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Phillip Garth Law 1912–2010

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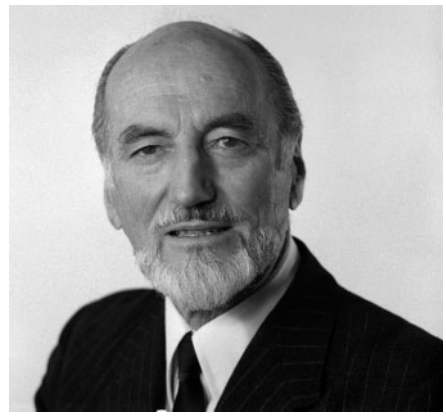
Phillip Law is renowned as the first and best-recognized Director of the Australian Antarctic Division, responsible for conduct of the Australian National Antarctic Research Expeditions (ANARE) 1947–66, with the emphasis on science. He established most of the ANARE traditions and oversaw the location and establishment of all Australian Antarctic stations. He was widely recognized and decorated for both national and international influence. His main trait was perseverance in fighting to achieve his goals. In 1966, he became Chief Executive of the Victoria Institute of Colleges to develop, highly successfully, non-university tertiary education in Victoria. Throughout his professional career, he was a prolific diarist, writer and publicist.

Phillip Garth Law is without peer as the outstanding Australian in the modern Antarctic period, best known for his role in establishing the reputation and traditions for the Australian Antarctic programme under the umbrella of the Australian National Antarctic Research Expeditions (ANARE). The list of his awards, and their international character, attest to his standing. In his field of endeavour, Law was legendary, a legend he worked hard to generate. He was ambitious, even driven, and this was matched with ability. From his earliest days, he had to strive for recognition, and this became an enduring feature of his character. His early life was a case of overcoming difficulties that would have stopped many. Throughout life he was a competitor, but he made it hard for himself by taking on extreme loads, both intellectually and physically. His diverse experiences in every field, be it sport, studies or music, led to his later desire to overcome the strictures of bureaucracy—an extension of his continuing development. He had a vision for the Antarctic: he wrote and spoke regularly of the day when the continent would be fully developed with sub-ice cities where workers lived full lives, where they extracted minerals, where supersonic flight made travel between Antarctica and Australia a reality, a forerunner of today's fly-in/fly-out concept. The seas around Antarctica would be a major source of food for an overpopulated world. Antarctica could be used as a nuclear waste repository and a repository for excess food production between times of need. In 1964, he could see this happening within a twenty-year time-scale. Law's later career in guiding the development of the Victoria Institute of Colleges has been overshadowed by his Antarctic persona and deserves better recognition. In this position, he was the leader and was much less critical of bureaucracy, now that he was the head of it.



The Foundations of the Man

Phillip Garth Law was born on 21 April 1912 in Tallangatta, Victoria, not far from the family home in Mitta Mitta. He died on 28 February 2010 at Balwyn, a suburb of Melbourne, eight weeks before his 98th birthday.

He was the second child of Arthur James and Lillie Lena (née Chapman) Law, both teachers by profession. Father was authoritarian; mother more tender and loving. The six Law children enjoyed a full variety of Australian country experiences, in a close-knit extended family typical of the time with outdoor activities dominant and very diverse. His primary school education probably was very much like that of any Australian child of parents who moved from time to time between city and country; however his secondary education was different, causing a major rift with his father and generating a belief that he was held back in the development of his career.

There were regular moves and a variety of schools. Two years were spent in North Fitzroy, where Arthur had been posted, but in 1914 the family returned to Mitta Mitta where Arthur studied to obtain his Bachelor of Arts degree. In 1916 the family moved to Gardenvale, a Melbourne suburb where Phillip filled in the interval between age 4 (kindergarten), through 5 (commencement of primary school) and on to 8. The early part was during the First World War and Arthur had been turned down from enlistment. While the locality was flat, with market gardens in contrast to the earlier country of mountains and streams, there was plenty of normal mischief and problems with conservative parents. Phillip was a good conscientious student, normally close to the top of his class, concluding grades 3 and 4, in the latter half of 1919. He quickly passed into grades above his older brother and the boys were soon in different schools to avoid too much unpleasantness. The contrast between conservative home environment and the schoolroom and adventurous playground was very marked, and many of Phillip's personality traits developed at this time.

Early in 1922, Arthur became District Inspector at Hamilton, Victoria, a prosperous country environment where the family stayed for almost eight years. Differences between Phillip and his father came to a head because Arthur, in collaboration with the headmaster and ignoring Phillip's very good grades, twice kept Phillip in a lower grade to ensure that his intellectual development did not run ahead of his physical. In retaliation, Phillip concentrated on sport. In addition to team sports, he was active in individual sports such as swimming, shooting and cycling, often with or in competition with brother Geof. Outdoors activities were important, particularly in the nearby mountains, the Grampians. One such occasion was in the company of the geology-trained educator Charles Fenner (father of Frank Fenner FAA) from Adelaide and this event crystallized Phillip's interest in natural science. He completed Intermediate Certificate in 1925 but his attempt at the Leaving Certificate the next year was not so successful and Phillip realized he had to work again at things intellectual. In 1927 he completed his Leaving Certificate and received many awards including for General Proficiency and Scripture Studies.

He took to jazz music, setting the scene for later Antarctic musical activities. His grandfather ('Dop') had initiated him to rhythm on the bones and spoons and he had picked up the elements of playing the tin whistle and mouth organ in primary school. Late in high school, he was given in succession a piccolo and a clarinet, both of which widened his musical horizons, but his first active role was as drummer in Geof 's Hamilton High School Jazz Band. Drums had one severe disadvantage, that of needing time to pack up while other members of the band could socialize. Thus, back to the clarinet at a time when he became increasingly interested in girls.

When he was 16 Phillip realized that being a surgeon was out of the question, and he decided to pursue his other interest, science, and to drop his over-cautious approach to life.

He now entered the workforce and began his transition from 'child' to adult, which was both complex and multi-faceted. His experience was similar to that of many others who finished high school during the Depression, hindered by lack of resources (that is, money and scholarships) and increasing unemployment. Following advice from Arthur, Phillip opted for Teacher's College but he was only 16 while entrance was at age 18.

To fill in two years, Phillip became a Junior Teacher, initially Grade 2 at Hamilton High School doing virtually all secretarial/office work, but in 1930, when Arthur was transferred to Geelong, Phillip became Junior Teacher at Geelong High School, which did involve some physical education training. During these years he continued to study and gained, in succession, Third Class Honours in Chemistry and a pass in Honours Mathematics. He also pursued further

sport, receiving the Merit award of the Royal Life Saving Society.

To make things more difficult, a review of teacher training in Victoria recommended a thirty per cent reduction in the number of studentships and allowances. As a result, Phillip had reluctantly to accept a Primary Teacher's Studentship to Ballarat Teachers' College. This tested him. He was determined to gain one of two positions available at Melbourne Teachers' College for top students from country colleges. He gained his studentship, learned something of piano and saxophone, and played more sport. At the end of the year at Ballarat, the country Teachers' Colleges were closed. Law moved to Melbourne and left home.

He moved to Carlton and while studying full-time at the Teachers' College, also took on a full first-year science course at the neighbouring University of Melbourne. He 'found the academic year a hard one'. He began boxing, which suited him because of the classification according to combatants' size. He failed at the first attempt to win a University Blue at intervarsity boxing but passed everything else.

In 1933, Phillip was posted to a Higher Elementary School at Clunes, 120 km north-west of Melbourne. His two years at Clunes included teaching in science-related areas, instructing junior boxing, playing football, shooting rabbits, playing jazz and pursuing university education! He could not attend university but enrolled for second- and third-year mathematics subjects that could be studied externally. He travelled 8 km every Friday night to work with a colleague at a neighbouring school. He passed two of the three mathematics subjects and applied successfully for a teaching position in Melbourne.

He was posted to Elwood Central School, responsible for a class of low achievers, but he was also Sports Master which gave him a means of enthusing students. His reviews as a teacher improved and to advance he took successively, part-time over two years, Second and First Honours in Education from the Education Department.

In mid-1934, the rest of the family moved to Melbourne where Arthur was a senior administrator of the Teachers' College. Arthur now took an interest in Phillip's boxing and assumed presidency of the University Boxing Club with Phillip as secretary. Again Phillip was unsuccessful in his bid for a Blue but pursued professional training.

In 1936, he bought a car to allow him to combine his university chemistry classes and teaching. He was successful at Intervarsity Boxing in Brisbane and won his coveted Blue. Celebration had a lifelong effect: he drank a bottle of neat whisky, was thrown over a balcony and could never again abide the smell of whisky.

