

THE INGENIOUS HANDIWORK OF

Nate Saint MAF PILOT

By MARTIN COLE

The Ecuadorian Government issued the commemorative stamp in memory of Saint, even giving his airplane registration number.

Photos courtesy of Missionary Aviation Fellowship, Fullerton, California)



On January 9, 1956 the world was shocked to learn of the deaths of five missionaries deep in the tangled jungles of Ecuador. In an attempt to make contact with perhaps the most savage Stone Age tribe left on Earth, the Auca Indians* in turn slaughtered the young apostles of Christ. Their names are now legend, and the ill-fated crusade of Jim Elliot, Ed McCully, Peter Fleming, Roger Youderian and Nate Saint has been well told in magazines and books.¹

However, for those who have not read the moving accounts, briefly here is the story. During September, 1955, Nate Saint flying a Missionary Aviation Fellowship Piper Family Cruiser, together with Ed McCully, discovered the remote village of the dreaded Auca Indians, so savage and ferocious that the Shell Oil Company had had to abandon neighboring exploratory camps when it was found that more blood than oil flowed from the sites.

It was to some of these abandoned camps, complete with hacked out airstrips that missionaries came to occupy, and bring Christian teaching to several tribes, who also had a fear of the Aucas. The missionaries were in their twenties, except Nate Saint, the old man of the crowd; he had turned thirty-two at the time of his death. One thing all had in common besides a missionary zeal; each had been a popular campus leader in college activities, this of course, in the days before it became fashionable to be militant and burn down school houses.

At the age of 13, Nate Saint was stricken with osteomyelitis, and fearing the worst, the boy promised God that "if He would let me live, my life would henceforth belong to Him." On recovery he kept his bargain. Airplanes were his passion. While in his teens he earned money for flying lessons, and during World War II he served as a mechanic with the U.S. Army Air Force. Thereafter he enrolled at Wheaton College in Illinois, to prepare himself for foreign-mission service, regretting he would probably be forsaking his love for flying. Then one day opportunity knocked, or rather pounded on his door. He learned that out in California some ex-service pilots were putting together a missionary flying service

called Missionary Aviation Fellowship. They needed pilots with mechanical skill and a religious fervor. To Nate Saint, the news of MAF was the voice of God. He dropped his college course and hurried to Los Angeles.

The Missionary Aviation Fellowship needed a pilot to pioneer its program in Ecuador. Nate, with his bride of a few weeks, Marjorie, arrived there in September, 1948 to occupy the abandoned Shell Oil camp at Shell Mera. He soon had a network of landing strips and radio communications (with Marj at the base radio hookup and in touch with him constantly), and in the matter of months he had transformed life for the isolated mission stations. Now, instead of spending days to walk in or out of the jungle, they had "instant" plane transportation, and furthermore regular deliveries of mail, medicines and supplies. The years — seven happy years, passed quickly; then with the discovery of the Auca village, time began racing towards an end.

Previous to the discovery of the Auca village their actual base had been a mystery, but their hit-and-run raids had long spread terror among the surrounding tribes. The Ecuadorian government had given up efforts to reach the Aucas when the venture proved too costly in lives. For the missionaries, the Aucas presented a challenge, for did not Christ command, "Go ye...to every creature." Although MAF pilot Nate Saint had spent many hours sweeping the skies over the endless stretches of jungle in search of the Aucas, it wasn't until one September day that their habitation was finally located.

The discovery of the village made the "Auca dream" a reality. The Lord's time had come to do something more than talk and dream of contacting the Aucas. Accordingly, plans were made to soften up Auca hostility by a campaign of airborne friendliness. Regular weekly flights would be made over the village, and by means of an ingenious airdrop system devised by Nate Saint, gifts would be presented.

It is the story of the Nate Saint airdrop system, and two other equally important ingenious contributions that prompts this article. For while much has been written of the tragic death of

* (Pronounced A-You-Ka)

Nate Saint, the Christian martyr, largely overlooked are the accomplishments of Nate Saint, the inventor. In a way, it is ironic that his inventive talents set in motion a chain of incidents leading to his death.

