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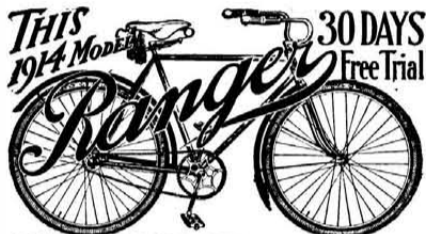
DIXON'S Graphite Lubricants

absolutely prevent wear in bearings. They cost more than plain grease, but their cost is a trifle compared with repairs.

Equally good for motor boats.

Write for Lubricating Chart.

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trains were difficult to control with the inadequate braking power of fifty years ago. Another reason for their failure was that the tender caught the dust and grit from the engine, making the repair bills heavy.

Finally, the enginemen complained that they had practically two engines to care for instead of one, and their disfavor doubtless contributed to the want of success of these tenders, which, as Zerah Colburn (then the greatest authority on locomotive engineering) said, "deserve to be remembered as a contribution to the practice of auxiliary power."

The Launch of "Shamrock IV"

(Concluded from page 482.)

indeed, that it was necessary to provide extension chain plates in order to get sufficient spread for the shrouds to hold the towering rig in place. A novelty in the rig is the fact that some of the shrouds lead to a point one third of the distance from the masthead; and midway between their point of attachment and the deck is a second pair of spreaders. This method of staying suggests that the mast must be built extremely light in plating.

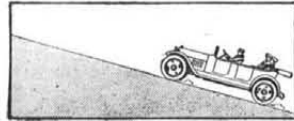
According to Winfield M. Thompson, the yachting expert, who is at Gosport for the purpose of observing the "Shamrock IV," she will have a sail spread of about ten thousand square feet. If this be true, the sail area will exceed that of "Resolute" by nearly 25 per cent, which is a truly enormous difference.

Gustav Hamel

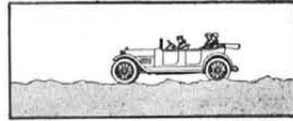
By Major H. Bannerman Phillips

THE finest of Great Britain's fliers lost his life in the attempt to cross the English Channel on May 23d, on his way from Paris to Hendon, where he was to have flown in the "aerial derby" on the afternoon of that day. The race was to start from there about 4 P. M., and after following a more or less triangular course around London, was to finish again at Hendon. Mr. Hamel had gone to Paris in order to fly over to England in the Morane-Saulnier monoplane with 160 horse-power Gnome engine, with which he intended to compete in the race.

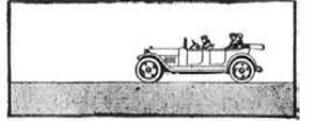
The most complete and thorough search was commenced as soon as it was known that there were fears as to his safety. Various cruisers and destroyers and two sea-planes of the British Navy commenced to search the sea for traces of him, and the nature of the weather may be judged from the fact that both sea-planes were wrecked and the rough seas made hard work for the crews of the destroyers as they and the cruisers slowly patrolled the Channel and swept the surface of every portion of the sea between England and France, where there seemed to be the slightest chance of finding any clue to the fate of the intrepid aviator.



Hills



Heavy Roads



Boulevards

Every-day tests of your lubrication Try them on nearby roads

How soon does incorrect lubrication show up?

Often in one short run.

Consider three types of roads:

Hills. You come to a sharp grade. With one lubricant you must drop to a lower speed. With another lubricant you can climb the hill easily.

Why?

Because the first lubricant is wrong in body. Compression and explosion escape past the piston rings. Power is wasted. If the oil is low in quality, you must also overcome excessive friction.

Only oil correct in body and quality will give you full power for the hills.

Heavy Roads. The conditions are very similar to those in hill climbing.

Sand, mud or "rough going" bring heavy strains to the motor.

Where an oil correct in body and quality carries the car along easily, an incorrect oil brings power-waste and excessive friction-drag. Overheating is apt to follow.

Boulevards. Along level roads loss of power is not so often noticed.

But, even on the smoothest roads, only the correct grade of oil will give you full power and full mileage from your gasoline.

