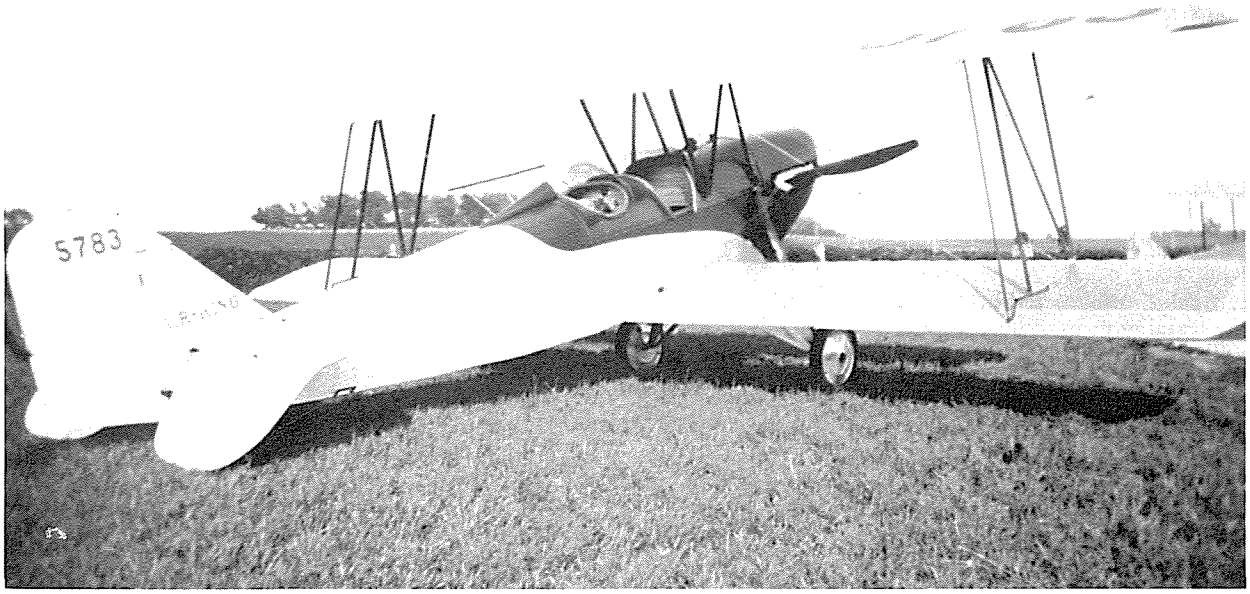


Air King owned by Paul B. Shaw

THE AIR KINGS OF LOMAX

by Paul D. Stevens

The Air King was a three-place, open cockpit biplane manufactured by National Airways System of Lomax, Illinois between 1926 and 1929. Some 70 planes were built. It got its name during an early demonstration flight when a pilot commented, "It'll be the 'King of the Air'." And so the name caught on.

National Airways System (NAS) was incorporated by Shukri F. Tannus on February 25, 1925 to "manufacture and sell airplanes, seaplanes, airships of different types, capacity and weight; to manufacture and sell airplane, seaplane and airship parts, and to do other general manufacturing business; and to conduct, operate and carry on commercial and special airways passenger and express transportation service; also to engage in the carrying of and operate aerial mail service."[1]

The background of Tannus is as varied as it is interesting. He was born in Ainarab, Lebanon, and was orphaned at the age of nine. After laboring for several years in Europe he immigrated to America in 1897. Fortunately, he had the foresight to recognize the value of an education and this prompted him to help himself through school selling oriental rugs, until finally graduating from Northwestern University in 1904 with a pharmaceutical degree. He went to work for a medical school in Keokuk, Iowa, and remained in their chemistry department until failing eyesight forced a change of vocations.

While selling rugs along the Mississippi River, Tannus observed plentiful stands of wild sedge grass growing on the bottomlands and recognized its potential for making brooms. He organized a broom factory at Canton, Missouri which prospered until the sedge grass was exhausted. The factory was subsequently moved during September 1919 to Lomax, Illinois where brooms were manufactured from imported Kansas broom straw. The cultivated broom business at Lomax flourished and Tannus subsequently expanded his financial interests to include a printing shop, general store and the leasing of farm ground to grow cucumbers.[2]

One wonders why Tannus became interested in the manufacture of airplanes. It is known he did not particularly cherish flying which in those days was certainly a requisite for pioneering in any aircraft venture. Perhaps the answer lies in his being an opportunist and visualizing a vast aviation industry with Lomax as the hub.