Great ideas generally spring from small and obscure beginnings and such is the case of the Nate Saint bucket-drop. One day while sitting in class at Wheaton College, Nate idly swung a string in circles, to which a pencil was attached. He observed a curious thing. Although he was making large circular motions with his hand the pencil dangling beneath remained relatively stationary. He filed away this seemingly unimportant incident in his memory bank and forgot about it as time went by. Then in Ecuador, when the urgent need came to make aerial contact with missionaries and Indians where no airplane could land, his computer mind reached back into the memory bank for a solution. He recalled the classroom incident and wondered if the same principle would work if an object were to swing on a line from a plane.

To test his assumptions he experimented with the bucket-drop idea, and afterwards set down his findings:

"While a friend was letting out the (fish) line I circled at 1000 feet. The circles had to be large ones, and with the (canvas) bucket some 1500 feet behind us, we were ready for the test.

"I banked and turned sharply, gradually making the circle smaller. As I did so, a curious thing began to happen. Up till now the bucket had travelled about 60 miles an hour. Now, it began to move more slowly. The large arc of cord behind it bent towards the center of the circle, permitting the bucket to settle downward toward the point of a huge, invisible cone. As the bucket dropped earthward it seemed to lose all horizontal motion. Finally, it came to rest in the middle of the open field."

The first real test of the Nate Saint bucket drop came shortly later. Frank Mathis of Wycliffe Bible Translators had received an urgent call for help from the Arapicos Indians, and was heading for their village when Nate Saint received additional word that the village was contaminated with a highly contagious disease. One victim had already died.

Nate Saint had improved his bucket drop system by using 1500 feet of wire and including a telephone in the bucket. Missionary Bob Hart accompanied Nate; when they arrived over the village they spotted Mathis. Unreeling the wire with phone and bucket, Nate succeeded in setting it in the center of the village. While Hart talked for several minutes with Mathis, Nate relayed over the plane's shortwave radio to a doctor in Quito, two hundred miles away, the symptoms of the sick Indians; the doctor prescribed medicine, which was dropped on a return trip.

The use of the convenient bucket drop became rather commonplace, and in time Nate Saint became so adept he could place the bucket at any given spot, or else have it hover motionless a few feet off the ground.

Following the first bucket drop on the Auca village, Nate Saint wrote in his diary, "We delivered the first gospel message by sign language to a people a quarter of a mile away vertically, 50 miles horizontally, but continents and wide seas away culturally and spiritually."

In the weeks ahead, the flights brought about a rapport of sorts between the Aucas and missionaries; the Indians were placing gifts in the bucket, one, a parrot, became the object of affections at the Saint household. Thus, encouraged by gifts and gestures of waving and smiling, the missionaries decided the time had come to establish a beachhead in Aucaland. After considerable exploration Nate found a sandbar on the Curaray River, some four miles from the village. But there were doubts if the sandbar offered sufficient length for takeoff. A determination would have to be made before an initial landing.

The flying missionary solved this new problem in his own ingenious way. Experimenting at Shell Mera he perfected an unique method, so simple, yet who other than Nate Saint would have thought of it. Into one-pound paper sacks he placed yellow paint pigment powder. These were dropped from the Piper Family Cruiser, while flying precisely at 65 mph, and at intervals of 7 seconds. The bags split on landing, scattering the bright pigment, and consistently marked off spaces of approximately 200 yards. Returning to the Curaray River, and putting into practice this method, he learned that the sandbar was indeed the space of two markers, or 200 yards, an adequate length for the Piper's takeoff. Preparations were made for the landings.

Tuesday, January 3, 1956 at 8:02 a.m. pilot Saint lifted the Piper off the airstrip at Arajuno. With him was Ed McCully. Fifteen minutes later, a landing was made on the sandbar. McCully was left alone while Saint returned to Arajuno for another load. Altogether he made five trips that day, ferrying men and supplies, including material for a tree house.

