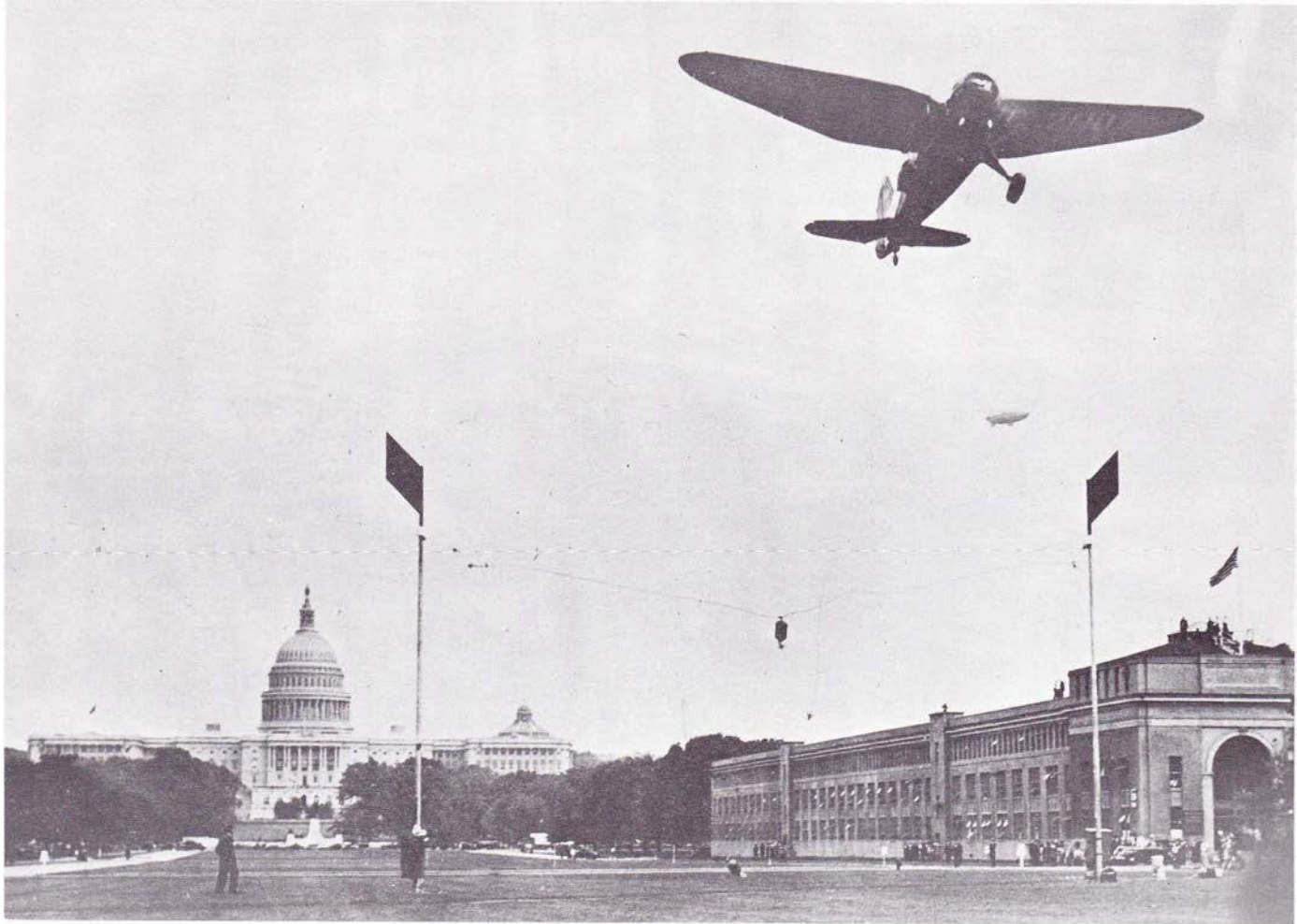




Norm Rintoul, flying Stinson NX 21107, demonstrates the proposed mail delivery (pouch near the ground) and pick-up system to the Postmasters' Convention over the Washington Mall in November of 1938.

## All American Aviation

Written and Copyrighted By PAGE SHAMBURGER

When the Experimental Air Mail Act passed through Congress in April of 1938, Dr. Lytle S. Adams and his Tri-State Aviation employees had reason to expect a bright future. They had definite experience with a revolutionary way of transporting mail, and they were ready to use their experience on an air mail route. But nothing is that simple.

Dr. Adams' companies had developed an experimental pick-up system for package delivery by air, non-stop, for department stores in West Virginia. The same system had been used to pick up and deliver mail, non-stop, by air during the Chicago World's Fair. Thus, the experience necessary to bid for one of the new Experimental Air Mail Routes was available. All that was needed was to locate the capital, and to this end, Dr. Adams interviewed Felix and Richard du Pont in Wilmington, Delaware. The du Ponts were vigorous aviation enthusiasts who had formed the Elton Investment Corporation to foster new ideas and "to be an angel" to fledgling business projects.

Dick du Pont, a quiet and shy young man who held the glider distance record, was eminently interested in manufacturing aviation products and he immediately saw the experimental mail pick-up system as a proving ground for

flying equipment, as well as an air service to towns without airports. Thus, on October 1, 1938, the final papers were signed and Dick du Pont paid all of the outstanding debts against Tri-State Aviation and its All American Aviation. A stock agreement was made with Dr. Adams, and he and Arthur Davis were then the sole financial backers of the new company. Later Felix du Pont, Sr. and Felix du Pont, Jr. purchased non-voting stock.

When he gained control of the companies, Dick du Pont was faced with Postmaster General James Farley's opinion that experimenting with new air mail routes was needless. However, the Act "Authorized the Postmaster General to experiment with new and supplemental means of transporting mail by air." Postmaster Farley had little choice after Congress passed a joint resolution to force him to delegate the routes. Besides that, young du Pont now had the only patented method of aerial non-stop pick up of mail, and this was the only such method approved by the Civil Aeronautics Authority (now the Federal Aviation Agency) and the Post Office Department. He envisioned the pick-up covering all of North and South America, connecting all small towns with the trunk airline system.

All American's name better denoted his idea of ALL

of America, though Tri-State Aviation had been the operating company in the past. Later, he and Dr. Adams disagreed over this small sounding matter of a name, and it led to some violent arguments between the two men. So, when Dick du Pont acquired the companies, he also acquired an uninterested Postmaster General, an unhappy partner and four experienced employees—Normal Rintoul, John Graham, Harry Stringer and Victor Yesulaites. While Postmaster Farley neglected to relegate any routes, All American's new President heard of the planned Postmaster's convention in Washington in November 1938. This made an ideal time and place for a demonstration.

John Graham set up the pick-up site poles on the Mall, and the Stinson NX21107 was to fly over the Capitol and out over the Washington Monument. The ground station consisted of two poles, 33 feet tall, imbedded in concrete with 28 feet of steel pole extending above the ground. These poles were topped with a right triangular sheet iron marker, two feet by four feet. They were 54 feet apart and had a 3-inch hemp rope running between them, hooked to the top of each with a spring clip. The parallel transfer rope extended down the poles to form a huge loop. The mailbag was fastened to the bottom of the Loop and lay on the ground, 60 feet back.

