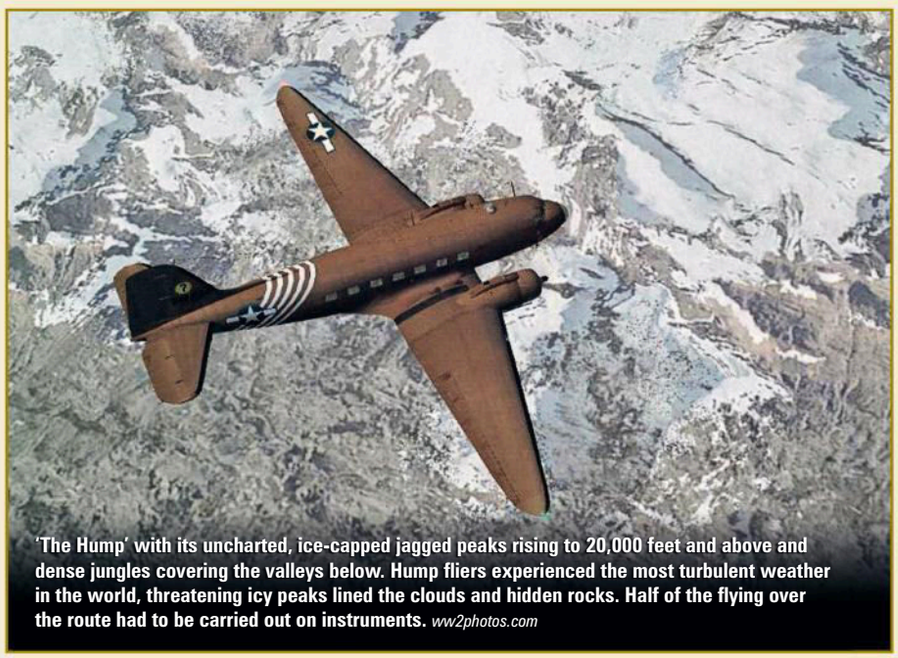
Flt Lt Stuart 'Chota' Arnold RAAF. *Stuart Arnold*

Aussies flying The Hump

JULY 1945, KUNMING, CHINA.... The RAF Dakota was ending its journey. It had flown from India to Kunming in Yunan Province, southwest China – but Kunming airfield was nowhere to be seen. It was lost in a "witches' cauldron of black mountain ridges and writhing storm clouds streaming evilly below."



'The Hump' with its uncharted, ice-capped jagged peaks rising to 20,000 feet and above and dense jungles covering the valleys below. Hump fliers experienced the most turbulent weather in the world, threatening icy peaks lined the clouds and hidden rocks. Half of the flying over the route had to be carried out on instruments. *ww2photos.com*

IN *The Forgotten Air Force, The Royal Air Force in the War Against Japan 1941-1945*, Air Cdr Henry Probert RAF described this air route to China as "one of the most difficult in the world.

"Much of the country was uncharted, ice-capped peaks rising to 20,000 feet and above and dense jungles covering the valleys below. The weather was unusually bad and about 50 per cent of the flying over the route had to be carried out on instruments.

"At first, wireless aids to navigation were almost non-existent but later great efforts were made to safeguard aircraft in the area where the most turbulent weather in the world was experienced.

"Incredible air currents threatened the transport aircraft, jagged peaks lined the clouds with rocks and Japanese fighters in the early days were constantly trying to intercept the unarmed aircraft making the crossing..."

The Himalayan mountain chain rises in India's northwest adjoining Afghanistan, flows generally east-south-east and then east until reaching northeast India. From there it bends southeast then south, gradually losing height until petering out in southern

Burma and adjacent countries. Various ranges have local names but they belong to that one great chain.

The Himalayas also extend into southwest China in an unruly mass of the high mountains and deep gorges of Tibet and China containing the headwaters of such rivers as the Chindwin, Irrawaddy, Mekong, Salween and Yangtse. This was 'The Hump'.

"Flying over other mountainous regions of the world was considered by pilots of the Hump as mild compared with the lonely and awesome snow peaks, the terrific down draughts and powerful cross winds, the seemingly endless square miles of jungle, without a single spot for a landing, which marked the towering barrier between India and the hard pressed China," wrote Air Cdr Probert.