The Lomax Machine Shop and Foundry, complete with tools, was acquired and converted for building airplanes. The management was put in the hands of Glenn J. Romkey of Burlington, Iowa, who had a barnstorming background. He soon found that building a competitive aircraft with foundry tools and an inexperienced labor force was proving to be a difficult assignment. To acquaint workers with aircraft construction and manufacturing methods, several crated J-1 Standards were purchased from Nichols-Beazley Airplane Company of Marshall, Missouri.

The aircraft were rebuilt to carry four paying passengers and powered with Hisso or Curtiss C-6 engines. The efforts produced mixed results, and in the end most of the Standards were sold.

In the beginning NAS aimed for production of a four-place OX-5-powered aircraft, and it was believed by saving enough structural weight with the use of dural tubing and sheet metal, a third passenger could be added. If successful it would put Air King outside the general run of competition. Glenn Romkey established the basic configuration during 1925 and 1926. The detailed design work was largely that of engineer Wallace "Chet" Cummings with an assist from Orville Hickman a former Swallow engineer. Although Hickman was strongly influenced by Swallow designs, the final Air King configuration resembled somewhat that of the Alexander Eaglerock emerging on the market.

The prototype Air King had a wire-braced fuselage built up from dural tubing which was assembled with gussets and rivets. The wings had internally routed spruce laminated spars with cap strip type ribs spaced at 12 to 18-inch intervals. False nose ribs extruded from the front spar to the trailing edge between each full rib. Built-up compression ribs of spruce were used to separate the span into bays. Bay trussing was of #9 gauge music wire using standard aircraft turnbuckles to apply tension. The wing's trailing edge was girded by a light metal cable which caused a scalloped effect between ribs as the fabric covering shrank during dope applications. All of the interplane and center section struts were of dural tubing streamlined with balsa wood and covered with doped fabric. Empennage components were of dural tubing with Duraluminum sheets formed into channels to create major load bearing members. The landing gear consisted of dural side Vee struts supporting a straight axle with suspended rubber shock cords to absorb landing loads.[4]

The dural airframes saved weight but a load of three passengers and pilot were more than the 90 hp OX-5 engine could safely sustain. NAS also found the dural fuselages expensive to manufacture and switched to Shelby SAE 1010-1015 steel tubing after approximately two dural units had been assembled. The Shelby

tubing was of marginal strength for aircraft use but permitted welding which greatly facilitated production. Several aircraft with Shelby fuselages were built with dural struts and empennages but a series of landing gear failures forced NAS to abandon dural after possibly six aircraft had been delivered to customers. NAS reportedly retrofitted the dural units with steel assemblies and turned their efforts toward materials which were easier to work with. No four-place Air Kings reached customers and all dural components were subsequently scrapped. Aluminum was destined to become the industry standard for manufacturing airplanes but in 1927 it was beyond state of the art technology available to NAS and they were unable to successfully use it. Their gamble with dural cost NAS several months of development time in addition to the money and materials involved. It was of little consolation that no successful four-place OX-5 biplanes emerged from the era.[5]

During February of 1927, Andrew H. Yashack of Mount Ayr, Iowa, joined NAS as a shop hand and quickly established himself as a premier welder and master mechanic. His ingenuity and untiring efforts were responsible for many of the improvements and refinements which were progressively incorporated on production Air Kings from the spring of 1927.

By mid-1927 all primary fuselage and empennage members were of SAE 1025 steel but SAE 1010-1015 was retained for empennage ribs and trailing edge members. All tubing joints were being welded and wire braces were deleted from Model 27 Warren truss fuselages.[5]

Empennage members were reshaped and balance trim was provided by a cockpit lever which shifted the stabilizer forward or aft. Wire replaced tubular elevator bracing and engine cowls were modified to enclose OX-5 rocker arms.[5]

Wing area was increased by approximately 20 square feet to maintain acceptable landing and stalling speeds as gross weights had gradually increased. Costly box spars gave way to conventional dual solid spruce spars and the size of rib cap strips and braces was increased to ¼ inch. The wing's scalloped trailing edge was eliminated by substituting an aluminum V in lieu of the original wire cables.[5]

The Air King had two features which were relatively peculiar to the design. One was its dual strut connected ailerons and the second was lower wings which out-spanned upper wings by the width of the fuselage. Upper and lower wing panels were interchangeable on the same side. NAS theorized this configuration would improve aircraft handling characteristics during stall maneuvers and lower the aircraft's landing speed. This interchangeability was an aid to manufacturing and maintenance but gave the aircraft an awkward appearance in the eyes of many. It might be worth pointing out that many pilots thought the Beech Staggerwing of 1933 was an ugly duck when compared with sleek Waco cabin models of the day.

