

HOW I BROKE THE RECORD! By Capt. Malcolm Campbell.

## A WONDERFUL "BOX OF TRICKS"!



When that famous romantic writer Jules Verne "invented" the submarine in his fanciful yarn "Twenty Thousand Leagues Under the Sea," he little thought that within a few years that amazing vessel of his would be regarded as very much of a back number! The submarine of to-day is a wonderful "box of tricks".

The picture-the interior of submarine L22-shows a few of the very complicated controls which have to be watched and handled, and on which the safety of the vessel and its crew absolutely depends. Some of our submarines even carry aeroplanes which, with folded wings, are stowed away in cylinders until wanted!

# Meidernbousishord ag Pen and Pictures 

By "WAYFARER."

## "WHERE'S MY KITE ? "

0NE of the most extraordinary real-life storics I have ever heard was told to me the other day. I had just finished writing the paragraph about kites (in the issue published the week before last) when a friend came to me with astonishing news.
This, briefly, was his story: A flying officer, stationed at an aerodrome in Essex near where my friend was staying, was flying about 2,000 feet up when he dropped his map. It fell between his feet. To pick it up again he had to unfasten the strap which held him sccure in the cockpit.
He bent down to retrieve the map from the floorand upset the plane! Out he shot, but fortunately he remembered in time to open his parachute. He actually landed unhurt; after hurtling down 2,000 feet!

He accosted the man who rau to pick up the bitsas he thought-with the cool remark: "Where has my kite gone? I have just fallen out of it!"-and lit a cigarette!
There must be something, after all, in the old phrase: "Boys of the Bulldog Breed !"

## THE SEAL AND THE "DOC."

I expect a good many of you saw the seal whose photo is alongside when he came to this country with a circus at the beginning of the ycar. Here we see him paying a visit to the animal-doctor!

Really he is doing nothing very extraordinary, for animals " go sick * just as human beings, and, just as there are doctors who specialise in patching-up human beings, so there are doctors who spend their lives curing sick animals.

Our zoos maintain a regular staff of doctors to attend on the caged animals when these have to be admitted to hospital. Not that the animals very frequently come over queer, but they often suffer from ingrowing nails, toothache, and similar complaints which the doctor can soon put to riglits.

And sometimes a tiger or lion gets its paw injured through wedging it between the bars of its cage. Birds break their legs, monkeys have trouble with their tails, and the clephants know all the pains of rickets. No, the zoo doctor's job is not a sinecure! (Continued overleaf.)


## The Modern Boy's World.-(Continued.) CRICKET COACHES.

These are busy days for cricket coaches. All over the country fellows are flocking to the nets and "getting their eye in," all of them full of hope that they will get their colours this season.

I wandered into Vincent Square the other evening to watch the Westminster boys at practice. Mr. Donald Knight, the brilliant Surrey batsman, who is Games Master at the school, was hard at work demonstrating strokes, correcting faults in foot-
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work, and generally helping his charges on the road to becoming proud possessors of the coveted pink blazer of the Westminster Eleven.

Mr. Knight is proving a very successful man at his job, and several of his pupils have made their mark in 'Varsity cricket, notably R. G. H. Lowe, whe did the "hat-trick" against Oxford, and C. H. Taylor, who knocked up a faultless century against Cambridge in his first jear.

## AMATEUR SOLDIERS.

When I went to schoel the O.T.C. was still a thing of the future, but we did have what we called a Riffe Corps. There were about sixty boys in it, dressed in a sort of pinkish uniform and carrying old, out-ofdate snycler rifles! We drilled once a week, and were rather a laughing-stock to the rest of the five hundred!

And now what a change! No need to recall the fact that the O.T.C: provided officers for nearly all the New Army in the Great War, and that boys not yet of age rose to be majors !

Our photo shows the wireless section of Charterhouse School O.T.C. enjoying a jolly field-day.

## THE HAUNTED SCHOONER.

I have had many enjoyable talks with old "salts," and they have been remarkably manimous on one pointthat if you rob a ship of her figurehead sle becomes a haunted craft!
I had the privilege a weck or two ago of joining a select company assembled to witness the filming of the sinking of an old three-masted selrooner, the Amg.
Shell after shell was driven into her, according to programme. The Amy caught fire, and the three tons of explosives which had been packed into her hold blew up. But still the old schooner floated!
Some old sailor among the crowd suggested that if they replaced the Amy's figurehead (it had been removed before operations started) all things would pan out as arranged.
Sure enough, when the figurehead was restored the Amy consented to go down---but only after another nine rounds had been fired into her from a destroyer! She then sank without trace, excepting for the figurelicad, which they afterwards found bobbing about and which thre managing director of the film company promptly claimed.

## A WANDERING FREAK.

The young fellow in our photograph is not content with being several feet higher than the normal man but must travel round the world on his stilts, just by way of getting a little more notoriety!

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How Sbroke the Pecond/


Capt. Campbell and his $£ 1,000$ Cup!

WELL, you fellows, what am I to tell you about that sprint of mine on Daytona beach? Of course, it was very pleasing to win the world's land speed record, but I am just a little bit disappointed because I know that dear old Blue Bird could have gone faster if the conditions had been better.

But it was all a glorious adventure, from the time that I decided to build Blue Bird to the time when she flitted so speedily along the American shore.

When I was a boy I was just as fond of adventure as are you. It is natural for a fellow to be fond of adventure, and as you grow up you will firl that fond ness stay with you, that you long more and more for it.
It was the love of adventure which made us all lose sight of the horror of the War. We joined the Army or the Navy or the Air Force because it was a great adventure to fight for our country against her enemies.

And, of course, it was the love of adventure which made me build Blue Bird. It was very expensive, and it meant a lot of hard and worrying work, because crerything had to be tested thoroughly; but eventually my racing giant was created, and I was proud of her!

At last we were ready to go to America and make an attempt on the record. I had never crossed the

\section*{" Incredibly quickly, the timekeepers worked out the

## " Incredibly quickly, the timekeepers worked out the figures from the electric timing apparatus and announced the result. I had won the World's land speed record at 206.9 miles apt hour!" <br> By Malcolm Camphell <br> The first of a magnificent series of episodes in the life of the World's most famous racing motorist!

Atlantic before, so that I was getting my fill of adventure.
The sea voyage was soon over, and there we were in New York. The Americans were wonderful. They knew that I had come over to try to veat their men, but they helped me in cvery possible way. I had to hurry to llaytona, because the record attempts had been organised into a meeting, and if it lad not been for the sportsmanlike assistance of the Americans, I might have been late.

Daytoua at last! It looked a wonderful beach, with its sands stretching as far as the cye could sec.

It did not take us long to uncrate Blue Bird, for I was very impatient. You see, I was not quite sure how the car would behave. As far as testing could tell me, Bluc Bird was perfect. I had never actually driven her "all out," and I was anxious to know how she would shape.

The weather was irritatingly wet, and I had to wait for some days. Then came my chance. The Daytona police-a fine body of men-cleared the course, and I went out on my first trial spin. Blue Bird's engine roared into life. I got comfortable in the cockpit, and off we went. Hurrah! I soon knew that Blue Bird was magnificent!

Faster and faster we went. The sands seemed to be rushing to meet me. It was as though I was stationary and the world was rushing back under my wheels. Then we hit a bump in the sands and leaped into the air.

There was no time to be worried about it. Things happen quickly when you are moving at two hundred miles an hour, and in a fraction of a second Blue Bird had bumped back on to the sands. But it was a nasty

## jar!



## How I Broke the Record!

## (Continued from previous page.)

## BLUE BIRD CRIPPLED.

When I eventually pulled up-and it takes you a long time to bring a car to a standstill from such speedwe made a thorough examination. Poor Blue Bird was crippled! The body was split, there was $\mathfrak{a}$ broken shackle and other damage. But the tyres had stood up to the terrific strain, and I was very pleased about that.
My mechanics did not hesitate. Blue Bird was a well loved patient, and they toiled enthusiastically at the task of repairing her. It was lucky for me that the damage was so trivial. All this time, the Americans were ${ }^{*}$ lavishing their best attentions on me, and I was beginning to feel proud that, in some little way, I was helping along the friendship between the two great English-speaking nations.

But I fretted at the delay, though Bird had hit a bump or a soft patch. I realised that I was being magnifi- Everything was happening at lightcently served by my mechanics. Ready again!

## THE RECORD.

I shall never forget that longedfor moment when everything was ready for my record attempt. The course was clear, the sands seemed in good condition, and the only thing wrong was a rather strong cross-wind. Blue Bird was on the mark, and I was ready. Off again!. Blue Bird accelerated like a sudden gust of wind, but all too soon I was on the measured mile.
I had not reached maximum speed, though I was doing well over two hundred miles per hour. But how I had to wrestle with Blue Bird! It is a strong man's job to keep control of the wheel when a car is travelling like a projectile. My muscles ached, and then something happened. I was half thrown from the car, there was a terrific roar of wind. Blue
ning speed, but I remember that I loosed a hand from the wheel to push back my goggles which had been blown from my face.

How can $I$ tell how Blue Bird righted herself? But she did. I had had an escape. Down wind my speed was very high, though it was higher: when I left the mile than when I entered it. Then came the return journey.
Not quite so fast, but fast enough. Incredibly quickly, the timekeepers worked out the figures from the electric timing apparatus and announced the result. I had won the world's speed record at 206.9 miles an hour.
The sequel was splendid. All America congratulated me, and their sincerity was obvious. I hope to meet my American friends again next year, and then-well, we shall see!

## (Next Week.-How I Started Motor Racing !)



You won't stcp at Bank Clerk, of course, you will want to be a MANAGER. But you must be a Clerk-and a good one-first!

IT is not altogether easy to ge into a bank, unless you go about it in the right way. You need to be seventeen years of age, and the first step is to decide which bank you want to enter. This done, the manager of the local branch will tell you the best method of getting in. But if you know a big customer of the bank, and can get him to speak for you, half the battle is won.

A point to remember is this: A career as a bank clerk offers big possibilities to a fellow who is keen. No bank wants duds, and your ability to overcome the initial difficulties which confront you ini an attempt to get a
footing is really a tribute to your own keenness for the job.

Some banks have an entrance examination, which you would be required to pass. Failing this, you must have passed a matriculation examination; the best known of which is that at the London University. But this fact need be no barrier, because you could still sit for the entrance examination for a banking firm which holds one, and, if you passed it, you would be all right.
Once in the bank, you won't be content with the minor job which you will be given. Some fellows are, and they wonder why their progress is so slow.

The way to get aliead is to study
for the examinations which are held by the Institute of Bankers, the address of which is 5, Bishopsgate, London, E.C.2. The subjects of these examinations look rather formidable at first sightLaw and Banking, for instance. But, if you have a taste for these things, they aren't half so dry as they first appear.
Geography is another subject. A fusty, musty-looking word that! But it is interesting when you are reading about the wilds of Borneo, or the Golden Horn, or sunny Naples. And the commercial side of it, with which the examinations deal, can be just as entertaining. English composition, Economics, and Foreign Money Exchanges form three more subjects.

Voluntary subjects are Continental languages; those subjects already mentioned are compulsory. You can qualify in each subject separately, and the Institute exams are split into two parts, the second being more advanced than the first, althougli the subjects are the same. You cannot sit for a subject in the advanced examination until you have passed the preliminary.

When you decide that you'd like to be a bank clerk, your ambition naturally isn't to advance to the post of cashier and stop there, and you are quite right if you look past the head even of branch manager to the highlypaid posts that lie beyond. Banking is an important profession, and it is one of the greatest of all. Like every other profession, its ramifications are very wide. For the fellow who can interest himself in money and all it meaus, banking offers the prospect of steady advancement if only he will study to fit himself for the big appointments which are within his reach.


# Pantazales, soldier - brigand and would-be President of Mexicowith John Howarll in his gripfails to reckon with the Spirit of Adventure which sends Men to the uttermost correvs of the Eurth! 

Complete in This Issue.

Two black machines glided to earth on the northern side of the IViexican border !

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UAN PEDRO PANTAZALES grimned. He leant his gross form across the table and wagged a dirty finger at the prisoner.
"Eengleesh peeg!" he purred. "We have decide zat you are a spy! You weel be shot at dawn! Si!"

He drew a wheezing breath, mopped at his florid, perspiring face, and continued :
"You do not deny, you peeg, zat you are John Howard? Zere ees on'y one John Howard in ze whole of Mexico! He ees a spy in ze pay of ze Republico !" He crashed his elenched fist on to the table and his voice rose to a bellow. "And you are zat man!"

He heaved himself back in his chair, breathing heavily. It was very hot. His shirt, showing through the gaping, unbuttoned tunic, was damp with perspiration. Languidly lie wared a podgy hand.
"Take lim away!" he grunted in Spanish.

Six dark-skinned, ragged bandit soldiers closed in about John Howard. They hustled him from the room, across an adobe-brick-paved courtyard shimmering in the heat, and thrust him roughly into a cell at the end of a long, gloomy corridor. The door clanged shut on him, bolts grated protestingly in their sockets, and the bare-footed soldiers slouched away, leaving one of their number on guard in the corridor outside the cell.