And then, in the same year, he met Nellie Isabel Allan ('Nel'). She also was a student teacher and had much in common with Phillip—unconventional, intelligent, 'wild'. They met at a college event where Phil was part of the band. She had won the same studentship from the Ballarat Teacher's College as he, and won a major prize in Primary School teaching. From now on, until her death in 1990, their lives were tightly integrated. He was totally infatuated with Nel, but she seems to have taken pride in cutting him down to size. It was, to say the least, a fiery relationship and remained so. Phillip passed Physics II that year so well that he was advised to attempt Honours in Physics III the next year.

He had another worrying experience; during a State amateur featherweight boxing match, he won but was not only exhausted but also very ill with a splitting headache and pain in his neck that affected his training. However, he did not seek medical advice. He realized something was wrong, gave up competitive boxing and restricted himself to gymnasium work.

He attempted Physics III Honours in 1937 and despite difficulties in meeting class attendance requirements, gained First Class Honours. He still needed to meet the foreign language requirement but had time to attempt and pass the language tests the next year when Nel was appointed to a country school.

Law thus became a physicist, but his natural outlook was to see everything in a broader context and to pursue a wide range of interests and activities—music, boxing and many outdoor pursuits. Between the ages of 18 and 26, he was involved in several physically highly demanding escapades in the Mt Bogong/Mt Kosciusko region, Australia's highest. He learned to ski, to trek through difficult country, and to survive (sometimes only by good fortune, leading to his belief in his own personal luck) under harsh

conditions. In 1938, short of funds, he sold his car and moved back with the family.

University, the War and Transition

In 1939 Phillip enrolled for an MSc degree in Physics at the University of Melbourne under Professor Thomas Laby and also applied, unsuccessfully, for an overseas appointment with the then Council for Scientific and Industrial Research (now CSIRO). It was a difficult time, with the threat of war, a major bushfire season, and difficulties at home where very conservative parents found it difficult to accept that Phillip was a grown man capable of making his own decisions.

As a student on leave from the Education Department, Phillip received no salary and thus financial pressures were extreme. This put great strain on the relationship with Nel who would not marry him because of a perceived heart problem that decreed she should die by the age of 30. They were both broke but she did agree to an engagement and he provided a zircon ring.

The University allowed Phillip to tutor two physics classes and to tutor privately, thus providing him with some income. Laby rejected Law's proposed MSc topic but suggested two projects to be completed quickly before the final thesis topic was decided. Law enjoyed these studies and threw himself into a very hard work regime.

1940 was a big year for Law. He was appointed Senior Demonstrator in Physics and encouraged to tutor students at Newman College, both positions he enjoyed and excelled in. He completed his preliminary projects and his MSc thesis topics were decided—metrology of optical components, and protection of optical instruments from deterioration in tropical climates due to fungus and condensation. Both were closely connected with the work of the newly established war-related Optical Munitions Panel that Laby headed.

April saw the Second World War begin in earnest and Law decided that the University should do something about it. With Alf Butcher he convened the University National Service (UNS) of 30–40 groups each with its own function. This led to workloads such as marking service personnel assignments, collecting recyclable material, establishing savings schemes, ambulance appeals, picking fruit, and general physical fitness/medical schemes.

He completed his MSc thesis and applied to join the Royal Australian Air Force. Neither his supervisor nor Nel objected overtly. He resigned from the University and, after farewells, on 25 March 1941 presented himself at Laverton RAAF Station for appointment as Pilot Officer. He listened to an induction speech and collected his uniform but was called to the office to be told he must return to the University to help the University's war effort. So ended his formal involvement in the war.

Laby put Law to work on an Optical Munitions Panel project to design and build an instrument to measure the radii of curvature of lens surfaces. Law continued research on tropic-proofing optical instruments and now also gave lectures; however, his enthusiasm about his own lectures was not fully appreciated by his family, who saw him becoming very self-centred and arrogant and even supported some of Nel's barbs.

Nel now agreed to marry Phillip so she had to resign her teaching position. They married at Scots Church, Melbourne, on 20 December 1941. It was a teetotal wedding breakfast followed by a freer restaurant event; this in turn continued in the hotel room until management intervened. The honeymoon was marked by the breaking of a bottle of wine in Nel's case, leading to a laundry role for Phillip. Because of Nel's 'heart condition', they decided not to have children. Nel returned to work and with three salaries (hers and Phillip's university and private tutoring) they could move into a South Yarra flat.

February 1942 saw the bombing of Darwin, and further austerity. In November, Laby resigned as Head of Department and in March 1943, Law was Acting Lecturer with enhanced salary and responsibility. He became Acting Secretary of the Optical Munitions Panel linking Defence, University and industry in the design, research, construction and report-writing concerning complex instruments. Law was retained eventually on the committee as Assistant Secretary.

Fungal growths on instruments in the tropics again came into focus and Law suggested a visit to New Guinea to see for himself if his solutions worked in the field. He took leave from the University and joined the Army as a civilian. He was

in New Guinea for five weeks, travelling widely, but did not see any action. On his return, he was unhappy with his lot and began to apply for other positions.

In 1945 came another of Law's key moments. Dr Leslie Martin, whom Law admired, was appointed head of physics and formed a cosmic ray research group at a time when radiation and its sources were subjects of great global and local interest. He had Law's temporary lectureship upgraded to a three-year contract, allowing Law to sever his connection with the Education Department. He enrolled for a part-time PhD in the cosmic ray group but ultimately did not complete this degree.

Law had been working ceaselessly and diligently for many years and the load now took its toll; he became ill and was told to have a holiday. He took three weeks' convalescence and resigned from the Optical Munitions Panel, but was given new responsibilities within the department, partly because Martin saw that he needed new challenges.

The war was now over and Law had to consider his future. He recognized that he could be little more than a 'competent, well organised routine scientist' (his own view) within the University where advancement depended on the death or retirement of those more senior. He hoped for something better and began to apply for administrative positions.

Antarctic Division Days

Again Fate stepped in, to have the greatest impact on Law's career. Almost as an aside, Martin mentioned that Australia was considering an Antarctic expedition and needed a Chief Scientist. Law immediately expressed interest, Martin made the telephone call, and Law sat for an interview. He was offered a one-year appointment, took a year's leave from the University, and assumed his position on 1 August 1947.

After the Second World War, interest in the Antarctic stirred with non-claimant nations, especially the USA, concerned about management of the continent. Sir Douglas Mawson, in particular, urged the Australian Government to get involved. Macquarie Island was recognized as Tasmanian but there was doubt about the status of Heard Island, strategically located in the central Indian Ocean. There was little activity on mainland Antarctica but the mood was for change. Australia—a nation with little tradition of dealing with severe ice conditions—decided to take a role. Group Captain Stuart Campbell from the Department of Civil Aviation was appointed as Chief Executive Officer.

At a meeting of the Executive Planning Committee (EPC), to which Campbell invited Law, the name 'Australian National Antarctic Research Expedition 1947' was coined and ANARE was born, reflecting the central place of science and built on the terminology of the pre-war British, Australian and New Zealand Antarctic Research Expedition (BANZARE). Law was appointed initially as Senior Scientific Officer for 1947–8, a temporary position. He attended EPC meetings and enjoyed a friendship with Mawson who had similar views to his own.

Early Expeditions

The first year's programme was to establish bases on Heard and Macquarie Islands and a depot on the French Îles Kerguelen. The voyages were under Campbell, and Law was to undertake a third, on HMAS *Wyatt Earp* to reach the Antarctic mainland, to visit Mawson's old establishment at Commonwealth Bay, and to conduct cosmic ray research on the way.

In preparation for the science programme, Law, with a group that included the young physicist David Caro, developed robust cosmic ray research gear and tested it in the Australian Alps, an adventure in itself. The collaboration resulted in close friendships with men now well known as Australian Antarctic pioneers, particularly Fred Jacka who succeeded Law as Chief Scientist and was first director of the Mawson Institute for Antarctic Research (MIAR) at the University of Adelaide.

Because of delays in modification of the *Wyatt Earp*, Law's voyage sailed from Melbourne on 17 December 1947 in company with Campbell, and returned on 1 April 1948. It was a voyage none wished to repeat and is well summarized in Law's own account (1995) and Ralston (1993). None of its primary aims was achieved; it did not reach the Antarctic mainland but Law saw icebergs and many other Antarctic marine features and learned a great deal, including his renowned propensity for seasickness. He was involved in what was apparently only the second (brief) landing on the Balleny Islands. One of his

oft-repeated perceptions was the apparent lack of genuine interest in science, the real drivers being politics and adventure.

