planting our popsies where the enemy did not appreciate it. As it was, we caused no immediate explosions, although we hoped they would come later; we lit no fires and aroused no response from the enemy. We entered the narrow Banka Strait in the dark and left in the dark. We had come an awfully long way to do that.

The night we almost 'bought it'

However, there was still appalling weather on some flights, and as always, because we flew at low or relatively low altitudes, navigation had to be accurate. In many activities long experience can sometimes produce complacency and on one occasion on my second tour of operations this certainly happened to me. The flights from Darwin to Leyte Gulf had to be made at night, because the American invasions of the Philippines and of parts of Borneo had left behind very many bases still held by numerically strong Japanese forces, including fighter squadrons. A glance at a map of modern Indonesia will show that a low flying aircraft had to weave a fairly tortuous track through the Moluccas, the vast stretch of islands between New Guinea and the Celebes, many large enough to get on a good map and many more only identified on a detailed marine chart. On one of my flights from Darwin to Leyte Gulf on the twelth of July with Squadron Leader Mike Seymour as captain, A24-357 had just been fitted with a new type of radar. It came with a fine reputation in European operations, but its installation in a few Catalinas had not been accompanied by any instructions about its use. At some stage of this particular flight I began fiddling with it but the results did not seem particularly encouraging. This did not concern me in the least because I had never greatly relied on radar and I was getting the expected indications of position at the expected times from standard navigation techniques.

One isolated small island was shown on my chart to have a height of about 4000 feet and I was being very careful to see that at 2000 feet we would pass about 50 nautical miles to the west of it. However, the new radar indicated we were

on a track that would put it right in our path. To my shame, I became stubborn. I would trust my dead reckoning, my recent star fix, my careful wind calculations, and ignore the new fancy technology. That pig-headedness nearly destroyed us all. At the moment the radar image indicated we were *over* the island there was a sudden increase in turbulence and a crew member on watch in the blister compartment reported he could see land below us. I shouted to Michael to turn very steeply to port. A few moments later would have been too late. Through my stubbornness we would have shared the same fate as my good friend Bill Clark a long time before at Buka.

Our staging base of Labuan has been mentioned. Our operation from it on the nineteenth of June was the first Allied air strike from any part of Borneo, only six days after troops of the AIF had captured the small island from the Japanese. I discovered subsequently that Lieutenant Donald Williamson, a Duntroon graduate whom I had taught at Carey, was killed in the landing. A strong swimmer, he had swum from ship to shore and back again the night before the landing to assess the Japanese defences.

I was now a Flight Lieutenant, the squadron navigation officer, a largely symbolic title, and the flying partner of the Commanding Officer, Mike Seymour. Besides our shared flying experience on our first tours, we had something else in common: in Western Australia he had also been a teacher before the war. On the fifth of July we made a harassing raid on Kendari, on the east coast of the Celebes. In a sixteen hour flight from Darwin we spent three and a half hours over the target, dropping bombs and incendiaries at irregular intervals, without visible results. This was followed by another detachment to Jinamoc and two more mine laying operations in Banka Strait. On the second occasion we sighted some shipping in the target area. In mid August – shortly before Hiroshima – we carried out an eighteen hour offensive patrol of the Flores Sea, making many straffing attacks from low level along the coast of Flores Island and a bombing attack on Kokar.

The Japanese surrendered at Singapore on the second of September, exactly six years after Hitler invaded Poland

and thereby caused England and Australia to declare war on Germany, but this did not bring relief from flying for the Catalina squadrons. They were pressed immediately into service to bring home those ex-prisoners-of-war of the 8th Division, AIF, who were fit to fly from Singapore. I first flew into Singapore via Labuan on the seventeenth of September, and immediately went to Changi, hoping to find my brother there. I did not find him, or anyone who could give me information about him. This was a very great disappointment. Next day we flew out with fifteen soldiers as passengers. They seemed to me to be remarkably fit after their years-long ordeal. We flew them first to Labuan (in six hours), from there to Darwin the following day (in fifteen hours), from Darwin to Cairns three days later, and on the twenty-seventh of September to Rose Bay, Sydney, with stops at Brisbane for Queenslanders to disembark, and at Rathmines, for what reason I cannot recall. They had shown great interest in how a Catalina is flown, and only this interest could have restrained their impatience over the alighting at Rathmines, about forty minutes flying time from Rose Bay, when what they wanted most was to get to Sydney, perhaps to do what they had talked about many times during their captivity – 'shoot through on a Bondi tram'.

I spent that night with relatives in Sydney and during the evening an uncle, the father of three sons who were RAAF pilots, two of whom had lost their lives, took me aside and broke the news that Eric had died while a prisoner-of-war of the Japanese on the infamous Burma Railway on the twenty-fifth of September 1943. Next day I had to fly north again with my crew to bring home more ex-prisoners. I did not find that easy. Many colleagues were being released; there was no longer an enemy; I thought my job was done and I did not want a permanent career in the RAAF. In addition, I felt that the prizes of peace might have all been distributed before I was finally discharged. Early in the flight I broke down when I told fellow crew members of Eric's fate.

During September my flying time had far surpassed the 100 hours which was officially the limit of flying time

permitted in any month. The limit, of course, was often exceeded during the worst days of operations, particularly in 1942 and 1943. On this flight we picked up ex-prisoners at Manila and brought them home via Morotai (in the Halmaheras and once again an Allied base) to Darwin, from where they were distributed to home destinations by other aircraft. We remained at Darwin to carry out courier duties. These included ferrying army personnel into, rather than out of, Balikpapan on two occasions. There we found the retreating Japanese had blown up all the oil storage tanks formerly owned by the Dutch. Another duty in this period was to take a well-guarded Japanese prisoner to Koepang at the Dutch end of Timor. These and other tasks added another 84 hours of flying in October.

Demobilised and back to teaching

One by one colleagues were flying south for discharge, and as the end of the year approached, and those of us who remained in the squadron continued to do flying that seemed useful, I began to worry I might not be discharged in time to resume teaching in February. It was beginning to look as though it would take longer for me to get out of the Air Force than it had to get into it. There were certainly rules which were followed, but these seemed to give little weight to length of service. Married men were released before single men, and married men with lots of children before those with few or none. As I had neither wife nor children, I had low priority, despite five years and three months of service, and despite 2208 hours 50 minutes total flying. Eventually patience was rewarded. Flight Lieutenant Arthur Sandell's service on the Active List of the RAAF was terminated on demobilisation in Melbourne on the fourteenth of February 1946. I immediately – next day, in fact – resumed a teaching career at Carey.

The Catalina was the only aircraft in the RAAF which was in operational service against the Japanese from the first day

of the war until the last. Answering the question 'What was the war's greatest aircraft?' in *Wings* (December 1945), Air Commodore J.M.Lerew DFC, Commanding Officer of the Wirraway Squadron at Rabaul in 1942, said:

The slow flying Cats reached places which were out of range of any other aircraft we had in the early days of the Pacific War and did everything from dive-bombing cruisers to dropping beer bottles and tacks on Jap airfields.

