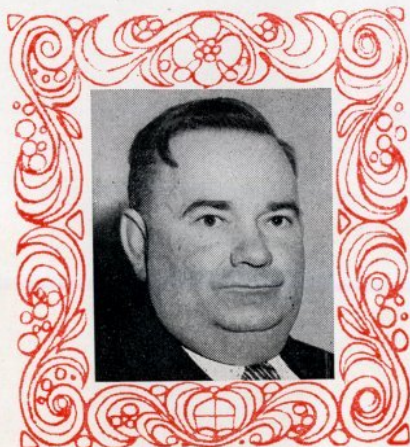




"Smithy"

"GREATEST OF THEM ALL"

2/-



THE aircraft Southern Cross is a permanent reminder of the men and machines that made possible the great pioneering era of civil aviation.

Pioneer airmen of all nations were men of courage and vision. They believed aviation could become one of the great servants of mankind and persevered against discouragement and doubt. Many gave their lives, others lived to see a dream come true within a few decades.

The aircraft they flew made possible the aerial comfort and safety we know today, and of all aeroplanes that pioneered the air-lanes none achieved a greater record than the sturdy Southern Cross.

Brisbane airport, Eagle Farm, will be the last home of this great aircraft. It was there that Southern Cross landed after the historic flight that conquered the vast Pacific from the air.

Australia made considerable contributions to early aviation, but her greatest contribution was in men. Australian pilots were amongst the greatest in an era of great airmen, and among the greatest of these aviators was Sir Charles Kingsford Smith, who, with Charles Ulm, James Warner and Harry Lyon, flew the Southern Cross on its greatest flight.

The permanent home of the Southern Cross at Brisbane airport will not only be a memorial to these men and to a great machine; it is a memorial to an era and to the men who made it. It is a recognition of the endeavour, the courage and the spirit of many men, and a perpetual reminder of man's achievements in the air.

COMMITTEE:

CHAIRMAN:

The Right Honourable the Lord Mayor of Brisbane, Alderman T. R. Groom.

**VICE-CHAIRMAN AND
CAMPAIGN DIRECTOR:**

Mr. Bruce Wight, M.P.

TRUSTEES:

Sir Arthur Fadden, Messrs. C. Bray and Carl Bishop.

HON. TREASURER:

Mr. L. McKenzie.

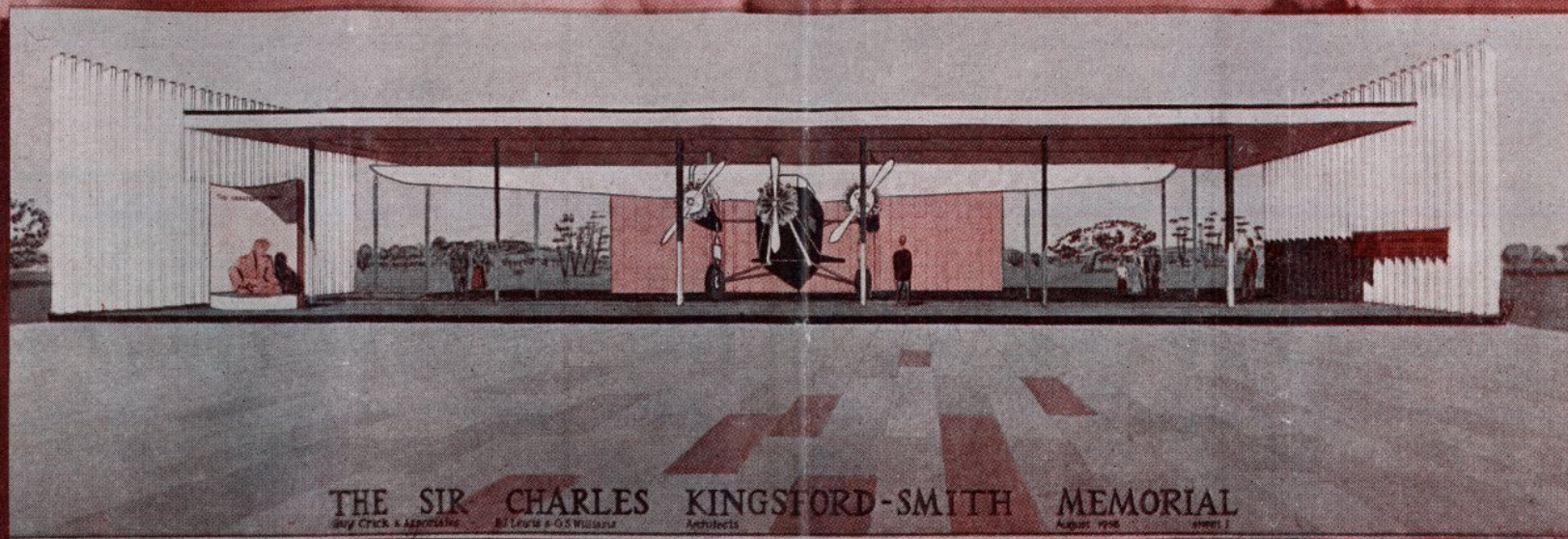
HON. SECRETARY:

