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Chapter 13

Ken Atock: Australia's Forgotten Rocketeer*

Kerrie Dougherty†

Abstract

In 1998, the author presented a paper on the two groups calling themselves the Australian Rocket Society. In researching the Melbourne ARS, a reference was found to an otherwise unknown mail rocketeer by the name of "Ken Atcock," about whom virtually no information could be discovered at the time. As it transpired, a misspelling of the surname in the original reference had rendered this interesting young rocketeer 'invisible' to research. Recent research by a relative has now brought to light the story of James Kenneth Atock, known as Ken, a high school student with a passion for rocketry, who became Australia's youngest known pre-War rocketeer. In 1936, aged just 15, Ken designed, built and attempted to launch an experimental mail rocket at Fisherman's Bend, Melbourne. He also built a second rocket that was never flown. An academically gifted student, Ken wrote newspaper articles about the latest international developments in rocketry. Sadly, Ken's potential to become an important Australian rocket experimenter and space promoter was never realized, due to his premature death in 1941, while attempting to escape from a POW camp in Crete. His experimental rockets are, however, preserved in the Australian War Memorial in Canberra, and his memory commemorated by a scholarship at his former school, to

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support students' academic performance in scientific education with an emphasis on space and rocketry. This paper will outline the short but inspiring life of Ken Atock. It will present his rocket experiments and examine his connections with the Australian Rocket Societies and international rocket experimenters in the 1930s.

I. Introduction

An earlier paper by the author, presented at the 49th International Astronautical Federation Congress in 1998 [Ref. 1], investigated the history of the two groups calling themselves the Australian Rocket Society (ARS). In researching the Melbourne ARS, a reference was found to an otherwise unknown mail rocketeer by the name of "Ken Atcock," about whom virtually no information could be discovered at the time. As it transpired, a misspelling of the surname in the original reference had rendered this interesting young rocketeer 'invisible' to research. Fortunately, recent research by a relative, coincidentally himself a 'rocket scientist,' has now brought to light the story of James Kenneth **Atock**, known as Ken, a high school student with a passion for rocketry, who became Australia's youngest known pre-War rocketeer.

This paper therefore supersedes that section of the earlier paper on the Australian Rocket Societies in which reference was made to "Ken Atcock" [Ref. 1, p. 118] and should be read in conjunction with it.

II. The Spaceflight Movement in Australia

In the latter half of the 1920s, the work of rocketry pioneers like Konstantin E. Tsiolkovski and Robert H Goddard, combined with the rise in popularity of science fiction and enthusiastic promotion of space exploration by other spaceflight pioneers such as Hermann Oberth in Germany, gave rise to the international Spaceflight, or Interplanetary, Movement [Ref. 2] that led to the establishment of space travel and rocket societies in many countries. These groups undertook theoretical and practical research in rocketry and spaceflight.

Research now made possible by the extensive Trove database of digitized newspapers, developed by the National Library of Australia [Ref. 3], has shown that experiments conducted by overseas rocketeers were widely reported in Australian newspapers from the late 1920s, with stories even appearing in small regional papers outside the major cities. Australians were thus widely aware of the activities of the Spaceflight Movement, and it is perhaps not surprising that refer-

ences to local rocket experiments, inspired by overseas developments, begin to appear in the Australian press around 1930. These reports have shed new light on the history of pre-War rocket experimentation in Australia, which has proved to be more widespread than was previously believed.

One of the earliest stories of local rocket experimentation so far identified tragically reported the death of seventeen-year-old Melbourne, Victoria, shop assistant Leslie Frank Aitken, in February 1930. Attempting to develop a rocket-powered car, presumably inspired by the rocket car demonstrations of Max Valier and Fritz von Opel, which had been widely reported in the Australian press, Aitken was killed by an explosion while attempting to make a rocket by filling an iron water pipe with a home-made powder fuel that he had mixed up from "explosives and chemicals" [Ref. 4].