Landing gear failures were a source of embarrassment on early production Air Kings. Superintendent Romkey and shop foreman Yashack started experimenting with various landing gear configurations during the fall of 1927 as production activities slowed down. Yashack developed what he considered to be the first oil compression shock system featuring a long oleo strut connecting the axle and top fuselage longeron. This system was apparently pirated by a major competitor before the inventor could have it patented. Thereafter, landing gear systems similar to the Yashack design were used for years by the industry.[9]

What NAS had not perceived were new mandatory government regulations in the offing. Henceforth after December 31, 1926, manufacturers would be required to comply with some six chapters and 89 sections all spelled out in "Air Commerce Regulations." Up to that time airplanes were being built more or less on an honor system without direct federal supervision. But this system was found wanting in too many instances, with the result that flying accidents took a heavy toll of pilots and passengers. For an approved aircraft a certificate of airworthiness known as Approved Type Certificate (ATC) was given.

Some time during July 1927, NAS asked the Department of Commerce to evaluate the Air King and recommend necessary changes to meet ATC requirements. Henry "Hank" Frese came and after taking a look at the plane refused to make an evaluation flight. This understandably created a deep rift. NAS and Frese operated at an impasse throughout most of 1927 but NAS eventually bowed to pressure and at the urging of Frese hired engineer Claude C. Flagg during the spring of 1928 in an effort to certify the Air King. Flagg had acquired type certificates for several airplanes and fully understood the requirements. He quickly redesigned the aircraft with technical support from consulting engineer Jerome Lederer and initiated manufacturing standards which satisfied Frese and the Department of Commerce. ATC No. 29 was issued April 2, 1928 and for some time Air King was the only ATC airplane being manufactured in Illinois.[4]

Most of the ATC Air King changes were relatively minor but greatly improved the aircraft. They included: use of SAE 4130 chrome poly steel for engine mounts and landing gear axles, modifying Vashack's oil compression landing gear, improving fuselage shape, raising the turtle deck, reshaping the front cockpit cowling for easier entrance and egress, use of streamlined aircraft flying wires, improved cowling shape, use of new production Hamilton propellers, removing the radiator from beneath the upper wings and placing it between the landing gear struts and paint brushes gave way to spray guns which provided the aircraft with a much better finish.[5]

Tannus, the experienced salesman, recognized that the success or failure of NAS lay squarely on the shoulders of its sales organization. He envisioned establishing a series of local airports across the country similar to the Curtiss system as a solid base for expanding NAS services and aircraft sales. Decatur, Alabama, and Bloomington and Canton in Illinois were three cities where NAS established facilities. Everyone who purchased an Air King from the factory was urged to take an agency. Consequently, a considerable number of dealerships were established but the Air King was difficult to sell, thus few were sold. Don and Sid Baker of Wisconsin; the Colorado City Flying Club of Texas; David Langmack and Don S. Phillips of Oregon; Forrest H. Longeway of Montana; the National Flying Club of America; and C. Jeff Warren of California made some sales. The Becker Flying Service of New York; Cameron Aviation Company of Ohio; Herman J. Neubauer; John Reardon and Alexander Varney of Illinois and Texas Air King of Dallas were among the more successful dealers.[6]

Tannus owned a printing shop and was a strong advocate of advertising. Office girls Frances Cassidy and Raamah Farquhar literally mailed thousands of sales brochures to prospective customers across the country. Full-page ads frequently appeared in Aero Digest, Aviation, Popular Aviation and a multitude of daily newspapers.

Air King production began during the winter months of 1926-1927. Most of the factory help were men and women off the farm who were totally unfamiliar with airplanes. Some experienced aircraft workers migrated to Lomax as production picked up. Several student pilots paid for flying lessons by working in the factory. Employment varied greatly, but approximately 45 persons were on the payroll in mid-1927. They built an estimated 55 aircraft during the year.

The airplanes were test flown by Jack "Blackjack" Echols, Arthur J. "Steve" Lacey and Wilbur E. "Bill" Thatcher. NAS maintained a well-tuned Air King for demonstration purposes and frequently sent their pilots out to compete in midwestern air shows. The pilots on occasions ferried the planes to customers. Several airplanes were flown to Burlington, Iowa for pick up by customers—this was after a Jack Garlock of New York died when an Air King, on taking off the short, sandy field at Lomax, drifted into a tree. On impact with the ground it burst into flames.