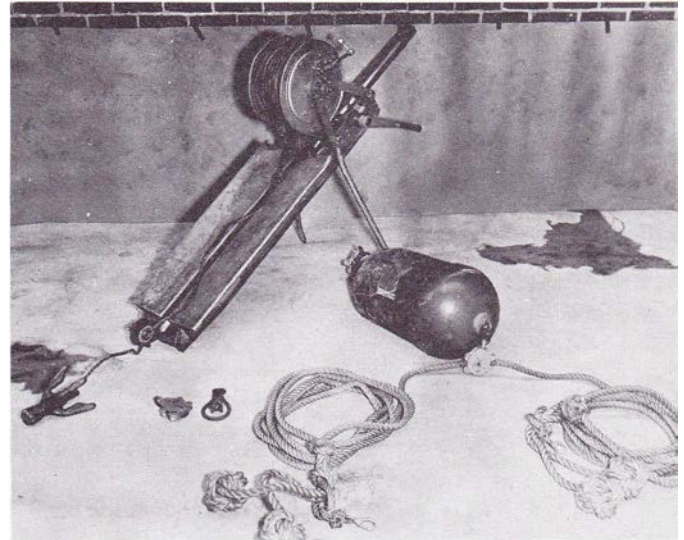
The loop part of Dr. Adams' invention served as a shock absorber. To move a stationary object to approximately 90 miles per hour in one jerk would put a tremendous strain on the airplane and the rope. Some form of cushioning was imperative. The 50 foot loop of 3-inch hemp graduated into rubber shock cord, connected to the container did the job.

A hand-operated winch inside the Stinson and a hydraulic air-oil strut were used as additional shock absorbers. Hanging from the belly of the plane, the 50-foot pick-up cable of wire rope trailed an eight pound four-finger grapple.

The unique method first employed had the Stinson SR10 gliding in between the site poles; the grapple hooked the transfer line, and the pilot climbed out at a steep, slow angle. The slower the climb, the easier it was for Victor Yesulaites, the pick-up mechanic, to haul in the mailbag. His job was further complicated by having to hand set the plane's hydraulic strut. When the grapple made connection, Vic took the plane's end of the wire rope on which was fitted a metal ball, and slipped that ball into a slot on the strut. His timing had to be perfect. If the ball were in the slot prior to the pick-up connection, the use of the strut would be expended in the air flow. The instant the grapple hooked he had to drop the metal ball correctly, thereby activating the strut for its role of shock absorber. All of this had to be accomplished while the airplane tightened the connection at the rate of 90 miles per hour. Unfortunately, this system had many faults. The trailing grapple swung and though pilot Rintoul guided the Stinson exactly through the poles, the grapple due to spinning, could be off to one side. If it hit a steel-site pole and broke it, there was a delay while John Graham installed another. And if the grapple hit a pole, or the ground, it bounced and came shooting up towards the airplane often smashing through the fuselage or wings.

The constant swinging of the grapple created another problem. The air flow forced the weight to gyrate and this caused the wire rope to burn through with metal fatigue. Like any wire bent back and forth in the same place too often, the grapple wire snapped. When this happened, the grapple hurdled through the air at nearly 100 miles per hour. In addition to these frustrating problems, the Washington, D.C. demonstration brought out another question of the reliability of the system. The canvas sack used as a mailbag would spin and once started, it spun faster and faster. Building up momentum, it often gained forward speed and caught up with the airplane! But the demonstrations of an entirely new air mail system were made and the men of All American returned to Wilmington--and waited.

On January 1, 1939 James Ray, Sr. and his son joined



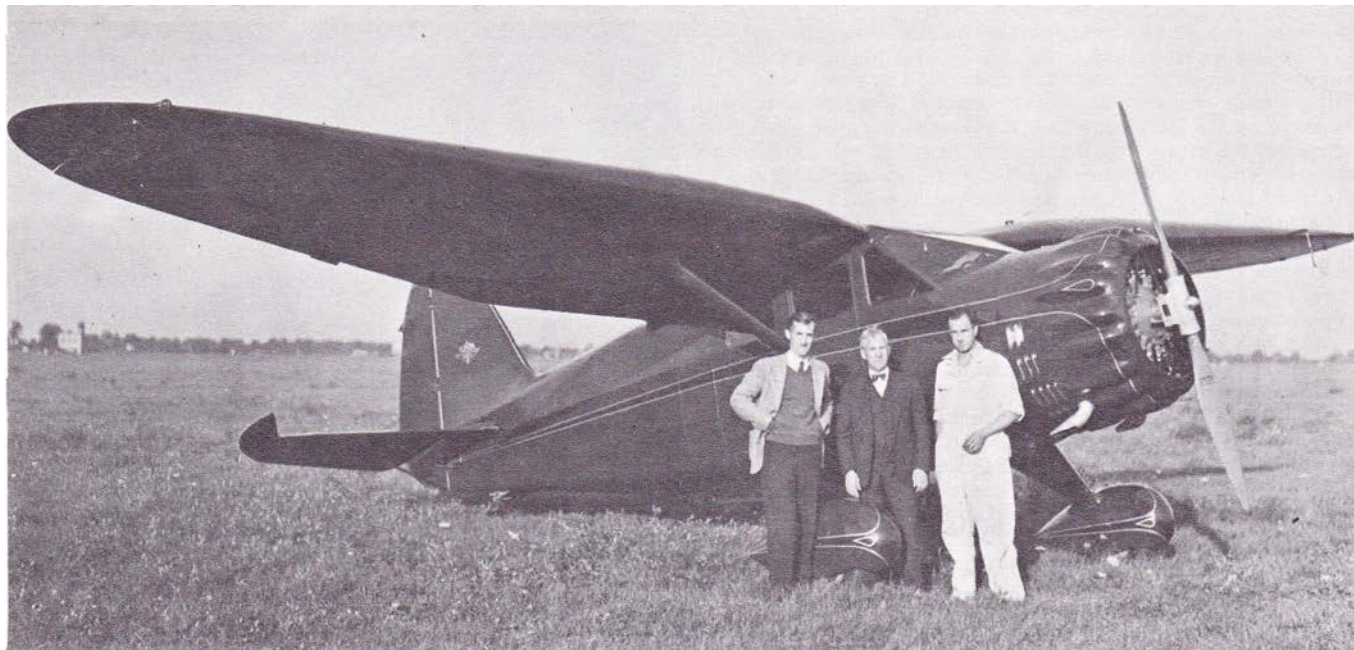
Original equipment used for pick-up system was, from left: Grapple attached to cable and hand operated winch. The winch is bolted to the air-oil hydraulic strut. The hemp transfer rope with container connected by polygram. Monkey fist knots at ends of rope.

the company. The early air mail pilot and prime developer of autogiros with Pitcairn Aviation, became All American's first operation manager. His son, Jim, Jr., started experimenting with radios for the fledgling company.

The Washington demonstrations brought out all major problems, the first being energy absorption. The weight and bulk of the heavy hemp loop must be eliminated. Victor Yesulaites' invention, a polygram—a solution so simple it had been overlooked a dozen times--solved this headache. This worked like the Chinese puzzles, where when you stick a finger in each end, the harder you pull the tighter they get, yet, without pressure they loosen their grip. Yesulaites' polygram consisted of two blocks of wood costing 68cents. The old air-oil strut, with an operating pressure of 45 pounds, stayed in place and the polygram did the rest. The two pieces of wood carefully shaped to fit each side of the transfer rope were held parallel by plates. The mailbag hooked to the bottom, and the hemp loop disappeared with progress.