RAF Dakotas were normally crewed by a pilot, navigator, wireless operator and occasionally an engineer. The Dakota circling over Kunming that abysmal July day also carried a passenger, Edmund Townsend, a special correspondent for the London *Daily Telegraph* newspaper.

Townsend's account of his experience was graphic: "We were at the end of a 1,000 miles daily run from Calcutta across the Hump – that 400 miles wide Himalayan mountain barrier between India and China. We had just twisted down from oxygen mask altitude to fly along the gorges shadowed by the razorback mountains.

"Fifteen minutes flying time would bring us to Kunming, now one of the world's busiest airfields, on the Yunnan Plateau 6,400 feet at above sea level. Then across the valley before us unrolled the sinister curtain of a monsoon storm cloud rearing from ground level maliciously.

"With a few moments to spare we swung off in a wide half-circle to miss the core of the dangerous turbulence and run on to the airfield from the far side."

Townsend's pilot was an Australian flying his twentieth trip. He was 21-years-old Flying Officer Stuart Arnold. In his crew were two Londoners, Flt Lt Robert Gellard of Ealing, the 25-years-old navigator, and Warrant Officer William Holmes of Hampstead, the 34-years-old wireless operator. Both were on their fifteenth Hump run.

Townsend continues: "For the next twenty breathless minutes we scraped around unfamiliar mountain crags, already wreathed in storm tentacles, while the pilot and navigator sharply scanned the rugged terrain for landmarks. Menace lurked in those black clouds terracing down on the mountain tops...

"Like a bird trying to escape, our plane quested to and fro in the maze of gorges that looked all alike. We had begun to note likely spots for a crash landing in the valley bed in case we could not struggle through to the airfield. Then at last through the mist we picked up our bearings. Taut nerves relaxed and thankfully we scudded in over the airfield before the storm closed down on us.

"This battle with the tropical weather is the daily routine of the RAF aircrews who fly the Hump..."

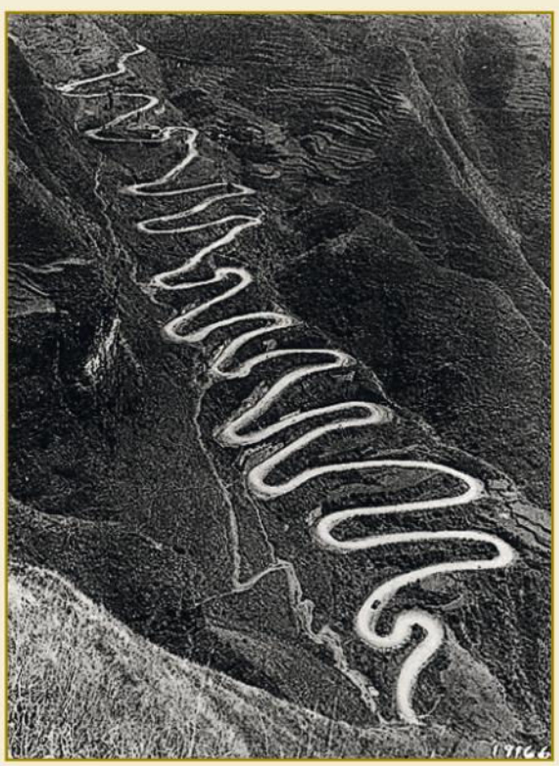
THE INDIA-CHINA FERRY

The airlift was really an American affair. Allied Far East strategy supported China to contain over a million Japanese troops who might otherwise be deployed into the Pacific. It was a task fraught with difficulties.

Japan's invasion of French Indo-China had closed all sea and rail access for supplying China except through Turkestan in the Soviet Union. Following signing of the Soviet-Japanese Neutrality Pact in April 1941, accessibility ended and the Burma Road became the only available lifeline.

Rapid Japanese expansion in South-east Asia threatened this vital land route prompting the idea of an air cargo service from India as early as January 1942. There would be two branches: a Trans-India >>>

Above: **A loaded 52 Squadron RAF Dakota of takes off from the soggy Assam airfield for another journey over the Hump.**
ww2photos.com



Left: **The sinuous Burma Road. When the Japanese seized Myitkyina in May 1942, Allied access to the Road was cut. The only way to supply China was by air over the Himalayas.**
ww2photos.com

We had begun to note likely spots for a crash landing in the valley bed in case we could not struggle through to the airfield.