Also seventeen was another early Victorian rocketeer, Brian Falkenberg, whose brief interest in rocketry in the early 1930s, was recounted in the author's earlier paper [Ref. 1, pp. 115–117]. A science fiction enthusiast and amateur astronomer, Brian seems to have acquired his interest in rocketry from reading science fiction magazines such as *Amazing Stories* and its imitators. Although he reported, in a December 1931 letter to the American Interplanetary Society [Ref. 1, p. 116], some ground tests of a home-made rocket, possibly firework-powered, it is not known if Brian ever successfully launched a rocket prior to abandoning his interest in the field in the mid-1930s, when he developed a passion for amateur radio.

Sydney boasted a pair of early rocketeers in Ernest Fraser and Kenneth Forman, mechanics who owned an auto garage in the Sydney suburb of Roseville. They sought to surpass the rocket-powered flights of von Opel by developing a rocket capable of climbing to an altitude of 60,000 ft (18,288 meters) and carrying a pilot across the Tasman Sea to New Zealand [Ref. 5].

In 1930, they successfully tested a "small and rather crude" model of their rocket concept [Ref. 6], which was launched from Flagstaff Hill, near Wollongong, south of Sydney. It was claimed that this rocket landed within 6 ft (1.83 meters) of its intended landing site three-and-a-half miles (five-and-a-half kilometres) away. The success of this small rocket encouraged the partners to develop a larger-scale model (about 3 ft, or 1 meter, in length), to further test their propulsion system. The rocket's design and its solid fuel were developed by an anonymous "science master at a country high school" [Ref. 7], whose propellant mixture was claimed to "possess the advantages of liquid air used by overseas experimenters without its dangers" [Ref. 6].

Unfortunately for Fraser and Forman, their rocket model, and part of their garage, were both destroyed on August 2, 1932, when an oxyacetylene tank ex-

ploded during some welding [Ref. 5]. Although they apparently intended to rebuild the model and continue test flights, no further mention of their activities has so far been discovered in the newspaper record.

III. Rocket Mail in Australia in the 1930s

Although US space historian Frank H Winter has dismissed the bulk of rocket-mail 'experimentation' as having "no real connection with the interplanetary travel movement" of the 1920s and 1930s [Ref. 8, p. 109], this offshoot of the Spaceflight Movement had a significant impact on Australian rocketry in the second half of the 1930s, strongly influencing both Ken Atock's interest in rocketry and the formation of the first Australian Rocket Society.

The founder of rocket mail is generally considered to be Friedrich Schmeidl, an Austrian who wanted to develop a rocket-based postal system, to overcome the difficulties of communication in his country's mountainous terrain. In 1928, Schmeidl began to finance his research by producing and selling souvenir envelopes carried in his experimental rockets [Ref. 9, p. iii]. This innovation quickly grew into a popular and rather lucrative branch of philatelic collecting, so much so that, while some mail rocketeers were serious experimenters seeking to advance the development of rocket technology, others were philatelic groups more interested in producing commemorative envelopes to be flown in any available rocket (such as adapted firework rockets or maritime rescue rockets) and sold thereafter to collectors.

To Australians, only too familiar with the "tyranny of distance" [Ref. 10], the idea of rocket mail, with its promise of rapid delivery to remote districts or offshore islands, was particularly appealing. Schmeidl and other mail rocketeers inspired the first Australian rocket mail flight, which took place on 5 December 1934. As described in Reference 1, this flight was carried out by the Queensland Air Mail Society, using a standard ship's rocket to carry the philatelic payload, which was stored in a metal container attached to the rocket by a long life-line. The initiators of this 'mail rocket' flight, Alan Hunter Young and Noel Morrison, went on to found the first Australian Rocket Society (ARS) in Brisbane the following year.

