

**CAPT. CAMPBELL of the BLUE BIRD writes FOR US!**

# *The* **MODERN BOY**

EVERY MONDAY.  
Week Ending May 12th, 1928.

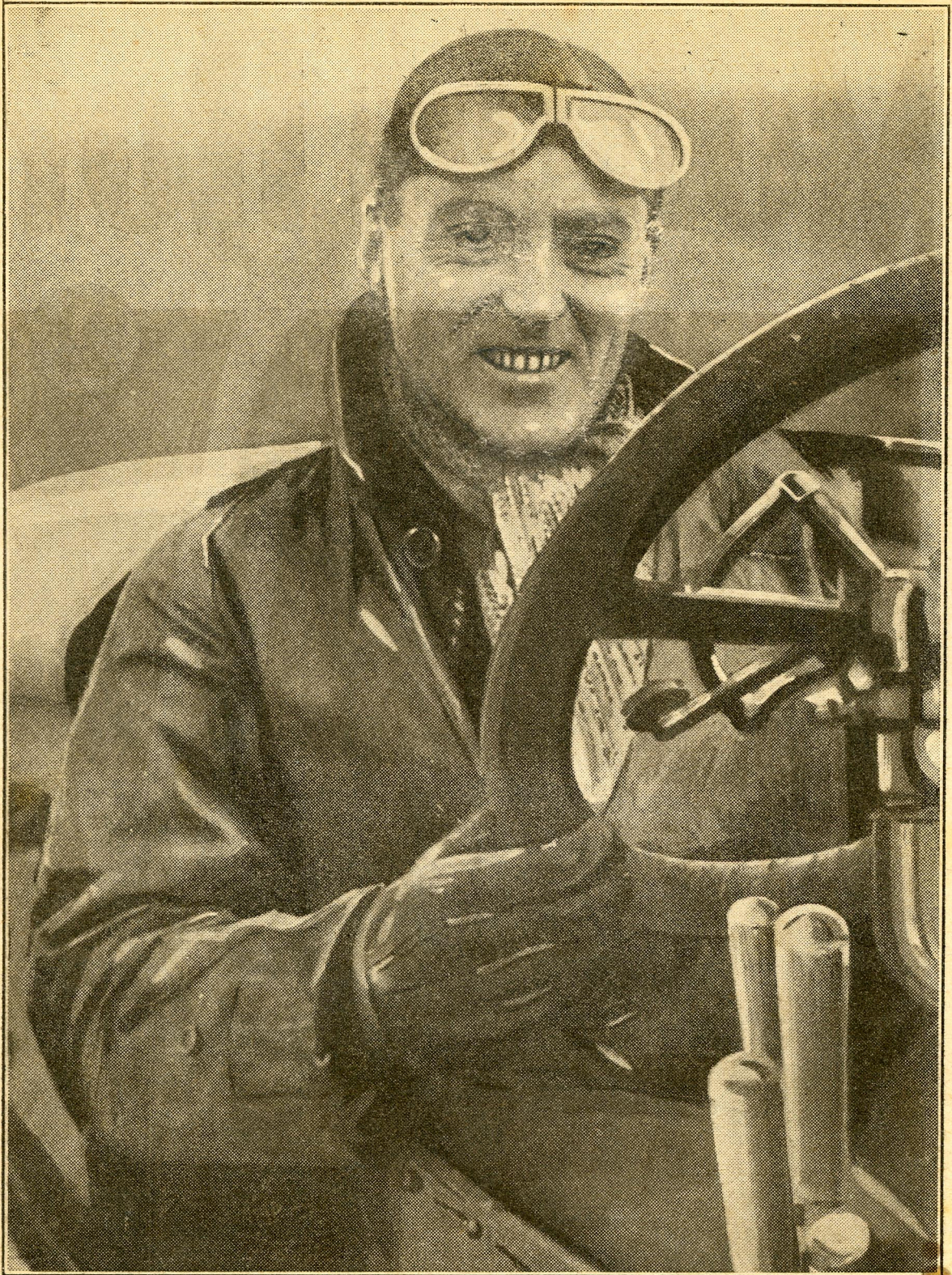
No. 14.  
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**THE BREAKDOWN GANG TO THE RESCUE! (See page 11.)**

# THE MAN WHO BROKE THE RECORD!



CAPTAIN MALCOLM CAMPBELL, who in his racing car, the Blue Bird, travelled faster than anyone had ever travelled on land before and is now writing—specially for the MODERN BOY—a series of articles dealing with stirring episodes in his career! Cool nerve and

dauntless courage are characteristic of Captain Campbell, and a love of speed has grown up with him since his school days. These "secrets" of a great sportsman's life have never before been published, and will be of great interest to readers of the MODERN BOY.

# The Modern Boy's World of Pen and Pictures

By "WAYFARER."

South African cattlemen stunting.

## HIGH SPIRITS.

HEARD the story of the young dare-devil learning to fly—and selling his instructor a "pup" in the sky? A friend of mine is a student in the same flying-school, and I have just received from him a letter all about the great jape.

A few sketchy details have appeared in print, but, as my friend points out, funny as it all reads in cold ink, it was funnier still when it was enacted in hot blood!

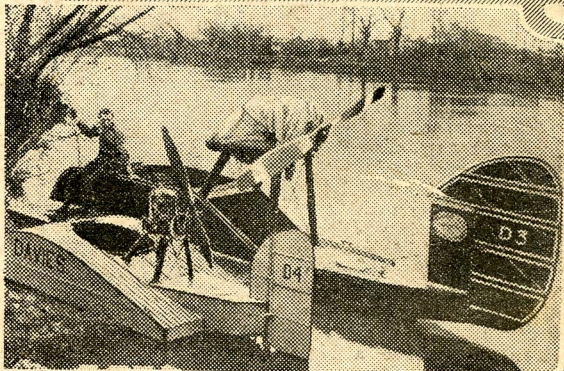
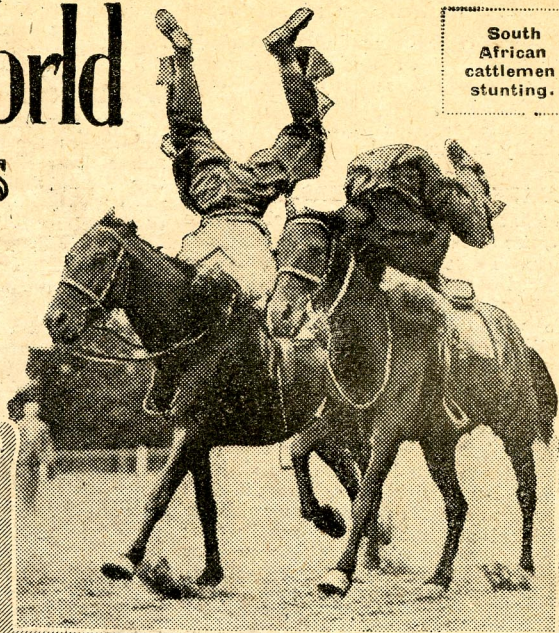
Young O'Neil simply would not take things seriously. He handled the controls of the plane in which he and the instructor were seated as though he were on solid ground and playing with bits of stick. But he was certainly proficient! The instructor had no doubts of that, but he thought that if he could fling on him unexpected responsibility it might bring young O'Neil to regard flying as a rather more serious business.

## THAT JOY-STICK!

So, with a flourish, the instructor suddenly withdrew his control stick—they were well up in the sky—and heaved it overboard. That left the young dare-devil in supreme control of the plane—for the first time in his life. Was he scared?

He made the instructor's eyes bulge out of his head the very next moment. Without hesitating, young O'Neil loosened his own joy-stick and sent it flying after the instructor's! Almost as quickly, the scared instructor grabbed his parachute and leapt out of the plane.

(Continued overleaf.)



Right: The latest in Hydro Gliders.

Below: An obstacle in the Bradfield College sports.



# The Modern Boy's World—(Continued).

It was O'Neil's next move! Calmly he hauled from its hiding-place a third joy-stick, and with it piloted the machine playfully around his instructor as the latter parachuted dizzily earthwards!

## CRAZE FOR NUMBERS.

That's the sort of young fellow who sooner or later goes in for looping the loop. I heard recently of an airman who, in the one flight, looped the loop 1,093 times! How many more loops he would have negotiated without falling out of the plane or crashing he leaves us to guess.

He says he only stopped looping because his petrol gave out!

A funny thing, this craze for numbers. At a Yorkshire school I hear there is a boy who has skipped 3,652 hops without a break! His headmaster tells us the young skipper finished at that number not because he was exhausted or the rope was worn out, but because the school-bell rang and interrupted him!

## SKIMMERS!

I have travelled in a car at ninety miles an hour, in a plane at one hundred, and on a toboggan at—well, I don't know what speed! But I can tell you that these new and fast motor-boats, of which there is so much talk now, give you a sensation that is more fascinating than anything else in the speed line!

Our picture on the previous page shows a boating enthusiast with two gliders of his own construction. They are driven by air screws, and D.4, though her little engine gives only six horse-power, can travel at twenty miles an hour. These air-driven craft have a big pull over

A long horn with a long distance note!



ordinary launches in that they can speed across the shallowest water. As a friend of mine remarked: "I guess they don't need much more than a heavy dew!"

## WONDERFUL RIDERS.

Have you seen the party who call themselves the Star Rangers? They run a show similar to the rodeos of the West, and our photograph on page 3 shows what wonderful riders these young South Africans are.

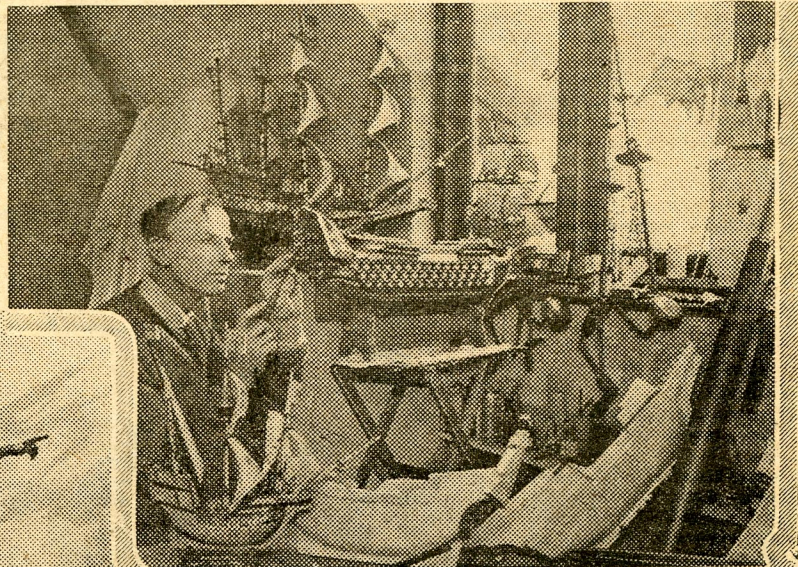
I once rode a real bucking bronco. I had better say I tried to ride it, for at the second buck I rose off the saddle, flew into the air like a shooting-star, and came down head foremost into a patch of undergrowth.

Just as well I found a soft place to fall, for otherwise I should certainly not have been writing these notes.

## A WAGON IN THE WAY!

A sports meeting is never complete without a sack race and an obstacle race, and it is lots of fun inventing new sorts of obstacles. On page 3 is a photo of boys of Bradfield College going through a netted wagon in their obstacle race. Bradfield is a big Public school near Reading, where I once went to see the open-air Greek play, which is held once a year in an old quarry close to the school.

Captain Tarver at work on one of his beautiful model ships.



## A MODEL FLEET.

I hear that £300 was paid recently by a collector for a model ship built about a hundred years ago. Here is a picture of Captain Malcolm Tarver, retired from the sea, working on models of old-time sailing-ships.

There are very few of the splendid old clippers left now. I once had a voyage in a schooner from Tampa, in Florida, to Key West—an experience I shall never forget. Somehow a sailing-ship seems part of the sea itself. I saw green turtles floating on the surface, flying fish rose in great flights chased by bonitoes, and porpoises gambolled round the ship. In those four days I saw more of the real life of the sea than during all the months I have since spent aboard big steamers!

## "MUSIC!"

Do you know the voice sounds that carry farthest? They are the Swiss "yodel" and the Australian "Coo-ee!" Of the two, the "Coo-ee!" is the winner. I have heard this welcome sound nearly two miles away, in still air!

In ordinary weather it is never easy to make sounds travel far, and in the Swiss Alps some of the guides carry horns with which to signal—like the monstrous "musical instrument" in our photo!

# How I Started Motor Racing!

By Malcolm Campbell

**Another Episode in the Wonderful Career of Captain Malcolm Campbell who—though Holder of the World's Motor Speed Record—confesses that he started his motoring career with an accident!**

EVER since I can remember I have felt the urge of the wanderlust and of adventure. When I was a boy, we were in the morning of motoring-time, and the motor-cars of those days were weird and wonderful things, which, if you saw them now, would make you roar with laughter.

The first time I ever went in a motor-car was when I was about twelve years old. It was, I think, in 1896. I went for a ride with my sister in a Daimler wagonette, and was very thrilled at the adventure of horseless transit!

We had an accident; rather a funny one. Our driver went round a corner, perhaps a little bit faster than he should have done, and we just clipped the back of one of those old horse-drawn charabancs—brakes, you know—which used to take people for brief excursions into the country.

We were going from Eastbourne to Pevensey when we hit the back of the brake, and we very neatly knocked off the two rear seats! Two ladies were sitting in these, and they fell over backwards from the brake. The driver merrily urged his horses along, quite ignorant of the fact that he had shed two of his passengers!

But the two poor ladies were in a dreadful state. We stopped our wagonette, and I ran along to assist them. One of them was very concerned and asked me if I had heard her hit the road with her head!

One vivid recollection I have of this old-time accident is that I had an orange in my pocket, and I was very upset when I discovered that the collision had squashed the luscious fruit.

So, you see, I started my motoring career with an accident, and although I have had many exciting adventures since then, I shall never forget the story of the squashed orange

and the ladies who fell out of the brake!

## MY FIRST MOTOR-BIKE.

Some years later, when I was nineteen years old, I bought my first motor-cycle. It was fitted with a trailer, very like a bath-chair. We had not thought of sidecars in those days, and the passenger used to sit in this bath-chair behind the motor-cycle—which wasn't too comfortable, because the smell of the exhaust and the dust from the road was all thrown into the passenger's face!

I got to like motor-cycling very much. I did a lot of touring and racing before the War, and used to race at Brooklands until 1914. I also built and flew an aeroplane as long ago as 1909, but this is another story.

My motor-cycles used to give me a lot of enjoyment, and I think that motor-cycling is topping fun for young fellows. But somehow or other, I could not do much with them at Brooklands. There was always somebody a little bit faster than me, with the result that I used to finish second and third quite often. But very seldom did I win a race!

More than twenty years ago I bought my first racing car. It was a Renault,

and I raced it at Brooklands in the first year that the famous motordrome was opened. But I did not win with it.

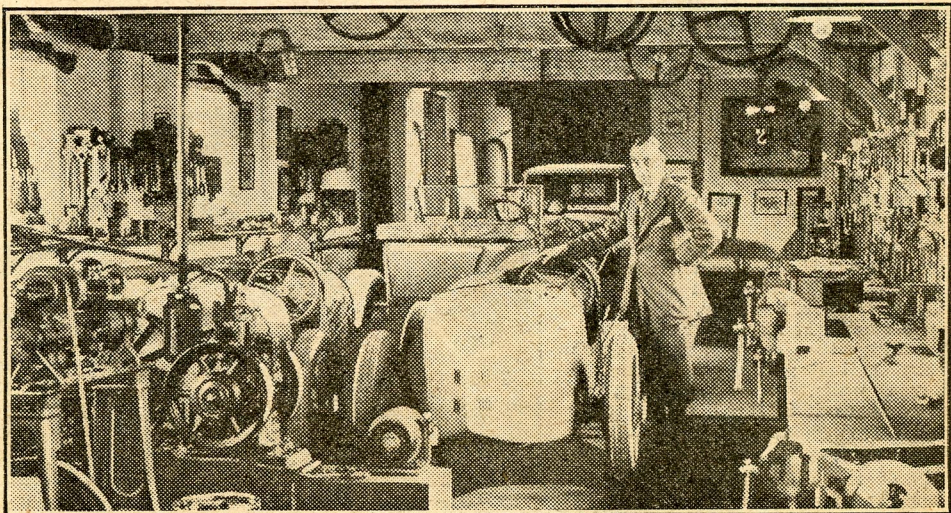
For years I raced and toured on my motor-cycles and cars, and then the War broke out, and I eventually became an instructor in the Royal Flying Corps. That gave me plenty of excitement, because some of my pupils used to land me into some strange adventures.

But I never quite lost my love of motor-cycling and motoring. I bought a machine while I was on leave during the War, and enjoyed some wonderful spins on it.

## THE OLD AND THE NEW.

Sometimes I marvel at the wonderful development which has taken place in motoring. In those long-ago days we should never have dreamed of going for the long tours which motorists enjoy nowadays. It was quite a feat to get there and back even when you undertook a brief ride, and there was always plenty of work to be done in making adjustments.

To-day, motor-cars are so very reliable that very little of adventure is left. But I seem to have grown up with motoring, and I have been racing and



Captain Campbell's famous garage at his home at Horley.

# How I Started Motor Racing!

(Continued from previous page.)

record-breaking for more years than I care to remember. But it is fine sport.

When I compare Blue Bird, with her wonderful engine and the great speed of which she is capable, with those funny

old cars which I used to drive, it seems incredible. The early cars were designed very much on the lines of the old horse-drawn vehicles, except that there were no shafts.

They were not very fast, and they were not very reliable. We used to sit up high in the funny old bodies and jog along in a series of jerks!

Even the racing cars of those days were slow and clumsy, and we did not dream of speeds such as we have achieved in recent years.

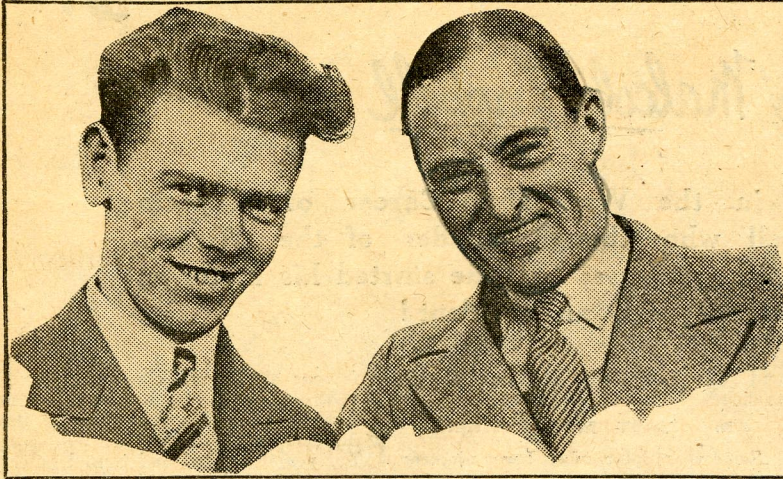
## AFTER THE WAR.

When the War was over I went into motor-racing properly. It seemed the only thing which could offer me the excitement for which I craved. I had a certain amount of success from the start, and as cars became faster and faster, so I became more devoted to the sport.

Motor-racing to-day is really exciting. It is a real thrill to race against other men at over a hundred miles an hour, and it is a delightful sensation to find yourself gradually overtaking a man to whom you have given a start.

Nearly all the Brooklands races are handicaps, and starts are given in time—not in distances. Sometimes you have to wait quite a long time on the starting line while other competitors are on their way round the track, but you are compensated for the waiting period because you have the thrill of the chase added to that of speed!

(Next Week.—Capt. Malcolm Campbell will write another fine episode for the MODERN BOY—"My Early Flying Thrills!" You must not miss this, on ANY account!)



