

AIRWOMAN

February, 1935

10 cents a copy - One dollar a year

Vol. 2, No. 3.



In This Issue

FIRST! EXCLUSIVE!

AMELIA EARHART'S NAVIGATION CHART—HONOLULU-OAKLAND



The Ladies Cocktail Bar offers a temptingly gay atmosphere that gives "happy landings" a new significance. Here the furnishings . . the bar . . the decorations . . are all featured in a smartly modern manner for your pleasure. A complete repertoire of exciting refreshments, from which to choose your favorite concoction. All deference is paid "to the ladies"—the allegedly "hardy sex" is allowed only in your company . .

The Gotham offers a welcome haven to the traveler . . with its warm hospitality . . congenial atmosphere and spacious comfort. Set your compass for The Gotham and experience that delightful "homey" feeling. You'll appreciate the alert service . . the sincere concern for the comfort of each guest . . and most of all the surprisingly moderate rates beginning at \$4.00.



The Gotham

Max A. Herring, Resident Manager

FIFTH AVENUE AT 55th STREET
NEW YORK CITY

CONTENTS

Just Among Us Girls—By Mister Swance Taylor	3
Aerial Photography	4
Scoring Up	5
Dawn-to-Dusking—By Barbara Southgate	6
Flying De Luxe—By Linda Wellesley	7
Beryllium—By Col. Harold E. Hartney	8
Lines in the Sky—By Pat O'Malley	9
Amelia Earhart's Flight Navigation Chart	10
Books and Magazines—By Mabel Britton	12
Pot and Pan Mechanics	12
Junior Airwoman—By Betsy Barton	13
Fashions in Flight—By Fay Gillis	15
The 99er	16
W. N. A. A. Contact	17

The Bay Cities Chapter of the 99 Club cooperated most efficiently in covering the Earhart Pacific flight, including not only all on the spot reports but pictures and the clever poem by Dorothy George of San Mateo on page 10. We are also very grateful to the Oakland Port Enquirer for their courtesy in permitting us to reproduce the grand picture on the cover of A. E. just after she landed, as well as other pictures.

AIRWOMAN, the magazine of sky talk for women who fly and for those who are still earthbound but interested, is the official organ of the 99 Club of women pilots and of the Women's National Aeronautical Association.

AIRWOMAN is distributed on American Airlines, Boston-Maine and Central Vermont Airways, Central Airlines, Eastern Airlines, Pan American Airways, Pennsylvania Airlines and Transcontinental and Western Airlines.

AIRWOMAN (successor to The 99er), Volume 2, Number 3, February, 1935. Published monthly by Airwoman Associates at Hotel Gotham, Fifth Ave. and 55th St., New York City. Editorial offices, Hotel Gotham, Fifth Ave. and 55th St., New York, N. Y., U. S. A. Clara Studer, Editor; Fay Gillis, Associate Editor; Betsy Barton, Junior Editor; Margery Brown, Roving Reporter. Subscription \$1.00 per year, single copies 10 cents.

THE TAYLOR "CUB"



Miss Mary Alice Mabb of Bradford, Pennsylvania
ONLY BRADFORD AVIATRIX FLIES A CUB

They SELL

for

\$895

Without Motor
and Propeller

\$1425

and

\$1495

Choice of Engines

Miss Mary Alice Mabb, Bradford's only Aviatrix, proved herself an apt student and a natural flier. Her first experience with aviation began December 4th, 1931, and yet Miss Mabb passed her flying test and received her private license the 28th of the same month . . . giving much credit to The CUB for her success.

Women invariably like the CUB. It is so easy to handle. Sound engineering and sturdy construction make the CUB America's Safe Plane . . . easy to buy easy to maintain. Fliers agree that to fly a CUB is to want one.

"AMERICA'S SAFE PLANE"

• Ask About Our TIME-PAYMENT plan. Free Folder •

TAYLOR AIRCRAFT CO.
BRADFORD PENNSYLVANIA

• The Taylor "CUB" is SAFE • ECONOMICAL • STURDY • STABLE •

WHAT DID SHE DO SO WRONG?

By Mister Swanee Taylor

AN EDITORIAL

GIRLS!—Did you hear about that catty anti-Amelia editorial written by some old pussy, I fear, on the staff of the learned *San Francisco News*?

Or perhaps you heard the rumblings of that bilious piece called, "Amelia Earhart: A Flier in Sugar," appearing in the January 30th issue of none other than *The Nation*? This last one—just a few pot shots at the lady—came from the facile pen, if we are to believe a chaste footnote in that estimable magazine, of "... a well-known author ..." who elected to blaze away from the comfortable ambush of a pseudonym.

Now, both of these gems of commentary literature are calculated to make the aviation bosom heave in righteous resentment. That is, if you will let either, or both, of them throw you. But when viewed through the glasses of reason the venomous aspect is considerably diluted. Both become, if I may switch away from the feline metaphor, nothing more than the hollow rappings of that red-headed little beggar, genus woodpecker. And Amelia Earhart most certainly is impervious to any kind of attack that is characteristic of the hammer-headed woodpecker. He pecks away only at dead timber.

But let us get down to cases. First, we'll dip into the Leslie Ford opus, (that's his nom de guerilla), and see what we will see. Well, to give it to you succinctly, Mr. Ford professes to be more amused than hurt by the "public relations" shennanigans of the Hawaiian sugar interests against the Jones-Costigan Act. To be sure, he has the true by-line writer (real or adopted) scorn for publicity releases. He shudders to the core at the thought of an advertising agency, which had launched a wholesome-in-these-times paid space campaign, should dare to presume to supplement this campaign with certain feeble essays on the glories of Hawaii by Irvin S. Cobb, Vicki Baum and Anita Loos, just to mention a few.

He also finds a thing of horror in Attorney General Homer S. Cummings' article, released by the agency's Pan-Pacific Press Bureau, on how the government goes about the business of law enforcement out there in that polyglot population. (Remember the Massey case?)

The humor of the whole situation, as far as can be gathered, is that all of the trained seals, (special writers to you), invariably made mention of the fact that Hawaii is, "... an integral part of the United States." Which, you've got to admit, is as funny as all outdoors. It sure slays me, all right!

However, let's wash up Bro. Ford by quoting a salient remark made by him. He speaks volumes when he says, "... Miss Earhart has been unquestionably the brightest feather in the Pan-Pacific Press cap." Which, if anything, makes her fee ridiculously low.

Now for the old pussy editorial: Here we have bared claws, angrily eager to bury themselves in any hapless prey. Lamentably I haven't been able to dig up a copy of that January 4th editorial. For that matter, I haven't been able to discover an issue of the worthy journal anywhere east of Denver. Therefore I can't speak freely or from first hand. But I am fairly well informed thanks to the columns of *Editor & Publisher*, the outstanding trade paper of the fourth estate.

One week before the hop, to the day, some 89,000-odd San Francisco truth seekers were smacked in the eye with a guilefully anxious editorial head, "Don't do it, Amelia." Which, out-

side the ranks of scare-head journalism, comes under the classification of hitting in the clinches. But anyhow, after shouting boo, at its readers, San Francisco's great crusading force proceeded to regard the hop in the light of a publicity stunt, hence, unworthy of the risk or even the effort. In their weighty editorial judgment the gravest risk was obtainable in the ever-present possibility that our government might have to waste \$100,000 or more searching for her.

Of course the News found authority for alarm in the mouths of some very jittery old gals stationed at the navy's most appropriately named station, *Mare Island*. (Pardon my italics). Several naval officers, just like their army sisters on

(Continued on page 10)

From Talburt's CARTOON SHAFTS IN THE WEEK'S NEWS—
New York World-Telegram, January 19, 1935.



"WOMAN'S WORK IS NEVER DONE"

A E R I A L

P H O T O G R A P H Y



Two Oklahoma pilots and members of the Tulsa Unit, W.N.A.A. (Left) Alma (Mrs. Fritz) Martin, private pilot; (right) Gerry Honomichl, 99er, limited commercial pilot.

Passengers and crew arrive at Newark Airport on Eastern Air's round trip flight inaugurating their New Orleans Flyer service.

(Left to right)

James H. Kindelberger, Pres. of North American Aviation; Augusta Walmsley and Mayor Walmsley of New Orleans; Capt. Rickenbacker; Mrs. Woodrow Wilson; Mrs. Eugene Meyer; Mrs. Rickenbacker; G. W. Branson, asst. pilot; Marie Louise Reynolds, stowaway; H. T. Merrill, pilot, and Rudolph Hecht, president of the American Bankers Association.



(Below)

Amelia Earhart's Lockheed Vega sits down at Oakland Airport, fresh out of Honolulu at 1:30 P.M., January 12, 1935, after completing the first solo flight over this course. Distance, 2408 miles. Time, 18 hours, 16 minutes.

Photo courtesy Oakland Post Enquirer.



SCORING UP



Helen MacCloskey
of Pittsburgh.

PAGING Louise Thaden! Get out the list of records in your article in the December issue of *AIRWOMAN* and check one off—the 62 miles, Light Plane Speed (plane must weigh empty less than 1,235 lbs. and seat two or more). Helen MacCloskey took you seriously and broke that world's record at the Miami Air Races in Florida. Her speed was 166.67 miles per hour and her passenger was Genevieve Savage, who thinks that record breaking rides are lots of fun. Splendid work, Helen. We are all proud of you and hope you have started the girls off to a record breaking year. There are still a lot of marks we can fly at before we can rest on our laurels. Come on, girls, let's have a record breaking column every month.

