Point Barrow, Alaska. The ruggedest air-transport operation in the world–between here and Fairbanks–is handled by Transocean Air Lines. LARRY KEIGHLEY

The Daring Young Men of Transocean

Orvis Nelson's air line owns 114 planes - and such oddments as a broom factory and a printing plant. JOHN GUTNIANN

By ***RICHARD THRUELSEN***

Six years ago Orvis Nelson was just another pilot. Today he bosses the world's biggest contract air carrier - Transocean, whose bold young crews have already flown 38,000,000 miles with everything from Mecca-bound Moslems to bazookas for Korea. Here's the wild and woolly story of his amazing rise.

PART ONE

One summer day several years ago Orvis Nelson, president and board chairman of Transocean Air Lines, stopped off in Puerto Rico on a northbound flight from Caracas, Venezuela, to his company's Atlantic-division base at Windsor Locks, Connecticut. Nelson had just completed a charter trip from Rome to Caracas–via Shannon, Ireland, the Azores and Bermuda–during which he had carried a load of European refugees to their new homes in South America for the International Refugee Organization. Rather than make the northbound flight empty, Nelson decided to pick up a load of passengers for New York in

San Juan. This bid for an extra few dollars was nipped when Nelson discovered, just before taking off, that he had a cracked cylinder in one of the four engines of the DC-4 he was flying. Canceling his passenger load, Nelson decided to fly the plane: north on three engines.

"I had a crew of five, including my wife, who had served as stewardess on the trip from Rome with the refugees. We lightened our gas load and took off. I was a little surprised to find that the airplane was very slow in getting off the ground. We finally staggered off at the end of the runway. Then I had a lot of difficulty in gaining altitude-in fact, we were out a couple of hours before I got her up past five thousand feet. I finally got the ship to eight thousand and we started burning up the gas and picking up speed. It's not as bad as it sounds–making that seventeen hundred miles on three engines–because you're always pretty close to the coast line. If any other trouble had developed I could have swung into Florida, Virginia or any other place along the coast."

At Bakersfield, California, flight supervisor John Waterman (back to camera) instructs a group of Indonesian cadets sent by the Indonesian Government to Transocean's aviation school for pilot training. JOHN GUTMANN

Nelson made the Bradley Field base at Windsor Locks without incident and was met there by Harvey Rogers, operational director of the company's Atlantic division. Rogers immediately reported a rumor that connected Transocean planes with some sort of smuggling operation, so the two men checked over the DC-4 that Nelson had brought in, for contraband. They found nothing.

"We went back to Rogers' office," recalls Nelson, "and were still talking about it when Don Zipfel, our chief pilot on the Atlantic division, called from Gander, Newfoundland, where he'd just landed on a westbound trip from Munich with another load of refugees for Caracas. Zipfel had experienced some minor mechanical trouble and in checking the belly compartment of his ship-an area under the floor which is usually blocked off by the baggage–he had discovered that the space was filled with contraband books of Irish–sweepstakes tickets. Zipfel wanted to know what to do. I told him to bring the ship in to Bradley. Then we notified the customs men and the FBI. After that we went out and burrowed into the belly compartment of my ship–and unloaded 3000

'AL flies charters almost anywhere in the world. Here's ne crew – Jim Jones, Paul Zimmerman, Herman Menge nd Gloria Fontess – on a Tokyo street. HORACE BRISTOL

Nelson, restaurant manager Mario Cortese, TAL executives Richard Pettit and Sam Wilson (back to camera) at Transocean's restaurant in Oakland, Cal.

pounds of the illegal tickets from my plane. No wonder I'd had trouble getting that ship off the ground on three engines in Puerto Rico."

Before he left Bradley Field for his company's headquarters in Oakland, California, the following morning, Nelson sent out orders for a spot check which revealed that four other Transocean planes then in transit with refugees were carrying similar hidden loads of the contraband tickets. An investigation later proved that the booklets had been surreptitiously stored in the belly compartments during refueling stops in Ireland on the eastbound leg of the trips, before the planes picked up their passengers in Europe. The tickets were off-loaded at Bradley during a night watch, when the planes halted there for a routine maintenance check-up on the return trip to Europe. Five Transocean employees were later convicted and jailed for their part in the conspiracy.

