

Junior Leader

Vol. 18, No. 3

Ottawa, Ont.

December, 1960



The Junior Leader
The Magazine for Canadian
Boys and Young Men

Chief Scout for Canada

HIS EXCELLENCY MAJOR-GENERAL

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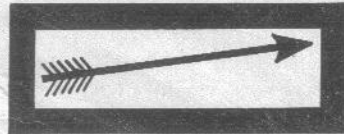
OTTAWA

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THE NEW GOLDEN ARROW TRAINING



Golden Arrow Patrol Leader Training is replacing the Bronze and Silver Arrowhead Courses as the Association's official method of Patrol Leader training. Here are answers to some questions which may be asked.

What form does the training take?

The training fits into the normal activities of the Troop and is definitely not a formal course. It includes the training which a Scoutmaster is normally expected to give his Patrol Leaders.

Where can the booklet on Golden Arrow Training be obtained?

"The Golden Arrow Training Handbook" may be purchased from your local Stores Department Distributor or Scout Office for 40c.

Who is eligible for the training?

Troop Leaders, Patrol Leaders and Patrol Seconds.

What recognition is given for successful completion of the training?

An embroidered cloth badge consisting of a golden arrow on a green background. It is worn on the left shirt pocket flap of the Scout uniform.

What are the requirements?

Patrol Second must, as outlined in the Booklet:—

- (1) Have received instruction from his Scoutmaster in all essential aspects of Patrol leadership.
- (2) Have satisfactorily participated in a Patrol Leaders' training hike.
- (3) Have satisfactorily participated in a Patrol Leaders' training camp.
- (4) Have knowledge and ability above the general standard of his Patrol in any three Scouting skills, and demonstrate his ability to instruct in these subjects.

- (5) Satisfy his Scoutmaster that Patrol meetings of not less than thirty minutes each are being held regularly, to the benefit of the Patrol.
- (6) Satisfy his Scoutmaster that he has led his Patrol in camp for at least a period of twenty-four hours to the benefit of the Patrol.
- (7) Be recommended for the Golden Arrow Patrol Leader Badge by the Court of Honour and his Scoutmaster.

Will Junior Leaders be able to wear the Bronze or Silver Arrowhead?

Any Junior Leader who has qualified for either Arrowhead may continue to wear it.

Does a Junior Leader who has been awarded the Silver Arrowhead automatically qualify for the Golden Arrow?

The requirements for the Golden Arrow Badge are quite different from those for the Silver Arrowhead and therefore the answer is "no".

Who conducts the training?

The Scoutmaster, Assistant Scoutmasters and others may be enlisted to assist when necessary, but the responsibility and the lead in the training must remain with the Scoutmaster.

How long does the training take?

It is possible for a Junior Leader to fulfil the requirements for the Golden Arrow Badge within six months of being appointed.

Free Jamboree Stamp

To introduce our complete line of Scout Stamp Approvals, we offer absolutely free one copy of the stamp issued by France in 1947 to commemorate the 6th World Jamboree. Send 10c in coin to cover mailing costs.

Topical Stamps—Box 732—London, Canada

Congratulations on Your Promotion

Queen's Scout

Garry Wetherup, 1st Glen-Ray, Toronto; Jim Reid, Pat Lobey, 13th Peterborough

Patrol Leader

John Stirling, 2nd Willowdale; Keith Hendren, Wayne Patterson, 13th Peterborough; Stuart, Robbie Lough, 99th Pioneer, Winnipeg; Paul Dillman, Ron La Plante, Davis Gibbons, Don Whyte, Kerry McCauley, Tom Hardie, Wayne Tomlinson, Herb Pohrennam, Kevin Gow, Garth Wilson, Neil Pendleton, 1st Newmarket.

Religion and Life Award

Ken Pomeroy, Jim Reid, Harold Hendren, Bill Pomeroy, Keith Hendren, Paul Ferguson, 13th Peterborough.

Grade "B" Cord

Pat Tobey, 13th Peterborough; Nick Duguid, 1st Newmarket; Garry Wetherup, 1st Glen-Ray, Toronto.

Grade "A" Cord

Bob Sproule, Davis Gibbons, Barry Lloyd, 1st Newmarket.

Troop Leader

Jim Gilroy, Bob Sproule, Bob Stewart, 1st Newmarket.

Bushman's Thong

Davis Gibbons, Kirk Du Guid, Bob Sproule, 1st Newmarket.

FAREWELL AND HAIL

BY B. H. MORTLOCK

(Executive Commissioner for Relationships)

One of the things that concerned me was the fact that the National Headquarters had no direct contact with Scouts, other than through the books we published like *Starting to Scout* and *The First Class Scouts' Book*—the predecessors to *Tenderfoot to King's Scout* and *Tenderfoot to Queen's Scout*. I felt we should have a means of communicating to Scouts across the country on a regular basis.

My first thoughts were in the direction of a boys' magazine—just the sort of thing being considered now, but for a number of reasons this was not feasible at the time. The war was on and we had neither the staff or the money. Then I was reminded that a previous attempt to produce a national boys' magazine right after the first World War had been a financial disaster.