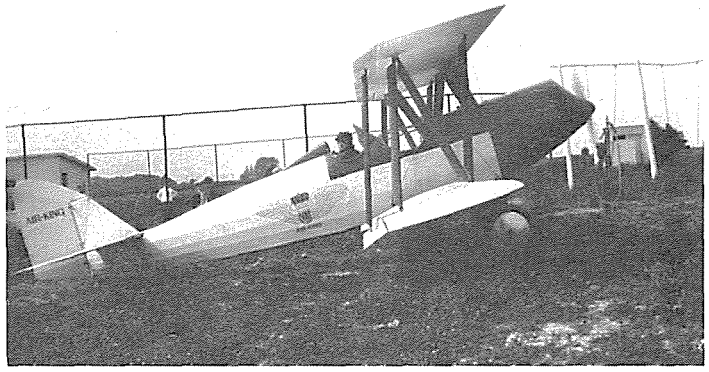
The planes were sold in 21 states mostly to barnstormers to replace weary Jennys or Standards. It is interesting to note that one Air King after being resold ended up with the Mexican revolutionary forces of General J. Gonzalo Escobar in 1929.

In setting up the incorporation, Tannus had shrewdly included the possibility of operating an airmail service. Thus when the post office asked for bids NAS was the only organization to bid on the Chicago to Atlanta airmail route on March 27, 1926. NAS proposed establishing a 10 plane service for 61½% of the revenue

(Above) Glenn J. Romkey preparing to deliver the first production Air King. (John W. Romkey)

(Upper right) Other than several group photos this is only known picture of Shukri F. Tannus. He was not a hunter as photo might suggest, rather the game seen here a gift. His main hobby was gardening. He neither smoked nor drank. Although a wheeler and dealer in business he died penniless.

(Right) An early production Air King at Dr. Herman J. Neubauer's Eagle Airport at Hinkley, Illinois. (Andrew F. Lech)



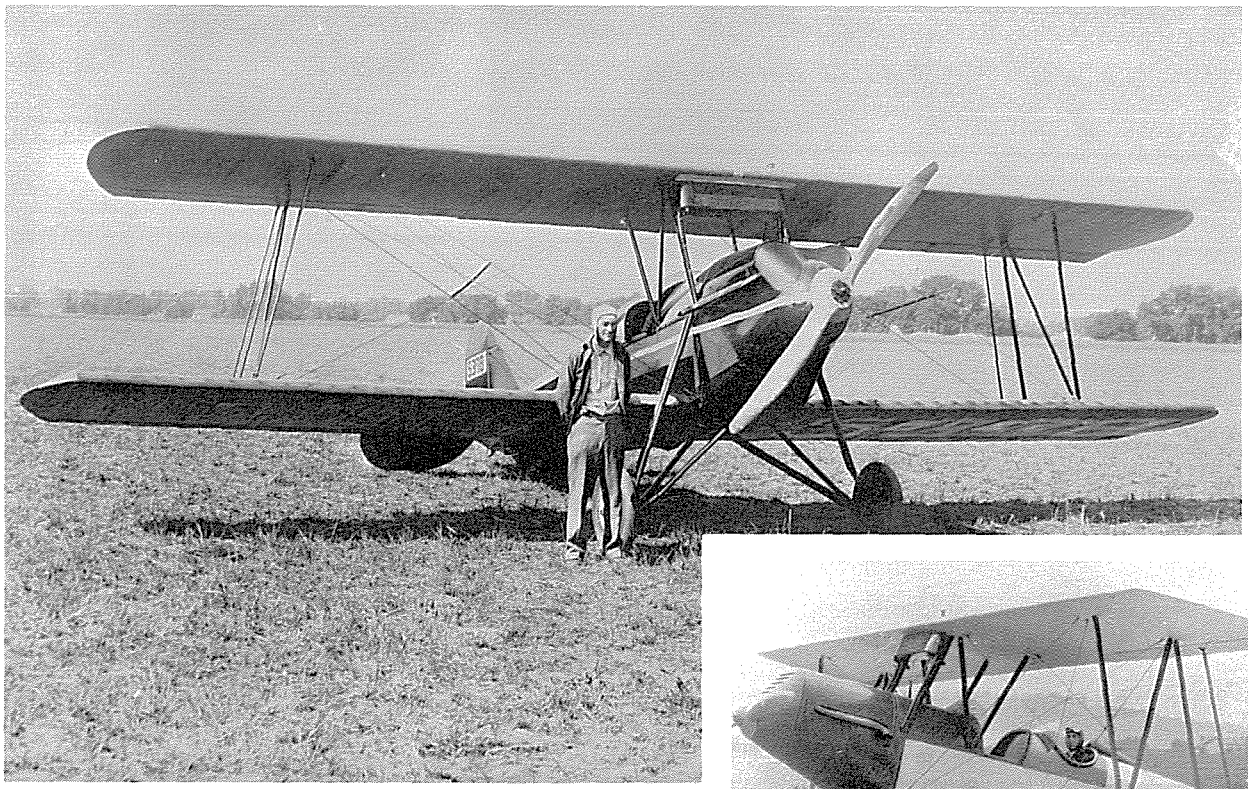
derived.[7] Tannus wanted to use Bellanca CF-type airplanes until NAS could develop a suitable replacement. However, Bellancas were extremely expensive and NAS was unable to pay the price. In desperation, NAS proposed using modified Swallows and/or Standards but airmail officials rejected their use and NAS was forced to forfeit their contract. It was not until August 7, 1928 that an airmail contract was awarded to Interstate Airlines, Inc., a division of Aviation Corp., which evolved into what is today American Airlines.[8]