They operated day and night in all weathers, were the first to locate and shadow the Jap fleet – which led to the magnificent victory of the Coral Sea battle – and were the last RAAF aircraft to cease work at the end of the war. They are still carrying POWs home.

Besides killing thousands of Japs they saved innumerable Australian lives, bringing back valuable information from reconnaissance patrols, to say nothing of their daring air-sea rescue work under the very nose of the enemy. They also produced some of the most gallant crews in the RAAF.

In answer to the same question, Air Marshal George Jones, then Chief of the Air Staff, said:

In the Pacific War, I would say that as far as the RAAF was concerned, the Catalina was the greatest aircraft we had, regarding it from the point of view of its offensive value. Its immense range was invaluable.

From the time of my demobilization until, fifty years later, I decided to write about my life during the Second World War, I have not talked much about the experience, not to my family, not to my students and teaching colleagues, not even to fellow flyers who survived the war but went their separate ways in peace time. It is not that over those fifty years the memories have never flooded back, or that fear has not returned on occasions in dreams,

but the war did not make me a dedicated militarist, and I rather despise those who think that having fought in a war has given them a licence to always remind others of the fact.

But I am proud of my RAAF service and forever grateful to have known some of the finest Australians of my generation, of whom 320 from just four Catalina squadrons lost their lives. As the Cairns memorial to them states: 'Their resting places are mostly unknown'.

Acknowledgments

For the above account I have used the following resources. My own flying log book, and the following publications:

Catalina Chronicle by David Vincent (no date). This was the first, and became possibly the definitive, history of RAAF Catalina operations.

Catalina Squadrons – First and Furthest by Jack Riddell 1992. I have greatly admired the careful research of Jack Riddell, the prince of flight engineers. On the few occasions in which his dates differ from those in my log book, I have relied on the latter.

Black Cats compiled by A.E.Minty (RAAF Museum) *Black Cats* is a wonderful collection of accounts of Catalina exploits written by people who took part in them. I knew many of the authors and always admired their daring, but little did I know at the time that they were such competent writers. My reading of the book did much to re-create for me the feeling of wartime flying.

Royal Australian Air Force, 1939-1942 by Douglas Gillison (Australian War Memorial, 1962).

Lake Boga at War by Brett Freeman, Catalina Publications 1995.

Catalina, Neptune and Orion in Australian Service by Stewart Wilson (no date).

The Catalina Squadrons of the RAAF in the Second World War

11 Squadron
Formed at Richmond, New South Wales, September 1939
Moved to Port Moresby, September 1939
Moved to Cairns, November 1942
Moved to Rathmines, New South Wales, July 1944
Squadron disbanded, February 1946

20 Squadron
Formed at Port Moresby, August 1941
Moved to Cairns, November 1942
Moved to Darwin, September 1944
Squadron disbanded, March 1946

42 Squadron
Formed at Darwin, June 1944
Detachment operated from Leyte (Philippines), from December 1944
Squadron disbanded, November 1945

43 Squadron
Formed at Bowen, Queensland, May 1943
Moved to Darwin, April 1944
Squadron disbanded, March 1946

Catalinas - Restored for display in Australia and one still flying in New Zealand:

PBY-5A	A24-30	on display, Flying Boat Museum, Lake Boga, Victoria.
PBY-5	A24-46	on display, Albany, West Australia
PB2B-2		on display, Powerhouse Museum, Sydney.
		One Catalina is being restored for display at the RAAF Museum, Point Cook, Victoria.
PBV-1A		is airworthy, in Auckland, New Zealand. This aircraft is owned by The Catalina Club of NZ and flies regularly.

Postscript

Some readers may want to know what happened afterwards. What sort of a guy did he live to be? Coming as it does at the end of a tale about action and adventure in the 1940s, this sequel may well seem to strike a different, more intellectual, note, and for that I ask my readers' indulgence. I tend to be a serious type, and I've always regarded my vocation as seriously important. Moreover, after a lifetime of teaching, it is difficult to throw off the habit of being didactic; some teachers even want to change the world!

More than five years in the RAAF had given me a great love of flying but also a strong liking for the sense of community which pervaded the experience for me. Men and women in the services had surrendered many individual purposes and many individual freedoms, and adjusted to a life which had a predictable routine, a life in which there was a clear hierarchy, yet an hierarchy which was acceptable to most of us. You knew whom you must salute, and by whom you could expect to be saluted. Men and women had for long periods been separated from family and youthful friendships and former occupation, and in their place, at least temporarily, a new kind of bonding, a new sense of brotherhood had developed. In my case, the appeal of this sense of community was only in part due to new friendships; it was also the idea of community that was attractive. On reflection, some of this appeal was seen to be because it was essentially a simple life; one's wants were

few and readily satisfied, one's salary went automatically into one's pay book, if one's socks had too many holes in them one went to the equipment store and got another pair, and there was an adequate amount of leisure time, time to think and talk and read. And if an order came to do something which would put one's life at risk, well, that was part of the price.

For a time I asked; why could not life in peace time be as uncomplicated? Why could not a society at peace be infused with community of purpose as Australia at war had been? Having fought on the side of democracy, and won, could we translate democracy's moral ideals into a reality? This must mean deciding a righteous balance between the freedom of some to prosper more than the rest and the right of the less able and less fortunate to a life free of want and insecurity. We can hardly say we have succeeded, now that the gap between the rich and the poor in our country has become so disgracefully wide. I cannot do better than quote a friend, the late Henry Schoenheimer, on the choice before us. 'We, the human race, can choose a life of peace and comfortable decency but not of unlimited consumption. A life of peace and comfortable decency for all of mankind, a life lived in harmony with each other and the whole of the biosphere ... I call an era of global humanism. Alternatively, we can choose a future of super-acquisition and aggression, an uninhibited contest of all against all with the technologised and pathologically consumption-oriented nations tearing the earth apart, ... I call this ... global fascism'.

Towards the end of the 1940s I discovered Tolstoy, and this was a milestone in my life. It put an end for me of any thought of using a military model as a basis for social organisation. A supreme artist, the writer of not one, but two of the acknowledged masterpieces of literature, Leo Tolstoy's output of ethical and philosophical writing, though now unfortunately neglected, makes a powerful case for the rejection of violence in human relationships. In the ninety years since his death, numerous examples of military elites, empowered by the international, mostly Western, armaments industry, have ruthlessly suppressed people who

have had aspirations for freedom, by massacre and attempted genocide. These have dramatically confirmed the validity of Tolstoy's argument.