The season was education the hard way but bases were established successfully on the islands. A major lesson was that shipping and resources were inadequate and something better was essential.

In marked contrast to conditions on *Wyatt Earp*, Law, with a post-graduate student, travelled to Japan on MV *Duntroon* to further understanding of latitudinal variation of cosmic ray across the tropics. In Japan, he was involved in an amusing case of mistaken identity when he was taken to be a member of an Australian parliamentary delegation with all the misapplied pomp that that entailed.

The Government decided to put Australian Antarctic activities on a permanent footing and on 18 May 1948, ANARE was formally incorporated into the Department of External Affairs by creating the Antarctic Division. Law applied for the permanent position of Assistant Officer-in-Charge (Scientific), basically second-in-charge.

The appointment to a permanent position in the Public Service was not easy. He and Campbell were very different and did not get on. Campbell tried every ruse he could to prevent Law being appointed to the position, including having scientific expertise removed from the selection criteria and his own nominee recommended. Law pulled his own strings and eventually succeeded in having scientific expertise retained. Campbell returned to his substantive position in the Department of Civil Aviation, opening the way for Law's advancement. Law applied for and was appointed as Acting Officer-in-Charge of the Division on 3 January 1949. He organized the 1948/49 programme to re-supply the island bases and to exchange expeditions.

Management of Science

It quickly became obvious to Law that the Australian Government included scientific institutions with expertise to address several disciplines relevant to Antarctica—the Bureau of Meteorology (meteorology), the Ionospheric Prediction Service (upper atmosphere physics), the Bureau of Mineral Resources, Geology and Geophysics (now Geoscience Australia (GA)—earth sciences), the National Mapping Service (geodesy, cartography—now in GA), CSIRO (initially particularly biology) and so on. Money was limited and thus science in the Antarctic Division would be only in areas where no dedicated institution existed or was interested—which meant glaciology, medicine and eventually cosmic ray physics and biology. These were to be augmented where appropriate by university expertise. This changed with time as some institutions became dependent on dedicated funding that was not necessarily available to support Antarctic science, and thus the Division's range of disciplines grew to include upper atmosphere and cosmic ray physics, but overall the organization had a strong biological emphasis. Expeditioners who went south contributed to diverse projects and thus many papers include authors whose primary expertise was in a different discipline.

Expeditions and Head Office Again

Law took LST3501 (re-named HMAS *Labuan*) to Heard Island, departing Melbourne on 21 January 1949. The trip down was largely uneventful due to good weather but on occasions the ship behaved badly and did not build confidence. Transfers were well conducted using amphibious DUKWs, the exchange taking only 15 h. The programme was completed quickly and efficiently and the ship departed Heard Island on 11 February. Comments of those who had spent 1948 on the island were that Law had handled the entire effort exceedingly well.

The next day, the ship was at Îles Kerguelen, avoiding mines that had been installed by Australian interests. The island was deserted but Law saw widespread remains of earlier occupation as a source of building materials. The ship arrived at Melbourne on 28 February. In transit, he received a cable from the departmental secretary congratulating him on his success. His status as an expedition leader was growing. Macquarie Island that season was relieved in March/April 1949, under the leadership of Trevor Heath, Law's administrative officer.

Law spent 1949 on the administrative details of running an organization his way. He wanted five-year funding, an operational method different from the traditional bureaucratic public service, and a break from any unnecessary nexus with the armed forces. He sought new

independent headquarters, painted HIS way, and HIS own means of fast-tracking ordering of equipment and parts. Nel designed a Division logo and letterhead and developed a short-cut means of communicating between expeditioners and loved ones. In short, with a minuscule budget Law established an organization as independent as it could be, no easy task when funded by and responsible to the Government. He was helped greatly by his staff, especially the late George Smith. He obtained approval to put his own case for funding and to assess potential employees his own way. He put great stock on publicity and took a central role. By the end of the year, he had a staff of eleven including some scientists. He held discussions with the French about placing a facility on Îles Kerguelen so that Australia could, without a significant budget increase, build a station on the Antarctic mainland to replace that on Heard Island.

Many of the Antarctic Division's legends and traditions took root this year. Law employed the 'ratchet principle' in the Antarctic Division's operations. Each year's consolidation was the foundation upon which further development would build within the Australian Antarctic programme and the Antarctic Division.

There was one possible glitch and it was his 'friend' Mawson who believed that the Division should become financially self-sustaining by co-operating with an industry such as whaling. Law got around this issue by ensuring that minutes of meetings were cast his way. It was an amazingly successful year but at its end, Law was absent, on his way to Cape Town as observer on the Norwegian-British-Swedish Antarctic Expedition (NBSX) to Antarctica. This included Australian John ('Joe') Jelbart who had been on Heard Island for the first expedition and who would die on the second year of NBSX.

The NBSX voyage was difficult but Law learned a great deal more about Antarctic conditions, about the sort of ship he wanted permanently, about accommodation on board, about relations between expedition leader and ship's captain, and about the importance of good food (in contrast to that on this voyage). He saw very efficient mid-ocean discharge of cargo and commented favourably on the land transport. He also observed aspects of crew behaviour that he did not like. It was a very useful exercise. He became convinced of the need for a ship larger than *Norsel*, used on this voyage.

Law travelled to Europe from Cape Town, arriving in London on 15 March 1950. In England, France and Norway, it was typical Law, examining in detail an extreme diversity of equipment and speaking with renowned explorers such as Brian Roberts (Scott Polar Research Institute, SPRI), Paul-Emile Victor (Expéditions Polaires Françaises) and Harald Sverdrup (Norsk Polarinstitutt).

On his return to Australia late in April 1950, Law had to contend with new departmental arrangements following a change in government. While the arrangements were not as favourable as in the previous administration, he had the EPC agree to his submissions to government, including for a permanent station on the Antarctic mainland, maintenance of both island stations, initiation of a long-term scientific programme and planning for a new, purpose-built ship. The new minister (P. C. Spender) seems to have supported his ideas but not his increased public visibility. In July a message from Heard Island generated the wrong kind of publicity—the doctor had appendicitis and planned to operate on himself. This led to requests for ships to assist. The Navy said 'no' but eventually relented with HMAS *Australia* but the appendicitis receded and the subject walked ashore when the ship berthed. Law was furious and decided, overriding advice, that every future doctor would need to have the offending appendage removed before sailing.

The episode illustrated further the need for a dedicated and appropriate ship and the minister agreed to a search for a stop-gap charter of such a vessel for 1951/52 and for detailed planning to begin for an Australian ship.

Law continued building the Antarctic Division by filling key positions such as a new Administrative Officer and Chief Scientist (Jacka). Law planned to have Joe Jelbart groomed as a possible successor but then heard of Jelbart's death.

The 1951/52 re-supply voyages had to proceed and once again, only HMAS *Labuan* was available. Again, Law was leader on both changeovers. The voyage to Heard Island was another nightmare. It departed from Melbourne and Albany, on 16 and 22 January 1952 respectively. Weather was appalling: 12–13 m seas, cargo

shifting, Navy sailors preparing for the worst, deck plates splitting, fuel shortage, damaged unloading ramp, broken condenser pipes and more. At Heard Island, Law was marooned ashore while the captain wanted to get away. Feelings were low and re-supply was incomplete. Law managed to re-board the ship which then went to Îles Kerguelen for a couple of days, during which good weather and French hospitality helped lift morale before the return to Heard Island. On 17 February, change-over was complete but the problems had only begun. A continuing series of breakdowns left the ship immobilized and a tug was ordered. When it arrived, the boilers were repaired and the ship limped into Fremantle. She eventually arrived at Sydney but would not sail again.

For the re-supply of Macquarie Island Law obtained *River Fitzroy*, another inappropriate ship, but it succeeded. The change-over lasted ten days, hindered by bad weather, recurring failures of the two poor DUKWs that had been provided (one of which was lost) and the different work ethics of the ship's and Law's crews, but saved by a combination of the efforts by Law and Dick Thompson. The ship then returned to Port Kembla.

