

GAS BOILS AT MILE ALTITUDE

TESTS MADE BY MAJOR SCHROEDER TEACH AIR SERVICE PERSONNEL INTERESTING FACTS.

The Air Service Information Bureau has issued a bulletin on phase of Major Schroeder's flight. The information is interesting to all pilots, exploiters and internal combustion engineers. The bulletin follows:

Considerable trouble has been experienced by Mayor Schroeder during his big altitude flights on account of the failure of his siphon pump to deliver gasoline to the carburetor at high altitudes. Upon installation of the Schroeder flowmeter in the gasoline feed system he discovered boiling of the gasoline at altitudes from 6,000 feet and up. This indicated by bubbles appearing in the glass tube of the flowmeter at about 6,000 feet. These bubbles increasing in number and consequent failure of the pump itself. Experiments in the laboratory of the material section, engineering division, reproduced this situation exactly on reducing the pressure on the gasoline to pressures corresponding to atmospheric pressures at various altitudes, and an analysis of the gasoline by distillation process showed the gasoline to be casing head gasoline rather than straight run. As casing head gasoline has a much lower boiling point than called for by specifications Nos. 3511-B covering domestic, 3512 for export, and 3513-A for fighting gasolines, the conclusion was immediately arrived at that a gasoline having a higher initial boiling point and consequently conforming more closely to the specifications would stop the boiling that had been experienced. Consequently a gasoline conforming to specification No. 3511-B was ordered from the Sun Oil Company and used by Major Schroeder in his last two flights with no trouble whatever experienced due to boiling. The matter of condemning the gasolines used at the field on the ground of not meeting specifications had been under consideration for some time, but had not been decided upon definitely as it was something of an advantage to be able to use the ordinary high test gasoline on sale at all filling stations.

However, this instance together with trouble experienced in the dynamometer laboratory and increasing complaints about evaporation losses at the hangars led to condemnation of the casing head gasolines and immediately increased the quality of the gasolines to the point where they now meet specifications.

The principal lesson drawn from this series of experiences is the wide spread prevalence of an incorrect impression among air service personnel concerning the efficiency of the specific gravity test of gasoline. Most all air service personnel regard a gravity of 65 baume, or specific gravity of 721 as establishing beyond a shadow of a doubt the efficiency and general good qualities of the gasoline. This, however, is not correct as two gasolines—one straight run and the other blended casing head—can be given identical specific gravities but very different distillation curves, that is to say plotted curves which give the initial boiling points, the final boiling point, and the intermediate points. The casing head gasoline will show considerably less power delivered in the motor after it gets there, than does the straight run gasoline. By 'straight run' is meant that fraction from a crude petroleum distilling off between such points as are designated to constitute the fraction known as gasoline.

Inspection of specifications Nos. 3511-B, 3512 and 3513-A, will disclose the fact that specific gravity is not named as a requirement of either of the three gasolines but that entire dependence is placed on the distillation curve. Specific gravity is of value

"Poor Man's Lawyer" Has Its First Woman Attorney



"LEGAL advice," said Miss Dorothy Frooks, attorney for the Salvation Army at National Headquarters, New York City, "ought to be given away for the asking. It ought to be dispensed like religion and medicine."

That is the reason why Miss Frooks chooses to cast her legal career with the Salvation Army, to aid that organization in the part of its work in which it serves as "The Poor Man's Lawyer." That is the reason why, armed with a legal degree dated 1918, an admission to the bar on which the ink was scarcely dry, twenty-two years of youth and more than ordinary good looks, she opened her office at Salvation Army Headquarters, 122 West Fourteenth Street, New York City. Miss Frooks has made good. She

has untangled many family snarls without resorting to the divorce courts. She has obtained justice for tenement dwellers who have been preyed upon by landlords, installment collectors and loan sharks. She has helped pay off mortgages, settle wills and draw up contracts.

It is no uncommon thing for the Salvation Army to receive urgent calls from the poor for legal advice and assistance; and when the cases are worthy the Army obtains competent lawyers and sees that justice is obtained.