James D. Dole's offer of $25,000 to the first and $10,000 to the second flyer to fly nonstop from the United States to Hawaii spurred NAS to offer an entry. "Miss Peoria," as the plane was named, was a biplane powered with a Whirlwind J5 engine. In Oakland, California—the starting point—the plane was disqualified for lack of sufficient range. (This is a story in itself and will be presented by the author at a later date.)

By May of 1928, Flagg had developed the basic ATC 29 Air King design to its ultimate potential and Tannus recognized a requirement to expand his aviation line. Superintendent Flagg wanted to build a low wing tricycle gear airplane accommodating four but Tannus felt this idea was too risky and time-consuming to develop. Alfaro had remained with NAS after completing work on the Dole Air King and was selected to design a luxury four-place high wing J-5-powered monoplane. Alfaro chose a young engineer named Armisted to do "board" work and drew from his Martin design philosophy in laying out the short and boxy Monofour configuration. The Monofour had a Clark Y airfoil and large control surfaces to compensate for its short overall length. It had an electrical system for lights and engine starter, Bendix wheel brakes and its cabin was richly upholstered with fine fabrics. One unusual feature of this aircraft was its inverted stick which was suspended from the cabin ceiling. The idea was to provide accommodations for dual controls and a maximum amount of leg room with a minimum of equipment.[6]

The aircraft was manufactured in approximately 45 days at Lomax during July and August of 1928. Steve Lacey left for Cessna before the Monofour was ready to fly and Flagg subsequently hired Jimmy Jamieson to test fly the airplane. Jamieson initiated tests on August 19th and reported that performance surpassed estimates but the airplane lacked longitudinal stability. Alfaro refused to admit the airplane had a stability problem until a pilot of his choice, former Martin test pilot Cal Johnson, flew the airplane and confirmed the reports of Jamieson. Johnson recommended lengthening the fuselage by 30 to 36 inches as Flagg had previously suggested. This provoked the ire of Alfaro who quit when Tannus ordered the Monofour fuselage lengthened. This modification established longitudinal stability and most pilots indicated their approval of Monofour performance and flying characteristics. Some pilots encountered difficulty adjusting to the overhead stick, however. Its operation was identical to conventional sticks but it confused some pilots and provided an opportunity to crack unwary skulls. Romkey and Flagg recognized the Monofour had potential sales value and urged Tannus to get the airplane certified so they could start production; but this was not to be. Kenneth J. Ringel spent more than three months and 125 hours demonstrating the Monofour and NAS advertised extensively but the general economy was cooling off and NAS determined that sales potential did not justify further development. The Monofour would have sold for approximately $9,500 to $9,700 with NAS realizing an estimated profit of $1,900 each. NAS used the aircraft extensively until they defaulted.[6,10,11]

In 1928 Tannus recognized the NAS was approaching a crossroads. Important decisions would have to be reached. Accordingly he called a meeting of major stockholders and officials during the summer to evaluate their position and map plans for the future. NAS was short on working capital and one of their immediate goals was to revamp the stock program and offer additional stock certificates for sale in an effort to improve their financial position. The Lomax facilities were not well suited for aircraft production and flying activities. A committee was appointed to seek alternative midwestern sites offering better facilities and room for expansion. Peoria, Illinois newspapers of September



(Above) Everett Litton with Air King 5378 c/n 154 after he extensively modified it following accident. (Everett Litton)

(Right) Barnstormer C.R. Muhlberger of Ohio with Air King 4283 c/n 151. (C.R. Muhlberger)

25th announced NAS was moving its corporate headquarters to the Peoria Life Building and production facilities would be established on a 137-acre site near the Mt. Hawley Country Club. Work began immediately on a modern 100x196' glass and steel reinforced brick building at Mt. Hawley, which would serve as a hangar and factory building. The sale and production of the Air King had virtually halted by then and a number of former factory employees helped in the construction and move to Peoria. The Monofour was frequently used to ferry office girls and construction workers between Peoria and Lomax on weekends.