I found on my return to teaching I still did not want to do anything else. I had a special interest in mathematics and found it an easy subject to teach, especially at senior levels, since it is so well defined. My curriculum vitae has always been brief and hardly distinguished. I continued to teach at Carey from 1946 until my retirement in 1979, with the exception of two years in the early 1960s which I spent at Camberwell Grammar School. When I returned to Carey in 1965, it was to take up appointment as deputy headmaster, and I served under the distinguished and much loved headmaster Gerard Cramer during the rest of my career.

In 1949 I married my devoted wife, Rylice, and we have three sons, whose upbringing brought us great delight. They remain not just our sons, but are also our friends, and between them they have given us eight grandchildren.

Since boyhood I have had a love of music, due to my father's influence. I have always regretted I did not learn to play the piano when I was young. One of the first things I did after I was demobilised was to buy a violin, and I took lessons for a number of years. That was enough to enable me to play in the school's orchestra, but it was too late a start to make me confident and competent. As with golf, you need to begin young. My taste has always been classical, and I thrill to the sound of an orchestra playing the great symphonies and concertos. However, when asked by a friend many years ago what I would take if condemned to live on the proverbial desert island and restricted to half a dozen recordings, I had no hesitation in asking for the Beethoven last quartets. Today my request would be the same, though I would now beg to be allowed to add some choral music, performed by a choir like that of King's College, Cambridge. Modern compositions do not have great attraction for me, though I feel an important reason for attending concerts is that one is forced to listen to a quota of new or unfamiliar music, sometimes with unexpected satisfaction.

I have always enjoyed sport, particularly cricket and football, and for several years I coached the school's first eleven during one of its very successful periods. But I cannot agree children should be forced to play sport if they dislike it, or that sport deserves to be ranked in esteem far ahead of activities such as drama, music and art, either in school or in life.

During my career I played a part in the affairs of the Victorian Assistant Masters' Association and was its president for two years. The V.A.M.A was a voluntary association of male staff in independent schools, and my interest was less in its industrial purposes than in its possibilities for developing new thinking amongst teachers. I gained considerable satisfaction from organising three residential conferences of its members, one at Geelong College, one at Ballarat Grammar School and one at Geelong Grammar's Timbertop.

For thirty years I was an office holder in the Victorian Section of the New Education Fellowship (later the World Education Fellowship). This organisation was founded in England after the First World War with the aim of persuading teachers and parents to allow children greater freedom to think for themselves. The founders hoped that through education the world would never again be cast into a war like the one just concluded. One of its unique features was its attempt to make parents, and citizens generally, partners alongside professionals in determining the goals of education. It spread to many countries and the educators who were brought by the Fellowship to lecture to Australian audiences provoked a considerable response from teachers, and this brought about changes in practices in schools, particularly primary schools. Of these visitors, those whom I admired most were James Hemming (from England), Carleton Washburne (America), Kees Boeke (Holland), Margaret Mead (America) and, above all, Professor Ben Morris from Bristol. But it was an Australian educator who had the greatest influence on my educational thinking. Dorothy Jean Ross, teacher educator and for seventeen years headmistress of the Melbourne Church of England Girls' Grammar School, had a great depth of

understanding of young people, an admirable willingness to listen to them and to respect them, and had as much regard for the non-academic student as for the intellectually gifted. It is sad her insights are not more widely remembered. For this she was partly to blame, for she wrote very little about herself or her work. She was too modest.

In the late 1960s and early 1970s I represented the Incorporated Association of Registered Teachers of Victoria on the Curriculum Advisory Board, chaired by the Director of Education, and I was for a time chairman of its steering committee. It was the work of this Board which led to a widespread devolution of responsibility for curriculum development and school management right across the State. It was, I believe, the beginning of the current emphasis in education on process rather than content, which I now believe has gone much too far. The risk is great that many of today's students may go through life, perhaps with good research skills, but unacquainted with enriching cultural insights from both the past and the present. To leave curriculum choice to the child is to discount his ignorance and immaturity; to leave it to the teacher is to entertain an inflated notion of teacher wisdom.

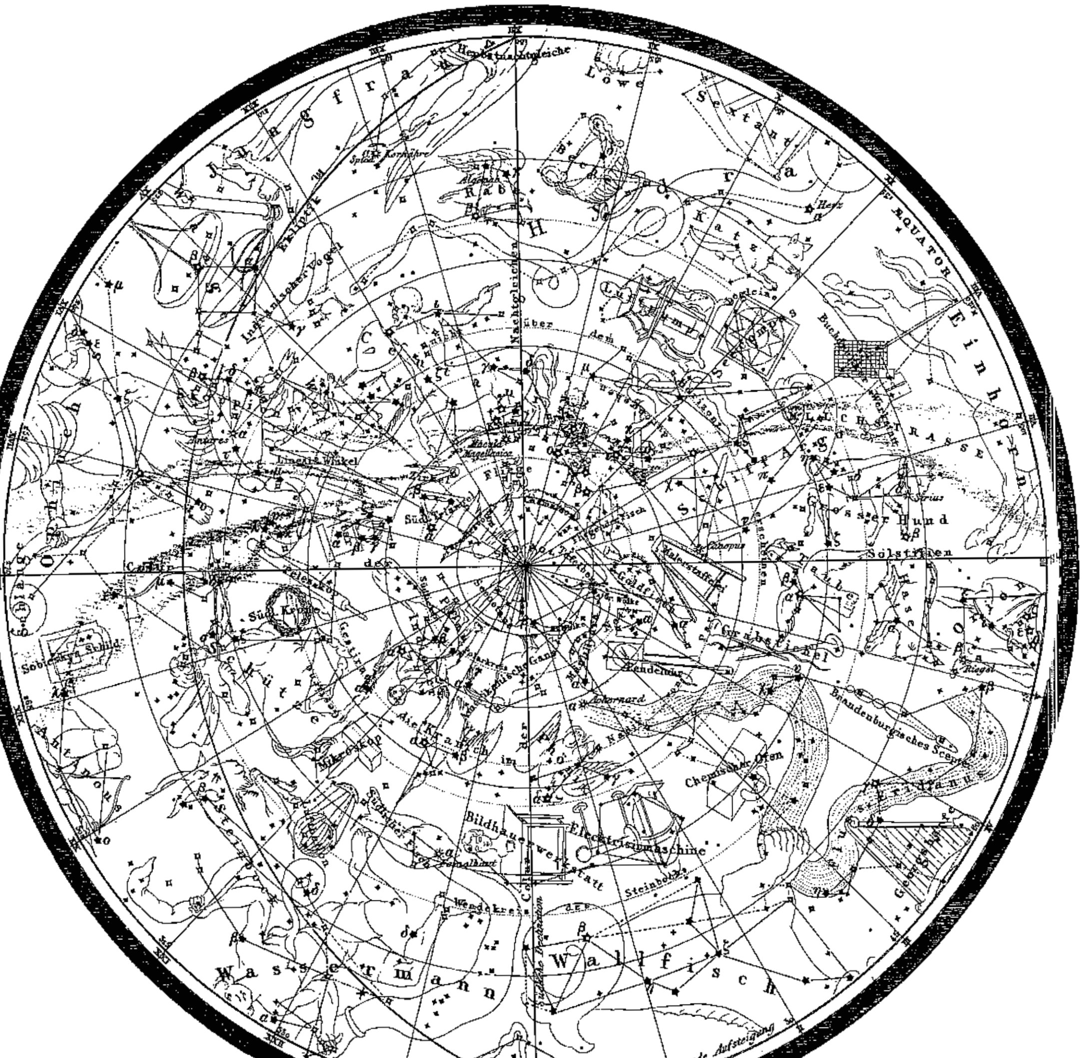
I loved it when Margaret Mead asked why childhood is ever looked on as primarily a preparation for adulthood, as a time of preparing to live rather than as a unique, unrepeatable time to live. But while there cannot be any quarrel with the idea that schooling plays an important part in fitting the child for life, a school which regards the teaching of vocational skills as its primary purpose has a narrow conception of education. Moreover, I quarrel with what many today, including politicians and educational administrators and parents (and consequently their sons and daughters) regard as 'life'. Society and the schooling we now offer seem bent on slotting education's products into the growth economy, justifying this with the claim that what matters most in life for men and women is their material prosperity and a high rate of consumption. I regret a policy that sacrifices philosophy to accounting, literature to marketing, physics to computing and information technology, and I regret that these modern alternatives have