Wearily John Howard threw himself on the low wooden bed; the sole
covering of which was an old blanket. His cyes closed. Within a minute he was sound asleep.
Night liad come when he awakened with a start. He lay staring up into the-darkness, collecting his thoughts. Yes, he remembered now. He was to die when daylight came. Ah, well, he was not afraid of death. Yet it was rotten to be sloot like a dog by the: yellow-livered, make-believe soldiers of Juan Pedro Pantazales.
He smiled grimly as he thought of his trial at the hands of Pantazales. The sentence of death had, of course, been a foregone conclusion before the nockery of a trial commenced. John Howard was doomed when the soldiers of Pantazales had closed in about him outside the El Casca saloon. He had known that. For Pantazales, the soldicr-brigand, whose aim it was to establish himself as President of the Mexican Republic, and who was prepared to go to any lengths in order to further that aim, had offered a price for the capture of John Howard, dead or alive.
And as he lay there, his hands clasped behind his head, John Howard's thoughts drifted back down the years which had passed. The wander-lust had always been in his blood; the spirit of adventure which sends men to the outposts of Empire, to the uttermost corners of the earth.
He had lived through the War days. leader of a fighting squadron in France. Glorious clays over the battle-line, midst the whine of shrapnel and vicious rat-a-tat-tat of enemy
machinc-guns. It was a man's life that. His thoughts drifted on. The War had ended. He had flown on the Italian mail routes then. He*might have been flying thefe stiad had he not thrashed the elcgant sapi di Milo, chicf pilot and braggart. His firm lips twitched at the thought. It had been funny. After his resignation, by which he had forestalled his dismissal, he had crossed to the States and shipped on a cargo boat out of 'Frisco.
A period of beach-combing amongst the islands had followed. Then, hearing that there was a scrap on in Mexico, he had quitted the islands and thrown in his lot with the forces of the Republic.
He had a healtlyy contempt for all the undisciplined rebels, and the ease with which he had penetrated the lines of Juan Pedro Pantazales, in quest of information for the Government forces, had reduced that individual to frenzied, almost hysterical impotence. But they had got him now--got him througl. his betrayal by a deserter from the army of the Republic. And he was to die:
He turned his head again towards the small barred window. The stars were paling and a cold grey light was filtering through into the cell. The Mexican night was all but done. The dawn was at hand. This, then, was the end of the trail. But he meant to meet death as he had lived, fearlessly and unmoved. Again his eyes wandered to the window. The rusted iron bars were silhouetted

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(Continued from previous page )
starkly against the lightening sky outside.
Footsteps approaching his cell brought him to a sitting posture on the bed. With hands clenched he rose to his feet as a key grated in the lock. They were coming for him. Bolts grated back, and the heavy iron door of the cell swung slowly open!

BUT it was the tall, gaunt figure of a black-robed and hooded priest which stepped across the threshold into the cell. He paused a moment to bid the sentry close the door, lest the misguided one be tempted to make a dash for liberty.
John Howard stared at the priest with knitted brows. His natural reverence for the cloth was outweighed by the knowledge that the man who wore it was doubtless a rogue and hypocrite, else he could never be found in the service of that butcher Pantazales. Silently, with folded hands and bowed head, the priest stood still till the door had clanged shut behind him. Then, in sonorous Spanish, he said:
"In a few short minutes from now, my brother, thy soul will have taken flight from thy poor body. It is to offer some comfort to that soul that I come, and-"
"I thank you!" cut in John Howard quictly, with a stiff inclination of his head. "But my soul is in no need of comfort from a pricst of Pantazales' !"
The priest turned his hooded head towards the door Thus he stood for a moment, motionless, then turned to John Howard again.
"Nay, now, my brother," he said harshly, "wilt thou not take advantage of my presence to-"
"Leave me, you carrion crow!" snapped John Howard. "Have done with this mockery!"
"Ill words for one who is to die so soon !" droned the priest.
He moved forward, slowly advancing towards John Howard.
"Hear me, my brother!" he went on, and his voice was but a mumble. "Wilt thou not take advantage of my presence-" He paused, then the words came in low, vibrant English: "To possess yourself of these guns and, with them, make a bold bid for life? ?
His hands, which had been folded in lis long black robe, whipped forward. Each held a squat automatic, the butts towards John Howard. There was a moment of intense silence. Joln Howard stood motionless, peering into the hawk-like face and steely-grey eyes, scarce visible beneath the hood.
"Take them, man!"
The priest's voice was urgent, terribly earnest.
John Howard's breath rasped in sharply between his teeth. He snatched the guns, and good indeed was the feel of the cold, bulging butts.
"You are no priest!"
He said the words jerkily, through dry lips.
"That can wait!" replicd the other
grimly. "Now listen carefully, John Howard, for your life depends on it! They will come for you at any moment now! Keep your guns in your pockets and your hands ready for the draw the instant I give the signal!"
"But_-" began John Howard.
The priest silenced him with a gesture. Along the corridor, approaching the cell, came the pad and shuffe of many naked feet.
"It is the firing-party !" whispered the priest. "Remember, when I give the signal!"

He drew his robes closer about him and, with bowed head, turned towards the door. There came a gruff command from the corridor outside. The cell door swung open and an officerbooted, spurred, unshaven, and un-tidy-strode into the cell.
"Have you finished with the soul of the dog, my father?" he demanded, with a sneer.
"Yes, I have spoken with him!" droned the priest. "But alas-""
"Then we'll do the rest!" snarled the officer.

He turned to the door and barked:
"Take your prisoner!"
Ten ragged bandit soldiers filed into the cell and lined themselves against the wall. Another snarled order from the officer and the grim procession left the cell en route for the courtyard where John Howard was to be shot.

In front stalked the officer, followed by the shuffling, bowed-beaded priest. Then came John Howard, pale-faced, lut with head erect. Behind him slouched the firing-party, their rifles on their shoulders, their half-smoked Mexican cigarettes behind their ears. The procession passed along the corridor and out into the fresh, clean air of early morning. Straight towards the northern wall of the courtyard marched the party.
The officer halted. He wheeled on the soldiers, preparatory to barking out an order. But the priest, bowed of head, shuffled onwards. He came to within a foot of that officer.
"Now !" he shouted.
He whipped his robes from him. Beneath them he wore a tight-fitting, black fying suit. His hands streaked forward. The barrel of a gun thudded against the startled officer's stomach. At the same instant John Howard's guns leapt into view and he whirled on the soldiers behind him.

0NE of the soldiers, more nimblewitted than his comrades, jerked forward his rifle and tried a snapshot at John Howard. The bullet whistled a full foot wide and splattered itself against the grey adobe wall.
"Hold your fire, you dogs," roared the man in the flying suit, "or I shoot your officer dead!"
The officer, white-faced, shaking, glared into the grim, hawk-like face so close to his own. He felt that hard ring of steel pressing against him.
"Hold your fire, you scum!" he screamed. "This fool is in earnest. A-a-h!"
'The words ended in a choking sob. He spun round and crashed heavily to the ground.

Crack! Crack! Crack!

Soldiers were pouring from tie building, firing as they came. It was one of these fools who had shot his own officer-an accident, of course, but a small thing. Officers were plentiful in the revolutionary army of Juan Pedro Pantazales, and one more or less made little difference.
"To me, Howard!" cried the man in the flying-suit. "We must make the gates!"
The rusty iron gates, set in the northern wall, were but yards away. Side by side, crouching, the two Britishers retreated step by step, their flaming guns roaring a staccato accompaniment.

The bandit-soldiers, rotten marksmen at any time, utterly undisciplined, frenzied with the easilyaroused excitement which is the heritage of Latin blood, were firing wildly. But blood was oozing from John Howard's shoulder, and one ear was torn and bleeding. His lips were drawn back from his teeth in a snarling grin. Shoot him, would they? Not whilst he was on his feet, with a gun in his hand.

He glanced at his companion. Blood, from a scalp wound, was streaming down the man's face. Blit his lips were grimly smiling, and his steely grey eyes were glittering. Then, without warning, Joln Howard's guns ceased firing. The triggers clicked harmlessly. His ammunition was done.
"Steady!" The voice of his companion was cool, unruffled. "The gates are just behind us! I will hold these dogs! Run for it, man! There are horses!"

John Howard hesitated no longer. He knew that the only way to save them both was implicit obedience to this grim, hawk-faced man. He leapt backwards towards the iron gates which hung ajar on rusted lingns. Outside, a scared-looking peon was seated astride a gaunt, big-boncl grey. He held two other horses by their leading-reins.
"Queeck! Queeck!" he gasped.
The man in the flying-suit dashed through the gates.
"Ride for your life!" he snapped, and leapt into the saddle of one of the horses.

Ignoring the pain in his wounded shoulder, John Howard scrambled into the saddle of the remaining horse. He gave the brute a sharp slap on the flank, and, neck and neck, the three horses raced for the open country which lay towards the west. The whole episode, from the holding-up of the officer to the flight on horseback, had not taken three minutes.

Soldiers poured through the gates, shouting wildly.

Crack! Crack! Crack!
They fired a wild and ragged volley after the madly-galloping horses. But they took no time over their aim, and the bullets whistled wide.
John Howard's companion turncd in his saddle.
"All right?" he demanded.
"Yes," replied Howard, through set teeth, for his shoulder was jarring agonisingly to the thunder of his horse's hoofs.

## "Good!" replied

 the, other grimly. "For we're not out of this yet!"
## J

OHN HOWARD
did not reply to that. He knew full well that they were in territory held by the revolutionaries, and that it would take long and hard riding before they won through.
But as he rode he covertly studied the profile of the man who had saved him from certain death. There was an elusive, tangible - familiarity about it. He liad seen the man before somewhere, some time. It was not like him to forget faces. Yet lie could not place the man.
" Best case our horses, hadn't we?", he grunted suddenly, for the pace was a cracker.
"No; we must push on!" was the terse reply.

Wonderingly, John Howard kept machines. But somehow, in the mad his mount going at the same inad whirl of events, he had not thought gallop. It secmed suicidal to him, that his companion would have for no horse that ever was foaled machines waiting out here on the could keep it up. They were heading plain. Another thing - those across a wide plain of withered grass machines standing by the cactus and stunted cacti. The peen, clump were not of the Curtis type. crouched in his saddle jockey-fashion, was squinting nervously to right and left.
"That greaser's scared stiff !" grunted John Howard to himself "Dashed if I can size this outfit up!"

They rode at full gallop for twenty minutes or more. The flaming ball of the sun was swinging up abnve the distant horizon behind them. The yellow, parched plaiu seemed to assume a yet more sickly hue beneath its rays. Then suddenly John Howard stiffened. He shook his liead impatiently, as though to free his cyes from the trickling perspiration of his brow, then peered ahead.
"Jumpin' jiminy!" he exclaimed.
Less than a quarter of a mile in front, revealed by the riders having reached the top of a sharp rise, was a large clump of cacti. And near it, with airacrews ticking over, stood two aeroplanes. Jet black wings, struts and fusclage, showed stark and vivid against the yellow background of the plain. Standing by the machines was a lithe youngster in flyng-kit.
John Howard's lips moved. He was addressing his remarks to hinself.
"You're- dead from the shoulders up, John Howard!" he muttered, and shot a quick glance at the flying-kit of the man who rode by his side. "You might have guessed, you silly duffer!"

He knew that Pantazales had a few aeroplanes-American Curtis


The lathering horses came to a sliding halt by the machines. "You got him, guv'nor 8 's cried the youngster.
went on the other, "was wounded, and his ammunition was all but done. You dived down out of the blue, with your squadron, and in ten minutes the fight was over!"
"Yes, I remember!" cried John Howard. "We got the swabs-all of them! And you are--"
"Rene de Lafayette, pilot of that lone machine!" was the response. "You saved my life, John Howard, and I swore then that some day I should repay the debt I owed you! I met you once again, for a few minutes, at your aerodrome behind the lines! This is our third meeting !"
"And you have repaid a debt which you never owed !" cried John Howard. "Those Boche were easy game for my squadron!"
"But none too easy for me !" smiled Rene de Lafayette. "No, Howard, you saved my life, for I would not have surrendered. And when I heard in Pucbla that the gross Pantazales had you in his clutches, I came here to get you !"
"Came to get me?" echoed John Howard. "Came to get me? Great Scott, man, you talk as though it was a pienic! But what were you doing in Puebla?"

Rene de Lafayctte shrugged his shoulders.
"Finding some little amusement in instructing officers of the Republic how to fly!" he replied. "This lad, Rex Ellison, is my lieutenant. He holds a first class pilot's certificate, issued by the British Aero Club !"
John Howard nodded.
"And this rescue?" he said. "What of the priest whom you impersonated?"
"I left him gagged and bound in his own bed-room in the early hours of the morning !" replied Rene de

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(Continued from previous page.) Lafayette. "The gag served to stifle some most unpriestly remarks."

And the peon ?": demanded John Howard, with a glance at the swarthy skinned fellow who was standing silently by.