Wednesday passed with no Aucas presenting themselves, despite occasional flights over their village. Thursday also drew a blank. That night Nate Saint wrote in his diary, "It is no small thing to try to bridge between the 20th century and the Stone Age . . . may we see them soon!"

See them soon, they did!

Friday, January 6, 1956. There was a sudden movement in the foliage, and out stepped a man and woman of perhaps 30 years of age, and a well formed girl about 16. Each was naked except for a G-string. It soon became quite clear that the girl was being offered as a gift, and during her stay, she appeared to be most disappointed that the men were not fulfilling the role expected. The visitors were fed hamburgers and photographed with a copy of Time. Both the girl and man showed interest in the Piper, and



"With the canvas bucket some 1500 feet behind us, we were ready for the test . . . Finally, it came to rest in an open field." —Nate Saint.

by sign language he let them know he wished a ride. When Nate agreed, he eagerly climbed in, and strangely showed no fear on takeoff, but rather, he chortled with delight and over his village he waved and shouted to those below who recognized him with open mouths. The balance of the day was passed in rampant friendliness, although the girl showed a growing impatience. She finally wandered off; the Aucan called after her, then followed. It was not until sometime later that the Aucan woman left.

Understandably, the missionaries were overjoyed. Months of preparation and years of dreaming had finally brought them face to face with the savages; they were the first white men to ever do so on friendly terms. In high spirits Nate and Peter Fleming flew back to Arajuno that night, and informed the waiting wives of the details of the miraculous achievement.

Although the missionaries waited hopefully through Saturday, no Aucas made an appearance. On a Sunday flight to the village, ten men were seen heading for the sandbar. Nate Saint radioed Marj, "Looks like they'll be here for an early-afternoon service. Pray for us. This is the day! Will contact you next at 4:35."

The contact was never made. All five missionaries had been slain with hardwood lances. The leader of the war party was no other than the Indian man the missionaries had befriended and given a plane ride. This information came two years later, to Betty Elliot and Marj Saint who remained on in missionary work. Mostly, the world accepted the deaths of the five missionaries as an enormous waste of life, however, it was Ed McCully's father who put a different perspective on the tragedies. He said, "God makes no mistakes." And so it would seem today, for Nate Saint's "Operation Aucan" is living on with Aucas becoming Christianized.

Living on also is the ingenious handiwork of Nate Saint. At this writing the United States Air Force is experimenting further with the Nate Saint bucket drop, to extend its use to that of air-to-ground rescue. The USAF technique is referred officially as LLLRS.²

In the long run, it is likely that the Nate Saint alternate-fuel-system for airplanes will have the most significant value. All pilots who fly hazardous missions know what it is like to sit constantly with ears straining for that first slight decibel interruption, knowing any malfunction will likely be in the fuel system rather than in the dual ignition system. Pilot Saint was no exception. "I sit above the jungle listening for systems of trouble that I never want to hear," he wrote before he devised a crude, yet workable alternate fuel system.

Experimenting with the engine running, he lifted the cowl of the Piper, removed the temperature-gauge fitting from the intake manifold, and squirted in gasoline. Each squeeze of the gas-loaded tube produced a burst of power. Encouraged, Nate borrowed one of Marj's cooking-oil cans for use as an auxiliary tank, and fixed it to the struts of the left wing, and to provide a streamline fairing, a piece of balsa wood whittled into proper shape, was attached. Salvaged fittings, strainers, and a screw-type valve made up the

assembly. The valve was mounted on the fire wall, with an extended control rod to the instrument panel. When completed Nate took the Piper up for a test.

"Two thousand feet above the landing strip I pulled the mixture control to idle-cut-off," he wrote, "It was quite a novel experience for a fellow who had listened so long, hoping never to hear it happen. But a turn of the new little T-handle on the instrument panel brought with it a wonderful feeling as the engine wound back up to smooth full-power. It picked up from the windmilling condition without a cough."