During 1951, the Antarctic Division underwent considerable consolidation. Law's title was changed to Acting Director and the Division moved into central Melbourne, in the Theosophical Society Building. He worked on improving supplies and implementing his own philosophy about the way to get the best from his staff. This revolved about quality of accommodation, food and alcohol (no spirits but beer and wine, at a time when wine was not widely consumed in Australia). Law's straightforward approach in dealing with other arms of government was recognized. A major improvement came with the appointment of R. G. Casey as Minister for External Affairs. Casey had a personal interest in the Antarctic, knew several of the famous personnel and had been involved in earlier diplomacy concerning the continent; he also had his office in Melbourne. The problem of shipping was met by combining Australian and French needs through chartering MV *Tottan*, an ex-Norwegian sealer, for the 1951/52 (and 1952/53) change-overs which were both again led by Law, supported by Richard ('Dick') Thompson as Administrative Officer. Again, Law was engaged with the idea of a continental base and a more permanent shipping system. He also applied to have his position upgraded and made permanent with salary paid retrospectively for three years. In the latter, he was unsuccessful and he was not appointed permanently until March 1952.

During the 1951/52 change-over voyages, Law initiated one of his legacies, the still active ANARE Club, to cater for the interests of all who had worked in the Antarctic programme. He also established the Antarctic Names Committee of Australia (ANCA, now the Australian Antarctic Names and Medals Committee) to oversee nomenclature in the Australian Antarctic Territory (AAT) and the Australian sub-Antarctic islands. This was becoming important internationally as several nations operated close to Australian facilities.

Law approached his department about a trip to Europe to attend an Antarctic conference; meanwhile, he was scheming with European institutions to have such a conference convened. Again, it was typical Law. His request did not gain much support but ultimately the Prime Minister gave permission, so Law asked to add the USA to the itinerary and went ahead anyway. All was approved retrospectively. He had won!

1952 saw a major change in logistics with long-term consequences. Westralian Farmers Transport Ltd notified Law of a new ship that might meet his needs—MV *Kista Dan* of the J. Lauritzen Line, a Danish company that supplied Danish interests on Greenland. Law and Lauritzen agreed that an arrangement for the southern-hemisphere summer would be ideal.

Law asked the EPC for support to establish a mainland station with the 1953/54 voyage. A tricky part of the discussion concerned the place of the sub-Antarctic stations. Because of the French presence on Îles Kerguelen, Heard Island was abandoned in favour of the Antarctic mainland. Government approved and thus planning advanced. Law, for the second occasion, did not lead the 1952/53 change-over.

The move to the mainland represented a major increase in the needs for training and equipment; Australia now had experience in the sub-Antarctic, but the Antarctic? The needs now were safe buildings that could be erected quickly but last for years (even if the long-term programme was not yet approved) to support life

Figure 1. Law at Mirny Station. Image courtesy of Australian Antarctic Division.

in a cold, snowy environment totally isolated during winter, more stringent medical needs, ground and air transport, clothing, power supplies, food, water, a new type of emergency potential. The results of Law's efforts are still in place in an evolved form. He travelled around Australia and chose the first year's expeditioners personally. Formal induction programmes and field training in snow conditions gave both experience and bonding while allowing misfits to be weeded out.

Weasels, designed for tropical wartime landings, were chosen for ground transport and two Auster aircraft for reconnaissance and to transport surveyors along the coast for photography, mapping and taking astrofixes (the equivalent of modern GPS; one of Law's great legacies). Some hut designs reverted to Law's earliest designs, others were purchased. He introduced clauses to the ship's contract to clarify relations between Captain and Voyage Leader. Nine people would constitute the first party and it included many Law knew well. He left nothing to chance.

The 1953/54 change-over began with Law's first trip on *Kista Dan*. It took two weeks and he was very happy with the ship and its facilities. It arrived in Melbourne on 26 December 1953 and sailed for Heard Island on 4 January 1954. Initial good weather deteriorated and Heard Island appeared unwelcoming; however the change-over went well, leaving a party of nine. The ship then left for Îles Kerguelen where supplies and a French observer (André Migot) were taken on board. This had all taken 23 days. Now for Antarctica.

Within a few days, signs of the Antarctic were everywhere—various ice forms, abundant and diverse wildlife. From aerial photographs, Law had chosen Horseshoe Harbour for a station. The ship had to stop while unloading, leading to an altercation with the captain. A storm on 6 February rendered flying impossible. The ship became stuck and parallels with Shackleton's *Endurance* experience were canvassed. When conditions improved, Law proposed blasting to release the ship and eventually this succeeded. On 11 February, the ship entered Horseshoe Harbour. That night, wind damaged both Austers but one workable 'plane was salvaged. Relations between Law and the captain were at a low. At 5.10 p.m. on 13 February, Law held a flag-raising, station-naming ceremony and named the station Mawson (Fig. 1). This was Law's first landing on Antarctica.

Law forced the expeditioners to work very long hours to unload and build so that he could depart eastwards on 23 February, meanwhile receiving congratulations from many sources. And so to Scullin Monolith, where Law wanted an astrofix but was dissuaded almost forcibly from landing, and to Vestfold Hills. Law and the captain were at loggerheads for several days. Cables concerned publicity because Law wanted virtual freedom but the bureaucracy in Canberra disagreed.

At Vestfold Hills on 3 March the flag was raised and photographed but clouds prevented an astrofix until the next day. They turned for Heard Island shortly after midday, but not before Nature put on its most horrendous display. Several thought the ship lost as it was uncontrollable in conditions that destroyed the remaining Auster. Only on 10 March did they break out of the ice. They arrived at Heard Island on 14 March, removed the men and sailed to Îles Kerguelen before heading home. Law conducted all the normal interviews and paperwork on the way but was angered by cables limiting the amount of media coverage he should have on return.

They arrived at Melbourne at 9 a.m. on 31 March to a much more muted reception than Law had anticipated. He was disappointed to say the least! But Mawson had been established as Australia's first station on Antarctica. This was one of Law's greatest achievements and could be seen as the end of ambition, but no! He now had an operating Division to evolve—continuously.

At home, the system was showing concern at Law's 'ratchet principle' of incremental growth. One of those concerned was his minister, Richard (later Lord) Casey, who previously had supported many of Law's ideas. 1954 was a tumultuous year. Law lost control of the EPC as Casey was to preside. Government agreed to close Heard Island but to have another year at Mawson, and reduced the budget. Law's continuing war over publicity caused major clashes with Canberra. Some of his submissions for staff re-classification were successful but key proposals were not, reinforcing Law's view that the Department of External Affairs had little interest in science, pure or applied, and saw occupation as the only driver. Mawson Station worked well despite some field adventures.

Again Law was lucky in that plans for an International Geophysical Year (IGY) were being discussed. The Australian committee met only following pressure from Law and supported his hundred-year vision. The scale and diversity of proposed activities would need expanded facilities down south.

During the 1954/55 summer, Law was in his element. Heard Island was closed, all the huts disassembled and prepared for re-erection at Mawson. After two days in the Vestfold Hills, during which Law spent a night ashore, a visit to the Larsemann Hills some 100 km south was thwarted by ice so they stayed at Lorten (now Lichen) Island, where Law took part unhappily in his first man-hauling exercise. He spent another night ashore, then sailed along the Amery Ice Shelf, mapping all the way to Mawson where they arrived at noon on 9 February. Relations with the captain were excellent.

The change-over at Mawson occurred on 28 February when *Kista Dan* sailed for Heard Island and Îles Kerguelen where they enjoyed best French hospitality. Some ANARE personnel attended unofficially and one became drunk, embarrassing Law and causing him to exercise his authority forcefully. The ship arrived back in Melbourne on 22 March and Law encountered an unexpected storm from two media people he had taken with him.

Unbeknown to Law, a journalist and photographer had laid many complaints about Law's management style, his attitude to their work and general interference, at a time when Law was hoping to be appointed Officer-in-charge at Mawson for the IGY. Communication with his superiors made it clear that this was not on. The public service was unhappy about his publicity and Law lost friends among the bureaucrats, specially the Assistant Secretary of the Department of External Affairs.

The season had been very successful. Two Air Force men received military awards and all men who had wintered were given Polar Medals, but there was nothing for Law. He again complained that science was rated second (if that) to mere presence.

A five-year plan had not been accepted and each year sweated on funding for the next. As IGY approached Law could see the resources other nations were allocating. Casey approved his request for aircraft with additional funds. Nel

Figure 2. Opening ceremony at Mawson Station, 13 February 1954. Law at flagpole.

was becoming a strong influence with her artistic flair and was expressing an interest in getting to see the continent herself.