An assistant from the El Casca saloon livery stable!" was the reply. "For a handful of good English gold and promise of safe transit across the border, he agreed to have horses waiting outside the gaol. He is a staunch Republican since Pantazales once liad him flogged!"

Yes!" nodded John Howard. "They'd sell their very souls for gold -these greasers! But why did we keep going at such a tearing pace when we'd left the gaol behind? ?'

Rene de Lafayette raised a pointing finger towards the eastern sky.

For that reason," he replied quictly. "I knew the buzzards would not be long in taking up the search !"

Wheeling, John Howard saw cigllt tiny specks ligh in the morning air. And there came to his ears the drone of aeroplane engines.

Pantazales' squadron !", he exclaimed. "And heading this way !"
Swinging round, his eyes took in the Lewis, guns mounted on Rene de Lafayette's machines.
Then his face fell, and he turned to Rex Ellison with a deprecatory. gesture.
"Sorry, sonny!" he said. "I forgot you were a pilot! I'll go in the rear cockpit!"

No!" replied the boy stoutly. "You go in the pilot's cockpit! I guess I can learn things from you !" And never, perhaps, had John Howard, veteran of a hundred air fiophts, been paid a more spontancous compliment.

SIDE by side the two machines rushed across the dried and acrid plain. In a long upward glide they took the air and headed northwards, with the cight Curtis machines of Pantazales but half a mile behind them.
The peon was in the rear cockpit of Rene de Lafayette's machinc. His swarthy face was bloodless and his eyes were glassy. His hand gripped the spade-grip of the Lewis gun till the knuckles. showed white through the skin. He was in a state of desperate funk. But he could be relied upon to fight like a cornered rat to save his own skin.
Rex Ellison, leaning against the gun mounting in the cockpit of John Howard's machine, grimned mirthlessly. He knew perfectly well that Pantazale's pilots would think tife two machines were running away
But Rex knew just why Rene de Lafayette and John Howard were flceing from the pursuing squadron. It was to gain leight. Side by side, wing tip to wing tip, the two machines roared towards the north, climbing steadily. Aid grimly on their tails came the eight Curtis machines.
At five thousand feet Rene de Lafayette glanced behind him. The


## VAUXHALL.



RENAULT.


[^0]enemy squadron, flying in Vishaped formation, were about a mile behind and fifteen liundred feet below. Rene de Lafayette's hand shot up. In obedience to the signal, John Howard thrust forward his control stick and kicked on rudder. He wheeled to the left, and Rene de Lafayette whecled to the right.
Then, like bolts from the bline, with synchronised guns ablaze, they tore down on the cight Curtis machines.
Rat-a-tat-tat! Rat-a-tat-tat! Rat-a-tat-tat!
The noise of their machine-guns scarce audible above the thunder of their engines, the two black machines tore through that ill-fated squadron. Flame licked back from the gunmuzzl s, and when both pilots yanked their control sticks back, to zoom upwards again, four Mexican machines were spinning earthwards in flames.

A Mexican pilot, driven by the courage of despair, came tearing at Rene de Lafayette with gun aflame. Grim of face, grey cyes glittering, the hand on his coitrol as gentle as a woman's, the War veteran kept straight on. The peon shrieked. It seemed that the machines must crash, propeller-boss to propeller-looss.

The Mexican pilot whipped gloved hands to his face. His nerve had gone. The nose of lis machine dropped as the control stick jerked forward of its own volition. Rene de Lafayette kicked on rudder and, wheeling in a tearing dive, whanged a burst of bullets into cockpit and engine cowling. A sheet of flame licked backwards. It seemed to engulf the forward cockpit and the stricken machine's earthward plunge was shrouded by a pall of thick black smoke.
Rene de Lafayette wiped his goggles with the back of lis hand. Then he smiled grimly. The three remaining machines were heading back the way they had come, as fast as their engines would take them.
Three hours later the two black machines glided to earth on the northern side of the Mexican border.
The three white men and the vastly relieved looking peon alighted from the machines.
"Well, we've won through, John Howard!" said Rene do Lafayette, a smile in his grey eyes. "Do our ways part here, or
He paused. $\qquad$ John Howard looked at $\lim _{\text {"Or }}$ sharply, almost cagerly.
"Or:" he said questioning'ly.
"Or do you throw in your lot with Rex and me?" replied Rene de Lafayette. "Listen," he went on earnestly, "you have trodden the trail of adventure through the years which are past! There is many a rogue such as Pantazales to be met on that trail; many a poor devil to aid; many a wrong to be righted! It is work for men, Joln Howard, and men who know no master save their God! What is your answer?"
John Howard thrust out his hand.
" Done!" he cried.
(Our Adventuress of the Air commence in recal eamest to carry out their oreat compact in next week's MODFI?N BOY! Don't miss this fine number - onder it befone yois forget !)


The " sea-serpent" coming ashove! Man-handling part of a \%o miles long cable.

WHEN Shakespeare wrote " I'll put a girdle round about the Earth in forty minutes," he certainly did not dream that things would speed up as they have done! When his Majesty the King opened the Wembley Exhibition he flashed a cable message from Wembley to Penzance, Fayal, Halifax, Montreal, Vancouver, Bamfield, Fanning, Sura, Auckland, St. Vincent, Madeira, and back to Wembley-encircling the globe in eighty seconds !
The history of the submarine cable is a romantic one, made possible by British determination, brains, and money. And many funny things have happened in the process of cable development! When the first cable was laid across the English Channel, a Boulogne fisherman pulled it up in his trawl, and, thinking that it was a new kind of seaweed, hacked out a piece as a sample!

When certain bold spirits first conceived the idea of laying a cable across the Atlantic, nine years elapsed before the job was successfully accomplished, which gives some faint idea of the tremendous difficulties the cable-layers are compelled to face.

During the War the cable companies did their bit nobly. Within a few minutes of the outbreak of hostilities they had flashed the call to arms to the four corners of the earth. Within four hours cable ships had grappled up and put out of action every cable connecting
Germany with America. One was taken

## A new deep-sea cable, 1,400 miles

 long, is to be manufactured and laid by a British firm. It will be taken in a cable-ship to Newfound. land and from there will be "run out" to the Azcres-a job which will occupy about twelve days!in at Penzance ; one diverted from New York to Nova Scotia; and a third was captured by the French at Brest.
It was the attack on the Eastern Telegraph Company's station at Keeling in the Cocos Islands that led to the destruction of the German raider Emden, for just before the station was destreyed the officials inanaged to get through the message that gave the Sydney the enemy's location.

It might be thought that the coming of wireless mould give the cable its deathblow, but never in their history have the telegraph companies been so busy, for their method of transmission is quicker than wireless, and it has the great advantage of secrecy. Cabled messages are not easily picked up!

Nowadays all cables:are duplicated, for a means has been dis-

covered whereby three messages can bo transmitted along two wires. Two messages are sent one way, while the third travels in the opposite direction. That enables local calls to come through without interfering with long-distance telegrams.
Cable-laying is performed by special ships like Messrs. Siemens Brothers' cable-layer Faraday, which is fitted with every conceivable kind of scientific apparatus to make laying a certainty and to prevent breakages of the cable. In her four tanks she carries 4,500 tons of cable.
In paying-out, the cable is passed over a dynamometer which records the pull on it. Should a deep hole be encountered then the pull is increased and the cable has to be paid out more quickly or the speed of the ship reduced.

When the Faraday goes searching for a broken cable she steams across its path, dragging a grapnel connected to the dynamometer, and when the grapnel seizes the cable the fact is indicated immediately on that wonderful gadget !

Above: Coiling deep-sea cable into one of the great tanks on board the cablelaying ship.

A famous cable-ship, the Faraday. She carries $\mathbf{4 , 5 0 0}$ tons of cable in her tanks, and is fitted with every conceivable kind of scientific apparatus to enable her to do the job swiftly and successfully.

## Complete in This Issue.



THE slanting rays of the setting sun struck across the purple Heather of the moor, tinting the corrugated iron roofs of the Fleet Motorcycle Works, and gleaming on the polished, bulbous tank of the powerful machinc just inside the open rates.

A boy stood close against the big racing outfit, his eyes alight as he looked the bike over. Just behind stood a bunch of works mechanics, grinning and nudging one another. They all knew Jim Curtis' itch for speed, and could see that he was aching to get astride the racer.
Jim was slim and brown and wiry, with hidden strength in his sinewy frame. He looked as though he was built of springs as he stood peering about the machine.
There was power in every line of that racing motor-cycle--power in its mighty steering-head, in the cut of the rounded tank, in the low-set saddle, and power in the finned, gleaming exhaust pipes streaming from cither side of the twin-cylinder enginc.
To Jim the machine scemed to crouch as it faced out of the gates towards the road which ran across the broad moorland, as though it was bunched up ready to hurtle forward with its black-mouthed exhausts bellowing a war-song of speed.

Joc Morgan, the Flect Works crack rader, had just brought the bike back from its final tests at Brooklands. He was in the office now, discussing the Southbay Speed Trials, for which this new bike had been specially tuned, and in which he was to ride on the morrow.
Jim was a sort of odd-job boy around the works. Sometimes they let him take a bike out on test, but usually he was kept on overhauls and special tuning jobs, because he was

## Meet Jim Curtis-the boy with an itch for speedin this exciting, complete story of motor cycle racing. The first of a NEW series. <br> BY <br> ALFRED EDGAR:

rather clever at that sort of thing. He wasn't allowed to test machincs very often, because he always tried to drive thein at too great a speed.

That was his trouble. He liked to flatten limself along the top of a tank and feel a mile-a-minute gale whistling past his ears. He couldn't seem to settle to the ordinary routine of the works. He wanted to ride racers, like Joc Morgan and a few others.
The mechanics around the bike grinned as a big fellow stepped forward. Bill Pape was his name, a becfy, red-faced, husky chap.
"Gro on, get across it an' take it for a run !" he grunted, and he glanced at the others as he spoke. They all knew that Jim was aching to ride the machine-and that if he did it there'd be trouble. Joc Morgan had spent days on the bike, and he wouldn't want its tune spoiled by a kid out of the shops. And that's why Pape went on: "Morgan ain't about! You're scared of the bike, that's about the strength of it! You couldn't hold it to the road."
"Couldn't I?" Jim glanced at him.
"I'd ride it soon enough if Morgan would let me!"
He slipped one leg over the fat saddle as he spoke, and settled his hands on the long, rubber twist-grip controls. His knees gripped about the pads on either side of the stream-tined tank, and his insteps tucked home on the footrests.

Right under his nose, close against the splayed steering-damper, was the dial of the speedometer-marked to show up to a hundred and twenty miles an hour. That was the speed Morgan hoped to touch with this latest machine.

Bill Pape's big foot suddenly stubbed up the back stand, and he pushed the machinc free. Jim's feet dropped to the ground as lie felt the bike go.
"Here, steady!" he gasped.
"Don't-"
"Go on, sit tight !" Pape urged, and he grinned maliciously. "We'll give you a push start. You're always talkin' about speed; show us some!"
Threc of his cronies jumped forward and pushed the bike out of the gates. Jim heard a man shouting:
"Better not chance it, Curtis ! There'll be a-"
"Let her go!" Pape yelled.
The bike was gathering speed now. For an instant Jim hesitated, then the smooth roll of the machine beneath him and the feel of its balanced weight decided him. He slid the gear-lever along its quadrant, let in the clutch, and the warm engine fired on the instant.
He wobbled a moment, steadied, and then he was off.
Jim forgot Morgan and Pape, forgot that he was risking the sack, forgot everything save the fact that there was a real speed machine pulsing beneath him, that there was a
two-mile straight ahead, and that he'd got the chance to learn what it felt like to ride a racing bus built to do better than a hundred miles an hour!

SMOOTHLY Jim slid into top gear and, as he opened the throttle, one of the fastest racing motor-cycles ever built began to leap into its stride.
Jim flattened along the tank, his head low: behind the tiny; rounded wind-shield, his every muscle tense as he thrilled to the raucous boom of the twin exhausts. He could feel the machine pulling under him. The front wheel kicked to the inequalities of the road, and from the rear tyre grit and small stones spun backwards in a dust-misted fount that spread wide and high behind.
He spared the fraction of a second to glance at the speedometer dialseventy! But seventy was nothing; they said that the bike could do a hundred - and - twenty. There was plenty of room ahead. If only he could jockey the machine up to a hundred miles an hour and hold it at that for a moment-just for a moment so that he could say he'd done if. That was real speed !

Eighty, and then, what seemed but a bare moment later, eighty-five! Ninety clocked up-ninety miles an hour ${ }^{1}$

The shattering bellow of the blackmouthed exhausts rang in his brain like a stimulus to greater speed. He became part of the bike, built into it, as he held it to the crown of the road. His eyes were glinting to the thrill, and Jim Curtis had strange eyes.