become preferences for many students, including very able ones, simply because they fear the realities and share the anxieties of the economic times in which we live. Rather, education's purpose should be the liberation of the intellect from ignorance and from the prejudices and falseness which may surround our beliefs and opinions. Education should cultivate the intellect as a critical instrument, and should serve as the stimulus and provide the capacity for all of us to continue throughout life the process of searching for such meaning as it is possible for human beings to have. And on top of all the things we ask our schools to do, we have to ask one more: that they treat all children with respect and love, so that, in their turn, those children will remain or become people who treat others with respect and love. Perhaps then we can expect those who are affluent, both nations and individuals, will cease to indulge themselves at the expense of the deprived people of the world, and our generation will cease to indulge itself at the expense of all those which will follow.

A good education, far from answering all our questions, will always be provoking us to ask more. What is the meaning of our existence? Or that question that puzzled wonderful Scottish philosopher David Hume: although we take it for granted we each have a unique 'self', something which possesses the thoughts, emotions, images and memories which make up our experience, and that self is the same today as it was yesterday, in fact has existed continuously for as long as we have lived, yet we cannot actually isolate it and observe it as we can those other things in our experience, including other parts of our bodies. Of my capacity to control my decisions, to do one thing rather than another, I am certain. I unreservedly know I have free will; if I don't know that then I don't know anything. Moreover, I cannot believe this centre of identity is material, that it is subject to the same physical laws as the rest of my body. But what is its nature and its relationship with the rest of me I do not know. Call it a soul, if you will. That it exists I have no doubt, but it is another thing altogether to say it is immortal, that it will survive death. To do so is to cross the line between what is

knowable and what is not, and Kant argued convincingly that this line cannot be crossed. Of course there is nothing irrational about saying that, beyond the phenomenal world, the world revealed to our senses, there could be a noumenal world, a world behind all appearances, but we will never be able to say there is one. We can, of course, say 'I believe there is', and that is what Kant did. But that is not knowledge; we cannot justify belief in something merely because we like it.

Those who went to war generally avoided talking about death, and when they had to, because comrades whose friendship they had briefly enjoyed failed to return, they disguised their feelings with expressions like 'They bought it'. Tolstoy in a marvellous short story entitled Master and Man, treated the supreme theme of the response of Everyman to the challenge of mortality. In the end there is no more dicing, no more chances, only certainty, that each of us will at the end of life quietly slip into the past.



Jungfrau
Kornähre
Sextant
Herz
Einhorn
Sirius
Canopus
Antares
Süd. Krone
Pelekan
Sobieskys Schild
Mikroskop
Pendeluhr
Grabstichel
Achernard
Brandenburgisches Scepter
Chemischer Ofen
Bildhauerwerkstatt
Electrisirmaschine
Fomalhaut
Steinbock
Wassermann
Wallfisch
Fische
Gerade Aufsteigung
Riegel

APPENDIX ONE

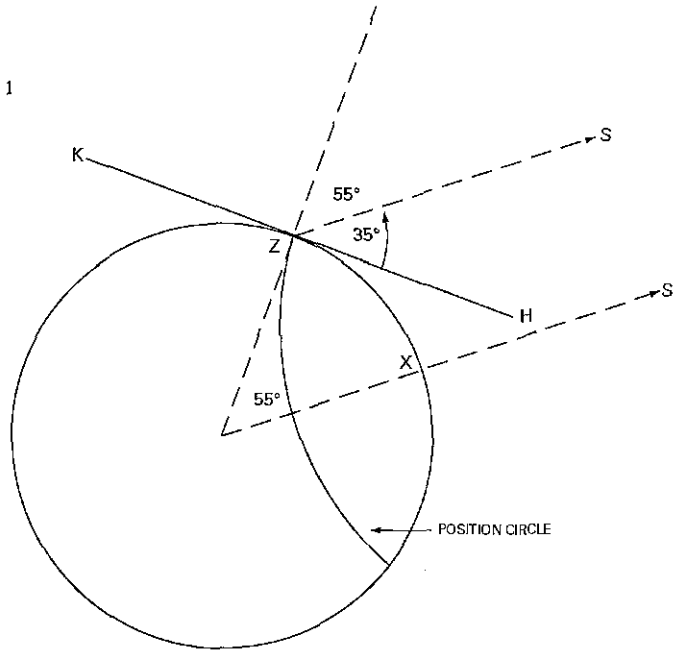
With only the stars to guide

Looking at the stars in order to find out where one is on the earth must seem to most people a strange thing to do. It is hoped that what follows will make the general principle of astro navigation clear to the reader, though at two points in the account, some rather complex details are glossed over.

To keep the account as simple as possible, it will deal only with the use of a star to obtain a position line on the navigator's chart, which means that the use of the moon and any planets will be ignored. Both moon and planets involve complications, the moon because of its closeness to earth and planets because of their erratic passage across the sky, something which puzzled astronomers for two thousand years.

Since man first studied the night sky, it has been apparent there is nothing erratic about the passage of the *stars* across the sky. They appear to be fixed in their relation to one another, as though attached to a sphere which revolves at a constant rate, making one revolution about the (apparently) stationary earth in very slightly less than twenty four hours. This explanation for what appears to be the case was, of course, replaced by that most counter-intuitive thesis of Copernicus, published in 1543, that rather than the stars rotating about the earth, it is the earth which moves, rotating on its axis once a day and completing an orbit around the sun once a year. However, in the conceptual scheme by which navigators use the stars to locate position, these motions of the earth are entirely

Figure 1



irrelevant. Astro navigation is based on the primitive idea that the stars revolve about a stationary earth.