It was a time of international developments that favoured Law. Science would now become more important in an international context whereas to this time it had been largely national. IGY was to be an exercise in global science that would become the currency of credibility. The planning for IGY was controlled by the non-governmental Comité Special de l'Année Géophysique Internationale (CSAGI), later the Special (eventually Scientific) Committee on Antarctic Research (SCAR). Although only four nations were active on the continent in 1955, several others, including the USA and the USSR, expressed interest during the 'Cold War'. Many participants in IGY rejected territorial claims and claimant nations had to accept 'interlopers' on 'their' territory. The USA announced that it would build stations at McMurdo Sound in the Ross Sea, at the South Pole, and along the Knox Coast of the AAT (Wilkes). The USSR then stated its intention to build stations including Vostok and Mirny in the AAT. As a result, Casey gave Law support for the development of a station in the Vestfold Hills.

The 1955/56 summer expedition departed Melbourne on 27 December 1955 and plans included mapping several thousand kilometres of the AAT margin using three 'planes and employing trimetrogon aerial photography supplemented with astrofixes. Where possible, there would be landing and collection of diverse scientific data. They visited Lewis Island on 7 January 1956, discovered Petersen Bank (named for the captain), and visited the Russian station of Mirny where Mikhail Somov was leader (Fig. 2). Mirny was being established with resources that dwarfed anything Law had seen. Communication was a problem but overcome. Mixing with the seniors of the Russian party meant that Law missed a lot of useful information that was passed between more junior members of both parties.

Kista Dan reached Mawson on 17 February where a hangar was built for the 'planes to stay for the year. Conditions and reluctance by the captain meant cancelling exploration west of Mawson so they came home via Heard Island and Îles Kerguelen to traditional French hospitality. Law was less than charitable about the captain. They arrived home on 26 March. Again, during his absence, senior administration was having

a problem accepting Law's approach to public service methodology.

As IGY approached, Law was a strong influence on Australian policy. He and Jacka attended meetings in France and Spain respectively and Law was convinced of the need for a more international approach at home, questioning the intentions of the USA and USSR following IGY. Would they stay and what would be their attitude to their own possible claims and alternative means of governance of the continent? Law received approval, largely through Casey's intervention, to expand Mawson, to build the station in the Vestfold Hills, to instal an automatic weather station in Wilkes Land (near where the USA intended to build Wilkes Station), and to acquire the necessary increased funding for extra equipment.

The plan for 1956/57 included visiting Mawson early, occupying the Vestfold Hills and returning to re-supply Mawson. It all went wrong and the automatic weather station was deleted. With Mawson iced in, they came across the current site in the Vestfold Hills with its sandy beach and older raised beach. The men worked hard and long to build the huts for the five-man wintering party. By 13 January, at 4 p.m., Law convened the ceremony at which he raised the flag, named the new station Davis, and returned to work. Water was a problem that was solved by harvesting small lumps of floating ice until snowfall. Law again was frustrated with the lack of publicity, probably specially about his own activities, and voiced that frustration. The media even commented on it.

They now made a rendezvous with the American ship *Glacier*, collected a few expeditioners and an American observer who it had been impossible to accommodate on *Kista Dan*, conducted major aerial photography around the margin of Prydz Bay, and sailed to Mawson. Here, Law went inland to meet a traverse party that had been away 84 days exploring the Prince Charles Mountains. Photography of the arrival failed and illustrated an insensitive side of Law who wanted the arrival re-enacted because of loss of the public relations potential; the returning party was not amused. All then sailed home via Heard Island and Îles Kerguelen before arriving in Melbourne on 12 March. Law had had a good season.

The 1957/58 season coincided with IGY and Australian efforts were aided by the prior existence of the stations. The USSR had built Mirny, Vostok, Leningradskaya and Molodezhnaya in the AAT, and the USA had erected Wilkes. IGY allowed Law to gain some concessions including a new Deputy Director, Don Styles. The Australian programme had ensured that very large areas had been photographed from the air and thus mapping at a basic level was virtually complete. This season *Thala Dan* made its maiden voyage, carrying an enlarged passenger complement in improved conditions. After much concern about publicity—a concern shared by Casey—Law was given a highly qualified, discreet journalist who reported in the way Law liked. Macquarie Island was renovated and largely rebuilt by early January 1958. The ship sailed south to examine the eastern sector of the AAT but bad ice limited what could be achieved. Law visited Dumont d'Urville (French) and Mirny (USSR), the latter marked by much vodka-fuelled celebrations. Even Law was affected. Davis and Mawson were re-supplied. The only real problem (again) was that of relations between Law and the ship's captain. During 1958, Law and Bechervaise published *Australia's Antarctic Outposts* but 1958 was marred by the death of Law's great supporter Sir Douglas Mawson in October.

After IGY, the question arose of the future of Wilkes, which included a subsidiary underground facility some 80 km inland. Did the USA want to remain and, if not, how would it be run and what were the territorial implications? In the long run, it was agreed that it would be operated by Australia. There were questions of the protocol surrounding the handover. After long negotiations, including a visit to the USA by Law and Dick Thompson, matters were ironed out.

The major feature of the 1958/59 season was the handover of Wilkes to Australia. To keep all stations operating necessitated another vessel for one voyage and thus Australia had *Magga* and *Thala Dan*. The handover, using *Magga Dan*, with all the formal pomp and ceremony, dinners and general bonhomie, took place on 3 February 1959. The ship then sailed east through difficult conditions to explore the region around Magga Peak/Pennell Glacier before turning for home via Macquarie Island. Australia now had three mainland stations and Law believed that the exploration of the coast of the AAT was essentially complete.

A Time of Change both Personal and International

1959 was pivotal for Law. On the positive side was the handover of Wilkes. Negatives that year included a major powerhouse fire at Mawson, wind destruction of two Beaver aircraft and a helicopter, another fire at Macquarie Island, and a death and a serious psychological problem at Wilkes requiring an American air rescue. Law recognized that his interest in continuing as Director of the AAD was waning and that he needed a new intellectual challenge. His mind turned to education, especially at university level, in a more senior academic role, perhaps drawing him back to his roots. He applied unsuccessfully for two vice-chancellorships and turned down the offer of an OBE on the ground that it did not adequately recognise the role of ANARE by comparison with the honours awarded to leaders of other nations' programmes that were inferior.

A continuing issue with Law had been the role of science in the AAD charter. The place of science and the classification of scientists had been a continuing source of clashes with the Public Service Board and with advisory bodies. Law saw science as the driver and integral to the AAD which, in contrast with the pattern in some other countries, should not be a dominantly logistics institution. In addition, he saw it as essential that the director be an active scientist.

Law presented the Sir Richard Stawell Oration to the British Medical Association on the topic 'Personality problems in Antarctica', commonly regarded as one of his best papers (Law 1960). Law always stated that the issue led him to introduce psychological testing of applicants; however, files of the Department of External Affairs from August 1955 show that it was Minister Casey who suggested to a reluctant Law that psychologists should be used in the selection of ANARE personnel.

An overseas trip re-invigorated his interests though more in the direction of science *per se*, and this was bolstered by support in his desire for an Australian ship suitable for the Antarctic.

Management of Antarctica was changing. IGY had been so successful, employing science and openness, that participating nations wanted the spirit of co-operation to continue and the international focus to change from exploration to science. Eventually, this led to the Antarctic Treaty as a formal international agreement, supported by SCAR. Law was in Washington at the same time as Casey for the inaugural Antarctic Treaty negotiations.

The year 1960 was another of mixed blessings. Casey's departure from politics and his appointment to the peerage in 1960 probably made things more difficult for Law; his main supporter was gone! Dick Thomson left for a higher position. Law had frustrations in trying to get awards for key personnel but was himself awarded the Founder's Medal of the Royal Geographical Society. In what Law saw as a fit of pique by management in his department, he was not given approval to go overseas to collect it, and Lord Casey accepted it on his behalf. The department limited publicity for the award. One has sympathy with Law's position.

Late in the year, he flew as an observer to the main USA station, McMurdo Sound, but his visit was marred by foul weather and many of his hopes for the trip were thwarted; however, it made him think positively about Antarctica as a nuclear waste depository in line with his broader, often controversial, views about the potential use of the continent.

Nel and Women in the Antarctic

The 1960/61 programme saw the first women in the Australian Antarctic programme although it was common practice in other programmes. Without seeking approval, Law allowed Nel to accompany him as one of five women on the voyage to Macquarie Island, three of the others being scientists. She enjoyed the experience and was a better sailor than Law. During the voyage Law was advised of a storm at Mawson that destroyed aircraft and damaged buildings. Another message told him that he had been awarded a CBE of which he and others disapproved, believing that he deserved a knighthood; however, he accepted.