They were that queer, light bluc which belongs to men of courage and daring. They were the kind of eyes which gaze out across untrodden Arctic wastes, or gaze unafraid at the death-dealing ranks of an advancing enemy, or gleam steadily through the spume and wrack of a storm-tossed sca. It might not be Jim's fortune to look on such things, but his eyes belonged to the kind of man who does.
Of course, he was only a boy, but the way he was holding that mighty speed machine to the road showed the stuff that was in him. He didn't want to hazard his life in frozen lands or savage countries, but he had the same urge as the men who did, only, in his case, it made him want to explore the wreck-strewn realm of high speed.
Away ahead he could see a wood where the road began to bend out of the straight. Just before it, the setting sun gleamed redly ou the low parapet of a hump-backed bridge. He realised that he would have to close the throttle when he came to the bridge in order to pull up before the bend.

He tucked his head down again-ninety-five on the speedometer!

Now the machine was kicking under him like a skittish horse. Through the short handle-bars he could feel the stabbing thrust of the front wheel. The mad surge and rush of wind stung his ears and eyes, but he was going to do a hundred miles an hour before he got to the bridge!

He was almost on it when he dared (Continued on page 16.)


$\mathrm{T}^{\mathrm{H}}$HE pale rays of the Yukon sun glinted through the window of the gold digger's cabin and fell upon the weather-tanned face of the sleeping man within. The sleeper stirred, threw the Hudson Bay blankets from his body, and hastily dressed. Another day had comeanother chance for the digger to find the red gold for which he had toiled so hard and suffered so much.

For years he had prospected and delved for gold in the cruel Northland. Sometimes he had struck lucky and then he had gone back to civilisation for a bit. But always he had returned, drawn as though by a magnet, for "it wasn't the gold that he wanted so much as just getting the gold."

A rugged figure he made in coarse grey shirt, belted trousers tucked into tightly laced leathern boots, and with face burned by the fierce summer suns and scarred by the winter frosts. His frugal breakfast of baked beans and coffee completed, he left'the cabin, armed with miner's pick and shovel, and tramped down to the creek. About him rose the great peaks, whitecapped with the eternal snow and sparsely timbered with fir and spruce on their lower slopes.

Already he had constructed a sluice, a number of narrow wo oden boxes joined together, parallel with the creek. The top end rested in a big bank of earth about six feet high, and stakes of wood, cut from saplings, supported the sluice at intervals almost to the point where it touched the ground. Thus the whole wooden affair had a slope of about one foot in five.

Plates of iron were clamped at intervals within the narrow boxes. A small channel had been dug to the top of the sluice from the head-waters of the creek, so that a constant stream of water ran down the whole length of the sluice and emptied itself from the lower end.

The gold digger set to work with his pick loosening the soil on the bank, loading it into a barrow with his flat shovel, and conveying it to a roughly made platform of wood near the top of the sluice, until he had a good stack of dirt accumulated near the higher end. Then he set to work with the flat shovel again, flinging the "pay dirt," as it is called, into the top of the sluice. The water quickly washed the sand down the wooden trough and swirled it over the low iron plates set at intervals as barriers.
With a break for dinner, the gold digger continued until the sun was dipping below the western peaks. Now was the time for the " clean-up," and, old stager though he was, his heart beat a trifle faster. Most of the lighter sand and dirt had been washed away; the heavier gold-what there was of itremained on the bottom of the sluice tucked against those iron plates that prevented it 3 escape.

Because he had discovered very fine gold on previous occasions, he dropped mercury above the plates to attract and mingle with the tiny particles of the precious metal. This mixture of gold and mercury is technically known as amalgam, and must later be separated again under the great heat of furnaces.
Still some dirt was left against the plates, and the gold digger unclamped the small iron barriers and collected all that remained in the sluice into a pan. The dirt he washed away by revolving the pan under the shallow water of the creek, and his eyes glinted as he saw a thin layer of red gold.

The gold he took into his cabin and dried out over the stove, and afterwards weighed it on a sinall pair of scales. His day's work had brought him about ten dollars (£2) and he was well satisfied !

## 400 MILES NON STOP The Railway Rivals. <br> $\mathbf{F}^{\text {ROM }}$ London to Carlisle- 300 miles in 3:34 minutes--that is the prosent <br> 320 MILES AN HOUR! <br> World's Seaplane Speed Record.

 record railway non-stop run, performed ly the L.M.S. cepress Royal seot. But it won't be the record for long when the now L. \& N.E.R. corridor temders are used fromi May Jst onwards, Mammoth expresses will roal from London to Edinburgh withont a second's pause400 miles non-stop!No driver or fireman could stand the strain of feeding one of these iron giants for the whole journey, so a restrve crew will have to be carried in the front brakevan. Special corridor-engines are being buitt so that relief crews can pass to the driving-cab.

The van is joined to the tender by a flexible covered gangway, and a narrow passage leads through the tender to the footplate

The Southern Railway envine Lomal Nelson, shown below, is Britains most powerful express passenger engine. She can haul a load of over 500 tons up very stecp gratients, at express speed.

THE world's seaplane speed record, which Britain's "dare-devil" pilot, Flight-Lieutenant Kinkead, lost his life in trying to smash, is at present held by litaly.

Major de Bernardi reached that speed in a machine practically similar to that which he used in the great Schmeider Troplhy race-which was won by the British pilot, Flight-Licutenant Webster, R.A.F. Webster did the 218 miles course at an average speed of over 281 miles per hour, and so secured the Trophy for England.

Major de Beruardi did not complete that course, but he made up for his frilure last March by beating Webster's time handsomely. The official record now stands at $318 \frac{1}{2}$ miles per hour, though Bernardi's greatest speed, while flying with the wind, was actually 320 miles an hour!
Will the British air-pilets retrieve for this country the lost honours?

## FASTER AND

THE BATTLE OF THE

## THE ROYAL YAGHT

 The Passing of $\mathrm{t}^{2}$ KinT 'HE King's famous cutter, the Webuilt the Britannia, will race again around timber rel our coast this year, but probably it will eqer skin, be her last season.

It seems a great pity that such a fine career should end, but the cutter is a veteran now. For thirty years the Britannia has featured in the great coastal races, and the King has sailed in her for many hundreds of miles.

She has been se patched, repaired, and
great ya Her tril been mans to the w prizes, an off the hos races that


## AND FASTER! TLE OF THE SPEEDMEN.

## AL YAGHT BRITANNIA.

## ssing of KD King's Cutter.

## cutter, the whilt that scarcely a bit of the original

 again around timber remains in her. She has changed obably it will her skin, as it were, time and again, it never her form. And she has become great yachting tradition.at such a fine e cutter is a f years the in the great has sailed in miles. repaired, and

Her triumphs as a racing yacht have been many. From the first day she took to the water she commenced to win prizes, and in one season alone carried off the honours in ninety per cent of all races that she entered


## THE FLYING MILE.

## Motor-cycle Records.

T is not often nowadays that the speed record for motor-cars lasts long. without being broken.
But with motor-cycles it is different. The record for these is now well over a year old and still shows no sign of being changed. It was in 1926 that O. E. C. Temple, riding a motor-bike of his own design, covered the mile at a fraction over 120 miles an hour, and here we are well into 1928!
Temple holds both the most important records in the motor-cycling world-the flying mile and the one hour's rum. The latter, made at an average speed of nearly 102 miles an hour, was made as far loack as 1925!
goes with it, for Captain Camploell. And well he deserved it!
Only at great personal expense and risk was the record-breaking run made. The sum of $£ 18,000$ spent on his racing car, the Blue Bird, was Captain Campbells own moncy, and the awful risk he ran was shown by a terrible broadside skid that an imnocent-looking sandripple caused him!

## THE LITTLE SPITFIRE. <br> <br> Champion Motor-boat.

 <br> <br> Champion Motor-boat.}NOW that practically everybody owns a car and our roads are becoming congested, those who prefer to take their pleasure in comfort from the overcrowiling point of view are turning to motorboating.
To encourage this comparatively new sport speed trials are everywhere being organised. The most popular of these is the International Race for the Duke of York's Gold Trophy. - This race takes place at Southampton, and the photo below shows the present holder of the 'Trophy, the Little Spitfire, racing for the finishing-buoy at twenty-cight knots.


## Speed Fever!

(Continued from page 13.)
another giance at the speedometer. The broad, black needle was dead on the hundred miles au hour mark.
A hundred! He'd done it! And Bill Pape had said that he hadn't the nerve to. The bridge!
He was on it before he realised it. His right hand snatched the throttle shut, and the note of the exhausts died as the great machine flung up the short slope; then leaped clean into the air as it crossed the top of the hump.

For the fraction of a second Jim felt. it flying high in a mad, wild, hundred-mile-an-hour jump. He heard the whir of the driving chain and the shrill song of the threshing wheels; then the tyres crashed back to the road, and in that moment he felt a terrific wrench at the handlebars.

The machine had landed out of the etraight, and, as he tried to correct the fault, the bike lurched. The reriest fraction of : a second afterwards it felt as though some giant hand had gripped the front wheel and was wrenching it fiercely from side to side.
He'd got into a speed wobble, the bugbear of all racing men!
He remembered that Niorgan hat said he himself would never be able to hold the machine if ever it got a wobble on. If Morgan could not hold it, then Ken knew that he couldn't. But with every ounce of strength in his sinewy body he fought for control.

The machine went bucking and weaving across the road. He had a momentary glimpse of grass and bushes and trees beyond; then the racing bike leaped sheer into the air, and he was flung forward out of the saddle.
One glimpse he had of the bike somersaulting near him. There sounded a mad, rending crash; then came the tearing slash of smapping branches all round him.

There was a mad, whirling confusion of Aying leaves and twigs as he was flung over and over, over and over.

J
IM sal up when things seemed to have quietened down a little, gouging his eyes clear of earth and bits of leares. His whole body felt peculiarly numb, but he was not conscious of any hurt except across lis chest, where he appeared to have hit something.
$\Lambda$ forest of brambles swayed before his cyes. Beyond them he saw a tangle of smashed and $t$ wisted fronds, and he discovered that he was in the lucart of a cluster of blackberrybushes.

Carefully. Jim began to pick himself up. 'His head reeled and his kuees felt weak, while the greenery swivled a round him; but it steadied presently. His arms seemed to move all riglit, and his legs were sotand. He began to realise that he was the vulbject of something approaching a miracle:
He liad crashed at a hundred miles an hour, and he wasn't hurt! He remembered that Joe Morgan had told
him once that it is better to come off a bike at ninety miles an hour than at thirty, becavise you slide farther and don't fall so heavily.
It seemed to Jim that Morgan was right, although twenty feet or so of blackberry thicket would make a cushion for anybody. His heart seemed to kick inside him as he remembered the machinc. He forgot his numbnesis as he staggered out of the bushes.
There was a mighty eak-tree near him, with a great gash of new-torn wood four feet up the hoary trunk. Near it lay the racing-bike.
It had struck the tree squarely. The beautiful, rounded tank was ripped at the nose, and petrol was soaking into the lush grass. The rear wheel was buckled, and the front one had been torn clear of the twisted forks. The crankcase was split and oozed hot oil. One exhaust pipe lad pierced the rear wheel, and the other was as flat as though an clephant had stamped on it.

The machine was an absolute and complete wreck, beyond all possibility of repair.
Swaying a little on his feet, Jim looked down at the debris. His first thought was regret for the fate of the magnificent racer; a moment later he romembered Morgan.
"Wonder what he'll say:" he gasped shakily; then he heard a roar behind him, and he turned.

A dozen old works likes were hurtling along the road towards him; leading them was a car, and hanging on to the side was Joe Morgan himself. Driving the car was Mr. Brady, the works manager. The bikes were being ridden by Bill Pape and the other mechanics who had watched Jim start.
They were up to him before Jim realised it, and came rushing across the grass towards him. Jim thought they must have seen his smash and were anxious about him.
"It's all right; I'm not hurt!" he called. "It's-." He broke off.
They were all rushing towards the bike, with the exception of Joe Morgan, and he was racing towards Jim. The racing crack was a big, broad-shouldered fellow, with a resolute jaw and eyes red-rimmed from the rush of wind at speed, because he seldom wore goggles.
"Hurt, kid?" He caught Jim's clbow and looked down at him. "I saw you go off at the deuce of a lick. What were you doing when you crashed?"
" $\Lambda$ hundred," said Jim, and he was conscions that his voice was thin and quivering.
He heard Morgan whistle; then the man's face seemed to grow misted, and his voice came again:
"Here, hold up! Not going to laint, are you? Set your teeth and get a grip of younscif. Bend over: ger your head down between your knces. That's the style!" He forced Jim down and held him there until things stopped spinning; then he straightened him up again. "You're all right now. It's shaken you up, I'll bet. Hallo! You've made one or two nasty dents in the old grid!"