So the idea of a magazine for Troop and Patrol Leaders was considered—but again we had no money. I was Editor of *The Scout Leader* at the time and so decided to cut down on the number of pages and the number of engravings used, to save enough money to produce the first issue of *The Junior Leader*. In this manner we produced the first issue, presented it to the Canadian General Council and got the authorization—and the money—to carry on.

We had a contest for a name and there were a lot of suggestions such as *The Patrol Leader*, *The Canadian Scout* and so on, but most boys who wrote in suggested the temporary name *The Junior Leader*—so *The Junior Leader* it was.

I selected four Ottawa King's Scouts to be my advisory editors. They were a fine bunch of lads who used to meet with me monthly to discuss the contents of the magazine.

We started a column called "Notes from my Little Black Book" by Racasac. We got this Scouty sounding name in this manner. We took the first letters of the surname of the four junior editors and put them together with "ands" in between and we had the name. This

is how it was—"Rankin And Campbell And Smellie And Cameron". Now take all the capitals and you have Racasac.

In 1950 when George Beers joined the Publications Staff I handed over the editorship to him, and he in turn handed it over to Uncle Syd Young when he came to Canadian Headquarters from Toronto in 1957.

And now *The Junior Leader*, after 17 years of service to Troop and Patrol Leaders in Canada will bow out to make possible the introduction of a much bigger and better magazine to serve not only the boys in the Movement, but thousands of boys outside the Movement also. Naturally one is sorry to see his own brainchild disappear, but when it disappears in such a good cause, we can most sincerely wish its successor every possible success. In this wish, I am sure every reader of *The Junior Leader* will join.

LATEST NEWS

The Publications Department is forging ahead clearing the decks for the prototype. Boy Magazine Committees are being formed across the country and they will be keeping all informed on the progress of our venture. If you or your Troop are asked for information or opinions we know you'll co-operate.

Subscribers to *The Junior Leader* have also been advised that December, 1960 is our last issue and they are to do one of two things:—

- (1) Leave their subscription amount with us and thereby remain on our mailing list for the prototype and survey or—
- (2) Notify us, in writing, that they wish their subscription amount returned.

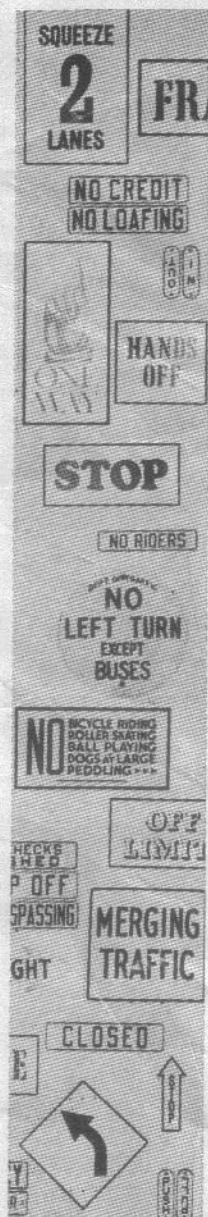
Let us know of any of your ideas for the Boy Magazine. We want to make it the kind of magazine you will enjoy. Write to The Boy Scouts Association, Boy Magazine, Box 3520, Postal Station "C", Ottawa 3, Ont.

Uncle Syd has asked me to write a few words in this last issue of *The Junior Leader*. He has done this in recognition of the fact that it was under my direction that *The Junior Leader* came into being in September, 1943.

This is how it came about. Just a year earlier, in 1942, I had joined the staff at Canadian Headquarters (Dominion Headquarters it was then called) as Associate Editor of Publications.

SIGNS FOR PATROL LEADERS

BY UNCLE SYD



was a mighty man amongst men but the strain got him in the end and we will now take off our hats in sad respect to his memory, for he died young.

Common or garden specimens of Scoutmasters cannot do without Patrol Leaders. They are needed. The thought of the good ones comforts Scouters in the silence of the night for they know that without their help the Troop would slowly sink to the ground and like maple syrup would slide out under the door.

Next Act

I will now adapt a quotation. "All Patrol Leaders are equal but some are more equal than others." Is it true that immediately the two stripes are fastened on our heroes chest he becomes the perfect specimen?

"No," said he, turning a few portraits to the wall.

Now let's get serious (???) . You see, I feel that Patrol Leaders are so important that we can't risk a single one of them feeling sad and sorrowful. Some of them do, and it's probably because they think that their Patrols aren't coming on as fast as they should.

The type that don't worry are those that have great Patrols and those who couldn't care less.

The good ones - we don't have to worry about. So let's see what we can do for the others. Sit back and pay attention.

Frustrated

I am afraid that it is not possible to supply Patrol Leaders with a course similar to my "You, too, can play the triangle in two weeks." There is no easy way to become a good Patrol Leader. It is quite easy to be a bad one, though.

Now let's take a look at Ernest Earnest. He has just been made a Patrol Leader by a wise and discerning Scouter and he feels the responsibility of it all weighing heavily on his young shoulders. Now that's a very good start indeed; the fact that he knows that it is a responsibility. He knows it and accepts it.

This is not always the case, said he, shaking a sorrowful grey hair. Some

chaps just feel conceited and push their chests out to have their photos taken, then they realize that they have got into a position that puts them apart from their fellow men. For they are apart in a way. No longer is a Patrol Leader tenderly concerned with their progress. Instead they find that they themselves have to be tenderly concerned with the progress of others. The Scouter has paid them the compliment and included them among the trainers. Weak spirits try to slink back into the 'as you were' state.