There is an apocryphal anecdote in the writing profession which concerns the case of the neophyte who asked a veteran literary hack how to start a story. The youngster was advised to be sure that his opening paragraph captured the reader by including at least hints of romance, of religion, of high fashion, of sex and of mysteries to come. The beginner thereupon sat down and hammered out this unbeatable opening: "My God," cried the duchess, "that handsome young man has run off with my garters."

Though the case of the contraband sweepstakes tickets lacks some of the all-around appeal of the duchess' lost garters, the incident will serve as well as any of a hundred other anecdotes to introduce Orvis Marcus Nelson and his Transocean Air Lines, Incorporated. The picture of a corporation president flying a crippled air liner-on which his wife is serving as stewardess-over 1700 miles of ocean as a matter of routine and then holding up a mass airlift of refugees while he solves an international conspiracy–and all this in a fairly typical day's work–is just unusual enough to suggest the unconventional character of Nelson and his Transocean corporation. As one of this country's most engaging and ebullient postwar enterprises, Transocean has blended more than 38,000,000 miles of global flying, technical skills in a dozen fields, international salesmanship and a supersensitive nose for any honest dollar into a world-wide operation which confounds the Jeremiahs who hold that the day of free enterprise is done and that adventure and business can no longer be combined with a profit on the side.

Starting in March, 1946, with a bank loan of a few thousand dollars, a subcontract to fly military loads twice daily between San Francisco and Honolulu and a dozen surplus airplanes lent by the Government, Nelson and his youthful staff have, in six years, built Transocean into the world's largest contract aerial carrier. With their own fleet of 114 airplanes – half of them transports -TAL now operates half a dozen air lines and air services outside the United States, circumstances, corporate energy and the nagging fear that they may someday be eliminated from the transportation field by bureaucratic fiat have all, at one time or another, induced Transocean to add other activities to its primary role as a contract air carrier. Transocean now:

. . . owns and operates one of the country's largest aircraft and engine maintenance plants in Oakland.
. . . staffs a string of its own bases which stretch around the world.
. . . operates two airport restaurants
. . . runs a hotel-on Wake Island.
. . . owns and operates a printing plant in California.
. . . has a heavy-construction company engaged in bridge and road building on the West Coast.
. . . operates a barbershop.
. . . owns a broom factory in Minnesota.
. . . owns and operates a chemical plant.
. . . has a crop-dusting operation currently operating in the Middle East.
. . . runs an automotive sales and service company on Okinawa.
. . . has a world-wide trading division which deals in such diverse items as Red Sea fish meal and Swiss watches.
. . . has an industrial-development division which has just completed a plant for the manufacture of aircraft components for Navy fighters.
. . . is busy supervising the reactivation of the Japanese domestic air lines.
. . . provides air services for some of the Navy's Alaskan operations.
. . . runs the interisland air-transport system for the Department of the Interior in the Pacific Trust Territory.
. . . flies approximately 10 per cent of the United States-to-Korea airlift.
. . . owns an interest in the Philippine Air Lines, which it reactivated on a world-wide basis after the war.
. . . flies a vittles airlift from Africa to the desert oil outposts of the Middle East.

Though they conduct these ancillary operations with verve and profit, Nelson and his Transocean staff never forget that their first job is to fly anything, anywhere, any time-the one qualification being that no job shall trespass on the protected area of operations the Civil Aeronautics Board has set aside for scheduled carriers, such as T.W.A., American and Eastern air lines. Nelson believes Transocean should supplement rather than compete with the scheduled air carriers and for that reason his company has never entered the regular domestic passenger field.

Transocean's willingness to fly anything, anywhere, at any time-the basic premise of all contract flying – has presented Nelson with a good many wild and woolly challenges. One of the most unusual of these occurred one July day two years ago, a month after the beginning of the fighting in Korea. Transocean already had some planes flying the Pacific with military loads for Korea; in addition, it was operating a fleet across the Atlantic in the IRO resettlement project. Nelson, an international commuter, happened to be in New York when a call came through from Washington.

