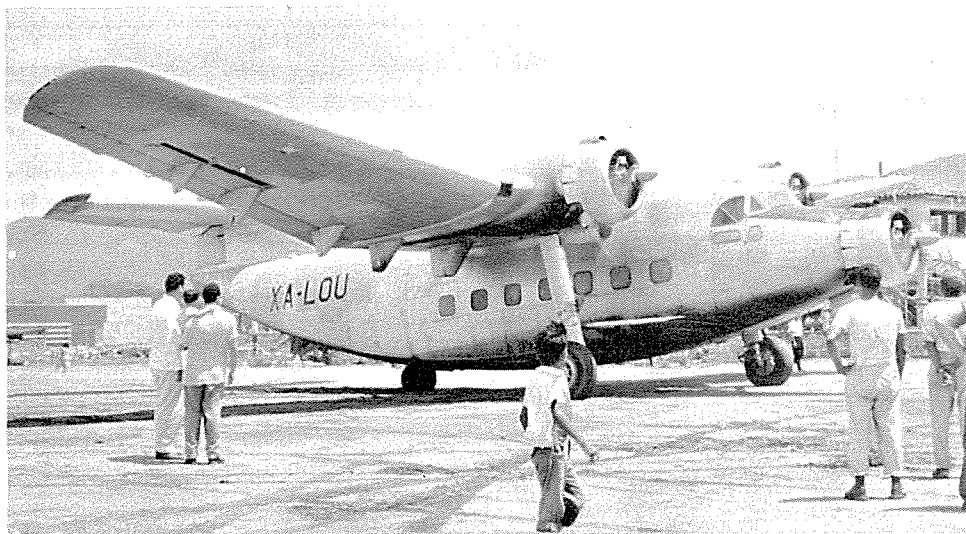


GARY G. KUHN



The NORTHROP YC-125 "RAIDER"

Photo - Ing. Jose Villela, Jr.

Mention of three-engined aircraft to the AAHS member directs his attention back into the past: to the route pioneering work of the immortal Ford; to that great German veteran, the Ju 52/3m; and to an assortment of the venerable Fokkers, Stinsons, and others. Certainly Northrop's post-war YC-125 "Raider" will never approach the fame of these sturdy old reliables---in fact, it can in some respects be termed a failure. Yet, this aircraft, though a veteran itself of better than a decade, seems to have an interesting future ahead of it. The checkered past career of the YC-125 "Raider" is presented below.

As related in William T. Larkins' superb work, The Ford Story, the Ford Tri-Motor was instrumental in pioneering air operations in the back country of Central and South America. On page 91 of this book it is stated that "perhaps the most fascinating aspect of the Ford Tri-Motor history is that portion regarding its operations in Central and South America." This was especially true concerning the largest operator of Fords in Latin America, Lowell Yerex's TACA (Transportes Aereos Centro Americanos) airlines. The gradual depletion of available Fords because of accidents, etc. over a period of time, however, left a large void that no other aircraft seemed able to fill. It was this need that led to the eventual design of the Northrop "Raider."

In 1946 Northrop unveiled a wooden mockup of the Northrop N-23 "Pioneer" three-engined transport. The design was the result of a study of Central American routes by Northrop engineers in collaboration with TACA airways. These routes featured short rough runways at an average distance of only 38 miles between stops. The design decided upon was a three-engined high wing monoplane with a specially designed high lift wing. A large fixed landing gear made possible the extremely rugged construction deemed necessary for the fields the "Pioneer" was to operate from, and also followed the emphasis on making the "Pioneer" relatively easy to maintain.

The "Pioneer", registered as NX8500H, made its first flight in December of 1946 from Northrop Field with Max Stanley at the controls. The N-23 was airborne in 1000 feet using neither full take-off power nor flap deflection. The first of many difficulties that would continue to plague Northrop's tri-motors manifested itself before this first flight, however, as the Wright R-1300 engines specified for the aircraft were not available on the completion of the airframe. The Pratt & Whitney R-1340-S3H1 engines in-

stalled in lieu of the Wrights gave 25% less power than had originally been counted upon. Nonetheless, the N-23 continued its testing program, exhibiting an impressive performance.

