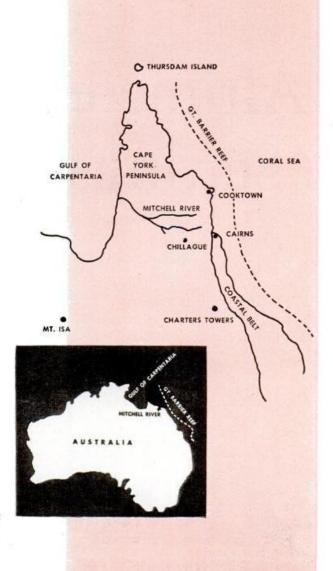
An Auster and a Dragonfly flown by Bush Pilots, Ltd. bring mail and supplies to the Arukun Mission Station operated by the Presbyterian Church.





Adventure is SOP in Queensland

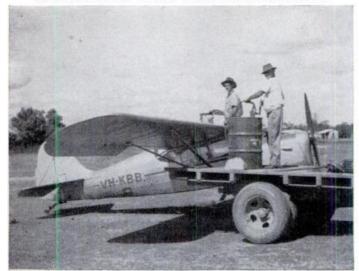
JUST A YEAR AGO last spring the fiercest cyclone within living memory was raging across Queensland, Australia. The coast was taking the brunt of the wind, while the interior was getting the rain. Raging torrents of flood water were sweeping small towns and ranch homesteads to destruction, and thousands of cattle were being drowned.

The airport at Cairns, on the far northeastern coast, was a shambles of smashed buildings and equipment. The wind was screaming across the airfield at 100 mph. Convair airliners were lashed with ropes and chains to ground anchors while the field force and mechanics, their faces haggard with lack of sleep, toiled endlessly, as every now and then, the wheels of the big planes lifted off the parking area in the gusts of wind.

Suddenly, during a lull in the gale, the engine of a small plane was heard, and an Auster Autocar with the Bush Pilots insignia on its side, appeared, taxiing at snail's pace, with a half dozen mechanics hanging onto the wings and fuselage, but still failing to hold her steadily down from flying attitude. By dint of main strength they got the plane turned into the wind and it leaped from the tarmac.

"That's goodbye to Bob Norman," a mechanic yelled.

Refuelling a Bush Pilot's Auster at Wrothem Park Station, N. Q.



A Bush Pilot's Cessna 137 ambulance plane picks up stretcher case.





Some aborigine passengers awaiting "out back" transportation.

The Bush Pilot finds the most exciting and challenging kind of flying "out back" in the desolate wilds of Australia.

By JENNIE ROCHE

It had taken an hour's heated argument by Norman to obtain permission from Traffic Control to make the flight. All aircraft were summarily grounded in the emergency but this flight meant life or death to a family and all the stockhands on an isolated cattle ranch. The ranch radio had failed. There was no means, other than by air, of warning the unsuspecting people that a great wall of water was tearing down the countryside and that they were directly in its path.

Somehow Norman rode his bucking plane over the ridges of the Great Dividing Range, at times not gaining a foot, yet with his airspeed indicator showing 100 mph. Once across the mountain range the wind dropped to 40 mph, but the overcast came down almost to tree-top level and rain beat down steadily. Following creek beds for two hours, the bush pilot finally landed on the ranch airstrip in a shower of red mud and slogged his way to the buildings.

The aroused rancher got under way with immediate plans to evacuate his family and employees to higher ground. A few hours later, the entire establishment was swept away including 3,000 head of cattle, leaving the cattleman nothing to show for a lifetime of work, but a

silt covered range. But at least the lives of all were saved.

Flying in weather-such as probably was never before deliberately tackled by light aircraft, Norman and his four pilots in their Austers, flew in all but the heart of the cyclone, carrying flood warnings, dropping medical and food supplies, and later searching for the bodies of flood victims and locating herds of drowned or marooned cattle.

This was an exceptional emergency, but the daily round of Bush Pilots Airways Proprietary Ltd., one of the world's most unusual pilot groups, lives because of its ability to handle emergency. Run on a co-operative, non-profit basis, its directors and shareholders are all cattlemen and back country people, as are its customers.

