



The Introduction of the Rotary Winged Aircraft – The Helicopter

Author: Paul. A. C. Richards, AM, September 2021

In 1863, the French writer Gustave de Ponton d'Amécourt (1825–1888) was the first person to coin the term "helicopter" from the Greek words "helix" for spiral and "pter" for wings.

The very first piloted helicopter was invented by French engineer Paul Cornu (1881–1944) in 1907. However, his design did not work, and French inventor Etienne Oehmichen (1884–1955) was more successful. He built and flew a helicopter one kilometer in 1924. Another early helicopter that flew for a decent distance was the German Focke-Wulf Fw 61, invented by an unknown designer.

The Russian-American aviation pioneer Igor Sikorsky (1889–1972) is considered to be the "father" of helicopters, not because he was the first to invent it, but because he invented the first successful helicopter upon which further designs were based.

In 1930 it was reported in the *Adelaide Advertiser* that great progress had been made in the development rotary lift aircraft, the autogiro or commonly known at that time 'Windmill planes'. on account of the four revolving vanes that take the place of the conventional wings of an aeroplane.¹

Many different types of autogiros, single-seater light aeroplanes, commercial types, and even cabin machines, have been built and flown in various countries with such success that the autogiro to-day may be said to have definitely taken its place among standard types of aircraft. Just how it will develop in the future, whether as a military machine, for airline operation or as a popular flying vehicle, it is difficult to foresee. The inventor, Senor de la Cierva, is equally loth to prophesy, though he is confident that in the very near future it will be possible to build an autogiro which, given an engine of sufficient power, could practically do everything that a helicopter—or vertical flight machine—is supposed to do. Such an autogiro, he tells me, could take off in ten to 20 yards, climb at an angle of 40 to 45 degrees, and be able to re-main in flight under full control at the extraordinary low flying speed of 18 miles an hour. Moreover, the machine would be able to descend vertically and stop dead on touching the ground. Such a machine, if the inventor's hopes prove capable of fulfilment, would undoubtedly revolutionise air transport, but the characteristics of the helicopter have so far proved so elusive in practice that it would be unwise to anticipate landing in one's tennis court for the next few years at least.



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In 1943 the age of rotary winged aircraft was developing rapidly. The helicopter, or direct-lift aircraft, was definitely on the way. Almost since the dawn of aviation enthusiasts have forecast an aerial eclipse of the motor vehicle. The helicopter may well convert such dreams into reality. High landing and take-off speeds, requiring large level and cleared areas often remote from city or home, greatly limit the popularity of modern aircraft. The average man will not tolerate the inconvenience of travelling five or ten miles to an aerodrome. He wants a machine he can fly from his back yard. Of course, this never developed into a decision of car or helicopter for modern society but blossomed into a commercial enterprise and a military coup for modern warfare such as that which arose in Vietnam in the mid-1960s.

The Melbourne Age reported:²

America, has yielded results in the shape of improved performance and greater simplicity of construction. Sikorsky, the famous Russian designer, will be remembered for his amphibian and "super air liners" used by Pan-American Airways on their Pacific routes. When men like Sikorsky believe in the helicopter, it is reasonable to assume that - the future of this type of machine is beyond doubt. It was a Sikorsky type V.S. 300 helicopter that established a world's record for its class in 1941, by hovering for 1 hour 32 minutes over less than half an acre. Because the direct-lift machine has now become a war weapon, and is therefore under the veil of military secrecy, the general public has had little opportunity to keep abreast of later developments.

By 1947 following World War II, literally hundreds of significant improvements were made in the construction and functioning of the component parts of the airplane. Though the list of important developments is very long, there are four items that stand out as those which will probably be most effective in the improvement of aviation throughout the world in the near future.

These are: Radar, the gas turbine, the jet propulsion power plant and the helicopter.³

Perhaps the last outstanding development in aviation is the helicopter, particularly as evidenced by the work of Igor Sikorsky. The helicopter can rise straight up from a confined space, hover as long as desired without any forward motion, or it can move forward, sideways (either side) or backward. It can fly in almost any kind of weather and into or out of very confined spaces. It has many possible uses that the airplane can never hope to meet. Fire Control None of the problems which are still before the helicopter enthusiasts are fundamentally unsolvable. Its uses are many. It can replace the surf boats of lifesavers, it is ideal for crop dusting, for the control of pests over expanses of rural areas, for carrying men and equipment in and out for the fighting of bush fires, for use on sheep and cattle stations and in mining fields. Gradually it will evolve as a means of moderate distance transport for commercial and private use.



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It should not be thought of as a competitor of either the airplane or the automobile, but as a device which will bridge the gap between the two. The average citizen would like to see the day when he could travel by commercial airlines anywhere in the world, swiftly, with certainty and safety and at low cost. That day is very close at hand. A large block of the citizenry would also like to have highly utilitarian, safe, inexpensive private aircraft available, that almost anyone can operate under all conditions for both business and pleasure. That is a very difficult order to fill. The public is going to have to wait a while. The advent of the helicopter brings it somewhat nearer to the realm of possibility, but not even that will bring substance to all the dreams.