"The call was from the military, wanting to know whether I could spare three airplanes immediately for a special flight to Korea. They said they had some highly secret loads at Fort Dix, New Jersey, that they wanted to get under way immediately. I told them that it looked doubtful, that everything I had was busy. I had a couple of airplanes in transit across the Atlantic at that moment. I did have a plane in Oakland and I thought I might charter some other operator to move the loads out to the West Coast from New Jersey. But I just couldn't find anything-and the scheduled operators were loaded to the gills."

Faced with this problem, Nelson moved quickly. First, he started the plane in Oakland for Newark. Then he rerouted the planes on their way across the Atlantic toward a stop in Bermuda with IRO passengers and had them land in New York. A scheduled carrier was prevailed upon to carry the refugees to Miami and another carrier was chartered to complete the flight to Venezuela. Within eighteen hours Nelson had three of his DC-4's in Newark waiting for the Korea cargo.

"I went down to help them load. The cargo turned out to be the new 3.5-inch bazooka rockets. In the early stages of the fighting the Russian-built tanks had been going

right through our lighter bazooka fire. Well, the armament officer there that day told me that in just about two weeks the Army had completed the design of a new, bigger bazooka and put it in production, and this was the first of them. We loaded up and flew the three planes right through to Japan. All they stopped for was gas. Three days after the Army had called me in New York, I heard a flash over the radio that the first Russian tank had been knocked out in Korea by the new 3.5 bazooka. I got a big bang out of that myself."

In pursuing its own brand of free–wheeling enterprise, Transocean literally roams the world in search of business; the company now has twenty-seven bases or offices scattered around the politically accessible portions of the globe. To date, Transocean has made more than 125 loaded-for-profit trips completely around the world. Nelson, a big, soft-spoken Midwesterner of forty-five who likes occasionally to fly the thin black line of his empire and see how things are going, piloted one of these casual circumnavigations several years ago.

"I had planned a shorter trip-from Oakland to the East Coast with some cargo, from there to England with some Air Force weather boys as passengers and then back to South America with a load of IRO refugees. I was taking my mother, who likes to travel, along as second stewardess. My wife, Edie, and Holly, who was then about fifteen months old, were down at the airport to see us off. Just before we left, I received a message from Washington that we were lined up to take a load of Berlin-airlift pilots from Frankfort to Tokyo and then another load of military cargo from Japan on in to Oakland.

"I told Edie she ought not to miss an opportunity to see the rest of the world-she'd seen a lot of it as a United stewardess and on other trips with me–so she went home, packed a bag, locked the front door, and in an hour we were off. We left Holly with Edie's sister in New Jersey, took the weather men to London and then ferried to Frankfort, where we picked up forty Air Force pilots who had served their time on the Berlin lift and were being sent back to their bases in Japan."

It is common nowadays to think of the world as a grid of airways and navigational aids which reduce long. distance flying to a comfortable mechanical procedure. This illusion is at least a decade ahead of reality; for out- side of this country, Europe and a few other sections where the routes and a pattern of flying have been established, the skies still present many of their original challenges to the modern airman. Over vast areas of the globe the safety of a flight often depends solely upon the skill and the experience of the pilot. Nelson flew into such a situation on this trip, in the Middle East.

"My route was by way of Rome, Damascus, Baghdad, Basra, Karachi and Calcutta. We took off from Damascus for Karachi via Baghdad and Basra in the late afternoon with poor but flyable weather. Into the overcast at 7000 feet and no chance from then on for the navigator to get a sight on the sun. He did notice, however, that we had a strong crosswind, which gave us a drift of about thirteen degrees. I wanted to turn at Baghdad and pass over the Basra-Abadan area at the head of the Persian Gulf before I changed course and headed for Karachi and I knew I had to stay clear of the very high mountains in Iran, to the east of Baghdad. There were no radio aids in Iraq, and the Baghdad broadcasting station was off the air, so I had to make my turn over that city by dead reckoning. Then I headed for Basra and climbed to 12,000 feet, while all hands went on oxygen. Couldn't see a thing, but I knew those mountains over to my left went up to tremendous heights."