After returning to Australia, Law took *Magga Dan* to resupply Wilkes where he endured a mock inauguration with a Crazy Bloody Explorer award from the staff. He was then to take *Magga Dan* south from Fremantle and saw it as an ideal chance to allow Nel to see the high Antarctic, one of his long-term desires. Again without prior approval, he arranged for her to sail. She was in trepidation but entrained to Western Australia.

Law was told to get ministerial approval and met the minister, later Prime Minister, John Gorton in Fremantle and was given approval gladly. Lauritzen, to assist in avoiding adverse public reaction, invited her as their guest. Problem solved, but not for the bureaucracy! The result was that when Nel and Law were invited, all expenses paid by Lauritzens, to attend the launch of their new ship *Jetta* (later *Nella*) *Dan*, relations with the public service were so poisonous that Law had to decline the invitation.

At Mawson, Nel had a marvellous time, partly overcoming her fear of flying. After Mawson, the voyage moved to Chick Island and in difficult conditions landed an automatic weather station. Then to explore the coast of Oates Land but again ice conditions made major exploration difficult, although they did manage to name Mt Gorton and land on a few islands where they took rock samples and magnetic readings. Despite the press interest in Nel's role on the voyage, the media coverage on arrival home in Melbourne was well managed, helped by Mr Gorton's approval.

The 1961/62 season saw Law have another attempt at the recalcitrant Oates Land. In *Thala Dan* he first visited Mawson's 1912/13 huts at Commonwealth Bay before re-supplying Wilkes. Then he returned east, sailed past the Balleny Islands to the clear water off Oates Land between Cape Hooker and Cape North at ~165° E in the Ross Dependency, raising both
New Zealand and Australian flags. Here they stayed until 25 February before coming home. Law was very pleased with success here.

At home in 1962, after a genuine global touring holiday with Nel, mixed with Antarctic commitments, they bought a home and he was rewarded with the John Lewis Gold Medal of the Royal Geographical Society of Australasia. The real reward, however, was a Doctor of Applied Science (*honoris causa*) degree from the University of Melbourne, to which he presented a very strongly worded occasional address. Unfortunately all was tempered by an instruction from his departmental secretary that he should still be addressed as 'Mr'. This led to intemperate correspondence but the issue ultimately was resolved.

In the 1962/63 season, a major glaciological tractor traverse from Wilkes to the Soviet Vostok station was successful. This set the scene for many such long-distance traverses that became part of the Australian *modus operandi*.

Law's fiery interactions with senior bureaucrats and negative coverage of some of his publicly-stated views about Australia's directions and of some of his seniors strengthened Law's desire for a new direction. In 1963, he was approached by Sir Frederick White about applying for the position of director of the Mawson Institute for Antarctic Research (MIAR) to be established at the University of Adelaide. While Law said 'no', he did encourage Fred Jacka to apply, partly because Law was having his usual clash with authority over the classification of scientists. Law saw MIAR as a good career move for Jacka but was unable to replace him with the sort of person he wanted.

During 1963 and 1964, his clashes with his department and the Public Service Board and over his budget continued, exacerbated by stomach upsets and a back injury from his beloved tennis. He stayed home for the 1963/64 sailing season and also missed a SCAR meeting.

1964 was another big year. Wilkes had been built in a depression and slowly filled with ice, ultimately making it unserviceable and requiring replacement. This was approved by government in July 1964, but the scale of activity and limited resources meant that a decision had to be made to close Davis temporarily. The replacement for Wilkes (re-named as Casey) was a classic Law innovation, built on stilts with an aerofoil design to prevent build-up of snow. In August he attended the SCAR meeting in Paris and also visited Russia.

September 1964 gave Law one of his most exciting flights, the first from Australia to Antarctica, aboard an American C-130 Hercules. It should have been a simple flight from Avalon, near Melbourne, to the South Pole followed by McMurdo Sound, but Nature interfered; the South Pole was too cold, McMurdo was socked in and the plane had to continue to Byrd Station, a total flight time of almost sixteen hours. At Byrd, the front ski could not be activated and it took time to waste fuel before a safe landing. The next day gave Law the opportunity to visit McMurdo for a few hours before flying home.

The 1964/65 summer season with both *Nella* and *Thala Dan* saw Law at sea again, first with the Macquarie Island change-over, then a brief

time at 'home' before embarking on the voyage to change over Mawson and close Davis. The voyage began with a musical send-off, a feature for many years of departures from Hobart. A major part of the year's programme was to conduct surveying and geology west of Mawson to Enderby Land, the westernmost section of the AAT, using air transport—the most efficient way of studying large areas distant from a station.

After almost three weeks at Mawson, during which there were diverse frustrations and continued re-shuffling of the programme, Law left for Davis and made a rendezvous there with *Thala Dan*, leaving the surveyors/geologists at Mawson with air support. Davis was closed in four days and Law returned to Mawson, mapping along the way and noting how the Amery Ice Shelf had retreated since his earlier visit.

The programme south and west of Mawson had proceeded well in his absence. There were frustrations on both sides (Law and scientists) at Mawson over the continuing changes made by Law. Loss of the Beaver aircraft after breaking through sea-ice meant an altered programme that put more load on helicopters. Law went SCUBA diving in order to find a site for a tide gauge.

The programme now was to operate from the *Nella Dan* which moved westward near the ice edge as far as Jagar Island. It was a time of continual re-adjustment with frustrations with the captain and between the major parties. This continued for three weeks but by that time, a major effort had been successful. However, Law and others were at war with the captain. The ship moved back to Mawson to finalize some surveying and pick up those returning to Australia. They left Mawson on 1 March and were in Hobart by 15 March. It had been a very frustrating voyage in many ways.

This voyage had illustrated well the continual difficulty between Law and ships' captains. Clashes were a pervading theme (with two exceptions) and this is consistent with Law's belief in his own judgement in almost all situations. Others may have experienced frustrations in the same circumstances but their reactions were less strongly expressed. The captain of this voyage resigned and became an embittered man who had had good working relationships with leaders on other expeditions.

Frustrations, New Opportunities and Another Transition

On return to Australia, the situation for the AAD changed with a new minister and new department head, both of whom needed to be introduced to the Antarctic business, and the loss (or potential loss) of some of his senior support staff. Law wondered if it was all worth it. He was offered a sabbatical position at SPRI in Cambridge but turned it down on the excuse that the AAD was not yet operating to his satisfaction! Jacka did resign to go to MIAR and initial indications were that helicopters would not be funded for the next season. Eventually they were funded but not at the size Law demanded because of the need for them to work farther afield.

Partly because of the administrative arrangements, Law wrote many submissions on his favourite themes—classification of scientists, need for Australian shipping, larger helicopters, developments in the Antarctic, including the evolution to higher priority for science. He was irked continuously by limitations imposed by bureaucracy and bureaucrats, particularly in DEA which was one of the most conservative departments, and while (after rejection and re-submission of cabinet submissions, and reviews) he did win recognition of science in particular disciplines as legitimate concerns, he was unsuccessful in obtaining separate classification of the Division's scientists, partly because if the Division received such approval, other government departments could also claim the same right. He never won that argument and it was not until 1981 that the CSIRO classification was accepted for the AAD. On other matters, however, he was renowned for his ability to achieve his ends in spite of bureaucratic obstructions. This came to a head in the mid-1960s when the winds of change were blowing strongly in government and in the Antarctic Division.

Law had become sought after to act on many non-Antarctic committees, usually to do with university matters in Victoria, and to comment on non-Antarctic issues. He was approached about the possibility of assuming vice-chancellorships. Now he was being questioned further by the bureaucracy about the amount of time he was spending on non-Antarctic matters. It was a time of continuing frustration. One morning late in 1965, Nel saw an advertisement for the position

of Vice-President of the Victoria Institute of Colleges (VIC). Law thought it could almost have been written for him, and applied.

In the meantime, there was the 1965/66 season in Antarctica. At about the same time as he sailed, he learned that he had been successful in his application for the VIC position. His time as director of Australia's Antarctic effort was thus about to come to an end. He was happy with a new captain but heavy seas damaged the Beaver aircraft and it and its pilot had to be returned to Australia by the *Thala Dan.* Equipment for building Casey Station to replace Wilkes was unloaded and Law had a leading role in a 'wild boat chase' to retrieve a boat that broke free in heavy seas. Then to Mawson, complaining again of timid captains. Mawson was in excellent condition and Law was happy but the change-over took place in appalling weather, forcing all to stay ashore. The ship broke its mooring lines but was undamaged.