Helen MacCloskey not only set a world's speed record at the Miami Air Races, which were held from the 10th to the 12th of January, but she also won first place in the Women's Aerobatics Contest. Whata girl! Edna Gardner flew true to form and won the Women's Handicap Race in her trim Aristocrat. Edna usually comes in first in every race she flies in. The spectators in Miami labelled her a "neat flier" but you have to be more than just that to win races.

There were twelve 99's in Miami for the three days of flying fun, but they weren't alone. The Army and Navy were represented by 350 high flying airplanes and the commercial fliers contributed 150 planes. From all reports a more than good time was had by all at the reunion dinners, dances, moonlight swimming parties, and of course the flying fields are included. Sounds as though the cry "On to Miami" is going to be louder than ever next year.

While the funsters were basking in Florida sunshine, Major James—"Jim"

to the gang—Doolittle and his wife were out in California preparing for a non-stop record breaking flight to New York in an American Airlines Vultee. As you all know he broke the record by four minutes in spite of extremely adverse weather conditions and the fact that he made the first flight to New York City. All the other records have been made to Newark, but the Major landed at Floyd Bennett Field first before proceeding to Newark. Mrs. Doolittle, who insists that she was just excess baggage on the flight, says she feels much safer in the air with Jim than she does in any automobile. "Yesterday going into the city on an Express Bus on icy streets, I was more frightened than during the black of night, travelling through space at the rate of some two hundred miles per hour." Guess we all agree with Mrs. Doolittle on that point. She also backs us up in the suggestion that the future generation will be air-minded, when she relates the following experience. "I was a fellow passenger on American Airlines recently with a youth boasting of the ripe old age of three weeks—that I think speaks for itself."

Harry Richman, Broadway star and night club entertainer and amateur pilot, didn't fly down to Rio, but he sure flew high. High enough in fact—22,000 feet to be exact—to set a new record for amphibians. When his plane was vibrating so much that it felt like the bottom was about to fall out, he decided that he had gone about far enough, so came back to Mother Earth to claim his record.

744 miles from Chicago to New York in an airliner with fourteen passengers, pilot and co-pilot, in two hours and 54 minutes sure is travelling like you can't

travel any other way. The plane flew at 10,000 feet aided by a sixty-mile tail wind, arriving in Newark 1 hour and 6 minutes ahead of schedule. Russell W. Thaw landed at Roosevelt Field in his Northrop after a non-stop flight from Amarillo, Texas, 1,580 miles in 6 hours and 30 minutes, aided by a 35 mile tail wind.

A flying tour, guaranteed to make most people envious, has just been completed, without pomp or ceremony, by Dr. Richard Upjohn Light, surgery instructor in the Yale Medical School, and Robert French Wilson, a graduate radio engineer also of Yale. They have just returned from a leisurely 29,000 mile flight around the world, in their Wasp-powered Bellanca Skyrocket, mounted on Edo floats. They flew where they pleased and when they pleased—the ideal way to travel. They visited 28 countries and flew over 7 others. Dr. Light said, "We didn't have a single forced landing throughout the entire 29,000 miles." They were in constant communication with radio stations.

"The greatest air race in history" with prizes totalling \$100,000 is being promoted by Elliott Roosevelt, an executive of the National Aeronautic Association. The race is proposed as a twenty-thousand mile dash around both North and South America. What an opportunity to use the Spanish we learned in college as well as to do some fast long distance flying.

"Jimmie" and "Joe" Doolittle



Dawn to Dusk Around the Bay State...

By BARBARA SOUTHGATE

IT was six-ten in the morning, bitterly cold, with the thermometer registering only eleven above. A small group of us stood around the stove in the office at Dennison's Airport, Quincy, Mass., desperately trying to warm our hands. We were listening intently for the first chirp of a cold motor as the mechanic worked to start it, which would indicate that we would soon be able to get under way for our dawn to dusk flight to visit every recognized airport in Massachusetts in the interests of the National Aeronautic Association.

Our little group consisted of myself, pilot; Margaret Kimball, co-pilot and navigator; George Mason, New England Governor of the N. A. A., and Joshua Crane, Jr., official checker of the trip. We were already behind schedule and growing anxious for the success of our trip, when we heard the familiar sputtering of the Jacobs with which our Waco cabin plane was powered. On the side had been painted in huge white letters "Join the N. A. A." Our cargo was composed of two thermos jars of coffee, forty-one packages with invitations to the Boston Aero Club dinner, one for each stop, maps, and two blankets for the comfort of our passengers.

Just at the break of day we took off for Provincetown, the first port. A half hour late on the start, we foresaw difficulty in making up our time. As the weather was not promising we climbed over the bay to gain altitude for the water hop, and hit clouds at very little over 1,500 feet, with glimpses of a cold, gray ocean below. A few minutes later we had gone through the cloud layer and out on top, cold hands and feet forgotten. At 8,000 feet we were flying over billowing masses of steely blue clouds, faintly

tinted with the crimson of the promised sunrise. Perfectly clear overhead, it was another world detached from the prosaic one left behind. But enjoyment was short, for we started down through hopping that Provincetown would be below. Once into the fog it became a bit choppy in contrast to the smooth air we had just left. Completely blind we resorted to instrument flying, with bank and turn on the dot, and rate of climb registering down. At last we could see once more the water beneath, and off to our right, just between wisps of cloud, was Provincetown.

ONCE down the hardest stretch seemed behind us although the weather was still decidedly bad and it was snowing. At Provincetown the brilliant red Waco was the first plane to land at the airport which just reached completion. It has two ample runways and is well marked. Our arrival was its dedication and we were greeted with some ceremony. But time was short so we soon took off in the storm for Hyannis. For a while ice formation on the wings, threatened, but by the time we rolled our wheels on Hyannis, Marstons Mills and Falmouth, and had started the climb for the water hop to Nantucket that danger had passed. Once more we were in the clouds, at times completely blind and at times with short glimpses of the water.

At Nantucket the ceiling was low but we had run out of the snow. A message was dropped there, and as the wheels touched ground we saw several people gathered to see us go by. Off again into the clouds and nonstop for Edgartown at Martha's Vineyard. It seemed a day for scenic effects. Through scattering clouds the airport was bathed in the pure sunlight of a perfect day. Streamers of mist were blowing off the water. Between us and the water were puffy masses of fog moving in the opposite direction.

At Edgartown we flew into perfect weather. The sun was well on its way into the sky. About this time my passengers had thawed out enough to take an interest in their surroundings. Head phones were donned and they enthusiastically listened to the early morning setting up exercises. It was good to be warm again. From that time on it was absolutely comfortable in the plane, thanks to the heated cabin. The only times we suffered from the cold were when we were obliged to stand around windy airports at gas stops with the

thermometer at twelve or fourteen degrees.

And so the round of ports went on. Taunton, Mansfield, Brockton, and Hanover were behind. Sometimes one or two people would be out to watch us pass. Sometimes there would be none to give us a friendly wave. But the messages were dropped faithfully at every place. One airport did not receive its message, it was rescued from the tail surfaces where it hung. By the time Hanover was reached the half hour's delay at the start was made up, and we circled for a landing at Norwood ten minutes ahead of time.

With Westwood and Menden on our tail we set our course for Grafton which is on the outskirts of Worcester. A splendid new airport greeted us. The field has been improved and enlarged. Then the good ship Waco was on its way to Westboro, Marlboro and all points east. At Natick-Wellesley a car crawled out on the field to retrieve the notice. Before we landed at Boston to partake of the hot coffee in the thermos, we said good morning to the Squantum Base.

VERY nearly half the flight was completed. Twenty-three of the 41 airports had been covered. There remained those north of Boston, then Fitchburg, Gardner, Athol and Greenfield before the lunch stop at Northampton. The fog and snow of the early morning seemed a remote incident. In spite of a half hour's delay at the start we had made up time. Without overloading the motor the ship had been hitting 135 miles all the way.

The first hop out of Boston was short, just across to Muller Field at Revere. A few people waved as we rolled the wheels, dropped a message and were on our way. Beverly was closed tight, evidently awaiting completion of improvements. Newburyport looked desolate and rather damp. Pontoons perhaps would have been more in order. We dodged between steam shovels and tractors at Lawrence, and dropped the message into waiting hands of the crew as the wheels touched.

Early again, Lowell became a non-scheduled stop. For the first time we were requested to smile prettily for the camera. Between shivers and stamps of the feet the camera men managed to get two or three pictures before we dashed gratefully for the warmth of the cabin.

(C

Mayor Tompkins of Gardner, Mass., presents 3 new N. A. A. memberships to Barbara Southgate (center) and Margaret Kimball



FLYING DE LUXE

By LINDA WELLESLEY

When "Slim" Lindbergh sets forth from San Francisco Bay on his Trans-Pacific aerial argosy early next Summer, he will be at the stick of not only one of the world's finest airplanes, but probably the most luxurious—Pan American Airways' new Martin Clipper.

Powered with four geared, super-charged Pratt & Whitney Wasps, each developing 800 h. p., the first of four of these ships soon to be placed in overseas operation by Pan American Airways, is being exhaustively tested at the Glenn L. Martin plant in Baltimore.