Nelson, who spent a good part of his career as a United Air Lines pilot flying our Western mountains in all sorts of weather, soon realized that he had a problem on his hands. The DC-4, at 12,000 feet, began to hit turbulence which he recognized as orographic – a turbulence caused by air currents passing over mountainous terrain.

"We'd get this heavy graupel–snow that was being sprayed on the windshield as if it were being shot out of a hose. There were no radio aids and we couldn't get high enough to see the sun, and later, when it got dark, we couldn't even get any star shots to fix our position. The minute this graupel started hitting me I took another look at the map and decided that we'd better go up a bit and also change our course more to the south. I was afraid that wind was pushing us over toward the mountains. So I picked up a heading of a hundred and fifty degrees which ordinarily would have carried us west of the Basra-Abadan area and out over the uncharted deserts of Saudi Arabia.

My navigator on that trip had put in a lot of time flying the oceans, but he didn't have much experience with that sort of flying. First he thought I was crazy and then he got a little concerned. But I kept kicking her over every time we began to hit that turbulence–figuring the wind was pushing us over the high country. For the last two and a half hours of the flight I was flying a hundred and eighty degrees, or due south.

"Finally, when we'd been out about five hours without a check for ground position or speed, we started getting a few breaks in the solid overcast above and the navigator got a star shot. While he was plotting our position the clouds broke away below us and I was very pleased to look over beyond my left wing and see the oil flares of Abadan about twenty-five miles away. We figured later that we'd had a hundred-and-seventy-five-mile-an-hour wind from the southwest. That wind might have pushed us right over into the mountain peaks. It was one of those little things that prove again that experience is hard to beat.

"One of the kicks I got out of this trip was an incident that took place when we were climbing for altitude out of Calcutta. We hit an unusual area of radio reception and I could hear three other Transocean planes on the air. One was taking off from Teheran, another was taking off from Bombay, flying immigrants to the Holy Land, and the third was taking off from Rome with refugees for South America. That day we flew over the delta of the Ganges and over the Burma Road area and a corner of Indo-China and across China, hitting the coast near Canton, and then over the island of Formosa and nonstop into Okinawa. About eleven and a half hours of flying. We refueled there at Okinawa and then went on. I picked up Mt. Fujiyama shortly after sunrise the next morning."

After several days in Tokyo, Nelson flew an Army load back to Guam, where he changed ships and took a group of construction workers back to Oakland, pausing briefly at Transocean bases on Wake Island and at Honolulu.

"Edie spent. one night at home in Oakland and then flew east to pick up Holly and bring her back. Our whole flight had taken just about two weeks. That was a pretty nice trip."

Operating as it does on a world-wide basis, Transocean has frequently found itself a hapless neutral with commitments on both sides of an international conflict. Situations of this nature de mand considerable diplomatic and operational agility. About the time of Nelson's globe-circling trip in 1949, Transocean had several crews flying DC-4's for the Pakistan Air Lines–filling in till the native crews were schooled to handle the big planes. At the same time, Nelson's company had a contract with Bharat, an Indian air line.

"We'd sold Bharat some airplanes and we had a contract to overhaul the aircraft and train some of their native pilots back in the States. Meanwhile, we'd lent Bharat some captains and flight engineers to fly several of the DC-4's we'd sold them. This was fine until both Pakistan and India decided to move in on Kashmir, which had a Hindu ruler and a predominantly Moslem population. By the time the UN got India and Pakistan to agree to an armistice, both countries had armies entrenched in the high mountains bordering Kashmir. Supplying those troops, reached only through a 14,000-foot pass in the mountains, was a fantastic job, and Bharat was given a contract by the Indian Government to drop food supplies to the Indian troops. At the same time, the Pakistan Government gave Pakair a contract to supply the Pakistan forces by air."

With this interesting and logical development, Nelson discovered that he had Transocean crews, flying what had originally been Transocean planes, dropping supplies to two opposing armies.

"There was some sort of a deal that neither side would shoot at those airplanes if they dropped only food. Any arms had to be brought up on pack horses or camels. As a matter of fact, our boys did find some ammunition inside sacks of rice on both sides. After that they checked each loading to see that there was nothing but food in those drops. And once they were in the air they kept talking back and forth on the radio-keeping each other posted on what was what. It was an odd situation for a while, with Transocean right in the middle."