As the grapple hooked into the transfer rope, the end nearest the connection snapped loose from the pole, and gained momentum. This forced the polygram off center, thereby tightening its jaws on the rope as it moved toward the other end of the transfer rope. Consequently, the container gained speed gradually, not with a jerk, and the polygram allowed at least 30 feet of cushion before the mail container had to reach the speed of the airplane. To offset the grapple's often poor connection, heavy knots called "monkey fists" were tied on each end of the transfer rope. These were used in much the same way the Argentine cowboy used his bola, a rope with a ball on each end. The knots twisted around the grapple, securing the connection.

While the experiments continued in Wilmington, Harry Stringer, Dr. Adams and Representative (now Senator) Jennings Randolph struggled with the Post Office Department's lack of interest. Finally, the Postmaster General advertised for bids on two experimental air mail routes. The contract called for flying two routes over the "graveyard of aviation". Fanning out from Pittsburgh, these routes led through the roughest flying country in the United States. Ground transportation, in parts, was slow, if not impossible. Roads and railroads followed valley into hub cities by circuitous routes. The Government considered it "a natural." The poor ground transportation and the infamous bad weather combined to make



Stinson SR10, NX 21107, was the first aircraft belonging to All American Aviation and was flown in from the factory in 1938 by Norman Rintoul. Left to right: Norm Rintoul, Dr. Lytle S. Adams and Victor Yesulaites.

this a test worthy of the name.

All American Aviation was the successful bidder on that contract as set up by Acting Postmaster General, W. W. Howe. This contract was for testing the feasibility of picking up and delivering air mail, non-stop, by airplane on regularly scheduled flights.

The first route, from Pittsburgh to Philadelphia served 27 other points in Pennsylvania. The second route, again starting in Pittsburgh, ended in Huntington, West Virginia and snaked by 28 intermediate sites in southwestern Pennsylvania, West Virginia and southeastern Ohio. The combined route mileage totaled 945 miles.

The All American men were faced with flying the mail over an area as bad for terrain and weather, as could be found. The "graveyard of aviation" already had taken an expensive toll in lives and they were to fly regularly scheduled flights over it every day. In the West Virginia portion the routes led over the Allegheny Plateau, the highest mean altitude of any state east of the Mississippi. The escarpment known as the Allegheny Front earned the nickname "hell's strait" from the early Air Mail pilots.

Allegheny County Airport became the new headquarters. Triple A, The Airway to Everywhere, became the slogan. Five Stinson SR10s were the total line equipment. Equipped with standard 260 hp Lycomings, four of the Stinsons were painted bright red; the fifth, painted black, had a 450 hp Pratt and Whitney engine. The Reliants were chosen for their reputation of ruggedness and for their tight turning radius. A five place airplane, all of the upholstery was removed, as were the four passenger seats. The winch and hydraulic strut were built into the structure and a small seat was added for the mechanic. The hatchway was a 2 x 2 foot hole cut in the bottom of the fuselage and covered with a plywood door.

May 12, 1939, the first scheduled day of the Pick-Up dawned bright and clear. The first five pilots, all with over 4,000 hours and 10 years flying experience, were Norman Rintoul, James Piersol, Thomas Kincheloe, Sir Holger Hoiriis and C. D. Vinet. Lloyd Julson and Raymond Elder signed on as reserves. The five pilots all flew the first day and Ray Elder flew a second section, due to excessive mail, to Philadelphia.

The first flying mechanics were Victor Yesulaites, Delton R. Osborn, Glen Rymer, C. B. Rodgers and John Graham. The first routing, spotty due to dedications

and press showings, went from Pittsburgh to Huntington with 13 pick-ups en route. Not superstitious about 13 pick-ups, the men were too superstitious to fly the next day--May 13-- but on the 14th, the other contract route started with nine pick-ups in operation. By July 2, 1939 all 58 points were being serviced.

They had no flying minimums the experimental year. As long as they stayed contact in daylight, they could fly at any altitude. Pittsburgh famous for smoke restricting visibility, the Ohio River Valley, equally notorious for lasting and thick fogs and the towns these planes visited--towns Corry, Altoona and Clearfield, were in valleys BETWEEN MOUNTAINS--this was Triple A's country.

Often with hilltops obscured, valleys filled with smoke and fog, the pilots faced a schedule of 110 miles-per-hour in each of the five planes. They had no radio navigational aids at the usually necessary low altitude, and to keep their schedule--which they did--they devised their own aids. They knew every haystack and when to turn at a certain red barn. A special crossroad told them to climb 150 feet to get over the terrain ahead. To the uninitiated, all of the haystacks looked exactly alike; each red barn seemed identical to 25 others, and crossroads numbered in the dozens. The most shocking part was the smack of an unseen mail pick-up. Riding along with no forward visibility, with treetops nearly brushing the fuselage, the pilot judged his exact position by land marks directly below and seen from his side window. When he cut back on the throttle, out went the delivery, a quiet smack, and the mechanic started sorting the retrieved mail. Timing and knowing landmarks, these crews kept to the average route speed schedule of 110 mph within three minutes. They maintained that average within three minutes for 75 pick-ups in 58 communities while flying 1540 miles per day. They served towns ranging in population from 799 to 105,000 with the smallest, little Glenville, West Virginia, supporting the line to the extent of shipping 116 pieces of mail in one day.

Visualize a small red Stinson darting down a river valley between mountain sides extending a thousand feet on both sides. The plane had to be centered between two steel poles less than 60 feet apart. Before that chore though, those poles had to be FOUND. Sometimes they were located on a small level dent in mountain faces, sometimes on golf courses and in cemeteries. Often, less



All American's Hack Stinson, NX 2311, was used for the tires and filed fairings were necessary to cut transfer

company's major experiments. Knife blades down center of line if plane came in too low. Pick-up arm retracted.

than 20 feet above trees, in poor visibility, trying to find those poles--well, there was no room for error. A known white escarpment might be the signal to set altimeters. This was important for an instrument error of 50 feet could be fatal.

Jim Piersol left the company and Ray Elder replaced him on the active pilot roll. Ambrose Banks came in to replace Lloyd Julson. Either you liked this kind of flying, or you hated it. Either you joined in combatting the problems facing you, or you changed jobs. Rintoul, for instance, tired of the spinning mailbags floating up beside his window, took to experimenting. He bought a dome-shaped lampshade from a Pittsburgh ten-cent store. The shape seemed logical to him and his own trailing experiment proved out the theory. A fibre hose for the mailbags was the outcome. Stuart Plummer, All American's engineer, added a skirt made of the sidewall from an old tire, and this new design made spinning bags a thing of the past.

In this type of unique operation, problems cropped up nearly every day. The delivery cable tangled with the pick-up cable and produced a twisted halt to bringing in the mail. A weight, in this instance, added to the delivery line gave a weight-drag ratio and fouling became impossible.