In the fall of 1947 the Wright engines originally called for became available and were installed. These enabled the "Pioneer" to take-off in 390 feet at a weight of 23,000 lbs. Northrop was able to comfortably guarantee a take off distance of 700 feet at a gross weight of 25,500 lbs---a useful load of over 5½ tons!

The "Pioneer" had a wing span of 85 feet, a length of 60 feet, 7 inches, and a height of 17 feet 10 inches. Empty weight was 14,400 pounds with a design gross weight of 25,500 pounds. It was able to fly at 15,000 feet on two engines and had a service ceiling of 21,000 feet. Take-off run fully loaded was 700 feet, and the "Pioneer" landed in 750 feet.

Prospective buyers of the "Pioneer" included TACA, Parks College, and Norwegian Airlines. The aircraft was demonstrated to representatives from a variety of countries, including Iran, Chile, Peru, Mexico, and Argentina.

The most prominent prospective buyer was, of course, TACA, whose purchase of the "Pioneer" depended upon the refinancing of the airline. TACA did in fact order 40 "Pioneers" soon after the Waterman Steamship Company had completed negotiations for the purchase of a majority holding in the airline. This order was withdrawn, however, when the Civil Aeronautics Board did not permit entry of this surface carrier-controlled airline into the United States. Northrop was left without a likely buyer for the "Pioneer".

A final disaster struck the N-23 in the early spring of 1948. Northrop was not entirely satisfied with the "Pioneer", and during a flight test of a new tail design, NX8500H crashed killing the Northrop test pilot, L. A. (Slim) Perrett.

In the meantime, however, the Air Force had become interested. Northrop was the winner of a design competition for a versatile light cargo transport capable of exceptional short field performance, the design being driven directly from the N-23. Consequently, in March of 1948, just a few days after the "Pioneer's" crash, a \$5½ million Air Force contract was awarded Northrop for 23 YC-125 "Raider" transports. Plans to produce the "Raider" in Canada by Canadair Limited did not materialize although

company designations CL-3 and CL-12 were allotted the YC-125.

Two basic versions comprised the Air Force order: the YC-125A, a light assault transport, of which 13 were to be built; and the YC-125B, an arctic rescue version which the other 10 "Raiders" were to be. These specialized uses involved the addition of a great deal of equipment and cumbersome installations that added considerably to the YC-125's empty weight. In addition, provisions were made enabling the "Raider" to operate as a paratroop ship, and for it to be towed by another aircraft as a powered glider! Another feature was the provision allowing installation of JATO units for emergency and heavy lead take-offs.

The military YC-125 "Raider" had a wing span of 86 feet, 6.4 inches; a length of 67 feet, 1 inch; and a height of 23 feet, 1.8 inches. Powered by three Wright R-1820-99 engines of 1200 horsepower each, the YC-125 had a maximum speed of 207 MPH and a gross weight of 40,900 pounds. An alternate proposed powerplant was the Wright R-1820-101 of 1275 horsepower giving a somewhat better performance.

Upon delivery of the aircraft in 1950, it was soon found that no specific need for the YC-125 did in fact exist. Rapid development of the helicopter had much to do with this situation. Further production of the "Raider" having been earlier decided against, the 23 service test aircraft were allocated to Sheppard Air Force Base, Texas for mechanical training. Here they were used for a basic engine training course, never flying.

At least one ski-equipped YC-125B was used by the USAF in the SOIAS (Sliding on ice and snow) project beginning in 1950. It was found to be a considerable improvement as a ski-aircraft over the Fairchild C-82 "Packet" used previously. In fact, an official Air Force report states that the YC-125B was "superior to any large aircraft previously tested on skis in the respect of take-off performance." On the other hand, tests conducted by the Air Rescue Service at Bemidji, Minnesota, in 1951 led to the conclusion that in spite of its extremely good short field performance, the ski payload of the YC-125B was so low that it was not considered operational.

In 1955 the YC-125 "Raider" was declared surplus to Air Force requirements. 19 "Raiders" were then sold at Sheppard AFB, 18 to the Frank Ambrose Aviation Company, Inc., and the other to Planet Airways. Of the other four aircraft, two were disassembled in Air Force use and two were donated to schools. Buyers had their eyes on the foreign market as the YC-125 was not to be licensed to operate in the United States due to the large cost and the small number of aircraft involved.