Although designed to carry 38 passengers and 2,000 pounds of cargo 1,250

to gratify the æsthetic tastes of the most exacting future trans-ocean argonauts.

In an exclusive interview with a representative of AIRWOMAN, Mr. Geddes described his aspirations in this, his first venture into the realm of airplane decoration and furnishing:

"The chief difficulty, of course," he said, "was in reaching a comfortable solution within the stringent weight restrictions, but I believe that we were successful. As a consequence, the interior of the new Martin Clipper provides both day and night accommodations for long flights. It has been specially designed for efficient conversion from day to night and night to day use.

"Throughout the interior design every effort was made to increase the enjoyment of air travel by affording passengers unusual comfort in day or night set-up. The object was to overcome many of the cramped and unattractive conditions which have too long been associated with the airplane. The result is greater attractiveness, more free and more natural travel conditions and a far greater refinement of service than any heretofore provided.

"For instance," Mr. Geddes explained, "there is a permanent lounge for fourteen people. This lounge has divans and easy chairs, two card tables, smoking table, and in fact, all the comforts of a living room. The lighting is indirect, but ample for reading and card playing. At bedtime and in the early morning, part of this space converts into two spacious dressing rooms with wash basins. In addition to these dressing rooms there is a women's and a men's lavatory.

"Then there are three passenger compartments, each seating eight people by day and by night sleeping six, with curtains for privacy. Instead of individual seats, these compartments have large comfortable sofas divided into three sections. The backs of the sofas hinge upward and form the upper berths. The seats themselves pull out, turn over, and form the lower berths. Each compartment has two portable tables for games, eating, writing, etc. The lighting is effective for reading in the seats or in bed."

The famous designer then described the facilities for feeding passengers while in flight:

"Because of the fact that the space across the ship entrance passageway, not used in flight, can be incorporated in the galley, the galley is unusually large

and permits most efficient service. Consequently, full meals of the finest food will be served by two stewards, either in the lounge or in the passenger compartments. We have chosen beetleware dishes instead of the customary paper. There will be a wide variety of liquors—everything from whiskey to champagne—and all will be served in their correct glasses."

After explaining that not only is the interior sound-proofed, but air conditioned, Mr. Geddes continued:

"The interior is designed in the modern manner, with fabric wall surfaces and furniture slip coverings. These wall surfaces and slip covers are easily and quickly removable for laundering for each flight. All other interior equipment is easily removable for inspection and cleaning. In the interests of harmony, sheets, pillow cases, and napery will conform to the color scheme of the interior.

"All in all," Mr. Geddes concluded, "I believe I can safely say that when these ships are placed in operation they will be the most comfortable and restful ever afforded the flying public and I hope a boon to aviation."



AIRCRAFT DESIGN MEDALS

A new N. A. C. A. cowl having adjustable trailing edge flaps has just achieved the unique distinction of winning both annual medals offered by the Society of Automotive Engineers—the Wright Brothers Medal for outstanding developments in aircraft design and the Manly Memorial Medal for developments in power plant design. This device is based on principles developed by R. B. Beisel, of the Vought Corporation; A. Lewis MacClain, of the Pratt & Whitney Aircraft Company, and F. M. Thomas of the United Aircraft Corporation. Eighty-four airplanes now under construction for the U. S. Navy by the Chance Vought Corporation will be equipped with this latest development in cowl.



NORMAN BEL GEDDES

miles at 150 m. p. h., the passenger accommodations have, of necessity, been reduced to 18 in order to increase the flying range to a minimum of 3,000 miles. This will enable the Martin Clipper to negotiate the long over-water hops non-stop with a comfortable margin of safety.

Realizing that long trans-ocean flights are apt to be boresome, Pan American will strive to relieve the tedious hours by surrounding its passengers with all the luxury and comforts which can possibly be encompassed within the restricted confines of an airplane fuselage.

Searching for the man best qualified to carry out its ideas, Pan American logically turned to Norman Bel Geddes, one of the world's most distinguished designers, and gave him carte blanche. The result is a guaranteed interior de-

BERYLLIUM

By HAROLD E. HARTNEY, Lt. Col. (Air Res.)



It is safe to say that one of the greatest contributions to aviation during the five lean years of the depression has been the advances in metal alloys. Progress has been made in steel, nickel, aluminium and copper alloys to nothing short of an astounding degree. This progress is but faintly reflected in the automotive, aeronautical and radio industries. We have not applied to more than 40% of its possibilities the advances made in this great field of research and accomplishment.

Many of us will remember that just about the time the whole economic structure collapsed in the autumn of 1929 there was a great deal of talk of a new metal—beryllium. We may have felt that it was either lost in the shuffle or was a blighted hope, for there has been little said about it lately, although the facts basically are just as astounding as they were heralded at that time.

BERYLLIUM is a new chemical element—a metal which is one-third lighter than aluminium (specific gravity 1.84 as compared with aluminium 2.70). It is so hard and strong that it can cut glass, it is ductile, non-corrosive, and despite the fact that it is too brittle in its pure state, it can in varying percentages alloyed with other metals produce a resultant alloy as strong as tungsten steel and yet as workable, under proper treatment, as the finest piece of metal ever put in a lathe. These were facts in 1929 and still hold good today. I attribute the tardiness in placing beryllium in the airplane industry to several different causes:

First, beryllium is still too expensive. It costs \$25.00 per pound although it cost \$300 per pound when the market broke in 1929.

Second, several thousand remarkable steel alloys have come along and possibly the most important of these for aviation has been the one containing molybdenum.

Third, duralium problems, mainly inter-crystalline corrosion have been to a degree solved and have made the use of that alloy more or less commonplace.

Fourth, lack of huge high-grade beryllium ore deposits, despite the fact that 5% of the earth's crust is beryllium, has precluded the possibility—in combination with a non-enterprising period of finance—of setting up the plant investment and

equipment that with mass production will bring down the cost of beryllium to that of aluminium.

I can imagine many readers saying to themselves as they recall the shattered hopes on the subject of beryllium—"Just another white hope gone wrong!" As a matter of fact, such is not the case. Beryllium today stands as the one great possibility for aeronautics, not only in the apparatus or the airplane itself but for large portions of all types of airplane power plants of the future.

In the five years of depression, almost to the capacity of the ore deposits, beryllium has come along to an astounding degree and has become commercially successful in two lines:

FIRST, as an alloy with copper. The long lost art of hardening copper has been found. Beryllium is to copper about what carbon is to steel. Huge surpluses of copper the world over made the leaders of that industry more inclined to explore the beryllium-copper combinations and, briefly, here are some of the results under a sponsorship in the United States of two of our great copper interests:

(a) Beryllium-copper alloy has 7 times the life in a bearing of the best phosphor bronze bearing and the resultant effect on the shaft is better.

(b) A beryllium-copper alloy with only 2 1/4% beryllium, and now readily purchasable on the market, has a tensile strength of 200,000 pounds per square inch and a Rockwell hardness of 112.

(c) This metal is less subject to oxidation and corrosion than the best de-oxidized copper.

(d) It is more valuable in many places on an airplane engine right now than the best known steel alloy, but it is practically unused therein except for controllable pitch propeller hub cones that demand a metal non-galling and non-scoring.

(e) This copper has a fatigue resistance that is unexcelled in any other known alloy, although when beryllium and steel, beryllium and aluminium, or some other metal is mixed with beryllium the resultant may be even better. Helical plate or any kind of spring made of beryllium-copper will stand several million flexes when the best phosphor bronze spring will break after 400,000.

It is safe to predict that beryllium-copper will supplant steel alloys in many fields of industry, such as, in your automobile, in your airplane and your kitchen

unless the better beryllium, steel, nickel or other alloys on the horizon come along soon.

THE other field where beryllium is now successful commercially is in the use of beryllium oxides as a refractory.

Freed of alkalis and other impurities, beryllium oxide has developed extraordinary properties. With a melting point of 2,500° C. it has unbelievable strength with extraordinary lightness and even at terrifically high temperatures it retains its electrical insulation properties. Repeated thermal shocks, crashing it up to 2,000° C. and cooling it off instantaneously time and again has no effect on this remarkable substance.

A word to the wise is sufficient for the engineer who reads these unbelievable lines, who has ingenuity and enterprise enough to apply it where it fits!

WHILE the latter is an interesting commercial application, the one most alluring to the aviation enthusiast is its combination with other metals as a precipitant hardening agent. For example, magnesium with its hexagonal crystal formation should dovetail in with the similar crystals of beryllium and produce an extremely light metal at a very low cost provided beryllium were of the price of aluminium today.

Do not be disappointed or give up hope when I state that as yet such an alloy has not been successful, nor should one be discouraged when he finds that small percentages of beryllium in aluminium are rather disappointing. Remember this—that when beryllium is purchasable at, say, \$1.00 per pound it is just possible that the necessary impurity to make it not too brittle will be supplied by throwing a dash of magnesium or a sweetener of aluminium into what is almost a pure beryllium metal and one will have a non-corrosive metal as tough as the toughest steel, as brilliant as high speed steel and as constant as the Swedish steel in a Jansen gauge, and from its use we will save in the structure alone of a ship of the Douglas airliner type two and one-half tons and still have a much longer life, be completely freed of the bug-a-boo of inter-crystalline corrosion and embrittlement of metal structure even when standing in storage.