On October 29, 1939, Sir Holger Hoiriis with Bill Burkhart as flying mechanic, demonstrated a night pick-up at Bellanca Airport in Wilmington. Gauging his distance by the neon lights, Hoiriis made three night pick-ups. Tommy Kincheloe flew the regular night route, as an experiment, from Oil City to Pittsburgh, with pick-ups at Grove City, Butler and Natrona, Pennsylvania. The experiment was a success, but night flying seemed too severe a risk for the value. Holger Hoiriis was a brilliant man, well-educated and he had been knighted by the King of Denmark for achieving a trans-Atlantic flight to Denmark. He flew the first airplane, after Charles Lindbergh, to go where he said. He also had the distinction of taking the first paid passenger, west to east, across the Atlantic. . The passenger was a Brooklyn junk dealer and since Holger spoke English with a very cultured British accent, HOW he learned English was a standing joke.

From May 12, 1939 to the end of December, All American completed 283,100 miles of scheduled flying, contact and during daylight hours. Two Stinson Reliants

served Route 1001, Pittsburgh to Philadelphia-Camden, and one handled the West Virginia swing. The other two planes were standbys and all were of necessity maintained like the finest race cars. During that first winter, a blizzard hit Pittsburgh suspending all airline operations. Not Triple A--they packed the snow and laid railroad ties for 1500 feet along the ramp. With a three to five degree grade, take-offs were made downhill and landings, uphill, despite the wind's direction. The mail went through and right on schedule, since no landings were necessary along the Experimental Routes.

The Post Office Department decided not to extend the All American contract and the company applied to the Civil Aeronautics Authority for certification on December 12, 1939. At the hearings, a point of law nearly ended the new company. The CAA could not consider certification because they had no jurisdiction over All American as long as the Experimental Air Mail contract remained in force. Dr. Adams brought out another factor predicting the demise of All American. The CAA could not certificate any airline for transporting mail and cargo, only. The cure for this near fatal illness was to force the establishment of an amendment to the Civil Aeronautics Act of 1938. The amendment must allow certification without passenger carrying and this had to be passed by Congress. Snag after snag delayed the grinding wheels of the Government and in March of 1940, All American's hearing was closed. Nothing more could be done.

Though the Stinsons continued flying out their year of contract, the end grew nearer. In a little over a month, the Iron Men of Flying, as the Triple A crews were called, would be gone from the scene. Then, several days of warm rain fell on the heavy winter snows of the Ohio River watershed. The floods came and again, All American was the only mail service able to proceed on schedule. With their pick-up systems, they began delivering desperately needed medicine, penicillin and whole blood. Their value to flood-stricken Ohio Valley citizens could not be measured in dollars and cents.

Reporting to Congress acting Postmaster General W. W. Howe said, "The operation has been carried on during one of the worst winters in recent years. Notwithstanding that fact, a very high percentage of performance has been maintained throughout the length of the two routes. In a recent instance, pick-up service was maintained in the Ohio Valley notwithstanding the fact

that there was no other transportation. It was necessary to use row boats to place the mail on the pick-up poles." He added, "From a safety standpoint, it is interesting to note that notwithstanding the fact this operation has been carried on over mountainous terrain with single motored planes and, without the usual strict supervision given regular transport routes by the CAA, the carrier has operated a full year on the two routes without a single casualty. For a new type of operation, this record is perhaps without precedent when all conditions are considered." The acting Postmaster General ended his report to Congress with: "The experiments conducted by the Post Office Department in compliance with the wishes of Congress, as expressed in H. R. 7448, appear to have demonstrated conclusively that the pick-up can provide improved air mail service and it is recommended that such service be authorized by Congress on such routes as are granted certification of public convenience and necessity by the Civil Aeronautics Authority." Banner headlines in the cities along All American's routes read "Success kills the U. S. Mail Pick-Up Service." Congress had not passed the necessary amendment and the Reliants flew their last routes on May 12, 1940. During that first year of operation, Triple A completed 438,145 miles of scheduled flying and made over 23,000 pick-ups. They had handled 75,000 pounds of mail and 6,500 pounds of express. Throughout the often repeated "worst winter in years", they had run a percentage of 91.6 completed pick-ups on a three minute schedule.

The flying crews experimented and worked with the stilled, Stinsons in the hopes the mystifying ways of the Government would turn back in their favor. Dick du Pont reported to the Post Office Department and the CAA, "Commercial aviation will never fully perform its function as a 'public convenience and necessity' until the benefits it provides in the swift transportation of mail, express and passengers are extended directly to every section of the country. Everyone is paying for this service and it is manifestly unfair to deprive them of it when a practical means of providing it is available." By "practical means" he meant, of course, the pick-up. An airline serving the Triple A's 58 communities would be commercially worthless. If each of these points necessitated a landing, the transportation of mail would have slowed to a snail's pace. A national network of pick-up routes, as visualized by Mr. du Pont, coordinated with trunk lines, would make every community in the United States less than 24 hours apart for both mail and cargo.

Literally, then, the main purpose of the Pick-Up System had been proven. The network of established airlines served 210 cities in America and provided air service to only one-fourth the population. The other 3,500 communities, each with a population of 2500 or more, could be linked to this system and given direct airmail benefits by the pick-up. And, it could be done on a regular schedule. Triple A had verified that fact.

Finally, on the 21st of June, 1940, The Experimental Air Mail Act was repealed and approval signed by President Roosevelt on July 5, 1940. That half of the battle over, Congress passed a bill adding an amendment to the Civil Aeronautics Act of 1938, allowing certification of air carriers for cargo and mail only.

Robert J. Bartoo, examiner on All American's certification case, gave a favorable opinion and on July 22, 1940, All American Aviation, Incorporated received a Certificate of Convenience and Necessity "To engage in air transportation with respect to property and mail." This is Docket 363 and called AM (Air Mail) Route 49. Triple A, then, became the first new airline to be certificated under the Civil Aeronautics Act of 1938.

The new routes, overlapping the old, made a total of 1,365 miles. For certificated miles, they were ninth in the total of seventeen scheduled airlines in domestic use. This was the first practical evidence of the CAB's extension of the benefit of air mail service to

small towns. The start of a badly needed development, that of the nation's feeder airline system, came with the assignment of AM Route 49.

All American's five new routes continued using Pittsburgh as a center and fanned out to Jamestown, New York and to Williamsport, Pennsylvania and added a third daily flight to Philadelphia-Camden. The two other routes went to Huntington, with one going via the Ohio River towns and the other covering the hill communities in Pennsylvania and West Virginia. All American inaugurated their first certificated routes on August 12, 1940, the 22nd anniversary of the official establishment of the Air Mail under the Post Office Department. All five routes were in operation by December 2, 1940. The term "interlocking" is difficult to define; it's the Government's method of fighting a monopoly. When interlocking was heard on R. C. du Pont, he resigned from his other aviation business offices. The Board then approved his office as President and Chief Executive of All American. An interlocking hearing on Dr. Adams for his offices: Director of All American, President and Director of Tri-State Aviation and Officer, Director in the Airways Patent Company, was not approved. He resigned on November 27, 1940 and left All American.

The end of 1940 saw all of Triple A's routes in operation. They were flying the bulk of the mileage in West Virginia's and Pennsylvania's highly industrialized areas which contained many small but thriving towns too close together to be economically served by a through carrier. They rendered service to a population of 2,514,468 in a section where the terrain was rough and surface transportation slow at best. The company was paid 460 per mile.