Right: **Two other aircraft used to fly the Hump: Curtiss C-46 Commando and Consolidated C-87 Liberator Express. The C-46 was larger than the Dakota and had superior performance and cargo capacity. It first arrived in India in April 1943. The C-87 was introduced in January 1943. Based on the B-24D bomber, it was able to fly over the lower mountains but was unsuitable for many airfields. Another variant, the C-109, was designed exclusively to carry fuel.** *MAP*

Command from India's western ports to Calcutta for moving cargo by rail to Assam; and the Assam-Burma-China Command to shift cargo from Assam to southern China.

For this, the Allies had to hold northern Burma and use Myitkyina as a terminal for sending supplies by barge downriver to Bhamo and transfer to the Burma Road. When the Japanese seized Myitkyina on 8 May 1942, Allied access to the Burma Road was cut.

To keep supplying China, Allied leaders agreed to a continuous aerial resupply effort directly between Assam and Kunming. The whole operation would be given to the USAAF's Tenth Air Force, and then to Air Transport Command (ATC).

The first mission was flown on 8 April 1942. Flying from the RAF airfield at Dinjan, Lt Col William Old used two former Pan American DC-3s to ferry 8,000 US gallons (21,100 litres) of fuel to replenish the Doolittle Raiders' B-25s on reaching China after their Tokyo bombing mission.

At first much was makeshift because of the inadequate supplies, make-do airfields, and primitive maintenance facilities. Chinese National Airlines Corporation (CNAC) pilots would contribute greatly to the India-China supply route. CNAC was a civilian airline owned 50/50 by Pan American Airlines and the Chinese Government.

Stuart Arnold would have familiarisation training with CNAC supervised by a civilian Pan Am pilot flying for CNAC.

During 1942-1945, the Chinese received 100 US transport aircraft: 77 Douglas C-47s and 23 Curtiss C-46s. Early on, while replacement parts were critically scarce, improvisation was the name of the game. One shot up CNAC DC-3 needing a new wing had it replaced by a wing cannibalized from a DC-2. The result was a DC-2½!

Crumbling Allied resistance in northern Burma in May 1942 necessitated more diversification of the USAAF's early air effort. ABC Ferry Command resupplied General Stilwell's retreating army and evacuated its wounded while establishing its regular air service to China using ten borrowed DC-3s, three USAAF C-47s, and 13 other CNAC aircraft, but the serviceability rate was low.

Below: **Hump pilots to be: Lionel Thrift (back row first left); Stuart Arnold (front row first left); and Mike King (front row first right).** *Stuart Arnold*

GROWTH AND COST

Japanese fighters based at Myitkyina within range of Dinjan, made overnight maintenance and pre-dawn takeoffs for the unarmed supply aircraft necessary. Potential interception forced shifting the route to fly the difficult 500 miles trip to China over the Eastern Himalayas. This became known as the 'high hump', or simply the 'Hump'.

Flying from Myitkyina, Lashio and bases in southern Burma, the Japanese could launch bombing attacks on Allied bases at Dinjan, Chabua and Sookerating covered by fighters equipped with external fuel tanks.

They could also intercept supply aircraft braving the mountains and weather.

There were occasional encounters. In one instance, the pilot of an intercepted C-46, Lt Wally Gayda, pushed a Browning automatic rifle out the cockpit window and fired a full magazine at the attacking Japanese fighter, killing the pilot!

This situation finally changed when US and Chinese troops recaptured Myitkyina airfield in May 1944, dispossessing the Japanese of their principal fighter base. It became an emergency landing ground for Allied aircraft and allowed the deployment of larger Douglas C-54s despite fighting in the town lasting until August.

From humble beginnings the command's aircraft strength grew to 640 machines by 31 July 1945: 230 Curtiss C-46s, 167 Douglas C-47s, 132 Douglas C-54s, 67 Consolidated C-87/C-109s, 33 B-25 Mitchells, ten Stinson L-5s, and one B-24 Liberator.

The India-China ferrying operation became the largest in terms of volume of cargo airlifted and was the most successful strategic air bridge in aviation history until the Berlin Airlift in 1949 – but at great cost.

Officially, the airlift "expended" 594 aircraft and logged flight time totalling 1.5 million hours. At least 468 American and 41 CNAC aircraft were lost from all causes resulting in 1,314 aircrew and passengers being killed.