I'm still old fashioned enough to have great regard for Scout Law No. 7, especially where Patrol Leaders are concerned. A fellow suddenly finds out that he has to give orders! Further, he has to get his orders obeyed. All very nerve wracking.

Plans, Facts, System, Preparation

These words should be tattooed on each Patrol Leaders chest—in bright colours. To be a good, efficient Patrol Leader you have to plan with your Second the progress of your Patrol. You have to know facts concerning each individual in your Patrol and where he stands in his progress of Scout requirements at any given time. To do this you must have a system and the Patrol record book and perhaps a Patrol Progress Chart are the best ways to do this. As Scouts in your Patrol pass the various requirements make sure that all the details are noted and posted on the Chart.

BE PREPARED—Seems as though I've heard that somewhere before. Yes, Be Prepared at Patrol meetings and Troop meetings for the training of your gang. Have the equipment, books and your own knowledge ready for any given project. Make sure that you have taken the Bronze Arrowhead Course or, if you are a brand new Patrol Leader, get in on the new Golden Arrow Training Course for Patrol Leaders. This is a big help in becoming a First Class Patrol Leader.

Au Revoir

Yes, it's not goodbye but just—I'll see you again soon fellows. I've had a lot of fun writing this page each month for the last three years and I hope that through the ramblings and ravings you have read between the lines and have gained some knowledge of the fine art of leading a Patrol.

Look for the prototype of our proposed Boy Magazine and in the meantime write to me and let me know what you would like to see in the magazine. It is designed especially for you and we would like your ideas on exactly what you would like to see in this magazine.

As this is probably the last time you will hear from Uncle Syd for a little while at least (loud cheers) I thought I had better leave you with some pearls of wisdom. Yes, fellows, this is my swan song. I am now going to devote all my talents to the production of a prototype of the brand new Boy Magazine. It will be bigger and better than ever and I am sure you will all be looking forward to receiving a copy of the prototype and eventually being a subscriber to our Boy Magazine.

As my last epistle to you I am going to speak about the boss. No, not the "Home, James and don't spare the horses" type. But the figure of you, a Patrol Leader. Stop blushing.

There was once a Troop who did without Patrol Leaders. The Scouter

WHY DOES AN ANIMAL HIBERNATE?

Animals hibernate because winter conditions cut off their normal supply of food. This long "sleep" is nature's way of protecting it's own.

Hibernation "winter sleep" from the latin word for winter "Hibernus".

When winter's icy winds and deep snows are just around the corner an animal going to hibernate looks for an

out-of-the-way place to hole up in. He grows fatter, moves more slowly, until he finally falls into a stupour.



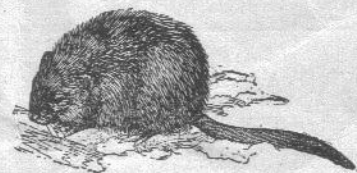
Some animals like the Badger, sleep all winter.



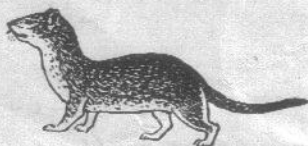
Others like Chipmunks and Squirrels wake up on warm pleasant days, eat some of their stored food and go back to sleep.



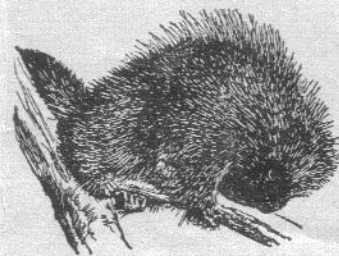
When An animal in hibernation breathes very slowly, it's heart scarcely beats and its body temperature becomes very low.



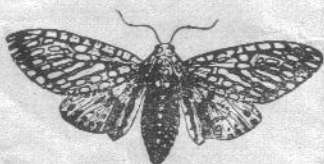
Almost all animals that hibernate are vegetable eaters and almost all burrowing animals hibernate.



Bears, Skunks, Squirrels, Gophers, Bats, Badgers hibernate to some degree.

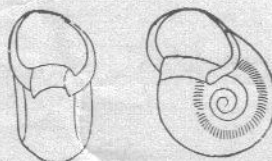


Toads, frogs and some reptiles hibernate as do earthworms. Flies, Queen Bees and some Butterflies.



The Emperor

Certain Snails become inactive during hot dry periods. This is called "Estivation" and is similar to hibernation.



If you should come across a hibernating animal on a winter hike don't wake it up roughly or suddenly—it could be fatal to it.



WINTER ...IN SNOW OR

CLOTHING IN COLD WEATHER, WEAR LOOSE FITTING CLOTHES IN LAYERS OR "SHELLS" KEEP IT DRY!



START WITH "LONG-JOHNS" NOT TOO TIGHT



NEXT, A FLANNEL SHIRT, WOOL TROUSERS



NEXT, A WOOL TURTLE NECK SWEATER



WEAR WOOL GLOVES WITH WATER REPELLENT MITTS OVER THEM.