Mr. J. Johnstone.

COMMITTEE:

Messrs. S. Sturr, G. Drury, W. Pickford and J. Moxon, Sir Raymond Huish, Messrs. V. Adams, M. Davie, R. D. McCluckie, M. R. Hornibrook, H. L. Trout, H. C. Affleck, F. W. Kelly and Captain R. Adair.

MINISTER FOR CIVIL AVIATION.



THIS is the architect's drawing of the Sir Charles Kingsford Smith War Memorial it is planned to erect at Brisbane's airport, Eagle Farm, with funds raised by public subscription.

The fund has been launched by a committee of prominent citizens who believe that all Australians who have a just pride in their national heroes will want to see the imperishable exploits of this "greatest airman of them all" embodied in a permanent shrine.

This worthy project, which has the full approval of the Commonwealth authorities, will ensure that the veteran Southern Cross, which has survived the vicissitudes of unnumbered flying hours and the batterings of fierce storms in many hazardous ocean and continental crossings, will find a lasting resting-place on the spot where it touched-down after what was undoubtedly the most gallant, inspiring and famous flight in history.



Sir Charles Kingsford Smith

"Smithy"

EVERYWHERE acknowledged as the greatest airman of them all, Sir Charles Kingsford Smith fired the imaginations of people around the world with his breath-taking exploits. He pioneered the way and blazed the trail for safe long-distance flying, and the fruits of his matchless courage and pertinacity are seen in the smooth and regular functioning of today's great inter-ocean airlines.

Born in Brisbane on February 9, 1897, he was fascinated by flying from a very early age, and was constantly making experiments on his own account.

In World War I he enlisted in the Army, and served as an infantryman on Gallipoli. Later, he volunteered for the Royal Flying Corps, and flew Spads—which were the glamour aircraft in that great conflict—and was once shot down in combat over France. He was awarded the M.C. by King George V for his feats in the air in the European theatre.

In America in 1928, still intent on an aerial career, he negotiated for the purchase of a Fokker F7 monoplane which had been designed for the use of polar explorer Sir Hubert Wilkins, and named it The Southern Cross.

"Smithy's" first exploit with The Southern Cross was an attempt on the world's non-refuelling endurance record. For this attempt he had stronger wheels and axles fitted to carry the 1,522 gallons of petrol required. This was equivalent to the weight of 68 people, which meant that on take-off the aircraft was carrying two tons overweight. "Smithy" remained in the air for 50 hours 4 minutes—2 hours 18 minutes short of the record.

It was then that he conceived the audacious idea of a pioneer flight across the Pacific to Australia.

He was desperately short of money, and would probably never have put his plan into effect were

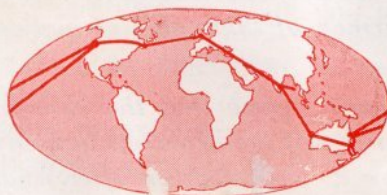
it not for the aid of an American businessman, G. Allen Hancock. Mr. Hancock was very much alive to the importance and significance of such a flight. He also believed implicitly in "Smithy's" capacity to carry it out, and came forward with financial backing. "Smithy" and Ulm at this stage were down to their last six cents. Aviation today owes much to Allen Hancock. Another who helped with a substantial sum was an Australian who happened to be in the U.S.A. at the time—Mr. Sydney Myer, of Melbourne. He made it possible for "Smithy" to equip his Fokker with three radial engines for the big crossing.