Eighty-one more aircraft were never accounted for, their 345 personnel listed as "missing", but around 1,200 fortunate personnel were rescued or walked back to safety. It was said that the crashed aircraft made an 'aluminium trail' over the 'Old Rock Pile' which pilots could follow!

52 SQUADRON RAF

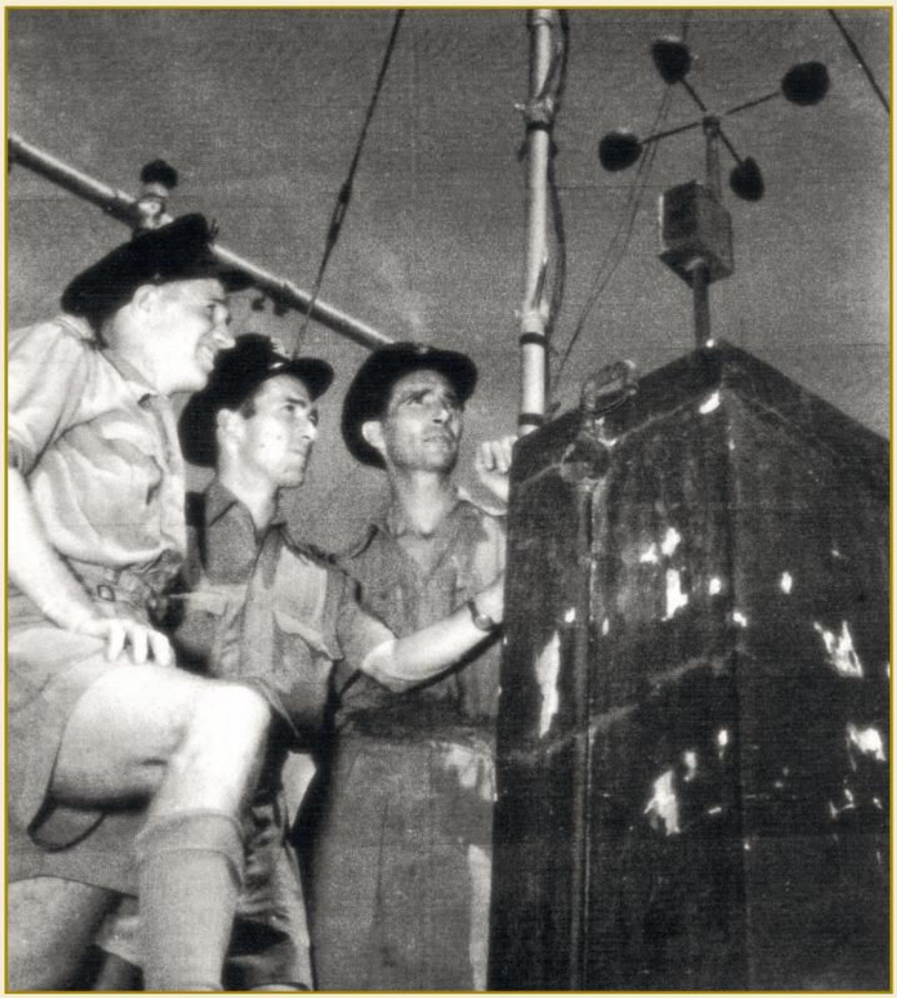
Queenslander Stuart Arnold was 16 and living in Brisbane when war broke out in September 1939. As he approached age 18, he convinced his parents to sign the necessary papers for him to join the RAAF.

After initial pilot training at Narromine NSW he sailed for Canada where he was awarded his wings and promoted to Pilot Officer. On arrival in England he expected to be posted to a Coastal Command squadron but he and his three companions from training days were surplus personnel.

They were posted instead to India and South East Asia Command. Three days after their arrival, Stuart had his almost obligatory bout of 'Delhi Belly' before spending six weeks as a Ferry Command pilot. A posting followed to 52 Squadron RAF, Transport Command, based at Dum Dum on the outskirts of Calcutta, to fly Douglas Dakotas.

No 52 was a multipurpose squadron ranging far and wide throughout India, south as far as Ceylon and into Burma and China. "We carried passengers, (including lots of VIPs), mail, freight of all kinds (including on one occasion three mules) and we occasionally dropped supplies. We also evacuated wounded from Burma after unloading supplies," he remembers.