To compare the efficiency of any oil with that of Gargoyle Mobiloil, make this test:

Test. Select a steep hill. See how far you can go up on high gear with the former oil. Then clean out your motor with kerosene. Fill your oiling system with the correct grade of Gargoyle Mobiloils. Be sure that operating conditions in both cases are identical. Use the same test. See how much further you go up the hill.

Use the oil specified for your car in our Lubricating Chart, printed in part on the right. A copy of our complete Chart will be sent any motorist on request.

On request we will also mail a pamphlet on the Construction, Operation and Lubrication of Automobile engines. It describes in detail the common engine troubles and gives their causes and remedies.

It is safest to buy Gargoyle Mobiloils in original barrels, half-barrels and sealed five and one-gallon cans. See that the red Gargoyle, our mark of manufacture, is on the container.

The various grades of Gargoyle Mobiloils, purified to remove free carbon, are:

- Gargoyle Mobiloil "A"
Gargoyle Mobiloil "B"
Gargoyle Mobiloil "E"
Gargoyle Mobiloil "Arctic"

They can be secured from reliable garages, automobile supply houses, hardware stores, and others who supply lubricants. For information kindly address any inquiry to our nearest office. The city address will be sufficient.

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Specialists in the manufacture of high-grade lubricants for every class of machinery. Obtainable everywhere in the world.

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Correct Lubrication

Explanation: In the schedule, the letter opposite the car indicates the grade of Gargoyle Mobiloil that should be used. For example: "A" means "Gargoyle Mobiloil A." "Arc" means "Gargoyle Mobiloil Arctic."

Table with columns for Model of Cars (1910-1914) and Lubrication grades (A, Arc, etc.)



Mobiloils

A grade for each type of motor

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(Publishers of the Textile World Record)

examined by searchers of either nation, the French authorities taking an equal interest with the British in the operation, but all in vain.

From what is known of the route taken by Mr. Hamel, it seems probable that, in the first instance, he meant to strike the English coast at Hastings, but found the fog unfavorable to the longer sea-passage and then went farther east, in order to follow the Calais mail-steamer across and thus shorten the sea-journey as much as possible. The steamer having left when he reached Calais, he may have started for Dover, hoping to do the twenty-one miles in as many minutes, but getting caught by the fog, may have lost direction and been carried out of his course and over the North Sea, and finally, when his fuel gave out, he would be forced to come down out of sight of land, when his fate would be sealed. His monoplane was without floats, being intended for over-land work, and it could not sustain him long on the surface of the sea, in any case. The circumstances of the voyage bear a painful resemblance to the last journey of the late Mr. Cecil Grace, who was lost in December, 1910, on the return over-sea flight from Calais to Dover in foggy weather.

Mr. Hamel was certainly the most experienced and the most distinguished of Britain's airmen, and he was, deservedly, one of the most popular, partly on account of his achievements, but also on account of his fine manliness and simplicity, to which was added a peculiar charm of manner. He was 25 years of age, and had displayed the greatest aptitude as an aviator of any man of his time; for since he qualified as an airman at Pau in 1911 he had shown himself to be as proficient in cross-country as in exhibition flying, and seemed to have a natural affinity for and knowledge of the air. He was the first pilot to cross the Channel with a lady as passenger, and also the first airman to make the London-to-Paris journey with a passenger in one day, and the first British airman to "loop the loop." He was looking forward with keen ambition to make the first attempt to cross the Atlantic in the Martinsyde monoplane which was being built for the purpose at the cost of Mr. E. Mackay, and which will be described at length in one of the forthcoming issues of the SCIENTIFIC AMERICAN. That his services in the cause of aviation from a national and patriotic point of view were duly appreciated, not only by the British public but by the government, was shown by the following communication in which the Admiralty made known their decision to abandon the search for traces of him on the 26th of May: "It has been decided to suspend the searching operations by flotillas and air-craft which have been in progress for the last forty-eight hours for Mr. Hamel. In relinquishing this quest, the Admiralty desire to place on record their recognition of the services rendered to British aviation by the missing airman. He was without question the foremost exponent in these islands of an art whose military consequence is continually increasing. His qualities of daring, skill, resource, and modesty merited the respect of those who pursue the profession of arms, and his loss, if this must be accepted, is received with deep regret by the officers and men of the Naval Wing of the Royal Flying Corps."