Adventure followed the small red Stinsons nearly everyday. The path of that air mail system was unusual to say the least, and the grapples hooked chimneys, fences complete with fence posts and other such items not on the prescribed list. Experiments for modifying the equipment took the toll of free hours and still energy absorption led the problem list. A compact energy absorbing reel moved into the system. The reel worked on a principle similar to a salt-water fishing reel. Instead of a fishing reel's constant drag, the pick-up's reel freely released one complete turn, then gradually a nut tightened the brake adding pressure automatically. This slowed the outgoing cable and was the first giant step into picking up heavier and heavier objects--an innovation that saved many lives during a war then in the making.

After several failures, the steel pick-up boom was perfected and installation begun on all the planes. The grapple disappeared. The boom was installed forward of the center of gravity and retracted to the rear, under the tail. The flying mechanic manually dropped the arm prior to pick-up and retracted it after completing the job. A small hook fastened to the winch's cable ran down a groove in the arm. When the hook made connection with the transfer rope, it slipped off the boom and the winch loosened the free revolution allowing cable extension before braking. Two problems stuck with the system. First, the steel arm, even with a wooden air foil on the leading edge, fluttered badly and added stress to the airframe. Second, the winch could not be switched to retrieve the container until it was first checked by hand. This proved necessary in order to be sure the hook was not stuck in some part of the airplane. Neglecting this important duty caused a fatal accident later.

All was not seriousness with the pick-up men, though. The bottom dropped out of the weather one early Spring day in 1941. Pittsburgh's Air Traffic Controllers and all of the incoming traffic got caught in a bind, unexpectedly. Airliners stacked over holding positions waiting for instrument clearances, and the tower men's voices were going into high pitch with speed when out of their overhead loudspeakers they heard:

"Triple A, Flight 6, over the Allegheny River, VFR,

landing Pittsburgh." Slim Tommy Kincheloe was coming in for the night, and he was coming in contact!

From the Pittsburgh tower came the brisk direction, "Triple A, Flight 6, hold Highland Bridge."

"Roger--Flight 6 holding Highland Bridge,"

The Highland Bridge is upstream of the airport over the Allegheny River and located in the center of a residential area. Immediately, the telephones in the Allegheny County Airport's office, in the CAA's office, in the tower, and in All American's office started ringing. These irate callers reported a low flying airplane:

a) disturbed them, b) was in dire trouble, or, c) was flying under the Highland Bridge.

The last complaint proved definitely to be the case.' The control tower operator told Tommy to "hold at the Highland Bridge." He did just that. He held under the bridge!

Explaining to Triple A's operation office, Tommy said, "The top of the Bridge was in the soup and we were told to stay contact. Besides, I didn't want to get into the overcast with all the airliners. The tower told me to hold at the Bridge, and hold at the Bridge I did. I don't know what the problem is--there's plenty of room between the pilings, and I stayed legal."

All American needed 20,000 pounds of mail per month to financially break even. In April of 1941 they carried 15,000 pounds. Encouraged by this report and eyeing the possibility of the future, ten other operators applied to the CAB for certification of pick-up routes. At the end of fiscal year 1941 the company reported a net income of \$3,824.17. Small, true, but at least the company was operating in the black. By the end of that year Representative Randolph reported to Congress, "It is an outstanding accomplishment and duplicates the performance made by the Air Pick-Up Service in the same region during the year's experimental contract by the Post Office Department, a record that was subsequently cited by the Postmaster General as one of the most notable achievements in modern air transportation. The service continues to deserve this commendation. Of equal importance and significance is the surprisingly large increase in air mail volume in the communities on the Air Pick-Up Routes which can be attributed directly to the establishment of the service. A check was made recently to determine this increase. It was disclosed that since permanent establishment of the service, the air volume has increased over 47% at 53 points...and 93% at the 53 additional points on the present pick-up lines."

He added: "Within five years, barring war developments, 2,500 American communities will receive this service. It is my information that more than 1,600 cities and towns are now asking for the advantages of the system...Sufficient postal revenue is produced to defray the out-of-pocket cost of the service to the Government."

Beginning the second year of certificated operation, the Stinson Reliants flew twice-daily routes on the five segments radiating from Pittsburgh to 111 cities in six states--Pennsylvania, West Virginia, Kentucky, Delaware, New York and Ohio. Flying 1,300 miles of scheduled routes daily, the six pilots and mechanics were making 165 pick-ups a day and their certificate AM 49, was amended to add three more--Lewistown, Carlisle and Shippenburg, Pennsylvania. Strictly an adjunct to the airlines, Triple A fed the trunklines additional traffic from new and potentially rich territories they could not reach otherwise. Though war worries were foremost, All American's job was to transport the mail. Lloyd Santmyer and Vic "Rugged" Ricard, two of the world's most experienced instrument pilots, now flew with the company. Of course, some innovations cropped up in flying to maintain the completed schedule. "Saint" Santmyer developed a system for timing the ridges. By climbing at a known landmark to a previously researched altitude, he would hold his plane for the prescribed time by his watch, then let down through the overcast into the valley below. This took practice and study in

good weather. Soon, though, all of the pilots flew with a scratch pad on the instrument panel--a scratch pad to jot down the time and altitude needed for the ridges along their routes. Legal? Not really, but it worked most of the time and the mail got through on schedule.

Santmyer developed a tangent to his ridge timing system on Route 49A, called "Slaves' Alley." The easier route, from Pittsburgh to Huntington, went along the Ohio River and was called "King's Row." Slaves' Alley, by way of the West Virginia hills, particularly the area around Spencer and Elkins, is chock full of little hills. Annoying to pilots, these rough hills are partial to quick changing weather conditions. Slaves' Alley, too, meant many pick-ups, close together and made with difficulty. Santmyer decided those hills weren't high enough for timing, nor were the stations far enough apart. So, he came up with an extension to his kind of instrument flying--home on the 60 cycle hum of the power lines between Spencer and Gransville. Driving a car under certain power lines, a humming noise interferes with radio reception. That hum is a 60 cycle buzz--and that's what he flew--on top of the power lines. Since he used this system only in marginal visibility, the ever important watch became an important Instrument again. He had to time the distance to the other station--he couldn't see it. In a car when your radio gets interference from the 60 cycle hum, remember, you are less than 20 feet from the wires. How high was Santmyer?

On September 22, 1941, Gammy Vinet flew a special mission. The interior equipment in Stinson 21109 was the same. The site poles, at Wilmington's Airport, were standard, but 200 feet behind Erwin Talley, the pick-up mechanic, waited a J-3 Cub. Dick du Pont sat at the controls of the Cub which in place of prop had a hook connection to the transfer line. Cammy steered the Stinson through the poles and slammed a connection with the transfer line, but before the Cub could reach the speed of lift, the rope broke--three times.

Darkness postponed the experiments but on September 24th, the same three men climbed back into the same two airplanes. The rope had been replaced with undrawn nylon. The red Stinson swooped between the poles; the hook connected with the transfer line, and the Cub took to the air. The first airplane to be picked up by an airplane became an accomplished fact. The development of undrawn nylon ropes and AAA's experience with picking up objects opened the eyes of the military observers. If a Cub could be picked up, they reasoned, then why couldn't troops in gliders--if the need ever came? And the need came quickly. When the Japanese attacked Pearl Harbor, the call to military service hit these experienced ranks hard and fast. Losing several of the well-qualified pilots and mechanics to the services and test work, AAA staggered until the War Department realized the vital role air transportation systems played and froze the remaining personnel in their jobs.