Stuart crewed up with a colourful RAF navigator, Bob Gellard DFM who said he wanted to "fly with a colonial, not a "bloody Pom!" There was also an Australian wireless operator, Sgt Keith Caldwell from Forbes NSW.



Above: **Left to right: Keith Caldwell (radio operator), Stuart Arnold, Bill Walsh (radio operator).** *Stuart Arnold*

Bob had been born in India and joined the RAF in England pre-war. He had two operational tours as a navigator in Blenheims before his squadron transferred to South-East Asia. He knew India well and could speak the language. He and Keith would be Stuart's regular crew.

Early in January 1945 Akyab Island was retaken from the Japanese. Its harbour and adjacent aerodrome became a base for operations south along Burma's west coast towards Rangoon. Stuart crewed a special flight to deliver some senior navy, army and air force officers and staff to their new command.

There were RN and Indian naval vessels in the harbour including the Australian destroyers *Napier*, *Nepal* and *Nizam*. To identify his Dakota as 'friendly', Stuart followed normal practice of lowering the undercarriage and firing the colours of the day.

Unfortunately, Japanese fighters had attacked the area just beforehand and Stuart's colours seemed to signal the navy to open fire, the aircraft hit in several places. Fortunately, there were no casualties and someone must have told the trigger-happy navy to cease fire before more damage was done. "Some very senior officers were not amused," says Stuart. "Nor were we."

After returning from a flight to Burma on 9 February, Stuart's CO asked if he would like to "volunteer" to fly to China. The work was for volunteers only!

FLYING THE HUMP

Stuart had to become familiar with the routes over and through Himalaya's high mountains and deep river gorges. For this he was instructed by the >>>

Unfortunately, Japanese fighters had attacked the area just beforehand and Stuart's colours seemed to signal the navy to open fire, the aircraft hit in several places.

Above: **RAF Dakotas were used to carry an amazing variety of loads over the Hump and throughout Burma.** *ww2photos.com*

Pan Am/CNAC pilot from Dinjan, an aerodrome in Assam adjacent to the Himalayas in north-east India and the starting point for the flights to Kunming.

"My training took four days and in that time we did 12 crossings of the Hump, eight in daylight and four at night for 42.15 hours flying time. The weather was good and the terrain very impressive. My training captain slept most of the time."

Other Australians among the RAF volunteers were Plt Off D L Kuschert of Bronte NSW, Flg Offs Mike King of Stanmore NSW, Lionel Thrift of Manly NSW, William Walsh of Perth WA, Dave Bardon of Mackay Qld, and Sqn Ldr W G Gaston of Kalgoorlie WA.

The RAF's one Dakota trip per day over the Hump was a token effort when compared with the huge stream of US flights of more than fifty a day, and a takeoff rate around the clock from India or China every 75 seconds.

Each RAF crew averaged one trip a week. Routinely, they stopped overnight at the RAF mess at Kunming before the return flight next day.

Stuart regarded the Dakota as "a most reliable and versatile aircraft in all senses of the words. It never let me down... but it was not designed to fly where we were flying it.

"On every occasion when we left India for China we took off at maximum all-up weight and then had to struggle up to altitudes where it was not designed to fly, but did.... down meant a slow descent to an altitude that the aircraft could maintain with the remaining available power and this would be below the height of the mountains that we had climbed so high to traverse."

The good weather conditions of Stuart's initiation flights were deceptive. One winter flight to Kunming by Lionel Thrift and his navigator, 'Kush' Kuschert, was nightmarish. Passing over the first ridge from Assam they encountered cloud at 8,000 feet, then rime ice, snow, and finally a belt of clear ice at 11,700 feet.

"Ice began to form on the leading edges, but the de-icer boots threw most of that off," Lionel related in *Victory Roll*, published by the Australian War Memorial in 1945. "But then it formed around the base of the cylinders, and one motor started to pack up, so we headed back south for Myitkyina.

"Then we were tossed about in some of the worst turbulence I have ever experienced. We were thrown about so much that twice we were on the point of stalling and finally we stalled completely.

"Electrical disturbances blew a relay in the main radio set, filling the radio compartment with sparks. We were still in cloud and losing height, so I ordered the crew to put on their parachute harnesses and sent Kusch and the wireless operator back to throw out the cargo, mainly medical stores.