Captain Malcolm Campbell (right) and Frank Lockhart who drove the Stutz racing car in the great speed contest at Daytona Beach. The honours fell to Captain Campbell, of course! He did 208 miles per hour, winning the £1,000 gold trophy and the title of holder of the World's land speed record!

# THE ELECTRIC MUSTANG!

Over the Rockies, on the Old-time Trails of the Redskin!

WHEN one thinks of electric trains the London Tubes spring into mind, while the Rocky Mountains are coupled up generally with Red Indians and grizzlies!

It will come almost as a shock to you, perhaps, to learn that an electric railroad over the Rockies has now taken the place of the dangerous trails of the Sioux and the fur trapper.

Only sixty years ago the State of Montana, through which the Chicago, Milwaukee, and St. Paul Railway now runs, was practically unknown country. Then gold was discovered, attracting so many "bad" men that the famous Judge Lynch had to look in on them!

This outlawry gave the Indians their chance, and famous chiefs like Sitting Bull and Crazy Horse caused much trouble, especially to railway surveying parties, before being captured and their braves dispersed.

Now, as our photo shows, one may ride in comfort through the romantic Rockies on the platform of a fast-moving observation car, sustaining its steady flight mile after mile; now threading the crags among those rocky sentinels; now holding to the canyon walls, securely, safely, as effortless as it is sure!

Only the magnificent scenery remains to remind the traveller of 1928 of the difficulties and dangers that the pioneers of the 'sixties of the last century were called upon to face!

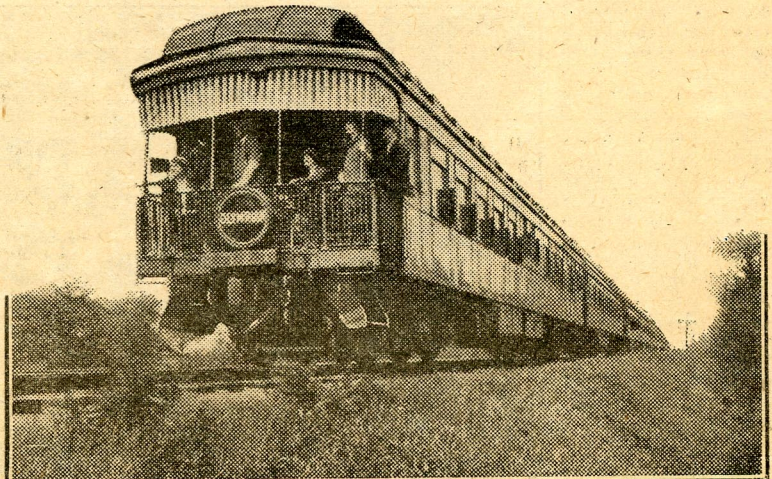
Surveying and laying the railroads over the Rockies was a risky job. The workmen lived in huge construction camps, and were always escorted by companies of soldiers to protect them against the raids of Indians, who had a great objection to the white man's "Iron Horse" invading their territory.

When a man climbed aboard the work-train in the morning he took care to take his rifle with him on his journey to the railhead, and it was a common occurrence for the train

to have to fight its way back to camp when the day's work was done!

The Indians were also very fond of tearing up the newly laid rails, placing huge rocks on the line in the hope of derailing trains, and generally doing their very best to stop the march of progress!

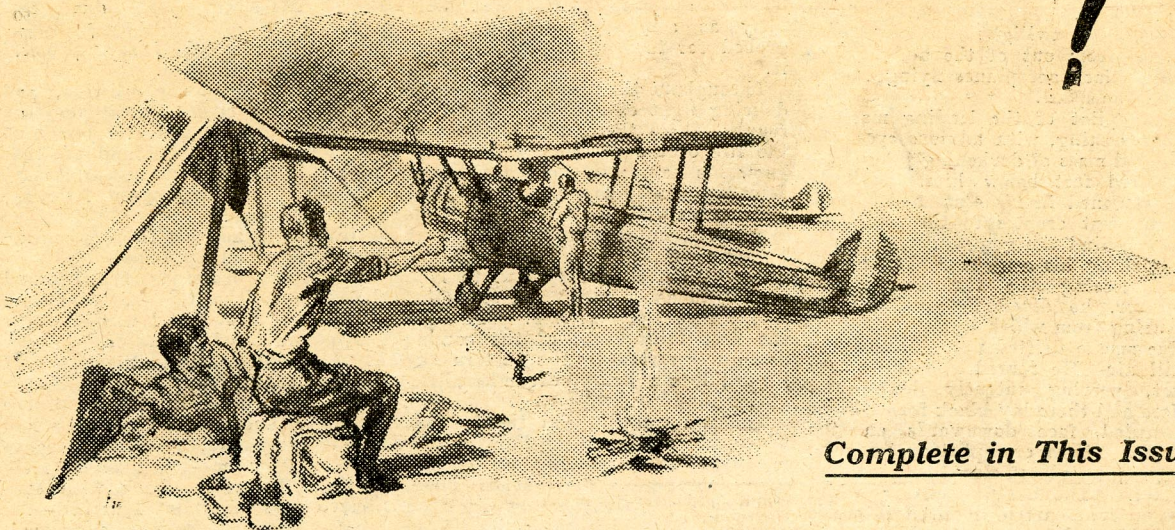
But Progress recognises no hindrance. And now we have so far progressed beyond even the wildest dreams of those brave old pioneers of early railway days that the Electric Mustang of the once-wild Rockies is to-day an accomplished fact!



The "Olympian" Observation Car of a famous train on the railway which is electrified for 660 miles—through four great mountain ranges!

(Photo by courtesy of the Chicago, Milwaukee & St. Paul Rly.)

# The Ivory Trail!



**Complete in This Issue**

"I am Rene de Lafayette! And they are my comrades, Rex Ellison and John Howard!"

"I'VE beaten you—beaten you in the end!"

Guy Norton, emaciated and racked with fever, shook a scraggy fist at the broad, yellow river which flowed sluggishly towards the distant sea. His bloodshot eyes glared across at the dark tangle of impenetrable jungle which fringed the opposite bank.

He swayed on his feet and passed a hand wearily across his aching brow. Nine weeks he had spent in the steaming jungle of Equatorial Africa, and it seemed as though Africa had marked him for her own.

Nine weeks of sweltering, humid, poisonous heat, in search of ivory. But he'd got it—got the ivory! Ten thousand pounds' worth!

Moored to the bank on which he stood were four native boats, long and crude of structure, laden to the gunwales with the ivory. His boatmen were back in the jungle behind him, dismantling the encampment which had been his headquarters.

He was going down the river now—to Solago! He would sell his ivory there. Then home to England; and he would never come back. He hated Africa—hated, with a fierce intensity, its heat, its fever, its swamps, its vast, unconquerable jungle.

"I've beaten you," he shouted—"beaten you—"

Something like a black log splashed gurglingly in the turgid waters of the river, close inshore. Guy Norton laughed foolishly.

"Crocodile!" he muttered. "Greasy, slimy, beastly! Typical of this awful country!"

He looked at the watch strapped on his shaking wrist.

It was five o'clock—that hour when a strange, unearthly silence broods over the jungle and all Nature is

*Nine weeks of sweltering, humid, poisonous heat in search of ivory. . . . But he'd got it—got the ivory! Ten thousand pounds' worth!*

*An Enthralling Complete Yarn of our Adventurers of the Air,*

BY

**G. E. ROCHESTER.**

hushed. Suddenly he started, and bent his head in a listening attitude. There came to his ears a faint, regular thud, thud, thud! He recognised it in an instant as the noise made by canoe paddles thudding against gunwales as they were withdrawn from the water.

He stared down river, and his hand moved spasmodically towards the automatic stuffed in his belt. Round a bend in the river crept four long native canoes. In the sternsheets of the foremost sat two white men.

They made an odd contrast—those two men. One was tall and gaunt, without an ounce of superfluous flesh on his lanky frame. The other was short and stout, with a podgy and greasy, yellowish face. The tall one nursed a rifle across his knees.

"Schaumberg and Niccolini!" muttered Guy Norton. "The hounds!"

He withdrew his automatic from his belt and glanced askance at the shaking hand which held it. Straddling his legs, he tried desperately to get a grip on himself, to steady his jangled, fever-stricken nerves. The canoes were almost abreast of him when, at an order from the tall man, the blacks turned the bows in towards the bank.

"Keep your distance, Schaumberg!"

shouted Guy Norton hoarsely. "Keep your distance, or—"

He left the remainder of the sentence unsaid, but raised his automatic threateningly. The tall Schaumberg laughed, but gestured to the blacks to cease paddling.

"What's the matter with you, Norton?" he demanded. "Aren't you pleased to see a white man?"

"A white man, yes!" retorted Norton savagely. "But not a couple of yellow skunks like you and Niccolini!"

The fat Niccolini half rose in his seat. His podgy face was, for once, crimson.

"You say that again!" he snarled, but Schaumberg laid a restraining hand on his arm and said soothingly:

"Take no notice, man! The fever microbes have got into his brain!"

"Have they?" Guy Norton jeered. "Well, maybe they have, Schaumberg! But I'm sane enough to plug both you and that fat excrescence beside you, unless you sheer off!"

"But why, you fool?" demanded Schaumberg, and there was no anger in his voice. "Do you own the river?"

"This part of it I do!" snapped Norton. "I know why you're here, you thieves! But there's nothing doing, so you can clear off!"

Schaumberg laughed softly. His hand was still on Niccolini's arm, his eyes on the fever-ridden Britisher on the bank. Then, with amazing swiftness, his hand dropped to Niccolini's open gun holster. It whipped up, sun glinting on squat blue-black barrel. Crack!

A thin wisp of smoke curled slowly upwards. Guy Norton's gun dropped from his nerveless hand, unfired. He

# The Ivory Trail!

(Continued from previous page.)

clutched at the breast of his tattered shirt, staggered forward, then pitched face-foremost to the ground.

THE sun was sinking behind the tree-tops, and the brief Equatorial twilight was at hand when from out of the north came three black aeroplanes flying low at a terrific speed.

The pilot of the leading machine was scanning, with anxious eyes, the tangled mass of darkening jungle five hundred feet below him. Suddenly he stiffened in his seat and a look of interest crept into the cold grey eyes behind the goggles.

Pushing his control stick forward, and closing the throttle to one quarter, he dived towards a large clearing from which several spirals of blue smoke drifted upwards into the still air. He roared over it at fifty feet, peering intently downwards. Here and there lay black forms, some sprawled face downwards on the ground, others crumpled grotesquely.

The pilot's hand closed on his Verrey pistol. The next moment a white magnesium cartridge flared into life and dropped earthwards. It was the signal to land, and, waiting until their leader had glided down into the clearing and landed, the other two pilots followed.

Scarcely had their machines lost way and come to a quivering stop than they leapt from the cockpits and ran towards their leader, who was bending over the body of a black.

"What is it, gov'nor?" cried the younger of them—little more than a boy, he was. "What on earth has happened here?"

"Murder, by the look of it, Rex!" replied the leader grimly. "This poor devil has been shot through the head." He crossed to a smoking heap of embers and picked up a fragment of coarse, charred canvas.

"This has been a white man's encampment," he said sharply. "This is a piece of tent material! I—"

"Great Scott! Look there!" rapped the third pilot.

The leader wheeled. Next instant he was running across the clearing towards a white man who was crawling slowly, painfully into view from the undergrowth.

"Steady, man—steady! I've got you!" he said, dropping on his knees by the man and placing his leather-clad arm around the thin, emaciated shoulders.

The other looked up with wondering eyes, bright with fever, into the grim, hawk-like features of the airman. He clutched frenziedly at the sleeve of the flying-coat.

"Who—who are you?" he whispered haltingly. Then, without waiting for an answer, he went on: "They shot me—Schaumberg and— and Niccolini! Remember—Schaumberg and— and—"

The words trailed away. His head slumped heavily backwards, and he went limp. Lifting him in his strong arms, the airman carried him to the centre of the clearing. Laying him

on the ground, he ripped open the tattered shirt.

"My surgical-case, Rex," he said sharply, after one glance at the wound just below the heart.

The youngster ran towards the machine which had landed first. He was back in a few moments with a leather surgical-case. Then, skilfully as any surgeon, the leader probed for the bullet and extracted it.

Throughout the night, by the eerie, dancing light of a blazing fire, they fought, those three airmen, to save the life of the wounded man. They knew his name; they'd learned that from the metal identity disc which he wore on his wrist. A relic, that, of the War days, for it was engraved "Guy Norton—R.A.F."

More than once they had to hold him down as he raved and struggled in the throes of delirium. But when the first faint light of the coming dawn was streaking the eastern sky he fell into a heavy, dreamless, life-giving slumber.

The sun was high in the heavens when he awakened. For a few minutes he lay staring up at the blue arch of the sky overhead. Then, as memory came flooding back on him, he struggled to raise himself on his elbow. But a firm hand was laid on his arm, and a quiet voice said:

"Take it easy, old man. You're not better yet!"

Guy Norton passed a weak and shaking hand across his eyes. Then, painfully focusing his vision, he stared up at the grim, hawk-like face of the man seated by his side.

"Who—who are you?" he asked slowly. "I've seen you before." Then, as recollection came to his clearing brain, he added excitedly: "You—you got me when I reached the clearing! Who are you? Where did you come from?"

"I am Rene de Lafayette," replied the other quietly. "And they"—he motioned towards where his two companions were overhauling the aeroplane engines—"are my comrades, Rex Ellison and John Howard."

"But I do not understand—" began Guy Norton.

"We will leave explanations until you have drunk this soup," cut in the other drily. "Your story might interest us, Guy Norton."

THE hot soup sent the blood tingling through Guy Norton's wasted frame. A flush crept into his sunken cheeks, and when he spoke his voice was stronger.

"My story is soon told," he said, a trifle bitterly. "I came to Africa during the War—when we were chasing the Boche out of the Cameroons! I was an air pilot, but when the War ended, and the squadron left for home, I resigned my commission and stayed behind. For Africa had got me—got me, do you understand?"

Rene de Lafayette and John Howard nodded. Rex Ellison but vaguely understood. Yet he had heard his two comrades speak of that terrible fascination—that something which pulls at the very heartstrings—the lure of Darkest Africa.

"So I stayed on," continued Guy Norton. "I will pass over the lean

years of fruitless drifting, for they can be of little interest to you. Six months ago I found myself in Solago! I had some little money, and I decided to stake it all on one last venture. I had heard rumours of ivory, back here in the interior—an elephant cemetery, where the poor brutes come quietly to die. You understand?"

"Yes, I've heard of such places," grunted John Howard.

"I fitted out an expedition, and we came up river!" went on Guy Norton. "We camped here just nine weeks ago. And I found it—that ivory! I was the only white man, but my blacks were good fellows—all except one!"

He paused, and his thin, talon-like fingers clenched spasmodically.

"That one deserted when I found the ivory deposit," he continued savagely. "Fool that I was—I might have known! He was in the pay of Schaumberg and Niccolini. I guessed that yesterday when I saw those two brutes heading up the river. I knew then that they had heard of my find, and had come to take it from me—to take it from me!" His voice shook with suppressed passion. "But I was ill—the fever had me! I was slow, and Schaumberg beat me to the draw.

"The rest you can read for yourselves. Schaumberg and his men must have come on here. They shot down my men in cold blood, I suppose. If any escaped, what matter? Who would believe the tale of a nigger—if ever the tale was carried down to the coast?"

"Some might believe!" suggested John Howard quietly. "The Belgian Administrator at Solago, for instance!"

"That rotter?" Guy Norton replied. "He's hand in glove with Schaumberg and Niccolini!"

"Tell us of this Schaumberg and Niccolini!" said Rene de Lafayette.

"They are the two most powerful white men in this part of Africa, which is under Belgian administration!" replied Guy Norton, a quiver of passion in his voice. "Their trading station at Zambu, fifty miles up river from Solago, is more like a fort than anything else! They are a pair of fiends who fear neither man nor devil! Cunning, treacherous, rotten to the core, they are feared by the blacks and hated by the whites! If there's a dirty game afoot in the Belgian Congo, then you can bet that Schaumberg and Niccolini are in it!"

He paused and surveyed the three airmen with glittering eyes.

"Do you know what they deal in?" he burst out. "They came after my ivory—white ivory! But the blackguards do a far greater trade in black ivory—yes, black ivory, the brutes!"

"You mean slave dealing?" snapped John Howard.

"Yes, slave dealing! And Wiesner, the administrator, knows it! It's more than a rumour that they pay Wiesner to leave 'em alone, and pay him well! But it's not necessary! The rotter's scared stiff of them, and he's content to sit and drink himself to death in Solago!"

"And at what sum," cut in Rene de



Lafayette quietly, "do you value the ivory which this Schaumberg and Niccolini stole from you?"

"At ten thousand pounds!" replied Guy Norton. "I know ivory, and I'm not over-estimating! But why do you ask?"

"Because I shall obtain from Schaumberg either your ivory or ten thousand pounds!" replied Rene de Lafayette.

Norton stared at him for a moment, then essayed to rise to his feet.

"No!" he cried. "This is my affair, and I shall settle with Schaumberg myself! He left me for dead, the dog, but I'm going down river to Zambu, and I'm going with a gun in my hand! I—I—"

He broke off weakly, almost overcome by the violence of his outburst. Rene de Lafayette placed a strong arm round his shoulders.

"Listen, Norton," he said gently. "I know just how you feel! But, ill with fever as you have been, and weakened by your wound, it would be suicidal madness for you to attempt to have a reckoning with Schaumberg and Niccolini at Zambu! They would shoot you down on sight, man, even if you succeeded in ever getting through the gates of their stockade."

"The gates of their stockade?" echoed Guy Norton. "Do you know their trading station, then? Who are you, anyway? How did you come here? I have told you my story, now tell me yours!"

"There is little to tell!" replied Rene de Lafayette quietly. "We are adventurers of the air, we three, who endeavour to bring some justice where justice is sorely needed. We knew of Schaumberg and Niccolini! They figure prominently on our list of gentlemen who, in odd corners of the world, are making themselves objectionable! We were on our way to interview Schaumberg and his henchman, Niccolini, when, in looking for a landing-place for the night, we saw the burning remnants of your encampment."

"But I don't understand!" protested Norton. "Have you the law on your side? If you haven't, then anything you might do to Schaumberg and Niccolini might land you into serious trouble with the authorities! Britain has no mandate over this territory!"

"The only law we recognise," replied Rene de Lafayette sternly, "is the law of humanity!"

Guy Norton sat silent a moment, his eyes on Lafayette.

"My hat!" he burst out boyishly. "I see what you mean! You're a sort of modern Robin Hood—"

"Only unfortunately, as yet, my band is not as strong as his!" cut in Rene de Lafayette, with a smile.

"Then let me join you!" cried Guy Norton. "Let me come with you! I can fly a machine, and—and I must leave Africa! The fever is slowly killing me! Let me join you. I'm not fit yet, but I soon will be, and I swear I'll never let you down!"

Rene de Lafayette glanced at John Howard and Rex with twinkling eyes. Then, turning to Guy Norton, he said:

"You do not lack for courage, Norton! Weak as you are, without a dog's chance, you would have gone after Schaumberg and Niccolini! Join us and welcome, but on one condition!"

"And that?" demanded the other eagerly.

"That you take things easy till you are quite fit once more, and leave my comrades and I to deal with the men who shot you down!"

Guy Norton hesitated. Then he thrust out his hand.

"Done!" he cried.

M'LAGA, giant Basuto, fingered the heavy Mauser pistol stuck in the belt of his tattered dungarees, and scowled. He was native boss at the Zambu trading station, and, like his masters, Schaumberg and Niccolini, he did not approve of visitors. Especially visitors such as the dirty, unshaven, white man who had just come down river in a native canoe, and who was now engaged in mooring that canoe to the jetty.

But M'laga did not leave the stockade gates against which he was leaning. If the white man desired speech with him, then let the white man come and seek it. An arrogant

dog was M'laga, and popular with his masters, if not with his men.

