

The

Official Journal of
THE CANADIAN ARMoured CORPS

FEBRUARY 1944

TANK

CANADA



SCREWDRIVERS

From "CAM"

It is a cold bleak day. The boys are just in from driving class and are all in a heap around the pot-bellied stove getting thawed out and dreamin' of the good ol' summer time and their sweet pa-tootsies. Sarge O'Sweat is sorting over a set of hand tools on a nearby bench—"Today", he starts off, "after watching some of the screwy drivers on the M.T. course, I got reminded about screwdrivers—the screwdriver is a tool that's nearly as simple, but takes a lot more punishment, than screwy drivers.

"Before you ever become good driver mechanics, you'll have to learn to use your head, as well as your hands when using a screwdriver.

"So first off, get this into your heads, a screwdriver is intended for one purpose—to loosen or tighten screws, but young, green greaseballs use a screwdriver for practically every other purpose—including trying to drive me crazy!

"Will someone remove Tpr. Halftrack's elbow from the stove without waking him up—the smell of burning flesh always bothers me before lunch."

"Now", the sarge continues, "the standard screwdriver with its slim steel shank and wood or plastic handle is especially designed to withstand considerable twisting force for its size—but if used as a pry or pinch bar it will surely bend.

"Another thing—if you use the screwdriver for prying, the blade may break. The tip of the blade is hardened to keep it from wearing and the harder it is the easier it will break if much bending and strain is applied. If you must pry, use 'bars aligning and pinching' (or hire a detective). 'Bars aligning and pinching' are made for prying and are strong enough to resist bending.

CAC WOMEN'S AUXILIARY ANNUAL MEETING

The third annual meeting of the Women's Auxiliary to the Canadian Armoured Corps was held at the Active Service Club, Barrie, on January 10, with Mrs. J. C. Cave in the chair and a good attendance.

The Recording Secretary, Mrs. F. Landriau, gave an outline of the activities throughout the year. She said it had continued and extended its policy of working both for the benefit of Armoured Corps personnel and next-of-kin and for community and general wartime projects. Every month large consignments of cigarettes were sent to Armoured Corps men overseas, in England, on the war fronts and in hospitals. A donation received from the men of one of the units at Camp Borden had been used to send chocolate bars to non-smokers overseas. Two hundred Christmas parcels had been sent to Armoured Corps prisoners of war through the Canadian Red Cross Society. In April the Auxiliary sponsored a public meeting held for the benefit of next-of-kin of men in the armed forces. At this a representative of the Dept. of Pay and Allowances made clear the meaning of its regulations and explained many matters which some had found puzzling. This meeting was attended by 225 persons. The Auxiliary had also organized a most successful Tag Day for the Russian Relief Fund and had provided helpers for such voluntary work as Salvage, the Canteen, the distribution of

The scene—Driver Mechanic Class—D & M School.
The hour—Near chow time.
The cast—Sarge O'Sweat and his stooges.

"Don't let me ever catch you monkeys hammering on the end of a screwdriver. It has never been intended for use as a cold chisel, a punch or a drift.

"Another thing you've gotta remember is selecting the right size of a screwdriver so that thickness of the blade makes a good fit in the screw slot. This not only prevents the screw slot from becoming burred and the blade tip from being damaged, but cuts down the force required to keep the screwdriver in the slot.

"If a screwdriver blade becomes damaged through misuse or if a corner chips off because the blade is too hard, the screwdriver can be made serviceable again by grinding it on an emery wheel. When grinding a damaged blade first grind the tip straight and at a right angle to the shank. Never hold the screwdriver against the emery wheel very long at a time and keep dipping the blade in water to keep it cool. Unless this is done, the heat caused by friction against the emery wheel will draw the temper and the blade will become soft. After the tip is ground square, dress off a little at a time from each face. Be careful to keep the blade thick enough to make a fairly tight fit in the slot of the screw for which the screwdriver is intended. Keep the faces parallel for a short distance or have them taper in a slight amount. Never grind the faces so they taper to a sharp edge at the tip.

"So, gentlemen, if you want to be happy in the service, be kind to all screwdrivers, don't use 'em for prying, never hammer on the end of 'em, never use pliers on the shank to twist with—and if someone will now tap Halftrack on the nose with that 18" screwdriver on the bench there to wake him up, we'll break off for chow."

ration books, and Hospital Nurses' Aides. A list of such volunteers within the Auxiliary has been compiled and is kept up to date with a view to assisting community projects in Barrie.

Mrs. J. C. Cave, Welfare Convener, reported that the work of her Committee had greatly decreased owing largely to the valuable assistance to dependents given by the Dependents' Advisory Board. Fifty-eight cases had been dealt with, each one being given personal supervision, and 42 letters had been received from all parts of Canada asking for help and advice. She expressed her sincere thanks to the citizens of Barrie, the Camp Borden Family Welfare Auxiliary and personnel at the training centres at Camp Borden for their help, information and assistance given in many ways. Mrs. W. H. Cunningham, for the Visiting Committee, reported 112 visits paid to wives of Armoured Corps personnel in their homes during the past year and 86 visits were made to Armoured Corps wives in the hospital.

Mrs. Richmond, Convener of the Soldier Services Committee, said that a total of three-quarters of a million cigarettes had been sent overseas during the year, or 28,800 packages of 25. Three hundred pounds of chocolate bars had also been sent. Since September, 75 pairs of curtains and drapes had been made at the sewing meetings for various buildings in the CAC training area. Thirty-eight articles were made and donated for the Christmas party, and layettes were made and given to needy cases.

—Continued on page 17



TIMOSHENKO

and the Defensive Phase of the War

By CAPTAIN H. A. DeWEERD
REPRINTED FROM INFANTRY JOURNAL, U.S.A.

PART TWO

The character of Russian resistance at Smolensk is indicated by the fact that even in the late summer of 1941 the Germans did not have strength enough to make decisive attacks in several sectors simultaneously. When troops were withdrawn from the unproductive Smolensk area to be sent southward, German military critics now described positions east of Smolensk as "having to be left to their own" or being "held by a few machine guns and the carbines of gun crews." Thus, early in September Timoshenko's sudden offensive at Yelnia caught eight German divisions off guard and crushed them. Conducting a party of British and American newspapermen over the Yelnia battlefield shortly after the engagement General Sokolovsky observed that the Germans were already on the defensive and digging in. "What lies ahead of them," he said, "is trench warfare, mud, Russian roads, and winter."

General Sokolovsky's predictions did not materialize until early in December. The reinforced Wehrmacht made its supreme effort to take the Russian capital and knock out the Red Army in a series of mighty offensives on the Central Front from October 1 to December 5. These gigantic operations fall into several distinct phases. The first, from Oct. 1 to October 20, fell in the period of Timoshenko's control of operations on this front. It was preceded by a statement from Hitler that the Russian army was crushed and would never rise again. So confident was the Fuhrer that he allowed Press Chief Otto Dietrich, on October 9, 1941, to pledge his word to the representatives of the German and neutral press that:

With the crushing of Timoshenko's army group the campaign in the East has been decided. The military decision is final. . . . These blows have finished the Soviet Union in a military sense. The Red Army no longer has at its disposal units with any considerable freedom of action. The divisions which were hurled against the Germans (at Yelnia) were in fact the last ones.

The German offensives against Moscow launched over a wide front in October were the mightiest efforts in the history of war. In terms of tanks, guns, planes, and men employed these operations dwarfed the most intense phases of the Smolensk battle. Timoshenko's armies were forced to give ground before this overpowering onslaught. City

after city fell into the hands of Marshal Bock's troops. On October 15 the Red Army communique hinted at the loss of Mozhaisk and frankly admitted the gravity of the situation. On October 18 the German communique announced the "annihilation" of Timoshenko's eight armies and the capture of 640,000 prisoners. General Westhofen exulted in the pages of *Der Neue Tag*: "The incredible has happened! The enemy has been beaten even before the coming of winter!"

These rejoicings were wildly premature since the German communiques on which they were based were completely inaccurate. The eight armies referred to (those of Golikov, Boldin, Below, Rokossovsky, Vlasov, Govorov, Kuznetsov, and Lelushenko) were still very much "in being." In fact, they were to be the spearhead of Zhukov's successful counter-offensive on December 7.

Timoshenko did not share in the Red Army's repulse of the final German offensive against Moscow in late October and November. In one of those abrupt transfers of command which illustrate Stalin's gifts as a military administrator and judge of men, Timoshenko had replaced Budenny on the Southern front on October 24, and General Zhukov, who was soon to prove his skill in conducting a major counter-offensive, had been placed in command of the Central Front.

The great battles before Moscow were the first rewards of the Soviet plan for exhausting the enemy's strategic reserves. The German Wehrmacht reached the limit of its powers on December 5. It captured Klin some thirty-five miles northwest of Moscow, but this was the last spasm of the dying offensive. The bitterest winter in recent years and the Red Army counter-offensive followed. On December 8 the German High Command announced the suspension of offensive operations on the Central Front. "Warfare in the East," it said, "will henceforth be conditioned by the arrival of the Russian winter." This unmistakable admission of failure was emphasized by Brauchitsch's removal as commander of the Wehrmacht.

Meantime Timoshenko had raised the curtain on the first Red Army counter-offensive by slashing at Kleist's extended lines north of Rostov. On November 29, 1941, the outside world was electrified by the news that the revitalized Red Army in the south had recaptured Rostov. This was the first important city to be recaptured from the Wehr-

macht since 1939; its recapture made Timoshenko a world figure.

The successful Russian defense of Leningrad and Moscow, the repulse of the Germans in the south, and the Russian winter offensives represent a kind of super-battle of the Marne. The German objective of knocking Russia out of the war before the onset of winter was frustrated. Time had been gained in which to marshal Russian resources for the long struggle of attrition. Though the Russian winter counter-offensives of 1941-42 did not liberate any important strategic point or solve the problem of the German "hedgehog" defense of key cities, nevertheless the winter was one of ever-threatening danger and great suffering for the German armies on the Eastern Front. The German army survived the harsh winter of 1941-42, but it never was able again to strike with the measure of superiority it had achieved at the outset of the campaign in June, 1941. The frank tone of relief with which the German leaders welcomed the return of spring testified as to the critical character of the period.

After their failure to destroy the Red Army in 1941 the Germans had only one more year in which to exploit their military advantages. After that the scales would be weighted progressively against them. The entrance of the United States in the war meant that ultimately the tremendous resources of America would be added to those of Britain and Russia. If Russia could be knocked out of the war or enough of her territory and resources captured before the Anglo-American forces could open a second front in Europe, then the German military position was not unfavorable. If Russia survived the year 1942 with armies and spirit intact, Germany's military doom was sealed.

Accordingly, the year 1942 was one of utmost hazard and importance for all the belligerents concerned. It was the critical year in the European theatre of operations. All signs pointed to the early resumption of the Axis offensive against Russia. The Red Army had checked the first powerful thrusts of the Wehrmacht. Now it had to continue its policy of systematically weakening the enemy for the final

offensive in concert with the developing plans of the United Nations.

The balance of forces in the East was revealed early in 1942 when it became apparent that the Wehrmacht was not powerful enough to assume the offensive on more than one front. Abandoning their traditional program of destroying the enemy's armed forces, German strategy now seemed directed at limited objectives—territory and oil. Anticipating that the Southern Front would be the main theatre of 1942, Timoshenko attempted to delay their attack and divert Nazi forces from the Crimea by launching an offensive in May on a 100-mile front from Volchansk to Krasnograd which aimed at the recapture of Kharkov. The Russian attack, which was pressed home vigorously from May 12 to 30, met some success but failed to take Kharkov or prevent the Germans from carrying out their preparatory operations on the Crimea. On May 23 the Germans captured Kerch. From June 7 to July 1, General Manstein subjected Sevastopol to an attack of unprecedented intensity. The city finally fell after a heroic defense which showed the population and army fighting to the last. Timoshenko's gains south of Kharkov were lost to a Nazi attack which began in that area on June 10 and reached the eastern bank of the Oskol river by June 28, but his May offensive aided in the prolongation of Sevastopol's defense. This set the Nazi timetable back and contributed to the successful stand at Stalingrad.

When the big attack came, it was a twin advance aimed at the Caucasus and at cutting Russian communications on the Volga at Stalingrad. Tremendous gains were made, but repeated German attempts to take Voronezh failed on July 20. Held here, the Nazi wave surged southward, and, although the failure to take Voronezh was overlooked at the time in view of the far-reaching Nazi success in the south, this was a decisive episode in the campaign of 1942. The failure to capture Voronezh laid the German armies in the south open to the Russian counter-offensive which followed the victory at Stalingrad. Thus Timoshenko's defense of Voronezh and the great defense battle on the Don bend prepared for the Nazi debacle in the fall and winter of 1942-43. These operations, next to the defense of Moscow,

are ranked by certain American observers as among the most important steps in the preparation for the Wehrmacht's final defeat in Russia.

Farther south, the armies of Marshal Manstein raced forward. Rostov and Novocherkassk were captured on July 28. Then the German attack branched off in two directions. One advance aimed at the Caucasus, the other at Stalingrad; both made spectacular progress. Krasnodar fell on August 20, Mozdok on August 26, Novorossisk on September 12. The apparent collapse of Russian resistance in this area led Leland Stowe, writing in *Foreign Affairs* for October, 1943, to say that the failure to defend Rostov and Novocherkassk to the death was the cause of Timoshenko's abrupt transfer to the central front late in August. He infers that it was only "the elderly Ukrainian warrior's past services to the state . . . which saved him from complete disgrace." Mr. Stowe's accuracy as a reporter has been repeatedly questioned in past operations such as Norway, and in this case he seems to be on equally infirm ground. Timoshenko was, in fact, transferred from the critical southern front before the decisive battle at Stalingrad, but to assert that his "failure" to defend Rostov and Novocherkassk seriously upset Russian plans is refuted by Mr. Churchill's speech in the Commons on September 21, 1943. He revealed that on his visit to Moscow (August 12-16) Stalin then assured him that Stalingrad would be the main defense line, that it would be held and that plans were already underway for an offensive to destroy the German Sixth Army. Walter Kerr's forthcoming book, *The Russian Army*, makes it clear that one of the most important factors in the Stalingrad victory was "the brilliant manner in which Timoshenko retreated in the early weeks of the German offensive, conserving his men and material for future battles."

The most savage struggle of the war developed at Stalingrad late in August and raged throughout September and October. The crack German Sixth Army under Lieutenant General (later Field Marshal) Paulus, supported by Rumanian and Hungarian forces, was entrusted with the capture of the key to the Volga. Fighting of extreme intensity raged over a wide front. The terrain at Stalingrad offered the defenders few of the advantages they enjoyed before Moscow in 1941. Rail communications had been severed by the German advance and Russian supplies had to be ferried across the Volga under German fire. Aside from the fortified position built up around the city, the defense rested on the courage and fortitude of the Red Army and the population. A step by step defense delayed the German advance to the outskirts of the city until September 12. German units reached the Volga north and south of the city on that day.

Street fighting went on ceaselessly in the rubble of battered Stalingrad. Progress was exasperatingly slow. Russian artillery made every German gain costly; each house had to be reduced separately. Debris which clogged every street prevented the full use of Nazi armor, and a note of irritation crept into the German communiques. Finally, on September 30, in his Reichstag speech, Hitler solemnly assured

the German people that Stalingrad would be captured and held against all attacks!

Like the ill-starred promise of Otto Dietrich on October 9, 1941, this speech was to boomerang back at the Fuhrer's head. As Russian counterattacks at Stalingrad developed, the German communiques began to alter their confident tone. On October 8, 1942, the Nazi High Command reported that the "essential objectives at Stalingrad" had been attained. Stalingrad was not taken—and a Russian counteroffensive followed which trapped and destroyed the whole German Sixth Army.