ADD A LIGHT JACKET, WOOL CAP, HEAVY BOOTS



FOR VERY SEVERE COLD WEATHER, OR WET, COLD RAIN, WEAR WATER-REPELLENT JACKET OR COAT OVER ALL YOUR CLOTHES; WEAR WATER-PROOF SHELLS OVER GLOVES OR GALOSHES



KEEP YOUR FEET DRY.



WEAR HEAVY BOOTS OR GALOSHES OVER LOW SHOES

2



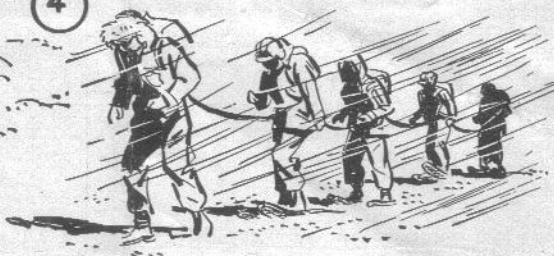
ON THE TRAIL...

3



A SNOW BANK IS AN EXCELLENT WINDBREAK. WHEN IN DANGER OF FREEZING, DIG A HOLE IN THE SNOW, LARGE ENOUGH SO THERE'S AIR SPACE AROUND YOU

4

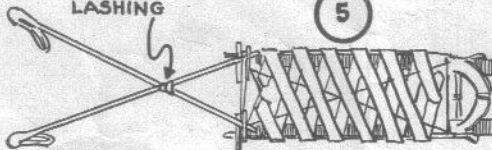


IF YOUR PATROL GETS CAUGHT IN A BLINDING SNOW-STORM, TIE YOURSELVES TOGETHER, DECIDE THE BEST COURSE TO FOLLOW, HEAD THAT WAY. DON'T GET EXCITED, TAKE IT EASY AND YOU'LL SOON REACH CAMP.



DIAGONAL LASHING

5



MAKING CAMP... CHOOSE CAMPSITE LONG BEFORE DARK --- THE SIDE OF A HILL, IN A CLUMP OF EVERGREENS... AN UNEXPOSED SPOT NEVER PITCH CAMP UNDER DEAD TREES. TRAMPLE DOWN A WIDE AREA OF SNOW.

6



7



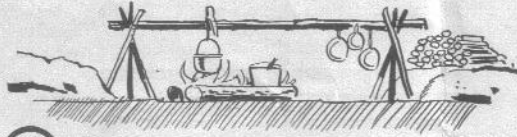
DON'T GET OVERHEATED YOU CAN FREEZE TO DEATH AFTER TOO MUCH SWEAT CONDUCTS HEAT FROM YOUR BODY.



COOKING

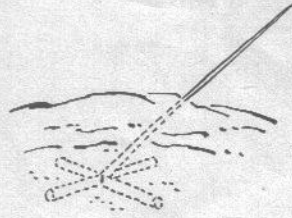
USE A HUNTER'S FIRE. DIG SNOW AWAY TO BAREGROUND IF POSSIBLE. PLACE A "FLOOR" OF LOGS AND BUILD FIRE ON IT. PUT LUG POLE 3 FT. OVER FIRE, SUPPORTED BY TRIPODS

CAMPING FOUL WEATHER



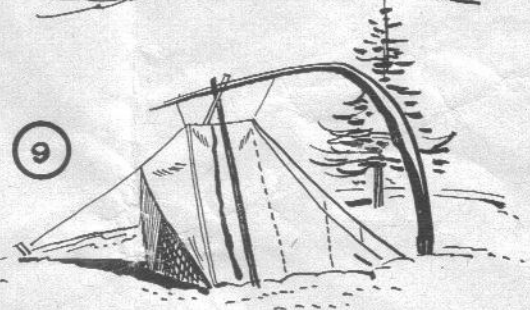
8

KEEP A POT OF WATER ON FIRE AT ALL TIMES. HOT STEWS, SOUPS, HOT CEREAL, TEA, HOT LEMONADE, & HOT CHOCOLATE ARE BEST FOR WINTER CAMPING CHOW. SERVE FOODS THAT ARE HIGH IN ENERGY & FATS. CARRY EMERGENCY CHOCOLATE RATIONS WITH YOU FOR ENERGY BUILDING

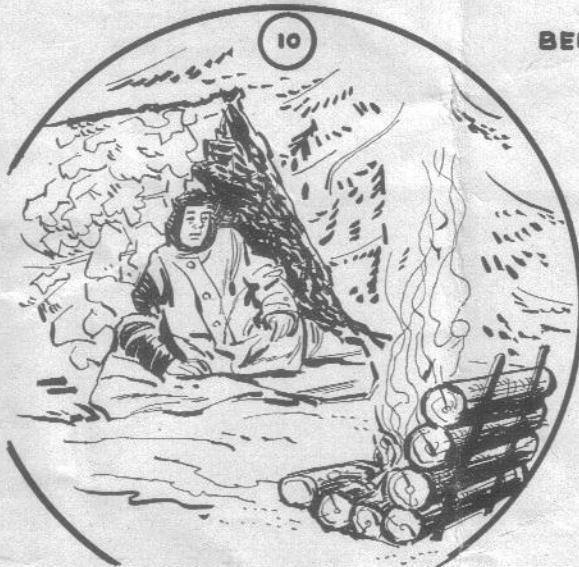


BURY CROSS STICKS IN SNOW TO HOLD TENT ROPES IF YOU CAN'T DRIVE IN PEGS.