His scowl deepened as the white man slouched across the jetty towards him. He noticed a bulge in the right-hand pocket of the man's cotton pants. A revolver, that, and a big one.

"What you want?" he demanded roughly, as the stranger came to a halt in front of him.

"Schaumberg at home?" grunted the white man, with a leer which seemed to be directed at M'laga's Mauser.

"No!" lied the Basuto snarlingly. "Ain't he, now?"—and the white man grinned openly. "Away up river on a leetle innercent expedition, mebbe, eh?"

"You talk much," growled M'laga angrily. "Boss not at home! You go!"

"Aw, come off it, nigger!" drawled the other. "Reckon he'll be at home to me! Just take him that and tell him the fellah what owns it is cravin' admittance."

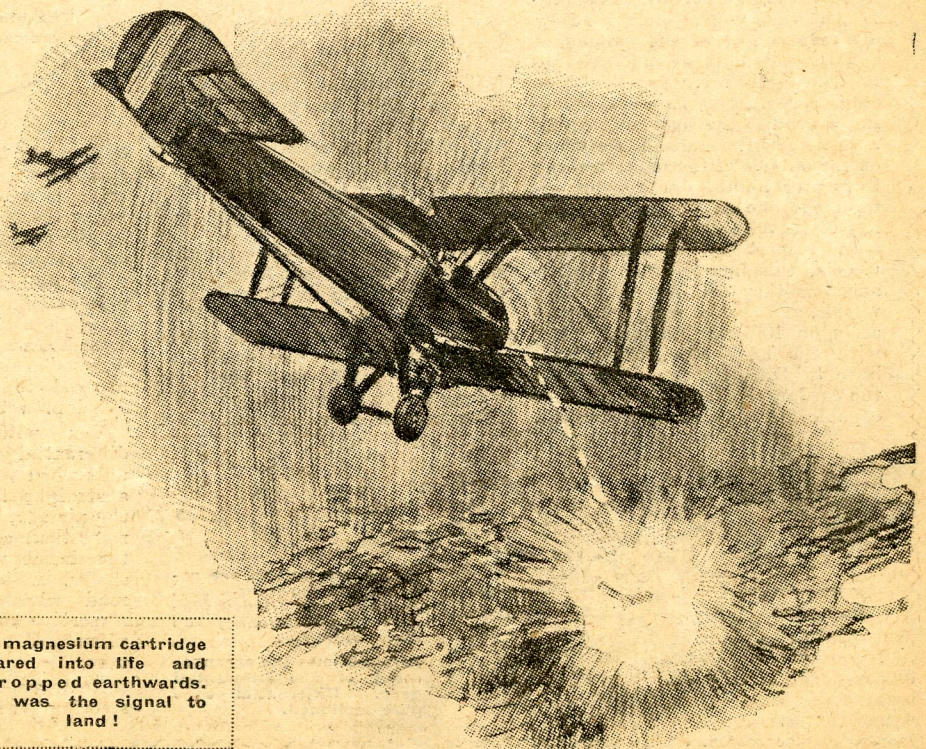
He thrust out a dirty, clenched hand, palm upwards. Then, slowly opening his fingers, he disclosed a medium-sized diamond in the rough. The Basuto stared at the diamond, then at the grinning face of the white man.

"Take it to Schaumberg. There's more where that one came from, nigger!" drawled the latter.

Without a word, M'laga took the diamond and passed in through the stockade gates. Within ten minutes he reappeared.

"Come!" he grunted; and the white man followed him across an earthen square, baked hard as stone by the sun, to a long, low, one-storied building.

Holding aside the rush matting which was suspended in the main



A magnesium cartridge flared into life and dropped earthwards. It was the signal to land!

# The Ivory Trail!

(Continued from previous page.)

doorway, the Basuto motioned for the white man to enter. He did so, and found himself in a large living-room plainly furnished with a long wicker table and several wicker chairs. Seated at the table, glasses by their elbows and a gin bottle between them, were Schaumberg and Niccolini.

"Howdo, Schaumberg!" leered the newcomer. "Reckoned on findin' you at home!"

"Stand just where you are," replied Schaumberg harshly, and at the same moment M'laga's black hand was insinuated into the stranger's trouser pocket and a heavy-calibre revolver withdrawn.

"Gimme that, you nigger!" shouted the stranger, wheeling in dismay.

With a triumphant grin M'laga stepped past him and laid the weapon on the table. Schaumberg picked it up.

"More like a cannon than anything else," he said, and a mirthless smile was on his lips. "You can sit down now!"

Whether by chance or otherwise,

the revolver was covering the stranger as he slouched forward and slumped into a chair at the foot of the table, facing the door. Waiting until the Basuto had withdrawn, Schaumberg demanded harshly:

"Who are you, and where did you find this?"—and he flicked the rough diamond on to the table.

"I ain't talkin' till I gets my gun back," responded the other sullenly.

"You're not going to get it back," retorted Schaumberg icily. "No man goes armed in here."

"You an' Niccolini scared of bein' plugged, hey?"

With livid face Schaumberg leapt to his feet and crashed his fist on to the table.

"Another remark like that from you and I'll kill you!" he snarled.

"Likely, isn't it?" The stranger laughed hoarsely. "I know you, Schaumberg! You won't kill me till you know where that diamond came from. I know where there's heaps of 'em! I found 'em, but they want mining! I'm here to talk bis'ness, but I'm not talkin' till I gets my gun!"

Niccolini and Schaumberg exchanged glances. The faintest of

faint nods passed between them, and as Schaumberg threw the unwieldy weapon towards its owner the fat Niccolini quietly withdrew his own automatic from his pocket, under cover of the table.

"Well, there's your gun," remarked Schaumberg. "Now let us hear what you've got to say. Have a drink?"

"No; it might be hocused!"

"You are very suspicious, my friend," Niccolini laughed.

"I know you, you see!" replied the other blandly. Then, with thinly-disguised admiration in his voice, he added: "There ain't many that don't know you."

"All right—get to the point," remarked Schaumberg pleasantly. "Where did you find that diamond?"

"Ah! But if I tell you I'm goin' to come in on a half share. These diamonds are bedded, and you've got to find the cash to dig 'em out!"

"Certainly you can come in on a half share if there's anything in your find," replied Schaumberg, with another glance at Niccolini. "But get on, man! You've come from upriver, haven't you—"

(Continued on page 26.)

# THE CAR X-RAYED.

The Secrets of the Motor-Car Revealed. This Week.—THE DIFFERENTIAL GEAR.

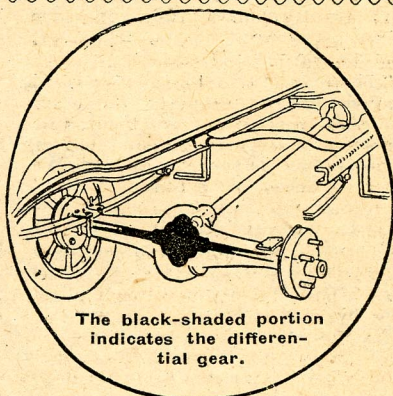
IN last week's article I showed you the position of the differential gear in the back axle. I will now explain its working. In the first place, I want you to realise that in all cases where two wheels are placed side by side and at a certain distance—i.e., at each end of an axle—they are revolving over the ground at equal speeds only when travelling in a straight line. Any deviation from the straight, as when rounding a bend in the road or turning a corner, will result in the wheel on the outside of the curve making a greater number of revolutions than the one on the inside, as it has to travel a greater distance.

In respect of a car's front wheels, this fact is of no importance, as they are merely rolling wheels, and each is mounted separately on its own bearings. But with the back axle, the wheels have to transmit the drive from the cardan shaft, and yet must be capable of independent movement.

In the diagram below, A shows you the main parts of a differential gear in a very simple form; B is the differential cage and bevel wheel, driven by the pinion attached to the cardan shaft; C, planet wheels, part of the cage; D, sun wheels, of which there are two; E, the axle shafts, to which the sun wheels are attached.

If you study the diagram carefully, you will see that the cage, B, can only carry the planet wheels, C, round with it, and cannot make them revolve on their bearings. Also you will observe that the cage takes its bearings from the same centre as the axle shafts, E. Therefore, as the sun wheels, D, are attached to the axle shafts, it follows that the planets, C, are always in mesh with both sun wheels, D, which means that the axle shafts are in engagement with each other via the planets, C.

Bear in mind that the road wheels are on the ground, and that their respective speeds will differ



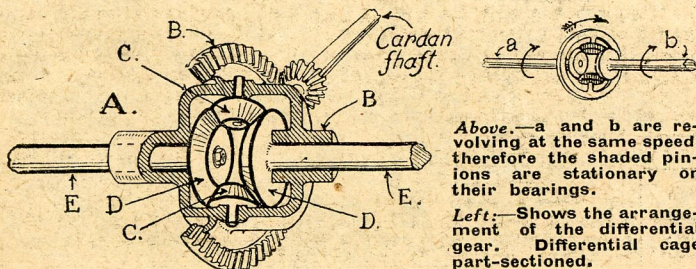
The black-shaded portion indicates the differential gear.

only when travelling on a curve, and you will see that immediately there is a difference of speed between the two it is accommodated by the planet wheels, C, revolving on their bearings.

The differential cage rotates the planets, and the planets, by being in mesh with the sun wheels, are forced to rotate them, because the planets cannot revolve unless allowed to do so by a varying speed between the road wheels.

You will realise that the differential gear revolves as a solid unit when the car is travelling in a straight line. In other words, the planets, C, are really nothing more than coupling links between the bevel wheel and the axle shafts, with this difference—the road wheels can adjust their respective speeds by virtue of the planets, C, rotating on their bearings.

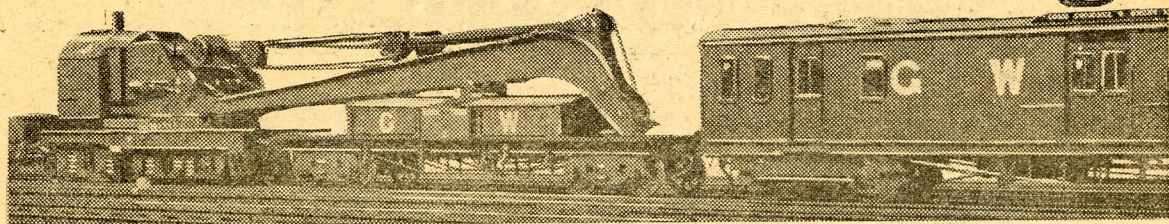
Next week I will explain the steering gear.



Above.—a and b are revolving at the same speed, therefore the shaded pinions are stationary on their bearings.

Left.—Shows the arrangement of the differential gear. Differential cage part-sectioned.

# The Breakdown Gang!



A breakdown train and travelling crane of the Great Western Railway.

EVERY fellow knows that the crack passenger express is King of the Steel Highway, and that other less important trains always have to give way to these fliers. There is, however, one train which takes precedence over even the "non-stops"—the breakdown train.

When the breakdown train, with its gang of skilled workmen aboard, is rushing to the scene of an accident, all other trains are of secondary importance. As in the case of the fire-engine in the busy streets, everything movable is hurried out of the way to give the breakdown train a free road.

Although all that is humanly, mechanically, and electrically possible is done to safeguard travel by railway in this country, and whilst all these precautions are wonderfully effective, a serious accident involving loss of life may occur on even the best regulated of railways.

It is then, when an engine or coaches, or both, leave the rails, that the code signal summoning the breakdown train is flashed over the wires, and a powerful engine already standing by with steam up races with the breakdown train, consisting of travelling cranes, breakdown vans, and other equipment, from its depot to the scene of the derailment.

Every railwayman is in league to hasten its progress, and the signalmen along its line of route pass the word forward from box to box in order that there may be no hold-up on the journey. If the smash is a big one, two or more breakdown trains, each complete with its cranes and vans containing all the miscellaneous gear required on these occasions, which are always standing by at various parts of the railway ready for immediate use, and their breakdown gangs, may be ordered to the spot.

The first consideration is to save human life, and when everything possible in that direction has been accomplished, all efforts are exerted towards clearing the road so that traffic may be resumed at the earliest possible moment. If both lines of railway are obstructed, the first objective is to clear one, so that single line working—in which both up and down traffic is conveyed over the same line—may be adopted.

Railway traffic in this country is so dense, and trains follow so closely on one another, that any main-line obstruction which is not promptly

When a smash occurs on the railway line the breakdown train, with its gang of skilled workmen aboard, rushes at once to the scene. Everything movable must shift out of its path. It is a case of "Make way for the Breakdown Train!"

cleared soon spells chaos, congestion, and dislocation. Where there is an alternative road, oncoming trains are diverted so as to avoid the site of the accident.

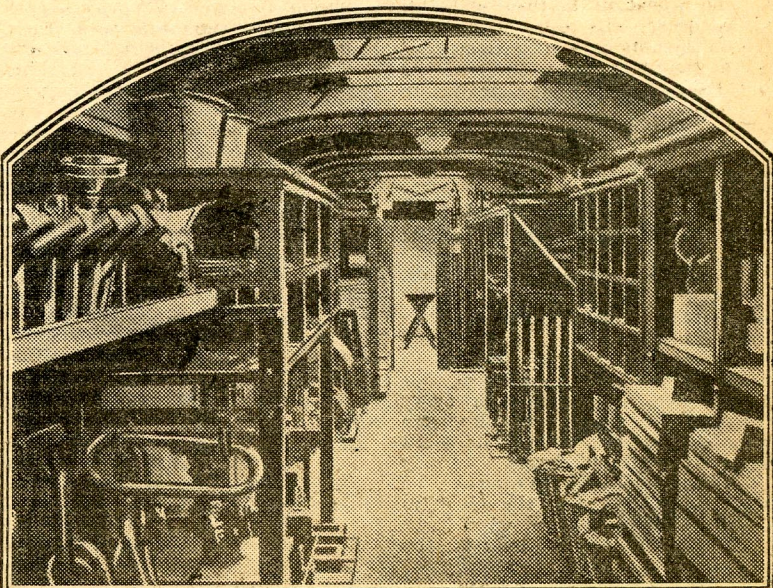
Our breakdown trains have arrived on the scene of the smash, and whilst the 40 ft. jibs or the gigantic travelling cranes are being unshipped from the "match" trucks on which they rest when travelling, the breakdown vans have disgorged their hydraulic jacks—some of 40 tons capacity—pulleys, ladders, tools, and, if it is night-time, searchlights and flare-lamps are brought into play. Then the work of clearing the debris goes on apace. There is no time to waste. The crew consists of picked men. Every man knows his job and puts his back into it.

If the derailed coaches or wagons

can be lifted and replaced on the track on their own wheels, this is done. If not, a powerful oxy-acetylene apparatus is employed to cut through the iron and steel of the smashed-up vehicles, so that they may be removed and lifted on to wagons and cleared out of the way.

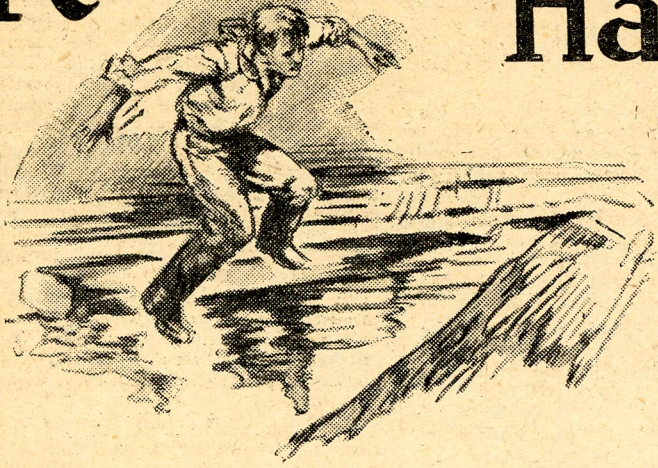
The travelling cranes on this work can lift extraordinary loads, and a pair of them make light work of a modern giant locomotive. The crane jibs may be swung into practically any position, besides being raised or lowered, and the cranes also have self-propelling movements. The breakdown van is stocked with emergency rations for the use of the officers and men engaged in this work, and its miscellaneous contents embrace fire-extinguishers and first aid appliances, besides many tools and gadgets which experience has proved may be useful in such emergencies.

Everything is carried on under pressure until the officer in charge can report the line clear again, and a sigh of real relief goes up when the breakdown gang have reassembled their equipment, lowered and secured the towering jib of their crane, have wired headquarters "All clear," and are speeding homewards to a well-earned rest after their labours.



Inside one of the vans of the breakdown train, with tools and appliances arranged for instant use.

# Round the World on Half-a-Crown!



By  
**TOM ROGERS.**

**Life in a Logging Camp! Tom and Pud are racked in every limb, but, bruised and despairing, they stick it!**

**D**URING our first few days in the logging camp near Shuswap Pud and I underwent more sheer physical suffering than we had ever done before in our lives.

Neither of us was used to swinging an axe, and we badly blistered our hands before we resorted to coarse buckskin gloves. Clearing the undergrowth to make tracks through the backwoods was such terribly tough work that each night our muscles were racked with pain. We tore our flesh on thorny shrubs, and Pud badly hurt a foot from the fall of a heavy branch.

More than one of the workers of our swampers' gang became fed-up and quit. Others were used to this kind of backwoods work, and were as tough as rawhide. Without a doubt, Pud and I, who were the worst sufferers of all, would have turned up the job, but that neither wished to be the first to suggest chucking up the sponge.

So, racked in every limb, bruised and despairing, we stuck it, though sometimes in the evening we were almost too tired to force food down our throats, and only wanted to throw ourselves full length in our bunks.

And then, after a week or ten days, we actually found ourselves beginning to take a zest in the work.

This was due to two things. In the first place, our muscles and bodies had toughened to such an extent that they no longer pained with every movement; in the second place, we had gained enough "savvy" to avoid needless trouble and hurts.

The hard work and the tang of pine in our nostrils gave us the appetites of horses. At meal-times, when there was a big rush for the long trestle-tables, we always were among the first to get our legs under them. No one ever seemed to take more than ten minutes for a meal, though in that

short space of time an amazing quantity of grub was stowed away.

Hardly a word was ever spoken. The only sounds were the clatter of knives and forks on tin plates, and the sudden scuffle when someone made a dive along the table for some condiment, for no one ever asked for anything or passed anything.

*Young Tom Rogers, telling his own unvarnished story, is an adventurous youngster who started out to see the world with but half-a-crown in his pocket. In Vancouver he chums up with "Pud" Drummond, another young adventurer. They travel to British Columbia and get jobs as "swampers" in a lumber camp.*

I said that no one ever took more than ten minutes over a meal, but for the moment I had forgotten Pud. There, to the disgust of the bull-cook, he sat in solitary state long after everyone else had finished, mopping up such as remained of the flapjacks or blueberry pies. How he ever managed to swing an axe after his efforts at the table was a miracle.

It was all like a great battle—an unending battle for logs to feed the greedy maws of the sawmills. The backwoods around the camp hummed with life and activity.

Gone were the days when oxen driven by "bull-punchers" dragged the logs down skidways. Our forest vibrated with machinery and piped to the shrill note of whistles. An aerial skidder worked by steam—or "flying machine," as it was popularly called—hoisted twenty-ton logs from the ground and swung them out through the air. A steam tractor

hauled them down to the river for launching.

But at the hub of all the work were the axe-men, or fallers, whose shining blades brought down the forest monarchs. So skilful were they in their task that they could send a tree crashing to the ground almost to a yard in the direction they desired. Beside the fallers there were a number of other workers known as buckers, hook-tenders, donkey engineers, high-riggers, rigging slingers, chokermen, and whistle punks.

To describe their various jobs in detail would take too long; but, briefly, the buckers cut the trees into log lengths after they had been felled. The hook-tenders and rigging crews were responsible for getting the felled logs out of the woods. The duty of the whistle punk was to sound the whistle signals through a magnetic wire to the man in charge of the donkey engine. He, in response, was kept constantly shifting his gears to get out the logs that the buckers had sawn.