As at Moscow in 1942, Timoshenko did not share the final defense or victorious counterattack at Stalingrad. The actual house-to-house defense was conducted by Lieutenant General Vassily Chuykov, who acted on the assumption that any city was a fortress if every house was defended room by room. The victorious Russian counterattack north and south of Stalingrad which cut off and destroyed Field Marshal Paulus's army was led by Generals Zhukov, Vassilevsky, Voronov, and Rokossovsky. Stalin had once again intervened in the critical stages of the campaign to change commanders, and transferred Timoshenko to the Orel-Leningrad front.

The Stalingrad disaster staggered the German nation. One of the captive Nazi generals, Moritz von Drepper, kept mumbling: "This is defeat! We have had losses before, but this is utter defeat!"

Meantime, the Russian offensive south of Voronezh which began on January 16, drove the Nazi armies back to the line held in the spring of 1942. The steady Russian advances in the south were followed by the assumption of the offensive by Timoshenko's army group near Lake Elmen on March 1, 1943. This seems to indicate that his transfer from the Southern Front was part of Stalin's program for using his leaders where he felt that they could serve Russia best. The Russian communique announcing the March offensive gave the lie to German propaganda reports that Timoshenko was "out of favor with Stalin" and that he had been "sent on a mission to Washington." The action on the central and northern front widened as Rzhev fell on March 3 and the advance of Timoshenko's forces menaced Staraya Russa.

The complete reversal of position on the Russian front in the summer of 1943 was revealed when the Red Army launched its summer offensive at Orel in mid-July after an abortive German attack on the Belgorod-Kursk front. What part Timoshenko played in the Red Army operations of the summer and fall of 1943 was not made clear until October 9 when he was awarded the Order of Suvorov for directing operations on the Taman Peninsula which led to the expulsion of the Germans from their Caucasus bridgehead.

The present and future stages of the war are bringing new men, methods, and materiel to the fore in the Red Army. A whole new corps of young battle-tried officers bursting with offensive spirit and "know-how," a perfected method of tank-artillery-

REGULATION UNIFORMS
AND ACCESSORIES

NAVY, ARMY
AND AIR FORCE

ORTH LIMITED

Military Tailors

Representative.
E. W. CROUCHER

217 Dundas St.
LONDON, ONT.

Manitonna Hotel
BROCKVILLE

infantry penetrations and encirclements, a vast array of streamlined small infantry divisions, powerfully equipped with artillery and automatic weapons, give promise that the offensive phase of the war will find the Wehrmacht outmatched in fighting capacity as well as numbers. That Stalin has chosen other leaders to conduct this phase of the war is not a reflection on the men who successfully conducted the defensive phase of the war, so much as it is a clear indication that the Red Army has now embarked upon a carefully considered policy of all-weather offensive warfare. The relative ease with which it stopped the only offensive effort the Wehrmacht could make in July, 1943, at Kursk and turned that abortive attempt into a sustained Russian offensive which brought the Red Army beyond the Dnieper in October is convincing proof of this development.

The new leaders of the Red Army's offensive are a group of young lieutenant and colonel-generals who average forty-five years of age, and who were almost unknown in Russia three years ago. They include Lelushenko, Yeremenko, Rodimtzev, Tolbukhin, Chuykov, Rokossovsky, Golikov, Tulenev, and Vatutin. We may assume that the average age of divisional commanders is even lower. Under Marshal Stalin the supreme direction of the war is entrusted to a group of young marshals: Vassilevsky (Chief of Staff), Zhukov (Vice-Commissar of Defense), Novikov (Air Forces), and Voronov (Artillery). These men are convinced exponents of the war of materiel in the industrial age and showed their ability to conduct a sustained offensive over a 700-mile front in the summer and fall of 1943.

Other indications that the Red Army has reached a new stage in its development are revealed in Stalin's address of February 23, 1943, on the anniversary of the founding of the Red Army. It had taken two long years of war he said to school, reform, and temper the Red Army. Now it is the equal or superior of the Wehrmacht in all phases of war. Outwardly the changes in the Red Army appear in the regulations regarding the uniform and insignia of service as well as the formation of elite units. To all intents and purposes it now follows the pattern of traditional armies. The establishment of the Suvorov School for military cadets is another step in this direction.

The chief feature of the Soviet conduct of war has been their refusal to depart from the long-term strategic plans and doctrines built up for a war with Germany. Now that the defensive phase of the war has been successfully passed it may be that men like Timoshenko will find less scope for their talents. Yet there is every indication that the Kremlin and the people appreciate the role played by him and other leaders in the early days of the war. Eve Curie, visiting Russia in 1942, found that next to that of Stalin, the face of Timoshenko appeared most commonly on Russian posters. Trying to supply a parallel that they would understand to a group of American correspondents late in 1942. Stalin said: "Timoshenko is my George Washington." In dealing with an adversary as formidable as the Third Reich, attrition is a necessary step to victory.



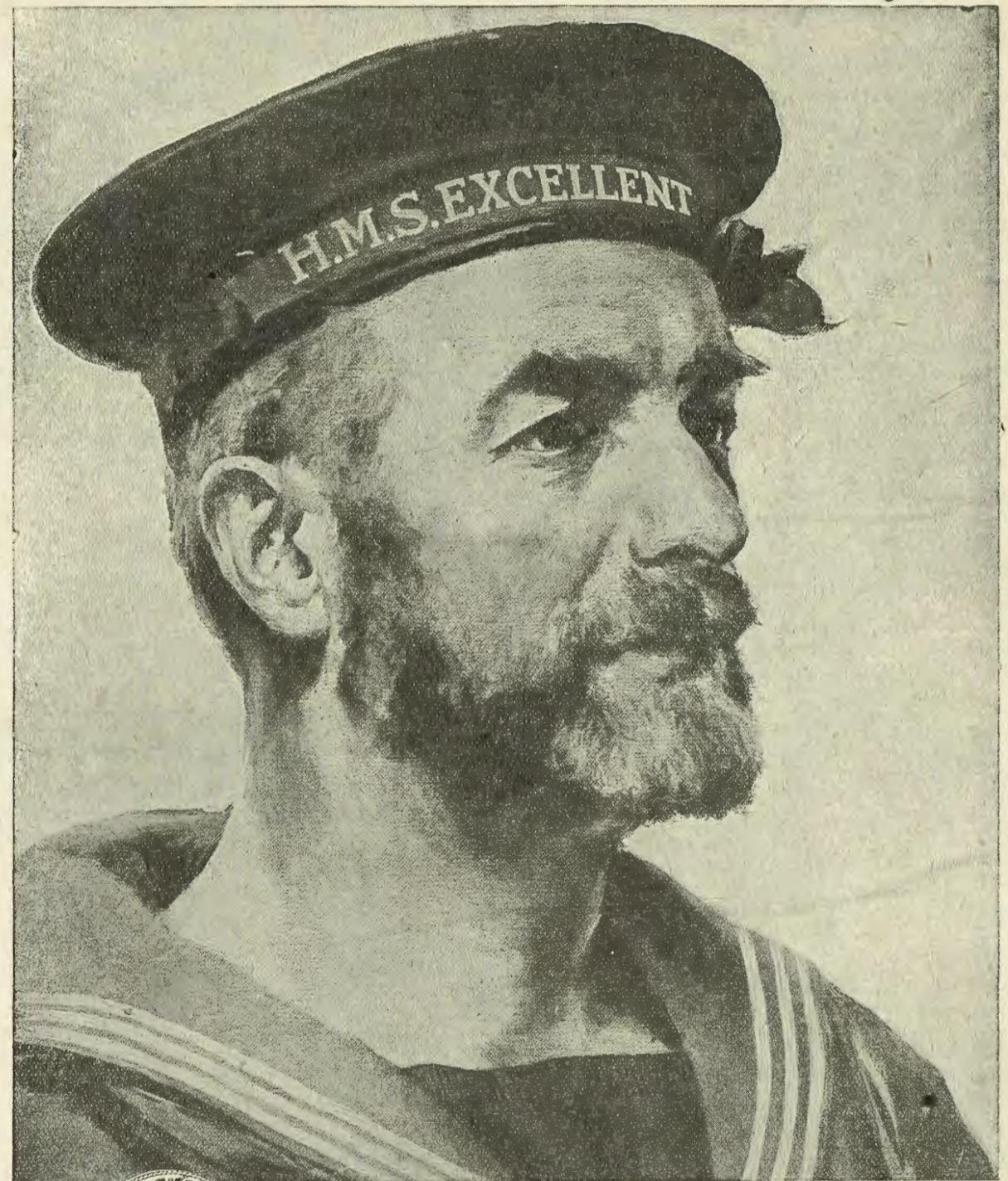
A real beauty queen! Miss Helen McFarquhar who, representing Central Aircraft Limited, won the title of "Miss London" in that city. One of her many prizes was an all-expense trip to Windsor, where she competed with other beauties from all over Western Ontario. She recently turned 18.

BOMBAY—The highest mileage steamed by an Indian warship stands to the credit of HMIS Jumna, the sloop which shot down four Japanese bombers in Dutch East Indies waters early in 1941. Her "tally" of 51,179 miles represents an average of 140 miles a day during twelve months.

NAIROBI—Another considerable contingent of East African troops on leave has arrived in Kenya from Ceylon. It is about sixteen months since they left East Africa to help in garrisoning Ceylon, at a time when the situation in the Indian Ocean and in the East generally was not so favorable as it is now.

NEW DELHI—It was a British officer of the Indian Medical Service, Surgeon-Major Ronald Ross, who discovered, forty-five years ago, that malaria is carried by the mosquito. Since that time much important work on malaria control has been done in India. A semi-official Indian Research Fund Association, founded in 1911, supports the Malaria Institute of India, whose work is internationally recognized. A special grant from the Government of India has been devoted to intensive control schemes carried on for a period of years in restricted areas to test the methods evolved by the Malaria Institute. As in many other fields, war has speeded up the processes of peacetime, but the success of the present anti-malarial measures is due largely to the long years of research in India before the war.

THE ASSOCIATION OF SERVICE NEWSPAPERS ADVERTISEMENT PAGES.
67/68, JERMYN STREET, ST. JAMES'S, S.W.1. TEL. WHITEHALL 2504.



This national figure is still the symbol of all that is best in Tobacco manufacture — Player's Navy Cut — a name justly famous for excellent and dependable quality.

N.C.C. 559.A



In every way KIWI lives up to its reputation as the finest polish. *It gives a longer lasting shine and preserves the leather for longer wear.* As you rub in the polish its fine waxes penetrate right down through the pores, nourishing the leather, keeping it soft and supple—shining it with a dazzling brilliance known and praised by H.M. Forces everywhere and in millions of homes the world over.

KIWI DARK TAN **KIWI BLACK**
PER 4d. & 8d. TIN

SHAVEX

The Perfect Two Minute Shave

NO SOAP - NO BRUSH - NO LATHER
IS USED BY ALL BRITISH FORCES

For shaving when in a hurry it is marvellous—a perfect shave in two minutes. No water needed, but if you have water, moisten your face before using Shavex. You can shave in a quarter of the time that it takes with soap and brush and your skin will feel as fresh as a daisy.

Almond Oil in Shavex keeps the face young and takes away wrinkles. Smear Shavex over the face when you have shaved and your skin will keep young, fresh and free from blemishes.



Millions all over the world are now using Shavex. Beware of imitations—there is nothing like Shavex—the antiseptic shaving cream—the first on the market.

SHAVEX is sold everywhere
1/3 and 1/10 (including Purchase Tax)
Obtainable at N.A.A.F.I., Boots, Woolworth's, Timothy White's & Taylors, Ltd. and all Chemists, or direct post free from the
SHAVEX ZEE-KOL CO., LTD.
40 Bavaria Road, London, N.19

COLUMBIA

NEW RECORDS

DAVID LLOYD
My lovely Celia - - - } DB 2109
The English Rose - - - }

TURNER LAYTON
I hear your Voice - - - } FB 2919
Piccaninny Mine, Good-
night - - - }

MONTE REY
Darling - - - } FB 2915
There are such Things - - - }

ALBERT SANDLER TRIO
I'll walk beside You }
ALBERT SANDLER—Violin Solo } DB 2110
The Lark in the clear Air }

SANDY MACPHERSON
at the Theatre Organ
Vilia; Merry Widow Waltz } FB 2914

Jimmy Leach and the
NEW ORGANOLIANS
All our Tomorrows - - - } FB 2916
Ding Dong—it's Love - - - }

CARROLL GIBBONS
and the Savoy Hotel Orpheans
Hit the road to Dream-
land; That old Black Magic } FB 2917
I'm going to get lit Up -
Why don't you fall in } FB 2923
love with Me - - - }

... at the Piano
Carroll recalls the Tunes, No. 1 } FB 2922

VICTOR SILVESTER
and his Ballroom Orchestra
Dancing without any } FB 2920
Music; Boulder Buff }
Why don't you fall in Love } FB 2921
with Me; Let's get Lost }

NAT GONELLA
and his New Georgians
I'm forever blowing Bub-
bles; Seven days' Leave } FB 2918

The Finest Name on Record

The Columbia Graphophone Co. Ltd., Hayes, Middlesex.

JEEPS DON'T FLY

By GUNNER



There once was a bloke named Icarus. According to the legends his father made Icarus and himself a set of wings. Also according to the legends these two pioneers of aviation flew. However, Icarus, in spite of warnings, flew too high one day and the sun melted the wax which fastened the feathers to his wings. As a result the feathers came off and our friend succumbed to the force of gravity which was operating even in those days and our hero returned to earth with considerable speed and despatch.

The above pathetic little tale is told to show that then, as now, people always had a "better way" and as frequently happens, grief results. The modern counterparts of Icarus are those Joes who, in spite of modern knowledge of aerodynamics and the natural force of nature, try to fly Jeeps.

We see frequent "glamour" shots of jeeps flying through the air with all the apparent ease and grace of the gent of trapeze fame. About all they are actually doing is shaking the liver and lights out of themselves and putting a terrific strain on the poor jeep.

A jeep is a quarter ton, 4x4 vehicle and is not designed for flights. It lacks the necessary wings for one thing. The jeep is the result of several years of careful experimentation and is primarily a recon-

naissance vehicle. It is powered to negotiate almost any sort of country but misuse of this power is criminal. Its popularity is ample proof of its ability to meet the need for which it was designed. BUT, remember it is a vehicle designed to operate ON the ground and NOT ABOVE it. One frequently sees in our magazines advertisements in which jeeps are doing the most outlandish stunts. Well, the jeep CAN do many of these stunts but it must be remembered that it is simply a motor vehicle with all the usual chassis parts, etc., and that these parts will eventually succumb to breakages and fatigue if continually subjected to unnatural strains. Just because the vehicle can "take it" is no justification for continuing the abuse indefinitely. BE SENSIBLE. The civil speed limits apply to jeeps as well as to other vehicles. Our newspapers are supplying ample proof of the excellence of our Air Force. Let's leave the flying to them. They have the machines for it.

Overseas, the jeep, in common with other vehicles, is treated with more respect. In the field it is a well-known fact that if you have a vehicle out of action it frequently means travelling on foot. Not to overlook the anathema that will descend on you if you bring in a vehicle damaged through abuse. So, my little chickadees, take a tip from the experience of Icarus and stick to the rules for common sense driving, whether it be jeep or what have you.

Potent Stuff - This Petrol!

(From CAM)

The screwball sniffed the air delicately and purred, "I like the smell of gasoline. I like the smell of new-mown hay. I like the smell of fresh tobacco."