In the initial Air Force contract it was required that the aircraft be certificated by the Civil Aeronautics Administration under Part 3 of the Standard Category of the regulations. The tests were almost completed when the contract was terminated and they were not finished. A later amendment to the regulation would require all tests to be repeated from the beginning for the YC-125 to be licensed by the FAA now.

A number of modifications and improvements have been slated for the YC-125 before sale to foreign operators. Most obvious and important is the replacement of the surplus 1200 horsepower engines utilized by the Air Force, with the Wright R-1820-56 engine of 1350 horsepower. This engine change combined with a thorough program of eliminating unnecessary weight-consuming military equipment has resulted in a claim of spectacular performance for the "Raider." With an empty weight of under 24,000

pounds, the re-engined YC-125 can carry a useful load of 19,000 pounds -- approximately 80% of its own weight!

In January of 1956, an Ambrose YC-125 equipped with the 1200 horsepower engines made a trip through Guatemala, Nicaragua, Panama, and Honduras, returning to Miami. This aircraft (N2561B) was especially demonstrated to COPA Airline officials in Panama and was also enthusiastically greeted in Honduras. The flight was uneventful, the "Raider" operating smoothly and efficiently.

Selling price of the YC-125 varies according to different modifications and included features, but \$100,000 is a fairly accurate round figure. "New designations" of the "Raider" that may be noted are the "C-125D", an Ambrose appellation of the 1350-horsepower modifications, and the "C-125W", the "Raider" as marketed by Worldwide Aeronautical Services, with the 1350 horsepower Wright R-1820-72MI engines. Frank Ambrose also suggests the possibility of installing 1450 horsepower engines.

Frank Ambrose Aviation apparently intends to sell some of the YC-125 Raiders and to retain the rest for lease. Six aircraft remain at Kell Field in Wichita Falls, Texas, the location of Sheppard Air Force Base. These are for convenient access to Mexico and parts of Central America. The remainder have been ferried to Miami or sold elsewhere.

The likely histories of each of the 23 Northrop YC-125 "Raiders" are listed below. Certain inconsistencies and lack of available details are dealt with in several paragraphs following the individual histories.

48-618 YC-125B c/n 2502 N405OK, N2560B, XA-LOV, TG-DAH-84

This Raider has probably the most interesting history of any of the 23, though certain portions of this history are uncertain. On August 3, 1949, c/n 2502 was registered to Northrop Aircraft, Inc. as N405OK. It participated in the incomplete CAA licensing program mentioned above, until the cancellation of the registration on November 13, 1950. Next this aircraft became 48-618, as it was originally constructed to be. After its sale to Frank Ambrose Aviation in 1955, the aircraft was registered as N2560B. It was soon sold to Servicios Aereos de Chiapas S.A. and registered as XA-LOV. Based at Tuxtla Gutierrez in isolated and mountainous southern Mexico, this aircraft and its sister ship 48-626 furnished valuable cargo and passenger service to an area badly needing air transportation. On taking off from Tuxtla Gutierrez on July 9, 1958, with ten passengers and a crew of three, the left engine caught fire due to an electrical system failure. The other two engines also lost power and XA-LOV began losing altitude, barely missing a large school building. The powerless airplane crashed into a number of houses, killing two people that were in one of the houses, and injuring others. The operating company of XA-LOV went out of business soon after this crash. It seems that 48-618 must have been repaired after its crash, for this is the serial for the aircraft acquired by Jose Luis Arenas B. of Guatemala on January 8, 1959, as TG-DAH-84. It has since suffered some damages during a landing at Panchita, a very small and remote airstrip, and at least until quite recently was unable to leave this field. It may now have been flown back to Miami, however.

See Page 41 for photo of XA-LOV, ex-48-618

48-619 YC-125B N2561B (probable c/n is 2503)

Purchased by the Frank Ambrose Aviation Co., Inc. in 1955 and registered as N2561B. This aircraft made the January 1956 flight from Miami to Guatemala, Nicaragua, Panama and Honduras, that was described above. The plane was seen at Miami in June of 1957 in a special demonstrator color scheme, but was not observed there in June of 1959.