While clearly interested in the philatelic side of rocket mail, Young considered himself a serious rocket experimenter, whose aim was to develop a postal delivery system that would use rockets to carry mail to the remotest areas of Queensland faster than a train or aircraft. However, Young and Morrison do not appear to have been highly technically skilled and, although Young claimed the title of 'designer,' the Australian Rocket Society's mail rockets were all

constructed by a Brisbane plumbing firm. Their 'rocket experiments' were further hampered by the fact that they seem to have obtained at least some of their technical information on rocketry from Gerhard Zucker, a German mail rocketeer who was essentially a fraudster. Zucker was adept at generating publicity for his rocket launches, which were even reported in Australia, but his impressive-looking mail rockets were little more than hollow casings, powered by a few gunpowder charges that had a tendency to explode spectacularly.

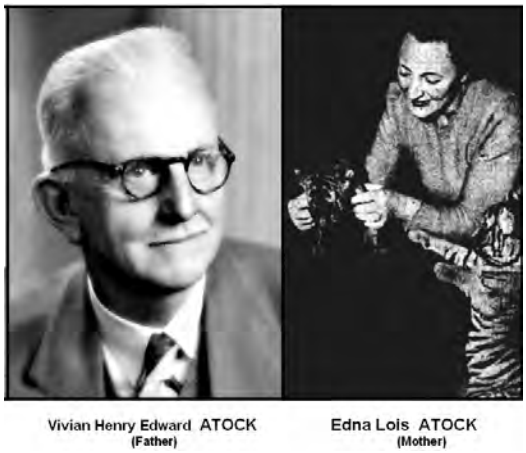
Figure 13–1: Alan Young with an early Australian Rocket Society mail rocket, the *Zodiac*. *Zodiac* failed on its only flight attempt, due to the failure of its home-made gunpowder charges. Credit: Author's collection.

The ARS rockets were all powered by home-made gunpowder charges, devised by Alan Young, apparently after some basic training in the use of gunpowder from the head of the plumbing firm that constructed the ARS' rocket bodies [Ref. 1, p.109]. This lack of experience undoubtedly led to the failure of six of the eight rockets launched by the ARS between October 1935 and May 1937, when the society folded. A detailed account of the activities of the Queensland Rocket Society can be found in Reference 1.

IV. Ken Atock, Australia's Youngest Rocketeer

Australia's youngest known pre-War rocketeer enters the story of Australian rocketry at the same time that the Australian Rocket Society was active in Brisbane.

James Kenneth Atock, known as Ken, was born in Darlinghurst, a suburb of Sydney, on March 28 1921. The story of his life here presented is the result of research conducted by his nephew, Mr. Warwick Holmes. Ken's parents, Vivian Henry Edward Atock (a chemist by training) and Edna Lois Stewart, were not



married at the time of his birth and seem only to have married about six months later for social and moral reasons. However, Vivian and Edna did not live together very long after the wedding and she subsequently left Sydney, taking Ken to Melbourne, where they lived with her family. Edna later filed for divorce from Vivian on the grounds of abandonment: this was officially granted in 1928.

Figure 13–2: Ken Atock's parents Vivian and Edna. Credit: W. Holmes.

Despite her divorce, Edna continued to use her married name Atock. She lived in various locations around Melbourne until her death in December 1975 aged 76 years. Young Ken apparently never knew his father, who continued to live in Sydney and passed away in 1988, aged 98 years.

While it is not clear what triggered Ken's interest in rocketry and spaceflight, he may have been inspired by the stories of overseas rocket experiments carried in the Melbourne newspapers and/or the reports of Australian rocket experiments in Victoria and other states. Whatever the origin of his interest in the area, by 1936 Ken was passionate about rocketry and the future promise of the exploration of space.

Academically gifted, Ken Atock was a student at Melbourne's prestigious Camberwell Grammar School, receiving the Latin prize in 1933 [Ref. 11] and the Modern Languages and Spelling prizes in 1934 [Ref. 12]. In 1936, as a student in Form V, Ken launched himself into the roles of rocket experimenter and spaceflight promoter. He corresponded with international rocketeers and seems to have kept well abreast of the latest international developments in rocketry through books and journals. While he would undoubtedly have read of the ARS' rocket firings, Ken does not seem to have had any direct correspondence with that group until they contacted him in early 1937, seeking details of his first mail rocket attempt [Ref. 13].