With this, he dropped the hose with which he had been filling a five gallon can of gasoline and brought out his trusty pipe. From an ancient pouch, he filled it with tobacco. He fumbled in his pocket for a match and scratched it across the seat of his jeans.

There was a loud bang and the screwball vanished. He was sighted some time later over Weeville, Man., and is believed responsible for an air raid "alert" in the Vancouver area that lasted for twenty minutes.

Even if he hadn't lit the match, the screwball would probably have wound up a dead pigeon from his sniffing operations alone. For the dangers of gasoline come in packages of three: fire and explosion; poisoning from inhalation, and skin irritation.

Of the first, everybody knows how explosive gasoline vapours are—and the lunkhead above found out. But not everybody knows that gasoline vapours are pure poison when inhaled (danger number 2). As a matter of fact, one-tenth of the amount of gasoline vapour in the air necessary to cause an explosion, is harmful if inhaled. A couple of good snorts will cause dizziness, nausea, and a rollicking good headache. Large amounts will deliver the same results as a michael finnegan of the most potent variety—namely . . . eight, nine, ten and you're out.

Headache, dizziness or a beery sensation accompanied perhaps by an intense desire to sing Sweet Adeline, are a warning that too much gasoline vapour is at large. A quick dive out the window into the open air will clear up the early symptoms—but if anybody has been knocked out by the fumes, run, do not walk to the nearest doctor.

The third danger, skin irritation, is not so widely appreciated. Gasoline, if allowed to remain in contact with the skin will cause severe burns—and we don't mean lit gasoline. Wearing absorbent gloves while handling gasoline is a bad practice and clothes and shoes that have become saturated with the stuff, should be changed—but fast. And keep away from fire—or you're a toasted marshmallow.

Dishpan hands may be acquired through exposure to gasoline because the protective oils are removed from the skin and chapping, roughening and cracking are sure to follow. In some cases, dermatitis will result. This is an inflammation of the skin that usually starts on the hands and spreads over the entire body. You'll love it!

Wash off any gasoline that has got on the skin, with soap and water.

As to the biggest danger lurking in gasoline—

fire and explosion—talking to most people about this yields the same results as talking to a brick wall. It requires a deep and thoughtful mind to understand that gasoline vapour rolls along the ground like a thick cloud and goes boom! when it encounters a spark or a flame. But just on the off chance that somebody in the audience loves life, here's a list of precautions guaranteed to save your own or somebody else's life at one time or another. Read them and keep off the deadline.

(a) No filling of tanks, transfer of gasoline, or other operations which involve exposure of gasoline to air, should be carried out near open fires, motors in operation, or lights that could ignite vapours. Men engaged in such work must not carry matches, and smoking in the immediate area should be forbidden and prevented by supervision.

(b) Work should be done in the open air if possible, and good ventilation must always be maintained. Gasoline vapour is heavier than air and if not removed will settle in depressions (trenches and ditches) or flow into basements at some distance.

(c) Gasoline should be used as a motor fuel only (except in field stoves where white gas is used). It must not be used for cleaning or as a solvent in repairing machinery.

(d) Care must be taken to avoid spilling gasoline. It must not be emptied into sewer lines or cess-pools, since vapours may travel great distance through these channels and be ignited elsewhere.

(e) When large quantities of gasoline are being transferred and the flow is rapid, the tank that is being filled should be grounded or the hose employed should carry ground connections, to avoid accumulation of static electricity. This hazard is intensified when the air is very dry and the container into which the gasoline is being run is well insulated from the ground.

(f) Proper fire extinguishing equipment should be at hand whenever gasoline is transferred or loaded.

(g) Rags or waste saturated with gasoline should be destroyed and not left lying about as a source of vapour or fire hazard.

USED CARS WANTED FOR CASH

ANY MAKE, YEAR OR MODEL

HAROLD HILL

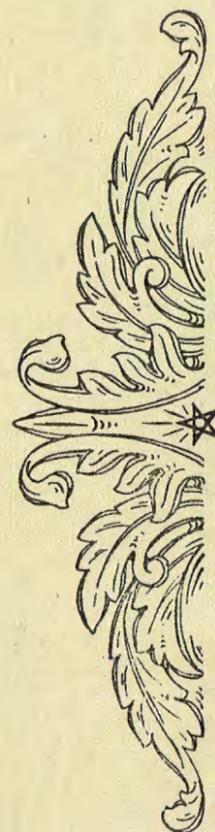
MECHANICAL AND BODY REPAIRS

Phone 4035

BARRIE

Elizabeth St.

THE ASSOCIATION OF SERVICE NEWSPAPERS ADVERTISEMENT PAGES,
67/68, JERMYN STREET, ST. JAMES'S, S.W.1. TEL. WHITEHALL 2504.



Cadbury means Quality



FOR YOUR PROTECTION

Your teeth are important to you and deserve the best protection you can give to them. Try Euthymol morning and night. Euthymol is a man's dentrifice. There is no mawkish taste about it. Its sharp, healthy "tang" never palls. Moreover, it is ideal for smokers, not only because it removes stains from teeth but also because it leaves the mouth cool, refreshed and wholesome.

1s. 6d.
Per Tube

(Including Purchase Tax)

Euthymol

TOOTH PASTE

6/43-2 Printed in Great Britain

ADJUTANT:
WE MOVE OFF IN
HALF A MINUTE'S
TIME, SIR!

GENERAL:
JUST TIME FOR
MY 30-SECOND
BREAKFAST

The War Office has given approval
for Wheat Flakes to be included
in the regular Army dietary.

KELLOGG'S WHEAT FLAKES

The 30-Second Breakfast



"He saw the gilded weathercock
Swim in the moonlight as he passed
And the meeting-house windows blank and bare
..."
LONGFELLOW

Paul Revere lived at a time when his country was passing through a period of discord and discontent. Whilst young Paul was still in his teens, rebellion against George the Third's determination "to be King" was already stirring in the hearts of the Colonists. The anti-British caricatures by Revere, executed in the years preceding the famous "Tea Party" at his native Boston, provide evidence of the deep influence the events of the times had on his career.

Born in 1735, the son of a silversmith, Paul Revere received his early training at his father's shop. Already he was beginning to show that he had inherited considerable skill at the craft when, in his country's hour of need, he answered the call to the colours.

Stationed at Fort Edward, New York, he quickly displayed qualities of leadership and in the year 1756, as a young second-lieutenant of Artillery, he took part in the expedition against Crown Point. But it was his midnight ride from Charlestown to Lexington, immortalised by Longfellow, to forestall the advance of the British that endeared him, for all time, in the heart of every loyal American. The town Revere, Mass., was named after him in commemoration of this famous exploit.

Paul Revere was without question a good soldier and a fine craftsman. When the embers of war had burned out he at once resumed business as a goldsmith and silversmith. Today, British silversmiths, their own careers interrupted by war, salute the great American patriot.

THE GOLDSMITHS & SILVERSMITHS COMPANY LTD

112 · REGENT STREET · LONDON · W.1

AFV Range, Meaford

By VERN O'DONNELL, K. of C. Supervisor

From the embryo of barracks in farm houses and personnel of a selected few doughty pioneers, the AFV Range has grown into a small well organized camp directing operations over a large range composed of towering hills and rolling dales to the shores of Georgian Bay.

On a range so large, with such a small group on hand, personalities and initiative abound. This is the final testing ground for the men in tank training and it must of a necessity be as much alike to battle conditions as possible. Those who come in the winter and those who are permanent tank drivers here appreciate the difficulties of our allies, the Russians.

Deep drifting snow, bogs and rocky land proves that the tank men have their ups and downs. To this young camp which previously had nothing but work and a bed to sleep in to offer, has come in the past few months canteens and a reading and recreation room under the auspices of the K. of C. Army Huts and now lo and behold, even a hockey rink.

In such a camp where soldiers of all ranks know personally each other, a friendship akin to that of a band of men thrown together for some tough job in an out of the way post seeps in through army discipline and militarism.

C.O. of this camp is popular Capt. Blecker who seems to have the rare faculty of having all the important decisions at his fingertips while never forgetting the million and one small details and troubles which daily occur. Minute Lieut. Finch, who perforce had to have stilts put on his control tower so that he could see what was going on, directs range operations. With wireless headgear on, the phone ringing, tanks firing and somebody shouting their trouble at him from the target phone, Mr. Finch does well to preserve his sanity. There has been one time in his checkered career that he was known to "blow his top" but that is best forgotten, as such occasions are few and far between. The troubles of each individual in camp and for that matter of the whole world are carried on the shoulders of our friendly "Tec" Officer, Lt. Westbrook. Morning, noon and night, at breakfast, dinner and supper phones are ringing for the call is out for the Range trouble-shooter.

All in all the A.F.V. Range at Meaford is first and foremost a Canadian Army Camp where each and every one of its men are doing a tough job and doing it well, of which they well may be proud.

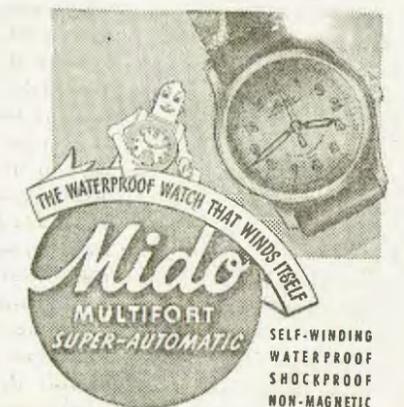
LONDON—Britain still undergoes air attacks, with many civilian casualties. The whole country has now had a total blackout for more than 1,600 consecutive nights. Canadian soldiers find the blackout one of the most striking wartime features of Great Britain, and, like the British people themselves, find it hard to bear. More than 300,000 unaccompanied children and 250,000 mothers with children are still evacuated from their homes. More than 70,000 infants have been born in Emergency Maternity Centres.



in action ... it's *Mido*

MULTIFORT SUPER-AUTOMATIC, the Waterproof Watch that winds itself

For service men, executives, war workers, doctors . . . the perfect timepiece is MIDO MULTIFORT Super-Automatic. It winds itself—thinks for itself—keeps absolutely accurate time, with the power generated by your arm's natural motions. Self-sufficient, immune to hazards, waterproof, shockproof, non-magnetic.



Come in to see our selection
... from \$39.50 to \$220

REEVES Jewellers
DIAMOND MERCHANTS

Opposite
Post Office

BARRIE

Phone
3745

Advice to Young Officers

(FROM A MSS OF 1791)
Reprinted from the R.A. Journal

Those who are unacquainted with the service, may perhaps imagine that this chapter is addressed to the subalterns only, but a little knowledge of the present state of the British forces will soon convince them that it comprehends not only the greatest part of the captains, but also many of the field officers of the Army. The first article we shall consider is your dress; a taste in which is the most distinguishing mark of a military genius, and the principal characteristic of a good officer. Ever since the days of ancient Pistol, we find that a large and broad rim'd beaver has been peculiar to heroes; a hat of this kind worn over your right eye, with two large dangling tassels, and a proportionate cockade and feather, will give you an air of courage and martial gallantry.

The fashion of your cloaths must depend on that ordered in the corps, that is to say, must be in direct opposition to it; for it would show a deplorable state of genius, if you had not some ideas of your own dress.

Your crosslet should be broad with a huge blade pendent to it, to which you may add a dirk and a bayonet, in order to give you the more tremendous appearance. Thus equipped you sally forth with your colours, or chitterling advanced and flying; and I think it will be best in walking through the streets, particularly if they are narrow, to carry your sword in your right hand; for besides its having a handsome and military appearance, the pommel of the sword will serve to open you a free passage by shoving it in the guts of everyone who will venture to oppose you; as by your dress he cannot expect the least quarter. We are told the Janisaries never wear their swords but upon duty; a practice more becoming Turks than Christians. When you go to London, to see your friends in the country, or to any other part where your Regiment is not known, immediately mount two epaulets and pass yourself for a grenadier officer. Never wear your uniform in quarters when you can avoid it. A green or brown coat shews you have other cloaths besides your regimentals, and likewise that you have courage to disobey a standing order. If you have not an entire suit, at best mount a pair of black breeches, a round hat or something unregimental or unmilitary. If you belong to a mess, eat with it as seldom as possible, to let folks see you want neither money nor credit. And when you do, in order to shew you are used to good living, find fault with every dish that is set on the table, damn the wine, and throw plates at the mess mate's head. If the dinner is not served up immediately on your sitting down, draw circles with your fork on the table, cut the table cloth and if you have pewter plates, spin them on the point of your fork, or do some other mischief to punish the fellow for making you wait.

On coming into the Regiment, perhaps the major or adjutant will advise you to learn the manual, the

salute or other parts of the exercise, to which you may answer that you do not want to be a drill serjeant or corporal, or that you purchased your commission and did not come into the Army to be made a machine of.

It will also be perfectly needless for you to consult any treatises of military discipline, or the regulations for the Army. Dry books of tactics are beneath the notice of a man of genius, and it is a known fact that every British officer is inspired with a perfect knowledge of his duty, the moment he gets his commission; and if he were not, it would be sufficiently acquired in conversation at the main guard, or the grand Sutler's. Thus a general officer, who has never before seen a day's service beyond the limits of Blackheath, or Wimbledon Common, being ordered abroad, lands in America, or Germany a factus Imperator, tho' by very different means from those of Lucullus. If you have a turn for reading, or find it necessary in that manner to kill the many tedious hours in camp or garrison, let it be such books as warm the imagination and inspire to military achievements, as the Woman of Pleasure, Crazy Tales Rochester's Poems; if you aim at solid instruction and useful knowledge, you must study Lord Chesterfield's Letters or Trustler's politeness; if you have a turn for natural philosophy, you may peruse Aristotle's masterpiece.

If there should be a sober disposed person, or in other words a fellow of no spirit in the corps, you must not only bore him constantly at the Mess, but should make use of a practical kind of wit to torment him. Thus you may force open his doors, break his windows, damage his furniture, or in camp throw squibs and crackers into his tent at night or loosen his tent cords in windy weather; young gentlemen will never be at a loss for contrivances of this nature. Be sure also to stigmatise every officer who is attentive to his duty with the name or appellation of martinet; and say he has been bitten by a mad adjutant. This will discourage others from knowing more than yourself and thereby keep you upon an equality with them.

When ordered for duty, always grumble and question the roster. This will procure you the character of one that will not be imposed on. At a field day be sure not to fall in before the Regiment is told off and proved; and then come upon the parade buttoning your gaiters, or putting on some part of your dress. Observe the same when for guard; making 20 or 30 men wait shews you are somebody. When you mount guard invite all your friends to the guard room, and not only get drunk yourself but make your company drunk also, and then sing and make as much noise as possible. This will shew the world the difference between an officer and a private man, since the latter would be flayed alive for the

least irregularity upon duty. Though it may on some occasions be proper and becoming a military man to be watchful and to sit up all night as in drinking, gaming, at a masquerade, etc.; yet it would be an intolerable bore on guard; and if near an enemy, and liable to be attacked, would argue a degree of apprehension that a good officer should be ashamed of.

When you mount the quarter guard in camp, as soon as the men have grounded their arms, put off your sash and gorget, and immediately go to your tent, or to the grand sutler's in the rear; the serjeant can take care of your men in your absence; and should any general officer happen to come by, you will have an opportunity to shew your activity in running across the parade to turn out the guard.

Never read the daily orders. It is beneath an officer of spirit to bestow any attention upon such nonsense! and the information you can get from them will not repay you for the trouble you are at in decyphering them and reducing them into English. It will be sufficient to ask the serjeant if you are for duty. Be a constant attendant at the general officer's levees. If you get nothing else by it you may at least learn how to scrape and bow, to simper and display a handsome set of teeth by watching closely the conduct of the aide de camps.