So it was that, after innumerable setbacks and frustrations which would undoubtedly have deterred many with less determination, Captain Kingsford Smith on May 31, 1928, took off from Oakland, San Francisco, with a crew of three. These were C. T. P. Ulm (co-commander), Harry Lyon (air navigator), and James Warner (radio operator). The last two were both Americans.

The Southern Cross touched-down at Eagle Farm, Brisbane, on June 9, after 83 hours 42 minutes' flying time.


It was the first time the limitless wastes of the Pacific had been spanned by air, and the flight was justly acclaimed the most brilliant feat in flying and navigation in the history of aviation. The attention of the entire world was focused on the progress of this epoch-making flight and many people today can vividly recall the intense excitement which prevailed in Australia.

For "Smithy" and his Southern Cross in the next few years, triumph followed triumph. Two months after landing at Eagle Farm, he took off, with Ulm, H. A. Litchfield and T. H. McWilliams, on a non-stop flight from Melbourne to Perth (2,000 miles). In September the same year they flew from Sydney across the Tasman to Christchurch (N.Z.) and back.



1928. 1929.

FIRST PACIFIC CROSSING • MELBOURNE-PERTH. NON-STOP • ENGLAND-AUSTRALIA SOLO RECORD



On June 29, 1929, Captain Kingsford Smith took the Southern Cross, with the same crew, on a flight from Australia to England. In June the following year he flew "the Old Bus" across the Atlantic from Dublin to Newfoundland, and a month later crossed the continent from New York to San Francisco.

"Smithy" left the old Southern Cross in the U.S.A., and in October the same year, having acquired a new 'plane, the Southern Cross Junior, he flew alone from England to Darwin in 9 days 21 hours 40 minutes, beating the solo record set up in the meantime by another famous airman, Bert Hinkler.

In October, 1933, in another solo flight over the same route, he was to set a new record of 7 days 4 hours 50 minutes. In the meanwhile, he had made the first all-Australian mail flight to England and back, and later he also made yet another double crossing of the Tasman Sea to New Zealand.

He then established new flight records between the Australian capital cities, and capped this, on October 20, 1934, with another Pacific crossing from Australia to the U.S.A. in the Lady Southern Cross, a single-engined 'plane, accompanied by the famous Captain Taylor, now Sir Gordon Taylor.

At one stage, "Smithy" held eleven world records in aviation, and until World War II he was the only person who had made a flight around the world in the one 'plane (in this case, the Southern Cross) that involved crossing the Equator.

For his unexampled service to the progress of long-distance civil aviation, "Smithy" was knighted by King George V in 1932.

The news of the tragic end of Sir Charles Kingsford Smith on the night of November 8,

1935, brought an acute sense of loss to millions all round the world — to all who prize the human qualities of tenacity, daring, and practical idealism.

Exactly where, how and why he died are questions which have never been finally resolved, but sufficient circumstantial evidence has been gathered to establish the probable facts.

Sir Charles Kingsford Smith was lost in his Lockheed Altair aircraft on a record-making flight from England to Australia in November, 1935.

He was a sick man when he took off, suffering from a heavy attack of influenza, but he was unwilling to defer the attempt for fear he would run into the monsoons which begin in the East in early November. He left Allahabad, India, about noon on November 7. He was seen to pass over Calcutta, and it is thought he was also sighted over Rangoon, Burma, about midnight.

Some months afterwards, a wheel of the Lockheed, with a piece of undercarriage attached, was salvaged from the sea not far from the island of Aye, one of a small archipelago off the Burma coast.

This island consisted chiefly of a tall rock jutting straight up from the water, making a lone peak seven hundred feet high.

"The generally accepted surmise", says Sir Charles's brother, Wilfrid Kingsford Smith, "is that in the dark early hours of November 8, Sir Charles decided to fly low over the water, possibly seeing in the murk ahead the onset of dirty weather. With his usual scrupulous care, it is thought, he no doubt scanned his chart by the light of the cockpit lamp, and seeing from it that the ocean below him was covered with low-lying islets, he resolved to drop to around 400 feet

above sea-level. It is assumed that he struck this uncharted pinnacle and crashed."