At the moment "\$25.00 a pound" for this metal . . . the . . . some im-

By PAT O'MALLEY

Paraphrasing a popular song, C. R. Smith, President of American Airlines, Inc., decided that "the night was made for sleep," and proceeded to work out a transcontinental schedule which permits passengers to go to bed at night and do just that. American drew a new transcontinental line across the sky on January 14th; the first to serve the south directly and the first providing complete sleeping accommodations for night flying. This bids fair soon to become the most popular way of going from coast to coast, and no wonder! By day they use the speedy Douglas ship and by night the Condor sleeper plane, changing from one to the other at Dallas. This service is certainly the top. The berths in the sleeper are exceptionally roomy; they've got baggage racks, clothes nets and hangers, reading lights and buttons for use in summoning the stewardess. And to complete all the comforts of home the passengers get orange juice and coffee when they get up in the morning.

January was a big month for ex-newspaper men. One of the fraternity married the President's daughter and another was elected vice president of United Air Lines in charge of publicity, advertising and traffic. Ladies and gentlemen, I give you Harold Crary. Long may he continue his success. I don't suppose there's a more popular man in the industry. This latest honor gave all his friends a great deal of genuine satisfaction.

Captain Eddie Rickenbacker and his intrepid crew of two pilots, H. T. Merrill and G. W. Bransom, made another spectacular long-distance flight on January 16, when they hopped off on a pre-inaugural 7 hour and 30 minute flight over Eastern Airlines' 1,303-mile New York-Atlanta-New Orleans route. Mrs. Woodrow Wilson was a guest on this flight, and was accompanied by Mrs. Eugene Meyer, wife of the publisher of the Washington Post and Mrs. Rickenbacker. They left New Orleans at 6 A. M. and arrived in Newark at 1:30 P. M.

It's open house for owners of private airplanes to board the TWA these days. These planes are issued to all

TWA field managers, meteorologists and airport personnel at all cities along their route between New York and Los Angeles to extend every possible service to all visitors. This will include free weather information, general flying conditions, routing information and best flying conditions.

To all mechanical staffs at TWA's terminals the instructions provide for expert mechanical help and advice, in addition to arrangements to supply fuel and oil at the prevailing prices.

Of the 122,775,046 persons living in the United States (1930 census) 53,751,593, or 45 per cent, live in areas which are directly served by scheduled air lines, according to the demon statisticians at the Bureau of Air Commerce. They also figured out that three-fourths of the nation's metropolitan districts are served directly, the domestic air routes being so distributed that they touch 71 of the 96 major centers of population.

A despatch from Rio de Janeiro announces that another air line is being considered which will knit closer the far-flung corners of the Brazilian Republic. It's a Pan American Airways project and it would rise at Brazil to provide a cut-off between the United States and Rio and the southern key trade centers. The route would lie entirely inland and open up a new territory which the government is interested in intensively colonizing and would bring the most northern provinces of Brazil, now nineteen days distant by surface transportation, within a single day of the capital.

I told you that Vultee ship was fast, but I didn't tell you it was chain lightening, did I? That's because I didn't realize it until Jimmy Doolittle took it on a transcontinental flight a couple of weeks ago. He took off from Los Angeles at 5:27 P. M. and streaked across the country in 11 hours and 59 minutes. He established a new cost-to-coast record for passenger planes on this dash, and if it weren't for unspeakably bad weather all the way across he'd have made it in several hour's less time.

The Vultee is a ten-place single motored low-wing monoplane and is in service between Albany and Montreal, Chicago and Dallas and Chicago and Cincinnati on American Airlines.

Spots for airplanes to park in are pretty well scattered all over the map by now, but—as usual in matter of applied aviation—California is ahead, with Texas down in the Southwest, second and Pennsylvania on the Atlantic side, third. It comes as a surprise that Alaska leads in the matter of auxiliary fields.

A report for January 1, 1935, from the Bureau of Air Commerce shows a total of 2,297 airports and landing fields in the United States. California leads in the number of airports and landing fields with 204, while Texas is second, with 145, and Pennsylvania third, with 116. Texas has the largest number of municipal airports (58), Pennsylvania has the most commercial airports (70), and Alaska the most auxiliary (emergency) fields (72).

Sally Rand greets her ten-year-old brother on his arrival at Newark via Boeing transport plane. Young Eugene, a sculptor prodigy, has been exhibiting his work in Chicago and New York.





Myrtle and Paul Mantz, of Burbank, Calif., both pilots, who accompanied A. E. and G. P. to Honolulu for the start of the flight. Paul is A. E.'s technical adviser and cooperated from the beginning in all the preparation work, including testing of the plane and all its equipment.

To Amelia Earhart Landing from Honolulu

*Amelia's Lockheed thunders in;
A microphone is there
To tell a hundred million ears
Her conquest of the air,
While hangar-hoppers stand and bask in
fame's reflected glare.*

*We barely know that motors mote,
That gadgets percolate,
And fifty miles from home we're lost;
An ocean flyer's fate
Jumps out at us each time we hop
beyond our pasture gate.*

*Not so this Earhart! With effect
Of nonchalance and ease
She rides through fog and rain above
The wet and briny seas—
To her all four directions don't look
like quadruplet peas!*

DOROTHY GEORGE.

JUST AMONG

(From page 3)

duty at Wheeler Field, shrilled to heaven that it was a dangerous undertaking. They screamed that trans-ocean flights should never be made in anything but big boats. A statement which should make the Wright Company, not to say Pratt & Whitney, proud and glad. They inferred, between sobs, that big strong men alone can fly across any body of water wider than the Gowanus Canal. Sorrowfully, they gasped that she would arrive in Oakland with less than fifty gallons of gas.

We won't pretend to understand what motive prompted the editorial. Either it was a business office "must," which is hard to believe, or else it was that be-whiskered old circulation gag spawned in controversial brawls. Or, who knows, it might even have been one of those silly, What are - you - going - to - do - about it-Mr.-Mayor blasts. The fact, however, that the agency does not buy space in the News makes it rather the unsporting thing to do. So let's skip it.

Oddly enough, the major

plaint seems to be the 1000 honorarium, or paid to Amelia. So was a professional aviator allowed to fly for an award. Her transpo says she may.

And wasn't that flight the one they call *The Spirit of St. Louis*? What in the nature of a publicity stunt? How about Dick Byrd flying for dear old Wanamakers? He was able to make his contribution to aviation thanks to the department of Texaco. So the boys and girls. Several have been personally subsidized in their endeavors. But sponsors were trying to dish out wampum in applied aeronautics are scarce as feathers right now. Amelia Earhart is not ending her flying job she gets comes home solely to her own ingenuity is her own property bought with her own money.

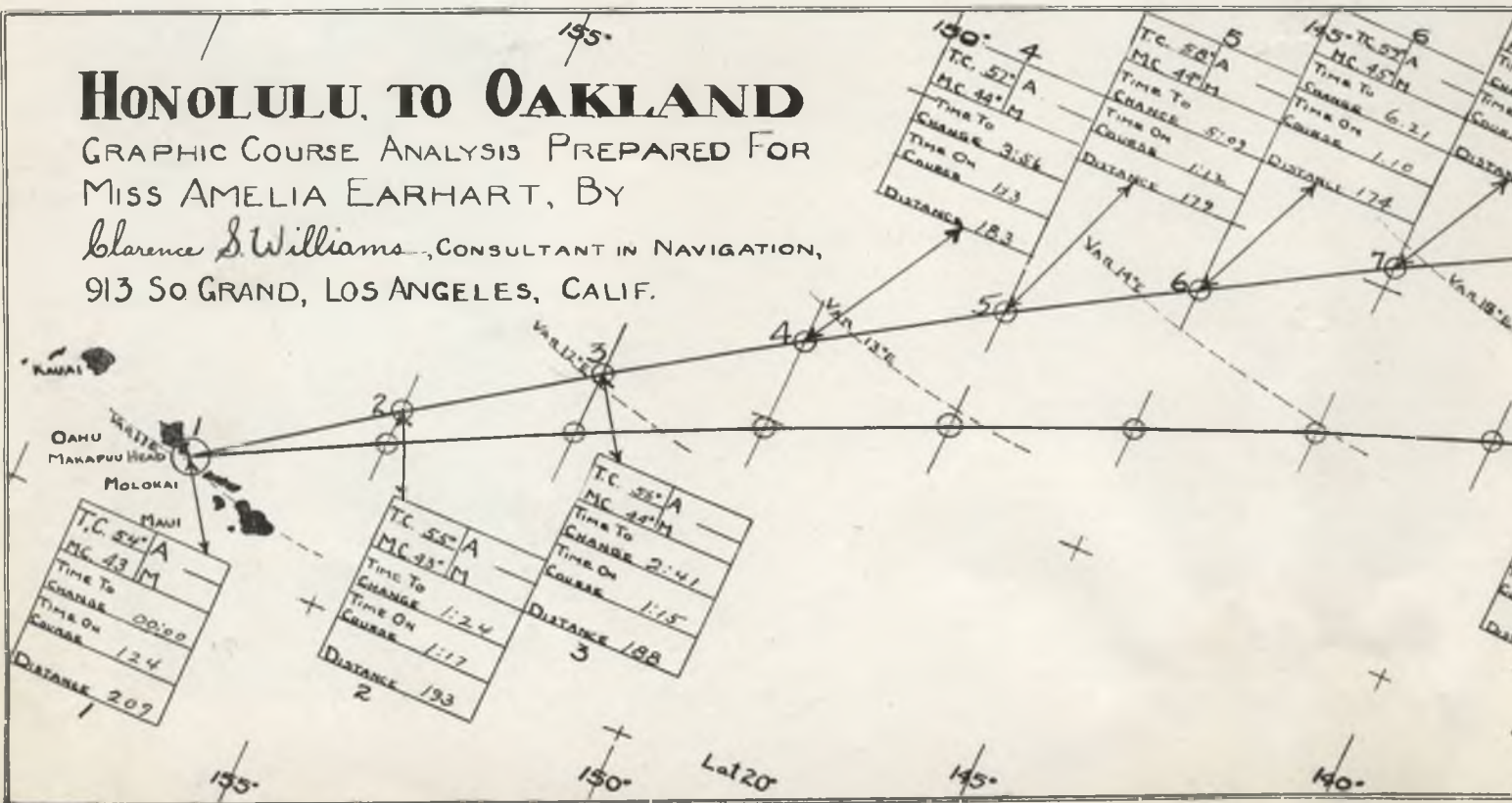
Which brings us back to the inevitable. So what! to charges of professional exploitation, publicity. So what!

