

A leaky oil line during a stunt flight resulted in this complexion for Miss King.

AIR QUEEN

by F. LELAND ELAM

Here's a pilot for the girls to feel proud about. Bernadine Lewis King is an ace in her own right and competes with airmen to prove it.

A THOROUGHLY distinguished flyer of more than usual accomplishments—whose achievements and records stamp her as an unusual air queen—is Miss Bernadine Lewis King.

A typical Western girl, raised in the New Mexico Rockies, and known to many of her friends as "the flying cow girl" because of her interest in cattle and activity in taking part in round-ups when possible, saw her first airplane when she was eight years old. Aviation has been one of her main interests since that day.

In the early 1930's she decided aviation would be her career, and after passing her pilot tests before Department of Commerce Inspector Gene Scroggie, she set out to become a success as a pilot in business aviation and to make it pay her well.

During her flying career which has been crowded into an unbelievable brief period of years this young woman has flown over 1,000 certified hours and experienced a wide range of adventures and near catastrophes which rival fiction.

Today she is the only woman skywriter in the United States, an exceptional stunt exhibitionist, and the holder of upside down flying records. The different kinds of aviation work Miss King

has done since she received her license in 1935, and the experiences she has had are amazing, and would fill a good-sized book if one were to tell about all of them. We will touch on but a few in the following paragraphs.

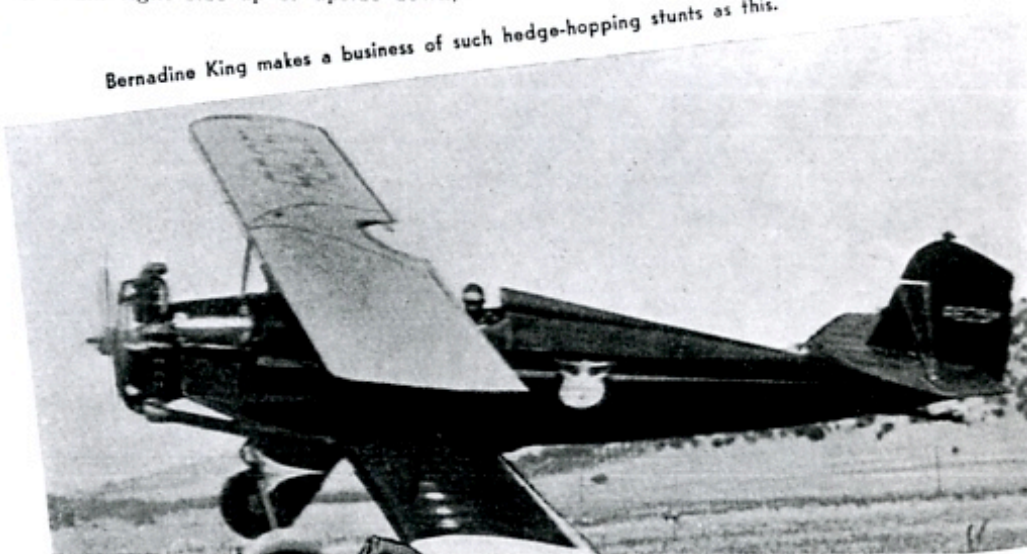
She has made 32 forced landings, approximately four times the number made by the average pilot, and she significantly attributes nearly every one of them—some of which were safe by a very narrow margin—to what she terms "unorthodox methods of flying—testing, stunting and dangerous aerobatic maneuvers."

It makes no difference to Miss King what she is doing as long as she is in the air. The air is her life. "I don't care if I am right side up or upside down,

as long as I am upstairs," she told POPULAR AVIATION's correspondent at her headquarters at 6272 Yucca Street, Hollywood. "It may be in either big planes or little ones. I do prefer being alone, and most all of my extra-long cross country trips have been alone. However, I have trained several students, and carried many other persons."

As a student she flew Wacos, Lincolns, J-5 Eaglerocks, and several other planes in short hops or longer ones with duals and a check pilot. She often sneaked aerobatics, having an aptitude for them. She took many long cross-country hops, and it was on her first of these, while still a student, that she had

Bernadine King makes a business of such hedge-hopping stunts as this.



her first experience that lives vividly in her memory.

She flew from Los Angeles to a destination north of Bishop in the high Sierra mountains. She returned to Los Angeles and was attempting to land at dusk, when a sudden twisting and apparently uncontrollable motion of the plane, kept her fighting to keep the ship from getting completely out of control and to keep it on its path of landing. She fought a man-sized job in her J-5 Eaglerock and landed successfully to discover a tire had blown out. A good beginning and unusual experience for a student on her first cross-country solo flight!

Immediately after receiving her private license she completed a three weeks "good will" tour of seven western states. Her tour, sponsored by the officials of the larger cities and California state officials, took her along one side of a state and down the other, never covering the same ground twice.