After Mawson, it was to Prydz Bay and Bolingen Islands for geology and magnetic observations, requiring use of a small boat in difficult sea and ice conditions. Then to examine Davis Station which was as it had been left the previous year. The plan was then to proceed to Lewis Island but, when close to the island, the weather again deteriorated and the plan was abandoned. Law gave the order to return to Hobart where they arrived on 12 March 1966 after one of the worst storms he had ever endured.

Law attended his last EPC meeting, still fighting for the conditions he had sought for so long, enjoyed a farewell dinner with gifts, and left the Antarctic Division. He was ready for a new adventure. In all, Law spent some 1,218 days at sea during his ANARE days—at an average of 51 days per voyage.

Victoria Institute of Colleges (VIC)

Law now moved very successfully to a different and perhaps even more intellectually challenging environment. He started work on 26 April 1966 and stayed until 1977.

The concept employed at VIC was proposed by a committee headed by Professor Leslie Martin who had had such an important role in Law's earlier career. It followed presentation of the Martin Report on Tertiary Education in March 1965, after a very long gestation period and discussion of many models. The Report eventually recommended establishment of state-based Institutes of Colleges that would be Commonwealth-funded. The Commonwealth established a Commission for Advanced Education, parallel to the existing Universities Commission. The VIC was established in 1965 and Law was the first Vice-President and Chief Executive. It was to have a Council, meeting monthly, with a head who was chairman of the Council and President of the College. A major difference in Law's position was that, in contrast to earlier days, he was now head of the bureaucracy and also less in the public eye; he was no less prolific, however, in his writings, although these now concerned the philosophy and role of various levels of tertiary education and the differentiation between them.

In taking on his new role, Law was in a similar position to his initial appointment to the Antarctic Division. The VIC existed in name only with no office, staff, philosophy or clear idea of its responsibilities. He was starting again at the age of 54. He began by obtaining rooms, a telephone, a secretary and a typewriter. By February 1967 he had appointed a Business Manager, followed the next month by a Registrar. He oversaw development of a complex committee structure. The VIC model was unique to Victoria, largely due to Law's approach.

After having the Act establishing the College modified to separate the VIC from ministerial control, ensuring autonomy and allowing it to have its own Board of Studies, one of his early tasks was to extricate the existing technical colleges from the Department of Education despite that department's objections, and to break the nexus between secondary and tertiary education philosophy and practice. The VIC then had at its core seven affiliated technical institutions (Law 1967) and there were another 13 'unaffiliated' institutions in forestry, agriculture, physiotherapy and so on that were private or under other state government departments. VIC was to develop within Victoria a tier of tertiary education different from and complementary to the universities, and of comparable standard. While developing a structure similar to that of a university, Law had to formulate a philosophy to ensure that the two types of institution had clearly differentiated aims. The VIC was to be vocationally and technologically oriented,

responding directly to industry's needs. It initially did not include several teacher-training colleges that came under a separate State College of Victoria and were termed Colleges of Advanced Education. Law preferred to have teacher training distinct from his VIC but by 1974, the teachers' colleges had been placed under the purview of VIC and outside the state government bureaucracy.

At the outset, VIC was not to award degrees but in 1968, despite initial opposition from Canberra, the Victorian College of Pharmacy did begin granting bachelor degrees without too much fuss, and thus VIC developed as a co-ordinating, degree-awarding authority. The VIC was to be without a PhD-granting function, leaving basic research to universities. For all but one discipline, it would grant a Master's degree by research in technological disciplines.

During Law's tenure, VIC established seven new university-style campuses and created two completely new colleges—the Victorian College of the Arts and the Lincoln Institute of Health Sciences—by amalgamation of smaller units. He caused the formation of the Victorian College of the Arts by merging three smaller, struggling institutes—the National Gallery Art School, the Albert Street Conservatorium, and the National Ballet Co. He also oversaw the amalgamation of various small therapy schools and the College of Nursing. The Gordon Institute in Geelong was re-located at a new campus. It eventually became Deakin University and was taken over by the Universities Commission as Victoria's fourth university, much to Law's chagrin.

Recognising severe deficiencies in the understanding of marine science in south-eastern Australia, Law, in his role as President of the Royal Society of Victoria, tried to initiate an institute akin to the Australian Institute of Marine Science (AIMS) in Townsville. After succeeding in getting an enabling act through the Victorian Parliament, VIC was unsuccessful in obtaining Commonwealth funding for such an institution but did establish the Victorian Institute of Marine Sciences (VIMS) with a field station at Queenscliff. Law was chairman of its initial council.

In 1977, Law reached the then compulsory retirement age and 'retired'. In 1978, he was elected a Fellow of the Australian Academy of Science by special election.

In 1987, Australia's then Minister for Education, John Dawkins, released a paper (*Higher education: a Policy Discussion Paper*) that transformed higher education in Australia with the Colleges of Advanced Education abolished as such and converted to universities or merged with pre-existing universities. Law was appalled at what had happened to his VIC. However, times had changed: universities had become more aware of the needs of society and had evolved in directions closer to CAEs and CAEs had assumed some academic character. The VIC ceased to exist.

'Retirement' and Beyond

Australia/New Zealand Scientific Exploration Society

Law initiated the Australia/New Zealand Scientific Exploration Society and was its President from 1978 to 1980. It was based on a United Kingdom model of having eight to ten senior-high-school or first-year university students conduct a research programme for about five weeks under the supervision of a PhD student. Work would be conducted on a project identified by CSIRO or a government department in an area where little was known. The system worked for a few years but eventually foundered.

Antarctica

Law never let the Antarctic stray far from his zone of interest and while his employment at VIC may have been in a different milieu, his Antarctic commitment and productivity continued unabated. In an odd twist, in his latter years as director of the Antarctic Division he was on many non-Antarctic committees; but while at the VIC, he was an active member of several Antarctic committees such as the National Committee on Antarctic Research (ANCAR) and the Antarctic Names and Medals Committee. Now came his most productive time in publication and public-image terms; most of his books and many of his commentaries on the Antarctic came from this period.

Over the 1997/1998 summer he accepted an invitation from Aurora Expeditions to take a three-week voyage on MV *Khapitan Khlebnikov* to re-visit old haunts in the AAT. This allowed

Figure 3. Phillip Law at Law Base, Larsemann Hills, 1998. Image: P. Quilty.

him to see modern Mawson and Davis Stations, the summer Law Base in the Larsemann Hills (Quilty 2010), and other sites in the region (Fig. 3).

His Legacy

Law, like his parents, was of small stature and within the family was always 'little Phil', later 'Squib'. This small size meant that he was excluded from some of the activities of the 'big' boys even of the same age and in same class at school. Probably because of this treatment, he developed some of the 'small man syndrome' and felt he had to perform in some areas, both physically and academically, at a higher level than those around him, a practice that never left him. He was a feisty individual who thrived on controversy and a fight, be that physical or intellectual. His career is one of change, hard work, success in the face of difficulties and a 'never say die' mentality. He was going to win, one way or the other. He had a vision and anyone, bureaucrat or ship's captain, who stood in the way was the subject of strong criticism.

Under Law's guidance, a diverse scientific programme evolved with the Antarctic Division fulfilling three roles—as logistic support, as an institution with its own scientific programme, and with a policy function. He saw the link between Australia and Antarctica in many disciplines and in some way was influenced by that other dominant Australian Antarctican, Douglas Mawson. Like Mawson, Law was not interested in science entirely for its own sake; it had to have a practical side including the use of Antarctica as a source of wealth or for other practical uses. Hence he could see the value to Australia and New Zealand of an understanding of Antarctic and sub-Antarctic meteorology. Add to this, what has now grown of immense importance, the study of the upper atmosphere.

Even several decades after his retirement, Phillip Garth Law was the most widely recognized face of the Australian Antarctic programme, regularly called on to speak on the topic and to contribute to Antarctic conferences and workshops. Through his early efforts, Antarctica became established as a popular topic for Australians and the Antarctic Division, even though a Division of the Australian public service, assumed its own reputation and prestige.

Perhaps his greatest legacy was the Australian National Antarctic Research Expeditions (ANARE) concept, based on the earlier British, Australian and New Zealand Antarctic Research Expedition led by Mawson (1929–31), and followed by other nations such as Japan (JARE) and China (CHINARE). The terminology has been abandoned, much to Law's dismay.

Those who had worked with ANARE were welcomed as members of the ANARE Club. Law was its patron and it was almost a Law fan club. While Law was actively promoting the almost exclusively male ANARE image, Nel, with Phillip's blessing, established the Antarctic Wives Association for those left at home.