At exercise you must be continually thrusting out your expantoon, ordering the men to dress, and making as much noise as possible in order to shew your attention to your duty. When at a field day or review; you have taken post in the rear of the manual exercise to be performed, you have a fine opportunity of diverting yourself and the spectators. You stand very conveniently for playing at leap frog, or may pelt one another with stones; or if there should be snow on the ground, with snow balls. This will be a very harmless relaxation, as you have nothing else to do, and besides the diversion it will afford amongst yourselves, will contribute vastly to amuse the soldiers, and prevent them from puzzling their brains too much with the business they are about. If you are in the right wing during the firings, you must always keep a pace or two in front till you order your men to fire, when it will be expedient for you to step into the rear, to prevent your face from being scorched with the powder, or you may order two or three file on the right of your platoon to do only the motions of firing, which if it diminishes the fire of your Battalion, will at least save his Majesty's ammunition.

Evening roll call which drags one from the bottle, is a most unmilitary custom; for drinking is as essential a part of an officer's duty as fighting. Thus Alexander prided himself more in being able to take off half a dozen bottles at a sitting than all his victories over the armies of Darius. If the colonel should insist on the attendance of the officers, they should not fail to get a little mellow first, to shew the world they are no milk sops; but if any of the soldiers should presume to imitate their example, they must be confined and brought to a court martial; for what is commendable in an officer may be in the highest degree reprehensible in a private man,

and as the dramatic poet observes:—

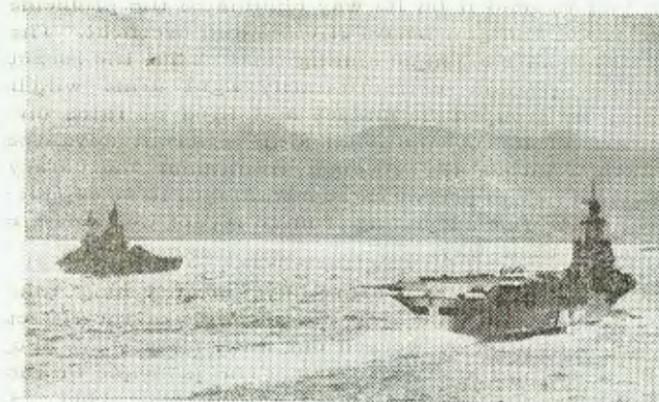
"That in the Captain's but a hasty word,"
"Which in the soldier is rank blasphemy."

When you are ordered to visit the barracks, would recommend it to you to confine your inspection to the outside walls, for what can be more unreasonable than to expect that you should enter the soldiers' dirty rooms and contaminate yourself with tasting their messes. As you are not used to eat salt pork or ammunition bread, it is impossible for you to judge whether they are good or not. Act in the same manner when ordered to visit the hospital. It is none of your business to muse and attend the sick. Besides, who knows but you might catch some infectious distemper, and it would be better that 50 soldiers should perish thro' neglect or bad treatment, than the king should lose a good officer.

Always use the most opprobrious epithets in reprimanding the soldiers, particularly men of good character, for these men it will not in the least hurt, as they will be conscious that they do not deserve them.

When on leave of absence never come back to your time, as that might cause people to think you had nowhere to stay, or that your friends were tired of you.

Make trenches round your marquee in camp to carry off the water and to prevent the stray horses coming near enough to tread upon your tent cords. The longer and deeper they are the better, that such as blunder into them in the night may break their legs, which will be an useful warning to other horses.



BRITISH WAR SHIPS CLEAR MEDITERRANEAN FOR ALLIED CONVOYS

Storm clouds gathering over the rock as a British aircraft carrier and battleship put in at Gibraltar.

LONDON—Indirect taxes are very high in Britain. It is estimated that on an annual income of \$4,000, a married man with two children would pay about \$400 in indirect tax, in addition to \$1,600 in direct tax.

LONDON—1,000,000 tons more cereals for bread and more than 250,000 tons more potatoes have been grown in Britain this year than in last year's record-breaking effort. This harvest is the greatest yield per acre of these products since official records have been kept.

ROCKETS

By LEONARD ENGEL

Reprinted from INFANTRY JOURNAL, U.S.A.

In the past three years, behind a curtain of secrecy which has only recently begun to lift, the chief belligerents in Europe—we, Britain, Russia and Germany—have brought into action nearly a dozen new weapons based on the rocket. We have the "bazooka," David Infantryman's antidote for Goliath Tank. The British have one or more multi-barrelled AA "guns" that fire heavy explosive rockets in large salvos. The Luftwaffe employs rocket bombs, and the Wehrmacht, six-barrelled rocket mortars in at least two calibers, 150 and 210mm. Finally, the Red Army has a six-barrelled "gun", the famed "Katusha" of the defenders of Stalingrad, which is self-propelled and may also be mechanically loaded; large rockets launched from simple trestle-like racks and employing no "gun" at all; a thirty-barrelled affair of one or two inches in caliber for use against tanks and rocket bombs.

The projectile that flies to its target under its own power is a hundred years older than the gun. Hitherto, attempts to use it have run afoul of insuperable technical difficulties and have achieved short-lived success at most. These weapons, however, work and work well. It may be that we are standing on the verge of a revolution in armament comparable to that brought about by the development of modern automatic arms.

Our allies and enemies and we have turned to the rocket because the shell which carries its firing chamber itself and requires no initial explosion in a gun to send it on its way eliminates the problems of recoil and gun-barrel stresses and overheat. The gun becomes a simple aiming tube. Thus the rocket makes possible extraordinarily light arms which may be grouped in masses and fired at rates unheard of for conventional arms. Recent advances have reduced the rocket's traditional inaccuracy sufficiently to permit these advantages to be exploited. It will be surprising if more rocket weapons are not on their way.

Practical rocket arms have been a long time coming, in part, because the principle of the rocket was not correctly worked out until forty years ago, by a Russian mathematician. The principle of the gun, by contrast, has been known since 1400. A great many misconceptions about the rocket are still in circulation in fact, such as the belief that it is propelled by the push of its awesome tail jet against the air. So let's begin by seeing how the rocket works.

When a propellant powder is ignited, whether in the firing chamber of gun or rocket, it generates enormous volumes of gases which exert pressure in all directions. In both cases, pressures to each side and up and down cancel each other out. In the gun, pressure forward is relieved by ejection of the bullet; the gun's recoil is caused by the gases' rearward pressure against the gun itself. In the rocket, just the opposite takes place: rearward pressure is per-

mitted to escape through tall nozzles; forward pressure, however, has no means of escape. So it pushes the rocket ahead. The rocket literally recoils its way forward, harnessing the force which is the conventional gun's greatest bane. Rocketers call the rocket's manner of progress "reaction propulsion."

The war rocket owes its present success chiefly to improvements in the composition and arrangement of its explosive fuel. The first rocket was an incendiary arrow which took off by itself when an unnamed Chinese soldier, shortly after the year 1200, made the mistake of adding saltpeter instead of salt to charcoal and sulphur, thus producing gunpowder in place of the incendiary mixture customarily applied to fire arrows. For the next 700 years, war and fireworks rockets alike were fueled by an unsatisfactory coarse-grained gunpowder essentially the same as the Chinese mixture. It was not until the last war that any real advance in fuels was made, through the belated application of modern explosives and explosive mixtures to rocketry. Even then, little was accomplished, for after November 11, 1918, military authorities everywhere (who had been responsible for many of the experiments with fuels) lost what little interest they had had. They remained uninterested until World War II loomed over the horizon.

Although the specific fuels used in each case are closely guarded secrets, in general military rockets today are driven by so-called "lazy" explosives, that is standard propellant powders or gunpowder modified to burn slowly. (Experimental non-military rockets also employ liquid fuels, but these are impractical for the battlefield.) Unlike the bullet, which is acted upon by the propellant only as long as it is in the barrel, the rocket is designed to accelerate slowly—quick-acting rockets, in fact, are still well beyond our ability—and to attain maximum speed as it nears the target. The war rocket propellant, therefore, should deliver thrust or recoil power throughout the first half of the rocket's flight. This means that the charge must burn for as long as two seconds.

The first modern explosive to be put to work driving rockets was nitrocellulose (smokeless powder). Dr. Robert H. Goddard, dean of American rocketry who developed them, began experimenting with nitrocellulose-powered projectiles before the first World War. By the war's end, according to a report by him to the Smithsonian Institution in 1919, smokeless powder war rockets of his design made to Army order had reached the testing stage. Dr. Goddard's fuel has since been improved by the addition of a "deterrent," an inert compound like starch (whose combustion products are nevertheless gaseous), to slow the powder's action. The British have worked extensively with a similar "lazy" mixture, cordite and starch.

The propellant employed by the Wehrmacht's

mortar rockets appears to be gunpowder modified and packed in an ingenious way devised during the 'twenties by a dare-devil German chemist, Tilling, who built rocket-powered racing cars in association with Fritz Opel, son of Germany's Henry Ford, Adam Opel. Tilling was killed in a laboratory blast in 1933, but his work was taken over and continued by the German Army artillery research centre at Spandau near Berlin. The Tilling charge consists of two kinds of gunpowder, the ordinary variety in fine grained form and a slower burning type (gunpowder with less than the normal percentage of saltpeter) in wafers. The slow-burning wafers, half of which are holed in the centre and half of which are solid, are packed in the firing chamber like cookies in a long cracker box, with the holed wafers toward the tail end of the chamber. The space left by the holes is filled with the fine-grained powder. When the charge is ignited, the fine powder flash burns, producing high initial thrust to overcome starting inertia.

Most existing rocket weapons are in the low or medium velocity category. Theoretical calculations show, however, that quite high velocities are attainable, even with existing fuels, and the near-future may see the introduction of several high velocity rockets of war. A 20-pound rocket would require only eight pounds of smokeless and starch to reach a speed of about 2,000 feet per second at a range of about a mile. Only six pounds would be needed, if pure smokeless were used, but the added power of pure smokeless would demand more than two pounds of reinforcement for the firing chamber. A ten-pound Tilling charge would give a velocity of 1,500 feet per second at the same distance.

The small band of experimenters who kept rocketry alive before the revival of military interest believe that rockets offer the ultimate possibility of extremely long range artillery. Even if this should prove desirable (the airplane has largely obviated the necessity), however, altogether new fuels of vastly greater power than those now available would be necessary. For present rocket arms have only a fraction of the range of comparable standard weapons. German and Soviet rocket arms (which are not man-carried and are therefore much larger than the bazooka) generally have a range of about 2,000 yards. Only one reaches farther: the 150 mm. German rocket mortar, when firing 50-pound rocket shell, which is unusually light for a projectile of six-inch calibre, 6,000 yards.

Although there has been a vast improvement, the rocket is still relatively inaccurate. There are four reasons for this. Because it travels at a low rate of speed at the start of its flight, in contrast to the standard projectile, which is travelling at its greatest speed as it leaves the gun muzzle, the rocket is more prone to drift deviation than the gun bullet. (A change of direction at the beginning of flight results in a greater total error than the same change toward the end of the flight.) Second, no powder charge burns with absolute uniformity. Quite wide variations occur in the thrust delivered by different charges at any given instant during combustion,

although the total thrust delivered by the charges may be equal. These variations affect the rocket more than the standard bullet or shell, owing to the greater period of time during which the rocket charge burns and the variations take place.

The third factor in the rocket's want of real accuracy is the fact that the centre of gravity shifts as the propellant, which is naturally placed in the rear half of the military rocket in order to leave space for an HE charge in the head, is consumed. The rocket becomes progressively nose heavier, a change which cannot but affect its trajectory. The consumption of the propellant introduces a fourth source of inaccuracy. As long as the charge burns, there is a high pressure cone immediately behind the rocket as a result of the tail jet. Once the charge is used up, however, the rocket becomes an ordinary projectile, with the ordinary projectile's low pressure area behind. For one part of its flight, the rocket is one kind of a projectile, and for the other, another kind, with altogether different flight characteristics.

Old as the rocket is, it is only recently that real scientific attack on its complicated ballistics has been possible. The rocket's deficiencies in respect to precision of aim as well as to range, however, are offset in part by the great mobility and massiveness of fire of rocket arms. The aforementioned six-barrelled German mortar is built onto the same carriage as the standard Nazi 37mm antitank gun and has a sustained rate of fire of sixty rounds a minute. The Soviet "Katusha," which discharges its missiles more rapidly still and is of the same or larger calibre, needs only a medium truck as its mount. The 30-barrelled Russian antitank device, whose shotgun-like fire is dispersed to counter the tank's ability to maneuver, seems to be only a little taller and wider than a man. The bazooka, of course, can be discharged as fast as ammunition can be fed to it, and can be carried at a trot by a single soldier and go anywhere a man can crawl. Such weapons can be brought much closer to their objectives than comparable conventional artillery.

One of the decisive Red Army accomplishments in the fall of 1941 in the Battles of Smolensk and Moscow was the halting of the previously unstoppable German armor. The Russians achieved this by developing literally scores of means and techniques of antitank defense. One such was the 30-barrelled rocket "shotgun", which has been reported in the *Militar-Wochenblatt* as having forty-two barrels, but a photo of which, published in a recent issue of the rocketeers' magazine, *Astronautics*, shows only thirty. Another specialized Soviet antitank weapon was the IL-2 ground attack plane, which carries extraordinary armor (over engine and other vital parts as well as the cockpit) and armament of two 32mm. cannon as well as machine guns. The IL-2, better known as the Stormovik, was also fitted with rocket bombs slung from rails beneath its wings.

The Russian-originated rocket bomb, also carried by British-supplied Red Air Force Hurricanes and since copied by the Nazis, is simply a bomb with a small "outboard rocket motor", that is, auxiliary

rocket, in its tail in order to add to the bomb's velocity. This boosts its penetrating power greatly (impact varies as the square of the velocity) and, is the one instance where the general rule of the rocket arm's lesser accuracy does not hold, thus enabling more accurate bombing by flattening the bomb's trajectory and shortening its time of flight.

Details of the rocket boosters built into Russian bombs are unavailable. A typical installation, however, is said to carry a propellant charge of roughly five per cent of the total weight of the bomb. In a 220-pound bomb, this would mean a booster charge of eleven pounds; the firing chamber, supports and jets would weigh twenty-five pounds. If a 220-pound bomb of ordinary construction were dropped from a plane travelling 200 miles an hour at an altitude of 1,000 feet, it would reach its target in three seconds with an impact velocity of about 375 feet per second. With the eleven-pound auxiliary charge, however, flight time would be cut to 2.1 seconds and velocity raised to 650 feet per second, very nearly quadrupling its striking power.

The heaviest of today's rocket weapons are the 210mm. German mortar and "Katusha" and the large Russian rack-launched type of rocket. The 210mm. mortar, whose stubby barrels (they are hardly longer than the rockets themselves) are fired in succession like the 105mm. and not in salvo, discharges 150-pound projectiles. "Katusha," on the other hand, if the single glimpse of it afforded by the Soviet newsreel of the Stalingrad battle is an accurate indication, fires in salvo and has much longer barrels, probably to improve its aim. A photo of "Katusha" in action also shows only one crew member. So it may be mechanically loaded. (Loading devices for rocket arms must be power driven; the convenient gas and recoil systems used with standard weapons are naturally out of question). There is no information about the weight of "Katusha's" projectiles, other than that they are heavy. The rack-launched Soviet rockets appear to be fifty-pounders or better.