Ken promoted the latest rocket experiments and speculations about future spaceflight through several articles written for Melbourne newspapers *The Argus* and *The Herald*. These articles shine with youthful enthusiasm for future spaceflight, but they are written with a maturity of style that belied Ken's young age and possibly gave his readers the impression that he was a fully-fledged journal-

ist, despite his actual schoolboy status. Among his articles was a featured item on future travel to the Moon [Ref. 14], which drew upon British Interplanetary Society founder Philip E. Cleator's newly published *Rockets Through Space* [Ref. 15].

In addition to promoting space travel through newspaper articles, Ken became interested in rocket mail and determined to develop his own mail rocket. Unfortunately for Ken, his technical inexperience and enthusiasm for rocketry led him to accept Zucker's claims for his rocket achievements at face value: he refers uncritically to Zucker's rockets in his article of 3 October 1936 [Ref. 16]. Consequently, he based his first mail rocket on one of Zucker's designs, in much the same way as the Queensland ARS loosely based their earliest rocket designs on Zucker mail rockets [Ref. 1, p. 109].

TURDAY, The Herald OCTOBER 3, 1936

ROCKETS And Their Future

America's first mail-carrying rocket, which travelled 1000 feet, and crossed the State line between New York and New Jersey.

By Ken Atock

Rockets have become almost common in parts of Europe, especially Germany, and they have now arrived in Australia.

ROCKET societies have been established in many countries, and they are continually experimenting and are gradually overcoming the major difficulties of rocket travel.

Rocket mail is now definitely established. Regular mail services are in operation between Shokel and Rade-

downward rush it turns nose-fo This lets down a one-way sliding da from which the parachute drops.

* * * *

THE one great difficulty in connection with rocket launching lies in choosing a suitable fuel. The first ha a mixture of potassium chlorate an potassium nitrate. This mixture, whe ignited, has the property of giving o an immense quantity of gases. How however, must be corrected the erro eous idea that the force of the ga escaping "pushes" against the atmo sphere and propels the rocket upward

The reaction is essentially one o recoil, as in a rifle. Returning to th matter of fuel; if sugar is added to this mixture in the correct proportio a little sulphuric acid dropped on a of the powder will spontaneously ig nite it. Lately, liquid fuels have be almost entirely substituted for sol materials.

Figure 13–3: Ken Atock article of October 3, 1936 in the Melbourne *Herald*. Credit: W. Holmes.

With the assistance of his schoolfriend Robert 'Bob' Ware, Ken designed and built a small mail rocket. Approximately two and a half feet tall (around 0.8 meters), this first experimental rocket had a metal body and fins. It was designed to carry a small quantity of souvenir covers (envelopes) to demonstrate its feasibility as a mail rocket. The rocket was to be propelled by a solid fuel charge, which Ken presumably developed by drawing on information gleaned during his rocketry research.

In an article in *The Herald*, published on the day of his first rocket launch attempt [Ref. 16], Ken described a rocket fuel composed of potassium chlorate and potassium nitrate, also explaining a means by which it could be made to act as a hypergolic fuel in conjunction with sulfuric acid: however, the exact fuel mixture that Ken used is unknown.

The launch of Ken Atock's first mail rocket was planned for Saturday, October 3, 1936, shortly after the Queensland ARS conducted its second successful rocket flight [Ref. 17, p. 4]. Whether the timing of Ken's launch attempt was inspired by the successful ARS launch or purely coincidental is unknown. It is, however, believed that Ken may have intended his rocket flight to be a 'demonstration' launch to raise interest in the idea of a special rocket mail flight in conjunction with the Australian Air Mail Exhibition, to be held in Melbourne in 1937, just as the ARS launch was conducted in conjunction with the Brisbane Philatelic Exhibition [Ref. 18].