Soon Pud and I learned to distinguish the various trees of the forests—the pine, cedar, spruce, hemlock, and tamarac.

We learned also the method of logging from cutting down the standing timber to the time when the logs were formed into booms, or rafts, on the lake by the agile "drivers." Once we witnessed some of these men hold a burling contest on the lake—that is, log rolling—and we were filled with admiration at their skill.

One day I had a go. It was a Sunday, and Pud and I, with several others, including Jem Turner, the camp boss, were standing on the river bank watching the sport. The Irish logger, Mike Hannon, who was expected to take a toss, managed to stick on a big cedar log without falling, much to everyone's disappointment.

"Here, sonny," exclaimed Jem, shoving me forward, "let's see what another Britisher can do!"

Reason warned me to steer clear of those logs, but, frankly, I hadn't the courage to refuse in front of my grinning camp-mates.

There was an open patch of water in the middle of a boom of logs moored close to the shore, and, with a horrible sinking feeling in my heart, I set out to reach it.

Some of the bigger logs afforded a firm foothold to my heavily-nailed boots. Some of the smaller ones bobbed right under water with my weight, and I had to make a desperate leap for something more secure. Once I trod on a barkless trunk covered with slippery green lichen, and I sprawled full length, grazing my knees and arms. The laughter of Pud and the others rang in my ears, and, gritting my teeth, I got up and went on.

Here let me say that I hadn't the foggiest hope of being able to burl a log like the experts, all of whom had had years of experience on the Canadian rivers. All I wanted to do was to make a good showing, and I selected a big cedar that looked fairly safe for the attempt. A hefty log-driver, armed with a cant-hook, shoved me out into the wide patch of water in the middle of the boom.

Great snakes! The log was starting to roll before I was ready! I bent this way and that; my feet marked time rapidly in an effort to secure a grip. The only effect was to make the big, streaming log roll over faster in the water, and I found

myself doing a kind of frantic race on it.

"Good old Tommy! Stick it, pard!"

I could have brained that Pud.

"Ha, ha, ha!" roared my camp-mates on the log boom and bank.

My starting eyes saw their grinning faces; then my arms flung out, my hands clawed the empty air, and—splash!—I landed in the river on my back!

The river was ice-cold, and, blowing like a porpoise, I swam to the boom and dragged myself out, badly nipping my fingers between two logs in the process.

Of course, I grinned and pretended to like it, but I could not resist the temptation of landing Pud a hearty kick with my wet boot as he stood there on the bank doubled up with laughter.

That checked him for a minute or so; but my troubles appealed to him as so funny that he broke into fresh peals of mirth, until suddenly Jem Turner, shoving him forward, said abruptly:

"Go on; your turn, kid!"

Wet and shivering, I was on my way back to the bunkhouse, but I stopped and turned back.

"M-my t-turn?" gulped Pud. "I—I don't know nothing about it."

"Well, you'll never learn unless you try," grinned Jem. "Get busy!"

After that there was nothing for it but that Pud, too, must try his hand at the loggers' sport. Exactly five minutes later, to the uproarious laughter of the roughnecks, he wended his way with me to the bunk-

house, leaving a trail of wetness behind him.

After a week in the backwoods we noticed that a curious blue haze filled the air, and learned that it was due to huge forest fires a hundred miles to the northward.

We decided, as we were making good money and spending very little, that we would stick the camp throughout the winter. Luck, however, was against us, and shortly after Christmas half the swampers were laid off, Pud and I among them.

Our consolation was that we each had a goodly wad of dollars, and, crossing to Notch Hill, we took train eastward to Revelstoke, on the Columbia River, the gateway to the wonderful fruit orchards and mining camps of the West Kootenays.

To the east of Revelstoke are mighty forests and the foothills of the Rockies. To the south the Columbia opens into the lovely Arrow Lakes, a wonderful centre for game and fishing.

The comparative nearness of the town to the mighty Rockies inflamed Pud and me with a crazy desire to visit the mountains, though there seemed not the faintest chance of us doing so in the depth of winter.

Then, quite unexpectedly, we got the chance of satisfying our desire and, incidentally, of tackling a job different from any other we had struck in the Dominion.

*(The merest chance provides young Tom Rogers and Pud Drummond with a wonderful new job. See what they make of it—in next week's MODERN BOY!)*



Neither of us was used to swinging an axe, and we found it terribly hard work!

## FLYING HOTELS. Ninety Feet Wing Span!

**T**HE largest eagle that ever cleaved its way through the clouds would look like an ant if ranged by the side of the enormous flying hotel which landed the other day at the Croydon Aerodrome.

The first all-metal commercial aeroplane of its type to land there, this colossal German monoplane is driven by three 450-550 horse-power engines. Its wing span is over ninety feet, and its speed is 120 miles per hour!

It is a German plane—and now German airmen are talking about building super-Zeppelins in which people will be able to take week-end trips from Europe to America. They hope to start a regular service of such trips in June, according to the Zeppelin "king," Dr. Eckener, who has just completed his 2,500th flight in a Zeppelin without a single mishap!

He is not stopping at Europe-to-America week-end trips. He says the journey by air round the world in 280 hours is a perfectly practical proposition. Each Zeppelin flight to America will cost something like £10,000!

## STANDING A BRIDGE ON END!

### Another Clever Invention!

**I**N the Middle Ages every big house or castle was surrounded by a moat, a broad ditch full of water which was crossed by a drawbridge. The simplest form of drawbridge was a narrow roadway of solid timber, hinged on the inner side, which could be quickly raised by a large windlass inside the castle.

As drawbridges grew larger it was found to be more convenient to make them in two pieces, meeting in the middle, with windlasses at both ends.

The Tower Bridge, London, is, of course, the biggest drawbridge in the world. It has a centre opening of 200 feet, and the centre span is lifted by hydraulic machinery.

In the newest drawbridge which has just been completed, at Antwerp, immense counterpoised weights are used to lift the heavy bridge upwards, with the result that instead of taking four or five minutes to raise it vertically, the whole operation is completed in a few seconds! A very simple invention, yet an extremely valuable one.

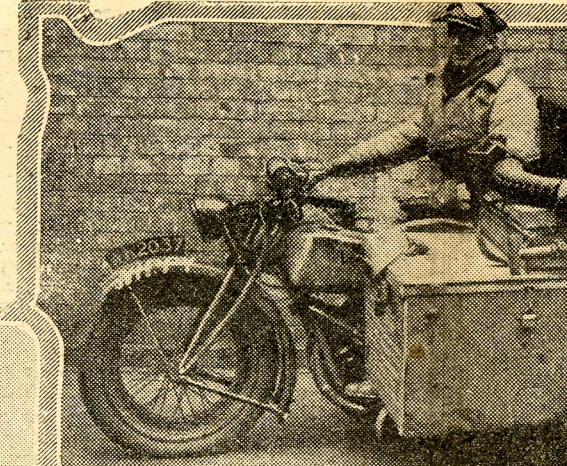
## OUR PICTORIAL NEWS

### ROUND THE WORLD ON A

**A** WELL-KNOWN racing motorcyclist, Mr. S. T. Granfield, recently returned from a tour of the world on his motor-bike and sidecar, crossed India in six days, and is the first man to cross Australia alone!

If you rode from Land's End to Edinburgh and back, and then once more up to Edinburgh, you would have covered

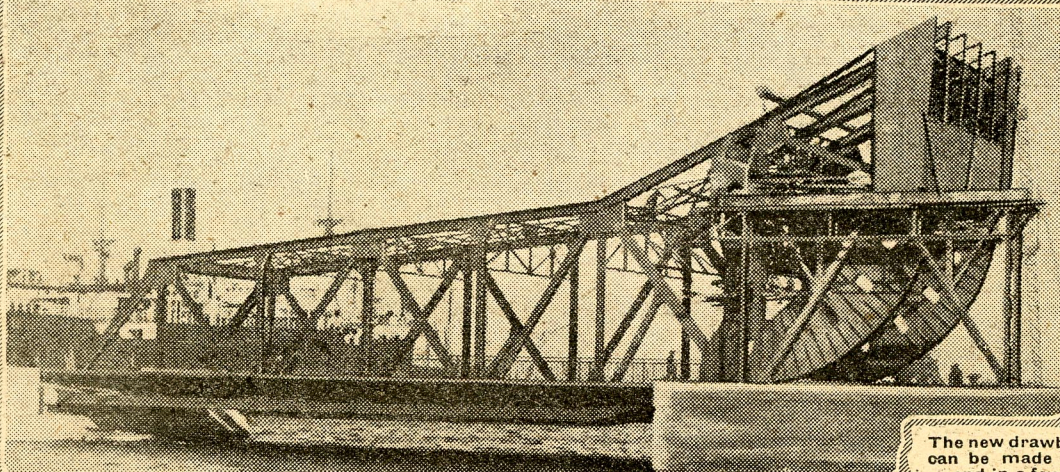
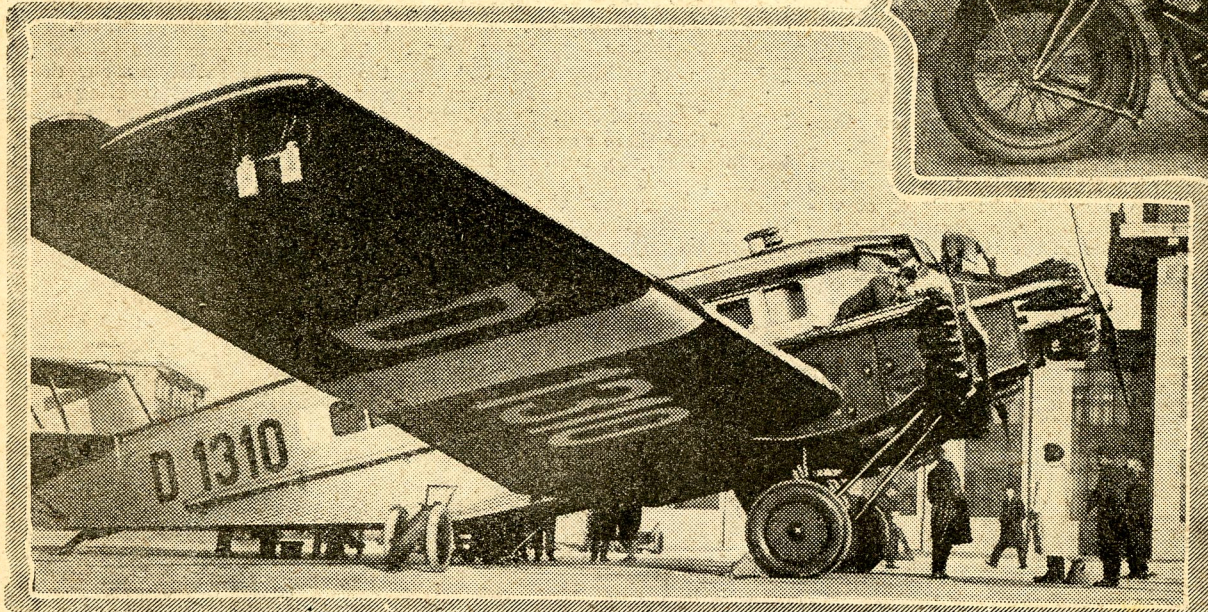
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The racing motor-cyclist and sidecar on which he made his tour round the world.

Left: Wing span nearly 100 feet. The first to land at the great aerodrome.

Right: A model of the new drawbridge designed to be raised in a few seconds.



The new drawbridge which can be made to stand on end in a few seconds.

OUR PICTORIAL NEWS PAGES.

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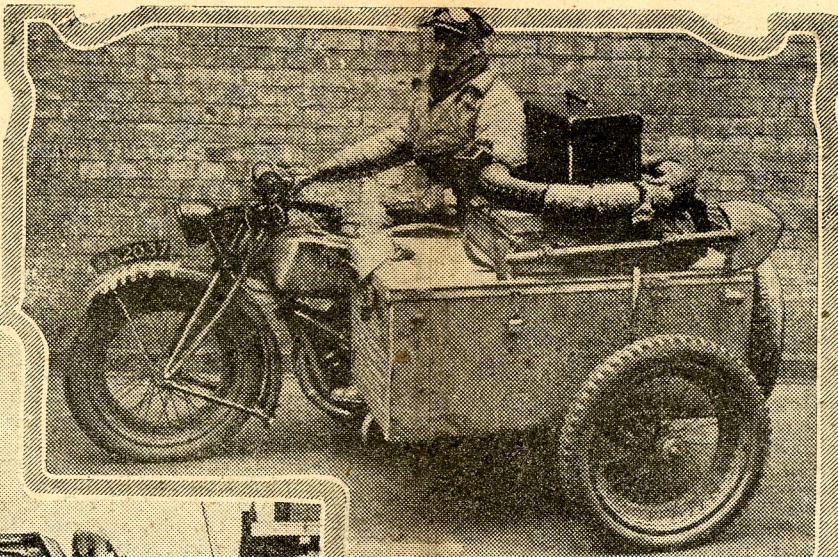
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ROUND THE WORLD ON A MOTOR-BIKE!

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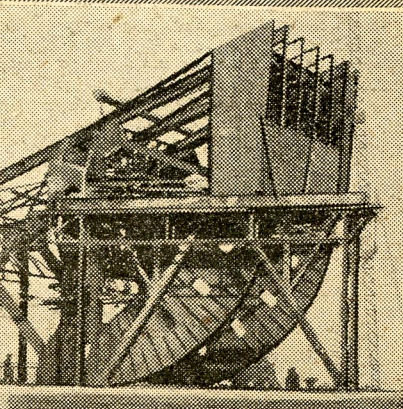
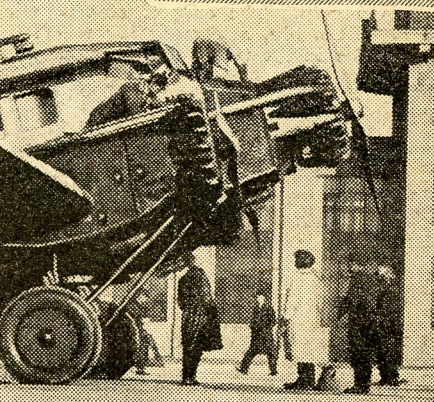
just about the same distance as Mr. Granfield covered in riding across India from one side to the other! Indian traffic is terrible. Often the whole road is blocked by slow-moving bullock wagons; you may meet elephants, camels, or a wedding procession—none of which will move an inch to let you by! Our congratulations on a fine feat!



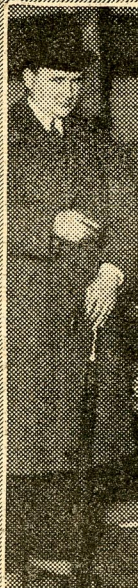
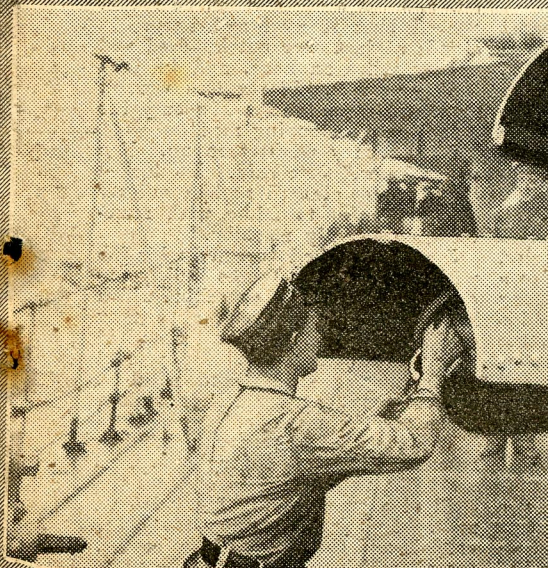
The racing motor-cyclist and the motor-bike and sidecar on which he has just completed a tour round the world.

Left: Wing span ninety feet, speed 120 miles per hour! The first aeroplane of its type to land at the great Croydon Aerodrome.

Right: A model of the new rail plane—a train designed to run suspended from overhead rails.

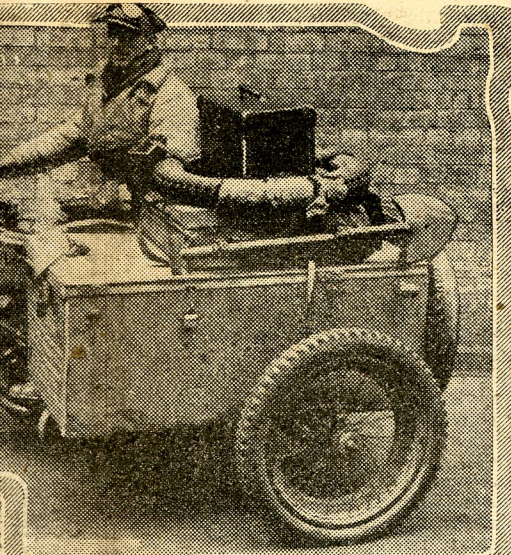


The new drawbridge which can be made to stand on end in a few seconds.



WORLD ON A MOTOR-BIKE !

motor-just about the same distance as Mr. field, re-eanfield covered in riding across India. ne world from one side to the other! Indian traffic crossed is ferrible. Often the whole road first man is blocked by slow-moving bullock wagons; to Edin-you may meet elephants, camels, or a more up bedding procession—none of which will covered move an inch to let you by! Our con-gratulations on a fine feat!



The racing motor-cyclist and the motor-bike and sidecar on which he has just completed a tour round the world.

Left: Wing span ninety feet, speed 120 miles per hour! The first aeroplane of its type to land at the great Croydon Aerodrome.

Right: A model of the new rail plane—a train designed to run suspended from overhead rails.

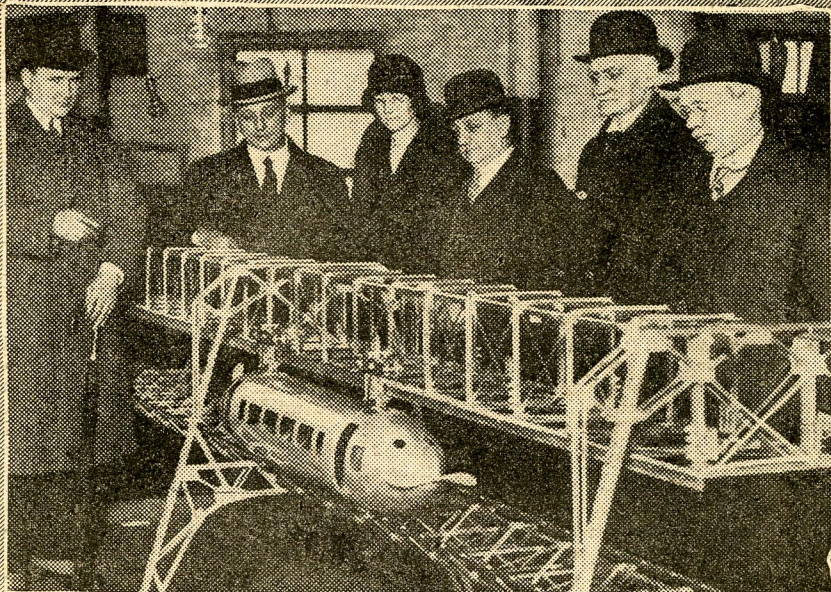
THE RAILWAY OF THE FUTURE ?

Trains to Hang From Rails !

INVENTORS have been busy for years past trying to construct a railway which will be cheaper to build, more economical to run, and very much faster than the ordinary sort.

The inventor of the torpedo, Mr. Louis Brennan, has invented a monorail; a car which runs on one rail and is balanced there by a gyroscope. The model runs on a wire cable and works beautifully. It is steady as a rock, but the trouble is the great weight of the gyroscope.