Figure 1 shows light from a star falling on all points on the earth in parallel rays because of the extreme distance of the star from the earth.

X is called the sub-stellar point of the star. At that point on the earth the star is directly overhead. We say its altitude is 90 degrees. At all other points from which it can be seen its altitude is less that 90 degrees, the altitude being the angle between the star and the horizontal at the observer's eye; this is provided for sailors by the sea horizon and for flyers by a bubble imprisoned in a liquid on the same principle as a spirit level.

An observer at Z can measure the altitude of the star (S), with the horizontal (the line KZH in the diagram) provided by the bubble in his sextant. He views the chosen star through the exact centre of the bubble, while trying to hold the bubble in the centre of its chamber. This is not an easy thing to master during flight, since the bubble is influenced by the slightest change in speed or direction of the aircraft. It is virtually impossible to obtain a good sight without active cooperation between pilot and navigator. The altitude of the star, in degrees and minutes of arc, is

displayed on the sextant as a 'shot' is taken. In the early part of the war sextants took only single 'shots', but a later, more sophisticated, model averaged six 'shots' over a short period of time. The bubble was artificially illuminated for operation at night.

Referring again to the diagram, suppose that the altitude of S, the angle SZH, is found to be 35 degrees. We now have to understand that all places on the earth at which, at a given instant of time, the altitude of that star is 35 degrees lie on a circle whose centre is the sub-stellar point X. This is called a Position Circle whose radius is the length of the arc XZ. (For the mathematically minded, that is $(90 - 35)\ 60 = 3300$ nautical miles, since the radius of the earth is such that 1 degree of angle at the centre subtends an arc of 60 nautical miles at the surface.) The navigator draws on his chart only a small part of this circle, which, because the circle is so large, can be represented by a straight line, the Position Line.

Thus the essential requirements are (a) a knowledge of the exact position of the sub-stellar point of the selected star (chosen, by the way, from a list of twenty-two) at the precise Greenwich Mean Time of the 'shot', and (b) the radius of its position circle at that time. The latter is no problem, as we have seen, but for the former a conventional device has been adopted. An imaginary point in the sky has been designated the First Point of Aries, whose sub-stellar point traverses the equator. The position of this sub-stellar point is obtained for any moment of the day from the current Air Almanac. That being known, and the relationship of the chosen star to the First Point of Aries (a relationship which does not change), the location of the sub-stellar point of the star is obtained. The full technical details of this last step are omitted from this account.

If the navigator had in front of him a map of the world, he could plot the position of the sub-stellar point of his chosen star and, with that as its centre, draw a circle with radius calculated as in the above example, and say that the position of his aircraft was somewhere on that circle. But that, of course, is fanciful, since the chart on which he plots his course of necessity covers a very small area of the

earth's surface. What he has to do is to work backwards.He has to chose an assumed position for his aircraft based on his dead reckoning. He then gets from his navigation tables (and this account omits technicalities in this step) two things:

a) the azimuth, that is, bearing, of the star's sub-stellar point from his assumed position at the moment of taking the star 'shot';
b) the theoretical altitude of the star from that assumed position at that moment.

The rest of the procedure is easy to understand.

There will nearly always be a difference between the altitude obtained by the navigator with his sextant and the altitude given by the tables for his assumed position, because the aircraft will not usually be at the assumed position. This difference is known as the Intercept. The reader will easily understand that if the sextant altitude is lower than the altitude given by the tables, the aircraft must be further from the star's sub-stellar point than the assumed position. Correspondingly if the sextant altitude is greater, the aircraft must be closer to the sub-stellar point.

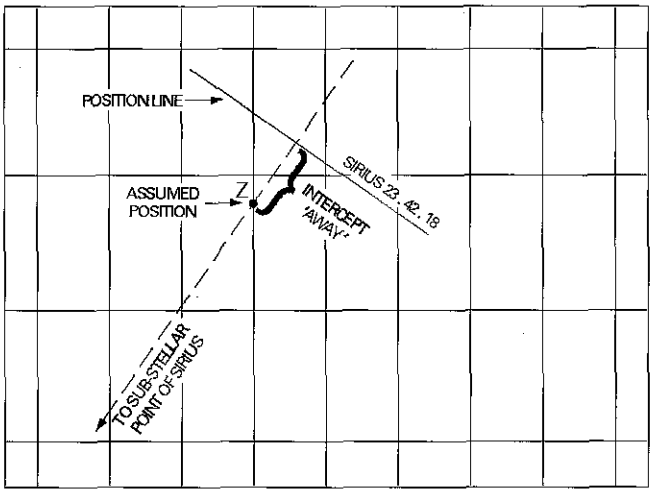


Figure 2

Figure 2 shows the plot of a position line in which the intercept was 'away', that is, the sextant altitude was less than the altitude that would have been the case if the aircraft had been at the assumed dead reckoning position.

The intercept will be in minutes of angle – one minute being a sixtieth of a degree – and since one minute of angle at the centre of the earth subtends one nautical mile at the surface, the intercept converts directly to nautical miles.

A single position line, of course, had limited value. What was needed was at least two, but preferably three, position lines, with considerable angle between them. Three position lines provided a 'cocked hat', as in Figure 3, and it was nearly certain that the aircraft was somewhere inside that small triangle. Since the three 'shots' needed to be obtained in a short period of time, the navigator had to be in alert and active mode. The sextant 'shots' and the calculations needed to be done quickly; the navigator wanted to know where he was now, not where he was half an hour ago.

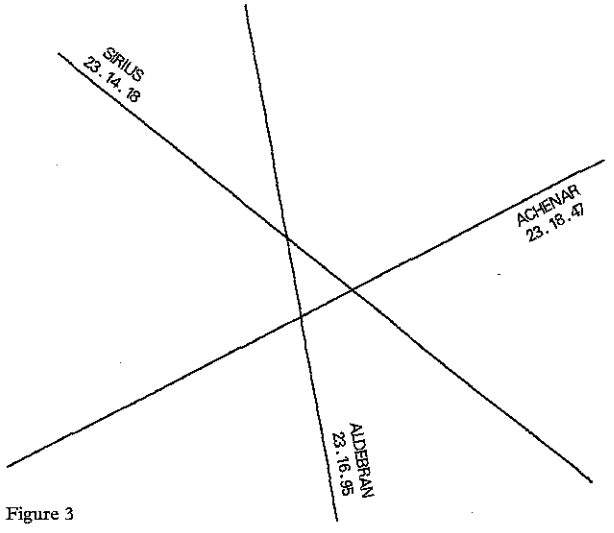
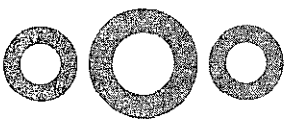


Figure 3

The technique was very reliable, though fixing position this way, especially in bad weather, taxed the energy of the navigator, often at a time when his energy level was at a low ebb, and the temptation high to take a chance his dead reckoning was accurate enough to locate a target or avoid a mountain. But the inky black night and the many hours since the last visual identification of position made an astro fix imperative. He therefore asked whichever pilot was in the cockpit for some careful straight and level flying, went to the back of the aircraft, opened one blister, thereby

letting in a blast of cold air, and searched the sky for three stars he could identify.