Figure 13–4: (Left) Smoke pours from Ken's first mail rocket after it catches fire during the launch attempt. Credit: W. Holmes. (Right) Ken Atock (right) and his schoolfriend Bob Ware unload the philatelic payload from the rocket after the fire. Credit: W. Holmes.

The flight attempt was conducted at Fisherman's Bend, an industrial area of Melbourne that would, coincidentally, later become associated with the Australian Defence Scientific Service, which undertook some of Australia's earliest space-related defense research [Ref. 19]. Ken and his friend Bob Ware prepared the rocket for launch, loading its small cargo compartment with the souvenir envelopes that Ken had addressed to himself and proudly rubber stamped with a cachet bearing the legend *Experimental Rocket Trial Flight, Melbourne, 3'10'6* (sic.), in a less-flamboyant emulation of the style adopted by many mail rocketeers for their souvenir covers. Each envelope carried a 'flimsy'—an insert on light paper. One side of the insert carried a picture of the successful liquid-fueled mail rocket launch of F. W. Kessler at Greenwood Lake, New York, USA, while the other carried a written account of the Kessler flight, clearly taken from a press report. The envelopes were contained within a fireproof wallet, to protect them during the flight.

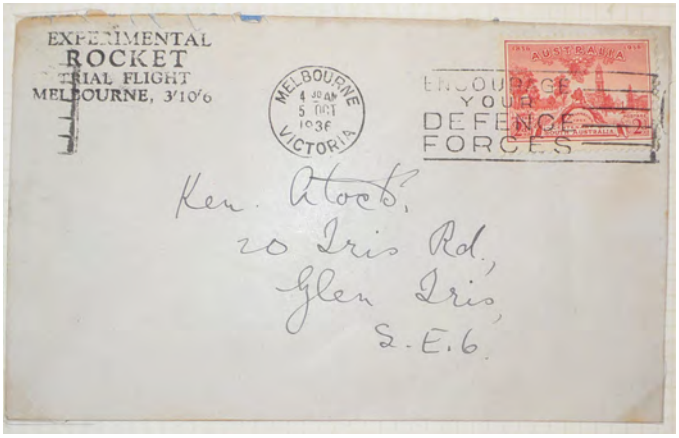


Figure 13–5: One of the surviving rocket mail envelopes (covers) from Ken's first attempted flight. Credit: W. Holmes/EA Crome Collection, National Library of Australia.

This proved to be a wise precaution, as the launch was unfortunately a failure, with the rocket catching fire before it even left the ground. The slightly scorched envelopes were retrieved from the badly burned rocket, and posted on October 5, in order to legitimize them as philatelic items. An envelope from the Fisherman's Bend launch attempt is held in the EA Crome Collection in the National Library of Australia. With only about fifteen souvenir covers associated with the flight, Crome, Australia's preeminent aerophilatelic collector, described the cover in his album as an example of the "rarest of all Australian rocket mails."

Despite Ken's articles for *The Argus* newspaper, the actual attempted launch of his mail rocket seems not to have attracted media attention, although according to a letter sent to Ken from the Australian Rocket Society [Ref. 20], a report of the rocket mail attempt did appear in an unnamed Melbourne stamp paper. This brought Ken's efforts to the attention of the Australian Rocket Society. Obviously believing Ken to be an adult rocket experimenter, Noel Morrison, Honorary Secretary of the society, communicated with him in January 1937, seeking details of his flight and its philatelic cargo [Ref. 13, Ref. 20]. Although Ken's letters in reply are lost to history, it appears that he had plans to move on to experimentation with liquid fuels, of which he was aware (based on his newspaper article of 3 October [Ref. 16]), since an enquiry to the ARS about hydrogen is referenced in Morrison's letter of January 25 1937 [Ref. 20]. However, lacking in technical expertise themselves, the ARS would have been unable to assist Ken in this regard.