9



WHERE THERE'S A POSSIBILITY OF RAINS, PITCH TENT ON A KNOLL OR GENTLE SLOPE



10

BEDDIN' DOWN

IF LOST, MAKE SHELTER OF EVERGREEN BRANCHES. GATHER LOTS OF WOOD, BUILD A FIRE, KEEP IT GOING. RELAX AND WAIT-- YOU'LL SOON BE FOUND IF YOU DON'T WANDER AROUND



A SWEATSHIRT WITH A BUILT-IN HOOD AND A PAIR OF TRACK PANTS MAKE A FINE SLEEPING OUTFIT. UNDRESS IN SLEEPING BAG... FIRST FLUFF IT UP WELL... IT'S THE AIR, NOT THE STUFFING, THAT KEEPS YOU WARM.

11



HAVE MORE UNDERNEATH THAN ABOVE-- MORE LAYERS OF BLANKETS OR SLEEPING-BAG, AIR MATTRESS, BROWSE-FILLED TICK ON TOP OF GROUND CLOTH

THERE'S A LOT OF FUN IN WINTER AND RAINY-DAY CAMPING



SKIING...



FISHIN' THROUGH THE ICE...



SKATING...



OR JUST SINGIN' IN THE RAIN!

FROM THIS..

Canada's Fascinating History in the Air

Have you ever wondered just how airplanes fly? How did airplanes develop from small and simple things to the huge and complex turbo-jets?

Do you realize that we are in the midst of a great change-over in technique of flying? At one time, all airplanes flew by using air-screws, or propellers.

Today, we know that faster and better flight is available from jets, and ram-jets, and rocket-motors. This evolution is changing flying, and more is yet to come. It is quite possible that the airplanes of today will become as extinct as the sailing ships of yesterday.

The evolution of the airplane has been remarkably rapid. The first flight of powered aircraft was made as recently as December 17, in the year 1903 . . . less than 60 years ago! The world's first great aircraft was the one invented, built and flown by Orville and Wilbur Wright. They started out by making huge kites and gliders, and in them they often flew over a mile. In fact, they made several world glider records. But they were interested in flying without the aid of wind. They dreamed of powered airplanes.

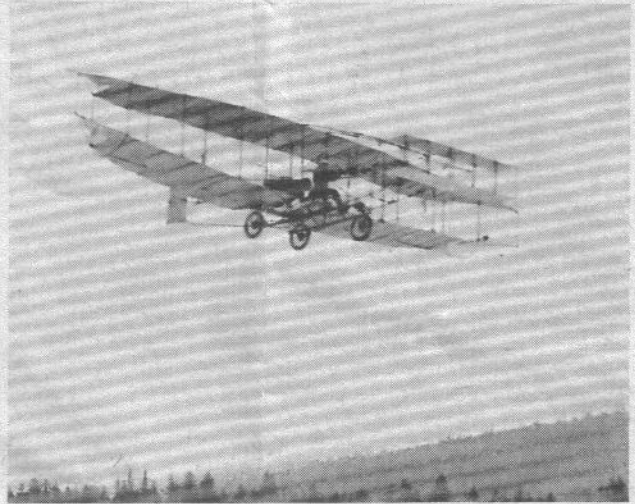
So they kept changing their gliders until they built one that could carry an engine. But no engine was available, so Orville and Wilbur built their own engine. Then they needed a propeller. But no propeller was available, so they built their own propeller. Their airplane, which they called "The Flyer," was tubby, like a bird. And on December 17, 1903, it carried Orville and Wilbur, one at a time, into the air.

On that December day those two amazing brothers defied gravity five

times. They never went faster than ten miles per hour, they never went higher than fifteen feet, they flew only a total of 500 yards, they were in the air only a total of one minute forty-two and a half seconds . . . but they had achieved the miracle of the 20th Century. They had made an engine pull them through the air. Another great aircraft was the Vickers Vimy, and it was the plane that took off from Canadian soil and first crossed the Atlantic non-stop, one of many that tried.

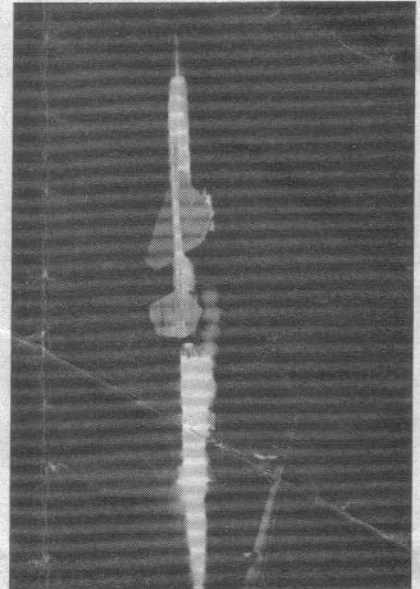
A British newspaper had offered about \$50,000 to the first man to fly non-stop across the Atlantic. This was in the year 1919. The shortest distance was from Newfoundland to Ireland, and four airplanes arrived in Newfoundland to make the try. One plane flew off to the mainland of Canada; one plane smashed up trying to take off; one plane got 1,400 miles across the Atlantic and then had to quit because of overheated engines; but the fourth plane reached Ireland.