The Arab-Jewish struggle in the Middle East has had Nelson walking a tightrope for some years. Transocean, which has always been profitably active in that part of the world, has provided commercial and charter air service to both Israel and the Arab nations as the need arose. Flying Mohammedan pilgrims to Mecca in one plane and refugee immigrants to Tel Aviv in another is apt to give an air carrier an overobjective view of the struggle between the two groups. While Nelson and his staff have always been acutely aware of the delicate position they occupied as a neutral doing business with both sides-particularly during the period of the Arab-Jewish fighting–there was one occasion when a Transocean flight crew literally forgot there was a war going on.

This particular incident occurred when a Transocean plane flying from Bombay to Europe had mechanical trouble and flew into Damascus, in Syria, with a bad engine. Rather than fly the plane out on three engines, it was decided that a replacement engine would be flown from Rome. The aircraft carrying this replacement also loaded some spare parts for another Transocean plane grounded at Lydda, near Tel Aviv. The crew decided to make the Lydda stop first, and after unloading the spare parts they took off with the replacement engine and flew north into Syria and Damascus. As Nelson tells it:

"The boys just forgot that they shouldn't fly directly from one belligerent country to another. What they should have done was to fly to Cyprus, a British island, and then cleared from Cyprus for Damascus. As it was, with the radio circuits open and everybody listening, the Syrians knew just where the airplane had come from. The crew finally talked the *officials* at Damascus into letting them off-load the engine, but the Syrians wouldn't let anyone get out of that plane.

"I flew into Damascus with my load of Air Force pilots just two days after the ship with the engine change had got away. The Syrians were still hopping mad, and I was met at the ramp of my airplane by two soldiers with fixed bayonets. They escorted me into the terminal and then into a room before the chief of police, and I sat there for three hours trying to explain that it was all a mistake and that we were sorry and that it would never happen again. The chief felt better because he'd had a chance to blow off steam and I'd taken it gracefully, so we finally parted friends."

This faculty of making friends by sweet reasonableness has served Nelson well during his six years of global commuting as Mr. Transocean. There are few Americans outside the ranks of our professional diplomats who can claim a more varied and geographically embracive catalogue of friends and close acquaintances–Nelson's international contacts represent all social levels and most colors, races, languages, religions and political persuasions, and they are to be found wherever airplanes fly. Nelson looks upon this world-wide network of familiars with astonishment and some awe, for by conviction he is still a small-town boy.

Nelson's parents–his father was born in Norway and his mother comes from pre-Revolutionary American stock that finally settled in Indiana–were running a general store and post office in Tamarack, Minnesota, when Orvis was a boy. Prospering, the family went into the lumber business and eventually acquired a number of timber tracts and several local sawmills. Orvis, who grew up in the woods, could handle an axe and a saw before he could a baseball bat. A catastrophic forest fire in 1918 just about burned the family out of the lumber business; the elder Nelson spent much time during the following years in Minneapolis as a businessman and state legislator, and it was there that Orvis finished his early schooling.

The Nelsons knew a family named Lindbergh from Little Falls, about seventy-five miles from Tamarack, and when the Lindbergh boy flew the Atlantic in 1927, young Orvis decided there might be a future in the flying business. A tour of duty in the Air Corps as an enlisted man on an aerial-survey project in the Philippines, followed by a degree in mathematics from Franklin College in Indiana–Orvis played football and ran a one-man aerial photographic business during his college years–finally landed young Nelson in the Air Corps flying school at Randolph Field in 1932. One of Nelson's instructors at the school was a Lt. Hoyt Vandenberg–who became a four-star general and head of the Air Force.

Lieutenant Nelson's duties as an Air Corps pilot on active duty included service during the winter and spring of 1934 when the military flew the air mail. Nelson's most poignant recollection of that period is the day he breakfasted with four of his fellow pilots before the five young officers started their over-the-Rockies runs with the mail. That evening only two of the five were alive to eat dinner.