She was a guest of the many mayors of the principal cities of the west, the chambers of commerce, 26 sheriffs, and 26 chiefs of police. She was honored and entertained by seven governors and other state officials. Miss King naturally derived a great deal of flying experience from this tour as it took her into airports of high altitude and low altitude. Also it was made in the month of January, when bad weather including snow, rain, hail, strong winds and fog were prevalent.

Undoubtedly her most unusual feats are two upside down flights, one between Caliente, Mexico, and San Diego; the second between Bellingham, Washington, and Vancouver, British Columbia, thus crossing both international borders of the United States. She established the first official world record for women for upside down flying with a time of 25 minutes and 26 seconds. Her present record stands at two hours and five minutes.

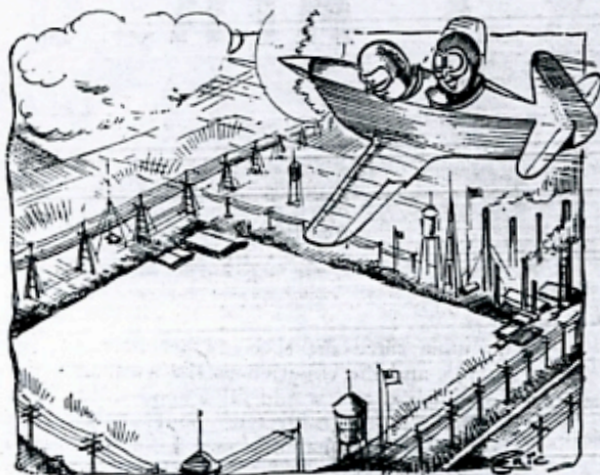
She has had many interesting experiences while in inverted flight. Once while going cross-country—right-side up—over the mountains to the East of Santa Barbara, the oil pressure dropped to zero. There was no place to land. It looked like she would have to fly back to the airport from where she started—or go on to her destination—but by that time the engine would be ruined.

Miss King called on her inverted flying experience for the one way which might solve the problem. Bernadine rolled the plane over in a one-half roll onto its back. As she hoped the oil pressure came back to normal, so she flew inverted. She navigated over the mountains and the San Fernando Valley to Union Air Terminal, where she one-half rolled over to right side up position and landed. At the time a Department of Commerce inspector was on an inspection tour and followed her in—

not knowing at the time the reason for the inverted flying. He later congratulated her.

Miss King took personal charge of changing a standard Fleet, extra heavy model, into a plane in which she could fly inverted and do smoke writing. She installed a Kinner 165 h.p. engine. This demanded a change in the motor mount, and it automatically changed the center of gravity. Bernadine took out the front seat and used the space for extra tanks for chemicals, oil and gas for both right side up, inverted flight and smoke writing. The ship is equipped to fly 5½ hours inverted.

She inserted ailerons and rudder tabs, special exhaust manifold, stack for "smoke" equipment, and extra control valves including a chemical tank pump which is manually operated from the rear cockpit. The motor is specially equipped with proper pumps to keep oil in the engine and working while in in-



"It isn't on the map but it's a typical airport, all right!"

verted flight. Occasionally, when something goes wrong, she receives a oil or gasoline bath.

Miss King did all her own testing of the equipment and special hookups, it often taking several days to test and perfect some detail. Three months of testing was the actual time required to get the ship to perform as she desired.

It was while testing a special inverted hookup over San Fernando Valley that Miss King had her narrowest escape. The ship went accidentally into an inverted power spin at 3,500 feet. For almost 2,500 feet the plane spun rapidly out of control and nothing she could do would control it. Finally giving up in despair she let go of the stick and prepared to use her parachute. Hating to lose the plane she took the stick for one last try at controlling it. The plane responded and she eventually landed safely. The loss of control of the plane she says was due to carelessness while making a certain maneuver.

At first Miss King had no intentions of specializing in aerobatics, but she did want to perfect precision maneuvers. She finally became so interested in this type of variation that she made aerobatics

part of her professional aerial program.

She has been referred to as one of the world's greatest aerobatic pilots. Amelia Earhardt once said she considered Miss King the best feminine acrobatic flyer and "tops" in inverted flight. Wiley Post said he believed her to be the best all-around woman pilot whose flying technique could compare with the best of men.

At no time has Miss King felt that she was so good that she could not make a mistake. "I'm not kidding myself any," she said. "I think I am good to a certain extent, but not too good. I can make mistakes, and my equipment can fail. When a flyer gets to the point where he thinks he is too good—watch out! He is dangerous. At each performance or exhibition on my low flying acrobatic act, I watch each slight movement every split second. I am flying my ship—it is not flying me. I truly love my aerobatic work. It has given me a greater appreciation of the elements and equipment."

Listed among her maneuvers are just about every movement of the plane that is in the books. The real daring aerobatic stunts take place close to the ground. One of these is picking up a handkerchief from ground by wing-tip. She does one-wheel landings and take-offs. She can take a plane off from a moving automobile. For this she uses an Aeronca or Cub.