The year 1942 found many changes; Cammy Vinet, Ambie Banks and Saint Santmyer flew for the war; Jim Ray left the company and was replaced by Halsey Bazely as Vice President. Pilot Ray Elder led a military plane in to a safe landing and the Congressional Record called him "Outstanding in net value to society." Defense industries in the area shipped tremendous poundage of cargo. On March 26, the pick-up line carried, 43 Air Express-shipments totaling 920 pounds--a record for a single day's volume.

With the heavy mail and cargo traffic on all routes and since allowable pilot flying time was upped to a wartime 120 hours per month, the Reliants received a terrible beating--and no replacements were available. The shop mechanics took to nursing the Stinsons with a vengeance. With the highest sort of morale, all members of the All American family constantly worked together, anyway--they had since the pick-ups inception. But, now the mail and cargo they handled was vital to the war effort. With no thought of overtime or shortages, the mechanics, Mike Mancini, Pete Borandi, Ed Rogers, Ed

Inderbitzen and others overhauled and rebuilt the aging Stinsons. They installed a protection plate on the planes belly to offset the constant banging of the mail bags. Designing as the need appeared, the mechanics devised a metal tube deflector to serve as a barrier and keep the pick-up rope from slipping around the tail wheel or between the tail surfaces. Tubes of metal were filed to a keen edge and installed down the front of the landing gear and tires; knife blades were riveted on the fairings and were inadvertently used to cut transfer lines, power lines, or anything accidentally in range.

Out of engineering came heavier winches and new experimental pick-ups were everyday occurrences. The pick-up boom changed from steel to tapered ash wrapped one-third the length in cord and covered with dope. Mancini and Borandi in their all-night sessions, designed a retracting component for the new boom. This, made from a truck brake cylinder, shows the interest, imagination and ability of the All American men.

At the end of their third year, the "Grab-it-and-Growl" line, so-named by an Atlanta newspaper, carried the mail in and out of towns equaling nearly one-half the total served by ALL of the trunklines put together. Flying contact and with their own systems, they completed the unbelievable total of 98% of all schedules for the entire three years. Mail carried ran as high as 81% increase each month and express increased at the fantastic rate of 227%. For instance, Corry, Pennsylvania, the home of Air Associates and a large military contract, demanded as many as 18 pick-ups a day.

Bussell Rean, the messenger at Corry, worked out his own system to tell the pilots another pick-up waited. After one shipment was snatched aloft, if he had more, he placed a panel of white cloth between the side poles. With amazing speed, Bean set UP 18 pick-ups in 17 minutes. By the end of 1942, the Stinsons were making as many as 30 pick-ups each trip through Corry. A record of 50 hurry-up shipments were snatched aloft in 1988. Another way All American helped the war effort!

All American's President, Dick du Pont was appointed Special Assistant to the Commanding General, Army Air Forces on April 2, 1943. Picked by General H. H. Arnold as Chief of the Air Force Glider Program, du Pont resigned as head. Of Triple A. Tendered with his resignation was the guarantee of coming back to his rapidly-expanding air service with the stated plans of using gliders to haul mail, express and passengers, when peace came again. His initial concept was the glider and the extreme flexibility of the Air Pick-Up could "provide express and local service combined in one in such a way that cargo and passengers could be carried over a route on which service is rendered at numerous intermediate points, but where, at the same time, each passenger and shipment will receive through service." In the post war short haul field, he visualized a large multi-engine airplane filled with passengers and towing one or more gliders loaded with express. If express needed to be delivered or picked up at specific spots, then a glider could be cut loose or picked up with no need for landing the tug plane.

For moving furniture or for transporting heavy weights, du Pont foresaw the cargo glider. His plans went as far as picking up and delivering passengers in gliders between terminal airports and eliminating the need for airports in small cities, plus adding to the over-all speed. However, he did not live to see his plans put to trial. On September 11, 1943 his experimental military glider dropped the tow line at 3,000 feet near March Field, California. It went into an uncontrollable spin and du Pont's chute failed to open.

On October 25, 1943, Triple A had its first serious accident. Pilot Thomas Edward Bryan and Victor Gasbarro, mechanic, completed the pick-up at Chambersburg. With an airspeed indicator and turn-and-bank instrument malfunctioning, a fast moving front brought in low ceilings, poor visibility and strong winds aloft. Tommy jotted the time on a scratch pad, pulled up into the overcast,

and waited the known number of minutes to clear the 1980 foot, ridge ahead. He had done it many time and this time he wanted to make the Gettysburg pick-up before stopping for the day. The strong winds aloft, however, forced an error in the arithmetic. He let down directly on top of the peak. The completely demolished Stinson was found first. The searchers combed the woods for 20 hours before locating the pilot and mechanic, who, amazingly, suffered only from exposure, a few cuts and one fractured ankle.

On December 22, 1983, the War Aviation Board closed the Philadelphia Airport. With an ammunition depot near the end of one runway, the board feared the constant Vibration of planes taking off and landing would cause an explosion. Suddenly a major city in the defense network was without air mail service. Triple A applied for the duty and the CAB approved it on January 14, 1944. To eliminate the danger of the Stinsons colliding with military aircraft, Triple A was cleared to fly at a maximum altitude of only 500 feet above sea level from Philadelphia to Wilmington to Washington. A hill near Wilmington is 747 feet high! The CAB and the War Aviation Board, after many conferences, realized the first ruling was unrealistic and allowed a new minimum, a maximum altitude of 800 feet. This gave a clearance of 53 feet over that hill and not much more over downtown Baltimore buildings, but the mail did go through!

By 1944, the Engineering Department had grown from one man to 260. As fast as pick-up equipment could be produced, it went into Service with the Navy or the Air Force. That year brought increased route mileage, substantial net income and respect for the unusual air operation. Hal Bazely was President; Charles Wendt, Vice President-Treasurer; Harry Stringer, Vice President-Traffic; Ed Minor, Vice President-Manufacturing and Development; and Bill Moore, Vice President-Operations. The war outlook seemed brighter and the small planes continued their work-horse load flying in the west, with a "slant clearance" of 3500 feet MSL or below, Blue Knob, west of Harrisburg, towered a little over 3200 feet. These men made it in their weary Stinsons, though.

Or at least most of them got through. This was the year the toll of time started catching up. August 3rd pilot Jerry Lindemuth and mechanic Ralph Monaco plowed into trees on a hill near Moundsville, West Virginia. The plane burned and both occupants were seriously injured. Ed Lowden and Buss Crow crashed after completing the Lewistown pick-up. A downdraft on the edge of a thunderstorm dropped them into the ground. Another Stinson was demolished but fortunately neither the crew nor the passenger, Dick Bazely, were injured. Millard Lossing flew along a squall line (a thunderstorm spawned in the Appalachians can move with amazing rapidity), and they counted 500 holes in the plane's fabric from the bail.