The course is marked off in divisions showing the T. C. (true course), M. C. (magnetic course), the time to change her course, how the letter M stands for magnetic compass—the two types of compass which she used on the flight. The compass readings were for preparatory navigation work on A. E.

HONOLULU, TO OAKLAND

GRAPHIC COURSE ANALYSIS PREPARED FOR
MISS AMELIA EARHART, BY

Blarence S. Williams, CONSULTANT IN NAVIGATION,
913 So GRAND, LOS ANGELES, CALIF.



January 18, 1935

S GIRLS

My dear Miss Earhart:

I am pleased to send you this message of congratulations. You have scored again.

By successfully spanning the ocean stretches between Hawaii and California, following your triumphant trans-Atlantic flight of 1928, you have shown even the "doubting Thomases" that aviation is a science which cannot be limited to men only.

Because of swift advances in this science of flight, made possible by Government and private enterprise, scheduled ocean transportation by air is a distinct and definite future prospect.

The trail-blazers who opened to civilization the vast stretches of this Continent of ours, who moved our boundary from the Atlantic to the Pacific, were inspired and helped by women of courage and skill. From the days of these pioneers to the present era, women have marched step in step with men. And now, when air trails between our shores and those of our neighbors are being charted, you, as a woman, have preserved and carried forward this precious tradition.

Very sincerely yours,

Franklin D. Roosevelt

Miss Amelia Earhart,
Oakland, California.

Keystone View Co.

As for the peril part, let me remind the doughty naval captain that you don't have to have barnacles on your chin to fly an airplane. Amelia Earhart has demonstrated time and time again that she is an excellent pilot. Just look at the record. It compares most favorably with the past performance chart of naval aviation. And her preparation for this particular hop shows infinite pains and attention to every minute detail. Something upon which all soldier boys and sailor boys may well cast a reflective eye whenever they set out on anything more involved than routine operations orders.

A glance at Amelia's navigation chart at the bottom of this page gives you a good idea of how thoroughly she went into the matter. Notice, please, that she allowed herself a nice margin in case of unusual California weather either up north or down in the land of eternal

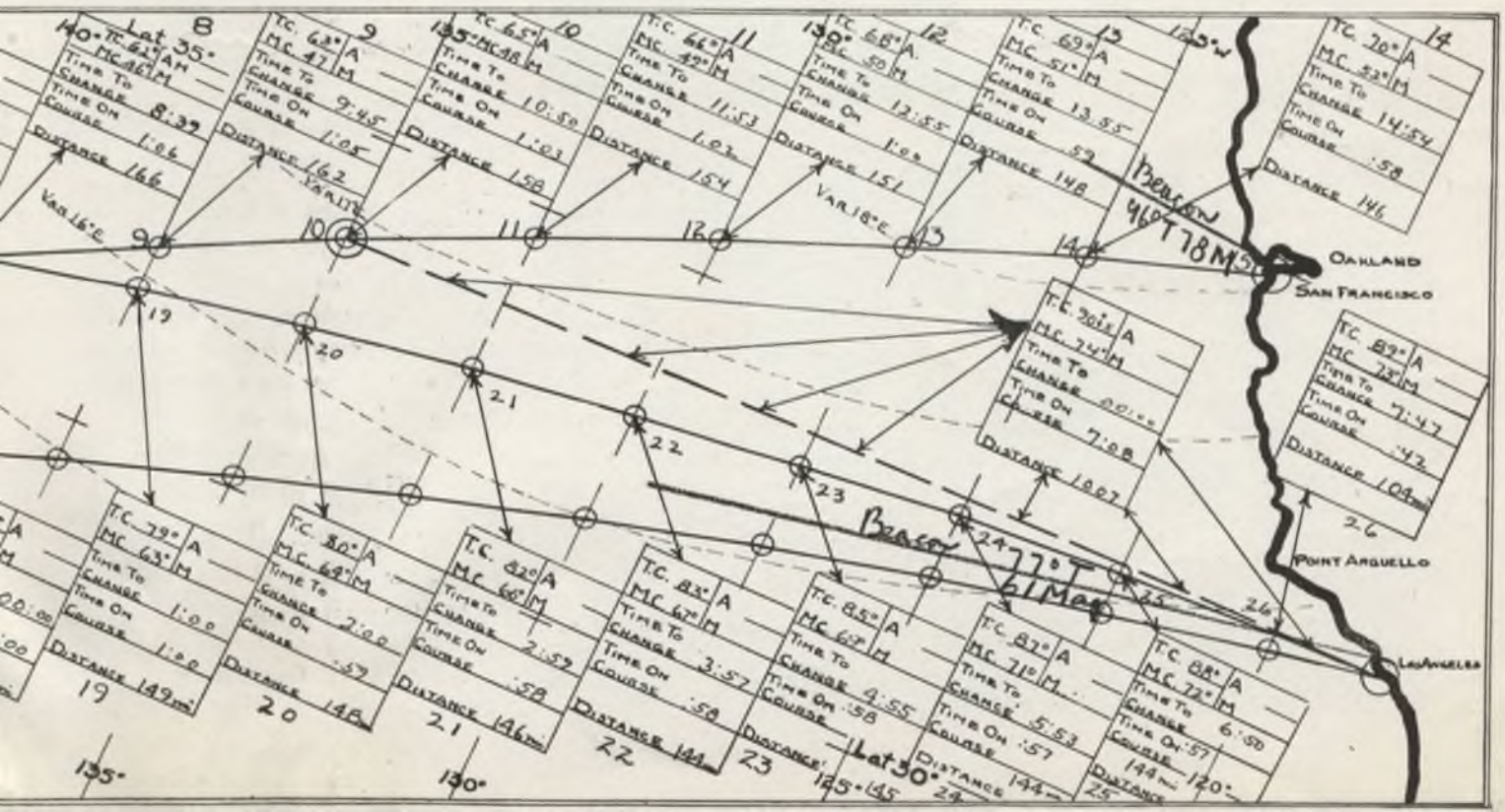
sunshine. And I have her word for it that she had *more* than two hours gas when she landed. Which means a surplus cruising distance of well over three hundred miles.

I don't think that Amelia would want me to tell you how this whole smell happened to get stirred up. She's much

too regular to quarrel with a recalcitrant, spoiled boy.

But do something for me, please. If you ever bump into Sir Charles, "Gal-lahad" Kingsford-Smith just tell him that good old Austraylia doesn't own the Pacific Ocean. Nor does he have a copyright on flying it.

flies that course, and the distance. Letter A in the upper righthand corner of each section stands for periodic compass and er her ship was swung for compass corrections in Honolulu. Clarence S. Williams, formerly of the U. S. Navy, also did the continental flights.



Books and Magazines

By MABEL BRITTON

Heaven High-Hell Deep by Norman Archibald. A. & C. Boni, Inc. New York, 1935. \$2.50.

Norman Archibald enlisted in the aviation section of the Signal Corps and reported for ground school in Texas in July, 1917. After two months of study he was one of seventeen selected from his group to be sent directly to France without preliminary flying instruction in the States.

Arrived in France, delays and disappointments awaited the enthusiastic Americans; guard duty, ditch digging, road construction but no flying—the preliminary schools were all filled to capacity. Finally in December the Commandant at Issoudun decided to make an experiment, to let a selected number start their training on Nieuports, fast advanced planes never flown before except by pilots trained previously on slower ships. The experiment was successful. Ever after these Americans were known as the "crowd who trained on Nieuports." During the winter and spring Archibald passed through the eight fields of preliminary and advanced instruction, aerobatics, formation, combat, aerial gunnery, etc., necessary to that highest and most desired rank of Pursuit Pilot. Transferred to Orly, receiving his commission, he finally reached the front in mid-July, being assigned to the 95th Squadron of the First Pursuit Group on the Chateau Thierry sector.

There followed weeks of aerial warfare, a game in which the pilot is self-taught. Away from the filth and horrors of the trenches, their work was clean, death was swift. They talked little of flights after they were over—of losses not at all, or only casually, as to mention "Lieutenant—went west this morning" or "Lieutenant—was bumped off." They joked at table, assumed light heartedness. A little Y. M. C. A. girl, joining their mess, attempted to copy their callous manner. One of the most popular members of the 95th had just crashed—they did not speak of it; she blurted out: "Well, Lieutenant Curry was bumped off today!" A cold silence, she was ostracized. Feeling her mistake, she rushed from the mess. Though Archibald followed and tried to explain, she never came back.