Undaunted by the failure of his first rocket, Ken and Bob Ware embarked on a new project, to construct a larger rocket, named *Mercury*, which was intended to be fired from Lilydale, then an outer suburb of Melbourne, as a celebration of the coronation of King George VI on May 11, 1937. Somewhat larger than Ken's first rocket, at approximately 4 ft tall (1.2 meters), the solid-fuel *Mercury* was intended to carry some 500 mail items. The design of the rocket, which incorporated two small canard wings in addition to its tail fins, was possibly based on the rockets of Reinhold Tiling, with which Ken was familiar, as he described them in his 3 October 1936 *Herald* article [Ref. 16]. The rocket was to be fired from a wooden launch rail, at an angle of 60°, reaching a speed, it was claimed, of 600 mph (965 km/hr) [Ref. 21].

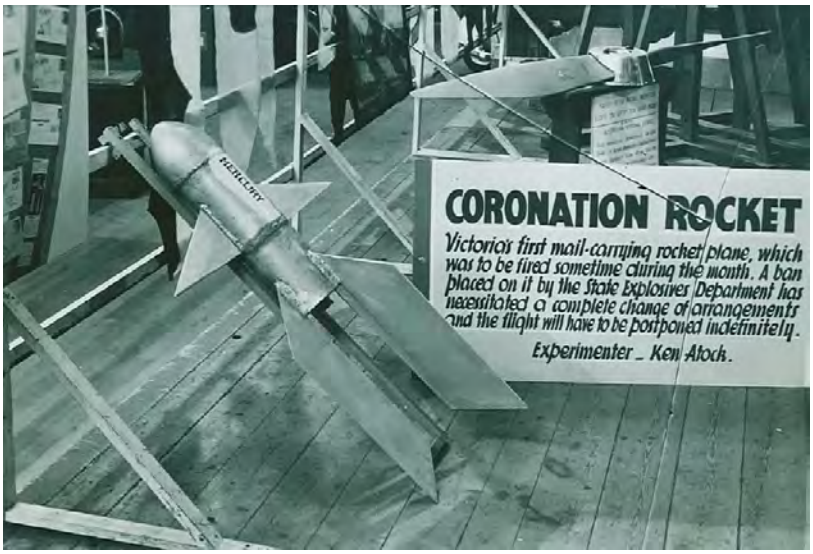


Figure 13–6: Ken Atack's second rocket, *Mercury*, on display at the Melbourne Motor Show in May, 1937. Prohibited from launch on public safety grounds, the *Mercury* was never to fly.

This ambitious launch was, however, canceled at the last moment by the State Explosives Department, on the grounds of public safety [Ref. 21]. Although the two young rocketeers attempted to find an acceptable alternative launch site further inland, and even considered the surprisingly modern idea of launching from a platform at sea [Ref. 22], the *Mercury* was never to fly. Although the rocket was displayed at the Melbourne Motor Show a few days later, no mail rocket flight in connection with the Australian Air Mail exhibition that year eventuated.

V. A Promising Life Cut Short

Perhaps warned by the authorities not to attempt further rocket launches, and needing to find employment on leaving school, Ken ceased his rocket experimentation after the *Mercury* flight was canceled, and took up work as a compositor, reader and part-time apprentice journalist for *The Argus* newspaper, for which he had previously written. Despite his earlier articles, Ken does not appear to have produced any rocket or space-related articles (at least none carrying his by-line) for *The Argus* while he was in their employ.

When World War II broke out in September 1939, Ken was the first Camberwell Grammar student to volunteer for overseas service, registering on the first day the newly-formed Second Australian Imperial Force (AIF) was established. Since, at 18, he was below the age limit for front-line soldiers at the time, he falsely gave his age as twenty [Ref. 23]. Ken's academic abilities were quickly recognized by the Army and he was assigned to the intelligence section of the 2/7th Battalion. He undertook training and intelligence activities in Egypt and Palestine. While in Egypt, Ken wrote a humorous piece offering advice to Australian soldiers on leave in Cairo, which was published in *The Argus* [Ref. 24]. He then saw active service in Libya, mainland Greece and Crete.