All who knew "Smithy" intimately, and were well aware of the unremitting care that this great airman took with every detail of his flying, and the uncanny skill he possessed in handling his aircraft in all his contests with the multitudinous forces of Nature, feel sure that it would be the intervention of some unseen and unknowable factor such as this uncharted tower of rock, upthrust in the dark, which occasioned the death of "Smithy" and his engineer, "Tommy" Pethybridge.

Many of his record-making flights were made in aircraft which were successors to the famous Fokker Southern Cross. His original 'plane, which he had left in California after he had made his continental flight from New York in 1930, was soon afterwards shipped to Australia. There it was used as an eight-passenger liner by the original Australian National Airways organisation on the Sydney-Melbourne Sydney-Brisbane services.

In 1931 the 'plane reverted to Kingsford Smith, who had it converted to carry 12 passengers and a crew of two and took it on "barnstorming" trips throughout Australia and New Zealand in the ensuing four years. During that time it carried an estimated 70,000 passengers.

The Commonwealth Government acquired the Southern Cross in 1935, and it has been kept "in storage" ever since — excepting when, in 1946, it was re-assembled, reconditioned and flown to Sydney to take part in the making of the movie "Smithy"

This veteran 'plane, it is now planned, will find a lasting resting-place at Eagle Farm, the spot where it made its first landing in Australia so long ago.



THE story of man's conquest of the air is really a story of the magnificent teamwork of three separate branches of scientific endeavour.

It is a record of man's penetration of the mysteries of aerodynamics, coupled with the creative triumphs of engine-designers, and backed by the skill and ingenuity of oil-industry-chemists and refinery technicians in evolving ever newer complex fuels to enable the new machines created by these two scientific workers to operate efficiently.

The Southern Cross made her historic crossing fuelled with Atlantic Union motor spirit, and lubricated with Atlantic motor oil. Though these were second to none in their day, and enabled those old-style radial engines to make the punishing flights, as "Smithy" himself reported, "without missing a beat," they were vastly different from the super fuels demanded by today's aircraft.

Until the commencement of World War II, most aircraft engines were operated efficiently enough on fuels many octane numbers under 100. But as old-time fuels were found unsatisfactory with the new engines, new refinery techniques had to be developed to produce super fuels.

Atlantic's great parent company, whose products Atlantic markets, has constantly been in the forefront of research into aero-engine fuel improvement, as it has in the car-engine field.

Fuels which performed satisfactorily at low altitudes were too volatile in the rarefied atmosphere and tended to boil, causing vapour-lock and engine misfire. To prevent this, the boiling range of fuels for high-altitude operation had to be changed.

World War II gave the greatest impetus to aviation progress. Fighter planes, with their smaller, power-packed engines, made greatest demands on fuels, requiring a higher octane to cope with the sudden bursts of speed during combat.

World War II saw also the dawn of a radical change in aircraft design with the development of the jet turbine engine.

The so radically different fuel demands of jet planes resulted in the evolving of special refining techniques to "tailor-make" products for this new application. They called for high heat value, cleanliness in burning, and a low freezing point. Today's piston engines bear little resemblance to the low-powered units in "Smithy's" plane. Some develop 2,000 to 3,000 h.p., with four to six engines to a plane.

Without constant new developments in refinery processes, the high-powered engines of to-day would not be possible, and we are proud to have had a share in the wonderful progress aviation has made in so short a time.



IN the early, and perhaps most exciting, chapters of the annals of flight, the inspired work of the Fokker organisation in the design and construction of successful flying machines has an imperishable part.

It all derived from the native genius of a young Dutchman, Anthony H. G. Fokker, born at Kediri, in Java, in 1890. He started his brilliant career in aviation in 1911, when, in a shed at Mainz (Germany), he built his first successful aircraft, the Spider, an automatically stable monoplane, on which he taught himself to fly. Fokker was the first man to make an automatically stable plane, for most aircraft in those days totally lacked stability, which often caused fatal crashes.

In the next few years he developed several more advanced planes and manufactured many for eager buyers.