Thus the names of Alcock and Brown are written imperishably into aviation history. But what a perilous flight they had. Once they flew into a thunderstorm, lost control, and roared down in a spiral dive. Alcock recovered control only 60 feet above the water! Another time they ran into a snowstorm, and six times Brown had to climb out along the wings to clear the snow out of the air intakes of the engines. And then, the morning of June 15, 1919, the wheels touched the green grass of an Irish bog, and the lumbering Vickers Vimy nearly turned turtle! But the non-stop Atlantic crossing had been made—in 15 hours and 57 minutes. Today the same Atlantic crossing has been done in less than three hours.



TO THIS

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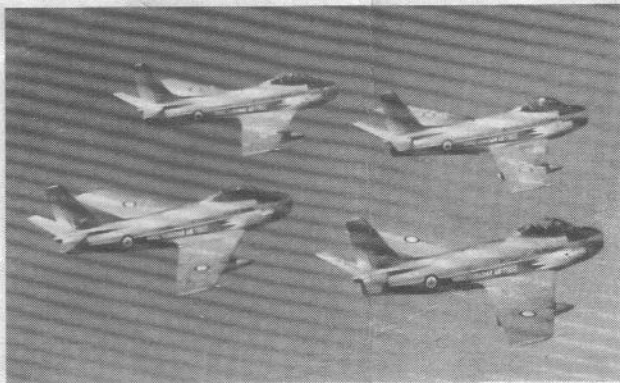
IN 50 SHORT YEARS

Top: The "Silver Dart" the first powered aircraft in Canada.

Bottom: The B-57 Canberra supersonic jet.

The problems of this new speed are much different from the problems of the old. Air may not seem like solid matter, but it can build up remarkable resistance. While engine designers were building more powerful engines, aircraft designers were improving the shape of aircraft so they would slide through the air more easily. This was called streamlining. But as speeds from more powerful engines increased, so did the problems; and finally the discovery was made that any speed as fast or faster than the speed of sound had special problems. This speed of sound is called sonic speed, and at sonic speed the resistance of air builds up rapidly and becomes dangerous. The shock waves at sonic speed can buffet an airplane so much it may become uncontrollable and may even break up.

New kinds of wings were developed—swept back, thicker, tapered. And thus the speed of sound was passed. As the air-screw gave way to the jet, discoveries were made about the best height for flying. And test pilots soon proved that far out in the sky, where the air is thin, permits best jet flight.



R.C.A.F.
Golden Hawks.
This precision
aerobatic team
of Sabre jets
may be
coming to the
Jamboree
next year.

In other words, it takes nearly one hundred different kinds of people to build an airplane and keep it in the sky. Some of these modern airliners cost as much as \$5,000,000 to build. What a far cry from the \$1,000 Orville and Wilbur Wright spent on their little "Flyer," the airplane that started all this progress.

If you do choose aviation as a career, you will take part in adventures just as exciting as the aviation adventures of the past 60 years. Soon we will have airplanes that can take off and land vertically, and that also can fly level at supersonic speeds. Rocket-powered aircraft that will reach an altitude of 100 miles and fly faster than 3,500 miles per hour are already in the experimental stages. But aviation scientists have uncovered a strange problem—the outside metal of such an aircraft gets too hot during flight; how will it be kept cool. There is no point in travelling from New York to Paris in half an hour if you are roasted alive in the process!

Today, the mighty airliner is filled with sensitive robot machines which guide it along an invisible, ever-chang-

ing flight path. The role of the pilot is vital only for take-off and landing. The great aircraft of the future will be even more robotized. Every operation may well become automatic, guided only by technicians who sit in control towers. When that time comes, passengers will be used to it!

Man's flight has passed beyond the realm of Nature's development of birds. We can now speed across the sky with soaring ease. Time, our enemy, is being conquered. There is no place for aviation to go, except forward . . . and that, of course, means space travel. A fabulous world of adventure is opening up, and you and your friends belong to that world. You will have problems to solve, dangers to overcome, and wonderful triumphs to enjoy!

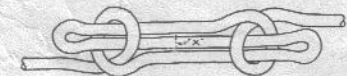
But such sky does not have enough oxygen for pilots and passengers, so pressurized cabins are vital.

Today, in spite of their vast size and huge weight modern jet airliners are wondrously reliable. Some of them have successfully undergone tests equal to flying ten hours per day for ninety years! And their speeds are quite marvellous. It is possible to breakfast in Hong Kong and have evening dinner in London, England! Jets are so quiet and smooth that flying in one of them is like being suspended in space. It is akin to the sweetness of the motionless vibrationless flight we sometimes have in our dreams.