After the adventures of flying the air mail in the makeshift military equipment, Nelson's ten years of piloting for United Air Lines proved to be pleasantly routine. When United took over several Military Air Transport Service runs during the war, Nelson helped pioneer the difficult all-weather operation between Seattle and Alaska. Later, he moved over to the transPacific run, and it was there that Nelson's long-cherished idea for an independent air line crystallized into a project that ultimately became Transocean. During his years as an airline captain, Nelson served for some time as a vice-president and negotiator for the airline pilots' union. He now thinks that experience probably helped school him in the soft-answer diplomacy which has so often helped Transocean win an argument and keep a customer. Some of Transocean's international involvements run a more complicated course than did the affair of the Kashmir drops. Several

years ago, while the Israeli-Arab fighting was in progress, Transocean accepted a charter from the IRO to fly a single planeload of fifty European refugees from Paris to Australia. Because some of the passengers were of Jewish origin, the pilot was routed from Paris to Rome to Athens and instructed to overfly the Arab countries and make his next landing in Abadan, Iran. From Abadan the trip was routed to Karachi, Calcutta, Bangkok, Singapore, and thence to Australia. The flight proceeded normally through Rome and Athens. In the next routine report the pilot informed the European airways radio network that he was passing north of Damascus at 8000 feet.

"That," recalls Nelson, "was the last we heard of our airplane for five days. We had Pan Am and KLM, the Dutch air line, check all their stations. We couldn't find a trace of it. I figured that maybe someone had known about part of the passengers' being Jewish and that perhaps the airplane had been shot down. Finally an Air France pilot just back from a trip to the Far East called our office in Switzerland and told them that he'd seen the airplane in Basra, Iraq, and that everybody aboard was interned there. Our State Department and the IRO-both alerted as soon as we knew the aircraft was missing-went right to work and we sent our director of operations at Bradley Field over to Baghdad to talk to the Iraqi foreign minister. We finally got the airplane and the passengers released after three weeks. That delay forced us to offload a couple of pregnant women in India, so that they could have their babies."

The puzzle of the unscheduled Basra landing has never been solved to Nelson's satisfaction. The captain of the plane insisted that he had received a cablegram, before he left Paris, ordering him to change his original routing and land in Dhahran, an Arabian port on the Persian Gulf. The cable had purportedly been sent by Transocean's Shannon, Ireland, office though no copy of the message has ever been found. The plane captain also maintained that he had received a confirmation of this rerouting by radio, after he was in the air.

"It was getting dark as he approached the Basra-Abadan area and there was a sand storm whipping up. The pilot radioed ahead to Dhahran, about four hundred miles to the south, and gave them his estimated time of arrival there. Dhahran radioed back and told the captain they had no landing permission for him–that he couldn't land there. So the pilot circled around, letting down over Basra and Abadan. He knew that Basra had a better airport than Abadan–which is close, but over the border in Iran–and so when the Basra tower called him and told him he could land there, he just went on in. It never occurred to him that he was landing in Arab territory with Jewish passengers aboard. When they came to a stop they were immediately surrounded by a ring of guards with fixed bayonets. And, of course, the cables he wrote announcing their situation were censored at source."

Who dispatched the cable and the phony radio message? That's something Nelson still wonders about.

The complications of running air services in the Eastern lands, where wars, intrigue, religious conflict and the enigmatic native mind all conspire to confound the aerial businessman, play no part in the operations at the other end of the Transocean network. In Navy Petroleum District No. 4, where Transocean runs what Nelson considers the ruggedest air-transport operation in the world, the company's one preoccupation is weather. This slice of frozen American soil comprises the northern shelf of Alaska lying between the Brooks Range and the Arctic Ocean, and it is here that the Navy has successfully tapped some oil reserves. Transocean won a contract in 1950 to provide the outpost at Point Barrow with an air link to Fairbanks, some 500 miles to the south.