In March 1952 one of the great success stories of the Korean war concerned the helicopter. It has survived its tests under battle conditions and, according to one of America's leading plane manufacturers, has made more advances as the result of the experience than would have been possible in 10 years in normal circumstances.

The *Adelaide Chronicle* reported that the helicopter has emerged as a vital military adjunct with vast civilian potentialities.⁴

The manufacture of helicopters has become an important part of the United States aviation industry, with millions of dollars worth of orders placed by the fighting services. A helicopter equipped with jets has undergone trials in California. Inventor, Mr. Stanley Hiller, claims that eventually it will become an average man's means of transport over short distances. It is the Hiller Hornet. As at present constructed it is a two-passenger craft which can be stored in an average-size garage without folding the main rotary blades. It is the smallest copter in operation. The largest are ten-seaters. The Hiller-Hornet weighs 345 lb., has a cruising speed of 70-m.p.h. and a range of 50 miles.

In 1953 there was a disappointing report that there had been no progress of a helicopter venture first raised at a conference in Lithgow, NSW in 1952. At that time Lithgow had staged the first helicopter conference in Australia. Many words were spoken and visiting experts said Lithgow's moves had advanced the advent of commercial helicopter services by three years in Australia.

However, although Lithgow set the lead on August 4, 1953, it has done nothing since that date although delegates from other towns and cities in New South Wales accepted appointment to a special helicopter committee which was to have met early in 1954.⁵

The history of helicopter operations in Australia commenced with military helicopters in 1947 and was followed by the introduction of civil helicopters in 1956. These early aircraft were capable of operating under the Visual Flight Rules and generally by day and introduced a new era of aviation in Australia.

The world's first regularly scheduled commercial helicopter cargo service was inaugurated at La Guardia airport (New York) in January 1953. A Sikorsky S55 helicopter, belonging to New



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York Airways, flew to Newark (New Jersey) airport. The regular run will be between La Guardia, Idlewild, and Newark.⁶

In July 1953 the Mercury reported that the first commercial helicopter service in Australia may be in operation soon. The proposed service would operate between Sydney and central western country towns, carrying passengers and freight.⁷

A decision on the inauguration of the service will be made within two weeks, after a conference between central western municipal and shire councils and an American helicopter company the Mayor of Lithgow (Mr. H. Heffernan) today interviewed company officials on the proposed service. He believed that a service between Sydney and country towns between Katoomba and Orange would be an economic proposition. The cost of a helicopter was £20,000, and the estimated cost of the service was £250 a week. Helicopters could carry two passengers and 780lb. of freight.

Of interest, in 1957 there was what was described as the first sighting of a live Tasmanian Tiger in 27 years from a helicopter by Captain Jim Ferguson, co-pilot of the Australian National Airways helicopter based at Queenstown, Tasmania.

The Argus Newspaper reported:⁸

Captain Ferguson, with his flight engineer Mr Les Taylor, and Mr M. Solomon, a geologist with Mount Lyell Mining Company, were flying slowly home along the beach at Birthday Bay, 35 miles south-west of Queenstown, at a height of 30ft., when they saw a tawny tiger-striped "dog" trotting along the beach. Realising it was no dog, Captain Ferguson whirled round and flew over the animal again - it was a Tasmanian tiger. Speaking from Queenstown last night, he said: "We had a very clear view of the tiger for about two minutes. "We have closely examined the natural history books here, and pictures, and we are convinced it was a tiger. "Argus wildlife expert Mr. Crosbie Morrison said last night: "This is wonderful news. The Tasmanian tiger was feared to be extinct. It is the largest known flesh-eating marsupial and the fact it has been seen alive makes it the rarest mammal in the world."

An excellent illustration of the helicopters use and role was during the Vietnam war where it was known as 'The Diggers Friend' In September 1966 the Canberra Times wrote:⁹

An RAAF Iroquois crew man checks his gun as his helicopter flies over other helicopters of No 9 Squadron, RAAF, at Vung Tau, south-east of Saigon. The helicopters are parked on specially constructed pads.

YUNG TAU, South Vietnam. Mobility and helicopters are key words in the Vietnam war. They go together like bacon and eggs. "The army would be sunk without us", says an Australian helicopter pilot, and certainly the advent of the helicopter in the Vietnam war has enabled allied Forces to get to grips with an elusive enemy. "If you had to footslog



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every inch of the way this war would last forever says the same pilot. "This is a fast moving war in which situations change so abruptly you need absolute mobility to keep on equal terms".