Quite a deal of his approach stemmed from his association with the military during the Second World War, and afterwards in establishing the Antarctic operation. What are now Station Leaders were Officers-in-Charge. In the early days, much of the clothing issue was military. Perhaps the best-remembered feature was the communication scheme in which Law developed a codebook that was shared between those in the Antarctic and family back home. Five-letter codes were designed to substitute for longer phrases and sentences. WYZZAs are still the subject of many a discussion.

Law's internationalization of the programme, particularly in co-operation with the Russians and the French, stood Australia in good stead in Antarctic forums such as the Antarctic Treaty system and the Scientific Committee on Antarctic Research (SCAR).

Figure 4. Law cairn at Mawson, 2013. Ashes of both Nel and Phillip Law reside here. Image: K. Quilty.

He believed in multi-skilling and that every member of an expedition should carry out diverse roles. This included the station doctor, who was encouraged to conduct some medical research while helping others, particularly biologists. Law believed very strongly that the Director of the Antarctic Division should be an active participant in the programme and recognized as an expert in Antarctic affairs. His concept of expeditions included basic accommodation and innovation in station design to match that philosophy, extracting every bit of information that could be gleaned from the men (as it was during his tenure) working down south.

VIC. Law's role in the VIC has received far less exposure than his Antarctic activities and deserves more recognition; it may be that the intellectual content of this position was at least as important as his practical work in the Antarctic Division. He developed the institution from a concept to a very effective reality, developing its philosophy, its independence, new institutes and a strong network of viable organizations with many administrative approaches in common. His legacy continues in the form of endowments in perpetuity to the Victorian College of the Arts (VCA), now part of the University of Melbourne—the Dr Phillip Law

Figure 5. Plaques for Nel and Phillip Law, Mawson, 2013. Image: K. Quilty.

Travelling Scholarship offered to dance students and the Dr Phillip Law Music Scholarship to celebrate innovation in music.

Honours and Awards

Law was a prolific diarist and keeper of records and thus comprehensive reviews of his life and his impact are readily available. He wrote hundreds of articles for popular and semi-popular magazines and journals. The collection of his papers in the National Library of Australia makes him arguably one of the most recorded individuals in Australian history. He is one who had many biographies written while he was still alive. Although he wrote a great deal himself, most was about the Antarctic and about others, not about Law.

Law enjoyed a good red wine and his legendary cigars, and to be taken to Melbourne's Kelvin Club for luncheon accompanied by one of his good reds that he had opened at home before the event was a very pleasant experience.

He was a great believer in 'Law's Luck'. As he aged he became very stooped and appeared frail but if a microphone was placed within reach, the voice and mental acuity of the past were very

obvious. His portrait was twice entered for an Archibald Prize, in 2002 by Sally Robinson and 2006 by Ellen Palmer Hubble.

In typical Law fashion, before his death, he organized a post-expiration lunch for some 160 of his 'friends' at the headquarters of the Melbourne Cricket Club of which he was a member, on what would have been his 98th birthday. He chose the wines, speakers, menu and, of course, the list of invitees. This event was followed two days later by a memorial afternoon hosted by the ANARE Club of which he had been patron for so long. The ashes of both Phillip Law and his wife Nel are now preserved in a cairn on Mawson Station, his first mainland Antarctic establishment (Figs 4, 5).

Positions held

1943–8 President, Boxing Club, University of Melbourne
1945–65 Chairman, Australian National Antarctic Research Expeditions Planning Committee.
1949–66 Director, Australian Antarctic Division
1951–2 Chairman, Victorian Division, Institute of Physics
1952–74 Chairman, Australian Committee on Antarctic Names
1953–7 Member, Australian Committee for the International Geophysical Year
1955 Justice of the Peace, Australian Antarctic Territory
1955–6 President, Geographical Society of New South Wales
1956 Member Melbourne Cricket Club
1956 Leader, Australian delegation, International Geophysical Year Conference, Barcelona
1959–78 Member, Council, University of Melbourne
1962 Deputy Chairman, World Health Organisation Conference on Medicine and Public Health in the Arctic and Antarctic, Geneva
1963–81 Member, Victorian Committee, Duke of Edinburgh Award
1963–88 Member, Recreation Grounds Committee, University of Melbourne
1964–6 Member of the Committee of Investigation into Administration of the University of Melbourne and Chairman of its Working Group
1964–74 Member, Council, La Trobe University
1964–95 President, Geelong Area, Victorian Scouts Association
1966–80 Chairman, Australian National Committee for Antarctic Research and Australian delegate, Scientific Committee on Antarctic Research (SCAR)
1966–80 Member, Council, Victorian Institute of Marine Sciences
1966–77 Executive Vice-President, Victoria Institute of Colleges
1967–9 President, Royal Society of Victoria
1968–77 Member, Advisory Council on Tertiary Education, Victoria 1968–78 Member of Board, Apex Foundation for Research into Mental Retardation
1968–83 Councillor and Trustee, Science Museum of Victoria
1969–70 President, Melbourne Film Festival
1969–72 Member, Victorian Universities and Schools Examinations Board 1969–77 Chairman, Royal Society of Victoria Committee to establish an Institute of Marine Sciences
1977–80 President, Victorian Institute of Marine Sciences
1979 Member, Australian Delegation, Antarctic Treaty consultative meeting, Washington, DC, USA
1979–82 Deputy President, Science Museum of Victoria.
1981 Member, Australian delegation, Antarctic Treaty consultative meeting, Buenos Aires
1994 Trustee, RMIT Foundation
1995–8 Chairman, RMIT Foundation
2001 Member, Board of Directors, Glacier Society, USA

Endowments

2004 Dr Phillip Law Music Scholarship, Victorian College of the Arts, Melbourne
2005 Dr Phillip Law Travelling Scholarship (for Dance), Victorian College of the Arts, Melbourne

Honours and Awards

1953 Queen's Coronation Medal
1956 Award of Merit, Commonwealth Professional Officer' Association
1958 Clive Lord Memorial Medal, Royal Society of Tasmania
1960 Founder's Gold Medal, Royal Geographical Society, London
1960 Patron, British Schools' Exploring Society
1961 Commander of the Order of the British Empire (CBE)
1962 John Lewis Gold Medal, Royal Geographical Society of Australia (South Australia Branch)
1962 Doctor of Applied Science (*Honoris causa*) University of Melbourne
1965 Polar Medal (invested 1996)
1966 Distinguished Honorary Member, Kelvin Club
1970 Vocational Service Award, Rotary Club of Melbourne
1973 Men of Achievement Award
1975 Officer of the Order of Australia (AO)
1975 Foundation Fellow, Australian Academy of Technological Sciences and Engineering
1977 Freeman, Victorian College of the Arts
1977 Queen Elizabeth II Jubilee Medal
1977 Honorary Fellow, Royal Melbourne Institute of Technology
1978 Fellow, Australian Academy of Science
1978 Doctor of Education (*Honoris causa*) Victoria Institute of Colleges
1982 Honorary Life Member, Melbourne University Sports Union
1982 Sir Edmund Herring Memorial Award for outstanding service to the youth of Victoria
1985 Honorary Life Fellow, Museum of Victoria
1985 Statue of Victory, World Culture Prize for Letters, Arts and Sciences
1987 Honorary Life Member, Melbourne University Graduate Union
1988 James Cook Medal, Royal Society of New South Wales
1988 Gold Medal Adventurer of the Year, Australian Geographical Society
1995 Companion of the Order of Australia (AC)
1995 Foundation Fellow, Royal Society of Victoria
2001 Centenary Medal
2001 Clunies Ross National Award for Lifetime Contribution to Science and Technology.
2002 Inaugural Annual Phillip Law Antarctic Mid-winter Lecture, Hobart
2008 Doctor of Applied Science (*Honoris causa*), Royal Melbourne Institute of Technology
2009 Phillip Law Room, Royal Society of Victoria

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Nota Bene

In Jamestown, South Australia, there is the Hubert Wilkins Aerodrome as a tribute to a local hero. As part of a small display about Wilkins, there is a book entitled *Sir Hubert Wilkins: His World of Adventure as told to Lowell Thomas*. It was published in 1961/62 by Readers Book Club and distributed in each state by the state's leading newspaper. In South Australia it was distributed by the *Advertiser* Readers Book Club. The image on the dust cover is purportedly of Wilkins, but it is Law! It is based on the original Hodgkinson image now in the Kelvin Club, but it has been redrawn and flipped 180° so that instead of looking to the left as in
the original (see the image on the cover of Kathleen Ralston's book *Phillip Law: The Antarctic Exploration Years 1954–66*), it has him looking to the right.

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