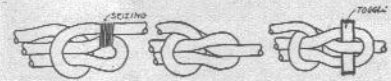
SHORTENING ROPES



"A"



"B"



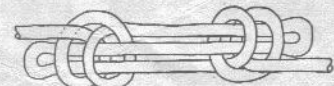
"C"

"D"

"E"

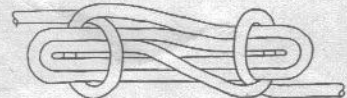
ORDINARY SHEEPSHANK

FIGURE NO 39



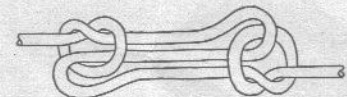
DOUBLE-HITCHED SHEEPSHANK

FIGURE NO 40



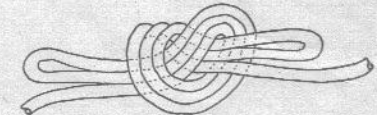
DOUBLE SHEEPSHANK

FIGURE NO 41



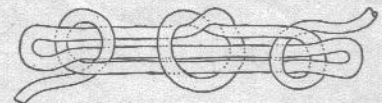
KNOTTED SHEEPSHANK

FIGURE NO 42



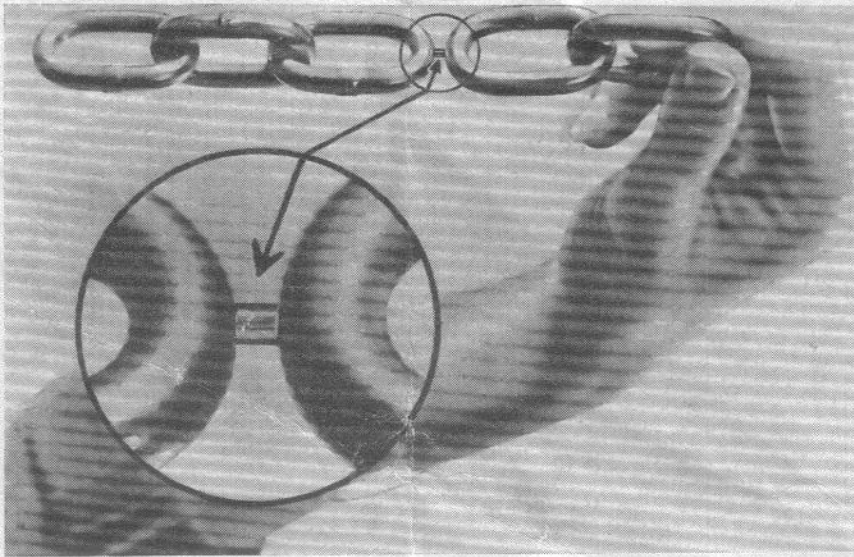
OVERHAND SHORTENING

FIGURE NO 43



OVERHAND SHEEPSHANK

FIGURE NO 44



This tiny permanent magnet (see arrows) weighs only fifty-six ten-thousandths (.0056) of an ounce but is so powerful that it is shown supporting a chain 215 times its own weight.

THE MARVELLOUS WORLD OF MINIATURIZATION

Recent discoveries in science have changed things in our industries. A marvellous, unbelievable world has opened up to us—the world of miniaturization. Giant machines that took up floors of factory space have been trimmed to one-tenth their former size. Complex computers are performing operations that once were done by a dozen similar mechanisms. The resulting economy has produced a new industrial revolution which will make better goods available to all at cheaper prices.

Exactly what does miniaturization mean? Well, as the word implies, it means cutting down in size. It means making things smaller and more efficient. It gives the producer a chance for new and unlimited research. To the consumer, it means a whole host of amazing products, products that will make his life easier and more enjoyable—at a lower cost.

Actually, the idea of miniaturization is very old. For many centuries collectors have been interested in items such as tiny musical instruments, paintings,

books and furniture. In the Arab countries, diminutive paintings the size of a postage stamp have existed for hundreds of years. A coin-sized pipe organ in Chicago's Museum of Science and Industry has attracted visitors from all over the world. When the keys and pedals are pressed they produce a true and beautiful sound. The Japanese have made telephone books less than two square inches in size, complete with numbers and addresses. And everyone knows about the Bible engravings made by monks during the middle ages—on the head of a pin!

Although those examples of miniaturization were very interesting, they meant little to the average person. It was only in the last decade or so that the practical application of this process was discovered. Research scientists at leading electronic laboratories came up with the transistor tube, an instrument that promised to revolutionize manufacturing processes. Since that time, hundreds of uses have been found for industrial miniaturization.

Transistor tubes no bigger than shoe-

lace tips have made the famous transistor radio possible. A radio that can be carried in a purse or in the pocket is now sold in all appliance stores. It is replacing the large, clumsy instruments that had to be lugged to beaches, ball parks and picnics. And as mass-assembly methods for its production are perfected still further, its price will probably be far lower than that of regular radios.

Electronic circuits that once took up a great deal of space are now being printed on blotter-thin panels. Electric motors the size of a man's thumb are operating complex relays of machinery. In weather prediction, a delicate gyroscope that looks like a bottle-stopper is making forecasts simpler and more accurate.

The computer, or "mechanical brain", is a direct result of miniaturization. It has been used to solve difficult engineering problems, predict election results and save countless hours of labor.

In the Russian sputnik and the American earth satellites, miniature instruments have recorded such data as amount of radiation, gravity forces, weather movements and temperature changes. Tiny transmitters and receivers have made it possible to keep track of the satellites as they spin around the earth, and to record all the information they gather by means of coded signals. Future plans include installing television transmitters in a satellite, an achievement vital to national security and defense.