In an area of 250,000 square miles of exceptionally rugged country and notoriously bad flying conditions, Bush Pilots Ltd. keeps the lifeline of communications open for those who live in the remotest tropical area ever settled by white men.

In a territory reaching from Thursday Island, off the northernmost tip of the Cape York Peninsula, to Mt. Isa in the south, and to Normanton in the West, Bush Pilots not only do all the charter work, but run a twice weekly schedule of visits and mail de- (Continued on page 56)

NOW 90 Buys the Basic Oxygen Unit

Use this New Puritan
Oxygen Unit

As a Portable Unit

As a Permanent
Installation in Your
Airplane — Designed
to Your Specifications



Now, you can buy the type of assembly that is best suited to your specific needs. This basic unit, which costs \$90, less cylinder, consists of the following: one adjustable two-stage flow regulator; cylinder connection for attachment to aircraft oxygen cylinder (1800 lbs. pressure); two outlet valves; two pieces of plastic tubing; one dozen Puritan disposable plastic masks.

You may quickly and easily adapt this basic equipment to meet your own individual requirements. (Add more outlets and plug-ins for the capacity you desire.) You use only safer, low pressures since regulator attaches to cylinder, and pressure is reduced from here on. Oxygen is supplied from cylinders, in the size you need, available at your aircraft distributor—or use lower cost medical cylinders available from Puritan.

THIS PURITAN EQUIPMENT NOW IN USE ON THE WORLD'S FINEST AIRLINES

After years of use aboard many major domestic, international and foreign air carriers, Puritan airborne oxygen equipment has been judged "tops." The Puritan disposable mask—the same one developed to meet rigid hospital standards—is now available to the aviation field for the first time.



WRITE TODAY FOR
COMPLETE DETAILS ON HOW
TO ORDER YOUR PURITAN
AIRBORNE OXYGEN
EQUIPMENT

COMPRESSED GAS CORPORATION 2012 GRAND AVENUE, KANSAS CITY B. MO.

PIONEER MANUFACTURER OF AVIATION OXYGEN BREATHING EQUIPMENT

FRYE'S FAMOUS BOOTS Fine quality A real treat for your feet NOW BY MAIL Postpaid

Feather-light, yet durable. You will like their superb styling and wonderful flexibility. 9 inch JET wellington, \$16.95. 7 inch strap and buckle jedhpur, \$17.95. Fine BLACK or BROWN colfskin, fully lined, leather soles, rubber heels. Men's sizes 6-12, ABCDE, from stock. Other Sizes 5-16, AAA-EEEE, made to order, \$2.00 more. ORDER NOW. Enclose check or money order. WRITE FOR FREE CATALOG. TODD'S, Bep't 9-FY 209 S. State St., Chicage 4, III.

SURVIVAL KITS

RESPONSIBLE EXECUTIVE PILOTS everywhere rely on our kits to protect their own and their passenger's safety on land or water.

"Global Master Kit C-2" sent on approval to rated firms in U.S.A. Write today for full particulars. State your problems. Give license number.

SURVIVAL EQUIPMENT COMPANY
Division of Victor Tool Co.
DEPT. 609 OLEY, PENNA.

Adventure Is SOP in Queensland

(Continued from page 35)

livery-the latter on government contract. Imagine the isolation of people in such country, where, in the Cape York Peninsula alone, there are only 40 men in an area of 40,000 square miles. This particular part of the Far North is heavily timbered, swampy and crocodile-infested with no roads or railways. For the rest, apart from the lush green coastal belt reaching from the south and ending abruptly at Cairns, the land is scrub dry and arid for nine months of the year. Huge cattle stations are hundreds of miles apart with scant surface communication. Life is much as it was 50 years ago except for radio, refrigerators and Bush Pilots. The ordinary monsoonal rains (the "Wet") come in the months of January, February and March. At those times, torrents of water flood the river beds, cutting all surface communication and totally isolating ranch stations and homesteads. It is routine for Bush Pilots to fly from dawn to dusk holding the civilization together.