One of the recommendations to come out of the summer meeting was the need to develop a light training type airplane. Glenn Romkey and Claude Flagg combined their talents to lay out preliminary plans for a two-place, high-wing monoplane with a 60 to 90 hp engine. The fuselage, tail surfaces and landing gear were welded in Lomax but the airplane was assembled at Mt. Hawley. Flagg left at the end of September 1928 and Jerome Lederer of Aerotech was apparently responsible for technical support in building the airplane. Very little Air Prince information is available but it had a 90 hp LeBlond engine and is known to have been a good performer.[6]

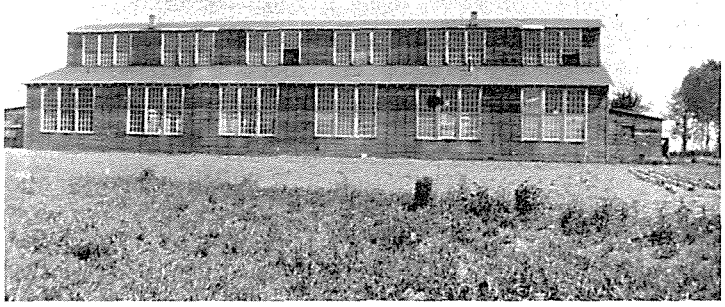
Glenn Romkey and S.F. Tannus flew the Air Prince to Leslie Field, Decatur, Alabama during February of 1930 where Romkey made an altitude record attempt for airplanes under 100 hp on the 23rd. He was able to reach 17,000 feet, only 2,856 feet short of the record, before icing conditions and a bloody nose forced him down after 50 minutes of flight.[12]

NAS expected to manufacture and sell the Air Prince for approximately $3,250 with a $675 profit. Only one Air Prince (X-43N c/n 1-3) was built, but it outlived NAS by several years. Its last registration was to a Kansas owner in 1936.[11]

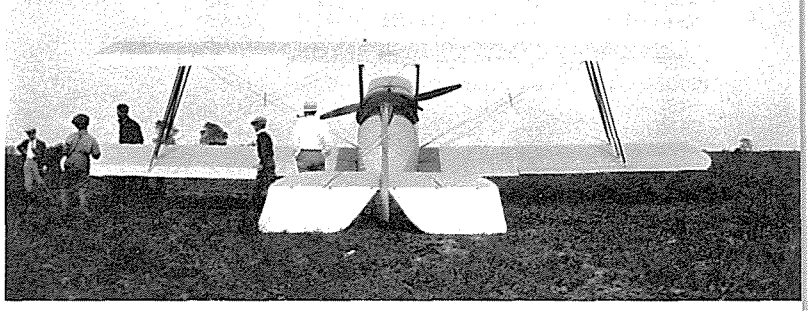
The financial promises that enticed NAS from Lomax to Mt. Hawley failed to materialize as hard times hit the midwestern farm country. Exact details are unclear but it appears NAS and its Peoria backers made a substantial down payment on the $54,000 Mt. Hawley farm site. The heavy expense of moving to Mt. Hawley, renting office space in the Peoria Life Building and construction of the new factory-hangar building strangled NAS as its supply of money dried up in 1929. By the time NAS was established at Mt. Hawley the aviation market had deteriorated to practically nil. The Air Prince was completed at Peoria but Air King production did not resume and NAS barely clung to life operating as a fixed base operation, demonstrating their airplanes and repairing customer Air Kings throughout 1929 in a hopeless struggle to survive the depression. The inevitable end came during March of 1930 when Andy Yashack took his tools home and caretaker Tommy Welch locked the doors for the last time. A liquidation of the few remaining NAS assets shattered the great American dream of Shukri F. Tannus. Tannus returned to the highways selling oriental rugs and tapestries after NAS folded. A heart attack claimed him in South Dakota during August of 1932. His wife, the former Mabel P. Swanson, was a dynamic figure in NAS affairs. She returned to her Des Moines, Iowa hometown where she worked to support the three Tannus daughters through college. Mrs. Tannus currently enjoys the retirement she toiled for so many years to attain.