Perhaps the most interesting member of the rocket family is the bazooka, not only because it is the lightest heavy caliber weapon in service, but also for its employment of another principle which, like the rocket, is not at all new but is just now coming into use. This is the so-called Munroe ring or hollow cylinder explosive principle.

For those who have not made its acquaintance personally, the U.S. rocket launcher, M1, is a long (more than fifty inches), twelve-pound tube discharging a two and a half pound projectile that looks like a sharp-nosed egg attached to a finned stick a few inches long. The bazooka has a normal crew of two. The tube is open at both ends, no breech being necessary since no explosion takes place within the tube. The "breech" end is merely provided with a small pin to prevent the rocket from falling out while the tube is aimed.

The bazooka projectile's propellant charge is quite small. Unlike some rocket projectiles, which depend upon large amounts of propellant and high

velocity for part of their destructive effect, the bazooka shell's driving charge quite literally serves solely as a means of bringing the shell to the target. The bazooka shell's tremendous destructiveness springs from another source altogether, an unusual type of high explosive charge in the projectile's head.

Back in 1900, a Columbia University chemistry professor, Charles E. Munroe, who, by the way, had no interest whatever in military matters, but was merely testing safes, found that a given charge of explosive which, when in solid form, did not damage a heavy steel plate at all, blew a hole clear through it when the charge was arranged in the form of an open cylinder, one end of which was placed against the plate. Such tubular charges proved to be of the order of ten times as destructive as solid charges. (Their effectiveness is due to the mutual compression of the explosive shock waves inside the cylinder; the hole blasted always has the same diameter as the open cylinder of the explosive.)

Professor Munroe reported his discoveries in a magazine article. The next year, 1901, and again in 1911, German interests attempted to pirate his work by patenting it in their own name, but they were unsuccessful. Otherwise his findings were ignored until about 1939, when both the Nazis and we thought ourselves of the forgotten chemist's discoveries. (Munroe himself died during the 1920s.) Both Germany and we are using the principle now. The first use of it in combat may have been in the capture of Fort Eben Emael; photos show Nazi engineers in that action carrying what seem to be ring charges. The weapon in which we employ the Munroe charge is the bazooka. It is no wonder that the bazooka is able to blast through the heaviest tank armor, setting the entire interior afire; no wonder that one enemy tank officer mistook a bazooka attack for the fire of 155mm. howitzers and promptly surrendered his group.

Other than the present, the rocket has left a real mark on only one period of military history, from the Napoleonic wars to the middle of the nineteenth century. The first battle in which it participated was probably the defense of one of northwestern China's cities against the Mongols of Kublai Khan in 1232, an occasion which also saw the first use of explosive grenades, dropped on the Mongols by the Chinese from the walls of their besieged city. The rocket idea reached Europe soon afterwards via the Arabs and figured to some extent in several European battles between 1250 and 1400. In the meantime, however, in 1313 or thereabouts, Friar Black Berthold of Freyburg or some other individual now unknown invented the gun. It was so much better and safer to the user than the crude rocket that the latter disappeared entirely from the European battlefield for 400 years.

The rocket continued to be used in Asia, partly, perhaps, because the gun was not devised in Asia and the guns that did reach the East from Europe were poor. The rockets the Chinese and others employed were small and ineffective, but in the last half of the eighteenth century, much improved types

were brought into action by the native troops defending India from British conquest.

As a result of the appearance of quite effective rockets in the battle of Seringapatam, in 1799, the British began to experiment with rockets. The official experiments were failures, but a Colonel William Congreve, working by himself, devised a weapon that became the terror of Europe for fifty years. It also found its way into the Star Spangled Banner.

In 1806, the British tried out their Congreve rocket in a surprise attack on Boulogne harbor. Picked British tars slipped into the harbor by night in rowboats equipped with the ladder-like launching racks from which the Congreve rocket was fired. The usual number of untoward incidents occurred, but the French were taken by surprise nevertheless (they puzzled for weeks over the mystery of how large missiles could be fired from rowboats) and considerable property damage was done. The next year, 1807, Congreve incendiary rockets really went to town. In an operation intended to eliminate the non-belligerent but pro-Napoleon Danish navy from the Napoleonic struggle, the British bombarded Copenhagen with 25,000 Congreve rockets. These not only sank the Danish fleet but burned the city to the ground.

The British reorganized several field artillery units as a rocket brigade after the success of Copenhagen.

When the British invaded our Middle Atlantic states in 1814 in the course of the War of 1812, they brought with them units of the rocket brigade and half a dozen small men-of-war fitted as rocket craft. The rocket brigadiers played a decisive role in the Battle of Bladensburg, causing two of our regiments to break and flee and thus precipitating a general rout. Our defeat at Bladensburg led to the capture and burning of Washington.

A month later, in September, the British attacked Fort McHenry in Baltimore harbor as a preliminary to the similar capture and burning of Baltimore. The rocket ships were used in the bombardment of the fort. These, however, were unsuccessful, one being sunk with all its hands by a hidden U.S. battery. The rest retired, but not before Francis Scott Key, watching the battle, had written "rockets' red glare" and "bombs bursting in air" into the Star Spangled Banner. (The word bomb was synonymous with rocket in those days.)

The frequently spectacular part played by British rocketeers led other armies to institute rocket brigades of their own right after the Napoleonic wars, but nearly forty years elapsed before the Crimean War, Europe's next major conflict, and by that time, the rocket was once more on its way out. It was driven out by the development of rifled cannon of great accuracy about the middle of the nineteenth century. By 1865, the British rocket brigade was the only one left. It lingered another twenty years, assigned to colonial campaigns (such as the Abyssinian expedition in 1867) only, finally being disbanded, too, about 1885.

Through most of this period, the British used the Hale rocket, a modification of the Congreve rocket, rather than the Congreve itself. The first Congreve projectiles had a tangential tail stick, like the Fourth of July skyrocket. This arrangement was hopelessly inaccurate and was soon replaced by a centrally located tail stick. But even the latter type of Congreve was unreliable and gave way to the Hale type. The Hale rocket was tailless. It was kept on its course by an auxiliary firing chamber, the gases evolved in which were liberated from side ports and spun the rocket, by a pinwheel effect, much as rifling spins a bullet.

Hale rockets were issued to the rocket brigade in 3-, 9-, 12-, 24- and 32-pound sizes, although rockets as heavy as 300 pounds were also made. The Mark IV 24-pound Hale rocket of 1870, representative of models of the type, was two feet long and four inches in diameter, approximately the size of a complete 105mm. round. It was made of steel or cast iron and carried a bursting charge of three pounds of wet gun cotton. For propellant it had nine and a half pounds of gunpowder made from willow charcoal, sulphur and saltpeter. Its range varied widely, sometimes reaching 4,000 yards, but generally was only half that.

For the past two years, the Luftwaffe has added to the capacity of its bombardment planes by the expedient of loading them far beyond the limit at which they can take off under their own power and then launching them by means of auxiliary devices. One is a compressed air or explosive driven winch-and-cable originally developed in England about 1927 and very much like the conventional catapult, except that the tow cable is attached directly to the plane instead of to a special carriage cradling the plane. The other Nazi-used take-off booster is a group of gunpowder rocket cartridges in a rig attached to the belly of the plane. The cartridges are fired in succession, providing extra thrust of several hundred pounds throughout the take-off run and for several seconds afterward. The empty cartridges and rig are dropped before the plane heads for its objective and recovered for re-use. The rocket rig has been used with the Dornier 217 and Junkers 88, with the latter, whose normal gross weight is about twelve tons, loaded up to seventeen tons.

Most of the rocket devices so far discussed have no application whatever in time of peace. They are purely military. The take-off booster, however, is not, for one of the problems which has long beset the aeronautical engineer is the fact that airplanes require twice as much power to leave the ground with a given load as to stay aloft once in the air. The rocket launcher offers a promising means of getting expensive-to-operate planes into the air with really full cargo holds. But for that purpose, the solid fuel cartridge rocket such as the German is far from satisfactory. It delivers power in bursts rather than in a smooth flow. Liquid fuels whose output can be regulated by valves controlling the flow of fuel are preferable. Several such have been experimentally developed.

In Wartime, Booby Traps are Weapons

By SERGEANT W. R. KELL, Editor
"On Parade", 5th (R) Armd. Div. RCASC.

WINNIPEG, MAN.—A short time ago this writer's son was killed in an airplane crash on an Ontario farm. The newspaper account reported that shortly afterwards the roads were black with people streaming toward the scene of the accident, all intent upon securing part of the plane still unburned, as a souvenir of an accident that cost a fine young fellow his life. RCAF men had to guard the wreckage day and night to foil these morbid souvenir-seekers.

Collecting mementos seems a common trait with most of us. Even on the battlefield soldiers will pick up oddments, from shell nose caps to German Lugers and binoculars.

So naturally, our resourceful enemy took advantage of that craze to collect souvenirs—and loaded them for bear.

After a few experiences the souvenir hunter learns to leave fountain pens, whistles, cigarette cases and whatnot, strictly alone, or he may find his collecting ends up in a piece of ground 6 ft. x 3 ft.—complete with a wooden cross.

Appropriately named "Booby traps" the ground left by a retreating enemy is decidedly unsafe. Apart from land mines, every stone or tree, item of equipment, empty house and most innocent appearing articles may be carefully designed to speed the unwary to his final resting place.

So the wise soldier suspects everything and lives to tell the tale of explosive windows, detonating beds and cameras that blast the souvenir hunter into eternity.

A demolition expert in the Italian area, whose job it is to prevent the booby and the trap from joining up, said that when he saw one of our boys start to pick up a nice looking pistol or German helmet, he promptly phoned for an ambulance.

Enemy explosive devices discovered are legion: for instance a German plane shot down behind our front lines had a fine radio set. When it was being removed, the set exploded and five men died in the blast.

In one narrow pass, hand grenades were hung on steel wires and concealed. Another steel wire was stretched taut a few inches above the road. When troops stepped on the wire the grenades exploded.

Wells and reservoirs, in areas abandoned by the Germans have been found with explosive loads left in them. One large cistern contained a charge of 20 kilograms of TNT with a firing system, as the boys who tried to get a bucket of water by hauling up the rope, found out.

Many houses at the front are full of such gags as a load of TNT attached to a wire that leads to the door, or a loose floor board between one room and another. One nice little stunt was putting a heavy explosive charge under the body of a dead German. When the body was removed, it vanished in a burst of flame—so did the remover.

Setting unexpected traps for an enemy is almost

as old as war itself. But with more civilized ? ? ? technique and modern appliances the laying of booby traps designed to kill more men in a shorter time has become a precise art.

Chief among these death traps was the anti-personnel mine introduced by the Germans in the fall of 1939. French Army Headquarters began to receive reports of strange happenings to patrols which went out, but failed to return. Days later the shrapnel-torn remains would be found, which meant that clearly the patrols were stumbling into some new and deadly form of booby trap. The French dubbed their mysterious slayer as the "Silent Soldier."

Then one of the "secret" weapons fell into French hands. It was the latest model mine. Its chief feature was an arrangement whereby the mine, on being tripped by a wire, was boosted out of the ground to waist height before exploding. Actually the "Silent Soldier" was a bomb which sprayed a wide area with shrapnel and therefore was much more deadly than a mine buried below the surface.

The moment one of the numerous trigger wires hidden in grass and leaves was touched up came the mine, bang it went and the patrol took no further interest in anything, evermore.

The French finally disposed of this trap by driving herds of swine across suspected areas and thus stripped the detonators.

A form of booby trap used on territory that is being yielded to an enemy consists of a bomb placed so that such simple actions as turning a door knob, raising a window or moving a chair will disturb a fine wire attached to the detonator. For the incautious soldier and all others in the vicinity the war ends in the ensuing blast.

A favorite booby trap used by the Germans had its trigger wire attached to a picture of Hitler left in an evacuated house. The soldier, true to his instincts, would grab the picture to throw it to the ground—and departed from life in a flash and a roar.

Today, however, the United Nations' fighters are using the same tricks. A Nazi colonel went up in smoke when he pushed open the door to his box at a theatre in Belgrade. Our men, too, are learning to avoid booby traps. No longer do they pick up helmets, pistols, cameras and other oddments left behind by the enemy. On today's battle-fields souvenir collectors are not likely to live long.

Strange to say among the worries of the booby trap clearing are mines that don't explode. Blocks of wood shaped just like the real mine are set in the mine fields, and the harried mine clearer, who cannot afford to take chances, consumes time prodding and examining just as carefully as he would the real thing. Moreover the next time the mine may be the real thing. No wonder then the motto in this hazardous business is "Your First Mistake Is Your Last."

THE ASSOCIATION OF SERVICE NEWSPAPERS ADVERTISEMENT PAGES,
67/68, JERMYN STREET, ST. JAMES'S, S.W.1. TEL. WHITEHALL 2504.



HE'S GOT A MARS IN EVERY PORT

MARS comes first with the Forces



For Extra Smartness
the shoes of
more & more
officers are
being polished
with



ALSO IN
BLACK, &
DARK BROWN.

SUPREME for QUALITY

N/JK



Poland,
Captain of
Engineers

Printed in Great Britain

The best
Toilet Preparations
are made by

JULES FRÈRES LTD.
LONDON, S.E.17

When you next buy Toilet Preparations at your
N.A.A.F.I. Canteen see that they bear the name

JULES FRÈRES LTD.

It is a guarantee of quality and value renowned all
over the country.

Remember: Jules Frères Ltd. are also the makers of

JULYSIA Tonic Hair Cream

which it is hoped will soon be available once more

Whiskers routed by
PALMOLIVE SHAVING CREAM



Its rich, olive-oil lather gives the double luxury of a smooth shave
and a soothed and comforted skin. Softening the beard in one
minute, its strong bubbles—which last at least 10 minutes—keep
bristles erect for the razor.

PRICES 1/6 & 2/6 including Tax

In Wartime, Booby Traps are Weapons

By SERGEANT W. R. KELL, Editor
"On Parade", 5th (R) Armd. Div. RCASC.

WINNIPEG, MAN.—A short time ago this writer's son was killed in an airplane crash on an Ontario farm. The newspaper account reported that shortly afterwards the roads were black with people streaming toward the scene of the accident, all intent upon securing part of the plane still unburned, as a souvenir of an accident that cost a fine young fellow his life. RCAF men had to guard the wreckage day and night to foil these morbid souvenir-seekers.

Collecting mementos seems a common trait with most of us. Even on the battlefield soldiers will pick up oddments, from shell nose caps to German Lugers and binoculars.

So naturally, our resourceful enemy took advantage of that craze to collect souvenirs—and loaded them for bear.

After a few experiences the souvenir hunter learns to leave fountain pens, whistles, cigarette cases and whatnot, strictly alone, or he may find his collecting ends up in a piece of ground 6 ft. x 3 ft.—complete with a wooden cross.

Appropriately named "Booby traps" the ground left by a retreating enemy is decidedly unsafe. Apart from land mines, every stone or tree, item of equipment, empty house and most innocent appearing articles may be carefully designed to speed the unwary to his final resting place.

So the wise soldier suspects everything and lives to tell the tale of explosive windows, detonating beds and cameras that blast the souvenir hunter into eternity.

A demolition expert in the Italian area, whose job it is to prevent the booby and the trap from joining up, said that when he saw one of our boys start to pick up a nice looking pistol or German helmet, he promptly phoned for an ambulance.

Enemy explosive devices discovered are legion: for instance a German plane shot down behind our front lines had a fine radio set. When it was being removed, the set exploded and five men died in the blast.

In one narrow pass, hand grenades were hung on steel wires and concealed. Another steel wire was stretched taut a few inches above the road. When troops stepped on the wire the grenades exploded.