Below you see the latest invention in the way of quick travel, a rail plane. The car is cigar-shaped, holds fifty people, and will travel at 120 miles an hour. The rail plane will run on overhead tracks, which could be built over existing railway lines. The inventor, Mr. George Bennie, is seen in the photo giving a demonstration of his model.



A NAVAL SECRET !

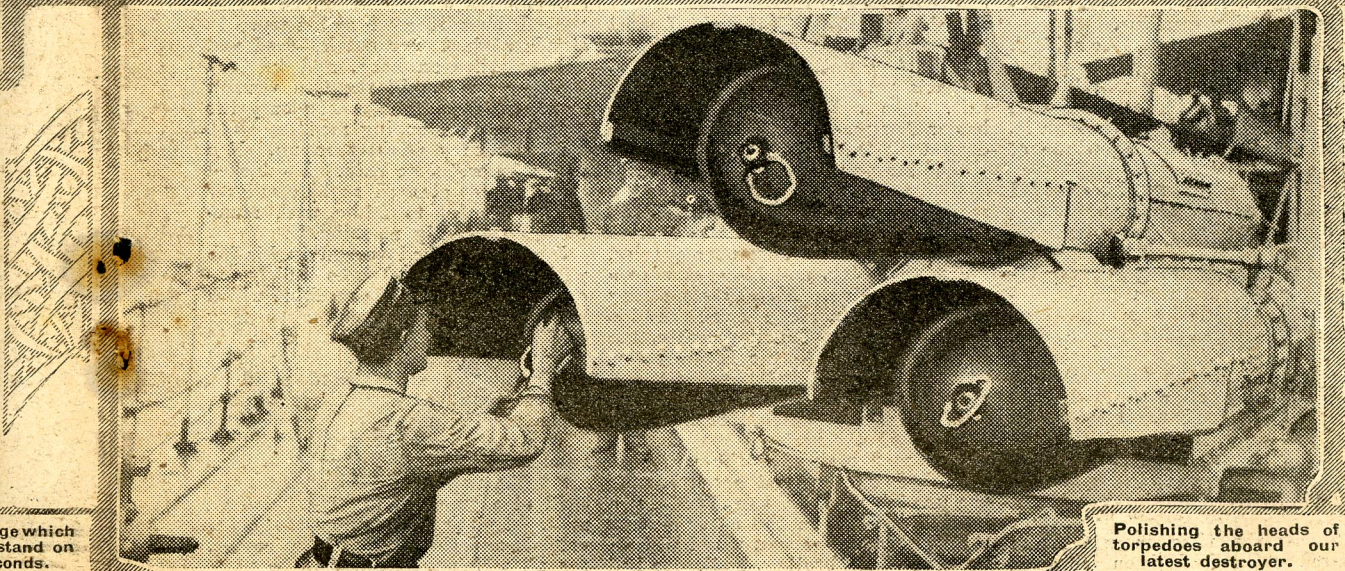
Hush-hush Torpedoes !

THERE is no naval weapon which is kept more secret than the torpedo. Come to think of it, there is nothing more wonderful in its own line than a machine which drives itself at tremendous speed through the water, keeping always just the same depth below the surface, and travelling straight towards a target perhaps a mile or more away.

A modern torpedo has two propellers, driven by air compressed to a pressure of something like 1,500 lb. to the square inch, and is fitted with horizontal and vertical rudders.

A torpedo costs as much as a small yacht, yet thousands were used in the Great War, of which perhaps one in five reached its target. The rest lie rusting in the depths.

The newest development is torpedoes directed by wireless, and it is said that, when these are perfected, the big battleship is doomed.



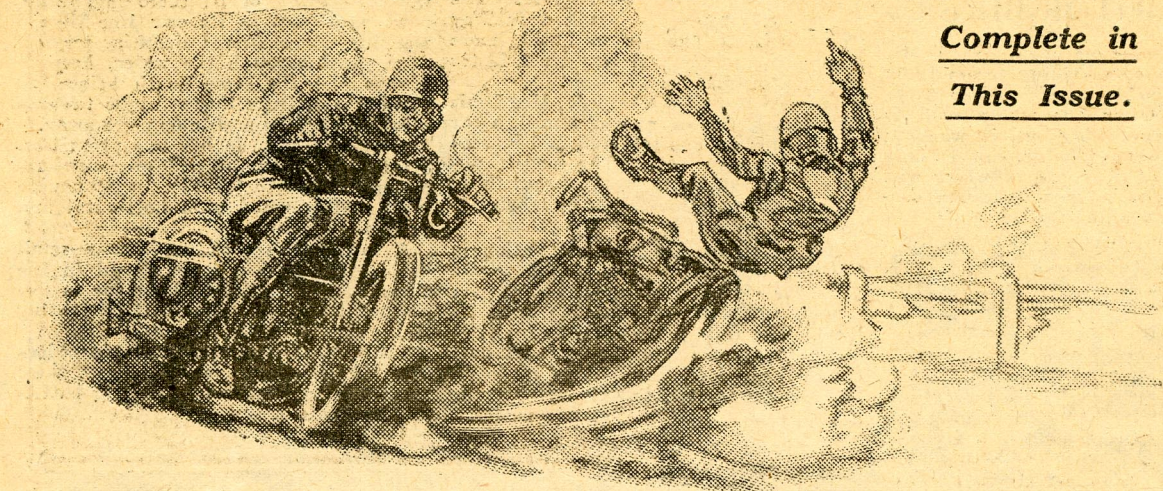
...ge which stand on ...onds.

Polishing the heads of torpedoes aboard our latest destroyer.



# WHIZZING WHEELS!

**Complete in  
This Issue.**



**JIM CURTIS** stood at the side of the moorland road, which stretched away out of sight across the heath, white and clean in the bright late-April sunshine.

Where the road rose over a slight rise was silhouetted a single figure, standing with a red flag raised high. He was a full mile distant from Jim. He knew how far the other was away, because they had just measured off the road.

In his hand Jim held a heavy stop-watch. Opposite, on the other side of the narrow track, was stuck a white-painted stick.

He crouched as he glued his gaze to the distant figure, and to his ears came the sound of a vibrant, rushing roar. On the far side of the rise he glimpsed something black, which developed swiftly into the hurtling shape of a racing motor-cycle, its rider flattened along the tank.

As the speeding shape smashed past the figure with the flag, the fabric fluttered down; Jim's stop-watch clicked, then he stood, watching the rocketing machine.

It came down the road like a black thunderbolt, dust lifting in a plume from its thudding rear wheel. The shattering crash of its twin exhausts filled the air with sound; through it, Jim caught the scrabbling whine of the whizzing wheels.

The thunder of the machine surged to crescendo as it stormed level. Jim had a glimpse of the grim-faced rider—teeth gritted, fists clamped on the long handlebar grips, crash-helmet rammed down on his head—then the boy clicked the stop-watch again as the speed-bike ripped past the painted stick.

The machine began to slow as it leaped the top of a hump-backed bridge; still slowing, it vanished around a bend, and was screened from view by a wood that stood there.

Jim glanced at the stop-watch. "Twenty-nine seconds!" he gasped, as he saw the time in which the measured mile had been covered. "That's—" He glanced at a sheet

*Young Jim Curtis and big, broad-shouldered Joe Morgan build a wonderful speed-bike. But they lack funds wherewith to make fame. Read how Jim solves the problem!*

*A brisk-moving, complete yarn*

By

**ALFRED EDGAR.**

of paper which he held in his other hand. "My hat! That's a hundred an' twenty-four miles an hour!"

He stood staring unbelievably at the watch and at the paper, while the note of the machine died behind the wood, then rose again as the rider turned and ran slowly back over the bridge until he stopped before Jim.

"What did I do?" he asked.

"One—two—four miles an hour," the boy answered.

"H'm, not bad! I thought I must be just a shade over two miles a minute!" grunted Joe Morgan. "That's pretty good on a road like this. The old speed-iron ought to bust a few records by the time we've done with it!"

Joe Morgan was a big, broad-shouldered fellow. His eyes were red-rimmed and a little bloodshot, because, although he was a famous racing crack, he seldom wore goggles.

Jim was wiry, and his eyes were a clear light blue. Already something of his cold nerve showed in his square-cut chin. Until recently, the two had been with the Fleet Motor-Cycle Works, but both had left, and since then they had been engaged on building a bike which, Joe believed, would beat the best.

This mad rush over the moorland road had been a final speed test of the machine. The two lived in a little bungalow on the other side of the wood with the man who had held the flag—Joe's brother, Phil. He had a crippled leg, and now he came

hobbling down the road towards them with the aid of his heavy stick.

Jim showed Joe the stop-watch, and the big fellow nodded as he saw the position of the hands.

"I don't suppose the timing's absolutely exact," he commented, "but it's near enough for us. The old bus was as steady as a rock all the way. And"—he broke off, and looked at Jim—"and you're itching to get in the saddle an' see if you can make better time than I did, aren't you? Well, you're not going to—see?" He grinned a little. "You'll wait until we've got the second bus built. I don't want the tune of this outfit spoiled just yet!"

He knew Jim's itch for speed; it was solely because of this that he had been sacked from the big works. He had "borrowed" a racing-bike, and had crashed with it just when the speedometer needle was flat over one hundred miles an hour.

"I wish we could raise the money to go for that mile record," Joe went on, and his smile died as he spoke. "We'd bust it good and hard. It stands at just over one hundred and twenty miles an hour, and we beat that just now. If the fees weren't so high I'd go for it. It's only the money that's stopping me!"

"The money might turn up. You never know," Jim said. He looked away as Joe glanced at him quickly and pretended to fiddle with something on the big machine.

Joe Morgan had turned in his job with the Fleet Works solely to devote himself to this machine which he had designed. So far as they could tell, the bike was all they had hoped it would prove. He wanted to break the mile record with it, because that feat would have made a name for the machine.

It costs a lot of money to break a record. Electrical timing apparatus has to be used, and this involves the skill of a group of highly-specialised men. In addition, there are other officials and the hiring of the course, for all which money has to be paid.

Jim knew all this. He also knew

that building the speed machine and getting the parts for two more had been very costly. They had the bike, and it did all they had hoped, but they lacked the finance to develop it.

"We'll just have to get one of the other bikes finished," Joe said, as they stood there. "I'll ride one and you'll ride the other, Jim, and we'll enter for races. When we've won enough prize-money we'll open out properly and go for records. Still, I wish we could have a cut at breaking the mile now! Anyway, you run the bike back to the shed, and I'll go up the road to meet Phil. Don't do more than sixty. Promise!"

Jim smiled his promise as he slid a leg over the broad saddle and kick-started the machine.

"I'll leave it in the shed," he said, above the roar of the twin exhausts. "I'll have gone by the time you get back."

"All right." Joe added: "You've been buzzing off every afternoon for the past week. I'd like to know what you've got up your sleeve!"

"The mile record," answered Jim; and, before Joe could ask him what he meant, the bike roared away.

ON either side of the fat, rounded tank was painted the machine's name—Flyer—and it certainly lived up to its name as it roared down the road, curving past the wood at a steady mile a minute. The chattering of its black-mouthed exhausts sounded like music in Jim's ears, and he itched to notch the throttle wide and let the machine go.

But he kept it at a steady speed until he came in sight of the bungalow, with a big shed built near. He ran the machine in, dismounted, and leaned it against a bench. Being stripped for speed work, it had no back stand.

In a wooden cradle at one side was the half-built shape of a second Flyer, and in a corner were the crated parts of a third machine. He grabbed a bunch of rags and swiftly cleaned down the frame and the engine of the Flyer, working with eager quickness and casting half a dozen glances at a clock which stood back of the bench.

When the racer looked bright and smart he pitched the rags down, closed and locked the garage doors, and then half ran around to the side of the bungalow. Against the fence, at the edge of a rough patch of grass, was an old pile of wood and some sheets of corrugated iron.

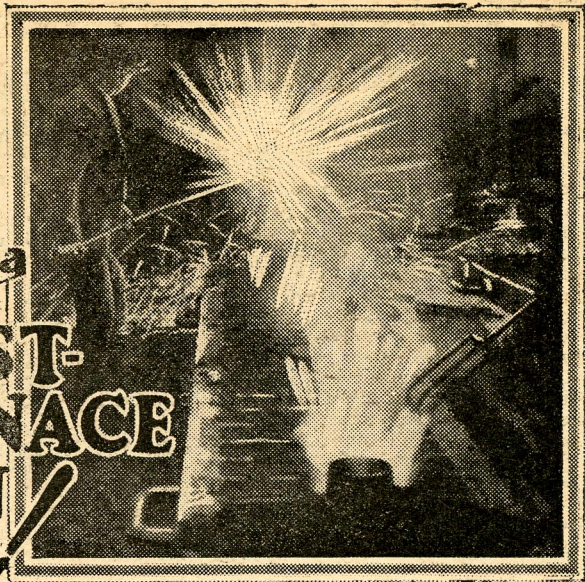
Jim dived down amongst the sheeting and drew out a battered-looking crash helmet and a leather racing-suit, some puttees, and a boot which was shod with steel. Both helmet and suit were covered with dust and cinders, but he rolled the whole thing up into a bundle, then stepped to the side of the pile and hauled out a motor-cycle.

It was a queer-looking, skeleton affair, with extra supports stiffening the frame, while the whole of the engine was surrounded by heavy, close-meshed wire. There was but one foot-rest to the bike; in place

(Continued on the next page.)

## A Day in the Life of a

# BLAST- FURNACE MAN!



A halfpenny bundle of wood would not help me much in lighting my fire. I need 20 tons of kindling wood at a time!

MY work lies in and about one of the huge furnaces wherein is melted the iron ore that constitutes the raw material of the steelmakers, shipbuilders, bridge-builders, and other allied trades.

It is not in the least like an ordinary furnace. In effect it is an immense hollow tower, 80 or 90 feet high, but yet looking somewhat squat because it is so big round—somewhere about 60 feet. It is built of steel plates riveted tightly together, and lined inside with a "skin" of special fire-bricks several feet thick.

To get one of these squat monsters properly heated up is no easy task. You can light an ordinary kitchen fire at the cost of a halfpenny bundle of wood, and get it going in the course of a few minutes. But to get a blast furnace going "from cold" costs about £3,000, plus many days' strenuous labour.

The furnace is fed from the top. Consequently, the first thing I have to do is to get my quota of kindling wood up from the ground level. As there are twenty tons of it, this preliminary operation takes up quite a little time.

My mate fills the "skip" at the bottom with the wood, about ten hundred-weights at the time, and sends it up to me by the lift. I tip it into the furnace.

This sounds easy, but it isn't really. And for this reason: Just as when laying a kitchen fire the kindling wood must be disposed to the best advantage, so it is with my furnace fire. As the furnace fills up ton by ton, I have to see that the mass of logs settles properly, not too tight together, nor yet too loose. There is quite an art in this.

When all the wood has been dumped in and fixed up just right, the fire is started. I wait till it is well alight, and then begin filling in with coke, which my mate sends up in his skip in the same way that he has previously sent up the kindling wood.

As soon as I see that the coke is beginning to "show red," as we say, I signal to my mate to turn on the air blast. It is this which gives the great heat that is necessary to smelt the ore.

The furnace is now in working order, and will go on roaring away indefinitely; for, once lit, blast furnaces are not allowed to go out. As yet, however, we do not put in any ore. Before doing this I have to make sure that the brick lining has stored up sufficient heat to smelt it properly.

This takes many days, the furnace meanwhile roaring away night and day; eating up coke at the rate of some 200 tons every twenty-four hours. We work in eight-hour shifts feeding the greedy monster with this fuel, and it may be three weeks before it is hot enough.

Then the iron ore is sent up by the skipful, and tipped in from the top, with alternate layers of limestone. This latter substance acts as a flux for the slag—that is, the earthy matter which enters into the composition of iron ore, and which will not melt properly without the addition of the limestone.

At intervals of every few hours my mate down below opens a tap-hole at the bottom and allows the molten iron to run off into moulds he has previously formed in the sand-bed outside the furnace. This naturally causes the contents of the huge stove to sink, and I get busy on top tipping in more ore and limestone alternately to make up the deficiency.

Such, in the main, is our work, day after day, week after week, year after year. There are, of course, other minor jobs to attend to, one of the most important being to see that the blast is kept always at full pressure.

The blast is provided by great gas engines fed by gas produced by the furnace itself in the process of smelting; and these engines have to be very carefully watched and regulated.

## Whizzing Wheels!

(Continued from previous page.)

at the other side was a long, smooth iron skid.

Jim's light-blue eyes lit up as he pulled the machine clear. He flooded the carburettor as he rolled the strange outfit towards the road from its hiding-place. At the gate he turned and looked in the direction of the wood, making certain that neither Joe nor Phil were yet in sight; then he push-started the engine, leaped into the saddle with the bundle under one arm, and went roaring off.

He rode one-handed, but he twice touched seventy miles an hour with the queer machine during a twenty-minute run, which brought him to a pair of broad gates that stood half-open. As Jim roared up, a man who was standing there pulled the gates wide, and grinned as the boy rode through.

Above the gates was a big sign, reading:

"MOOREND RACING TRACK."

Ahead showed the dirt track itself, a huge oval that was just a quarter of a mile round, its black, cindered surface streaked with skid-marks.

At the far end there was a big announcement-board, and three men stood in front of a building near. They all turned as Jim brought the machine to a stop and slipped from the saddle.

"Hallo, Curtis!" one of them greeted. "Just come up for a last run round, eh?" He turned to a man beside him. "He's the kid I was telling you about, the dark horse for to-morrow's big race. Out to drag in that hundred-pound prize, aren't you, Curtis?"

"I'm going to have a good try for it," Jim answered; and he let his machine drop sideways to its skid as he unrolled his bundle and began to don the leather kit.

The Moarend dirt-track races had been running for some weeks, but it was barely a fortnight since Jim had first shown up with his old bike. He had turned up when he had heard about the big race which was coming off on the following day, with a prize of one hundred pounds for the winner—the biggest cash prize yet offered. At first he had wanted to win it just with the idea of handing the money over to Joe to pay entrance fees for the Flyer machines in races. Now he wanted to get it so that the big bike could make an attempt on the mile record.

Dirt-track motor-cycle racing is one of the most thrilling sports yet devised. It's an affair of wide-open exhausts, smoke, dust, madly-skidding machines, and dare-devil riders. It had taken Jim a week of practising to get the hang of the game, but the previous Saturday he had won two small races, and had managed to get his entry for the big event accepted.

He had kept the whole thing secret from Joe, because he knew what Joe thought about dirt-track racing! His opinion was that it was just a freak stunt, and the fellow with the

most nerve was bound to win, provided his mount was sound.

Up to a point he was right. It wasn't like proper road-racing, where competing machines were thoroughly tested, and where tuning and driving skill counted. At the same time, dirt-track racing was announced solely as a sport, and a thrilling one at that. Jim thought that if he could win some money at it, and so help the Flyer, it was all to the good.

At the same time, he guessed Joe would stop him if he knew about it, because the risks of getting hurt were considerable. So he'd hidden his queer-looking outfit and had done his practising in secret.

Just as he was ready and was rolling his machine down to the cinders a smashing roar woke from the other end of the oval and another bike got under way. A man in a red-leather jerkin was in the saddle, and Jim recognised him as a fellow who was called "Red Ralph," favourite for the big race.

He went past Jim in a wild skid, spraying dust and cinders over him just as the boy got his racer going. Jim leaped into the saddle and streaked off after the red shape ahead of him. It was the first time he'd been on the course when Red Ralph had been practising, and Jim reckoned it was a good chance to get the favourite's measure.

He flattened over the tank, skidded the far end of the oval as his bike got into its stride, and then he was roaring round. Another mad skid at the end, which took him almost to the rim of the track, then he was overhauling the other machine.

Together they slowed into the turn, with Jim forcing his bike to the inside of the track and sliding ahead. The moment that he went, the red rider surged after him, and they roared round with hardly a yard between them.