Bush Pilots was born of this situation. In 1950, Bob Norman, an ex-RAAF fighter pilot was called upon to make a desperate flight in mid-monsoonal weather, to pick up the critically ill wife of Beverly Anning, the owner of Cargoon cattle station. Anning had tried to carry his wife by truck cross-country to the nearest hospital, 200 miles distant, but had been forced back by the flooded creeks. Knowing Norman to be a skilled pilot, Anning contacted him by radio, then set his ranch crew to tearing down bush and leveling off enough space for Norman to land his Tiger Moth. Working through the rain-lashed night, Anning's crew finally had a usable strip ready, just as Norman appeared low over the tree-tops.

This happy rescue resulted in the suggestion that a group of cattlemen should cooperatively subscribe toward the purchase of a small aircraft—Norman to be its pilot. A company was formed, an Auster Autocar purchased, and Bush Pilots Ltd. was in business. The company's aircraft are hired to the shareholders, of whom there are now 120, at a charge of \$21.60 per hour; and at a slightly higher rate to the general public. Any profit on public hiring is paid to the shareholders as a dividend.

Since 1950, demand for service has increased to the extent that Bush Pilots currently operate five Austers, hold four Mail contracts and have opened their own passenger terminal, hangars and workshops. To the people who live in Queensland, a Bush Pilots Ltd. pilot has become more than just a man who flies a plane. He is the tangible link with civilization, the bearer of news, good or bad. He is postman, guide, philosopher and friend. Often after a hard days flying, a pilot will spend his evening in Cairns, taking watches and radios to be repaired, collecting or delivering cleaning, ordering supplies, and carrying out a dozen similar personal tasks.

Bush flying calls for special pilot qualifications—above average fitness, self reli-

(Continued on page 58)

FLYING-September 1957

Available NOW



DESIGNED TO OPERATE LIGHT AIRCRAFT 28VDC GLIDESLOPE RECEIVERS

Installation of a LIGHT WEIGHT and COMPACT PC-6 provides 28VDC power supply in aircraft with 14VDC electrical systems. Instruments and other equipment requiring 28VDC and up to 50 Watts of power can be operated continuously. The PC-6 replaces the DY-20 rotary converter.

The PC-6 has been transistorized to provide maximum reliability and performance.

PC-6 SPECIFICATIONS

Weight . . . with shock mount, I lb. 7 oz. WIDTH HEIGHT LENGTH 31/8" 21/4" 47/8"

INPUT OUTPUT 13.5VDC 28VDC .50 to 4.5 Amp. 0 to 1.8 Amp.

LOAD RANGE 0 to 50 Watts RIPPLES 200MVP TEMPERATURE RANGE-30 F. to 170 F

FLITE-TRONICS, inc. 3312 Burton Avenue BURBANK CALIFORNIA

AIRCRAFT INDUSTRY NEEDS SPECIALISTS!

YOU can develop skill and know-how . . . specialize in aircraft maintenance, aircraft design,

cialize in aircraft maintenance, aircraft design, stress analysis!
Aeronautical University has had more than 25 years' experience in training personnel for the aircraft industry. Graduates in demand. Study AERONAUTICAL ENGINEERING TECHNOLOGY & ENGINEERING DRAFTING AIRPLANE AND ENGINE MECHANICS. Get your C.A.A. license, in a few months, degree in 24 months. Outstanding faculty and equipment. G.I. approved. Part-time employment available. Free placement service. Founded by Curtiss-Wright. Write for information and "Opportunities in Aviation."

AERONAUTICAL UNIVERSITY

AT CHICAGO MIDWAY AIRPORT 5126 West 63rd Street, Chicago 38, Illinois

(Continued from page 56)

ance, unhurried judgment and the homing instinct of a pigeon. The pilot's private life will have little place in the scheme of things as he is on call, and usually flying, seven days a week. Above all, he must love his job. He does his own refueling and running repairs, loads and unloads his aircraft, and he can log up to ten hours flying a day. In "the Wet," every flight is so urgent that he'll fly until he's almost too tired to crawl out of his plane.