48-620 YC-125B c/n 2504 N2562B

This is the aircraft most often seen illustrated in photos of the YC-125B in Air Force service, but little is known of it since its 1955 purchase by Frank Ambrose. Probably N2562B is still at Miami.

48-621 YC-125B (probable c/n 2505) N2563B, PZ-TAD

Purchased by Ambrose in 1955 and registered as N2563B. In 1959 this aircraft was chartered by the Surinam Government in order to help in the construction of seven airstrips in the interior of the Dutch colony. On September 24, 1959, a ferry permit was issued by the FAA for a flight to Paramaribo under certain conditions and limitations. The registration PZ-TAD (previously issued to a Cessna 170B) was allotted the aircraft on a provisional basis. An experimental certificate of airworthiness for non-revenue cargo flights only within Surinam (Dutch Guiana) territory was issued. The aircraft stalled during a landing at one of the airstrips under construction on August 15, 1960, and was substantially damaged. It is now being determined whether to attempt repair of PZ-TAD.

48-622 YC-125B (probable c/n 2506)

48-622 was not sold by the Air Force. This was very likely the aircraft used in the SOIAS tests mentioned in the above article. The test aircraft was then supposed to have gone to Wright-Patterson Air Force Base for use as a training device at the base radio school.

48-623 YC-125B (probable c/n 2507) N4194A

This "Raider" was the one sold in 1955 to Planet Airways. By mid-1958, N4194A had been acquired by Commandair Inc., but no other details of this aircraft are known.

48-624 YC-125B (probable c/n 2508) N2564B, CP-631

This was purchased from the Air Force by Frank Ambrose in 1955 and registered as N2564B. It was later sold to Quipco Associates Inc., who apparently sold it to Corporacion Minera de Boliva in 1957 or 1958, as CP-631. The aircraft proved valuable in transporting heavy loads at the extreme altitude of the Bolivian plateau. On June 30, 1959, CP-631 made a forced landing at Achocala, north of La Paz, with the wheels coming off and the lower part of the fuselage being badly damaged. The wing was also damaged, and any attempts to restore this aircraft are unknown. It should be noted that CP-631 has been incorrectly reported as 48-624 and N2563B, but that the N2564B identity is almost certain.

48-625 YC-125B (probable c/n 2509) N2565B

This aircraft was purchased by Ambrose in 1955, and registered as N2565B, it remains at Kell Field in Wichita Falls, Texas.

48-626 YC-125B (probable c/n 2510) N2566B, XA-LOU

After its purchase by Ambrose in 1955, 48-626 was registered as N2566B before being sold as XA-LOU to Servicios Aereos de Chiapas S. A. With this latter company no longer in operation following the crash of XA-LOV (48-618), XA-LOU is now inactively based at Mexico City's Central Airport.

48-627 YC-125B (probable c/n 2511) N2567B

Registered as N2567B by Frank Ambrose Aviation when purchased in 1955, this aircraft retained this identify and owner at least through mid-1958.

48-628 YC-125A (probable c/n 2513)

Like 48-622, this aircraft was not sold by the Air Force as surplus in 1955. The one clue to its fate is a rumor of a YC-125 once crashing at Eglin Air Force Base in Florida.

48-629 YC-125A c/n 2514 N2568B

Since its purchase by Frank Ambrose Aviation in 1955, N2568B has remained at Kell Field, Wichita Falls, Texas, and is still there awaiting resale.

48-630 YC-125A (probable c/n 2515) N6588A

In mid-1958 this aircraft was registered to Frank Ambrose Aviation, and it was seen in Miami in June of 1959. From the registration, however, it is likely that this aircraft was not originally purchased by Ambrose, but was one of two (48-634 was the other) reportedly given to schools.

48-631 YC-125A (probable c/n 2516) N2569B

This aircraft was originally purchased by Frank Ambrose Aviation, but has since been sold to Commandair Inc. It was seen at Miami in June of 1957, owner then uncertain.

48-632 YC-125A (probable c/n 2517) N2570B

After its 1955 purchase by Frank Ambrose Aviation, N2570B was flown to Miami, where it remained at least through June, 1959.