But that was a long time ago. In modern flying, what Catalina navigators found essential has been replaced by a new technology, one in which ground position is found with the aid of satellites, a system known as GPS. It is astonishingly accurate and very simple to use. Many of today's civil pilots were not born when passenger aircraft carried sextants. The Air Force has been slower to abandon astro navigation: it was only taken out of training programmes in 1995.



APPENDIX TWO Some of my closest associates

Group Captain Keith Bolitho MID, DFC, DFC (USA)

Born in February 1913, William Keith Bolitho was a bank officer prior to his enlistment as an aircrew trainee in April 1940. After initial training at Somers, his flying training was at Parafield and Point Cook, and he was commissioned at the end of his course.

Keith converted to flying boats in July 1941. From June to December 1942 he flew operationally with No. 20 Squadron. After a spell of instruction, he returned to No. 20 Squadron as a flight commander from August 1943 to June 1944, and from June 1944 until March 1945 he was commanding officer of No. 11 Squadron. This was a long period of operational flying and it is reflected in the large number of Catalina hours in his log book.

I navigated for Keith Bolitho on 27 missions between the 1st of April and the 20th of August 1942. This included eight exhausting bombing raids, three on Tulagi, two on Lae and three on Rabaul. The other operations were general reconnaissances and several "Milk Runs". *Keith was an impressive and* very determined captain who expected and received the utmost cooperation of his crew members.

Keith was demobilized in December 1945. By that time he had logged 3400 hours on Catalinas. He decided three years later to rejoin the RAAF, and was appointed to a commission in the General Duties Branch of the Permanent Air Force with the rank of Squadron Leader in September 1948. Keith served in various RAAF training establishments as Chief Instructor or Commanding Officer, and at Training Command in Melbourne, at the RAAF Staff College in Canberra, and at RAAF Headquaters in London. He was Australian Air Attache in Washington from 1953 to1956. He retired in February 1968 with the rank of Group Captain.

The citation for Keith Bolitho's Distinguished Flying Cross, recommended in January, 1943, was the following:

Since the outbreak of war with Japan, Flying Officer Bolitho has completed 1100 hours operational flying against the enemy, including 28 night bombing raids and 32 reconnaissance and convoy patrols, many of which were in enemy controlled waters. In January and February, 1942, he made eight night raids on Rabaul.

During a period of 32 days in April and May, 1942, he flew on daylight reconnaissances of the Solomons area each day, completing 270 hours flying in the period.

On the nights of the 8th and 9th of October, 1942, he made two incendiary raids on Rabaul township involving 36 hours flying in 42 hours. Both raids entailed carrying a hull full of unjettisonable incendiary bombs through a fierce anti-aircraft barrage while caught in searchlights. The bombs were dropped by hand.

At all times this officer has displayed the utmost keeness to engage the enemy, and his courage, coolness and determination have been an inspiration to all ranks.

Keith had previously been awarded a Mention in Despatches. The citation for his American DFC is quoted in the text.

Flight Lieutenant Clem Haydon

Clem Haydon was born at Gawler, South Australia, on the 5th of August, 1914. After completing secondary education at Gawler High School he won a scholarship to Roseworthy Agricultural College. He was a very good sportsman, and included among his athletic achievements was the winning of a heat of the Stawell Gift, Australia's richest professional sprint race.

At the time of his enlistment in Adelaide in August 1940 he combined farming with a partnership in a cabinet making business. His flying training was at Somers, Parafield and Point Cook, from which he graduated with a commission in March, 1941. After a conversion course on Catalinas at Rathmines, Clem was posted to No. 20 Squadron, then at Port Moresby, in September, 1941.

My partnership with Clem, by this time on his second tour of operations, began in August, 1942, and we flew together 34 times; 18 of these were bombing raids – on Buin (4 times), Buka (4 times), Rabaul (twice), Kavieng (5 times between the 18th of November and the 27th of December) Kahili (twice) and Ballale. And, of course, they completed several "Milk Runs", those long flights when we searched in darkness for Japanese shipping in the Bismark Sea. No captain and navigator could fly together for 470 hours, of which 245 were at night, in sometimes shocking weather and against hostile opposition around the targets, without forming a close bond, and developing a great amount

of respect for one another. Clem was a fine pilot and a marvellous colleague whom everyone admired. His loss at the age of twenty-eight was deeply felt in the Catalina fraternity.

Less than two months after I was posted south and had handed over my duties to a new navigator, Flying Officer John Lancaster, A24-41, piloted by Flight Lieutenant Clement Haydon, took off from Cairns on the afternoon of the 7th of April, 1943, on a patrol of the Gulf of Carpentaria. Nothing was heard from it until shortly after 2 am on the following morning when a distress signal was heard in Port Moresby. Efforts to establish wireless contact with the aircraft were unsuccessful. From dawn on the 8th of April searches were carried out over the area in which the aircraft had been operating, but no trace was found of any members of the crew, though a patch of oil was found on the water, the type of slick left by an aircraft after crashing into the sea. As the Cairns Memorial eloquently says: "Their resting places are mostly unknown".

Flight Lieutenant Bill Miller DFM

Bill Miller was born in January 1917. For eight years prior to his enlistment in May 1940 he had been a clerical officer with accountancy qualifications in the office of the Victorian Railways Commissioners. His RAAF training was at Somers, Parafied and PointCook. He graduated as Sergeant Pilot in November.

In February 1941 Bill fell foul of the authorities, was court-martialled for 'breach of discipline', and discharged. He re-enlisted in July and for several months was a staff pilot at Cootamundra Air Navigation School. He then began training on seaplanes at Rathmines Seaplane Training Flight, logging 250 hours

on the Supermarine Walrus and Vickers Seagull before conversion to Catalinas.