After further refinement and many trips "back to the drawing board," an "Emergency Fuel System" as it was subsequently labeled was approved for use on a 260 HP Cessna 185 aircraft. The system was given full approval by the FAA. Currently the MAF Technical Department has an application filed with the FAA seeking approval for use of this emergency fuel system on all MAF aircraft.

Time, the measurer of all things, will surely accord Nate Saint with lasting greatness. Certainly, his 'nitch' will be remembered for the Christian work accelerated with his death, for his jungle-flying techniques, and the bringing of greater reliability to aircraft engines. And measuring up all things in his life, did he not abundantly fulfill the promise he made as a boy of 13 and live an ennoblement of life few men attain? It would seem his own name, at least, will stand as a monument to greatness.

NOTES AND REFERENCES:

1. This story was largely developed from the files of Missionary Aviation Fellowship, Fullerton, California, with some assist from two informative books, *Through Gates of Splendor*, by Elizabeth Elliott, Harper & Brothers, 1957; and *Jungle Pilot*, by Russell T. Hitt, Harper & Row, 1960.
2. Author Cole wrote the Department of the Air Force, Washington, D.C. for further information on LLLRS system, and from the lengthy reply has selected pertinent portions giving a concise review of the experimentation.
 "Air Force engineers are testing a system which will use the principles of free-fall and circling lines to retrieve either men or equipment by using a Cessna U-206, C-130, C-7 or C-123 aircraft. The system, called Long-Line Loiter Retrieval System, (LLLRS) has applications for rescuing men and retrieving equipment. It uses the circling line principle which has been used by pilots for the past thirty years.
 "(One innovation is) the looped line deployment, designed to give more accurate delivery. It uses a small cone in the middle of the line to eliminate the tangling problem usually associated with whipping or lashing lines. A winch in the aircraft feeds the line out behind the plane. The cone in the middle of the line helps maintain the tension and loop formation.
 "Tests are currently underway at the Naval Air Facility, El Centro, California. Current and future tests use about 1,700 to 1,800 feet of line, and the airplane orbits in a quarter-to-one-half mile circle at an altitude of about 1000 feet and an airspeed of 70 to 85 miles per hour.
 "The Navy also is working on a similar system called the Ground Anchor Delivery System (GADS) which would employ longer lines and high speed jet aircraft. The Navy and Air Force are cooperating in the ventures, and the test data at El Centro will be utilized by both."

FIRST WAVES KILLED IN SERVICE (?)

Bill Martin, Fort Worth, Texas

Reading about the women pilots who lost their lives in WWII rang a bell. (See J-AAHS, Vol. 16, Fall, 1971, page 222.) I located a memorial service with the names of, I believe, of the first three WAVES killed on active duty in the Navy. The eleven people named here were killed in the crash of a PV-1 at Fairfax Field, Fairfax, Kans. on 26 Feb. 1944. Cause of the crash ... failure to remove ballast bags in the rear of the airplane from a previous flight.

All were attached to the staff of RAdm Elliot Buckmaster, Chief, Naval Air Primary Training, as I was. (He had been C.O. of the

YORKTOWN at the Battle of Midway). The three girls are identified in the list by "B-10":

Richard Provost Wilson, LCdr, M.C., USN
 Clint Campbell, Y3/c, V-10, USNR
 Mary Kathryn Carr, S1/c, V-10, USNR
 John William Gregg, AMM2/c, V-6, USNR
 Donovan Henderson, AMM3/c, V-6, USNR
 James Phillip Hodges, AMM2/c, USN
 Herman Eugene Rodgers, PR3/c, V-6, USNR
 Gene Francis Salisbury, S1/c, V-6, USNR
 Burlon Wilson, S2/c, V-6, USNR
 Margaret Irene Vajda, PhM3/c, V-10, USNR
 George Edward Young, Jr., SK2/c, V-6, USNR