He looked towards the wreckage now, still with a haud under Jim's
arm. Jim saw Pape and the rest staring open-mouthed at the machine, while Mr. Brady regarded it with his eyes narrowed and his face grim. Brady was a thin, wizened little man, and he was the terror of the works. He had lips that were leau and bloodless, and they were set in a tight line as he spun round on Jim.
"You-you- Look what you've done! Smashed the machine up! Smashed a bike that cost us hundreds of pounds! I suppose you were doing about forty and couldn't control her?"
"He was doin' a hundred!" grunted Morgan. "Don't bully the kid; he's groggy. He might ha' been killed! !
"Scrve him right!" the works manager snapped. "Who gave you permission to take this machine, eh? Who's going to pay for the damage: How're we going to--" He broke off, and barked: "You're sacked!"
'Jim knew that. He'd known he was sacked from the moment that he saw the battered bike. He heard Morgan saying:
"Go easy: Accidents will happen ! He didn't mean it !"
"Don't you take his part, Morgan!" There was a dangerous note in the voice of the works manager.
"I ought to be the one to grumble," the racing crack answered. "There": five weeks' work gone phut agains 1 that tree; but I'm not worrying. Don't bully the kid; give him a chance."
" Give him a chance !" Mr. Brady" jaw stuck out. "He's sacked, and lucky if he isn't prosecuted! You'!! get back to the works, Morgan, and start on another bike to replace thi -ne. It was built for short-distance records, and I'm going to see that we get them."
He turned and strode to the car. Big Joe Morgan stood looking after him, and suddenly he called
"Mr. Brady, if you want another bike, get someborly else to build it, I'm through!"' Then he drew Jim gently round as he said: "Come nu and sit by the stream. There's water there, an' it'll help to knock all tho buzzing out of your head.'

J IM wasn't quite sulue of what was happening. Fie saw Brady come hurrying after them, and there followed some kind of argument between Morgan and the manager. Then the sky seemed to turn black, and he had to fight the faintness which swept down on him When he had mastered it he found himself sitting beside the little stream which ran under the bridge, while Morgaa swabbed his face with a water-soaked handkerchief.
"Better now?" he asked. "That's fine! I know what you feel like. I came of down the Railway Straght at Brooklauds at seventy once, and I coulchn't seem to stand up properly for a week afterwards." He grinned, then he went on: "Fine human sort o' chap, Brady. Scemed to think the bike was more important than you. Gush, we can always get another bike! I tell you, I'm not sorry to be shot of him and the Fleet Works. I've been kind of wanting an excuse to cut loose, and I'm glad it's come."

Jim blinked at him, and the big fellow went on :
"I've resigned-g'ot that? I've packed up!" He laughed suddenly. "In future, I'll ride for Joe Morgan's benefit, and nobody else's."
There was silence for a space. In the distance Jim could hear Mr. Brady's car tearing off back to the works, some of the bikes following him. Behind him, Bill Pape and three mechanics were still looking. in a gloating sort of way at the wreckage.
"I've been watching you," Morgan said, after a time. "I wanted 'em to bring you in amongst the speed-irons, but they said you were too smart at overhauling customers' buses, so you never got $\mathrm{a}_{4}$ chance. I reckon that if you an' me got together, Jim, we could do something between us.
"You see, racing bikes ain't just sitting along the tank with all the taps turned on-there's a lot of work before you come to that part of it. I mean tuning-up, and-well, getting ideas about how you can find a few more horses in the old engine. You're good at that, and I reckon you'd be good at hitting the knots, too. See?"

Jim didn't quite see, so he said nothing. Things had happened with puzzling swiftness, but Joe Morgan had severed his connection with the Fleet Works because he had been wanting to do it for a long time. In addition, he was hinting at something.
"Feel fit enough to stand?" Morgan asked. "You do? Well, then, let's get on. I live a little way along the road, and if you get a cup of tea inside you you'll feel twice as good. Come on!"
They moved off. Jim's head reeled a little at first, but by the time they had skirted the wood he was steady again. In a few minutes they came to a bungalow set in the middle of a rough-looking garden. There was a big shed at the side of it, with double doors carefully locked.
Morgan pushed open the entrance to the bungalow, and Jim stepped into the room beyond.

A man was sitting at a desk under the window, with a big drawingboard in front of him. His features were like those of Joe Morgan, but they were much older. At his side was a thick and heavy stick, and Jim saw that he was crippled.
"This is my brother Phil. Here's young Jim Curtis, Phil-the boy I told you about. Remember?"

Pliil Morgan turned in his chair and lifted himself out of it with onc hand, while he extended the other to Jim.
"How d'you do?", he asked. "Joe's spoken about you often. Have you got lim to come in with us, Joe?"
"Don't know. I haven't asked him yet, but I've turned it up at the works."

You have? Good man!" Phil's cyes lit up. "I've been waiting for that, Joe! Now we'll show 'em a thing or two!" He sat staring from one to the other of them, then suddenly got out of the chair and went clumping across the room with the aid of his stick. "I'll get tea, then we'll talk about it," he said.
Jim glanced round the room. There

## THE NEW STAMP COLLECTING.

By F. J. MELVILLE, President of the Junior Philatelic Society.



$\mathrm{T}^{\mathrm{H}}$E modern fellow is as keen $\quad 0 \mathrm{n}$
stamps were tho boys of sixty yearis ago, but he looks upon them from a different angle. It is not sufficient for him to get stamps just to fill up ruled squares in his album ; that is too simple altogether. He wants to know all about the stamps, what their designs mean, and many other details which may generally be read from the stamps themselves.
In these chats I hope to tell you many things about your stamps which will interest you, and which are not generally too easy to find out for yourselves.

Why Afghan Stamps are Torn.
The visit of King Amanullah and his Queen to England has led many collectors to take a keener interest in the stamps of Afghanistan. The older stamps of that strange land are uncouth looking labels with the face of a lion in the centre. Those were stamps of the reign of suc: Ali, the Amir's name "sher" meaning lion.

They are crude stamps, and most of them are torn. You see, they had no postmarking arrangements, and the only way the Afghan postmaster could cancel the stamp was to tear or bite a piece out of it!

## King Amanullah's Stamps.

On the stamps of Sher Ali's successors, Abdur Raliman and Habibulla Khan, is a picture of a mosque gate with two minarets, flags at sides, and in front two crossed cannons. You would scarcely indentify these things, they are so badly drawn. But King Anianullah's stamps are much better productions.

The one shown here was issued recently to mark the anniversary of the King's accession. In the central opening at the top is the King's sign-manual. Below are the arms of Afghanistan, with flags and crossed swords, and the royal fez or headgear worn by the Amirs.

Until last year all the Afghan stamps were inscribed only in the native language, but soon there will be a full series with a little bit of English on them, " Afghan Postage," and the value shown in " pouls," of which 100 go to make an Afghan rupee.
were some coloured plates, taken from a motor-cycling paper, on the wall. and a shelf was filled with gleaming cups and bowls which Jo Morgan had won in speed events. On a small table were the parts of a magneto, half lidden under a cloth meant to keep the dust from then.

On a chair there was an old leather racing-jacket, a tear in it neatly stitched. In a corner was a gearbox, with its parts piled in a heap at one side.
'It's a bit rough," Joe said, "but Phil looks after it. We two live here together. He does my drawings and helps a bit in the garage when I'm tuning. We have a pretty good time, one way and another."

He stood staring meditatively at Jim, a little frown above his redrimmed eyes. He looked about the room, then regarded the boy again, and said :
"Look here, Jim. If you don't like the scheme, I know you'll keep it to yourself, but I want to make you an offer. You're out of a job now, but I think I can give you one. It's like, this-pretty nearly every chap who races thinks he can design a machine that'll be better than anything else on the market. Well, I'm the same as the rest of 'em, and I've not only designed a machine, but I've pretty. nearly finished building it."
Jim stared at him. He could guess what was coming, and his heart began to beat quickly.
"I reckon that I can do myself more good by working on it than by risking my neck for the Flect Works," Joe said. "Would you like to come and work here with me and Phil? The bike might be a success, or it might be a failure-I don't know. But I think-mind you, I only think-that it'll beat the best!
'If you come in, we'll build two to start with.. We'll tune 'em up and start going for records with 'em, and rumning in races-you on one and me on the other. We should be up against tlie Fleet machines and all the others --Broughs and Rudges and Hulsons and so on-but if we can make good- He broke off.

Jim swallowed hard and tried to realise what he was being offered.
There'd be fierce races on track and road. Maybe he'd even ride in the T.T. There'd be record breaking, and -why, it was just the thing which he had always wanted to do, and be knew that if Joe thought he'd got a bike which could lick anything, then there wasn't much chance of Joe being wrong.
"Well, what d'you think?" asked Joe.
"What do I think?" Jim laughed suddenly. "Well, I-I don't know what to think. But-but building bikes and racing them! D'you really mean it?"

The racing crack smiled as he saw the keen, eager light in Jim's eyes.
"Of course I mean it! Wcll, d'you like the idea? Will you come in with Phill and me? What d'you say?"
"Say?"-and again Jim laughed.
"All I've got to say is that I'm glad
I came off that bike!"
(Jim Curtis stars again in mext week's MODERN BOY. Look out for that story-it's magnificent!)


 vep. "Beat it!"

SO taken aback was Red Cullum by Mike Hannon's obvious challenge that he stared blankly as the other advanced. Then gradually a ricious grin spread over his face as he. put up his fists to defend himself.

The atmosphere of the bunkhouse became electric; someone kicked the door shut, another shoved the table aside, and the rest quickly formed into a rough circle.
No one attempted to keep the peace, and there were a good many like Pud Drummond and myself who were eager to see the bully of the logging camp get a lammering from this newcomer who was every whit as big and powerful as himself. The remaining men regarded the prospect as a good form of entertainment, and, born gamblers, some began laying odds against the Irishman.
In point of physique there was nothing to choose between the burly loggers as they stood there like two defiant giants with the mellow light of the lanterns shining on their superbly muscled arms and with the tobacco smoke curling in blue wreaths about them.
"Put up y' mitts to me, would ye, v' big skate?" grunted Red savagely. "By lieck, I'll caulk ye for this !"
'To Pud and I the expression meant nothing, but a Frencll-Canadian lumberman standing beside us mumbled under his breath: "Saints preserve zat Irish guy if he hits ze floor, for he'dl get Red's, boots planted on ze face for a cinch !"

And with a thrill I called to mind something I had lecard once about scraps between lumbermen. Apparently Red was one of the "old school," who believed in the privilege of the victor in stamping his mark on the loser.
This in the old days used to be done quite frequently bs a logger stamping on the face of his foe with his caulked boots-that is, boots fitted with halfinch steel spikes for gripping the logs and so disfiguring him for life. Even to this day in the Far West an occasional lumberman may be seen with his face pitted and scarred by the caulks of some victorious foe.
Now that I understood the real brutality of the man who had treated Pud so badly, I felt more anxiety for Mike Hannon as the loggers clashed.

Out shot Red's great fist with enough force behind it to have felled an ox. Mike side-stepped nippily for 80 big a man, and the blow glanced from his shoulder.
"Bad cess to ye!" roared Mike, in a rage, as he swung his right. "Hould this wan!"
The sound of that wallop to Red's left ear was like that of a mallet against a log, and the bucker went reeling among some of the onlookers.
Murmurs of admiration for Mike's feat rose from the rest of us, but these changed to gasps of anviety as Red Cullum came back at our champion like an avenging fate and slammed the Trishman's head from
side to side with a couple of hefty hooks to the jaw.
"Good for you, Red !" rasped one of the bucker's few pals. "Spread him in the sawdust!"
While loudest in support of the Irishman was the voice of my plump pard, Yud Drummond.
"Wire into the big stiff, chum !" yelled Pud, whose head must have been throbbing from his own hurts. "Knock seven bells out of the coward!'

Red Cullum exploded with fury.
"Jest wait, me chirpy young chipmunk!" he threatened. "I'il sure $\tan y e$, too, afore I'm through!"

Never had I seen such scrapping? Above the growing uprotar in the bunkhouse could be plainly heard the tremendous impact of the mighty fists. Blotches marred the faces of both men; one of the Irishman's eyes was slowly changing to a rich purple.
With every blow he struck, Mike gave a grunt of emphasis, while his roughneck foe loosed a torrent of the language of the camps.

## Thud!

Pud and I shrieked with excitement. Mike had caught the bucker a clout on the mouth that had sent him reeling half across the bunkhouse floor !
"Bravo! Follow him up!"
The big Irishman was a fraction too slow, and the bucker rushed at him with the blind rage of a wounded grizzly. Mike came across with a right to the neck that again shook

# Who'd be a lumberman? Young Tom Rogers and his chum Pud try the life for a spell and make a discovery ! 

his opponent, and promptly Red replied by driving a knee into the Irishman's stomach. With a gasp Mike jerked down his head, and up flashed Red's left to the jaw.
The giant strength belind the blow may be judged from the fact that poor Mike was lifted clean off his pins and flung like a sack of potatoes to the floor.
"Great smoke !" gasped Pud, in a hoarse whisper at my side. "He's outed him!"
"That's all yours!" rumbled Red Cullum, glaring balefully down at the senseless logger in the awed silence that liad fallen. "And here's another souvenir o' me for ye!"
To our dismay lie uplifted one of his great caulked boots above Mikes battered face to put the brand of his victory on his foe for life !
But before the spiked boot crashed down, Pud, with a wild howl of protest, leaped forward and drove his podgy fist full to the big bucker's moutl. As Red was standing on one leg at the moment he was taken completely off lis balance. Emitting a startled bellow, dlown lie went like an ox among the sawdust.