The theory was tested in a recent action between elements of the Australian task force and the Vietcong. As an RAAF spokesman explains it, "We only have six helicopters in Vietnam, but we use them well. "On this occasion a company was in full pursuit of a Vietcong force. The fighting platoons were setting a hot pace and the company headquarters element was being left behind "One of our helicopters was called in and dropped into the jungle to pick up the headquarters people and keep them up with the battle. "Suddenly the Vietcong force changed the direction of its flight and the company headquarters was directly in its path.

"We were called in again to pluck the head-quarters men out of danger. Minutes later the whole company had to be pulled out of the area to fight a few miles away. Without the helicopter you'd have been in no end of trouble

If a man is wounded, he doesn't slow down the rest of his unit-he's whisked off to hospital within minutes. If a whole battalion has to be moved to an operational area the job is turned over to the American Army, which has thousands of helicopters. Thirty or 40 helicopters can quickly whisk hundreds of Australian troops over the heavily jungled terrain to the enemies. "doorstep"

"Footslogging it to an operational area gives the enemy plenty of time to prepare", says a veteran Helicopter pilot.

"With a heli-assault he has only a few minutes' notice, when he hears the clatter of rotor blades coming in his direction -and in the jungle it is difficult to accurately pinpoint the position of noise. And if you happen to have bitten off more than you can chew the helicopters can pull you out of trouble just as quickly.

In 1977 the rusted remains of a fighter aircraft, a Hawker Demon of the RAAF was retrieved from a remote bush area near Waratah by a helicopter from No 9 Squadron. The Demon, AI-8, was one of two aircraft on a flight from Laverton, Vic. in February 1937, to take part in the Royal Hobart Regatta. The crew of the crashed Demon, Pilot Officer G. K. Buscombe, and his observer, Sargent H. W. Gould, were not injured. The crew of the second aircraft, piloted by Pilot Officer Ashton Shorter, forced landed on a roadway and Pilot Officer Buscombe made a controlled crash landing near a ridge. Recently, members of the Tasmanian RAAF reserve and Army reserve were involved in clearing a site for the RAAF helicopter to land to recover the wreckage of AI-8 for airlifting to Waratah township.



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In a five-hour operation, sections of the wreckage were lifted out by Iroquois helicopter and flown to the Waratah football oval, about 10 km. away. The wreckage was then loaded onto a RAAF truck and taken to Hobart. Four trips were made by the helicopter to remove the wreckage. The wreckage was flown by RAAF Dakota from Hobart to Pt. Cook where it will be rebuilt as a RAAF Museum exhibit. The aircraft will help fill a gap between the 1920s and the 1930s in tracing the 60-years of RAAF history. Tasmanian RAAF and Army reserve units had been involved in the search for the aircraft over the past 12-months. FLTLT David Hislop, of Hobart, a member of the ATC said: Four expeditions had gone into the bush to find the wreckage, but had little information as to its exact location. The wreckage was located by members of our unit and the bush area was cleared to make it accessible for air lifting."

The article was supported by photographs of the 1937 recovery party at the crash site of Demon Al-8. Horses, not helicopters, were used then to recover wreckage. Forty years later RAAF and Army personnel prepare the wreckage for uplifting by RAAF helicopter. The task commander, Flt. Lieut. Russ Pyers, said that the recovery operation went without a hitch, despite the restricted area of the landing pad.¹⁰

There have been numerous rescue operations using helicopters in Tasmania, these have been instances in the 20th century. Today they are a common feature in our air space and their versatility very much appreciated.

One of Tasmania's pioneer helicopter pilots was John Stanwix. His book 'The Flying Bug' published in 2021 gives an insight of the versatility and role of helicopters in Australia, Papua New Guinea and Antarctica. The book is available from the Tasmanian Aviation Historical Society - <https://tahs.org.au/tahs-shop/>

¹ Advertiser (Adelaide, SA : 1889 - 1931), Saturday 5 April 1930, p. 15

² Age (Melbourne, Vic. : 1854 - 1954), Saturday 14 August 1943, p. 7

³ Chronicle (Adelaide, SA : 1895 - 1954), Thursday 30 January 1947, p. 16

⁴ Chronicle (Adelaide, SA : 1895 - 1954), Thursday 27 March 1952, p. 10

⁵ Lithgow Mercury (NSW : 1898 - 1954), Thursday 5 August 1954, p. 4

⁶ Daily Examiner (Grafton, NSW : 1915 - 1954), Thursday 29 January 1953, p. 3

⁷ Mercury (Hobart, Tas. : 1860 - 1954), Saturday 11 July 1953, p. 5

⁸ Argus (Melbourne, Vic. : 1848 - 1957), Friday 4 January 1957, p. 1

⁹ Canberra Times (ACT : 1926 - 1995), Wednesday 7 September 1966, p. 20

¹⁰ RAAF News reported: National : 1960 - 1997), Thursday 1 September 1977, p. 7