Pilot 'Rugged' Ricard and Red Garcia were hit by lightning. A quarter inch hole in the prop spinner pointed to where the lightning had gone in and the ash boom, curled like a pig's tail, showed where it left. All wires were frayed, radios burned out, antenna mask sheared off and the leading edges of wings and tail surfaces were pricked with a myriad of tiny holes. The compass in this particular plane never recovered from magnetic disturbance, and with all instruments magnetized, the Stinson had to be grounded allowing time to weaken the charge.

On September 29, 1944 All American had its first fatal accident. In nearly 6,000,000 miles of unique flying and with the acute shortage of aircraft and parts, that in itself is amazing. Pilot Wilson Amos Scott was killed and flying mechanic Robert Harold Taylor was seriously injured. The rope broke after the State College pick-up. Evidently the pilot was intent on turning back to drop the rope segment. His attention was diverted to watching the ground and he allowed the Stinson to stall at too low an altitude to recover. On January 10, 1945, Pilot Albert Eugene Holstrom, Jr. and Cecil Linger

hit a tree near Greensburg, Pennsylvania while trying to dislodge a rope wrapped around the landing gear. Al Holstrom was killed and Cecil Lingar seriously injured.

During the war years, All American's Stinsons continued vital mail and express carrying chores and in addition, the company went to war in many other ways. Some of the pilots trained other pilots in the Airline War Training Institute and equipment designs did many jobs and saved many lives.

Glider pick-ups joined the fighting forces on D-Day and at the Remagen Beachhead. Gliders, loaded, with ammunition in England, were towed aloft and cut loose to land just behind the front lines. Then, seriously injured men filled the empty glider which was retrieved by airplanes in flight. Cutting loose from this tow, they subsequently landed at the door of a hospital. Again, the gliders were snatched aloft and returned to England for another trip. Between 700 and 800 casualties a day were transported to hospitals by this system. The "Air-Snatch" ambulance made the important trip in nine minutes as compared with eight hours to the nearest hospital via ground ambulance. Aerial ambulances were snatched aloft in the India-Burma Theater, too. Even earlier, the gliders used to deliver troops on D-Day were picked up and returned to England with valuable supplies and men.

All American's equipment and experience was utilized in another way during the fighting. The human pick-up, first tested by Norman Rintoul in All American's experimental black Stinson, remained classified for years. The British and American Air Forces picked up secret agents behind the enemy lines, particularly in France and Poland. The system sent an unlighted aircraft over the lines and as it swooped down over a predetermined spot, a parcel fell silently to the ground. This package contained telescoping station poles, a transfer line, harness and a note designating the time for the pick-up. When the time arrived, the plane glided in and grabbed the man and his information out of enemy territory. Other less glamorous applications of the pick-up systems included dud torpedos, information pouches and downed aircraft.

Back on the home-front, All American spent two years flying military materiel between air bases from North Carolina to Maine. The tired Stinsons filled this air transport contract and Triple A's knowledgeable low-flying pilots astounded the military powers with their attitude that the Stinsons WOULD go through. They quickly acquired a same--The Submarine Airline--and the cargo moved in and out with regularity in spite of blizzards and other adverse weather.

In the early years of the war, the Air Corps flew by the book--so did the Submarine Airline, only it was a different book. Often they shocked tower controllers by landing unseen, and requesting a truck to lead them to the ramp in fog or snow. Asked how they did this, All American's pilots said they had come in low, so low they knew go military planes would be there for mid-air collision danger.

In the two years of this operation, All American pilots flew a total of 1,733,834 miles and carried the staggering total of 1227 tons of materiel. When the war finally ended, AAA applied to the CAB for 59 more routes covering 20,064 miles and serving 1,321 communities in 24 states. Application was filed for a combination pick-up and passenger carrying certificate and serious consideration was given Dick du Pont's glider-cargo ideas. All American sat at the peak of the glory at this time. Tremendous foreign interest in the system led to patents in France, Sweden, Norway, Great Britain, Australia, Canada and several South American countries.

The company ordered five Lockheed Saturns, 14 passenger airliners under development. The Civil Aeronautics Board had been aboard a demonstration of combination passenger and pick-up and several members thought the idea feasible. One factor of the company's Board of Directors thought post-war plans should center on passen-

ger carrying, only. A split was in the making.

At Felix du Pont's suggestion, Robert Love bought Dick du Pont's 78,000 shares of stock. On January 1, Mr. Love replaced Bazely as President. Hal Bazely moved down to a Vice-President, and Charles Wendt retained his position of Vice President-Treasurer, as did Harry Stringer as Vice President-Traffic. Immediately following this change in executives, the company's major stockholders voted in the premise that All American's future should be as a passenger carrying airline. The Pick-up System started downhill.

All American had a Certificate--AM 49--and that was a vital asset with the CAB formulating the feeder line projects. Bob Love had organized Inter City Airlines; in the Air Corps, he reorganized the Ferry Division. During his first year in office, to quote Mrs. Love, "The change-over to regular scheduled operations was planned." By early spring of 1946, Mr. Love's Army and scheduled airline background showed in his dislike of the "Hair-raising aspects of the pick-up lines." Their wild, individualistic tactics didn't fit in with his idea of a stable airline. Under him, All American's major operating positions were filled with new personnel, many coming from American Airlines.

The old pick-up men had a difficult time swallowing the fact that their company was going to be run like the Army or like the big business of trunkline airlines. From the inception, they had made their own decisions and tried to carry out their jobs to the best of their abilities. They didn't like to be considered wild, unruly, or to be called "canvasback cowboys." Having been distinguished as the elite of the flying fraternity in their area, the switch in their status hurt. That spring, tempers flared and some resignations were turned in.

Even after the CAB issued a temporary feeder line certificate, and the inherent publicity of AAA becoming the oldest line to receive their's, the men were unhappy. Lockheed's Saturn production was cancelled and only one prototype ever completed. This was another blow. Triple A had depended on that airplane and they had to switch to a smaller one, a twin-engine Beechcraft. With some stockholders still hoping to save the pick-up with a combination idea, the larger planes were necessary.

Two Beechcrafts were put on the flight line in October of 1946. The pick-up installation in these D18Cs weighed 233 pounds and the boom was suspended from the front, near the nose. By December, the speed of the new planes had increased the pick-up route speed from 110 mph to 150 mph. A comparison with ground transportation shows that the average round-trip, Pittsburgh to Cincinnati by train was 20 hours. Triple A's new planes were covering the same route in six hours, 37 minutes. During 1946, they completed 93.7% of the schedule giving a seven year average of 92%. This tremendous record kept alive the hopes of a pick-up passenger combination, but in August 1947, the CAB denied that certificate on the grounds of safety.

Hard on the heels of that shock, the CAB denied the application for increased pick-up routes, called the Southeastern States Case. With the lack of military contracts, the denials of route extensions and the combination, Triple A's profile was changing rapidly. The valuable machine shop was discontinued in January of 1948. The next month, CAB's Examiner, Warren Baker approved the Middle Atlantic Case and All American was awarded a Temporary Certificate for passenger service to 45 communities in seven states. This new Certificate was valid ONLY if the pick-up lines were abandoned.