Good for you, Pud!" I yclled in a frenzy of excitement.
Many of the lumbermen laughed and applauded, but there was distinctly less gaiety as the giant bucker slowly picked himself up again.
" Y' cub !" he muttered between his gritted teeth. "For that I'll break ye wi' my two hands like as if ye were a rotten cedar slab! "
Probably he would have clone it, too, but that as he strode forward the door was flung open to reveal the bulky form of Jem Turner, boss of the logging camp, framed against the night.
A hush fell and Red paused irresolutely as Jem's eyes, like fragments of ice, surveyed the scene of disorder.
" You again, Red, hel ?", he grunted. "I heard there was a rough-house, and yon, I guess, is the galoot who's put this poor mutt to sleep?"

An axeman, or faller, who was known as "Sailor" Johnson from the fact that he liad been to sea before taking to the woods, took a pace forward.
"You've said it, boss," he stated. "This durn great he-bear started the whole bobbery, and jest because this fellow he's beaten up was a-singing in lis sleep-as sweet as you like lie was sirging, and no one else had a kick coming.,

Jem Turner swung round on Cullum.
"You're through!" he announced. "To-morrow morning you get your
walking ticket and liit the trail out $o^{\prime}$ camp."
"Bully for you, boss !" applauded the sailor. "And if he don't quit, I do !"

Several others intimated the same thing, and Red, sectling like a volcano with fiery anger, grew rankly defiant. Without another word Jem Turner gripped him, shook him as a dog would a rat, and flung him sprawling across the room on to one of the low bunks, where the bucker had the horse-sense to remain.

When, after much difficulty, Mike was brought back from circamland he wildly threatened to "knock ivery mither's son into the middle o' next wake entoirely!" But Jem Turner who was used to dealing with roughnecks, gave him a hefty clump on the ear that made him decide that his bunk was the best place, after all.

So having settled matters to the satisfaction of most of us, the hulking boss of the logging-camp went off back to his quarters. As we prepared to turn in we discussed the recent

## Young Tom Rogers, telling his own unvarnished story, is an adventurous youngster who started out to see the world with but half-a-croun in his pocliet. In I'ancouver lie chums up with " Pud" Drummond, anothes young adventurer. They travel to British Cohmbia and get jobs in a lumber camp. The bully of the camp quarrels with a newcomer and a fight ensues.

figlit among ourselves, and Pud much to lis own satisfaction, came in for a deal of rough praise from those who were mighty relieved that Red had got "thic builet."

Next morning, when the rest of us rose, Red and Mike remained in their bunks, too sore and sorry to start any "fireworks" again. And later in the day Red, with his roll of blankets, embarked on the sternwhecler for Notch Hill, and no eno dropped the silent tear to sec him go.

Strictly, our day in the loggingcamp, began at 6 a.m., when the fellow who did the chores-known as the bull cook-lighted the ${ }^{-}$stove in the bunkliouse. This was an unexpected luxury in the backwoods, but the chill of late autumn was in the air and we were jolly glad of it
Breakfast consisted of fried bacon, flapjacks (pancakes) and maple syrup, and coffce. Afterwards the loggers collected their various implements and ambled down a wide skidway of logs to their allotted tasks.
The boss, Jcm Turner, stood not
far from the cookliouse and, in some cases, gave special orders.
"You boys," he said, addressing Pud and me, "will join up with Stere Lambert's gang."

The man Steve was pointed out to n8-a morose sort of clap, who, when we reported to him, grunted but one word: "Axes." These implements we had issued to us from a large toolshed, and then we joined up with Steve's gang of swampers in the forest.

Our particular job was really the unskilled labour of the camp. We had to hew down sapings and bushes and clear a trail, while men of another gang laid small logs to add to the length of one of the existing skidways.

Half an hour of it about broke my heart-to say nothing of my back! Despite the kecmness of the carly morning I worked myself into a fine perspiration, and bothi my liands began to blister.

When, after an hour, Steve went off to consult Jem about some matter connected with the work, I proniptly slackened off and turned to Pud, who was as blown as myself.
"Phew! What about an 'casy 's" I suggested.
" $S$ " far as I'm concerned," puffecl Pud, "it's cither a mike or a funeral. Another half-hour of this, Tommy, will just about finish me!"

Slipping away among the brush from the rest of the swampers was an easy matter, and we threw ourselves down iull length in the shelter of a flowering slirub.
"What a treat!" breathed Pud comfortably.

Then suddenly a shrill whistle rose from not far distant, and, looking up sharply, we saw a tall Douglas fir come bowing dlown slowly towards us.
"Snakes!" ejaculated my chimm, leaping up. "Beat it !"

We fled-and only in the 'nick of time, for the great tree, hewn down by the fallers' ases, crashed horizontal to the loud splintering of branches, flattening completely the flowering bush beside which we had been having our peaceful mike.
"M-my lat!" gulpéd Pud, his podey face the colour of putty. "We've struck some job this time, Tommy lad'! Seems to me that, what with the work itself and the giddy risks, we shall earn our three bueks a day!"

And Pud wasn't far wrong !
Moung Tom has more yarns of the Iumber camps to tell next week:. Don't miss them orderyou MODERN BOY miss them ord
this very day!)


# Adventure in the Tropics, on Sea and Land and in the Air! 

## For Life or Death!

"FELLER sun he go!" muttered Kaio-lalulalonga.
The sun's rim dipped below the far horizon.
Darkness rolled, like a cloak, over Faloo.
The hcaving ocean, the coral reefs vanished from sight; the woods and the ligh bush were a black mass against the sky.
In the velvety darkness the stars began to gleam.
King of the Islands rose from the coral rock where he had been seated. In the glimmer of the stars ho examined once more his rifle.
"It's time !" he said quietly.
"Ready!" said Hudson.
The Australian had been waiting impatiently for the dark.
The beach-comber's hucky voice came through the shadows.
"You're mad, King of the Islands!" he mumbled. "You'll never carry the Dawn, with Bully Samson on board as watcliful as a tiger. Better steal a nigger's canoe and strike for Lalinge."
"That's enough,", said Ken.
"Feller beach-comber he stop along shore," said Koko disdainfully. "Feller beach-comber he no good fightt along Samson."
"You'd better stay here, Donlan, and we'll pick you up later, in the ketch if we get her," said Ken.
"If you get her!" muttered the beacll-comber. "You won't get her.
ketcls. You'll never get a foot over her rail."
"We're taking our chance of that," said King of the Islands impatiently. "You can come along or stay behind, as you choose. Make up your mind."
"Coming or staying ?" snapped Hudson.
"Coming !" groaned the beachcomber. "I daren't stay here alone, and that's the whole truth. But sure we'll never get the ketch, and I'll niver spind me money on Lalinge. Ochone."
"Belay that!" growled Ken. "Follow on !"

King of the Islands led the way.
For the second time since the seaplane had landed them on Faloo the shipmates of the Dawn left the beach and plunged into the blackness of the woods.
From the woods they passed on to the bush, taking carc, however, to avoid that spot where they had lifted the treasure of Mafoo, and where old Mafoo's head still swung from the branches of the banyan. A new devildoctor was in the place of Tokaloo; the hidcous place was still haunted by terror and death.
Trackless as the high bush seemed, King of the Islands scarcely faltered once on his way. Here and there, when a glimpse of the stars was to be had, they guided him; the compass and his sense of direction did the rest. King of the Islands led the way, his rifle under his arm; Kit Hudson followed him, his stockwhip
in his grip, his rifle on his back; Donlan followed the Cornstalk with faltering steps, starting and muttering at every rustle of the bush; and Kaio-lalulalonga brought up the rear. Only when the dense bush barred the way, and a knife was needed, Koko passed to the front and hacked a passage with his keen, heavy bushknife.
A silvery glimmer struck on the eses of the shipmates at last. It was the lagoon. They were through the bush, and the beach of Faloo, on the southern side, lay before them, with the palm-leaf huts of the natives scattered along it. Far out on the lagoon a black shadow on the water slowed the ketch-riding without a single light. Ken's eyes glinted as they fastened on that shadow.
"The Dawn !" hee whispered.
"If the naggurs hear mumbled the beach-comber.
"Silence !"
King of the Islands led the way on once more. A wide detour was made to avoid the native houses, and the four reached the beach at last, where the soft lap of the waters of the lagoon made a faint murmur in the night. There they stopped again.
King of the Islands had planned to seize a canoe belonging to the natives to reach the Dawn. The war-canoes of Faloo were safe in the canoehouses, watched and guarded; but it was more likely than not that some fisherman's canoe was left beached for the night above high-water mark

# Tslainds! C. Hamilton 


indeed, many of them. But if that and finding two paddles therc. From resource failed, the comrades were prepared to swim out to the ketch, taking the risk of the sharks.
"Remain here!" whispered Ken.
Jeaving his comrades he crept silently along the sand in the direction of '「a'a'ava's village.

As he expected, he found five or six fishing canoes beached well above the lapping waters of the lagoon.

King of the Islands passed among them, looking for one in which the praddles might have been left.

There was a sudden gasp in the darkness, and from one of the canoes a black face and rolling, startled eyes rose, staring at the shadowy figure of King of the Islands.

Ken's teeth snapped.
He had known that it was possible that some native might be sleeping in his canoe in the sultry night, and he had had to take the risk.

One cry from the startled islander was enough to give the alarm and to bring a swarm of savages yelling to the spot, and the man's mouth was already opened for a yell.

But that yell was never uttered.
'The clubbed revolver of the boy trader crashed on the fuzzy head, and the islander dropped back into the canoe with a low groan.

King of the Islands straightened up, his heart thumping, his head bent to listen.

There was no sound of alarm. 'The other canoes were untenanted. For a full minute he stood breathless, tense. But there was no sound save the soft lapping of the lagoon.

It had been a narrow escape, but it did not linger in Ken's mind. He grasped one of the canoes and halfcarried, half-dragged it over the soft sand, after groping in the interior

SIR ALAN COBHAM,

## the Famous Airman, is writing this superb story! You can commence reading it NOW !

much for the ragged nerves of the wreck of a white man.
"Feller tide he go !" murmured Kaio-lalulalonga. "No wantee washywashy along canoe-feller tide he go."
"Good !" breathed Ken.
Once afloat, the canoe was drawn away from the beach by the receding tide. Far out on the barrier reet there was a deep murmur of waters pouring through the rocky channels to the open sea. Fortune was favouring King of the Islands-the tide had be'en on the turn; it was not necessary to paddle. Koko steered the canoe with his paddle, and the tide carried them far out from the beach.
Perhaps in order to give no guidance to possible enemies, the Dawn showed no riding-lights as she lay at anchor, her cable taut, the tide pulling at her hull. Only the black shadow against the starlit sky showed where she lay.
Ken's heart was beating fast.
Under the stars the canoe glided silently, softly over the lagoon, slowly, slowly but surely, drawing nearer to the anchored ketch.

Of the Hiva-Oa crew Ken had, of course, no fear. He knew they would be glad to welcome back their skipper. But he did not know whether Bully 'Samson might have shipped new hands on the Dawn; he did not know whether Bully Samson was on the watch on the shadowy deck. The risk liad to be taken; but at every moment King of the Islands feared to hear the crack of a rifle from the vessel. There was no sound in the canoe as it glided onward. In the deep silence the trembling of the beach-comber could be felt. Nearer and nearer-
From the deck of the ketch there came the sound of a voice. It was the soft, musical voice of one of the Polynesian seamen singing in the starlight. Ken's heart thumped. He recognised the voice of Lompo. The twang of a ukelele accompanicd the voice. Lompo was awake and on deck, but where was Bully Samson? The deep, hoarse voice of the bully of the Shark answered the question.
"Belay that shindy, you black scum!"

Bully Samson was on deck. Ken was close enough now to pick out the red, glowing end of a cigar from the darkness.
There was the sound of a blow, and a whimper. Pattering footsteps were heard on the deck. Lompo, his song silenced, had fled from the brawny fist of the freebooter.
"Yo sing out along my ship, me knock seven bells outcr your black hide !" roared Samson.
"Yessar!" answered Lompo's trembling voice.
The red end of the cigar glowed over the rail. Bully Samson was

## King of the <br> Islands !

(Continued from previous page.)
leaning there now, staring across the water towards the shadowy shore, where a light burned in Gidcon Gee's bungalow.

The gliding caron was directly in lis line of vision now, though almost swallowed up in the shadows on the lagoon.

There was a sudden flash of lightit camo from the burning cigar as it dropped into the sea. Bully Samson had, scen the canoc. The cigar dropped from his mouth-his brawny hand grasped a revolver.
"You feller canoe, you steer clear along my ship!" he shouted. "You wantec trade, you wait along sun he come. Sheer off, or I'll shoot!"