In December 1941 Bill was posted to No. 11 Squadron at Port Moresby as a second pilot on Catalinas and was soon elevated to captain. Thus began a long and distinguished period of operational service. Bill flew on the first of two raids on January the 12th and 15th on the Japanese base of Truk in the Caroline Islands. It was the first attack by the RAAF or any Allied force against the Japanese in the area north of Australia, and although bad weather rendered it unsucessful, it demonstrated the ability of the Catalina to mount attacks over very long distances. Bill and his crew were the first Allied airmen to sight the Japanese fleet preparing to enter the Coral Sea in May 1942, and his aircraft was attacked by fighters at the end of that significant naval battle, as recounted in this text. Bill was awarded a Distinguished Flying Medal for numerous bombing and reconnaissance operations over Rabaul, Gasmata, Kavieng, Buka and Tulagi. As his navigator on many of these, the author has high praise for his skill and determination. His total flying hours at the time of his discharge in June 1946 were 3684. Of this number 3219 were on Catalinas, 820 of these being at night.

In peace time Bill returned to his position with the Victorian Railways, eventually becoming Secretary to the Commissioners.

Flying Officer Jack Riddell DFM, AEA

Jack Riddell enlisted as Fitter 2E, RAAF, in May, 1940, in Sydney. In May 1941 he began training as a Flight Engineer on Catalinas at No. 3 Operational Training Unit, Rathmines, NSW.

With Flight Lieutenant Frank Chapman as CO, he assisted in the formation of No. 20 Squadron at Port Moresby in August 1941. Following Japan's entry into the war, he accumulated 2300 flying hours, involving 32 bombing attacks and 120 operational flights, flying as first engineer with several captains, most notably Frank Chapman, Bill Miller and Clem Haydon. He was commissioned General Duties Flight Engineer in August 1944.

I flew with Jack Riddell many times and greatly admired his skill, his tenacity and his capacity to relate well with fellow crew members. The citation for his Distinguished Flying Medal, awarded quite early in his operational flying service, included the following:

This NCO has been employed as 1st Engineer on Catalina aircraft since August, 1941. Prior to the entry of Japan into the war, he proved most energetic and capable, and kept his aircraft serviceable under all conditions, showing outstanding ability to cooperate with local island workshops in carrying out service repairs in the

New Guinea area.

Since 7th December, 1941, he has been regularly employed on bombing and reconnaissance flying. During February, 1942, he flew on three raids on Rabaul in four days. Two of these were dive bombing attacks, and during the other, his aircraft was holed by shrapnel. On the following day, a Japanese bomb missed the trench in which he was sheltering by eight feet. He was also engaged in long reconnaissances during the Coral Sea Battle when his aircraft was damaged by a Japanese float plane fighter.

His offensive spirit, determination and fearlessness have proved of exceptional value as an inspiration to other members of the unit.

After demobilization in June 1966, Jack returned to his position with the Sydney plant of Australian Paper Manufacturers. In 1969 he took early retirement and moved to Northern New South Wales.

Photograph by commercial photographer in Port Moresby in December 1941.

Squadron Leader Mike Seymour DFC

Robert Michael Seymour was born in 1918. At the time of his enlistment in Perth in June, 1940, he was a Primary Head Teacher at Dunnsborough near Busselton, West Australia. His RAAF training was at Somers, Parafield (on Tiger Moths) and Point Cook (on Ansons). He was commissioned Pilot Officer at the end of his course in May, 1941. He then began flying boat training at Rathmines, at the end of which he was posted to operational flying in No. 11 Squadron then based in Port Moresby.

Mike built up a fine reputation as a captain on bombing operations, and was awarded a Distinguished Flying Cross, gazetted in April, 1943. He was prominent in proving the feasibility of using Catalinas for mine laying, and helped develop the techniques which became the Catalinas' main role in the last two years of the war.

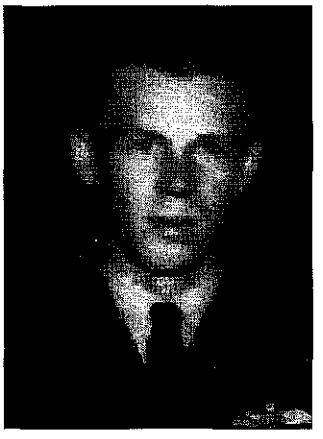
During many months of 1944 he was Chief Ground Instructor at No. 3 Operational Training Unit, Rathmines, and in July was promoted to Squadron Leader rank.

Mike was appointed to command No. 43 Squadron, based in Darwin, in May, 1945. By this time the main operations of the Catalina squadrons, now numbering four, was mine-laying in Japanese shipping lanes as far west as the China coast, operations which required temporary detachment to Leyte Gulf in the Philippines.

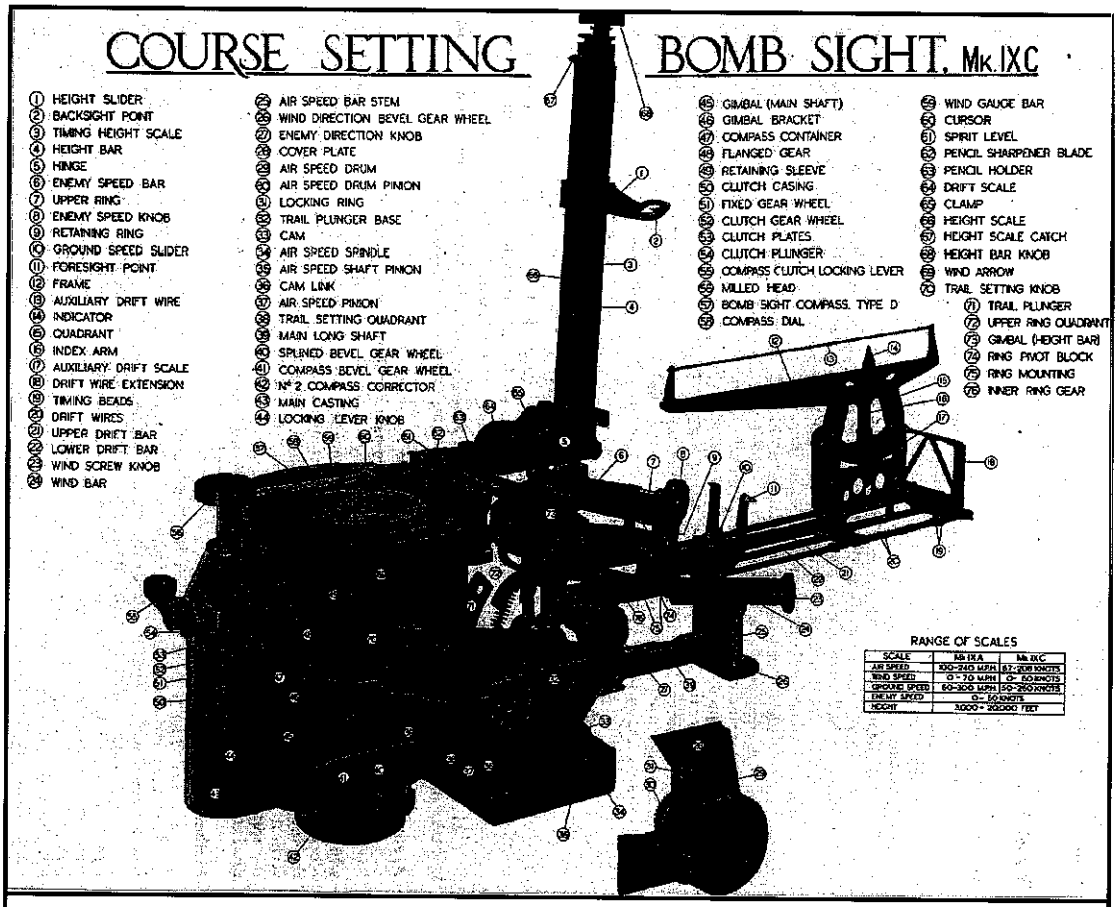
By the beginning of July, 1945, Mike Seymour's flying totalled 2640 hours, of which 2120 were on Catalina's, 580 of these being night flying hours. Many more were added before Mike handed over command of No. 43 Squadron in January, 1946. He was discharged in March. For the rest of his career he served the Commonwealth Department of Civil Aviation and for a time was its Chief Air Accident Investigator.