Navigation is difficult in the north. There are no radio aids of any description. A dozen tiny ghost towns, relics of the gold mining days, are hundreds of miles apart. The country is almost featureless-rivers dry and hard to follow most of the year. A good Bush Pilot never loses sight of the ground. He has his own methods, which will at least get him located in a definite area. For instance, if he sees dark, grey rock protruding from reddish soil, he knows he is over Chillagoe township. If he sees great areas of silver leaf bush, he is in the Strathmore Station district; huge red sandstone canyons locate him in the Charters Towers country.

I have flown in most parts of the world on commercial work, and to me, the most difficult navigation without exception is the northern territory of Australia. In 1954, I was navigator for my late husband when we flew a twin-engined aircraft from England to Australia for an aerial ambulance service. The only time on that 12,500 mile flight that I really was hard put for position accuracy was over this territory. Even when he reaches his airstrip, the pilot is usually faced with a crosswind landing. I have yet to see one of these strips into the wind and windsocks are a refinement unknown. The bush pilot becomes adept at judging the wind by ruffles in a water tank or cloud drift.

A forced landing in this country is an unpleasant prospect. Even if a pilot were successful in landing in the dense scrub, he would be faced with the problem of survival until help came. Without water, a man would perish in a matter of hours in the blazing sun. He would have to face the packs of wild pigs, dingoes (wild dogs), crocodiles and the deadly Taipan snake. At certain times of year too, there is a mosquito that would kill a man sleeping without a net.

One of the major hazards of flying in the tropical north is the dynamic effect of density altitude. Briefly this is caused by the heat of the sun, reflected from the earth thinning the air immediately above it. For instance, an airstrip 500 feet above sea-level can have a density altitude effect of 700 feet on a hot day. On take-off this condition is aggravated by the fact that most of the strips are hewn out of tall timber so that the air, at tree-top level, and boxed in by the heavy foliage, becomes hotter and consequently thinner than the air outside. The effect is immediate on the performance of an aircraft. Take-off is poor and climb negligible. Over the trees, if a pilot maintains his climbing angle, the result will be disastrous. His only recourse is

to assume cruising attitude and, even if brushing the tops of the trees, to sit there until he flies out of the area of "dead" air. After several unexplained accidents in such circumstances the Australian Department of Civil Aviation made investigation, and published a treatise on the subject, together with a series of graphs from which it is now possible to calculate the density altitude at any given place.

Although every type of freight and passenger has been carried, and there is little left to surprise a Bush Pilot an alltime unwelcome passenger was carried by the company, while I was in Cairns, a month ago. Capt. Lionel Blackman had

NEXT MONTH

ANNUAL BUSINESS **FLYING**

ISSUE

Don't Miss It!

taken off from an outback strip and was well on his way to his next stop, when the head of a deadly bush snake appeared from behind the instrument panel. It slowly surveyed the passengers, slid under the floor boards, and was not seen again until the aircraft landed, when the nine-foot reptile was hooked out of the fuselage.

An unusual job came Bob Norman's way recently. A motor launch worth \$150,000 was stolen from its moorings at Thursday Island. Bob was called by the police to make a sea search in his twin-engined Dragon Rapide. He spent an evening poring over maps, and figuring the direction he would take if he were the thief. Next morning, with a police inspector on board, Bob took off from Horn Island, the nearest airfield to Thursday, and headed north towards the Indonesian coast. Sure enough, after two hours flying, the launch was overhauled. Bob throttled back, and swinging low over the boat, called on the crew to "Heave-to." This was done, and Norman radioed the following police launch to come and collect their quarry. It was an audacious theft and would have succeeded but for the airplane.

Bush Pilots Ltd. is surely a small company but doing a big job by easing the fearful isolation of the people outback, and even making the north less bleak to folk who cling to it. Population is, of course, the desperate need of the north, but life is too cruelly hard for any but the born-and-bred back country man. Similarly only the pilot of unusual skill and spirit can meet its challenge. END

FLYING-September 1957