"Over Myitkyina the bad motor picked up, so we climbed to 13,000 feet, still in rime ice and cloud, and went back to our base in Northern Assam. We had been in ice and cloud for four hours."

CONSTANT TURBULENCE

Kuschert thought turbulence one of the worst aspects of Hump flying. "We are sometimes flying straight and level, then there is suddenly a whistling noise outside the aircraft. The airspeed builds up and we rise at about 2,000 feet a minute for thirty seconds or so. Then the whistling stops, the airspeed falls off, and we go down as fast as we went up."

There was often a strong down draught at the entrance to mountain passes so pilots would angle their approach so if caught in a draught they could turn away.

During the monsoon season from April to September, there was rarely a day with the Hump free of cloud. Half the time crews flew on instruments. A good period followed the monsoons when winds dropped, lessening the danger of icing.

Then, from November to the end of March, pilots often experienced high westerly winds (jet streams) exceeding 100mph. By flying near 18,000 feet they were able use them to achieve amazing speeds, but returning could be a problem.

Stuart Arnold recalled: "They almost doubled our ground speed on the way to China but created severe to extreme turbulence over the mountains and extraordinary up and down draughts.

"On one occasion we enjoyed a high speed trip to Kunming and the next day set off for home with average 60 knots headwind forecast. We climbed out into cloud and after 30 minutes broke out of cloud to find we were just 38 miles out of Kunming.

"Because we had insufficient fuel to cope with the obvious excessive headwind we returned to Kunming and spent another day there until the wind abated. When we got back to base we found that we had been posted as missing."

One pilot's de-briefing reported that when flying at 1,500 feet from the top of a 3,000 feet gap in the mountains his airspeed dropped to 110mph. "I realised I was in a down draught, expended maximum climbing power and began a steep turn to port. By this time we were below the level of the gap and the hills were very close on either side, but immediately I began to turn the control column was whipped out of my hand and the craft went into a steep dive.

"I thought the aileron control had gone as a result of the shock, but as I eased the stick back the aircraft came out of the dive and levelled out at 100 feet above the terrain.... and what terrain!

"I then felt for aileron control and to my relief it responded. The wireless operator had the entire key come away in his hand. Apart from severe turbulence and one snow storm, the rest of the trip was uneventful."

Despite bad weather and the mountains, 52 Squadron lost only one aircraft in a year of Hump flying. It disappeared between Dinjan and Kunming and has never been found. Stuart and his crew did 58 crossings of the Hump without 'bending' an aeroplane.

EPILOGUE

The war over, 52 Squadron evacuated British and Australian POWs and Chinese who had been prisoners since the fall of Hong Kong. Squadron life continued until 19-20 September 1945 when Stuart made his final operational flight to Rangoon and back and the squadron virtually shut down.

After leave until 11 October, all the RAAF and RNZAF personnel were gathered to be flown to Dhubalia north of Dum Dum next day.

"I was given the job of transporting them there in Dakota IV KM299. With mixed emotions I then flew it back to Dum Dum for my very last flight as a Royal Australian Air Force pilot attached to 52 Squadron, Royal Air Force in the South-East Asia Command and based at Dum Dum."

Back in Australia, Stuart married his sweetheart, Ray Manning, whose photo he'd always carried, started a family and tried several occupations until on 15 December 1948 he joined Trans Australia Airlines. With TAA he would fly the DC-3 again plus Convair 240s, Vickers Viscounts, Fokker Friendships, Lockheed Electras, Douglas DC-9s and Boeing 727s in a career stretching to October 1982.

In 1988, he was awarded the China War Memorial Medal by the Republic of China to commemorate "service in China by the Chinese Allies in the defeat of the Empire of Japan." There was also in a citation awarding him a pair of Pilot Wings of the Chinese Air Force in recognition of his "outstanding Personal and professional achievements in military aviation."

A special personal memory stirred for Stuart one day when he and his wife were with friends at a restaurant in San Francisco. While having after dinner drinks, the barman insisted that he knew him. "After swapping life stories we found that we had both served in Burma and China and that he was one of the Americans I had flown from Paoshan."

Drinks were on the house after that!

With special thanks to Stuart and Barry Arnold.