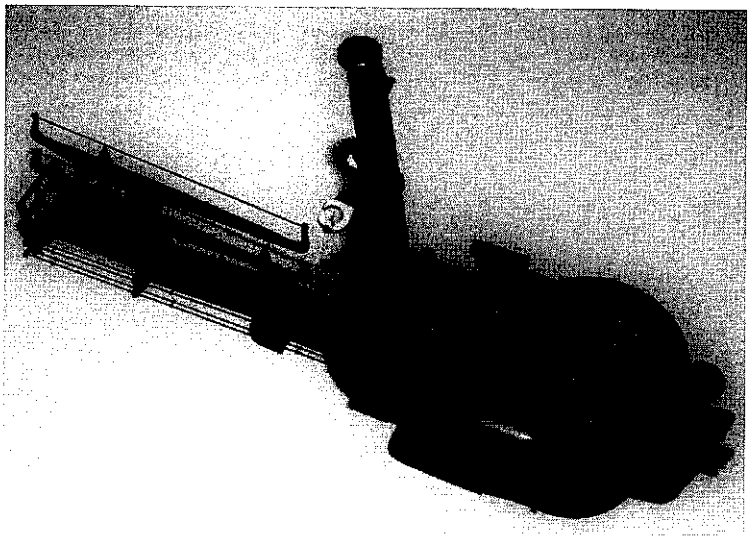
The citation for his 1943 award of the Distinguished Flying Cross was as follows:

Flight Lieutenant Seymour has been engaged in active operations against the Japanese since December 1941 in Catalina aircraft. In October 1942 he carried out two consecutive night bombing raids on enemy occupied territory in the face of very heavy anti-aircraft fire with many incendiary bombs in the hull. His determination, courage and calm devotion to duty has been in keeping with the highest traditions of the Service.



APPENDIX THREE **Bombsight Mk IX C**

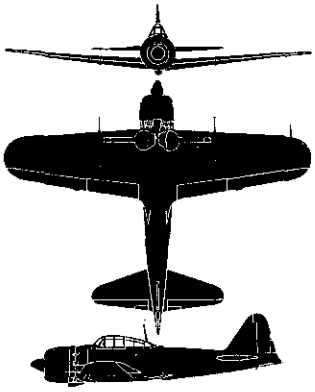




Photographed at RAAF Museum Point Cook, by arrangement with Ingrid Offler, Assistant Curator.

APPENDIX FOUR An intrepid enemy – the Zero

Mitsubishi A6M Reisen (Zero or Zeke)



The Zero or (Zeke) was manufactured by Mitsubishi and is regarded as one of the most successful fighter aircraft of the Second World War. It had a maximum speed of 530 kph at an altitude of 4900 metres. Its ceiling was 11,600 metres and its maximum range 3000 kilometres. By comparision, the Kittyhawk, with which the RAAF's Nos. 75 and 76 Squadrons fought the Zero in New Guinea in 1942, had a top speed slightly higher, but most pilots agreed that it was less manouverable than the Zero. It also had a lower ceiling.

This is a Zero recovered from Gasmata, New Britian, restored and now owned by the Australian War Memorial. It has been identified by Japanese air ace Saburo Sakai of the 204th Squadron of the Tainan Air Corps as one which he flew. Sakai's tally of downed aircraft was 64, a tally exceeded by only three other Japanese fighter pilots (with kills numbering 84, 80 and 74). Sakai flew a Zero with long-range fuel tanks from Lae on the north coast of New Guinea to Gualdacanal in the Solomoms on the 8th of August, 1942, to attack the American forces landing there. He shot down four U.S. fighters but was himself hit and suffered severe head injuries, including the loss of an eye. Despite great pain, he brought his aircraft back to Lae. He is still alive (1998) and has been quoted as saying the Zero excited him as no other aircraft had done. "The aircraft was the most sensitive I have flown; even slight finger pressure brought instant response".

The enemy aircraft which attacked our A24-12 on the 9th of May, 1942, at the end of the Coral Sea Battle, was almost certainly a variation of the Zero, a carrier-borne fighter known as Hap.

Photograph and information supplied by the RAAF Museum, Point Cook.

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Dicing with Death

An airman's account of his training and operations against Japan

Arthur Sandell

ROYAL AUSTRALIAN AIR FORCE 1941-1946

During the six years of the Second World War, thousands of Australian airmen – most of them barely on the threshold of adulthood – went *dicing with death* as almost a daily duty. Arthur Sandell was one of this distinguished company. A convinced pacifist until the enormity of Hitler's threat to civilised values brought a change in his thinking, he gives an account in this book of his enlistment, training and subsequent flying in the Royal Australian Air Force from the beginning of 1941 to early 1946.

Now in his eighties, the author has recreated for us some of his day to day experiences as a navigator in a squadron of remarkably versatile Catalina flying boats. The airmen of two squadrons of Catalinas, despite the slow speed and minimal armament of their aircraft, played a crucial part in reporting the advance of Japanese forces towards Australia in the critical days of 1942 and slowed the enemy's progress by bombing most of the bases they established between northern New Guinea and the Solomon Islands.

The author tells of operations, often sixteen to twenty-two hours duration, of the techniques of precision navigation, frequently in apalling tropical weather, and of the excitment and fear when heavily defended enemy ships or installations were reached.

After twelve months of operations in 20 Squadron, the author was assigned to instructional duties, followed by a commission to investigate in America the use of a new ground facility for teaching astronomical navigation. He then returned to operational flying in 43 Squadron. By this time the role of the 'Black Cats' had become the laying of mines in the waterways used by the Japanese as far west as Sumatra and the China coast.

The book ends with a brief account of what became of one ordinary Australian after his fighting days were over.

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