Wells and reservoirs, in areas abandoned by the Germans have been found with explosive loads left in them. One large cistern contained a charge of 20 kilograms of TNT with a firing system, as the boys who tried to get a bucket of water by hauling up the rope, found out.

Many houses at the front are full of such gags as a load of TNT attached to a wire that leads to the door, or a loose floor board between one room and another. One nice little stunt was putting a heavy explosive charge under the body of a dead German. When the body was removed, it vanished in a burst of flame—so did the remover.

Setting unexpected traps for an enemy is almost

as old as war itself. But with more civilized ??? technique and modern appliances the laying of booby traps designed to kill more men in a shorter time has become a precise art.

Chief among these death traps was the anti-personnel mine introduced by the Germans in the fall of 1939. French Army Headquarters began to receive reports of strange happenings to patrols which went out, but failed to return. Days later the shrapnel-torn remains would be found, which meant that clearly the patrols were stumbling into some new and deadly form of booby trap. The French dubbed their mysterious slayer as the "Silent Soldier."

Then one of the "secret" weapons fell into French hands. It was the latest model mine. Its chief feature was an arrangement whereby the mine, on being tripped by a wire, was boosted out of the ground to waist height before exploding. Actually the "Silent Soldier" was a bomb which sprayed a wide area with shrapnel and therefore was much more deadly than a mine buried below the surface.

The moment one of the numerous trigger wires hidden in grass and leaves was touched up came the mine, bang it went and the patrol took no further interest in anything, evermore.

The French finally disposed of this trap by driving herds of swine across suspected areas and thus stripped the detonators.

A form of booby trap used on territory that is being yielded to an enemy consists of a bomb placed so that such simple actions as turning a door knob, raising a window or moving a chair will disturb a fine wire attached to the detonator. For the incautious soldier and all others in the vicinity the war ends in the ensuing blast.

A favorite booby trap used by the Germans had its trigger wire attached to a picture of Hitler left in an evacuated house. The soldier, true to his instincts, would grab the picture to throw it to the ground—and departed from life in a flash and a roar.

Today, however, the United Nations' fighters are using the same tricks. A Nazi colonel went up in smoke when he pushed open the door to his box at a theatre in Belgrade. Our men, too, are learning to avoid booby traps. No longer do they pick up helmets, pistols, cameras and other oddments left behind by the enemy. On today's battle-fields souvenir collectors are not likely to live long.

Strange to say among the worries of the booby trap clearing are mines that don't explode. Blocks of wood shaped just like the real mine are set in the mine fields, and the harried mine clearer, who cannot afford to take chances, consumes time prodding and examining just as carefully as he would the real thing. Moreover the next time the mine may be the real thing. No wonder then the motto in this hazardous business is "Your First Mistake Is Your Last."

THE ASSOCIATION OF SERVICE NEWSPAPERS ADVERTISEMENT PAGES,
67/68, JERMYN STREET, ST. JAMES'S, S.W.1. TEL. WHITEHALL 2504.



HE'S GOT A MARS IN EVERY PORT

MARS comes first with the Forces



For Extra Smartness
the shoes of
more & more
officers are
being polished
with



ALSO IN
BLACK, &
DARK BROWN.

SUPREME for QUALITY

NJK



Poland,
Captain of
Engineers

Printed in Great Britain

The best
Toilet Preparations
are made by

JULES FRÈRES LTD.
LONDON, S.E.17

When you next buy Toilet Preparations at your
N.A.A.F.I. Canteen see that they bear the name

JULES FRÈRES LTD.

It is a guarantee of quality and value renowned all
over the country.

Remember: Jules Frères Ltd. are also the makers of

JULYSIA Tonic Hair Cream

which it is hoped will soon be available once more

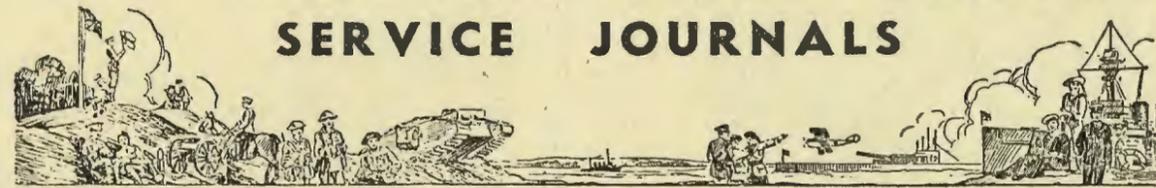
Whiskers routed by
PALMOLIVE SHAVING CREAM



Its rich, olive-oil lather gives the double luxury of a smooth shave
and a soothed and comforted skin. Softening the beard in one
minute, its strong bubbles—which last at least 10 minutes—keep
bristles erect for the razor.

PRICES 1/6 & 2/6 (including Tax)

THE FOLLOWING FIRMS SUPPORT SERVICE JOURNALS



<p>PRESSINGS - SPINNINGS SHEET METAL - PRODUCTS</p> <p>E. CAMELINAT & Co., Ltd. ALBION WORKS, CENTRAL 6755 TENBY ST. & CARVER ST., B'HAM (4 LINES)</p>	<p>SIMMONDS & STOKES, LTD.</p> <p>Specialists in all kinds of Cable Couplings</p> <p>NIPHAN</p> <p>VICTORIA HSE., SOUTHAMPTON ROW, LONDON, W.C.1</p>	<p>LABELS, TOKENS & BADGES</p> <p>NUMBER PLATES for PICTURES PRESENTATIONS GARDENS</p> <p>for CANTEENS MESSROOMS, etc.</p> <p>RELIANCE (Nameplates) LTD. CAMBRIDGE ROAD, TWICKENHAM</p>
<p>TRIUMPH</p> <p>World's Pre-eminent Motor Cycle</p> <p>TRIUMPH ENGINEERING COMPANY, LIMITED COVENTRY</p>	<p>BULPITT & SONS LTD. BIRMINGHAM ENGLAND</p> <p>SHEET-METAL WORK OF ALL KINDS</p>	<p>Gastings</p> <p>SPECIALISING IN NON-FERROUS CASTINGS of every description</p> <p>BILLINGTON & NEWTON, LTD. LONGPORT, STAFFS.</p>
<p>SIR WILLIAM ARROL & CO. GLASGOW</p> <p>Bridge Builders, Crane Makers, General Engineers</p>	<p>Butler's</p> <p>TABLE CUTLERY SILVER PLATE POCKET KNIVES SCISSORS & RAZORS</p> <p>GEORGE BUTLER & COMPANY, LIMITED SHEFFIELD</p>	<p>BENJAMIN INDUSTRIAL LIGHTING EQUIPMENT</p> <p>THE BENJAMIN ELECTRIC LTD. Brentwood Works, Tottenham, London, N.17</p>
<p>GIRLING BRAKES The Best Brakes in the World</p> <p>Sole Manufacturers NEW HUDSON LIMITED</p> <p>GARRISON LANE, BIRMINGHAM, 9</p>	<p>LANGHAM WORKS LTD. ENGINEERS</p> <p>General Machinists and Gear Cutters</p> <p>42a Walmer Rd., London, W.10 Tel. PARK 8470/1</p>	<p>B.H. MOXON & SONS, Ltd. SPRINGFIELD MILLS, KIRKBURTON</p> <p>Nr. HUDDERSFIELD</p> <p>FINE FANCY WORSTED SUITING MANUFACTURERS</p>
<p>CLARKE, CHAPMAN and Company Limited</p> <p>Engineers since 1862</p>	<p>SAMUEL GILL & SONS Designers & Manufacturers of Jigs, Tools, Fixtures, Gauges & Special Machines</p> <p>Lythalls Lane, Coventry Tel. Cov. 88605 Air Ministry Authority 707713/37</p>	<p>The Cleveland Bridge & Engineering Company, Ltd. - - - Darlington</p> <p>BRIDGE BUILDERS & GENERAL CONTRACTORS</p> <p>All Types of Bridges & Steel Structures</p>
<p>LATCH & BATCHELOR LTD.</p> <p>Amalgamated with WEBSTER & HORSFALL</p> <p>WIRE & WIRE ROPE MANUFACTURERS</p> <p>HAY MILLS, BIRMINGHAM, 25</p>	<p>SAMUEL GILL & SONS Designers & Manufacturers of Jigs, Tools, Fixtures, Gauges & Special Machines</p> <p>Lythalls Lane, Coventry Tel. Cov. 88605 Air Ministry Authority 707713/37</p>	<p>BUTTONS of all descriptions</p> <p>MANUFACTURED BY BUTTONS LIMITED, BIRMINGHAM</p>
<p>BIRMAL</p> <p>The Birmingham Aluminium Casting (1903) Co., Ltd.</p> <p>Birmid Works, Smethwick, 40</p>	<p>HIPPS (1931) LTD.</p> <p>CLOTHING MANUFACTURERS</p> <p>BALM ROAD MILLS, LEEDS, 10</p>	<p>PATONS & BALDWIN LTD.</p> <p>SPIN WOOLS FOR ALL KINDS OF CLOTHING</p> <p>ALLOA : HALIFAX : LEICESTER WAKEFIELD</p>

Stafford's

LABORATORY CONTROLLED PRODUCTS

When peacetime production is resumed, "Stafford's" is a good name to remember when you will be in the market for sundae sauces, flavors, toppings, syrups, ice cream fruits, soups, gravy makers, jelly powder bases, custard powders, baker's concretes, fruitthick, and many other specialty food products.

Order from your Stafford representatives

J. H. STAFFORD INDUSTRIES LIMITED - 24-26 HAYTER ST., TORONTO, CANADA

C.A.C. WOMEN'S AUXILIARY

(Continued from page 2)

Mrs. G. E. Vance reported that she had taken out an average of eight volunteers each Wednesday to the YWCA Hostess Hut at Camp Borden, where they assisted in the care of infants and children whose mothers were at the weekly social afternoon held at the Hut. Forty-nine such expeditions had been made during the year. She thanked the RCASC bus service for providing transportation each Wednesday.

Mrs. F. F. Worthington read a report on the annual Christmas party held in Barrie Armouries on Dec. 18, at which the distribution of the toys and their previous purchase and allotment had been the responsibility of the Auxiliary.

Mrs. G. Drake-Brockman, as Publicity Convener, said that a record had been kept in album form of all the activities of the Auxiliary throughout the year and she thanked the management of The Barrie Examiner for the kindness and courtesy with which they had always made space available for all such reports.

The Treasurer's report as under was then presented by Mrs. Wallace:

Receipts	
Membership	\$ 17.00
Collections, donations	804.40
Russian tag day	941.62
Carnival, June 19	3,080.00
Sale of knitting bags	18.00
Penny Bank collections	88.68
Sale of caricature	10.00
Plan for hospital care	319.80
Bank balance, December, 1942	1,490.24
Total receipts	\$6,769.74

Expenditure	
Office expenses	\$ 69.57
Advertising and publicity	2.40
Materials purchased	28.08
Aid to Russia Fund	941.62
Donation to Red Cross	500.00
Direct welfare	437.24
Expenses Russian tag day	17.66
Cigarettes overseas	1,800.00
Chocolate bars overseas	71.05
Carnival expenses	588.35
Christmas party	66.47
Plan for hospital care	316.50
War Bonds	500.00

Total expenditure	\$5,338.94
Bank balance on hand	1,430.80
	\$6,769.74

Mrs. R. F. Jobson, vice-president, proposed a special vote of thanks to Mrs. Cave, who for the past five months had

ROCKETS

(Continued from page 15)

Between the death of the Hale rocket and 1935, rocketry was largely in the hands of amateurs whose interests lay in the direction of high altitude rockets for meteorological purposes and, in the case of the more imaginative and daring experimenters, cargo- and man-carrying projectiles. For such sustained flight, they turned early to liquid fuels. Two main fuel mixtures were developed in America and Germany, where the most progress was made despite the fact that both nations' rocketeers had little financial support. These were liquid oxygen (loxygen, as it is often called) and gasoline, and loxygen and frozen alcohol. The latter is more efficient, generating greater thrust per pound, owing to the fact that alcohol contains in combined form part of the oxygen necessary for its own combustion. Only two and a half pounds of loxygen are needed per pound of alcohol, as against three and a half pounds with gasoline. Neither of these compounds is the final answer, for liquid oxygen is difficult to handle (owing to losses from evaporation, it must be generated afresh a short time before each use,) but they represent an encouraging advance.

CALCUTTA—Bow-and-arrow tribesmen of the Assam border have been comrades of the British "Tommy" and the Indian soldier in the fighting in Burma during the long monsoon months. At one hundred yards' range the feathered shafts of these Naga hill dwellers can kill as effectively as a bullet—and without a sound.

ALGIERS—After the surrender of Tripoli, General Alexander telegraphed to Mr. Churchill: "Sir, the orders you gave me on August fifteenth, 1942, have been fulfilled. His Majesty's enemies, together with their impedimenta, have been completely eliminated from Egypt, Cyrenaica, Libya and Tripolitania."

combined the arduous task of Welfare Convener, dealing with an average of one case per week, with that of Acting President of the Auxiliary. This was carried with acclamation.

The election of officers for the coming year then took place with the chairman of the Nominating Committee in the chair. The results were as follows: President, Mrs. J. C. Cave; 1st Vice-President, Mrs. R. F. Jobson; 2nd Vice-President, Mrs. Angus McNabb; Rec. Secretary, Mrs. Frank Landriau; Cpr. Secretary, Mrs. Parr; Treasurer, Mrs. Briggs; Assistant Treasurer, Mrs. G. Farmer.



The Governor General's Horse Guards

By MAJOR H. T. R. GILMORE, NO. 3 CACTR

The first troop of this Regiment was raised in 1810 by Captain John Button, who had been commissioned by General Brock. This troop was known as "Button's Troop" and performed useful service in the War of 1812.

In 1822 Captain George T. Denison was called the Regiment was then changed to the "York Dragoons". This troop afterwards served in the Rebellion of 1837-38.

upon to organize a troop of cavalry, and the name of

In 1853 the name was changed to First Troop, First Regiment, York Dragoons, and thirteen years later to The Governor General's Body Guard of Upper Canada. This latter name was chosen because, as the oldest continually maintained troop of cavalry, it had performed escort duty very often, and to many governors of Canada.

In 1936 the Governor General's Body Guard and the Mississauga Horse amalgamated to become The Governor General's Horse Guards under Lieut.-Col. A. J. Everett, M.C., V.D., who was succeeded by Lieut.-Col. A. E. Nash, M.C.

In July, 1940, the Regiment was mobilized for active service as the 2nd Canadian Motorcycle Regiment, GGHG, under the command of Lieut.-Col. R. P. Locke, E.D.

In January, 1941, it was changed to the 3rd Armoured Regiment, GGHG, and went overseas as a part of the 5th Canadian Armoured Division, under Lieut.-Col. H. M. Sharpe. The Reserve Regiment was formed in July, 1940, under the command of Lieut.-Col. W. L. Rawlinson, M.C., V.D., who was succeeded later by Lieut.-Col. G. D. Thomas, V.D.

Because of its role as a body guard, this Regiment has the honour of having as Honorary Colonel, the Governor General of Canada. The Honorary Lieut.-Col., Colonel R. Y. Eaton, has taken a great interest in the Regiment for many years.

Highlights in the early career of this Regiment feature service of many of its many members under Kitchener during the Sudan Campaign; the crossing on the ice of Whitefish Bay, Lake Superior, by a mounted troop during the Northwest Rebellion; furnishing a mounted escort to Their Majesties, King Edward VII and Queen Alexandra, when, as the Duke and Duchess of Cornwall and York, they visited Canada in 1901; and the furnishing of a similar escort to their Majesties, King George VI and Queen Elizabeth, during their visit in 1939.