Jim opened up, until both were coursing in one long skid. Cinders flew in surging clouds from their wheels, and Jim grinned down at his heavy steering head as he realised that he could leave Red Ralph behind any time.

He went wide at one end of the oval, and saw the other man cut inside him. For a moment they ran level, then Jim gave his engine full throttle to pull away. Just as he did so the other machine surged on, and from the tail of his eye Jim saw its front wheel nudge nearly level with his rear one.

Just what happened after that he never knew, save that the red rider's wheel deliberately touched his own. He felt the tail of his bike sling sideways. He hauled with all his strength on the handlebars to straighten it, but the fraction of a second later he was tossing headlong through the air.

He had a glimpse of his bike flying high above him, then he was sliding wildly on his back, with the machine crashing down yards farther along the track, and Red Ralph streaking away.

Ere he could pick himself up, the three men from the shed were at his side.

"Hurt?" asked the man who had

first spoken to him. "Bit shaken up, eh, son? Grab his other arm—that's it!"

They drew him slowly to his feet, and he sagged against their arms for a few moments, while his head cleared.

He wasn't hurt, but he could see that his bike was damaged, and he broke clear as he stumbled towards it. For a moment he thought that it was a wreck, then he saw the rear wheel had been crumpled up, and its debris made the smash look worse than it really was.

"Nothin' much harmed," the big man said. "If you haven't got a spare back wheel, I'll soon find you one." He drew Jim aside from the others, then he added quietly: "You're not up to all the tricks of this game, kid. Red meant you to come off then, because he could see you'd got him whipped. If you want to win to-morrow, you'll have to watch him!"

BY the time that he left the course,

Jim had his bike in running trim again. He made a dozen circuits just to be certain that everything was all right, then he returned to the bungalow. He left his machine and kit at the track, and to make up for the time he had taken off, he worked late in the garage on the second Flyer.

Joe didn't ask where he had been, but he could see that Jim was thinking about something else during all the following morning. As it was a Saturday, they knocked off work at twelve o'clock. After dinner, Jim tried to say casually:

"I'm going to clear off for a little while. See you later."

He grabbed his cap, then strolled from the bungalow. The two watched him go.

"He's up to some game," Joe growled. "He's been buzzing off on his own for the last week or more. I've got an idea that there's something coming off this afternoon."

"He's a mad young devil," Phil said, and he smiled a little. He was older than Joe, and he liked Jim. Phil had done all the drawing and much of the planning for the Flyer, and he lent a hand in the garage when occasion demanded. "It's funny he hasn't said anything lately about not being able to put the speed-iron at the mile record. He was full of it at one time."

"He said something yesterday about the money turning up, but I don't know what he meant," Joe told him.

"Well, I can make a guess at what he's up to," Phil said quietly. "He came home yesterday with gravel-rash on his chin and his hands; pretty nearly every afternoon lately he's come back with a fresh mark on him."

"Been coming off a bike, eh?" grunted Joe.

"Yes; a fine little rider like him taking tosses off a bike!" exclaimed Phil meaningly. "He brought an old bus he had at his old place over, but I haven't seen it since. And it must be more than a week since I saw him putting a steel sole on one of his boots. The only place where

you need a boot with a steel sole, and where good riders came off bikes, is at Moored!"

"Moorend! What, the dirt track?" Joe jerked from his chair. "You've hit it, Phil. That's what the game young beggar is up to—dirt-track racing! And there's a big race on this afternoon with a hundred quid for the first prize!"

"That'll be what he's after," Phil said. "It's all the gold in the Bank of England to a dud sparkin'-plug that he's trying to drag in some money. He knows that winning the big race would bring in enough to let the Flyer go for the record."

"Then, by heck, I'll stop him at it!" Joe roared.

And he grabbed his cap.

"It'd be better to go and cheer him on," Phil said, in his quiet way. "I don't suppose he likes the game—he just wants to help us out. Don't let's stop him, Joe—let's go and give him a yell for his pluck!"

**T**HE Moorend Dirt Track had never had a bigger crowd than assembled to watch the mad racing that afternoon. Eight smashing events paved the way to the biggest race of the afternoon, and the excited crowd roared its greeting as the six competing machines were run to the starting line.

The riders were leather-clad figures, each wearing a different-coloured leather jerkin—yellow, green, red, blue, white, and a slim shape in grimy brown—Jim.

Every man jack of them was after the glittering £100 prize—and so was Jim, although for a different reason. He wouldn't have been lined up amongst them if he hadn't wanted to help the Flyer on to fame and success.

Eight laps was the length of the race. Jim hoped he'd have the nerve to stick it. The starter's flag twitched, poised, then ripped down!

Jim let in the clutch, and his bike shot from the line. Inside, Red Ralph made the lightning get-away for which he was famed; Jim kept on the outside, because he knew the dust-smothered jam which would occur on the inside of the curve at the first turn.

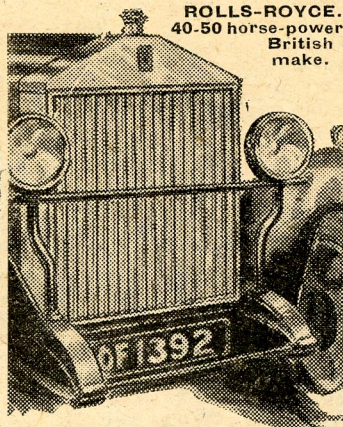
In a bunch, the six streaked off, with two machines close on the red rider's tail, and Jim streaking along on the outside; by keeping outside, he would have farther to go, but that didn't worry him.

He lost ground to the first bend, but gained it when the others skidded, because he held his bike to its course and hurtled on, leaning at an angle to the curve of the track. Speed mounted at the end of the first lap, and he started taking the turns with his steel skid grinding on the cinders.

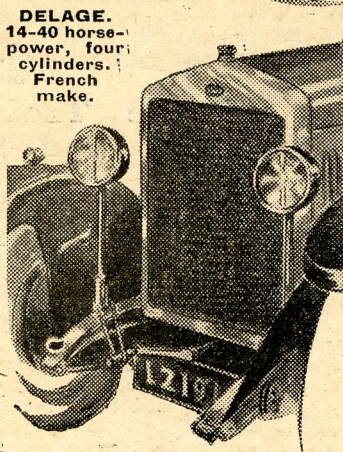
Two laps. At the end of the third the whole course seemed to be a flurry of clouding dust and spraying cinders—from the heart of which a man and a machine shot out of control. The rider was hurled from the saddle, full across Jim's path.

With a mad wrench, he took his machine inside him, got into a terrific

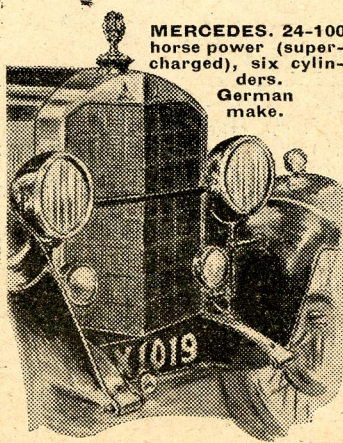
# What Car Was That?



**ROLLS-ROYCE.**  
40-50 horse-power.  
British  
make.



**DELAGE.**  
14-40 horse-  
power, four  
cylinders.  
French  
make.



**MERCEDES.** 24-100  
horse power (super-  
charged), six cylin-  
ders.  
German  
make.

Recognising cars is a fascinating pastime. This feature will help you to know the different makes by the radiator.

broadside skid which spun him completely round and all but brought him down. When he recovered, the rest were half a lap ahead of him.

Down the track he dropped now, throttle wide and engine giving all it had got. Steel-shot boot scraping the ground, bike leaning until it looked as though it must fall, he roared on. Ahead, he saw two more bikes tumble as their wheels touched on a bend.

Both went shooting out at a tangent, riders flying and bikes crashing as they struck the protecting fence: That left only Red Ralph and a man in yellow in the race, with but two laps to do, and Jim a full fifty yards behind.

He came up with them as they both skidded wide on the turn. Jim skidded, too, hauled his machine straight, and flung it through the slewing dust-cloud until he was level with Red Ralph.

He saw the man's smudged face as he glanced across at him, and the red rider surged towards him. Ken knew what was coming, and he pulled out like a shying horse, straightened, put his head down, and swept on with the other two at his heels.

He saw the last turn of the course leap back at him, and tensed every muscle in his body to meet the skid that he knew must come. He felt the tail of the bike begin to slide round; his steel-shod foot scoured the cinders, he heard the tearing scream of his skid, saw Red Ralph shoot level and slither out to skid across his path and balk him.

Jim let his bike go farther out, missed the other by bare inches, and then rocked away from him as Red Ralph's machine spun completely round. Jim saw him tilting sideways, and a moment after bike and man hit the ground and skated on.

Red Ralph was still sliding as a result of his attempted foul when Jim roared across the finishing line.

**W**HEN Jim came out of the office after collecting the £100 prize money, he found Joe and Phil waiting for him, and over the racing crack's face there was a broad grin. He shook hands wordlessly.

Jim handed the wad of notes to Joe. "That's for the Flyer," he said. "No, take it, Joe—it's to pay the fees for the record."

Joe took the notes, then looked at Phil.

"You were right," he growled, then he went on: "Jim, I knew you'd got some nerve, and I reckon I've got a bit myself. But it'd need more than a hundred pounds to make me run in a race like you've just won! We'll use the money like you say, Jim, but on one condition!"

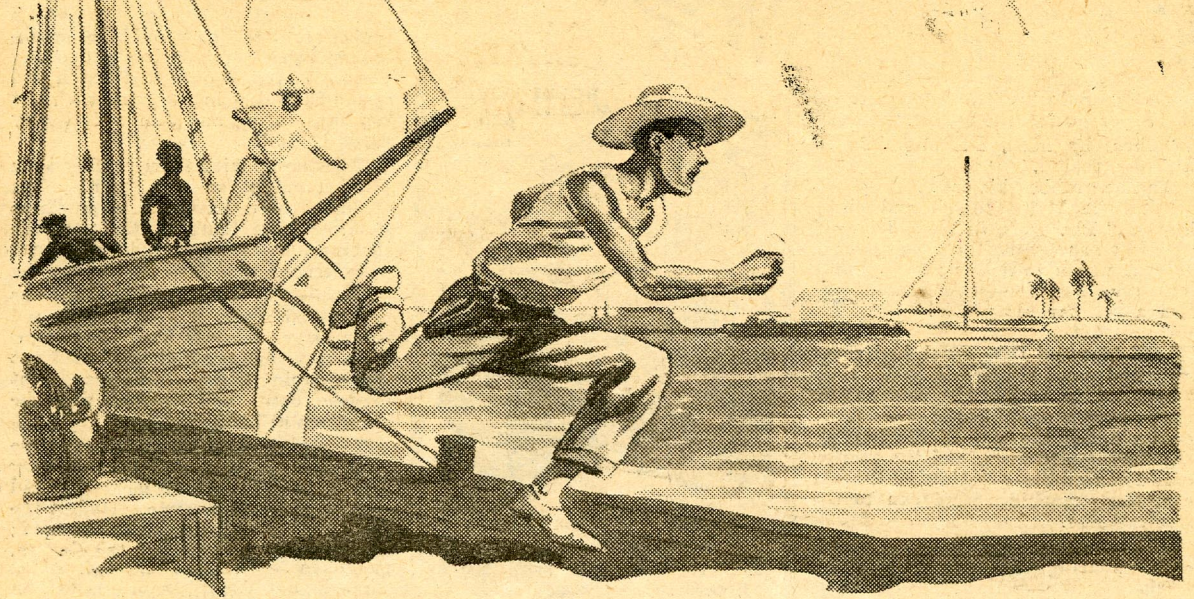
"What's that?" asked Jim.

"Why, that when the Flyer goes for the record, you ride it! Are you game?"

There was no need for Jim to answer!

*(Jim and the Flyer create a sensation in motor-cycling circles next week. Don't be an "also ran"—order your copy of the MODERN BOY this very day!)*

# KING of the



All the Romance of the Tropics is in this exciting story of Air—Land—and—Sea Adventure!

Where is Bully Samson?

THE whaleboat was swung up and the Dawn put before the wind again. Ken called the crew together, and the Hiva-Oa men clustered on deck with troubled faces. They had followed the impulse of their untutored natures in flinging into the sea the ruffian who had bullied and hazed them, and they had no regrets on that score. But they feared deeply the anger of King of the Islands.

"You feller boy, what you do along Cap'n Samson plenty no good," said Ken sternly. "I plenty mad along you feller boy."

"Feller Samson he plenty kill Hiva-Oa feller, sar," said Lompo. "You look eye belong you, sar, you see face belong me plenty kill."

"You look-see, sar," said Lufu, touching his ear, the lobe of which hung in rags. "Feller Samson he kill ear belong me, smashee plenty, sar."

The ear ornament worn by Lufu had been smashed off by a brutal blow, and part of the ear had gone with it.

"Plenty solly, sar," said Danny humbly. "Savvy plenty we do no good along Bully Samson, sar."

"What you do along Bully Samson he no good, he plenty bad," said King of the Islands. "Me plenty angry along you feller boy. Me think sendee you all back along Hiva-Oa—me think ship more boy along Nuka-hiva."

There was a wail of dismay from

the Hiva-Oa men. The five of them began jabbering at once.

"You no sendee feller boy back along Hiva-Oa," gasped Lompo.

"Nuka-hiva boy he no good along ship!" said Lufu. "Feller King of the Islands no like Nuka-hiva boy along ketch. He no good."

"S'pose Cap'n Ken kill Hiva-Oa boy along rope, Hiva-Oa boy stop along ketch," suggested Danny.

Ken had hard work not to smile at the simple suggestion that a rope's-end would meet the case!

Ken hardened his heart, and rated the shrinking crew for a good ten minutes, and by the time he dismissed them there was no doubt that they were sorry for themselves.

Koko, at the helm, had said no word. But he stole furtive glances at Ken's stern face.

"Cap'n Ken plenty mad along Koko?" Koko asked at length.

"Me plenty mad," answered Ken.

"Hiva-Oa boy he common Kanaka—you no common Kanaka, Koko, you savvy plenty no good makee feller Samson kai-kai along shark. You plenty bad feller."

Koko drew a deep breath.

"Koko savvy he plenty bad feller," he said humbly. "Koko plenty solly he makee King of the Islands mad along him. S'pose King of the Islands tell Kaio-lalulalonga jumpee along sea, Kaio-lalulalonga jumpee plenty too much quick. No wantee see sun he come any more s'pose Cap'n Ken stop mad along Koko."

Ken's face broke into a smile. Kaio-lalulalonga spoke with deep

earnestness, his big black eyes watching Ken's face anxiously.

"Me no stop mad along you feller Koko," answered King of the Islands; and the big Kanaka's face lighted up cheerfully.

Ken went below for his spell of sleep, and the crooning love-song of Hawaii was heard again from Kaio-lalulalonga at the helm, the clouds chased from his brow by the assurance that his white master would not "stop mad along him." The ketch glided along swiftly under the stars, and the shadowed sea astern hid the unknown fate of Bully Samson.

King of the Islands to the Rescue.

"HOT!" yawned Kit Hudson. "Warm!" agreed Ken. The Dawn lay moored at the coral wharf at Lalingé.

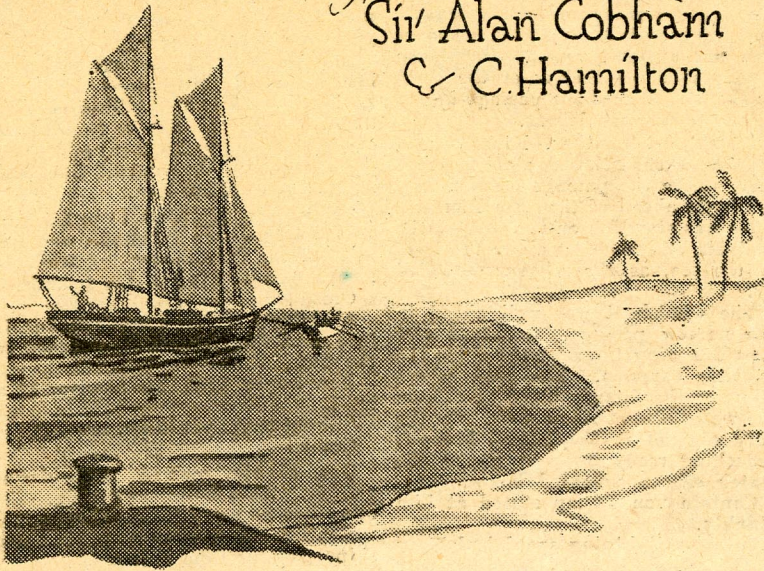
Under the striped canvas awning aft Kit Hudson was stretched lazily in a hammock. King of the Islands sat in a long cane chair, of which the armrests were so long that the legs could be stretched along them, and in that comfortable if not elegant attitude the boy trader was taking his ease.

The crew were ashore, but the tall figure of Lompolokuno could be seen strolling idly along the wharf towards the ketch in the blaze of the tropical sun.

Lalinge was hot and drowsy. Two or three natives, in lava-lavas that shone white in the sun, loafed under the palm-trees near the beach. No other craft but the Dawn was moored, but a schooner was moving

# ISLANDS

Sir Alan Cobham  
& C. Hamilton



out of the bay, slowly, towed by a whaleboat crammed with black rowers. There was hardly a breath of wind stirring.

Hudson glanced across at the schooner. A fat man, in white ducks, could be seen on her deck—a man with a darkly-bronzed face, thick lips, and heavy features. Slowly the schooner glided across the motionless water, heading for the channel in the reef outside the bar that led to the open Pacific. The tide was low, and the reefs on either side of the channel were uncovered and scorched dry in the heat. Slowly, heavily, the schooner—a Dutch schooner, broad in the beam—surged after the towing boat.

"Captain Van Tromp won't find much wind outside," yawned Ken, as he followed Hudson's glance.

"You know the man?"

"I've come across him a good many times." Ken shrugged his shoulders. "A bad hat—smuggler mostly—smuggling birds of Paradise from New Guinea, and rubber from Malaya, and niggers from the islands. A thorough bad hat! The less I see of him the better I like him. It's a dirty ship, and half his crew are shanghai'd, I've heard."

Lompokuno stepped on board the Dawn.

Ken sat up in his chair.

"It's time Koko was back from John Chin's office. As soon as it's cool I want to get the cargo on board."

"We sail to-morrow," yawned Hudson.

Ken smiled.

"We've had a week of lazing here—I'm keen for the salt sea breezes again. This will be a good trip, Kit,

Donlan is pitching away his share of old Mafoo's sovereigns on rum and trade-gin ashore. We've done rather better with our lot. We shall have a cargo this trip that will make us a little fortune in the islands."

"Bom—as that Portugee on Faloo used to say."

"Lompo!" called out Ken.

"Yessar!"

The Hiva-Oa seaman came aft.

"What name Koko he no come? You see Koko along beach eye belong you?"

"Me see, sar! Koko he no comey, no can!"

"What! And why?" asked Ken, in

**KEN KING, known as King of the Islands, trading in the South Seas in his ketch, the Dawn, rescues Kit Hudson, an Australian boy, from a rascally skipper called Bully Samson. Ken sinks Samson's boat and maroons him and his crew on a lonely island. Kit becomes mate of the Dawn. At Latinge they learn from Donlan, a beach-comber, of hidden gold on the island of Faloo, and go after it. Meantime, Samson is rescued. Learning that King is held up on Faloo, he charters a canoe, races to the island, and captures the Dawn. Ken, Kit, Koko (a native) and Donlan are left stranded on the island, whilst Samson sails away. Ken hides on the island, waiting for Samson to return in search of the treasure. At last he comes, and Ken regains his boat. Samson is thrown overboard by the native crew, and Ken searches for him. (Now read on.)**

**NEW READERS Can  
Commence  
SIR ALAN COBHAM'S  
Thrilling Yarn  
NOW!**

surprise. "Which way Koko he come along ketch?"