48-633 YC-125A (probable c/n 2518) N2571B

Since its 1955 purchase by Frank Ambrose Aviation, N2571B has remained at Kell Field, Wichita Falls, Texas.

48-634 YC-125A (probable c/n 2519) N4975B

N4975B was acquired from Sheppard Air Force Base on January 14, 1955, by the school of aviation of the LeTourneau Technical Institute of Texas. It was flown to the school at Longview, Texas, where it was used for basic engine and airframe instruction. About once a month, local flights of about one hour were made in the vicinity of its base at Gregg County Airport in order to maintain new cylinders installed in the aircraft. It is assumed that this airplane is still with the LeTourneau school at Longview, Texas. The above information is from a letter to Francis J. Caffrey, dated August 15, 1958.)



YC-125A #48-630 (later N65884) Photo - Gary Kuhn



YC-125B #48-619 (later N2561B) Photo - Gary Kuhn



YC-125A #48-635 (later N2572B) Photo - Mitch Mayborn

48-635 YC-125A (probable c/n 2520) N2572B

After its purchase by Frank Ambrose Aviation in 1955, N2572B was flown to Miami, where it was identified in June of 1959.

48-636 YC-125A c/n 2521 N2573B, XB-GEY

This Raider was purchased by Frank Ambrose Aviation in 1955, and registered as N2573B. It was later sold to Triplay y Maderas de Durango, S.A., as XB-GEY. After demonstrating a great usefulness due to its cargo carrying ability to and from short high-altitude airfields, XB-GEY is today inactive at Durango, reportedly due to a lack of spares.



YC-125A's at Kell Field, 1955. Photo - Mayborn

48-637 YC-125A (probable c/n 2522) N2574B

Purchased by Frank Ambrose Aviation in 1955 and registered as N2574B, this aircraft remains today at Kell Field, Wichita Falls, Texas.

48-638 YC-125A (probable c/n 2593) N2575B

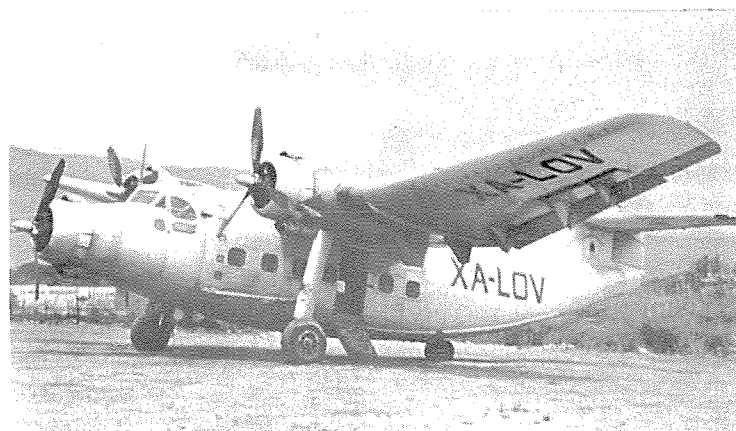
Like five other "Raider's" purchased by Frank Ambrose Aviation in 1955, 48-638 has since remained at Kell Field, Wichita Falls, Texas. It is registered as N2575B.

48-639 YC-125A (probable c/n 2524) N2576B

N2576B has also remained at Kell Field since its 1955 purchase by Frank Ambrose Aviation.

Continued on Page 71

XA-LOV (ex 48-618) at Tuxtla Gutierrez Airport, Chiapas, Mex., in 1958 (at right), and XB-GEY, (ex 48-636) at Durango, S.A., Mex. (Photos by Jose Villela, Jr.)



ARGENTINE AIR FORCE (Continued from Page 30)

The Present Situation

The Argentine Air Force actually comprises an Air Defense Command with H. Q. at Moron, which is responsible for everything concerning active defense, including radar and other installations and which comprises three Fighter-Interceptor Groups equipped with Gloster Meteor F-Mk-4-2, such as the First F-1 Group based at Moron. But of the initial 100 Meteors only 40 or 50 are currently airworthy. There is also an Air Tactical Command with H.Q. at Parana, responsible for reconnaissance; Army cooperation and ground attack operations, which comprises Fighter-Bomber Groups based at Mendoza, Moron and Parana. These units were initially using DL-22Cs and "Calquins" but these aircraft are actually being replaced by the IA-35 and even the MS-760, as a matter of fact, the first Paris flew with Fighter-Bomber registration: A-01. Besides there was only one "Calquin" left at Mendoza when I visited the base in July. We must also remember that G-46s are still used for observation missions in Moron.