But it was the outbreak of World War I which gave him his big chance. After having devised the M5 aerobatic trainer, a highly manoeuvrable monoplane, he adapted it as a two-seater for military use, and this plane formed the prototype of the big range of fighter aircraft he later evolved.

Anthony Fokker was the first man in the world to find the solution to the problem of firing a machine-gun through the rotating airscrew without hitting the propeller-blades. By a rather simple synchronising device, in 1915 he thus laid the foundation for the rapid development of the effective fighter plane.

In 1918 Fokker clearly foresaw the role which aircraft were destined to play in civil transportation. His experimental V.45 high-wing monoplane proved to be the answer to the problem of offering more comfort to passengers than quickly converted bombers and observation planes could give. A modification of this, the F2, became K.L.M.'s first real airliner in 1919.

It was in 1919, too, that Fokker established his now-famous aircraft factory near Amsterdam, in Holland.

Fokker planes led the world in the next few years, greatly facilitating rapid expansion of civil air services, and with Fokkers, a series of audacious airmen made daring pioneer flights which paved the way for intercontinental traffic.

Incidentally, Kingsford Smith's Southern Cross, a Fokker F.7, was built by a branch of the parent organisation opened in the U.S.A. in 1921.

It is an illustrious record, and constitutes a wonderful tribute to the genius of Anthony Fokker and his associates.

ORGANISATIONS WHOSE TECHNICIANS, DESIGNERS AND



SIR CHARLES KINGSFORD SMITH and Captain Charles Ulm arrived in the United States in August, 1927, to plan their conquest of the Pacific. They were confident that the aircraft for the task was a Fokker machine equipped with Wright Whirlwind engines.

The Whirlwind had proved its reliability on a number of long ocean flights. It was a 200-horsepower air-cooled radial engine, and for 83½ hours on the first trans-Pacific flight the steady roar of these engines was the most important sound heard by the four airmen on Southern Cross.

Some weeks after the flight, Kingsford Smith and Ulm described their reaction to the engines during the long hours in the air. They wrote: "It was a progress of tumult, accompanied every mile by that deep-throated roar of the motors that often battered our heads to such an extent we wished we were miles from an airplane engine instead of being huddled under three of them. Eventually we became almost so deaf we did not hear the roar, but suffered quite the same nerve-wear from its terrific concussion.

"We began to look on those motors as being good pals, pals that would not let another down if it could possibly be helped. In our mental intentness we began to detect a phantom flutter in the engines, but such dreams were base libel on those engines that never for a second shirked their big job."

The Wright Whirlwinds were built by the Wright Aeronautical Corporation at Paterson, New Jersey.

Lindberg flew the Atlantic behind a roaring Whirlwind engine, Admiral Byrd, Amelia Earhart, and many others set famous "firsts" and records on the proven radial power-plant.

In 1929 the Wright Aeronautical Corporation merged with the Curtiss Aeroplane and Motor Corporation to form the Curtiss-Wright Corporation. Today this vast organisation is a major producer of aircraft engines.

A single modern jet engine has more power than the three faithful Whirlwinds which are preserved in perfect condition in the Southern Cross, and Curtiss-Wright is producing engines for a jet age in the tradition of the now old-fashioned power units which proved the staunchest friends of four men who spanned the Pacific 29 years ago.



DETAILS OF THE SOUTHERN CROSS

ENGINES:

Three Wright Whirlwind J5 200-h.p. One was attached to the front of the fuselage, and the others were suspended under the wing on nacelles.

PETROL CONSUMPTION:

Under normal flying conditions, 10 to 12 gallons were consumed each hour by each engine.

AIRCRAFT WING:

Made entirely of timber. It is 72ft. long, with a 12ft. cord and a depth of 2ft. 9in. Details of structure: Two main spars built up from laminated spruce-wood, with a complete outer covering of plywood.

FUSELAGE:

A tubular welded structure 48ft. long and sheathed entirely in weatherproof fabric.

UNDERCARRIAGE:

Rubber suspension, with two wire-spoked wheels mounted on plain bearings. One tail-skid. The aircraft was not fitted with brakes.

NORMAL FUEL CARRIED:

Four 70-gallon tanks are installed in the wing, directly over the fuselage.