Lompo pointed a dusky finger at the Dutch schooner crawling across the bay in the wake of the towing-boat.

"Feller Koko he shanghai along Dussman," he said.

"What!" roared Ken.

A minute before King of the Islands had been the picture of idle restfulness.

He did not look idle now.

He sprang to his feet, a blaze in his eyes.

"Koko shanghai'd!" he exclaimed.

"Yessar! Shanghai along Dussman!" said Lompo cheerfully and with perfect calmness. Kaio-lalulalonga was on the best of terms with all the crew of the Dawn; but the South Sea Islander has an infinite capacity for minding his own business. The fact that Koko had been kidnapped by a Dutch skipper who happened to be short-handed did not appeal to Lompo as a matter important enough to disturb his calm. Indeed, he would not have mentioned the circumstance at all had not Ken questioned him as to the whereabouts of the Kanaka.

"Shanghai'd!" repeated Ken, setting his teeth. "That fat Dutchman has had the cheek to shanghai a man belonging to my ship! My Sam!"

Ken's eyes blazed across the placid bay at the Dutch schooner.

The methods of Captain van Tromp were well known to him. The Dutch skipper was a hard handed man, and he seldom touched at a port, white or native, without one or more of his crew deserting. Half his crew, as King of the Islands had said, were supposed to be shanghai'd. That was not Ken's business; but it became very particularly his business when one of his own men was shanghai'd by the schooner Oom Pieter.

"By gum!" Kit Hudson was on his feet now. "Koko shanghai'd on board that Dutch tub! And she's going out to sea! She'll be in the channel in ten minutes more!"

Ken gritted his teeth.

There was no time to unmoor the Dawn from the wharf, even if there had been sufficient wind from the shore to steer her across the bay. The Dawn's boat was ashore, up-ended against the wharf, in the process of receiving a new coat of paint. In ten minutes at the most the towed schooner would be passing through the channel in the coral reef, and once outside the reef she would be gone. Intervention, pursuit seemed equally impossible—and Ken's eyes blazed with rage.

He put his hands to his mouth and hailed the schooner—almost too far

# King of the Islands!

(Continued from previous page.)

off already for a voice to carry. But Ken's voice carried.

"Ahoj, the Oom Pieter!"

The fat man in white ducks stared round.

"Ahoj, Captain van Tromp!" roared King of the Islands. "You've got one of my Kanakas on board your schooner. You put him ashore, savvy?"

The Dutchman grinned.

He made a trumpet of his large fat hands and roared back:

"That big feller Kanaka belong you?"

"Yes!" roared King of the Islands.

"Belong me now!"

"Put him ashore, or I'll follow you to the end of the Pacific and hide your fat carcass with a rope!" roared Ken.

The Dutchman shrugged his fat shoulders and turned his back on King of the Islands. That was his answer.

Ken panted with rage.

"No chance!" said Hudson savagely.

"They'll be out beyond the reef before we can get a boat or a canoe."

King of the Islands did not answer.

He groped for a second at the back of his belt to make sure that his revolver was there, and with a flying leap landed on the coral wharf.

The next instant he was running like a deer.

Hudson stared after him in stupefaction.

For the moment he did not comprehend the intention of his shipmate, and he could only stare.

"Feller King of the Islands he plenty mad along Dussman," remarked Lompo placidly, and he sat down on the teak rail to watch Ken as he flew along the wharf.

Ken had had no time to explain his intention—there was not a second to waste. As it was, he doubted whether he would be in time. His feet hardly touched the wharf as he sped.

From the coral wharf he reached the beach, and his feet flashed like lightning along the sand.

He was running for the reef.

At high water the coral rocks were hidden deep, and the water lapped on soft sand. But the tide was out now, the beach was high and dry, and from the sand uncovered rocks stretched out to the barrier reef at the entrance of the broad bay of Lalinge.

At low water it was possible to walk afoot to the outer reef, and when the tide was down Lalinge natives would pick their way out on to the rocks to net the fish left in hollows and pools by the receding tide. It was necessary to pick one's way carefully among the sharp rocks and slippery pools, where sometimes a devil-fish, and even that most terrible of creatures, the sting-ray, was left by the tide.

But King of the Islands was not picking his way.

He was running as if for his life.

Leaping from rock to rock, splash-

ing through pools and seaweed, and utterly regardless of the ruin of his spotless white ducks, stumbling and falling occasionally, but springing up again as if made of rubber, King of the Islands raced out to the barrier reef.

The towing whaleboat was drawing the Dutch schooner into the narrow passage now. Even a small vessel had to pick her way carefully through the reef to gain the open sea without scraping on the coral—and the heavily-built Dutch schooner was not a small vessel. Her boom swung over the shelves of the coral as she surged into the passage astern of the towing whaleboat.

Breathless, panting, King of the Islands reached the edge of the coral reef, where the passage opened, half a minute ahead of the Oom Pieter.

He was standing on the edge of the reef, six or seven feet above the level of the sea, as the schooner crawled by.

The whaleboat was well ahead in the narrow passage, the stout coir rope dragging the schooner after the panting oarsmen. The rock where King of the Islands stood rose from the water almost like a wall. On the very edge of it Ken poised himself, crouching ready for a spring as the Dutch schooner floated below.

Captain van Tromp stared at him blankly.

Only by lightning speed had King of the Islands reached the reef before the schooner was towed past; but he was there, crouching for a spring and evidently intending to leap down on the deck of the Oom Pieter as she passed.

Van Tromp's little piggy eyes, almost buried in the fat of his heavy face, glittered with rage.

"You feller King of the Islands, you stop along reef!" roared Van Tromp in the *beche-de-mer* English which was the only English he knew.

Ken did not heed.

The schooner was passing him—not more than eight feet from the wall of rock on which he stood.

On the dirty deck of the Dutchman a giant figure lay, bound hand and foot. It was Koko—shanghai'd by the Dutchman and the three or four whitemen among his crew—bound and a prisoner till the schooner should be at sea, when a belaying-pin would be used to silence any objections he might have to serving under Captain van Tromp. Koko's bronze face had been dark with gloom—blood was running from a cut under his thick hair, showing that he had not been shanghai'd without resistance. But his face lighted up at the sight of King of the Islands crouching for a spring on the edge of the high rock.

"Cap'n Ken!" he yelled wildly. "Feller King of the Islands!"

A white seaman kicked the Kanaka and cursed him in Dutch. Koko did not heed. His eyes were fixed on King of the Islands. Captain van Tromp dragged a revolver from the back of his huge trousers.

"You feller stop along reef!" he yelled.

Ken sprang even while the words were leaving his lips.

The leap was a dangerous one, but King of the Islands recked little of that. From the coral rock the active figure flew, landing on the deck of the Dutchman. He stumbled on a guy-rope rove to the main boom and fell along the deck; but he was on his feet again in a moment, his eyes blazing at Ghisbrecht van Tromp.

"You Dutch dog!" panted King of the Islands. "Bout ship, you scum, and back to Lalinge." His revolver was in his grip now. "Bout ship, you scum! You hear me?"

The Dutch smuggler was gripping his revolver; but many eyes at Lalinge were on the schooner, and he dared not use it. But he shouted an order in Dutch to his men, and three of the crew—Dutchmen, like the skipper—rushed on Ken.

"Fling him overboard!" yelled Van Tromp in his own language, and the mate of the Oom Pieter and two seamen leaped at King of the Islands.

Crash!

A clubbed revolver, crashing in his face, sent the Dutch mate stunned to the deck.

Ken leaped back, his revolver at a level.

"Stand back, you dogs, or——"

Crack!

One of the seamen went down, yelling, with a bullet in his leg. The other backed away in haste.

Ken's revolver swung round at the skipper of the Oom Pieter.

"Drop that pistol, you scum, or I'll drive a bullet through your fat carcass! I give you one second!"

The Dutchman's revolver crashed at his feet. His little eyes glittered like points of fire in his rage, but he was daunted.

"That's better," said Ken contemptuously. He stepped aft to the Dutchman's side. "Order your men to release my Kanaka—sharp's the word!"

The muzzle of the revolver was almost touching the Dutch smuggler's jaw. Choking with rage, Van Tromp called out an order, and Koko was released from his bonds. In a moment the giant Kanaka was on his feet, and he snatched a belaying-pin from the rail and joined his master on the deck.

"S'pose King of the Islands sing out, me smashes head belong Dussman!" panted Koko, his eyes blazing at the Dutch skipper.

"Smash head belong Dussman, s'pose he no stop along Lalinge!" said Ken grimly. "You hear me, Van Tromp? Get your schooner back to the wharf, or, by my word, your skull's going to be cracked like an egg-shell!"

The whaleboat was still pulling and the gliding schooner was out of the passage now. King of the Islands had been only just in time. Captain van Tromp struggled with his fury. His face was crimson with rage. But the iron belaying-pin was rising in the vengeful grip of Kaio-lalulalonga, and the Dutchman dared not refuse. In a choking voice he snarled out orders to the sweating crew of the whaleboat, and the schooner was put about and towed back through the channel.

Slowly, sweating under the hot sun, the crew of the whaleboat pulled across the glistening bay, towing the Dutch schooner back to the wharf. King of the Islands stood grim and menacing by the side of the Dutch skipper, whose little furtive eyes, blinking from layers of fat, watched warily the belaying-pin in Koko's grip. The heavy hull of the Oom Pieter bumped against the coral wharf at last.

King of the Islands belted his revolver.

"Keep your hands off my crew another time, Captain van Tromp!" he said. "You feller Koko, you comey along ketch."

Ken leaped ashore. Koko, the Kanaka, stayed behind one moment. He threw the belaying-pin into the bay, and then his heavy fist, clenched and as hard as iron, smote full in the face of the Dutch skipper. Captain van Tromp, with a yell, went spinning along the deck and crashed down on the planks. Then Kaio-lalulalonga followed his master, grinning.

"Koko!" called out Ken sharply.

"Yessar! Kill face belong Duss-man plenty too much!" chuckled Koko.

And Koko followed his master on board the Dawn, while Captain van Tromp sat up on his deck and clutched a streaming nose!

### Missing!

"GOOD man, Ken!"

Kit Hudson clapped his shipmate on the shoulder as King of the Islands stepped on the ketch from the coral wharf.

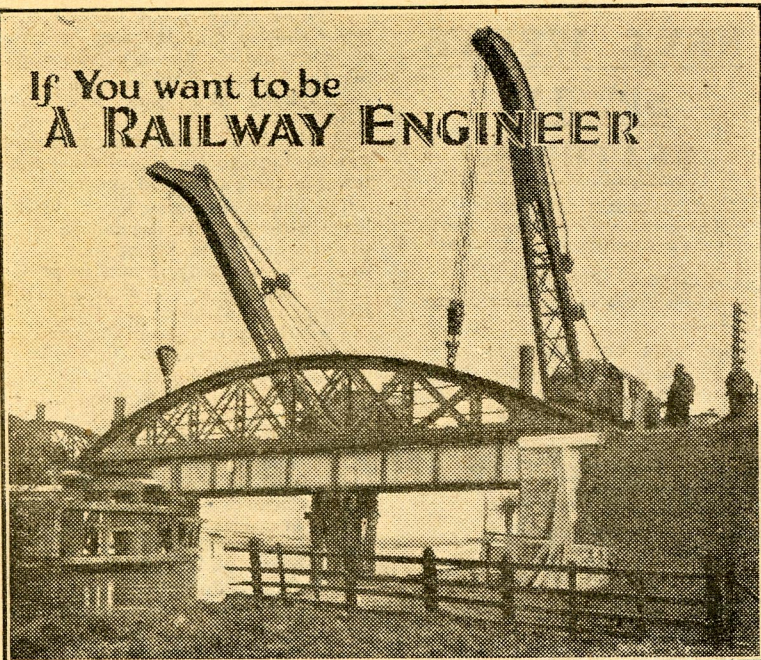
Ken grinned rather ruefully.

The spotless white ducks which he sported as shore clothes at Lalinge—a rather particular place in the item of clothes—had been drenched with water and mud; his shoes, formerly equally spotless, were limp and muddy; his hat was gone. He looked the wreck of the handsome young skipper who had stepped ashore from the Dawn.

(Continued on next page.)

## CAREERS IN THE MAKING.

### If You want to be A RAILWAY ENGINEER



When you see an express train roaring along at 80 miles an hour, what could be finer than to know that you have had some share in making this possible?

**T**HE first step towards qualifying as a locomotive engineer is to enter a locomotive works as an apprentice or a pupil. Whether it is better to enter a private firm's works or those of a railway company is debatable. In a locomotive builder's, knowledge can be gained of design and construction for various requirements of railways abroad as well as in England.

On the other hand, our railways turn out most of their own rolling stock, and, what is very important, once in the railway company's works a footing has been gained that may be most valuable.

The best age to commence is sixteen, as the training should take about five years, and should be completed by the age of twenty-one. The question of apprenticeship or pupilage can only be decided by means. A premium

pupil will have to pay anything from £100 to £300, spread over the term of pupilage, and will receive no pay. An apprentice will probably have to pay a small fee of a few pounds, and will receive weekly wages which increase with the time served.

A pupilage is, of course, preferable, as the chief mechanical engineer is personally responsible for seeing that his pupils receive the best tuition available, and that they go through every section of the work. An apprentice is confined to the branch of work, such as fitting or erecting, which he originally takes up, but some of the best locomotive engineers have commenced with an apprenticeship.

Conditions on the civil engineering side are rather different. The prospective engineer should have had the latter part of his school-

ing directed towards acquiring a thorough groundwork in mathematics, including trigonometry and mensuration, with some experience of surveying and mechanical drawing. A short period of shop work is also extremely useful.

The student who has taken a science degree in engineering, and shows a distinct bent in this direction, may obtain a position in a railway engineer's office as an assistant draughtsman, and be satisfied that he will have every opportunity of promotion entirely on his merits.

The usual course, however, is to become a pupil of the chief engineer for a period of two or three years. All candidates for pupilage must be at least eighteen years of age and have passed or been exempted from the examination for student membership of the Institution of Civil Engineers. The fees required are £125 per annum, payable in advance, for a period of three years, or in cases where the pupil has obtained an honours degree in engineering, the time may be reduced to two years at £150 per annum. No salary is paid during the term of pupilage.

Pupils are given every possible facility for gaining experience, including steelwork design and construction, new railways and widenings, and general engineering. All four big English railways own docks, so that pupils can, if they desire, also obtain experience of dock engineering. Naturally, the railway companies will give no guarantee of appointment after pupilages or apprenticeships expire, but no one showing intelligence and perseverance need fear on this score.

It is essential that any fellow taking up these professions should study and work hard. They are interesting jobs, and deserve the best that can be given to them. Wonderful as the Great Western Railway engine, King George V., or Brunel's masterpieces may seem now, they will be surpassed by the work of boys of to-day who will be the railway engineers of to-morrow.



# King of the Islands!

(Continued from previous page.)

But he had rescued Kaio-lalulalonga, shanghai'd on board the Dutch schooner. That was worth the loss of his best shore-going suit.

"I never reckoned you'd do it," said Hudson. "You were just on time, Ken. And you got the Kanaka."

"Feller King of the Islands he plenty good feller along Kaio-lalulalonga," said Koko. "Dussman he plenty flaid King of the Islands."

"Van Tromp doesn't seem pleased, though he's made you spoil your clothes, Ken," said Hudson, laughing.

From the Dutch schooner along the wharf the voice of Captain Van Tromp came clearly to the ketch.

Van Tromp was standing at the rail, shaking a fat fist at the ketch, and pouring out a stream of enraged words.

Most of them were in Dutch—a language of which only a few words were known to King of the Islands. But he did not need telling that Van Tromp was delivering a broadside of the choicest epithets to be found in his own language. The Dutch skipper, who had been forced to tow back from the reef to the coral wharf of Lalinge, was shaking with rage, almost like a fat jelly.

King of the Islands stared across at him from the ketch. While the fat Dutchman stamped and raved, and shook his podgy fist at the Dawn, the schooner was leaving the wharf again. The black crew of the whale-boat, to which the tow-rope was bent, sweated and panted as their oars dipped again. Once already they had towed the heavy schooner out to the channel in the reefs; once they had towed it back, with their fat captain quaking under the stern eye and menacing revolver of King of the Islands. Now for a third time they set to their heavy task in the blaze of the tropic sun; and brawny men as they were, their movements were slow and languid.

King of the Islands and Kit Hudson, quite unmoved by the unintelligible shouting of the Dutch skipper, looked across at him, with smiling faces. Van Tromp was in a fearful rage; but the rage of the fat, unwieldy man was not impressive. The Hiva-Oa men on the wharf grinned at him and made mocking gestures—Koko waved his hand in mockery. The Dutchman's fat hand went to his belt, as if for a weapon; but if he had a weapon there, he did not venture to draw it.

The tub of a schooner glided away from the wharf slowly. The bay of Lalinge was like glass, unstirred by a breath of wind. Outside the reef it was possible to pick up a breath, but no more. King of the Islands looked puzzled as he watched the schooner glide away and the fat figure of Captain Van Tromp grow smaller across the bay.

"Those niggers can hardly pull the schooner out," said Ken. "Van Tromp will be slower getting to the reef this time. He won't find much wind outside. As likely as not he'll

lie becalmed in that tub. I don't see his hurry to get out of the bay."

"Same here," said Hudson, puzzled by the same thought. "He won't gain an hour by getting out of the reef before the evening breeze springs up. But he seems set on it."

"If this was Port Moresby, I should think he had smuggled goods on board, and was anxious to get clear," said Ken. "But you can take anything you like out of Lalinge—except my Kanaka," he added, with a grin.

"Me tinkee—" said Koko. "Well, what do you think head belong you?" asked Ken.

"Tinkee Cap'n Samson no wantee see along King of the Islands," said the Kanaka.

The shipmates of the Dawn jumped.

## NEXT WEEK'S SPECIAL FEATURES!

**CAPT. MALCOLM CAMPBELL,**  
the record-breaking motorist, reveals  
"HOW I LEARNED TO DRIVE!"

**THE DESERT POLICEMEN!**  
British Tanks in the Land of the  
Sheik.

**THE BOSS OF TAMBOSA!**  
A rattling complete story of our  
Adventurers of the Air, by G. E.  
Rochester.

**TRACKING DOWN THOSE NOISES!**  
Our Wireless Page, conducted by  
Norman Edwards, M.I.R.E., etc.,  
Editor of "Popular Wireless," etc.

**THE MILE-A-MINUTE ACROBAT!**  
A swift-moving complete motor-  
cycle racing yarn by Alfred Edgar.

**IF YOU WANT TO BE A MARINE  
ENGINEER.**

A Career article that will appeal to  
every fellow with a taste for the  
Sea and a love of Engineering.

**A DAY IN THE LIFE OF A NEWS-  
PAPER MAN.**

Letting you into the Secrets of the  
Street of Adventure—Fleet Street,  
The Heart of Newspaper-land.

Etc., etc., etc.

"Bully Samson?" exclaimed Ken. "On board that Dutch schooner!" exclaimed Hudson.

"Me see um, eye belong me," said Koko. "Bully Samson he no go down along sea—no makee kai-kai along shark. Me see um long cabin along schooner belong Dussman."

"My Sam!" ejaculated Ken.

His first feeling was one of astonishment; but it was mingled with relief. Brute and ruffian as Bully Samson was, it had weighed upon Ken's mind that his crew had flung the freebooter into the Pacific. He had hoped that the gliding canoe, of which he had caught a glimpse that wild night, had picked up the bully of the Shark. If Koko had really seen him on board the Dutch

schooner, it was evident that he had been picked up.

"You're sure it was Bully Samson, Koko?" asked King of the Islands.

"Plenty sure, sar. See um eye belong me," said Koko. "Savvy Bully Samson plenty too much."

Ken nodded. The Kanaka was not likely to be mistaken. Bully Samson, with his black-bearded face and his burly form, was easy enough to recognise at a glance.