In September, 1941, the First Regiment, and the Reserve Regiment of the Governor General's Horse Guards paraded to the Timothy Eaton Memorial Church to deposit the regimental standard there for safe-keeping. Battle honours on the standard include the Northwest Rebellion, The Great War, Mount Sorrell, Somme—1916, Arras—1917, Hill 70 and Ypres—1917.

The Regimental Motto is "Nulli Secundus", meaning "Second to None."

It is interesting to note that a prize, offered by the Czar of Russia in 1864 for the best book on cavalry and military operations on horseback, in a contest open to cavalry officers of all nations, was won by Lieut.-Col. George T. Denison 3rd, a direct descendant of Captain Denison, mentioned earlier in this article.



'Second to None'

GREYS

CIGARETTES

Just honest-to-goodness tobacco

20 for 2'4 ★ 10 for 1'2

ISSUED BY GODFREY PHILLIPS LIMITED IN THEIR 99th YEAR



ORDERLY
SERGEANT
thanks to

BLUEBELL

LIQUID METAL POLISH



THE MATCH FOR THE BRITISH FORCES

BRITISH MADE BY BRYANT & MAY

Printed in Great Britain

Services Tributes to 'ASPRO'



SERGEANT
OVERSEAS
PRAISES
'ASPRO'

'ASPRO' PUTS "THE
BOYS" RIGHT

Dear Sir, A.C.2 H. Rowley, R.A.F.
I am writing this letter to let you know how I have benefited by taking your 'ASPROS'. My job makes it necessary for me to be out in all weathers and last week I had a severe cold and also a splitting headache. I thought I was in for a dose of the 'flu but before going to bed that night I took 2 'ASPROS' and a cup of hot milk and hey-presto I was as fit as ever and ready for duty the next morning. Whenever any of the boys are feeling out of sorts I give them an 'ASPRO' and it sharp puts them right. Wishing you success and thanks again for 'ASPRO'.—I remain, Yours faithfully,
H. ROWLEY.

NAVAL AIRMAN HELPED BY MATE'S SUGGESTION

Dear Sirs.—For quite a long time I had been suffering from very severe headaches. A mate of mine suggested 'ASPROS' so whenever I had an attack I took them. After a very short time I was completely free from these headaches.—I remain, Yours sincerely,
R. G. M. (Fleet Air Arm).

Made in England by
ASPRO LIMITED
Slough, Bucks.

OBTAINABLE FROM YOUR
N.A.A.F.I. CANTEEN



THE GERMAN DEFEAT AT OREL:
HEAVY LOSSES IN MEN AND ARMOUR

On August 5, 1943, Moscow celebrated the Red Army's great double victory—the capture of Orel and Belgorod. The capture of these strongholds represented a deep penetration into heavily fortified German-held territory, and gave the Soviet forces valuable bases from which to develop their great offensive... The Germans suffered heavy losses in both men and equipment.

Street Fighting Tactics

By **LIEUTENANT GENERAL V. I. CHUYKOV**
Commander, Soviet Sixty-Second Army

Russian experience at Leningrad, Odessa and Sevastopol, and especially at Stalingrad has added much to our knowledge of the tactics and composition of street-fighting units.

At Stalingrad the defenders created small shock (assault) groups for the house-to-house fighting required there. Such groups are kept small to keep them flexible and mobile, and they are equally valuable on either defense or offense. We learned at Stalingrad that in street fighting it takes a shock group not simply to destroy the enemy, but also to organize and use the captured strongpoint for our own purposes.

Small shock groups can work independently of other groups when the enemy has just seized a section of a city and is not well established. But where the Nazis have had a chance to establish an unbroken defensive line with strongpoints and a developed fire net, the action of shock groups must be planned to the last detail, for then they are the spearheads of further coordinated attacks. Shock groups attack swiftly and violently and they are directly supported by reinforcements.

We found that assault groups are best made up of three battle teams, the storm groups proper, the reinforcement groups, and reserves.

There is no hard and fast rule to cover the number of fighting men needed in such groups. Each commander must decide this for himself after studying the enemy's strength and fire power. But it is possible to say explicitly what the peculiar tasks of each group are.

It is the storm groups around which the whole shock group is formed. These are not large in numbers—six to eight men each. They are lightly armed, usually with hand grenades, tommy guns, daggers and shovels.

Each group gets a specific task in each situation. They fight to get inside the objective, for example, a sizable building, and destroy the enemy. In doing this they go through the whole building, each group through the section of the building allotted to it. The groups have a common commander and his means of communication are signal rockets, flares, and sometimes a telephone.

The reinforcement groups advance close in rear of the storm groups—just as soon as their commander signals "I am inside." When a rocket goes up to indicate that the storm groups have entered the objective, the reinforcement group rushes into the building, occupies the firing points already gained by the storm groups, and establishes new ones, creates a fire system of its own, and cuts across all the enemy's attempts to come to the aid of the garrison.

The reinforcement groups are heavily armed.

They carry light and heavy machine guns, antitank rifles, mortars, antitank cannon, crowbars, picks, and explosive charges. They necessarily include combat engineers and other men equipped with the most effective means of demolishing and destroying the enemy. The reinforcement group is subordinate to the commander of the storm groups.

The reserves are used to fill up and strengthen the storm groups to ward off lateral counterattacks by the enemy, and also, whenever they are so needed, as a blocking group or groups. Additional storm groups, also, can quickly be formed from the reserves as needed.

Speed and surprise are the two things that make the maneuver of shock groups effective. How inseparable those two elements are is to be seen from the following incidents.

Our storm groups attacked "Railwayman House" at Stalingrad. The storming groups had three minutes in which to get in and do their jobs. It was estimated that no more than a three-minute lull could pass between the last bursts of machine-gun fire and other preparatory covering fire against the enemy's firing points, and the moment when these points could be expected to spring back into life.

The storm groups made brilliant use of these three minutes. They rushed the house before the enemy could recover from the murderous fire directed against him just before the assault. Moreover, by thirty minutes later, every firing position inside this strongpoint had fallen, the first prisoner had been taken, and the garrison—consisting of two infantry companies and one heavy-weapon company—had been surrounded. There were three storm groups of six to eight men, each supported by eighty-two other men. This operation illustrates especially the importance of time.

Surprise played a big part in the capture of the "L-shaped house," also at Stalingrad. Here we put on a night attack without previous fire preparation. The storm groups broke into the house through the windows, one after another without losing formation, first of all hurling grenades through the windows as the groups ran forward. The Nazis did not have time to fire a single shot. In twenty minutes the storm group had been through one-third of this enormous six-storeyed building which sprawled over two blocks.

Every leader who has the job of storming an enemy strongpoint or centre of resistance has to realize the importance of time and surprise.

In hand-to-hand fighting, time and surprise merge—both are equally important. It is first of all a matter of getting near your enemy. The shock group must fight hand-to-hand. Its chief and indis-



NAAFI TALKS
No. 3

Cause and Effect—

In the piping days of peace NAAFI canteens offered sweets and chocolate in rich variety.

When sweet rationing came into force, the Ministry of Food applied the zoning scheme to NAAFI's allocation of sweets for the Services. This meant that, broadly speaking, only those varieties actually manufactured in the area in which NAAFI warehouses were situated could be obtained by those warehouses. Result . . . less variety in NAAFI canteens than in the shops.

Now, the zoning scheme is in force for all retailers, and a gradual decrease in the varieties on sale in civilian shops will be observed.

Another reason for the smaller variety available in NAAFI canteens was explained recently by Sir James Grigg in the House of Commons. The War Minister said:

"NAAFI are doing their best in the increasing difficulties of the present time. Retail shops, however, started rationing with the advantage of a reserve stock which has so far enabled them to supply a greater variety of sweets. NAAFI were only allotted enough sweets for their needs, and were unable to build up a reserve."

Service men and women are asked to remember that supplies of chocolate are short. Frequently, therefore, they may have to take part of their ration in boiled sweets or other confectionery lines.

**NAVY, ARMY & AIR FORCE
INSTITUTES**

**RUXLEY TOWERS, CLAYGATE, ESHER,
SURREY**



Are your teeth
"under a cloud"?

the answer's on
the tip of your tongue

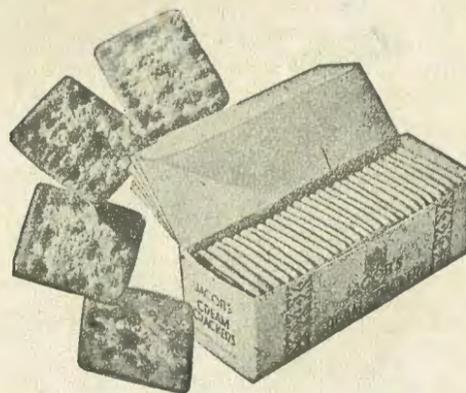
Run the tip of your tongue over your teeth. If you feel a filmy coating, change to Pepsodent to-day and see how quickly Irium—the super cleanser used in Pepsodent—flushes film away, polishes teeth shiny smooth. Pepsodent will make your teeth make your smile a ray of sunshine.



7½d., 1/3, 2/2 Including Tax.
TAKE OLD TUBES BACK TO THE SHOP

PEPSODENT

JACOB'S CREAM CRACKERS



Make an appetising light lunch with
Cheese, Meat Pastes, Savouries, etc.

pensable weapon is the grenade. The grenade dictates the distance of the assault—the nearer the enemy, the better.

Thus assault operations of this kind above all demand persistent, concealed progress, with the one aim of getting the attackers up to close quarters with the enemy.

The forward area of the sector occupied by the Russian troops was 180 yards from the "L-shaped house," but the storm groups rushed it from an initial position only thirty yards away. Approaches have to be made through trenches, or by crawling, using shell holes and ruins as cover. These trenches must be dug at night and kept well camouflaged. The men must gather for the final rush without being seen or heard by the enemy.

But however bold the group may be, the leader will look in vain for success if he has not planned the whole thing thoroughly. The assault especially must be carefully prepared and accurately calculated. The leader's preparations are based on two things: his study of the objective (the ground), and a complete and detailed assault scheme.

The study of the objective must give him a complete picture of the enemy's firing points and fire system. From it he must become completely familiar with all ways of approach. Only thus can he gauge the best hour and moment for the attack. From reconnaissance he must also gain detailed information on the defenses—the thickness of walls and obstacles, the position of entrances, concealed loopholes and passages of communication, the ground covered by enemy fire, the obstacles in front of the strong-point, and the firing points of neighboring strong-points which can place our approaches under flanking fire.

If necessary, the information supplied by reconnaissance must be checked by combat patrols.

This careful reconnaissance will help the leader solve his six main problems, which are:

- (1) Composition and organization of the assault groups.
- (2) Composition of the reinforcing groups.
- (3) The extent of reserves.
- (4) The tasks of the groups of all stages of the battle.
- (5) The degree to which the attack should be supported by fire from the rear; also, fire to cut off the enemy from his own reserves.
- (6) Signals and communications.

Men trained to be members of assault groups are told "There must be two of you to rush a house: you and a grenade. Both of you should be lightly dressed, you without your haversack and the grenade without its shirt. In rushing a house let the grenade go in first; then you follow. Go through the whole house the same way: first the grenade and then you yourself."

The tactics of an assault group must be flexible. Speed, drive, great initiative and boldness are demanded of every man, if for no other reason than that all sorts of unexpected things are bound to happen.

The fighting man finds himself in a labyrinth of rooms and foxholes, all full of danger. Never mind. Chuck a grenade in every corner. Go on. Put a tommy-gun burst into the remains of the ceilings; if that is not enough, then a grenade and forward again. The next room—another grenade. Comb it out with the tommy gun.

Don't dawdle!

Once you are at the objective the enemy may try a counterattack. He knows how to fight as well as you. Don't be afraid. You have already taken the initiative and it is in your hands. Attack all the more fiercely, use your grenades, your tommy gun; then go for the dazed enemy with dagger or shovel.

Fighting inside a house is savage fighting. Blind your enemy by every means and then hit him from the darkness. Be prepared for surprises.

The reinforcing groups also have their own tactical methods, which have passed the severest tests. They have to plan for every trifle as well as for the major problems.

Machine-gunners, mortar-gunners, number ones of antitank rifle crews now force their way into the building. Their number twos follow them, carrying ammunition and food for twenty-four hours.

Having forced their way in, they must immediately seize the upper or middle floors, in order to keep the surrounding ground under fire and prevent the bringing up of enemy reserves.

After occupying and establishing firing points in the building, supplementary firing positions must first be established outside the building on its flanks and then moved forward towards the enemy, in order to come to close quarters as a prelude to further active operations. This is most important. A house is, after all, more suitable for peaceful living than for battle operations, and especially offensive operations.

Don't stay put in a house. Immediately begin again to establish routes of communication, new blocks and trenches. Persistently work your way nearer the enemy.

Russian leaders and men are working hard to solve the tactical problems involved in cooperation between assault groups and artillery, tanks and other arms. At present we think this way about it. If the enemy's firepower is concentrated only inside a building or other objective which he has transformed into a strongpoint or centre of resistance, the assault must be sudden, without artillery preparation. In such circumstances, artillery preparation would have no effect.

Nevertheless artillery must go into action in the

course of the attack. Small caliber guns, supported by antitank rifles, brought forward at night or behind a smoke screen, can effectively belabor the enemy's firing points. These guns, moved forward quickly to their previously chosen positions, should place fire to cut the enemy off from escape and paralyze the enemy's attempts to help his troops within our own objective to be stormed.

One method of giving artillery support without sacrificing the speed of the initial attack may be noted here. The artillery opens fire on firing points within the enemy defense position ten minutes after the assault groups have forced an entry into the objective, instead of firing before the assault or at its beginning.

Skirmish support of the assault group from tanks that fire pointblank at the loopholes, or undermine buildings by their fire, considerably increases the force of the attack.

Other weapons must also be widely employed to give support to the shock groups.

Some commanders have raised the point: "Darkness or smoke screen?" The answer is to make use of both. The important thing is that during operations under cover of darkness or behind a smoke screen, the commander should be sure to keep the course of the battle under his control.

"Railwayman House" was stormed under cover of a smoke screen. The screen held for thirteen minutes and hid the movements of our groups, attacking from the south. The smoke did not interfere with control of the operations.

In the attack on the "L-shaped house" darkness made no difference in control of the operations. Here the attack itself began at first light, but the concentration had been carried out in complete darkness. Flares were used.

Underground attacks by mining are undertaken if an approach to the objective by other means would entail unnecessary losses. Our shock troops are using this method more and more.

The sapper (combat engineer) is an important figure in street fighting. His place in the shock group is a place of honor.

But it is wrong to think that city fighting is always in the literal sense of the words, street fighting. When the enemy has entrenched himself in a town, urban fighting means fighting for a house, for a building, for a block. Operations develop along alleyways, inside houses, in ruins, underground. But the streets are empty, and so are the squares.

LONDON—Aircraft factories in Britain have been widely dispersed, as protection against air raids. Nineteen aircraft firms which managed forty-five production units in 1938, were managing 323 units at the beginning of 1943.

LONDON—Up to June 30, 1943, Britain sent to Russia tanks, guns, aircraft and other supplies to the value of £179,000,000 (\$784,760,000). In addition, there have been large expenses incurred by the hazardous Arctic voyage, and in improving and maintaining the overland route via Persia.