September 1st the Squadron was relieved from duty with the French and transferred to the St. Nihel sector with the American forces. September 8th

Archibald, flying at 6,000 over the German lines was shot down by anti-aircraft and taken prisoner by the Germans. That the capture was partly his fault, through continuing over the lines with a weak motor, made it the more bitter.

The remaining 140 pages concern the harrowing experiences in the prison camps, at Karlsruhe, Landshut, Villingen. Throughout these pages of horror the characters emerge the more clearly. Mercifully, the Armistice ends their adventures.

It is a thrilling book.

Bread and Butter and Aviation



SOME day we're going to have a story on aviation's flying secretaries. It would be interesting to know how many of the girls who type the letters that are the current history of the business of aviation also know how to pilot aircraft.

Meantime the above picture shows Vilma M. Johnston, holder of a 50-hour private pilot's ticket. This Brooklyn-born pilot who formerly steno'd for Curtiss Flying Service, now is employed as a secretary by Pan American Airways, in the Chrysler Building, New York. She has just been transferred to the new Pan American base in the San Francisco area, and will leave shortly for the West Coast.

Vilma first began flying in the summer of 1932. O. P. Hebert of the Saffair school at Roosevelt Field was her instructor.

Pot and Pan Mechanics

Some time ago we just seemed to sense that Tiny (officially Jessamine) Goddard, private pilot, who has distinguished herself and that little Monocoupe of hers in competitive flying events, had a weather eye out not only for delicious foods but for unusual recipes. So we asked her to share some of her cooking secrets with AIRWOMAN readers. And herewith we give you Tiny's ideas on preparing a Spanish Steak and also French Pancakes.

Spanish Steak

Use $1\frac{1}{2}$ or 2 pounds top round steak; pound in as much flour as possible; season with salt and pepper and brown in the drippings. When browned on both sides cover with 1 can of tomato soup, add one green pepper and onions, sliced. Simmer, tightly covered from 1 to $1\frac{1}{2}$ hours. Serves 4 people.

French Pancakes

$\frac{1}{2}$ cup flour
1 cup milk
1 egg
Salt and sugar to taste
1 tablespoon melted butter

Mix in order given. Drop on griddle to make each cake about 5 inches in diameter. Roll up with 1 teaspoon of strawberry jam inside. Sprinkle with powdered sugar.

W. N. A. A. Contact

(A paragraph intended for page 17, from Marguerite Jacobs Heron's editorial, that just fits here.)

A letter to our National President, Mrs. Greene, from Mrs. Christofferson, Governor for Alaska, and post marked "Nome," says: "Your letter reached me at Shelton, Alaska, by dog team just one month from date of mailing. I am very sorry to be unable to assist you more in the fine work you are doing for aeronautics. However, I am doing all I possibly can for the pilots and those interested in flying here in Alaska. Next year I may call on you via airplane from Alaska and tell you something of interest. I always appreciate letters way up here away from all my contacts where news is precious." Doesn't that cause a breath of chill air to flick the nostrils and a whiff of flying snow blow across the eyes?

JUNIOR AIRWOMAN

By BETSY BARTON

NEW ORLEANS (La.), Jan. 16.—Marie Louise Reynolds stowed away with Captain Rickenbacker on his record smashing flight from New Orleans to New York. We'll admit we thought it a pretty audacious act. We learn from Marie, however, that her company was desired by the Captain as he was impressed with her three A. M. appearance to interview him.

We assume he was disinclined to break a young heart and so Marie is perhaps the only invited, *official* stowaway.

We have it in her own words: "It was the most thrilling and exciting adventure in my life." This isn't because Marie is only 17 either.

All daring things have small tragedies attached. We are sorry to state Marie lost her job as secretary. Hard-hearted boss. The demand for secretarial stowaways is on the up and up, Marie, so courage! And more power to you!

OAKLAND (Calif.), December.—Pert, blonde Kathryn Rodgers made her first solo flight from the Moreau Flying School. There Kathryn is a great enthusiast and situated at one of our better "Fly the Pacific" airports.

Phyllis Birchfield, also of Moreau, soloed the same day. We can't get enough of this my friends.

NORTHAMPTON (Mass.) — *Recently*. A group of up-and-comings headed by Mary Kimball, sister to Margaret of New England fame, have started a Smith College Flying Club. They are forced to use the Amherst club plane until they get one of their own. With the help of Amherst they propose to hold an intercollegiate meet somewhere next May.

Some of the more interesting statements we received are as follows:

"Considering that heavier-than-air machines have been flying for more than 30 years some people must be surprised that we still call ourselves 'pioneers.' What convinces us *especially* of our pioneering spirit is our difficulty in obtaining flying permission which, in many cases, seems about as easy as trying to get permission to accompany a rocket expedition to the moon or some similarly fantastic experiment.

The parents are no doubt muttering: "Probably'll have to consent to rocketing some day. Ho hum. Life is just one thing after another." Poor f only th d kick through!

Anyway, we'll be hearing from those Schmidt gals.

New Junior Airwomen are:

- 2—Jean Hill, Newburyport, Mass.
- 3—Barbara Benjamin, Framingham Center, Mass.
- 4—Arlene Clark, Framingham, Mass.
- 5—Eunice Cunningham, Framingham, Mass.
- 6—Marjory Devonshire, Framingham, Mass.
- 7—Eleanor Femia, Saxonville, Mass.
- 8—Mary Hancock, Saxonville, Mass.
- 9—Louise Merchant, Framingham, Mass.
- 10—Thelma Montgomery, Framingham, Mass.
- 11—Helen Salak, Framingham, Mass.
- 12—Frances Sheridan, Framingham, Mass.
- 13—Frederica Barker, Simsbury, Conn.
- 14—Susan Bontecou, Simsbury, Conn.
- 15—Harriet C. Durstine, Simsbury, Conn.
- 16—Charmion Kineon, Simsbury, Conn.

The only reason we are No. 1 is that we started this.

NEW YORK, *Now*. Come on, laziness, where's your number? Shall we bribe you with a wing fabric shirt?

Climbing Back

EVER since the private license requirements were skyrocketed from 10 up to 50 hours, with only an aching void left between a private and a student permit, the total for licensed pilots began to go into a decline. The subsequent creation of the 25-hour amateur license succeeded in cutting down the rate of decrease from thousands to hundreds but it failed to put the total number of pilots back on the upgrade.

Which makes the latest report on the subject from the Bureau of Air Commerce all the more worth sitting up and crowing about. Namely: the new total of 13,949 licensed pilots is exactly 312 pilots ahead of the last previous total as of October 1, 1934.

This upswing, coming at the season when the number of new pilots is at its lowest, looks promising for the months ahead. The total for women pilots, which at the last counting established a record of standing still rather than going lower, is on the up and up this time from 358 to 372. We may see that total get on speaking terms with the 400's in another three months, and go back once more up to 600 and some odd.

The stowaway, whose alarm clock like the Cricket on the Hearth was to blame for her recent ride to New York, is being assisted from the baggage compartment by the ship's captain.



BERYLLIUM

(Continued from page 8)

mediate adaptation to the aircraft business, even though a pound goes a very long way especially in copper alloys. It is not the cost of extraction, as is generally believed, which holds up the price. It is simply the lack of high grade ore deposits. In fact there is little question in my mind that the extent of this industry will progress in direct proportion to the extent of the high-grade deposits found.

ALUMINIUM and beryllium were first discovered in 1827 by the same man, Wohler. Aluminium, even within the life of one of my best friends—an attorney in New York, was so rare that it was quite the thing to have opera glasses of Bauxite and a simple method of extraction brought the price down to its present low level.

Beryllium is going through the same evolution. Unquestionably, in my mind, there are huge deposits of high-grade beryllium awaiting the probing eye of the prospector. It is a fact that there is beryl in every State of this Union where there are old rock formations, but to a degree it is like the gold content in the ocean.

It was my pleasure to spend some time on a high-grade beryl deposit in Canada this past summer. Beautiful ores, from Fergusonite down to Asbestoes, Mica and Graphite abounded in the whole neighborhood. The Beryl deposit, consisting of some 2,000 acres in a pegmatite dyke was what interested me most. Beryl there comes in hexagonal crystals running from six inches to two feet in length and from a quarter of an inch to twelve inches in width—always perfectly formed, impregnated in the Matrix of the country rock like currants in a cake. I would estimate that about 5% of the country rock which, by the way is feldspar in this case, consists of crystals. Beryl is a form of the precious stone Aquamarine. Had nature added a little bit of chromium these crystals would have been pure emerald. In fact, in a deposit in Nevada, with which I am familiar, \$6,500 worth of emeralds were taken out of the ground, collecting 3,000 tons of beryl. About 15% of the crystal is beryl oxide and in the Canadian deposit which I visited, about 18% of the ore is aluminium.