In another stunt she drops her landing gear and lands on the belly of the ship. Scooters similar to water floats are placed on ends of the wings to keep from digging them into the ground and causing serious damage. She jumps a plane over a car or small building about the size of a car, then lands dead stick. Strings are tied at certain points across runways so she will not misjudge the distance.

On all aerobatic flights, Miss King plans maneuvers in proper succession, and the minimum altitude for working. She does not vary from that while up-stairs. If she loses altitude for some reason, she climbs back up to the altitude where that particular maneuver belongs. She attempts to plan out all causes for possible failure, and how to get out of them, such as the effect of strong wind on a low slow roll and what difficulties might arise; or what a gust of wind would do to the plane on a dead stick one-wheel landing, and how she can control the situation.

In her capacity as a smoke writer she uses smoke as a publicity and advertising medium. She has also used it on occasions to signal police and rescue crews at work on the ground. She has signaled forest rangers with smoke of starting of forest fires which she discovered while flying over mountainous areas. She uses smoke to trail all aerobatic stunts.

Miss King has been on wild horse round-ups and used her plane on them

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Air Queen

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finding the smoke a good weapon with which to scare the horses. She owns a cattle ranch in Texas and has often assisted in round-ups by using smoke to signal round-up crews on the ground of the whereabouts of cattle.

Smoke writing is performed at 12,000 feet. It usually is very cold up there at any time of the year, and almost unbearable in winter. Having to consider every ounce of weight, the ship has a manually operated pressure pump for the chemical tanks. It is hard work as she has to do her flying with the left hand, and knees, and work the pumps with the right hand. The hardest thing to remember while she is doing all this she says is to dot the "i's."

At sky writing she has written everything in the air from hosiery ads to love notes. While "smoking" she counts as a musician would to obtain the correct size of the letters she is writing.

She smiles when she thinks of one experience she had while smoking (she does not smoke cigarettes) over a Montana town. The weather was changeable and the sky was covered with high scattered clouds. Most of the people of this community had not seen skywriting, so the sponsors insisted on having the exhibition put on even though Miss King objected and advised against it. There was a crowd of 15,000 persons in the audience waiting to see her write in the sky.

So up she went and wrote SHELL in the largest spot of blue sky that was available. But the changing clouds played their little trick and made visible to the 15,000 persons only four letters. The "S" was covered by a fluffy white cloud, and all they could see from the ground was "HELL."

Miss King owns two ships. At present she has a Stinson and her specially constructed stunt ship. The cabin plane boasts the unusual feature of a front seat which collapses to make a bed, thus transforming the ship into an aerial ambulance. One of its most interesting flights in this capacity was made between Dallas, Texas, and Los Angeles, when its pilot was called upon to rush a desperately ill man to medical treatment available only in the latter city. With her patient strapped to his bed, Miss King bucked a strong headwind all the way and delivered her patient safely 13 hours later to a waiting motor ambulance in the southern California city.

On one occasion Miss King flew from Los Angeles to keep a luncheon date. The weather was good when she left, so she wore only a satin shirt and trousers. She took no money or baggage. A sudden squall came up and she was forced to land in a small meadow in the mountains to escape it. The squall turned into a snow storm. The Sequoia National Park Service rangers found her and took her to their headquarters, giving her food, warmer clothing and lodg-

ing. The fury of the storm did not blow itself out until she had to spend eight days as a guest of the rangers.

The young woman is an accomplished seaplane pilot having learned to fly them on Lake Union and Lake Washington in Seattle. She passed her seaplane transport tests under Inspector William Moore at Seattle. She once established a world's record for time, distance, and endurance over Lake Washington of eight hours. It was witnessed by N.A.A. officials, and Department of Commerce representatives.

She has performed a co-featured act on many featured air shows with top-rank performers such as Milo Burcham (who has now dropped air show aerobatics to be a Lockheed test pilot), Frank Clarke and Tex Rankin. Miss King has produced and managed air shows, and tours, and has own organization for this purpose.

She has done test work on new types of propellers. Hunting is her favorite sport. When she goes on a hunting trip she does so by plane, often landing in meadows in mountains as near to her destination as possible. Her fishing trips are also made by plane. She is an expert shot and fisherwoman.

Quite as unique as her accomplishments in this field is the fact that Miss King regards her flying as any businessman would regard his business. She set out with determination to make it pay and it has—and then some. Her financial success, second only to the fame she has deservedly won, she traces to hard work, perseverance, and a combination of the same attributes that keep any ground-run enterprise solvent.

She holds land and seaplane commercial licenses, an instructor's rating, and is a third-class radio operator. Her only fraternal affiliation is with the National Aeronautic Association. Wherever there is a safety aviation meeting on the Pacific coast she figures prominently in it.

Admitting that the path has not been easy, Miss King nevertheless finds herself in the enviable position of having proved that women can succeed in a field which is practically closed to them—and which is even hard for men to conquer, for there are but six men in the United States who do the same kind of work she does.

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