Complete Range
Greatcoats
Three Styles
Uniforms;
Raincoats
and
Accessories
J. F. CRAIG
AND SONS
AT THE
FASHION CRAFT SIGN
Dunlop St. BARRIE
Phone 4302
The Store
That Quality Built

COMPLIMENTS OF
LAKEVIEW DAIRY
and
CITIZENS' DAIRY
(Suppliers to the Armoured Corps)

Valentine Cards
SWEETHEART, WIFE, MOTHER,
DARLING, LOVE
COMIC VALENTINES, EACH
5c, 10c, 15c, 25c
On display at your canteen
Whitty's Drug Store
ALLANDALE

C.A.C. Hockey Highlights

By SGT. T. A. M. "AB" HULSE
"B" Sqdn. No. 3 CACTR

Early last Fall, the Army training centres at Newmarket, Brampton and Orillia were designated by NDHQ as basic training centres for the Canadian Armoured Corps. Previously, these three modern camps had trained recruits for all arms of the service, and with the new link to Corps forged, the problem of establishing the esprit de corps between all parts of the whole, as it flourished at Camp Borden, arose.

Knowing the general interest in competitive sports that men of all ranks have, the Corps Commander, Col. J. A. McCamus, M.C., and his energetic Sports Officer of the day, Lt. Orville Burke, decided that the playing field, the hockey rink, and the squared circle could be the means of bringing together the boys in the black beret in one happy family, and firmly cementing the early associations formed by conferences and visits between officers and NCOs of both basic and advanced centres.

With winter at hand Canada's great winter sport, hockey, presented a golden opportunity to test the theory, and so it was preliminary discussions were entered into by representatives of all Corps training centres. Permission was obtained from W. A. "Billy" Hewitt, secretary of the Ontario Hockey Association, for the formation of an all-Armoured Corps Intermediate "A" group. With the retirement from office of Lt. Burke the heavy task of getting the spadework done fell upon the shoulders of Lt. Bill Hunnisett, himself a keen student of the game and netminder in the season of 1942-43 for the classy A9 Rams, who in a few short weeks made a name for themselves in intermediate hockey by their fighting spirit, in the face of almost insurmountable odds.

At a meeting in Brampton on Dec. 14 attended by representatives of every centre but No. 26 BTC, Orillia, final plans were laid and a 42-game schedule embracing the three basic centres, the three advanced training centres and T & S Wing, was drawn.

The problems of playing equipment (difficult to obtain under wartime conditions), a hurried probing of playing material available, the renting of covered rinks, the erection of outdoor hockey cushions, transportation troubles, pre-season practices, and the creating of interest among all ranks were tasks valiantly tackled by the Sports Officers and their hardworking staffs among the units, and the results to date in the face of the severest critics, must bring a glow of pride to those who shouldered the burden of making the league a going concern.

With covered rinks available at Newmarket and Orillia, the officials at No. 23 and No. 26 had little difficulty in this regard. No. 24 as in the previous year secured the use of Georgetown arena, distant 12 miles from Brampton but still close enough for plenty of practices. At Borden, it was necessary to await the arrival of rink boards, or to scrounge

materials. Lighting facilities had to be provided and even at the time of writing all centres have not yet been able to obtain the necessary items to enable night hockey.

With OHA teams in action successfully last winter at the three basic centres and A9 (No. 2), the experience of the past gave these four teams an edge all along the line. Brampton in 1943 had won the district OHA group, defeating Newmarket in the group finals. It would be fair to state early season results have proved this point, with the exception of Orillia Camp, where a complete change of sports personnel had taken place from the previous year.

Barrie Arena was secured as the site of the home games for the teams from Borden against the basic centres, while games between Borden centres were scheduled for outdoor action. Paid OHA referees, and a four club play-off drawing the first and fourth teams and the second and third teams in goals to count series, with the winners meeting in a best two out of three games series, were arranged and the teams were all set for "action imminent."

MEET THE TEAMS

Brampton (No. 24 CACBTC)

No team in the group has a more powerful or colorful aggregation than the high-flying Brampton Bullets. The team colors are blue, red and gold, and the master-minding is done by Lt. "Bing" Caswell, himself a player of note at U. of T., and CSM Bob Edwards. Truman "Flash" Abram, of Toronto, guards the nets. The defence is composed of Eddie Young, Port Colborne Srs., Doug. Bartliff, Stratford Jrs., Vern Ayres, ex-New York American star, Kenny Dixon, property of Toronto Leafs, and Plumley of Brantford Lions. The scoring punch is provided by Eugene "Joint" McComb, who has already centred two Provincial intermediate titleholders at Sutton and Aurora, "Bun." White, Owen Sound Ints., Montgomery, Sydney Millionaires, Bobby McLaughlin, Army Daggers, Joe Iannarelli, South Porcupine Srs., Teddy Lister, Toronto junior flash, Red. Creighton, Peterboro Army, Don Campbell, Etobicoke Jrs., Bobby Thorpe and Mason, St. Catharines Falcons, and Al Shill of the famous Toronto hockey family.

Newmarket (No. 23 CACBTC)

The Redmen, garbed as their name indicates, are handled by Lt. Bert Shaw, who gained fame on the ice overseas, and CSM Alex. Stewart, of Meaford. Jack Dobson, a Toronto youngster, handles the net duties, with Jack Wheeler, former Barrie Colt, Bill McNair, Kincardine, and Jack Life, of Toronto Lions, on defence. Johnny Callanan, New Haven Eagles, Gar Preston, of Aurora, former Newmarket junior star, Walter Zuke of Sudbury, on the player list of Les Canadiens, Harvey Avison, Brantford Lions, Stan Croucher, Port Carling, Johnny Campbell, Hamilton Jrs., and Goneau, of London, form a dangerous

attacking force. Lt. J. Kennedy is doing a fine job as Sports Officer.

Orillia (No. 26 CACBTC)

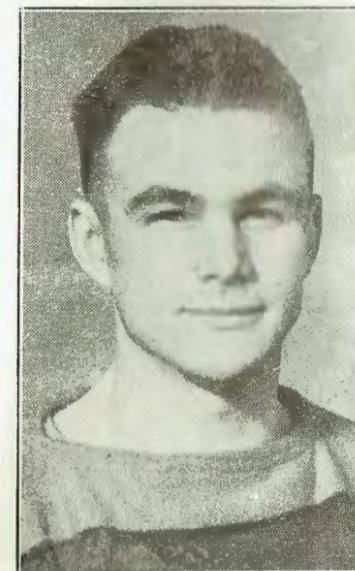
Lt. Frank Foster, lacking name players, has done a nice job by way of team spirit and "try." Weakness in goal has been apparent with no less than four boys in action. Ernie Curran, Orillia, and Madden form a steady defence, while up front Johnny Woodside of Vancouver, and McDonald, a westerner, have done yeoman work. Cpl. Paul Knowles of Aurora Jrs. has also played well. Players lost by draft, including Holdsworth, Hayden and Leskwi, have left the team shorthanded on occasions. Team colors are blue and red. Lt. Art Cloutier has been assisting Mr. Foster with the team.

No. 1 CACTR

Lt. Allan Kuntz, former New York Ranger star, besides coaching the team, has been one of the most prominent players in the league. "Duke" Ashton, South Porcupine, capably looks after the goal chore, while Connie Hill, Sudbury, teams nicely on defence with Mr. Kuntz. Others on the team include Joe McDonald, Charlottetown, John Heareford, Ottawa, Larry Taillefer, Huntingdon Army, "Scottie" Clark, Noranda, Alex Munro, Melita, Man., Phil Walters, Sarnia, and "Red" Linton, Lansing, Ont. Sgt. Ralph Peppy of Ottawa handles traffic from the bench, while Lt. Teoli of Montreal looks after the business details. Team colors are blue and white.

No. 2 CACTR

Resplendent in red, white and blue ensemble,



Reg. Westbrook

the Rams have quite a few name players in action. Reg. Westbrook, Army Daggers, ranks with the best amateur netminders. Lt. Jack Leeming, Young Rangers, Albert Gardner, Stratford, Lt. George Fennell, Barrie Colts, and Sem-balack from Western Canada are doughty blueline defenders. Lt. Lin Bend, New York Rangers, RSM Eddie Burke, St. John Beavers, and Briggs Creighton, Aurora Army, form one attacking trio, with Lt. Bob Bangay, Newmarket Redmen and Markham, Cpl. Charlie Nesbitt, Newmarket, and Lt. "Tim" Tyler, Bishop's College, functioning on another trio. Forbes, Morrison and Hilliard of New York Rovers, Love of Regina Jrs., and "Nip" Spooner of Collingwood form the reserve forces. Lt. W. S. Peat is Unit Sports Officer.

No 3 CACTR

George Brooks of Windsor and Bob Stewart, Niagara Falls, give the Grizzlies fine coverage in goal.

Chad. Bark, Balmy Beach football star, and Alex. Brown, who played together on defence at U.T.S. for two years, are again paired for hockey. "Frenchy" Lareau, Sherbrooke, is relief defenceman. Ken Wilson and Bunny Rose of Trail Smokies, Harry Moreau, Penetang, Ken. Milroy, Young Rangers, Lt. Paul Quarrington, Toronto, Lt. Johnny Guenette, North Bay Trappers, Lt. D. E. Toole, Winnipeg, J. B. Maguire, Lachine, Les. Martin, Toronto, and Leskwi from Dauphin, Man., provide the offensive punch. Team colors are scarlet, trimmed with green and brown. Capt. G. S. Gault, the popular padre, RSM Nick Lystar and Sgt. Ab Hulse are looking after the team.

T & S Wing

Capt. L. B. Cook and Lt. Bud Gendron have gathered together a pretty fair collection of players. Frank Mazza of Copper Cliff Jrs. is in goal, with Lt. Wilf Ridley of A9 Rams and Alex Sandalack of Regina Rangers, 1941 Allan Cup winners, forming a tough defence to beat. The first string line consists of Jimmy Boddy, Owen Sound, and the only brother act in the league, SSM George "Mickey" Maguire and Harold "Bud" Maguire, both former Ottawa junior stars. "Rusty" Horeck, Sudbury, Russ. Ketcheson, Portage La Prairie Jrs., Mike Flanagan, Cornwall, Jack Masson and Chuck Hamilton, Young Rangers, and Vince Dashney, North Bay, capably handle the alternate tasks. They also came up with Glen Brydson, former pro star with Montreal Maroons, in mid-season, on transfer from the Provost Corps. Team colors are gold and scarlet.

Watch February:

With a month of successful competition and rising enthusiasm at all centres the league has proved its worth. Despite many one-sided scores supporters have remained loyal to their favourites, and with all teams still able to clinch a play-off berth, February should see some memorable battles. Natural favorites on their showing to date for three of the favoured spots are Brampton, No. 2, and Newmarket. The fourth spot appears to be a toss-up at this stage. Injuries, transfers, drafts, and other unforeseen events will alternately weaken and strengthen all the teams. Lady Luck will have her finger in the pie too. When the play-offs start, try and get a seat!

Tribute for fine staff work must be paid Lt. Bob Fitzpatrick, Corps Sports Officer, while the support accorded the teams by the Commanding Officers of all the centres has been most heartening to all concerned.

BOMBAY—On escort duty round India's coast and on ocean passages, in patrolling and minesweeping, vessels of the Royal Indian Navy steamed well over half a million more miles in the six months ending June 30 than in the corresponding period of 1942—doing a total of 1,500,000 miles.

LONDON—In Great Britain's air and sea front against Germany, the Royal Air Force has done a tremendous job of destruction. It was given the task of crippling the German war machine, and in a single year, from the spring of 1942 to that of 1943, RAF raids on Germany are estimated to have reduced overall industrial output by from 15 to 20 per cent. This percentage has now been increased by further RAF, RCAF and U.S.A. air attacks.

ARMoured CORPS BOXERS WIN FIVE OF SEVEN BOUTS

Boxers from various units of Canadian Armoured Corps Training Establishment at Camp Borden won five of seven bouts in a tournament, Feb. 2, against the Air Force. The show was held in the Drill Hall of No. 1 SFTS before 1500 service fans. The card was arranged by J. D. Speyer, K. of C. Army Hut supervisor. Flying Officer G. N. Reed, RCAF Drill and PT Officer, and Warrant Officer Class One Ernest Sawyer, senior NCO at No. 1 SFTS.

Officials were: Referee, Capt. J. C. Godfrey, A11 CTTTC; judges, Capt. A. E. Pitcher, A32 CPCTC; F/O. T. R. Paterson, RCAF; timer, Gordon Haig, Air Force YMCA secretary; announcer, F/L. J. H. Brown, RCAF.

Results were:

126 lbs.—Tpr. Whitworth, CAC, Toronto, won a decision over LAC Tremblay, RCAF, Ottawa.

135 lbs.—LAC Faires, RCAF, Allensville, won a decision over Tpr. J. Carter, CAC, Windsor; Tpr. Bezusko, CAC, Hamilton, won a decision over LAC Faouy, RCAF, Quebec City.

147 lbs.—Tpr. Saunders, CAC, Hamilton, won a decision over Cpl. Rowlands, RCAF, Alliston; Tpr. Olnic, CAC, Vancouver, won a decision over AC1 Scheuneman, RCAF, Toronto; Tpr. Kerluck, CAC, Saskatchewan, won a decision over AC1 Chapman, RCAF, New York City.

180 lbs.—LAC Lennox, RCAF, Sudbury, won a decision over Tpr. Prosser, CAC, Toronto.



What slows down the Eighth Army on the Italian front. Mud, as these Canadians are finding out, is the worst of all obstacles. Here, Sgt.-Major Jimmy Walker, of Kingston, gets a push by Bdr. W. J. Black, also of Kingston.



The trademark
guarantees your satisfaction

Player's Please

MILD OR MEDIUM

NAVY CUT CIGARETTES
Plain End or Cork Tip

WE FEATURE CARDS

FOR EVERY OCCASION
SMART—UNIQUE—EXCLUSIVE
Don't forget all those Important
Dates

Send a Greeting Card!
BOOKS, STATIONERY, GAMES
TOYS

GIFTS

Which we wrap and mail for you.
Our aim is to be of courteous
service to you.

WEAYMOUTH'S
BOOK STORE

30 ELIZABETH ST. BARRIE, ONT.
PHONE 4055

COMPLIMENTS OF "COPACO"
Provision and Produce
Merchants
SPECIALIZING IN
Cooked & Delicatessen Meats
for Hotels and Messes

THE FIRST
CO-OPERATIVE PACKERS
OF ONTARIO LIMITED

BARRIE PHONE 2453

Military Kanteen Shop



49 Dunlop Street
Barrie - Phone 2332

OFFICERS

Greatcoats \$49.50
Pure Wool Sweaters, Etc.

Sam Browne Belts . . Trench Coats . . Haversacks . . Shirts . . Ties . . Lanyards . . Imported Glengarries . . Gloves . . Overseas Patches . . Sox . . Barathe Hats (all sizes).

OTHER RANKS

EVERYTHING FOR THE SOLDIER
Also Regimental Badges . . Wedge Dress Caps
Money Belts . . Forage Caps, Tradesmen's
Badges, Etc.

Special Price on Sleeping Bags
LOOK FOR THE MILITARY KANTEEN
OPEN EVERY EVENING UNTIL 9 P.M.
GOODS SHIPPED ALL OVER CANADA



ICE CREAM

• It's finer, smoother and
more flavorful

Ask for it—in mess, canteen
restaurants and stores

ORILLIA CREAMERY LTD.

BOOKS - MAGAZINES - PIPES
AND SMOKER'S ARTICLES
BILLFOLDS
SHAVING NEEDS
CIGARS - CIGARETTES
TOBACCO

UNITED CIGAR STORE

RESTAURANT

20 Dunlop St. -- BARRIE



O'Keefe's
**it's better
for you**

O'KEEFE'S BEVERAGES LIMITED