LAST year in this country the consumption of beryl ore was about 30 tons per month. This year it runs 300 tons per month and there is every indication that in twelve months hence the consumption will be 3,000 tons per month—provided it can be purchased at a

reasonable figure. The price of the ore ranges from \$20.00 to \$62.50 per ton although there are no set quotations and the crystals from different sections of the world vary greatly in their usefulness and intrinsic worth. Many factors, however, lead me to conclude that the present scarcity of beryl may disappear overnight and the ore itself become as commonplace as bauxite and then the money will be available for huge plant investment and the price of beryllium will drop to at least \$1.00 per pound. If it does, this will become the greatest milestone in aeronautical progress since the world war. Our engineers, scientists and government officials could do no better than to keep their eagle eyes out for that day for, after several years of personal research on this subject, I believe it is not far off.

Copyright, 1935, by Harold E. Hartney



Dawn To Dusk

(Continued from page 6)

At this point Margaret Kimball relinquished her position as navigator and took the controls. A beautiful take-off over a badly rolling field and we were en route for Fitchburg. Margaret circled the field and sat down to an irreproachable three point landing. Quite a large group greeted the Dawn to Duskers at Fitchburg Airport which has been greatly enlarged and improved.

Forty to fifty people waited at Gardner as Margaret taxied into the hangar. This ambitious city has built an active airport where one would suppose such things could not be. Literally a hill has been moved to a hollow to lengthen the east-west runway.

Once more Margaret and I changed positions as pilot and navigator and we were off. We put the nose down for a lusty zoom, then waved our wings in farewell. From here on the terrain was considerably changed. The country becomes more rugged, and the airports tend to snuggle into valleys between sizable hills. It was not long before Orange-Athol and Greenfield were behind us, and we were headed down the beautiful Connecticut Valley with its level tobacco and onion fields framed in the massive beauty of the Holyoke Range. Down the center winds the majestic river making its way to the Sound. The Waco sped down the valley to Northampton where lunch had been planned with the Smith College Flying Club. We sat in the warm office par-

taking of much appreciated sustenance, and chatted with some of the club members. Northampton seems to be a very active port situated advantageously for the convenience of the various colleges in that locality.

WE took off practically simultaneously with a Bull Pup on its way to Westfield, which soon looked like a red dragon flying buzzing into the distance, as we turned west to Pittsfield, our longest single hop. In spite of the fact that we held a higher altitude than before, the air continued rough. The rugged Berkshires were impressive as we sped over hill top and valley. Austere and dignified, Mt. Greylock looked up from the right, as if in disapproval of this invasion of its domain. Nothing daunted, however, we continued the journey to Pittsfield, thence turning south to Great Barrington, which is a very sizable town surrounded by the Berkshire Hills.

The home stretch had begun. Only the two Springfield airports to cover, then nonstop to Boston. It was not yet 3:15 on leaving Westfield, not more than 3:20 when the ship came over Bowles-Agawam. Being early I decided to say hello to the folks there, so levelled off for an actual landing.

Bowles-Agawam Airport at Springfield is a grand place. It has an immense area, smooth as a billiard table, wonderful approaches. It seems a shame that it is not more universally used. Unfortunately, our stay was very short as we were due at Springfield Airport at 3:28 for a gas stop.

A tired but happy crew left Springfield a little later. The passengers on the back seat were over-vigorously keeping time to the radio music, in fact so vigorously that we could feel the ship shake to the stamping of feet. Very appropriately we sang the "Last Roundup." Dusk approaching, we were cruising along over familiar country. Worcester and Marlboro slipped beneath. We followed the Turnpike from Framingham in, the street lights began to appear, one by one. Coming over Boston the red neon lights made an effective picture against the afterglow of the sunset, the beacon on the Custom House, the dome on the State House. As we glided over the buildings into East Boston Airport once more, boundary lights were on, blinking green and red in the dusk.

Ten years ago such a tour would have been impossible. Between dawn and dusk 41 airports of Massachusetts had been visited. A car could not possibly cover the territory, yet in absolute comfort, and without too much effort, we had cruised more than seven hundred miles.

FASHIONS IN FLIGHT

By FAY GILLIS

TRANSPORTING fashions by air is not new, which probably accounts for the fact that all of the smartest shops use air express for the delivery of their merchandise without fuss or flurry.

Way back in the middle eighteen hundreds, *Godey's Ladies' Book*—the *Vogue* of the Crinoline day—advocated Fashions by Flight as shown on a cover picture from the magazine reproduced on this page. Nothing was spared—not even the wigs or the ruffled pantaloons. They only had balloons in those days and air express wasn't what it is today, but in spite of the handicaps the fashion dictators realized the advantages of sending their latest creations by air.

However, with two-hundred-mile-an-hour planes and complete co-operation

Joan Crawford wearing a gown in Hollywood twenty hours after the finishing touches were put on by Hattie Carnegie's in New York.



between the stores and the airlines, there are no handicaps today. In fact everything is in your favor, and there's nothing unusual about it. Don't expect the salesgirls to get excited when you ask them to send your gown by air express because they have heard that request before, and from some of the most glamorous people too.

Hattie Carnegie's have air express down to a science. They have been air mailing Joan Crawford's clothes to her for years. If Joan can't come to New York, she air mails a sketch of the gown of her desires. It is made up in New York—Carnegie's have all her measurements—and it is air expressed back to her four or five days later.

IMAGINE the fun of receiving a dress made especially for you and delivered to you three thousand miles away, in four days. It is your own fault if you haven't a thing to wear, because you can have "what you want" in practically no time at all.

But Joan Crawford is not the only notable movie star who has enjoyed the speed of Hattie Carnegie's air express service. Constance Bennett, Katherine Hepburn, Norma Shearer, Dolores Del Rio, Ina Claire, Janet Gaynor, Marion Davies, and Pola Negri are a few of them. Guess practically all of them beat us at our own industry as far as shopping is concerned. It's rather annoying to have the people you least expect beat you at your own game.

The day of the opening of "Ode to Liberty" in Washington, one of Ina Claire's dresses was torn. A telephone call to Carnegie's in New York and two and a half hours later, Miss Claire was parading around our nation's capitol in her new gown.

Norma Shearer holds the long distance air express record. She had a red wool suit sent to her at The Grand Hotel in Berne, Switzerland, via the *Europa*, from which it was catapulted on the plane to the mainland, and rushed from there by another plane to Miss Shearer.

HOWEVER, Hattie Carnegie's is not the only store to offer air express as part of its service. Jay-Thorp's, Bergdorf-Goodman's and Milgrim's also send their fashions by air.

Grace Moore telegraphed Milgrim's for a dress. It left the store at 9 P. M. that night, was sent air express and was



OUR BALLOON POST

A cover from *Godey's Ladies' Book*, reproduced from the original in the collection of Bella C. Landauer

delivered to her apartment in Denver, Colorado, before ten o'clock the next morning. Service with a capital S.

Incidentally, both Mrs. Edsel B. Ford, whose husband and father-in-law have something to do with automobiles and Mrs. Roy Chapin, whose husband is president of the Hudson Motor Car Co., do their shopping via air express. Automobiles have their place, but for fast, efficient, long-distance shopping service take to the air!

LEARNING HOW

ELEVEN nations are represented in the enrollment of the Curtiss-Wright Institute of Aeronautics at Grand Central Air Terminal, Glendale, California. Collectively the students speak 21 different languages, besides English. It's a melting pot whose equal aviation has not seen since the old days way back before August, 1914, at the Curtiss school at Hammondsport, N. Y.

Meantime the annual report of the Casey Jones School of Aeronautics at Newark, N. J., reports an enrollment of 270 active students, which is believed to exceed that of any other similar school in the country.



New York-New Jersey

This section is having a booth at the International Trade Fair at Grand Central Palace in New York . . . Plans are under way for a housewarming at the new headquarters in the Hotel Gotham . . . and also for a cocktail party on March 15th . . . The 99's are joint sponsors with other organizations of the annual dance of the Aviator's Post of the American Legion on February 21st at the Hotel Pierre held for the benefit of injured aviators.

North Central

On Saturday, January 12, the Michigan Chapter had a record meeting, at Flint. For the first time in the history of the Chapter, which will have its first birthday next month, every member flew in to the meeting. This was such a big, big event that the Mayor of Flint came out to the new Municipal Airport to give us the keys to the city.

Gladys Hartung, Chairman, on behalf of the Chapter, presented Ruth Wakeman with a scarf of parachute silk, which was marked with her name and the Chapter's in 99 blue, as a farewell remembrance. Ruth is moving out to Oakland, California, and the Michigan Chapter and Illinois Chapter are going to miss her dreadfully, but we know the Bay Cities Chapter will take good care of her. (Bay Cities Chapter please note!)

The Illinois Chapter had a luncheon at Chicago Municipal Airport on Saturday, January 5.

Alice Hirschman.

Southwestern

THE January meeting of the Los Angeles Chapter of the 99 Club, held at the club rooms at the Clark Hotel on January 14, was one of the biggest and best to date.

Several girls have incorporated and are having a Kinner Fleet rebuilt for use by themselves and any 99's who would like to fly it. They are Myrtle Mims, president; Kay Van Doozer, vice president; Laurretta Schimmoler, secretary-treasurer; Dorothy George, auditor; Peggy Gauslin, Dorothy Kinsman and Onita Thorley. The ship is being rebuilt by the Pasadena Junior College and work is being watched closely by Jimmy Reed, Inspector, Department of Commerce. It will be finished some time in March and will be kept at the Union Air Terminal, Burbank. There will be a licensed Transport pilot in charge of it and any member may rent it at a special rate . . . Georgia Lee and Neil McGaffey's ship is progressing slowly but surely. We can be proud of these two. . . One of our newest members, Mrs. Morriss is taking instrument and radio beam flying. This is a very important

thing and more of the girls are urged to follow up the idea.