Several of the principal NAS officers and employees had outstanding careers. Glenn Romkey distinguished himself as a pilot and businessman; Andy Yashack operated a blacksmith shop and repaired farm machinery for many miles around his Iowa home; Claude C. Flagg designed a number of airplanes and attained high executive positions with Convair and General Dynamics; Steve Lacey was Cessna's chief test pilot at the time of his death on a fog-shrouded Kansas hillside; Alfaro returned to his native Spain where he had a long and successful career, and Jerome Lederer recently retired after more than 50 years of aeronautical engineering. He is best known for his long tenure (1948 through 1967) as Director, Flight Safety Foundation, and more recently as Director, Manned Flight Safety, NASA. Only Lederer and Yashack are still living.

Ray Woods of Montana with Air King 6778. (Ray Woods)



The Air King factory at Lomax. (Andrew Yashack)



(Above) Rear view of the Air King. (Andrew F. Lech)

SPECIFICATION SHEET

	1926 Proto	1927 Prod	1928 Prod	ATC 29 Model
Span, Upper Wing	30'11"	31'2"	31'2"	31'2"
Span, Lower Wing	33'	34'1"	34'1"	34'1"
Airfoil Section	Clark Y	Clark Y	Clark Y	Clark Y
Chord	5'	5'	5'	5'
Wing Area	290 sq. ft.	310 sq. ft.	310 sq. ft.	310 sq. ft.
Dihedral (L only)	2½ degrees	2½ degrees	2½ degrees	2½ degrees
Stagger	14"	16"	15"	15"
Overall Length	26'	25'5"	25'5"	25'5"
Height	8'8"	9'	9'	9'
Wing Loading	6.70	6.41	6.74	6.82
Empty Weight	1,095	1,190	1,290	1,340
Useful Load	850 lbs	800 lbs.	800 lbs.	775 lbs.
Gross Weight	1,945 lbs.	1,990 lbs.	2,090 lbs.	2,115 lbs.
Engine	OX-5 93 HP @ 1400 RPM			
Propeller	Hartzell	Hartzell	Hartzell	Hamilton
No. of Seats	4	3	3	3
Fuel Capacity	35 gal.	35 gal.	35 gal.	35 gal.
Cruising Radius	200 miles	198 miles	198 miles	198 miles
Maximum Speed	99 mph	99 mph	93 mph	99 mph
Cruising Speed	85 mph	85 mph	85 mph	85 mph
Landing Speed	31 mph	35 mph	35 mph	35 mph
Climb Rate @ S.L.	550 ft/min	600 ft/min	600 ft/min	600 ft/min
Price @ Retail	–	$2,100 FOB	$2,395	
Instruments	Tachometer, ignition switch, water temperature indicator, altimeter and oil pressure gauge.			

Note: Pilots report the quoted speeds are exaggerated and suggest a top speed of 90 mph and a cruising speed of 70 to 75 mph are more realistic.

(Below) Monofour being readied for first flight. (C.E. Welch)

NAS REGISTER AND SERIAL LISTING

Registration	Model Number	NAS C/N	Engine Model
278	Air King		OX-5
351	Air King	143	OX-5
X43N	Air Prince	1-3	LeBlond 90 HP
45N	Air King	444	OX-5 last Air King built
NC62E	Air King	172	OX-5
1069	Air King	120-A	OX-5 Rebuilt a/c
1269	Air King 27	125	OX-5
1306	Air King 27	115	OX-5
X1383	Air King		JC5A Dole test bed
1424	Air King 27	131	OX-5
1447	Air King 27		OX-5
1635	Air King 27	105	OX-5 also 2635 (engine no)
1707	Air King 27	121	OX-5
1982	Air King 27		OX-5
1987	Air King 27		OX-5
2249	Air King 27	104	OX-5 1st production a/c
2411	Air King 27		OX-5, OXX-6
2412	Air King 27		OXX-6
2968	Air King 27	133	OX-5
X3070	Dole Air King		JC5A
3097	Air King 27	114	OX-5
3167	Air King 27	137	OX-5
3168	Air King 27	139	OX-5
3169	Air King 27	120	OX-5
3187	Air King 27	138	OX-5
3222	Air King 27	140	OX-5
3480	Air King 27	144	OX-5
3490	Air King 27		OX-5
3527	Air King 27	136	OX-5
3545	Air King 27	142	OX-5
3566	Air King 27		OX-5
4088	Air King 27	127	OX-5, Hisso
4283	Air King 28	151	OX-5
NC4719	Air King ATC 29	152	OX-5
NC4720	Air King ATC 29	153	OX-5
4970	Air King 27	129	OX-5
5007	Air King 27	157	OX-5
5008	Air King 27	159	OX-5
5080	Air King		OX-5
5133	Air King 27		OX-5
5378	Air King 28	154	OX-5
NC5410	Air King ATC 29	155	OX-5
5612	Air King 28	160	OX-5
NC5703	Air King ATC 29	161	OX-5
NC5783	Air King ATC 29	163	OX-5
NC5916	Air King ATC 29	164	OX-5
6748	Air King 27	135	OX-5
NC6789	Air King ATC 29	166	OX-5
6886	Air King 28	167	OX-5
7081	Air King 27		OXX-6
7177	Air King 27	122	OX-5
NC7182	Air King ATC 29	168	OX-5
7254	Air King 27	134	OX-5
X7389	Air King 28	169	Siemens Halske
X7610	Monofour	1-0-1	JC5A
NC7636	Air King ATC 29	170	OX-5
NC7637	Air King ATC 29	171	OX-5
NC883H	Air King ATC 29	173	OX-5