New Meteorological Units in Great Britain.

SINCE the first of May the daily weather reports of the British Meteorological Office have published all barometric pressures in millibars, instead of inches; rainfall in millimeters instead of inches; and wind velocities in meters per second instead of miles per hour. The vertical component of solar radiation, as measured at South Kensington, is given in joules per square centimeter, and its rate in milliwatts. Temperatures, however, are still given in these reports in the old-fashioned Fahrenheit degrees. The Royal Meteorological Society has decided to use millibars in the series of pressure normals for the British Isles, which it is now pre-

paring. The barometers hereafter issued by the Meteorological Office will be graduated in both baromils and inches. (The baromils of the scale-reading are reduced to millibars, or absolute units of pressure, by applying appropriate connections.) Another new unit now used in Great Britain is the leometer (pronounced with the stress on the penult). This is defined as "the potential energy of unit mass raised through 1 meter against an acceleration of one 'leo,' or of unit mass raised through 1/g meters against the acceleration of gravity," and is a substitute for Prof. Bjerknes's "dynamic meter." The new unit of acceleration, 1 dekameter per second, is named "leo," in honor of Galileo. The leo and the units derived from it were introduced by Mr. J. W. Whipple, of the Meteorological Office.

An Industrial Education Convention

THE second convention of the National Association of Corporation Schools will be held in Philadelphia from June 9th until June 12th, inclusive. The first convention, held last Fall, took place at Dayton, Ohio; the meetings were held at the National Cash Register building. The meetings of the coming convention will be held in the new auditorium of the Curtis Publishing Company, at Sixth and Walnut Streets.

The National Association of Corporation Schools is an association organized for the furthering and developing of industrial education by employers. Its members are the corporations and firms who have taken positive steps in the forwarding of industrial training by organizing schools in which their new employees are taught what to do and their old employees are trained to higher degrees of efficiency.

Its field of operation lies right alongside the field of operation of the National Society for the Promotion of Industrial Education. The purpose of the National Society is to develop industrial and vocational training in the public schools. The National Association begins where the National Society stops; it takes the public school graduate just entering business and trains him for the particular work of the concern into whose employ he is entering. The purpose of both organizations is to train the man to be of the greatest value to society and business and to enable him to earn the largest possible salary.

For the past hundred years the efforts of the great minds of business have been directed to developing and improving the mechanical agencies of production, trade, and commerce. In the agricultural districts, the steam reaper and harvester do the work of hundreds of hands. In factories, every effort has been bent to produce labor-saving machines of greater and greater efficiency. Sixty years ago the "Clermont" ran up the Hudson; now we have the "Vaterland" and the "Aquitania."

It is recognized, in fact, that in our strivings to improve the machines and methods over which our employees are to exercise control, we have taken no steps to improve the employees themselves. Quality of production is not the result of machinery alone, but of brains as well. And we have not taken the trouble to train the brains. From now on it is a man problem.

The realization of the one-sidedness of this development is what has prompted the organization of the National Association of Corporation Schools.

The Curtis Publishing Company, a member of the association, will act in the capacity of host to the visiting delegates at the sessions. Among speakers at the convention will be Arthur Williams of the New York Edison Company, president of the association; E. St. Elmo Lewis, of the Burroughs Adding Machine Company, and Charles P. Steinmetz, of the General Electric Company.

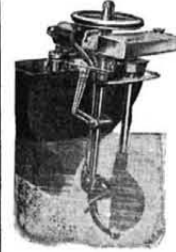
The meetings of the convention will be open to representatives of any business houses who are interested in the possible adaptation of industrial education to their own work and who will be interested in hearing the discussion and in talking with the members.

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DEMAND these essentials in an out-board motor, or you won't get your money's worth.

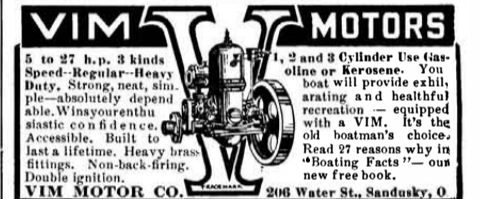
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