EDNA CRUMRINE.

New Members

Lucille Baker, Detroit; Violet Crosbie, Chicago; Dorothy Ruether, Detroit; Onita Thorley, Hollywood, Calif.; Gladys Vickers, Seattle.

A List of Sectional Governors

New England—Dolly Bernson, 140 Sewell Ave., Brookline, Mass.

New York-New Jersey—Marjorie Ludwigsen, 4 Irving Place, New York City.

Middle Eastern—Genevieve Savage, Quarters No. 4, Bolling Field, Washington, D. C.

North Central—Alice Hirschman, 861 Edgemont Park, Grosse Pointe Park, Michigan.

Southwestern—Clema Granger, 1617 Wellesley Drive, Santa Monica, Calif.

Northwestern—Cora Sterling, 2012 43rd St., North, Seattle, Washington, acting governor. (Election pending.)

Southwestern—Mary Nicolson, c/o Sternberger Children's Hospital, Greensboro, N. C. (Election pending.)

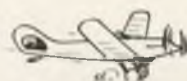
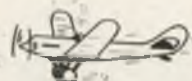
South Central—Dorothy McBirney, Tulsa, Okla., acting governor.

MICHIGAN CHAPTER—99's. Left to right: Mary Von Mach, Margaret Horton, Lucille Baker, Alice Hirschman, Faye Davies, Ruth Wakeman, Mabel Britton, Helen Lehtio, Jeannette Lempke, Florence Swanson (guest), Gladys Hartung.

Picture Courtesy THE FLINT DAILY JOURNAL.



W.N.A.A.



EDITORIALLY SPEAKING

The greatest news of the month is the admission of a new unit into the W. N. A. A.—the Albuquerque Unit consisting of fifteen members. Application to join the W. N. A. A. was made by this unit December first and a copy of their by-laws came through December 20th. It was the nicest sort of Christmas present. On January 8th, a meeting of the Board of Directors was called, the by-laws and application were reviewed and the unit unanimously voted in. Their charter went forward a few days later.

We wish to take this opportunity of extending to them greetings from every other unit of the organization and to hope that the association will be pleasant and profitable on both sides.

We had the pleasure of stopping off for some forty minutes at Albuquerque on our way west last spring and of being met at the railroad station by Mrs. Beam, Governor for New Mexico, and two of her friends, also aviation enthusiasts. Over a hasty luncheon in the picturesque station-hotel we learned much of each other through our mutual interest in aeronautics. A chief impression as the train drew out was one of lovely color—heavenly blue, rose, and sand. And such brilliant sunshine. But the color and sunshine were blended with a sense of pleasant and intelligent human contact and hospitality. From our slight acquaintance with place and people we can only imagine a unit of delightful members, in every way up to W. N. A. A.'s best. Mrs. J. S. Simpson is president. We hope to publish a complete list of officers in an early issue. Again we wish to assure the new Albuquerque Unit of a hearty welcome into the National group.

A welcome is also to be extended to two new members of the Salt Lake Unit, Mrs. A. J. Smith and Miss Jessica Blackburn of Salt Lake City. New membership cards are dated to April, 1936, it will be noted, so that members or units joining now have a few months extra grace on annual dues. This is in accordance with by-laws governing new members joining between January 1st and April 1st.

Please, units, keep in mind the date of the Annual Meeting, May 17th and the place—Dayton. We want you all to be represented this year.

We want to introduce this month the Tulsa, Oklahoma, unit of W. N. A. A. Mrs. Collier, the author of the article describing it, is President of the Tulsa unit and likewise Governor of Oklahoma. Other officers are Mrs. Earl Field, vice president; Mrs. Gordon Wright, secretary, and Mrs. J. T. Trimble, treasurer. The unit now has thirteen members.

MARGUERITE JACOBS HERON,
Secretary, W. N. A. A.

MEET THE TULSA UNIT

TULSA, Oklahoma, the "Air Capitol of the World," has achieved the distinction of being the world's busiest airport and as such has, even in this—primarily a man's business—often needed the "feminine touch." The Tulsa Unit of the Women's National Aeronautical Association has filled this need.

Organized in January, 1931, by a group of twenty women on the eve of the just-past depression, the unit has suffered somewhat through loss of members but has gained in experience and enthusiasm. Transfers and general shut-down in the industry have accounted for most of this loss but the Unit has forged ahead and in the past year has gained six new members. We wonder if any other unit can claim as many fliers for its size as can Tulsa—six in all—one with a Limited Commercial license, one with a private, both of them nearly ready for Transports; the other four have student permits. Two of these have soloed and are building up time for their licenses.

The Tulsa Unit has endeavored ever to maintain the object of the Association—to cooperate, aid, and effect any betterment relative to aeronautics. When the Unit was first formed a representative was appointed to contact the chairman of the Aviation Committee of the Chamber of Commerce, the manager of the Municipal Airport and the City Park Board to tell them about the organization, its purpose, and our desire to be of service. This action evidently was appreciated judging from the immediate response, because in less than two weeks the Unit was called upon to assist in

entertaining the women guests at the National Airport Conference and in the sale of tickets for the banquet. We turned out to be such excellent saleswomen that for the Wiley Post-Harold Gatty reception and banquet given by the city following their flight around the world the Unit outsold any other group.

Following this we were asked to place one of our members upon the Aviation Committee of the Chamber of Commerce, and at the dedication of the new municipal airport the Unit was placed in charge of all activities, both field and social.

Immediately after the completion of the new administration building at the municipal airport the Unit was offered a club room but we could not avail ourselves of its use until we could furnish it. Plans for the ensuing year include the furnishing of this room and a campaign for additional members.

The Unit meets at the Copper Kettle Tea Room for luncheon the second Wednesday in each month and we are always happy to welcome other members and girl fliers. A list of the officers with their telephone numbers is posted at all airports for their convenience.

BARBARA COLLIER.

Mrs. W. S. (Barbara) Collier, president, Tulsa Unit and Governor for Oklahoma Unit.





The Gotham rooms are more popular than ever with their new, tasteful furnishings, the loungy chairs and spacious conveniences. The delightful combination of its traditional elegance as expressed in the Renaissance Room, plus the modern smartness of the Alpine Grill and the Ladies' Cocktail Bar, will be pleasant memories of your visit.

The Gotham is located in the heart of the fashionable shopping district . . . convenient to all the smart shops . . . the theatres . . . and easily accessible to every part of the city. Just say "The Gotham" and the car from the airport will drop you at our door. Room rates start at \$4.00



The Gotham

Max A. Haering, Resident Manager

FIFTH AVENUE AT 55th STREET
NEW YORK CITY

Now a Waco Cabin Plane at \$5225.00



Here's a Standard Series four-place cabin WACO that will create a sensation in 1935. A ship with ample power and with performance features that cannot be matched at anywhere near the

price. Basically it is similar to the now famous 1934 Cabin WACO. Refinements and changes have made possible new, low prices for this model SC WACO, powered as follows—

Engine	Top Speed	Cruising Speed	Landing Speed	Price
Continental	140	122	50	\$5,225.00
Jacobs	144	125	50	5,490.00
Wright	148	127	52	7,000.00

In addition to this Standard Series four-place cabin WACO, the 1935 line of WACOS also will include a new Custom Series four-place cabin

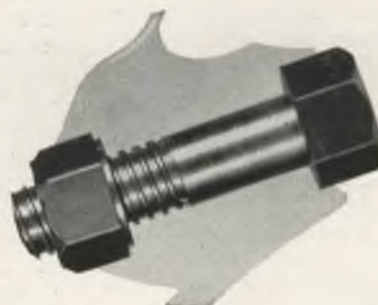
plane which will be announced soon. This ship will embody features which will make it the world's outstanding airplane.

THE WACO AIRCRAFT COMPANY, TROY, OHIO



"Ask Any Pilot"

WACO LEADS IN AIRCRAFT REGISTRATION



Loose bolts, nuts, or screws are dangerous! Parts with the

DARDELET SELF-LOCKING THREAD

always stay tight . . . Insist on their being used in your plane!

DARDELET THREADLOCK CORPORATION
120 Broadway New York City

The
B. G. CORPORATION



*Radio-Shielded
Model 4 B-2-S*

Manufacturers of



SPARK PLUG



Model 4 B-2

**136 WEST 52nd STREET
NEW YORK**



STREAKING through the night at an average speed of 223 miles per hour, Major James Doolittle made a non-stop flight from Los Angeles to New York, in a Cyclone-powered Vultee 10-place American Airlines transport, in 11 hours and 59 minutes—establishing a new transcontinental speed record for transport planes.

New transport speed records were also established during January, 1935, by Eastern Air Lines and Transcontinental & Western Air. E. A. L. made a scheduled flight from Miami to New York in 6 hours and 34 minutes with a Cyclone-powered Douglas. T. W. A. flashed between Chicago and New York, with a Cyclone-powered Douglas in the remarkable time of 2 hours and 54 minutes.

Such outstanding achievements in the field of high-speed transportation speak eloquently of the tremendous power and dependability of Wright Cyclone Engines.



WRIGHT
AERONAUTICAL CORPORATION
PATERSON NEW JERSEY

A DIVISION OF CURTISS-WRIGHT CORPORATION