COCKPIT:

Cockpit was of the open type for a crew of two — side-by-side.

CABIN:

This, when the Southern Cross was later fitted out as an airline plane, seated eight persons. When fitted out for "barnstorming" flights, the cabin seated twelve passengers and the cockpit a crew of two.

COLOURS:

Fuselage, royal blue; main-plane and tail-plane, silver.

PRODUCTS HELPED MAKE "SMITHY'S" FLIGHT POSSIBLE



History of Aviation



AVIATION is an essential part of modern Australian life. It is playing a major role in developing remote areas and has ended this country's geographic isolation.

Each year more than two million passengers fly on Australian airlines, and these passengers have at their disposal a network of more than 100,000 miles of air routes. They fly from Perth to Sydney without giving thought to the fact that they are flying a distance greater than that from London to Moscow. They fly from Sydney to Broken Hill without realising their journey is farther than from London to Berlin.

This acceptance of air transport has been rapid. It was only in 1936 that all Australian capitals were linked by air, and it is just 33 years since Australia's first airline, Norman Brearley's Airlines of Western Australia, began regular operations between Geraldton and Derby.

Aviation was eleven years old when it went to war in 1914, and during four years of war the Australian Flying Corps produced scores of enthusiastic young pilots, many of whom were to make major contributions to aviation. Among them were Charles Kingsford Smith, Ross and Keith Smith, Hudson Fysh and Norman Brearley.

After that war, development of Australian aviation was almost entirely due to men such as these. In 1917 Ross and Keith Smith, in the Vickers Vimy which was afterwards permanently housed at Adelaide Airport, made the first flight from England to Australia. This flight was followed by spectacular flights by Bert Hinkler, Parer and McIntosh, and many others. Flying in Australia was in its "barnstorming" stage, but the foundations of our modern aviation were being laid.

Norman Brearley's airline went into operation and was followed in the same year by Queensland and Northern Territory Aerial Services, the forerunner of today's international airline QANTAS, which began with a service between Charleville and Cloncurry. That 577-mile route has grown into a network flown by the most modern intercontinental airliners and serving 26 countries on five continents. Two years from now, the airline which began in outback Queensland will be using the most modern 600-mile-an-hour jet airliners.

By 1928 Australian airlines carried 900 passengers a year. Today they carry 6,000 passengers a day, and the total is increasing.

In 1930 Kingsford Smith and Ulm, fresh from their Pacific triumph, established the original Australian National Airways, linking six

capitals. The company failed during the depression years but the name was later revived and other airline companies were formed. At the outbreak of war in 1939 sixteen airline companies were operating, and in that 12 months carried 95,000 passengers.

The dramatic growth of air services since the war has affected every Australian community. Today distance is measured in hours and minutes, not miles, and business and everyday life are geared to the Air Age.

In 1946 Australian internal airlines carried just over half a million passengers. This year they will carry well over 2,100,000. In 1946 they carried about 5,000 tons of freight; this year freight traffic will total about 75,000 tons.

In 1946 we had an aggregate of 28,000 miles of air route—about the same as our present railway mileage. This year our air route network totals 103,325 miles.

Even these impressive figures of aviation progress do not fully convey the effort this country has put into aviation. A brief stocktake of aviation achievements shows that in Australia there are:

- More than 600 aerodromes.
- Twelve airlines.
- A network of air navigation, radio and safety aids covering an area of $3\frac{1}{2}$ million square miles—a greater area than that covered by the airways system of the United States.
- Air communication between the mainland and Tasmania which provides a daily average of 52 scheduled crossings of Bass Strait—better than an average of one every half-hour, 24 hours a day, every day of the year.

In the international field, Australia is reaping enormous benefits from civil aviation. Today a business man can leave Sydney after work on Friday evening and arrive in London on Saturday. The United States is only hours away instead of weeks as it was before Kingsford Smith made his trans-Pacific flight. The trail he opened with the Southern Cross in 1928 has become a busy skyway, and there are now 18 scheduled crossings of the Pacific by airliners each week—less than 30 years since the Pacific was first crossed by air.

Australians contributed a great deal to aviation development, and today their country is gaining full benefit from the most modern form of transport and can look forward to an exciting aviation future.