This is only the beginning—scientists predict great new advances in the next few years. For example, it should soon be possible to manufacture battery-operated, portable TV sets no larger than a small handbag. Miniature hi-fi sets are also in the development stage. Just imagine being able to carry your own hi-fi set with you from room to room, or whenever you go on a trip.

For the driver, miniaturization will mean a new era of safety under all conditions. Radar sets installed on the dashboard will warn motorists of approaching cars, especially at night and in bad weather. Plans have been made for a network of traffic control centres, advising each driver, through two-way transistor radios, of bottlenecks and detours.

Thousands of other ideas are beginning to take shape under the impact of miniaturization. Some of them will not really be in production for a few years, but the realities of satellites, electric watches and tiny radios are already with us. Our only limits are our imaginations.

TIME

By D. KEARNS

Although the timepieces in my home, and probably yours, do not always agree with each other, it hasn't always been as easy to tell the time as it is now. Over a hundred years ago the time of day would depend on what town or village you happened to be in because in those days every district or large community had its own local "mean" time. Even the railroads had their own time systems and, if they were very long railroads and covered great distances, sometimes they had several systems. Where one system ran into another, it became very confusing.

Sir Sandford Fleming, who was by trade a surveyor and engineer, thought up the idea of the Standard Time system. His idea was to divide the earth into twenty-four standard "meridians" or imaginary divisions on the earth, fifteen degrees apart, starting from

Greenwich, England. Each meridian was to be the centre of a time zone and within each zone the time was to be uniform. The time would change by one hour in passing from one zone to the next. Sir Sandford moved to our country in 1845 where he made surveys on the Northern Railway and later was chief engineer for the Intercolonial Railway. He was an important figure in constructing the railroad from Quebec to the Maritimes and in 1871 began to survey the route of the Canadian Pacific so by that time he understood the confusion that people were up against when travelling from one place to another.

Thanks to Sir Sandford's idea, there are now only seven time zones in Canada. They are called Newfoundland, Atlantic, Eastern, Central, Mountain, Pacific and Yukon.

Later, someone went a little further with this idea and started confusing things again. The story goes that an English builder, whose name is alleged to have been William Willet, wanted

clocks put ahead eighty minutes in the summertime to give people more daylight hours for sports. There are other stories that conflict with this but the fact remains that a Daylight Savings Bill was finally passed, not for sports, but to keep people from using too much fuel for light as World War I had started by that time and the government of England was concerned about fuel more than play-time. So, they cut the "putting ahead" idea down to sixty minutes for convenience and to encourage people to go to bed and get up at about the same time as the sun. Daylight Saving Time is now mostly a matter of local choice.

Sir Sandford Fleming, who was born in Kirkcaldy, Scotland, lived the remainder of his life in Canada, retiring in 1880 and became a chancellor of Queen's University which post he held until his death in 1915. He had done a great deal for Canada and the rest of the world, having been very active in imperial affairs and founder of the Canadian Institute.

MODEL PIONEERING
TOP OF TOWER WITH PLATFORM LASHED IN PLACE

NECKERCHIEF SLIDES
Here are a few suggestions that require little or no whittling. A great many small objects can be used to make slides to remember school.

Poncho
USE GOOD LIGHTWEIGHT TOUGH RUBBER OR OILCLOTH OR PLASTIC SHOWER CURTAINS. TO STICK 2 PIECES OF PLASTIC TOGETHER SIMPLY RUN A HOT IRON OVER THEM. EXPERIMENT FIRST.

TIN CAN BLINKER

CAMP STOVE
ALL YOU NEED IS A 1 QT. FLAT TIN CAN, TIN SNIPS, 2 SMALL ROUND TIN CANS, SMALL PUNCH, A FEW SMALL BOLTS & SOME GALVANIZED SCREENING. USE CANNED HEAT OR TABS.

THE SCOUT IDEA BOOK
THE BOY SCOUT SERIES NO. 1

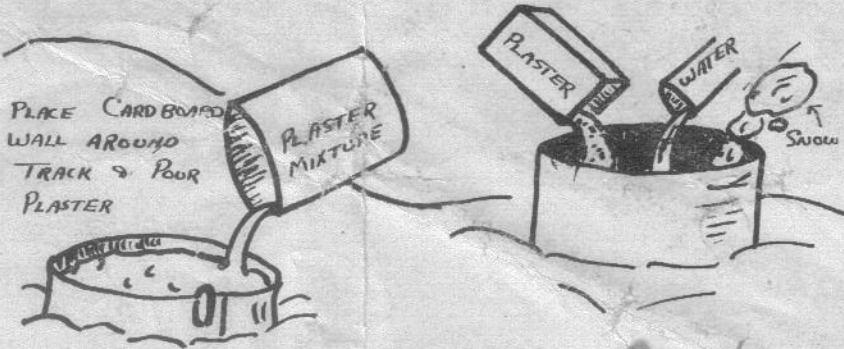
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- (1) Spray track with water from the atomizer, plastic squeeze bottle or small spray gun.
- (2) Place cardboard ring around the track.
- (3) Pour in plaster and allow to harden.
- (4) Remove the cast.

If you put snow in with your plaster mixture it lowers the temperature and makes it easier to work.

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