The company ordered six DC-3s and the old pick-up sites disappeared as rapidly as they could be replaced by service into airports. Since All American had flown as a Certificated feeder line with AM 49, it became the oldest of the new local service airlines. The Corporate name was changed to All American Airways, Incorporated on November 12, 1948. The hub of the old company had been Pittsburgh, how the center of activity moved to Washington, D.C. The newly named company moved into

new quarters at Washington National Airport.

The first trip of the passenger carrying All American Airways was flown on March 7, 1949 by one of the original pilots, Bay Eller. The Grab-it-and-Growl Stinsons were gone. The Airway to Everywhere was obsolete and the new All American covered routes called Main Street, U. S. A. On June 30, 1949 the last pick-up route was flown, this from Jamestown to Pittsburgh and by Rintoul and Yesulaites.

On October 28, 1952 All American Airways split—in the air transportation division the name became Allegheny Airlines. The other branch became All American Engineering and Research Corporation with offices and factory at the old du Pont Airport in Wilmington, Delaware. Many of the loyal All American men moved to Wilmington, and Charles Wendt, who had been with the Pick-up since the very beginning, was one. He is now the President of All American Engineering and has on his staff Robert B. Cotton, who had been in charge of engineering research with the old company. Norman Rintoul is the connection between the two organizations. He is a Captain with Allegheny Airlines and technical adviser on the Pick-up System with All American Engineering. In April of 1953 Leslie O. Barnes was appointed President of Allegheny and David Miller, from the old company, is Senior Vice President. All down the employment list of this rapidly growing local service carrier are the names of the pick-up pilots, mechanics, radio men and others.

Since 1953 Allegheny has shown a steady, conservative growth in the air transportation field. The airline, now with a permanent Certificate, AM 97, continues to be first in many phases and has continued to break records and establish new forms of air travel. It was, and is Les Barnes' belief that, "It is within the 100 to 250 mile distance range that the great untapped potential of the future lies. Our program is designed to increase our penetration into this travel market." Allegheny was the first single ticket, group plan airline, the first airline to have a daily family discount plan and the first airline to have daily nonstop commuter flights where tickets could be bought on the airplane. Basically, it all adds up to Les Barnes' idea of "making it easy for travelers to go by air".

All American Engineering still designs and makes hooks—now the Shaeffer Springhook for installation on the tail sections of F-101s, F-86s, F-100s and T-33

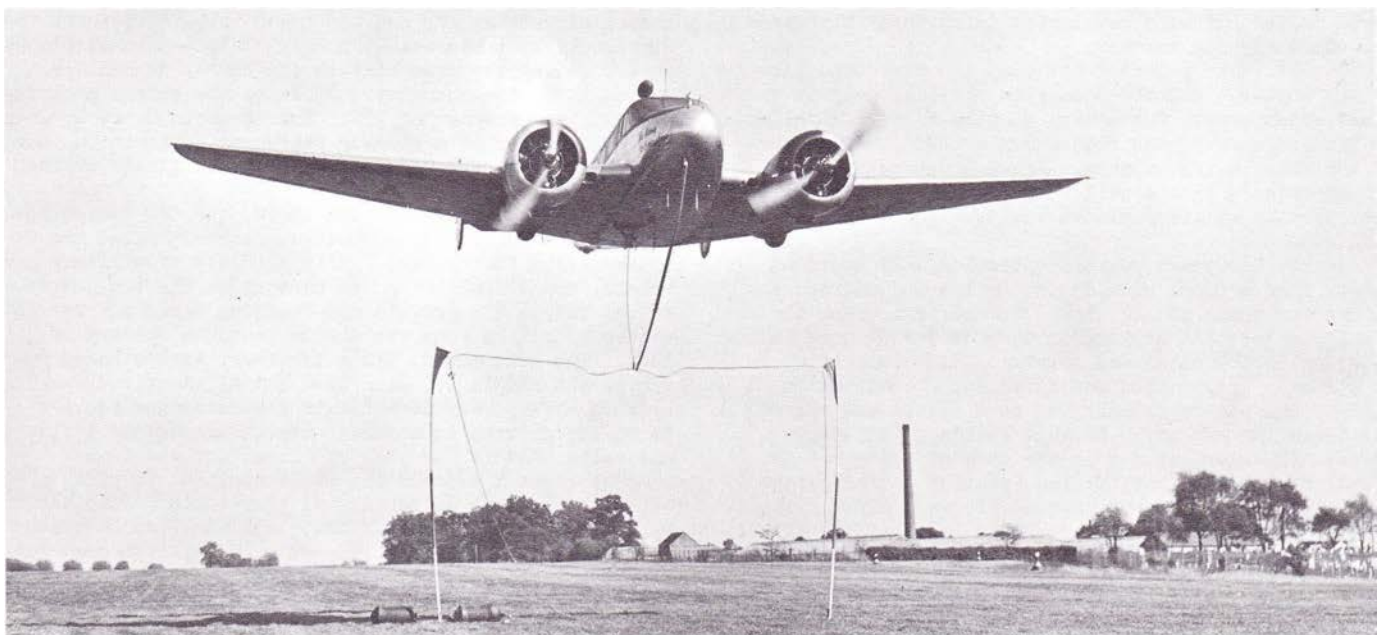
jets. These hooks connect with the "yielding elements" of arrestor gear to restrict aircraft and keep them from running off the ends of runways. Winches are still produced in Wilmington, and it's big business. Many new needs have cropped up in the military lines. The Mighty Mite, for instance, is portable and weighs only 50 pounds but can lift six thousand pounds with ease. Some models are used in missile work to hoist nose cones to the tops of rockets and in other related chores.

Dr. Adams' catapult firing of a fifty pound bag of mail has grown into All American Engineering's six jet Turbo-cat Tiger Tosser. The Turbo-cat, developed for the Marines, can launch jet fighters in 300 feet. A SAC combat loaded B-52 can be launched in only 250 feet. The old Pick-up System, with a few modifications, has been used for air-sea rescue. Men on a life raft erect a Y-shaped station pole, and an aircraft flying through the bars of the Y jerks the men aloft.

A further step in the Pick-up System called for Norman Rintoul. He took a leave of absence from Allegheny and helped All American Engineering enter the space age. Rockets and capsules fired into space collected data of prime importance. The government and All American Engineering agreed to hasten the delivery of this information to a central headquarters by way of air-sea pick-up. If the orbit of a space vehicle let it relay weather, pressure and valuable data to a line of ships, the length of time for the ships to rendezvous made the information less valuable. Any sea vehicle with a mast or a capability to install a 40 to 50 foot pole could be utilized with the pick-up. One end of the transfer line could be clipped to the mast and the other end to a canvas sea anchor. Rintoul picked up several containers of information in this fashion.

In 1959 All American Engineering and pilot Rintoul, then with over 20,000 pick-ups to his credit, again experimented with human pick-ups, and in 1960 air-to-air pick-ups were designed by All American. The 6593rd Test Squadron, Hickam Air Force Base, Hawaii, equipped eight aircraft with two trailing booms connecting three hooks to a winch. Sound familiar? It is—and it isn't. The two booms give a 26 foot spread behind C-119s. No, they are not picking up mail but have successfully located and picked up, air-to-air, the data-collecting capsule from the nose cone of the Discoverer Satellite.

The Pick-up isn't dead—only changed to meet the requirements of the space age.



Final operations of All American's Pick-up System were flown in two Beechcraft D18Cs, purchased in October of 1946.