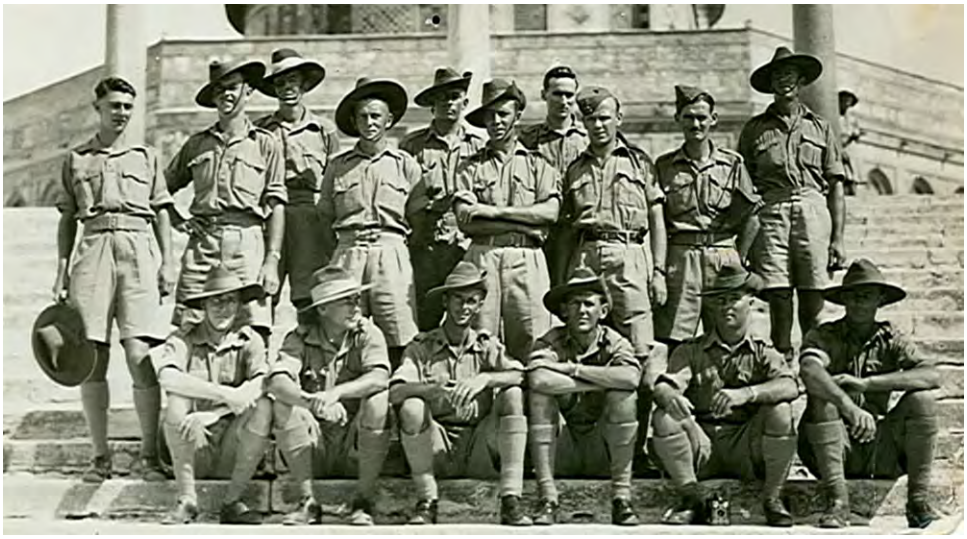


Figure 13–7: Ken Atock (second row, far left) during his military training in Cairo in 1940. Credit: W. Holmes.

During the chaotic evacuation of the Allied forces from Crete in 1941, Ken was captured, becoming a Prisoner of War (POW). Confined in a POW camp, he

used toilet paper and other scraps of paper to secretly compile intelligence information on enemy tactics, weapons, aircraft and troop movements. In an effort to get this vital data to the AIF high command in Alexandria, Ken attempted to escape from the POW camp, but was killed by machine gun fire from the guards as he attempted to go over the fence in July 1941. For this brave effort, he was posthumously Mentioned in Despatches [Ref. 25]. Ken's fellow rocketeer Bob Ware also perished during the War, dying of wounds in July 1942. His death was noted in *The Argus* on July 25, 1942, p. 2.

Had Ken Atock survived the War, his potential to make a more significant contribution to Australian rocketry and the country's space history might have been realized with the establishment of the Woomera Rocket Range in 1947. With his journalism training and pre-War experience, the author believes that Ken may also have become an important space promoter in the 1950s, encouraging Australians to believe that spaceflight would soon be a reality, just as von Braun, Willy Ley and others did in the United States, Britain and Europe.

After the War, Edna Atock donated Ken's rockets, together with other material relating to his life and gallant death, to the Australian War Memorial. In 1976, a bequest from Mrs. Atock's estate established the Kenneth Atock Memorial Scholarship at Camberwell Grammar, to support students' academic performance in science with the emphasis on space and rocketry. This scholarship is still awarded today—a fitting tribute to Australia's youngest rocketeer.

Acknowledgement

Much of the work of recovering Ken Atock's story was undertaken by his nephew, Mr. Warwick Holmes, who was for many years an avionics engineer with the European Space Agency and worked on a number of space projects, including the Rosetta comet mission. Mr. Holmes kindly shared his research findings to enable the production of this paper.

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