EVALUATION

Former Air King pilots and owners have provided these general opinions of aircraft design, workmanship and performance.

1. The design and workmanship on early production aircraft is considered substandard. Aircraft reliability was low and control forces were heavy. They had very poor resale values and few of them survived more than 2-3 years of service.

2. The 25 to 30 middle production pre ATC Air Kings were much improved but could not be considered better than mediocre airplanes. One of the biggest improvements was in reducing control force loads to a desirable level. Department of Commerce inspectors learned that NAS frequently substituted standard hardware and common muslin for infinitely more expensive aviation hardware and fabric. Inspectors frequently harassed Air King owners to the breaking point. This harassment and misunderstandings which developed between owners and NAS regarding the licensing of pre ATC Air Kings caused hard feelings in the field. There are no known documented cases of inflight airframe failures which resulted in accidents.

3. The last 20 or so airplanes NAS built included approximately 12 ATC 29 models. Engineer Flagg joined NAS at the beginning of March 1928 and insisted on using only first-line aviation hardware, fabric and steel in the manufacturing of subsequent airplanes. His high standards and close monitoring by Department of Commerce inspectors insured vast improvements in the quality and workmanship of ATC 29 model Air Kings. These airplanes compared favorably with contemporary designs such as Kreider-Reisner, Eaglerock and Swallow. Paul B. Shaw flew NC5783 c/n 163 a total of 826 hours and 9 minutes between June of 1928 and February of 1930 which speaks well for its reliability. This time includes approximately 600 hours of student instruction and the remainder consisted primarily of barnstorming and exhibition work which included dropping parachute jumpers and rope ladder acts.

4. The performance and flying characteristics of all Air King models were generally similar. They have been characterized as: A. Requiring an excessive takeoff run. B. Tail heavy, especially with full fuel load and two passengers. C. Somewhat underpowered. D. Stable in flight. E. Light and responsive controls. F. Excellent ailerons. G. "Heavy." H. Good stall and spin recovery. I. No unusual flying characteristics. J. Easy to land.

REFERENCES

1. Incorporation papers filed with Henderson County Clerk on February 25, 1925.
2. Burlington, Iowa Gazette August 6, 1927.
3. Claude C. Flagg letter dated December 10, 1970.
4. Claude C. Flagg letter dated October 28, 1970.
5. Claude C. Flagg letter dated November 18, 1970.
6. Claude C. Flagg "General Resume" of August 6, 1970.
7. International News Staff Dispatch of March 27, 1926.
8. Dekalb, Illinois Daily Chronicle of August 7, 1928.
9. Interviews with John W. Romkey and Richard Yashack.
10. Claude C. Flagg 8-70.
11. Lomax, Illinois Searchlight January 31, 1929.
12. Decatur, Alabama The Decatur Daily February 21, 1930 and February 24, 1930.

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Paul Stevens and Mrs. Tannus review scrapbooks.

ABOUT THE AUTHOR

Paul D. Stevens grew up on a farm not far from Lomax and has been researching NAS off and on since 1956. He is employed by All Steel Inc. as a production planning clerk and lives in Aurora with his wife and their three boys. Paul served with the USAF (1957-1961). Today he photographs aircraft as a hobby and collects aviation memorabilia. He is the AAHS F/RF-101 type specialist (RF-101s in Southeast Asia, Volume 14 No. 4) and claims to have the largest collection of F/RF-101 material existing anywhere. Paul would welcome hearing from anyone with F/RF-101 experience or interests. Write him at 88 Saugatuck Road, Aurora, Illinois 60538.