Evidently the bully of the Shark supposed that it was a native canoe, manned by natives, that was gliding down on the ketch. Whether the natives came as friends or foes, Bully Samson was taking no chances. H is revolver glinted in the starlight over the teak rail. The canoe was not a dozen yards from lim now.
"You washy-washy along shore, plenty quick!" he roared; and then, in the gloom, he glimpsed a white face in the canoe, and a startled oath broke from lim. Whether it was that the thought of King of the Islands was in his mind, or whether his keen eyes picked out the face of the boy trader in the faint starlight, the name came from his lips in a yell of rage.
"King of the Islands! By hokey !"
His finger was pressing the trigger.
Crack!
King of the Islands, standing up mu the gliding canoe, fired at the black-bearded ruffian, even as Samson pulled the trigger.

There was a wild yell on board the Dawn, and a crashing fall that made the teak deck rock. King of the Islands gave a gasping cry ais he felt the wind of a bullet on his check. But he had pulled trigger first, and Bully Samson's bullet had been deflected as he staggered. His shot whizzed away harmlessly towards the beach, while the bully of the Shark crumpled up on the deck of the Dawn.

A moment more, and the canoe bumped against the Dawn, and King of the Islands had leaped over the low rail and was standing on his own deck. A yell of isurprise and delight from the Hiva-Oa crew grected him.

- "Cap’n Ken !"
"Foller King of the Islands lie come."

Bully Samson, sprawling cin the deck, made a fierce cffort to raise the revolver again. Ken kieked it from his hand. The muzzle of the Winchester jammed on the brawny chest of the frcebooter.
"Lic still, yout scoundrel !" said King of the Islands, between his tecth.; "Lift a finger, and I'll riddle you!"

The wounded ruffian lay like a crouching wild beast, fierce eurses pouring from his lips. Kit Hudson leaped on board, and Kaio-lalula-
longa followed, dragging after him the beach-comber. The canoe went rocking away on the tide towards the reef.

Five minutes later King of the Islands was steering the Dawn through the channel of the reef, heading for the open sea. Bully Samson, his hands bound, lay on the deck; the Hiva-Oa crew stood at the sheets, singing aloud in their glee. Ken's eyes were dancing. Under mainsail and topsail the Dawn swept out into the starry Pacific, King of the Islands at the helm, master once more of his own ship-and the cannibal island of Faloo-the island of terror and treasure, dropped astern and was lost in the mist of the stars.

## Man Overboard!

KAIO-LALULALONGA, at the helm of the Dawn, crooned softly a Hawaiian song as le kept the ketch before the wind. King of the Islands sat on the teak rail, heedless of the dip and swing of the ketch as she cut through the starlit Pacific. A landsman would have been hurled backwards into the heaving sea, but the skipper of the Dawn sat as carelessly and comfortably as in a rocker on the club veranda at Lalinge.
Kit Hudson was below, taking a spell of sleep in lis bunk. On a licap of tapa mats on deck lay Bully Sam-son-a prisoner.

The Hiva-Oa crew were all on deck. The "watch below" scldom slept in the tiny forecastle of the Dawn-they were accustomed to bring tapa mats on deck and sleep under the gleam of the stars. But not one of the five Polynesian seamen was sleeping now. They were all wakeful, and muttering together occasionally, in the soft dialcet of Hiva-Oa, their black eyes continually roving to the burly form of Bully Samson. Ken understood a good deal of the dialect of the Mar-quosas-and perhaps for that reason Lompolokuno and his comrades muttered and whispered softly, so that not a syllable came clearly to their captian's ear's.
Lompo rubbed a deep cut on his brown check, made ly the hard Rouuckles of Bully Samson. His black eyas glittered as he rubbed it. Bully Samson, so recently in command of the ketch, had made the weight of nis heavy hand felt by all the native crew-not a man of the five but had marks to show. But Bully Samson lay wounded now, on the tapa mats, a prisoner in the hands of King of the Islands, and the Polynesians did not fear lim.

That something was toward among the crew Ken would have guessed at any other time. Usually peaceful, contented, laughing and happs, the Hiva-Oa men were now grim and sombre, and their dark glances at the bully of the Shark were full of unspoken threats.

King of the Islands rose at last from his precarious seat on the low rail, and yawned.

It was more than time for Hudson to relieve him on deck; but the mate of the Dawn had not awakened.
"Kcep her steady, Koko!"

Fing of the Islands, crossing to the cabin hatchway, paused to lools down at Bully Samson.

The black-hearted ruffian was not sleeping.

His fierce eyes met Ken's with a savage stare.
Samson's wound had been bandaged. The bullet from Ken's rifle, in the lagoon at Faloo, had knocked over the South Sea freebooter who had scized the Dawn, and he was severely hurt. Ken had done what he could for lim, but loss of blood had sapped away the giant strength of the bully of the Shark, and he lay helpless. Powerless now, from the effects of his wound, Ken had ordered his hands to be unbound, and lie was freebut weakncss, strange and unaccustomed to the Herculean freebooter, chained hira to the heap of tapa mats on which lie lay.

But if Bully Samson's strength had failed him, his savage spirit was as ficrce as cver. He glared defiance at the boy trader.
"Anything more I can do for you before I go below, Captain Samson?" asked Ken.
"I guess I'm asking nothing $\overline{\mathrm{t}} \mathrm{t}$ your hands, Ken .King," answered the freebooter, between his teeth. "Only-what are you going to dio with me?"
"Take you to Lukwe Island," answered Ken. "The District Commissioner is there now, and I'm going to hand you over to him-and wash my hands of you."
"Plenty much better sling Bully Samson along sea, sar !" said Koko. "Plenty better feller Samson makee kai-kai along feller shark."

Ken smiled.
"That's not a white man's way, Koko!" lie answered.
"Feller Samson way !" said Koko.
"Very likely; but not mine."
"Better take the nigger's advice!" jeered Bully Samson. "My turn will come, King of the Islands, and then look out for yourself!"

Ken smiled contemptuously.
"What have you done with my cargo, Samson?" he asked.
"I guess I sold it for a song to the German trader of Fusai," answered Samson, with a sour grin. "You'll never see it again. You've got your ship, but you won't get your cargo !'" He spat out a curse. "And you'll never lift the treasure of Mafoo; the niggers on Faloo will see to that."

King of the Islands laughed.
"Mafoo's sack of sovereigns is lifted," he answered. "Every coin that old Mafoo stored up under the devil-doctor's tree on Faloo is now on board the Dawn!"

A stream of curses came from Bully Samison.

Ken passed lim, and stopped again to glance down at Donlan, the beachcomber, lialf-aslecp on a tapa mat at the foot of the mizzen. The beachcomber was muttering:
"Goolden isovercigins-oodles of 'em ! Oodles of 'em !’’

Ken smiled, and went down the cabin steps.

He passed through the cabin to the little state-room amidships, where Hudson was in his bunk. From the deck, following lim, came a deeper murmur of the voices of the Hiva-Oa
men. The departure of their skipper seemed to have lifted some restraint trom the crew.

Ken did not heed it.
His mind now was filled with the ihought of his ship, recaptured at last from the freebooter who had seized it, and lis heart was light, his face contented and smiling. At any other time the strange unrest anong his crew would certainly have roused his attention. A white skipper with a native crew in the Pacific needed to be wary and watchful. But other thoughts were in Ken's mind now, and he gave no heed to the men of Hiva-Oa.
"Kit!"
The Cornstalk awakened at a word.
"My watchi" he asked.
"Ay, ay," answered Ken, with a smile. "I wouldn't wake you before." Hudson rolled out of the bunk.
There was a sudden cry from the lleck.

## Splash !

King of the Islands started.
"What $\qquad$ "Man overboard!", said Hudson.
"On a night like this no lubber
would be lubber enough to fall overboard! Danny chucking over some garbage from the caboose, I reckon!"

But King of the Islands hurried back to the companion ladder. He did not believe his own words. The plunge in the sea had been too heavy to be accounted for by the throwing away of garbage by the native cook. And there was the cry! Yet the ketch was sweeping on her rapid way unchecked, and there was no sound of alarm from above. Puzzled and vaguely alarmed, King of the Islands ran up the companion ladder. Kit Hudson followed him fast.

Ken leaped out on deck.
Koko, standing like a giant statue of bronze, was at the helm, massive and calm. The beacl-comber was sitting up on his mat, staring and grinning. The Hiva-Oa men stood in a bunch, whispering. All were there. It was not a case of "man overboard."
"What name feller splash along sea?" asked Ken, perplexed.
For the moment he did not think of Bully Samson. The wounded free-
booter was not likely to leap into the sea, even if he had sufficient strength remaining to leave the heap of mats.

There was no answer.
"What name?" rapped out Ken sharply.
The Hiva-Oa men did not speak. They huddled together, evidently in dread of their skipper's wrath, but dumb. Koko kept his eyes steadily on the sea, silent. From the beaclycomber came a husky chuckle.

Ken looked at him.
"What has happened here, Donlan?"
"Your feller boy they got plenty more sense than their skipper!", grinned the "beach-comber. "Bully Samson's gone!"
"What?" shouted Ken.
He sprang towards the pile of tapa mats. No burly figure lay there now. The ketch swept on with bellying canvas before the trade wind, leaving a long white wake astern. Ken stared at the tapa mats, and then at the line of foam that lay behind the Dawn.
Bully Samson was gone!
(Continued on page 25.)
 The Secrets of the This Week.-THE BACK AXLE.
Motor-Car Revealed.

0NE of the most important units of the motor-car, the back axle, houses far more complicated mechanism than most of you would think. There are the axle shafts, secured to the whecls, then the differential and its casing, to which the bevel or worm wheel is attached, and, tinally, the bevel pinion or worm that is driven by the cardan shaft.
The sketch below shows a simple lay-out of an orthodox back axle. You will see that the outcr casing, which is eccured to the -prings, is formed of three separate pieces-the contre casing and the two sleeves, which are bolted to the casing, one on each side. One other part of the casing consists of the housing for the bevel pinion or worm.

Inside the centre casing is the
difterential casing, which contains the mechanism that permits the axle shafts to rotate at different speeds, as when the car is rounding a curve on the road. The working of the back axle, apart from the differential, needs little explanation beyond stating that the bevel or worm drives the lirge bevel or worm, and this, through the medium of the differrntial and its case, drives the axle shafts and road wheels.

All back axles are fitted with ball or roller bearings. In the case of a bevel drive, light thrusthearings are fitted to the bevel pinion and differential bearings, as shown. On a worm-driven axle the thrust bearings fitted are very much heavier, owing to the severe strains imposed by this form of drive. There are three



An overhead worm-driven axle.
rlesigns of back axle in common ure-semi-floating, three-quarter floating, and full-floating. In the design of the semi-floating axle the axle shafts sustain the whole of the weight on the wheels, because the bearing for the wheel is actually on the shaft, as seen in the sketch at A.
In the three-quarter floating axle the bearing is fitted on the outside of the axle slecve and housed within the hub of the wheel, the axle shaft being secured to the liub, as at B. In the full-floating axle the wheel is mounted on its own bearings on the axle sleeve, and the axle shafts keyed to the hub onlythat is, the shaft simply rotates the wheel and does not sustain any of the radial load on the whecl. See $\mathbf{C}$ in the sketch.

Of the three principles, the full-floating axle is the best; but on most cars the semi-floating is the most popular. The brake shoes are pivoted to the axle casing, and the brake drums to the hubs of the wheels. Next week I will explain the working of the differential gear.


Of course, you want first-class reception. But you don't always get it, do you? Then look to your aerial!

OUR WIRELESS CORNER, Conducted by
NORMAN EDWARDS, M.I.R.E., etc., Editor of "Popular Wireless," elc.

AN efficient aerial, in conjunction is bright, before making any new elecwith a good earthing system, is trical joints. very important when you want really good wireless reception wut arial the poor old aerial very seldom gets proper is attached to the down-lead. proper attention or any kind of overhauling. Give it a look-over now, to see if the wet weather and winter gales hare impaired it.
As the aerial acts as a pick-up, it must be carefully insulated, otherwise the received impulses will leak away to earth without passing through the set. For this reason, the aerial insulators should be inspected and thoroughly cleansed of any soot and dirt which they have acquired.

All joints should next be tested, not only for mechanical strength, but to see that good electrical contact is being maintained. Thoroughly clean the wire, by scraping it with a penknife until it


Fig. 1.-The wrong way, A, and the correct way. $B_{\text {: }}$ to attach your down-lead.

Considerable strain is placed upon such a joint by the continuous weight of the down-lead, and the fact that this lead is nearly always in motion, the slightest wind being sufficient to move it and cause friction at the joint.
At Fig. 1, A shows a wrong way of making this joint. B is a method which may be employed with little fear of subsequent trouble. The strain on the aerial is divided, and the aerial and down-lead is one continuous wire taken through the insulator and then back on itself and bound-before being taken to the leading-in insulator.
The short wire $W$ is attached to restrict the movement in bad weather of this part of the clownlead adjacent to the aerial.
If your aerial is suspended from a staple or hold-fast, driven into a wall or woodwork, see if this support is loose or rusted. If it is badly worn or bent, replace it, but do not drive your staple into the holes left by the worn-out support.
Pay particular attention to your pulley ropes. If these are of hemp or cord, and not wire, and have done duty all the winter, renew them even if they appear still strong and fit. In cases where it is possible, the actual pulley wheels should be cleaned and very sparing. ly oiled. Do not use grease. It is too thick for the purpose, and will be covered with a thick coating of dirt in a very short time, and may jam the pulley wheel in the block. It is really surprising how much dirt there is in the atmosphere, especially in the neighbourhood of towns and cities.