The Pet 4 operation employs a fleet of seventeen airplanes, ranging from two-engine freighters to the famous single-engine Norseman bush plane. In winter the smaller planes are equipped with skis; in the summer they operate with floats. The larger freighters use wheels the year round, for, oddly, snow is not too much of a problem in this northernmost tip of the continent–the theory being that the air north of the Brooks Range is too dry to hold much moisture in suspension. Nelson, a veteran of hundreds of flights to the Southern Alaskan coast and the Aleutians during his wartime flying for ATC, surveyed his company's operations around Point Barrow shortly after they started and returned with a wholesome respect for the weather his crews must face.

"I've seen a hundred-and-forty-five-mile-an-hour wind roll up a steel landing mat just like you'd roll up a sheet of paper–and when it finished there was a truck inside the roll. I flew up from Fairbanks in February with Bill Word, who was our director of operations at Point Barrow. We landed the C-46 on a cleared runway; it was night and about forty-five degrees below zero. I'd planned to return south the next day, but that night it went down to fifty-five below and the wind hit seventy-five miles an hour.

"When the weather goes bad like that, all activity stops–everything but the engines. We run those, even in the airplanes, twenty-four hours a day. If we didn't, it would take three or four hours to get them started, even with the heating hoods we have for the engines. During the cold weather–which means most of the year–the only time we stop the engines is when we have an oil change or something like that. We ferry the ships down to Seattle for most of the mechanical work."

Flying the shuttle runs to Umiat and the various oil-drilling camps tucked away in the vast tundra plain which spreads to the south of Point Barrow, Nelson had an opportunity to acquaint himself with some of the weird operational procedures which characterize this far-north flying. Ski-equipped planes are usually anchored against the high winds by freezing the skis to the snow-packed runway. Drums of Diesel oil are also used as anchors-though on one occasion a 150-mile-an-hour gale at Umiat blew away three planes anchored in this fashion.

Every plane in the operation carries a survival kit with rations, candles, heating pots and snowshoes–everything necessary to keep the pilot and passengers alive for several weeks. When one of the pilots finds himself facing impossible weather conditions–a bad storm or one of the impenetrable fogs which descend upon the area without warning–he radios Point Barrow, picks out what he hopes is a level spot on the vast snow plain and lands to wait for better flying conditions. If the visibility is zero-zero the pilot says a short prayer and lands anyway. Fortunately, there are no trees in this part of the world.

Red Dodge, one of Transocean's bush pilots, faced a situation like this when he was forced down by a wall of ice fog some miles out of Point Barrow. Dodge felt his way down to a blind landing, keeping his plane level by instruments and slowing it as much as he could without stalling. Dodge hit the ice hard, bounced into the air and then leveled off for another blind landing. When the airplane came to a stop, the fog was so thick that Dodge didn't even bother to get out. He simply sat there in the plane till the fog lifted several hours later. Then he discovered that his bounce had just carried him across a deep chasm. Dodge

later decided that he was more than lucky when he unloaded the plane he found that the cargo contained a case of dynamite.

This sort of good fortune does not always ride with the Transocean pilots of Pet 4. One dark December day–a relative term in those far-northern latitudes–five of the Norsemen heading back for Point Barrow were enveloped in an ice fog just short of the base. Four of the planes made the field, but the fifth was forced to make a blind landing on the snow-covered tundra fifty miles from the Point. The pilot, unhurt, radioed his predicament to the base and was advised to wait where he was until help arrived. The fog turned into a storm and it was five days before a ground search party, traveling by weasel and guided by a plane, found the wreck and the pilot. As Nelson tells the story:

"The pilot said the only thing that bothered him was that his feet got a little cold. He rearranged the cargo and lay inside the plane in his sleeping bag. He had a supply of Western story magazines with him, and so he just settled down and read the Western stories by candlelight. There are a lot of white foxes up there and the pilot said that they would come right up to the window of the airplane and sniff. During the last several days there were probably a hundred white foxes out there keeping an eye on him."

Though the north is a land of tall stories, Nelson swears that this final note to the account of the bush pilot's rescue is true. When Transocean's chief pilot at Point Barrow called the bush pilot's wife to report that her husband had been marooned on the ice for some days, but that rescue operations were continuing, that lady replied, "That's a damned good place for him"--and hung up.

Editors' Note–This is the first of three artides by Mr. Thruelsen. The second will appear next week.