Attorneys in many cities make it a practice to give their services free to those recommended by the Salvation Army. Miss Frooks is the first woman to do so, and the first woman lawyer to "hang out her shingle" with the Army.

only in distinguishing between straight run gasolines of the same base and is of no value whatever in determining the quality of the gasoline unless it is known before hand whether the gasoline is from a paraffin or asphaltum base, and also that

it is straight run gasoline. The distillation curve, on the other hand, does give the relative efficiencies of the gasolines and is the only known reasonably short, test which can be used for the purpose.

The Mountain Girl as She Is

By ERNEST H. EDINGER.

For two centuries the hardy dwellers of the Blue Ridge Mountains, in Virginia and Kentucky, North Carolina, and Tennessee have formed one of the most picturesque peoples of the nation. Their isolation from the rest of the world, through nature's natural barriers of mountains and forests, has been largely responsible for insufficient school education, failure of industry and enterprise, prevalence of feuds and "home made" law, accompanied however by deep rooted ideals

of sturdy virtue.

The girl of the mountains, as you have pictured her from the novels of best known authors and still more recently from the modern "movie" screen, is a lank, rugged, untutored, ill-dressed girl, a woman before her years. She did all the hard work about the home but otherwise differed little from the men of the country, and she was just as dangerous a person to trifle with, for of course she "toted" a gun. This conception is all wrong and out of date today and if you would know

the mountain girl as she is, you must revise all your previous ideas. Miss Maid of the Blue Ridge is now a sharp, alert, tidy, neatly groomed young person. The same ruddy cheeks and flashing eye with head held high, and the sturdy frame and lithe figure are still hers and will always be, for that is her heritage. But there is a dash and vim about her that gives her an entirely new character, a pleasing personality and one quite as distinctive though different, from her old self.

If you chance to see in her favorite regalia, a brown middie blouse and khaki skirt, scarf and olive drab roll hat, you will best appreciate and immediately recognize her. She is a Girl Scout.

Scouting for girls has been introduced into the mountains and is spreading like the growing of green grass in spring. In Kentucky and Virginia especially has scouting already taken root. Girls are keen for the scouting program of healthful and helpful fun and activity, and parents have accepted it for its worth.

In breaking down of the reserve and natural aloofness of these girls and in bringing about the group idea of participation in sports and companionship, scouting has worked wonders. All that her sister of the city or suburban town can do, Miss Mountaineer can accomplish and not infrequently excel, for she "catches on" quickly. This is the case at Pine Mt., Marlan county, Kentucky, in the heart of the Blue Ridge. Natural physical conditions have not changed much in the mountains, however, and the magic outward and mental change in the girls is simply the product of one big idea—scouting. The schools still lack electric light and hot water; thirty miles is, as before, a long day's journey, and Baltimore and Washington, as England and the Alps, are "out yonder" in the general direction of the northeast where miles away lies the nearest railway station. There is only the vaguest conception of either the United States or the Kentucky government.

At school the girls get up at 5 o'clock in the morning and do the chores and after lessons are finished, engage in the tasks about house and field that is their lot. And after a day's work the size of which might put to shame the efforts of many a city dweller, the girls find time for a half hour or more of scouting work in the afternoon, and for a whole two hours on Saturday afternoons, when work is finished by 3 o'clock. Bed time is 8 o'clock sharp, which may account in part for the general health of the girls. "What do the city girls think about this?"

From the small beginning of one troop with single patrol, less than a year ago there are now several hundred girls in the region enrolled as scouts, and the movement is still in its infancy.

An interesting description of the life of the district is contained in a letter received last week at national headquarters of the Girl Scouts, 189 Lexington-ave., New York City, by Mrs. Jane Deater Rippin, national director, from Miss Lucretia Garfield, in charge of the Girl Scout work in the Kentucky mountains. Miss Garfield, from Pine Mountain Settlement School, Pine Mt., Marlan Co., in Kentucky, wrote as follows:

"The girls here do not have much leisure time but they are keenly enthusiastic about scouting. Every girl of ten years or over has joined a troop. Our meetings are an inspiration to me. The girls have not had as many years of school as girls of their ages in other parts of the country, and it is therefore, harder for them to meet the tenderfoot tests. Yet they would not for a moment allow me to make the tests any easier, and as a result the girls are quite up to standard."