Air Strategic Command is responsible for bombing and maritime reconnaissance operations and comprises Heavy-Bombing Groups with bases at San Luis and Moron.

There is also a Rescue Command operating a few Sikorsky S-56s and the S-51s of the National Direction of Civil Aviation.

An Air Transport Command which comprises three Transport Groups most of them based at El Palomar and using C-47s, C-54s, Vikings, Doves, Lancastrians and Bristol 170s. Besides paratrooper units use the

huge Bristol freighter as well as the transport Douglas C-47.

Finally there is an Air Combat Command actually headed by Brigadier A. C. Alsina, which coordinates all operational activities of Air Force aircraft.

The Military Aviation School is actually at Cordoba where it uses Mentors which are gradually replacing the Prentices, MS-760s and IAe-DL-22s. All advanced trainers such as AT-11s and AT-18s are based at Moron. Besides there is a Technical Specialists School and the "F.M.A." which is actually working on civil aircraft such as the IA-46 and IA-45 has been incorporated to the DINFIA group.

The Argentine Air Force actually comprises about 200 operational aircraft (excluding transports and trainers, of course).

Air Force elements have been divided into Air Brigades:

Air Brigade Number One based at EL PALOMAR in the province of Buenos Aires;

Air Brigade Number Two based at GEN, URQUIZA at Parana in the province of E. Rios;

Air Brigade Number Four based at EL PLUMERILLO in Mendoza in the province of Mendoza;

Air Brigade Number Five based at VILLA REYNOLDS in Villa Mercedes in the province of San Luis;

Air Brigade Number Seven based at MORON in Buenos Aires in the province of Buenos Aires.

There are other bases at Tandil and Rio Cuarto and Aeronautical Detachments at Comodoro Rivadavia, Mar del Plata, Rio Gallegos, Reconquista, etc.

YC-125 "RAIDER" (Continued from Page 41)

48-640 YC-125A (probable c/n 2525) N2577B

This aircraft was purchased by Frank Ambrose Aviation in 1955, registered as N2577B, and flown to Miami, where it was noted in June, 1959.

C/N NOTE: From the few construction numbers available for the YC-125 it is apparent that one number has been omitted in the assignment of these. It is likely that this number was omitted between the ten YC-125B models and the thirteen YC-125A models; the c/n 2512 not being assigned. The known c/n are quoted above without brackets, the others being listed as probable. (See Footnote).

The author must acknowledge that a great proportion of the work for this article was begun by Mr. Francis J. Caffrey who first became interested in the Northrop YC-125 Raider history. Unfortunately, other matters rendered Mr. Caffrey unable to complete the article. In addition to Fran Caffrey, the following AAHS members have been very helpful in the preparation of the article: Mitch Mayborn, Mike Graddidge, Warren Eberspacher, Jose Villela, and Merle Olmsted. It is hoped that no one work-

ing with Mr. Caffrey has accidentally not been mentioned.

Many of the Northrop "Raiders" have not yet begun to move from owner to owner in the remote corners of this hemisphere that the aircraft was designed to operate in. It is hoped that members will send in to the JOURNAL additional news pertaining to the YC-125, as well as answering certain questions and information gaps left by this article. The YC-125 will probably continue to be employed for certain specific uses for quite a number of years, and it will be interesting to read of these in the AAHS JOURNAL.

Gary Kuhn

FOOTNOTE FROM EDITOR: The missing C/N was referred to Member G. H. Balzer who writes: "A transcription of data from Northrop Contract Administration in 1956 indicates the number was unassigned. If so it would be between the YC-125B and the YC-125A. The "B" models were built first. N-2501 was the N-123 "Pioneer". N-250R through N-2511 were YC-125B's, (AF S/N 48-618 through 48-627); N-2513 through N-2525 were YC-125A's (AF S/N 48-628 through 48-640).