A sound plan is to use wire throughout for the aerial and all stays, and so on. A good seven-strand silicon-bronze bare wire cannot be bettered.
The best form of out door aerial for a private house is the inverted $L$ type, as at Fig. 2. The down-lead is taken from the end of the aerial nearest the house, to the set. The T type of aerial, Fig. 2, where the down-lead is attached to the


Fig. 2.-Two very efficient aerials and lead-in.
centre of the aerial proper, is commonly used on ships, but it can rarely be adapted with the best results to amateur use.
Do not take any part of your aerial near lead roofs or guttering if it can be avoided, and keep the actual aerial as far from trees and buildings as circumstances permit. It should be at least twenty feet high and about sixty or seventy feet long, if possible. See that the lead-in from the aerial is well insulated where it enters the house.

Leading-in insulators are quite cheap. The manner in which they are used is shown at Eig. 2.

Always remember that the efficiency of your aerial depends directly upon the efficiency of your "earth," so see that the latter is functioning properly.

## King of the <br> Islands!

(Continued from pagc 22.)

"BToo Late! OUT ship!"' For a moment King of the Islands had stood rooted to the deck as he realised what the Hiva-Oa men had done-that Bully Samson had been flung headlong into the sea by the brown-skinned seamen whom he had bullied and manhandled. They had waited only until their skipper's back was turned, and then the bully of the Shark had gone over the rail, and it was the splash of his luge body in the Pacific that Ken and Kit had heard in the stateroom below.
The next moment King of the Islands was roaring orders.
The crew were slower than usual to obey. But the look on Ken's facc enforced obedience. His look was almost terrible, and it put fear into the hearts of Lompo and his comrades. Koko looked sullen and dissatisfied. He had seen, with ruthless approval, the fate of Bully Samson. But he obeyed the boy trader's commanding voice, as did the Hiva-Oa men. And the great boom swung over, and the ketch swept round into the wind.
It was the boast of the Dawn's boy skipper that the ketch could lie as close to the wind as any craft in the Pacific, or closer; indeed, the graceful little craft could almost look the wind in the cye. But even the Dawn, good ship as she was and handled by a master's hand, could not sail in the teeth of the trade wind. As close-hauled as was practicable, she circled back to the spot-as near as it could be judged-where Bully Samson had been tossed into the ocean.

Ken's face was black with anger wrinkled with anxiety. Bully Samson fleserved his fate, and more; and had the situation been reversed, he would have flung Ken to the sharks without a second's scruple. But Ken's ways were not the freebooter's ways. He was as keen to save the ruffian from the sea and the sharks as if Bully Samson had been a shipmate instead of a deadly enemy.
"Can you hear anything, Kit?"
Hudson shook his head.
He was listening intently. But from the shadowy sea came no cry for help, no call from a swimmer.
"Not a sound!"
Ken set his lips.
"We must save him if we can. But he must lave been left a mile astern, or nearly. He hadn't a dog's, chance-wounded as he was, too!" King of the Islands gave his crew a grim look. "Even if he floats yet, we may miss him by a dozen cables' length-unless he can shout for help. My Sam! Hark! "
There was a sound from the starlit waters-an indefinable sound-but it gave King of the Islands hope.
He shouted to the crew, prompt to -bedience now. Never had they seen their boy skipper with that look on his face before. The vengeful Polynesians' who had tossed Bully Samsou
over the rail were eager to save him now to avert the wrath of King of the Islands.
The ketch hove to on the calm waters, and the whaleboat dropped swiftly from the davits. Lompo and Lufu took the oars, while King of the Islands- stood in the boat, seanning the sea and shouting:
"Aloy! Samson, ahoy!"
But no answer came.
In the perplexing dimness of the starlit waters something was visible -something that moved-but assuredly it was not a swimmer. It was possible that some fragment of wreckage was floating on the sea, and that the sinking man lad clung to it. Ken stared at the dim shadow and steered the whaleboat for it, shouting to the dusky oarsmen.
"Washy-washy plenty quick. Put your beef into it! By gum, me kuock seven bells outer you G'pose you no watshy-washy debblish quick.
The whaleboat fairly flew over the water.
"A canoe!" shouted Ken, in astonishment.

Clearly now the plash of rapid paddles came to his cars across the sea.
It was a native canoc that was gliding under the stars.

Ahoy!" roared King ., of the Islands. "Ahoy, the canoe

No answer came back.
But the paddles flashed wore swiftly than before, and the canoc raced away from the whaleboat.
The plash of the paddles died into the silence of the sea. Lompo and Lufu, straining at the oars, could not equal the speed of half a dozen paddlers.
Ken gave it up.
"Washy-washy along ketch:", he snapped.

And the whaleboat pulled back to the Dawn.
Ken had had only a shadowy glimpse of the canoe. Whether the paddlers had picked up Bully Samson or not he could not guess, but it seemed unlikely enough.
But there was nothing more to be done. If Bully Samson was still in the sea he had gone-down by this time.
The whaleboat bumped against the hull of the Dawn.
Ken swung himself to the deck.
"No luck?" asked Hudson.
" No."
"Then-he's gone."
"I'm not sure. There was a canoe -I saw it for a moment. It's barely possible he may have been picked up -just a chance, at least."
"A canoe-so far out at sea!"
"Nothing unusual in that--the natives make trips of hundrers of miles in their canoes in calw weather. That canoe was probably making Fusai from Lalinge or Faloo-some native trader. They fled from my bnat, and did not answer my hail. Thev may have picked up Samson.
"There's a ehance, anylow."
"We can do nothing more, at any rate."
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## PCCKET MICROSCOPES




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

CAN ànyone dodge ill-luck? That is a question which one of my readers, who has failed in a succession of exams, is very anxious for me to answer. He says he has been trying to dodge troubles all his life, but ill-luck creeps at his heels like a malicious dog!

I have told him of a cure that will chase away even the most persistent ill-luck. I've tried it, and if he tries it he will live to thank me!
The inventor of the cure, so far as I am aware, was a young fellow who had been so blessed with the gift of cheerfulness that he could smile at practically anything. Not one of those giggling, guffiawing chaps, but a youngster whose cheery and optimistic smile simply would not cồme off.

Nothing that his father did succeeded. His brothers were all in the same doleful cart, and consequently his mother lived, in a depressing atmosphere of failure and disappointment.

My young fellow was of different metal. He positively refused to be subdued by the crushing load which lung over his home. The first thing he did after recovering from a long illness was to start again his campaign of cheerfulness.
That so struck the family in general that the smiling habit gradually spread. Father was the first to go under, then mother, then the brothers. One day they found themselves all laughing in unison-the very first time in the history of the family!

Another bit of ill-luck had come along to trouble them. But my cheery young fellow had started them all off laughing at this strange determination of Fate to pester them. Gradually the laughter spread. They had found the cure!

Cheerfulness won't cure everything, of course. But give it a chance. Smile a while and things
brighten automatically. You will find you simply cannot remain unlucky for long.
Look checrful, and you will be checrful. Think Success-and Success will come to you. Providing, of course, that you continue to work haid for it !

I am afraid I have been a bit longwinded with that reply. I will try to make amends !
"Quiz" (Whitgift) would like me to tell him-which is the oldest public school. Winchester College used to claim this distinction from the existence of a charter dated 1382, but St. Peter's School, York, existed as the "Royal School of St. Pcter" in the sixth century. Then there is King's School, Canterbury, which was founded by St. Augustine, who died in 604 . I think that King's School must be the oldest of all.

I am informed by C. Hartley (Braintree) that he has caught. a bream weighing two and a quarter pounds, using only a bent pin and a worm and four old " $E$ " fiddlestrings. Inspired by this success, he wants to know the weight of the biggest whale ever caught! This was a blue rorqual whale, and it
weighed 75 tons. I doubt if they weighed 75 tons. $\frac{I}{\text { d }}$ doubt if they
bite at worms, $\mathbf{C}$. bite at worms, C. H.
"Is there a motor-cycle with more than four cylinders?" asks P. I. (Leamington). There is. It has six cylinders, and was built as an experiment by an enthusiast in the North of England. It looks extremely fat, needs expert handling, and has not yet been put on the market. Henderson, Cleveland, and Ace are all four-cylinder machines, P. L., and are all American. Thic Belgian F.N. four-cylinder is no longer being produced.

THE EDITOR.
 NEXT WEEK'S SPECIAL FEATURES.

HOW I STARTED MOTOR RACING! By CAPTAIN MALCOLM CAMPBELL.

## THE BREAKDOWN GANG:

When a "smash, occurs on the railway, out conies the Breakdown Train and its Skilled Gang.

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Our Wireless Corner, conducted by Norman Edwards, M.I.R.E., Editor of "spopular Wireless," etc.

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## A LEAN.TO BIKE SHED!



THE housing of the bike is generally a bit of a problem for the cyclist to solve. If you haven't a shed in the garden, then the bike has to be shuffledyinto a corner of the hall in the house, or some other inconvenient spot. Neither of these ways of housing the machine is satisfactory, so the best thing to do is to build a shed.

There are sheds and sheds; some are costly in production, and others inexpensive, small, but extremely serviceable. It is with the latter kind that we deal. The diagram below shows a small lean-to bike shed that can be made at low cost and put in any odd corner of the yard, garden, or sideway to the house.

As you see, this shed consists of a roof supported by two uprights in the front, and a canvas screen. It is built in the following way.

For the roof of the shed you will require two boards, each measuring 5 ft . by 1 ft . by $\frac{1}{2} \mathrm{in}$. These are fixed together by two battens to form the roof, 5 ft . by 2 ft . You will next require a length of wood, 5 ft . by 6 in., marked A in diagram. Four more pieces of wood are to be cut, measuring 2 ft .1 in . by 6 in . These form the sides, marked B. The two uprights that help to support the roof are cut from battens, 2 in. by 2 in., and are each 4 ft . long.


Now to assemble the shed. Mark a line on the wall against which the roof leans, 4 ft .6 in . from the ground. Along this line nail a 5 ft . batten of wood. Take the four side pieces, B , and nail them into position. You will notice that the ends of the sides have to be sawn at an anglethe angle of the sloping roof-which is ascertained when the boards are fixed into position.
The front board A is now nailed on to the roof. For the next job you will require the aid of a chum. Together lift the roof up, place one side on the batten on tho wall, then place the two uprights under the other corners of the roof, and drive nails through the roof into the uprights.
Whilst one of you holds the roof in position, the other must get four small iron brackets, marked C, and screw them into the wall and the sides of the roof, as shown. A nail or two driven into the roof along the side that is resting against the wall will complete the fixture.

You will notice in the sketch that a roll of canvas is fastened in front of the shed. This, when pulled down, acts as an effective wall to the shed. This is made in the following way. Get a piece of canvas 4 ft .6 in . by 4 ft ., and nail a length of broom-handle along the widest edge. Roll the canvas round the pole as you would a blind. To fasten it in position you will want two pieces of tin, 5 in. by 1 in., which are bent round each end of the broom-handle and then nailed to the front of the shed. These form brackets in which the pole rests.


## NEW GOODS FROM OLD INNER TUBES.

AGOOD many of you have, no doubt, an old inner tube. It seems a pity to throw it away and, providing the rubber is not perished, there are a number of money-saving uses to which it can be put.

The first thing that you can make with it is a handle grip for your cricket-bat. Just cut the required length and roll it on. Another is a roller for photography or hectograph. Obtain a length of broomstick, say six inches or length suitable, and a corresponding length of inner tubing. Thoroughly clean the side you will bo using as the outer and slip on to the stick. Then glue or gum in place, and there's your roller.

A handle for this can be easily knocked up and attached to the roller by nails, these forming the axis on which it revolves. You will find this of great use to you in performing such tasks as glos: sing prints, rolling duplicates, etc., etc.

And again, in many of your hobbies there is often a need for rubber bands. To save expense, cut strips off the inner tube, say one eighth of an inch wide, and there's your rubber band. If you want a stouter article, just increase the width.

## A BALANCING EGG.

YOU can make an ordinary hen's $\mathrm{eg} g$ do all sorts of queer balancing tricks if you treat it in this way.
Make a hole at each end of the eggo with a large needle, and carefully blow out the contents. Then block up one of the holes with a little candle-grease or white sealing-wax. Through the other hole, pour in a little silver sand to a depth of about a quarter of an inch. You can see how far the sand goes by holding the egg in front of a strong light.
Now fill up the other hole in the shell, and the egg is ready to go through its "paces." Stand it in any fantastic position that you can think of-on the handle of a tea-pot, on the edge of a cupanywhere, and it will balance in that position!


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