"You will appreciate that our location makes it harder for the people here to realize their connection with the rest of the country. We are surrounded by mountains on all sides over which we must climb to reach the outside world. The nearest station is four miles across Pine Mt. over a steep, rough and dangerous trail, and the nearest town of any size is some ten or twelve miles farther. Most of the children come from places even less accessible, and it is therefore not surprising if to most of them New York and Baltimore, England and the Alps, are all "out yonder" or "away off there"—generally in the direction of the nearest station, which happens to be southwest of here. To be sure the older children are somewhat more enlightened than those who have been here for several years and have a fairly good theoretical knowledge of the geography of the country and even of their relation to the government as citizens of the United States. But even so the rest of the country hardly seems real to a child whose experience has taught her that thirty miles is a good, hard day's trip.

"Our daily life is interesting. We rise at 5:30 o'clock in the morning; that is to say, most of us do; the girls who are working in the kitchen and the girls and boys who have charge of making fires in the morning have to get up an hour earlier. Breakfast is at 6 and immediately after breakfast every child in the school except those in the lowest grades starts work on his or her particular bit of work about the place. The oldest girls and boys, those in the eighth grade, ranging from about 16 to 20 years, attend school from 7 to 11:45 o'clock and do their manual work all afternoon and for an hour after supper. The girls of the next lowest grades, up to the age of 16 years work all morning and go to school in the afternoon. Supper is at 5 and all the dishwashing and other tasks are finished by 7 o'clock. Then the upper grade girls study until 8 and go to bed. You can see that there is very little time or energy left for anything extra.

"Fortunately there is no school on Saturdays and the girls get through their work about 3 o'clock so that we get about two hours of scouting. Everyone is eager for a time to come when the children will not work so hard, but until we have a few more modern conveniences, such as electric

Y. W. C. A. Sets Stage for Community Drama



"ALL the world's a stage" is proving true in a most literal sense. The Y. W. C. A. is one of the latest exponents of the drama, and its community pageants, held in towns and cities all over the country, from Dallas to Denver and from Georgia to Maine, have been a most effective means of arousing community spirit and civic pride. Dress-makers and draftsmen, actresses and artists, carpenters and cornetists unite in putting on the performances.

All of the stages of the Y. W. C. A. theatres are not as small as this model which Mrs. Donald Pratt, of the Pageantry Department, is building. In the natural amphitheatres from one hundred to two thousand actors take part. Miss Hazel MacKaye, sister of Percy MacKaye, of the Y. W. C. A., is now writing the plot for a Festival to be given at the Sixth Convention of the Young Womens Christian Associations of America in Cleveland, on the week of April 13, at which twenty-five hundred delegates from this and foreign countries are expected.

SERVANTS NO LONGER POOR

INCREASE IN BURGLARY INSURANCE REVEALS GROWING TIMIDITY ON PART OF EMPLOYERS.

New York, April 10.—An increase of 25 per cent in burglary insurance rates which has just been put into effect has brought to light the fact that employers, made timid by the shortage of domestic workers, are tolerating thefts from their wardrobes, and wine cellars in order to retain the few servants they have "in captivity." Officials of indemnity companies who give this explanation declare that in many cases employers have refused to allow the servants in their households to be light and hot water pipes, and more big boys and girls to do the hardest work, the burden on all cannot be lifted.

"This is the only school of any size in these mountains for many miles, and as the population is scattered in small clusters about the creeks, the local council of scouts will probably include all of the mountain district about here."

questioned about thefts, through fear that they will quit if annoyed.

Emboldened by this situation, dishonest servants are reported to be helping themselves to their employers' effects, such as wine, clothing and jewelry.

"Servants are privileged characters in the homes of the wealthy throughout New York," said the head of one security company. "In many cases holders of burglary insurance policies have cancelled their claims against the company rather than to prosecute a guilty servant, knowing that this would mean the loss of his or her services."

One New York lawyer recently refused to allow his servants to be questioned regarding a \$1,000 theft, saying: "Don't go near the house. If the maids suspect you, they will leave."

One investigator reported a case in which a young servant girl had, in two weeks, disposed of eight cases of champagne and eight cases of whiskey by holding wine parties in the kitchen for her friends and entertaining them with choice liquors from her employer's private stock. Although the owner knew he could not replace the missing beverages, he refused to prosecute.

More than seven million barrels of oil are being shipped out of Mexico each month.

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