"Well, I'm glad," said Ken, after a pause. "I'm glad he never went down when the black boys chucked him into the sea. I only hope he will never foul my hawse again. We're done with Faloo; and I hope we're done with Bully Samson."

"He's keeping out of sight," said Kit Hudson. "That Dutch tub has lain here all day, with a lot of coming and going ashore; but Bully Samson never showed up. He may be afraid of being nailed, at Lalinge, for seizing the ketch at Faloo."

"Anyhow, he's gone now," said Ken.

Slowly but surely the whaleboat was towing the Dutch schooner away towards the passage in the reefs.

The heavy craft was lost to view at last in the reefs at the mouth of the bay; Captain Van Tromp had got out to sea; though why he was so pressed to get outside was still a puzzle to King of the Islands. If Bully Samson was lying doggo on the schooner, he could have done so till nightfall, without putting out to sea.

But Ken dismissed the matter from his mind as he went below to clean up and change his clothes.

He had almost forgotten the incident of the shanghai-ing of Koko and his bearding of the Dutch skipper on his own deck, when, in the cool of the sunset, he stepped ashore on the coral wharf and walked along the beach towards John Chin's warehouse.

King of the Islands reached the office, and stepped in under the awning.

Chin's Eurasian clerk was in attendance.

"John Chin here?" asked King of the Islands.

"No, sar! Honourable master not yet returning from Kufa," answered the Eurasian.

"Not back from Kufa?"

"There is some unexpected delaying of unaccountable nature," explained the Eurasian. "The expecting was returning early, but honourable master not yet coming."

The Eurasian would have disdained to speak in beche-de-mer English like a Kanaka. He had his own educated-Oriental variety of the language.

"I'll wait," said Ken.

"Honourable captain being pleased to take one seat," offered the Eurasian politely.

Ken sat down in a cane chair under the striped awning outside John Chin's office.

King of the Islands was puzzled!

(Have you told your chums about this splendid story by Sir Alan Cobham? If not, let it be your good turn for to-day! Next week's instalment by the way, is extra top-hole!)

# Does Your Set "REACH OUT"?

The Aerial System of the Brussels Broadcasting Station.

## How to "Do Europe" on Three Valves!

**A**NYONE with a set that possesses a fair degree of sensitivity and amplification can receive good enjoyable programmes from anywhere within a range of some hundreds of miles. This is because broadcasting stations are increasing their power and receiving sets are so very efficient and simple.

It is remarkable what a two-valve set of quite ordinary design will do. A plain circuit using a detector valve followed by a stage of L.F. amplification will—on headphones—take you all over Europe and bring you music and speech from France, Germany, Belgium, Holland, and Spain.

The louder ones will be heard on the loud speaker, but if you want to "do Europe" without headphones, another stage of amplification is necessary. For simplicity of operation, purity of reproduction, and all-round good service there is nothing to beat the three-valve set that consists of a detector valve and two stages of low frequency amplification, one resistance coupled and one transformer, with, of course, suitable valves and "juice."

The European ether is very crowded these days, and sharp tuning is necessary. In this respect a slow-motion tuning dial is a wonderful help—a necessity in fact. You are probably aware of how this differs from the ordinary dial. The difference can be simply stated: The ordinary condenser dial is moved around by the hand and the vanes inside move at exactly the same speed.

In most slow-motion dials you turn a small knob which is geared in such a way that even turning it rapidly will only move the vanes around at a moderate rate. Slow turning of the knob will thus give you very fine adjustment. The cost of a good slow-motion dial is 5s.

It is comparatively easy to recognise the main European stations by their announcements, and once you have located a station and established its identity, you should make a note of your dial reading.

But be quite sure that you have the right station, for there is a good deal of

relaying going on and a certain German programme can be heard on more than one wavelength. The French greeting is "Ullo!" followed by the announcement of the station. The German broadcaster calls "Achtung!" which means "Attention!"

Reception conditions vary a great deal from night to night, and a station that comes in on the loud speaker on one occasion may be a mere whisper in the headphones the next time you try to get it. Atmospherics can be very troublesome, too, and some of the European stations are badly heterodyned; all you can hear when you tune them in is a high pitched whistle with the voice and music somewhere in the background.

Those who will get the best regularity possible in their distance reception will be those who live in a thinly populated area. If your aerial is one of a cluster, then you will sometimes experience trouble. Often the tuning and adjusting

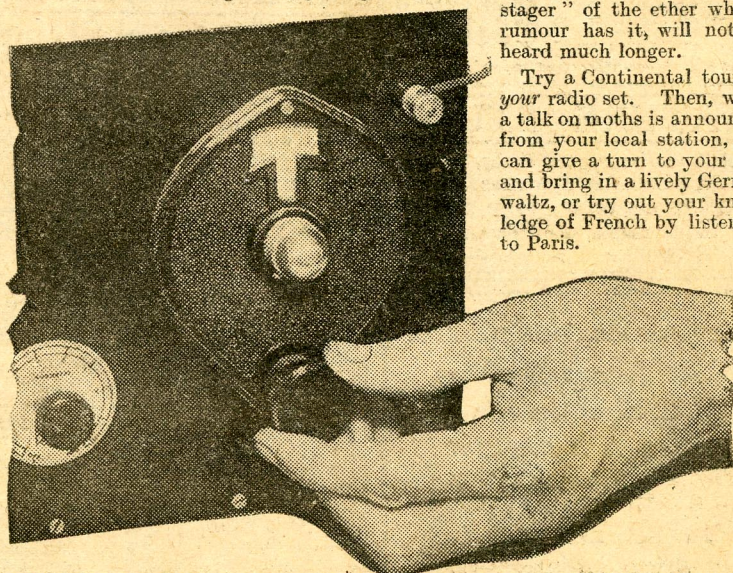
of a neighbouring set is quite enough to make signals which were coming in on your loud speaker fade away to a whisper.

And if your neighbour's set is a really powerful one—more powerful than yours—it is quite possible that but for *his* set you would not have been receiving the station at all!

Coils that tune over our ordinary broadcast band and go up to Daventry's wavelength will give you quite a number of the foreign stations. 5XX's neighbour is Radio Paris, which is easily received at good strength in this country on 1,750 metres. Lower on the scale is Königswusterhausen, on 1,250 metres, a powerful German station.

Another German "big voice" is that of Langenburg on 470 metres, and the latter is very popular with listeners in this country because it provides very tuneful programmes on the ordinary broadcast waveband. Up on 2,600 metres there is Eiffel Tower, the "old stager" of the ether which, rumour has it, will not be heard much longer.

Try a Continental tour on your radio set. Then, when a talk on moths is announced from your local station, you can give a turn to your dial and bring in a lively German waltz, or try out your knowledge of French by listening to Paris.



Slow-motion dials are cheap, and they improve the selectivity of your set a hundred per cent!

# The Ivory Trail!

(Continued from page 10.)

He broke off, inclining his head in a listening attitude. Far distant, but rapidly increasing in volume, was the drone of powerful aeroplane engines.

"What's that?" asked Niccolini sharply.

"Machines on air survey, most probably," Schaumberg replied, shrugging his shoulders in deprecatory fashion.

"Travelling fast!" muttered Niccolini.

The aeroplanes roared low over the building. Schaumberg turned in his chair towards the window. Then suddenly the whole building shook with the force of a terrific reverberating explosion close at hand.

"They're bombing us!" yelled Niccolini, and leapt to his feet, his automatic openly displayed in his hand.

"Drop that gun! You, Schaumberg, do not move!"

The stranger's voice cut in icily on the silence which had followed the explosion. His hands had whipped across his chest, and two guns leapt into view from holsters slung beneath his armpits inside his dirty shirt.

With a scream, Niccolini pressed jerkily on the trigger of his automatic.

Bang! Bang!

It seemed as though he and the stranger fired simultaneously, but Niccolini slumped heavily forward across the wicker table, a faint

bluish mark in the centre of his forehead.

Another tremendous reverberating explosion, and another, shook the building. From outside came the yells and curses of the panic-stricken blacks.

White to the very lips, Schaumberg sat motionless. The stranger's gun covered his heart unwaveringly.

"They're not bombing you niggers, Schaumberg!" he said coldly. "They're bombing outside the stockade. But close enough to set your men on the run! You and I are alone, Schaumberg, you dirty dog!"

"Who—who are you?" The words came from Schaumberg's lips in little more than a whisper.

"My name is Rene de Lafayette!" was the stern reply. "And I am here to avenge those poor devils whom you have sold into slavery during the years which have passed. You sent them to their deaths, and a fate worse than death, you murderer of men's souls! You bloated, blood-sucking spider! You have sat here spinning your foul webs over the length and breadth of this Congo!"

"Stop!" shrieked Schaumberg, his face bloodless. "Stop!"

"And you did not refrain from callous and brutal murder!" went on the grim voice unheeding. "There was Mortimer, found shot through the back less than a year ago! There was Lespard, burnt to death with his wife and children in the flames which devoured his small trading station! Yes, squirm, you weevil, for you hated Lespard, a clean, decent-living trader! Eight days ago you shot down Guy Norton

and his men! Shot them down like dogs, you—"

"How do you know these things?" screamed Schaumberg.

With courage born of despair, he whipped out his hand towards the heavy revolver which still lay on the table.

Then he shrieked out loudly as the butt of Rene de Lafayette's automatic crashed down, crushing his fingers and breaking the bones.

"What—what do you want?" he moaned, his face grey. "What are you going to do?"

"I want ten thousand pounds from your safe!" was the cold reply. "Then, with your undamaged hand, you are going to write a note to Wiesner at Solago!"

"And then?" whispered Schaumberg. "And then—"

Rene de Lafayette leaned across the table, his eyes on the shrinking man.

"And then, Schaumberg," he said tensely, "I am going to hand you over to those native chieftains whose men-folk and women-folk you have sold into slavery!"

"They will kill me!" shrieked Schaumberg.

"They are men—not beasts, as you seem to think!" was the stern reply. "They will give you fair trial, and treat you according to your deserts!"

(Next week's *Adventurers of the Air* will be one of the best Mr. Rochester has ever written. Don't risk being greeted with the cry "Sold Out!" when you go along to your newsagent for next week's MODERN BOY. Ask him DEFINITELY to RESERVE a copy for YOU each week!)

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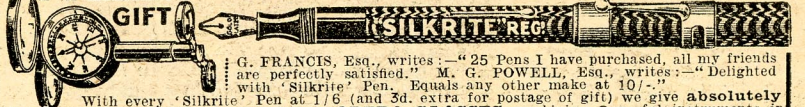
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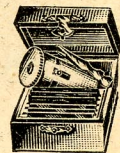
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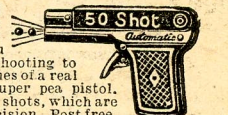
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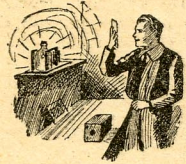
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# TRY MAKING THESE

Odd-minute jobs for nimble hands and a tool or two!

## AN ELECTRIC DARK-ROOM LAMP!



**A** HOME-MADE electric dark-room lamp is a great improvement on the old-fashioned oil or candle lamp, and is far safer. You can make one at very low cost—another big point in its favour!

The sketch below shows you the completed article. It consists of a coloured bottle standing between uprights on a wooden base, with a small battery by the side of the bottle, and a switch. These, with some wire, are all the components required.

Your first job is to prepare the wooden base and the uprights. The base measures 1 ft. by 8 in.—just an ordinary piece of deal. Four uprights are to be cut, each 6 in. by 1 in. by 1 in. Before nailing these uprights to the baseboard, find your coloured bottle, an orange-coloured one for preference.

Make sure the bottle has a wide neck, at least  $1\frac{1}{2}$  in. in diameter, and it should be not less than 8 in. high. When you have procured this, stand the bottle on the baseboard, on one side. Place the uprights round it, mark where they come, and then, when you take the bottle away, you can nail the four pieces of wood in position.

Replace the bottle between the uprights, and then cut two pieces of wood to act as crossbars.

These are nailed into position as shown in the sketch.

By the side of the bottle place a battery, the kind used for a large torch-light. In front of the battery screw a small switch. These switches are the same as used on a wireless set, and cost a copper or two at the local radio shop.

Now we come to the wiring of the lamp. For this you require three lengths of ordinary flex, 1 ft. 6 in. each. The circuit is very simple, as you will see after another glance at the sketch.

Fix the end of one piece of wire to the short blade of the battery, and on the other end of this piece fix a small globe (torch-lamp size). Fix a second piece of wire to the globe, and run it down to one terminal of the switch. The third piece of wire is fixed to the other terminal of the switch, and taken to the long blade of the battery.

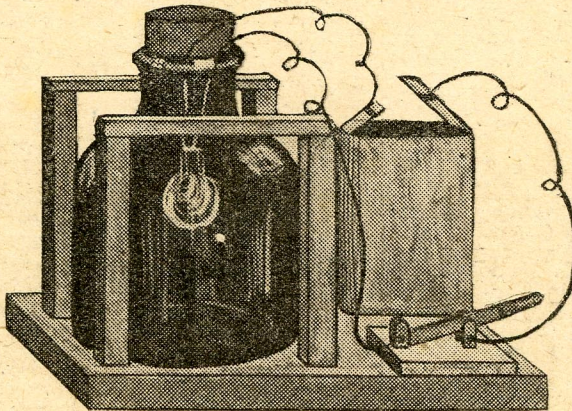


Your circuit is now complete. Don't forget how it goes—starting from the short blade of the battery to the globe, from the globe to the switch, from the switch to the long arm of the battery.

The next step is to drop the globe through the neck of the bottle, allowing it to hang three or four inches from the top. Get the cork of the bottle, cut two grooves for the wires and push it home into the neck. The lamp is now ready, and when switched on will give an orange light.

## A JOB OF SOLDERING.

**S**OONER or later the fellow who likes to make things for himself will find that being unable to solder is a great drawback. In making



Our home-made electric dark-room lamp. A particularly useful gadget, this.

things out of metal, or wiring up electrical or wireless apparatus, it is almost essential that good soldered joints should be made.

Here are a few simple rules that really count.

In the old days soldering was a messy business, because spirits of salts had to be used. Now, however, a paste has been introduced which simplifies the whole job.

For soldering you will require a small soldering iron (a sixpenny one will be quite suitable), a stick of solder, and a tin of flux.

You must first "tin" your iron; that is, give it a coat of solder. Put the iron in a good gas flame, or in the clear part of the fire, and leave it there until it is quite hot, but not red-hot.

Now dip it quickly into the flux, and then melt some solder on to it. The easiest way to do this is to melt some solder into the lid of the tin and then work the tip of the iron into this. When the iron is tinned so that no copper shows at the tip, you can go ahead.

The parts to be soldered must be thoroughly clean. Any scrap of dirt may lead to failure. Smear all the parts with flux, and then melt solder on to them. If everything is clean, and the flux is applied properly, the solder will run freely and set almost immediately.

When putting the iron back into the heat, be careful that you do not allow it to become red-hot, or the tinning will be burnt off, and you will have to re-tin the iron again.

## DECORATED WOODWORK.

**D**O you know that those colour decorations often seen on woodwork are quite simple to apply, and can be added by the handyman to give further beauty to many things he makes?

The transfers—marquetry inlay transfers, as they are called—can be bought in a very wide range. Birds, animals, flowers, and designs of all kinds cost only a few pence and look very artistic on a tray, a wireless cabinet, boxes, and so on.

You can also get all kinds of letters and numbers, and so put the name or number of your house on the fanlight or on the door or gate, and they transform any artistically shaped piece of wood into an excellent signboard.

The transfers are quite permanent. The outline is shown on the clean backing paper, and this outline is cut with the scissors. Put a thin coat of polish or clear varnish over the face of the transfer with a soft, small paint brush, and leave a minute or two until it becomes tacky.

Then apply the transfer face downwards to the wood or glass, and press it firmly down. Be careful not to let it slide about. Press flat all over, and leave to dry. After about twenty minutes the backing paper can be damped off with water.

Soften the paper gradually, and then slide it off the work. Soak up any remaining water and let the transfer get hard before covering it with a coat of varnish or clear polish to make it permanent.

Try this on your work and the bright and artistic colours will lend much beauty quite cheaply and simply. You'll be very pleased with the result!

If you are working on an open-grain type of wood, it is a good plan to run in a little filling matter before putting on the transfer. You make it by thinning tallow to a paste with linseed oil. Rub a very little of this mixture into the grain of the wood, leave it for twenty-four hours, then wipe off any surplus.

# The Editor Talks

Address your letters to—  
The Editor, The MODERN BOY,  
Fleetway House,  
Farringdon Street,  
London, E.C.4.

All letters must bear full name and address of the writer.

I HOPE next week to have a very welcome announcement to make to you—the result of our Competition! Many of you who entered for our numerous prizes may have been wondering what had happened about it.

But, as I said in my Talk a week or two ago, there were so very many entries to judge—the number runs into tens of thousands—that we have found it impossible to be as prompt about the final decisions as we—and you—would have liked. It is a job that must be done very carefully, as you can imagine!

The judges are now getting down to the last few hundred entries, and so I hope some of you will be bursting with joy this time next week! Meanwhile, hope will buoy you up!

There's nothing like hope, you know, though it's not everything. Hope doesn't carry one very far, unfortunately, where the material things of life are concerned. As someone once wittily said: "Don't live in Hope's—buy your tie and come out!" He was

referring to Hope Brothers, the famous outfitters, of course!

But hope, which means cheery optimism, must always go hand in hand with whatever you do or try. I shall never forget the lesson I learned when I read the notice stuck over the desk of a great man who had what I used to think—until I discovered the real secret of his success—an uncanny knack of getting the better of every "snag" that came in his way. The notice was this:

*"Nothing will ever be attempted if all possible objections must be first overcome!"*

Think it over! Meanwhile, a few replies to readers' letters!

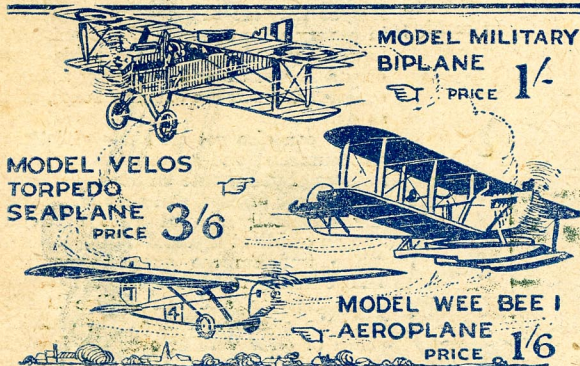
Five hundred and eighty Victoria Crosses were awarded during the Great War, "Sword" (Camberley). The V.C. carries with it a pension of £10 a year for rankers. It was instituted by Queen Victoria in 1856. Yes, a woman may win it.

"Does a railway engine weigh more than a steam-roller?" asks Sidney Green (Swindon). Yes, by a long way, Sidney! A steam-roller is, after all, only a glorified garden roller, and, if you look, you will see that the roller is broad and big, but usually hollow. Its job is to flatten the road surface, not necessarily to ram it down. The L.N.E.R. has a Pacific type locomotive weighing about 150 tons—enough for a score of steam-rollers.

The term "carat," S. L. V. (Preston), who hopes to be a jeweller some day, comes from the Greek word *keraton*. In Africa grows what the natives call the "Kaura" tree (the "Sun" tree), and it yields a yellow bean which, when dried, is always the same weight. The natives used this Kaura bean as a standard of weight in olden times. These beans were exported to India, and were there used for weighing diamonds and other precious stones. Thus a diamond might weigh ten Kaura beans—or ten "carats." Is that clear? A carat, by the way, is not the same weight for all countries. I will send you a list of the different weights if you would like to have it.

I've tried rubbing orange-peel on my hands, "Pained," but I cannot remember that I found it very effective. Vindictive lot, maths masters: they can walk about the Form-room as quietly as cats, can't they? At the same time, you were not supposed to be drawing cartoons featuring his "whacking great nose," were you?

THE EDITOR.



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