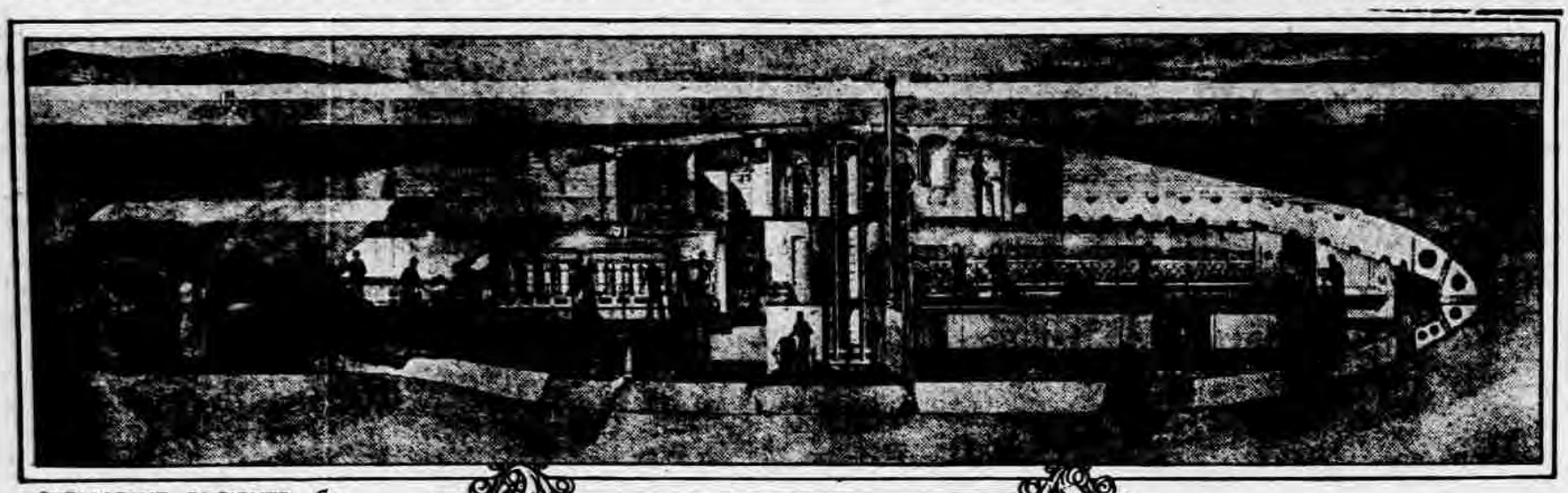
Our Submarines Have Defied Ice Menace



SUBMARINE DESIGNED for UNDER-ICE SERVICE in the BALTIC SEA. A TYPE of BOAT SUBMITTED to the RUSSIAN GOVERNMENT in 1905 by SIMON LAKE.

Experiments Fifteen Years Ago Proved Ability to Cope With Situation Costing British Seven Vessels

By ROBERT G. SKERRETT.

PANGS of regret must have filled the hearts of the commanders and crews of the seven icebound British submarines blown up not long ago at Helsingfors. Seven perfectly good boats, they had to be blasted into bits because there was no way of getting them through the ice and preventing their capture by the advancing Germans.

Not only did the destruction of the boats represent a property sacrifice of quite $2,500,000, but those British submarines had long evaded the efforts of the enemy to capture them and to sink them, and, what is more, their officers and crews had made splendid use of them in levying heavy toll upon both the merchant and the fighting fleets of the Teutons operating in the Baltic. The underwater craft were fit and well supplied with torpedoes to keep up their aggressive campaign, but unfortunately the winter put an end to their activities and held them immobile somewhere near the capital of Finland.

It is a matter of record that these subaqueous boats reached the Baltic by two routes. Some of them made their way boldly by way of the Skagerrack and the Kattegat into the Baltic, cunningly eluding the mine fields planted at various points by the Germans to halt just such a venture, while others of the flotilla made their journey via the Arctic Ocean and the White Sea to Archangel, thence reaching Kronstadt and the Gulf of Finland by inland water routes and overland by rail.

Shipped by Railroads.

In this latter procedure they duplicated what was done during the Russo-Japanese war in moving American built submarines from Libau and Kronstadt east to Vladivostok, a feat afterward copied by the Germans in shipping U-boats from Kiel to the Adriatic.

The commanding officers of the British submarines were willing to try anything that offered a reasonable prospect of success. It was proposed by some of them that the ice should be broken up around their boats and a space cleared wide enough to get a start for a dive beneath the enveloping field. Then, when once under the water, the vessels could make a break for it below the ice and try to run to the open water which lay a comparatively short way out in the gulf.

Somehow this suggestion did not meet with general approval, and the majority vote was against the attempt on the score that it would wellnigh certainly prove disastrous. These youthful leaders in daring enterprise did not know that a precedent had been set for them along that very line, a precedent that demonstrated conclusively that just such an undertaking was practicable. The story is worth telling because it is another evidence of American initiative and also because it may yet lead to important developments before the present struggle comes to a close.

During the winter of 1903-04 the submarine torpedo boat Protector was at Newport, R. I., awaiting a tryout by the naval board of inspection and survey. At that time the army was far more keenly interested in the craft than the naval authorities, especially because Mr. Lake's boat was able to travel upon the seabed and in its diving compartment possessed a feature which might be of great value in countermining or otherwise operating in connection with fixed submarine defences.

AFTER an UNDER WATER RUN in the WINTER TIME.

Accordingly three officers from the School of Submarine Defence at Fort Totten were detailed to examine the vessel, and agreeably to a programme prepared by them, the Protector was put through her paces in Narragansett Bay on January 15, 1904. The weather had been very cold and the bay was covered with extensive floes of ice a foot or more thick. As part of the programme consisted in running submerged, it was necessary to drive the Protector under the ice.

Finally, when coming to the surface, the boat rose directly beneath a big floe, and notwithstanding the thickness of the ice the craft broke her way right through it and came up without difficulty, carrying a deckload of ice. She suffered no damage bodily and the only thing broken was a light spar used as a signal mast. Her periscope, although exposed at the time, was in nowise injured.

Best Attacked From Below.

This demonstration was no part of the prescribed official programme, but Mr. Lake had taken advantage of the opportunity to prove a contention of his. He had repeatedly argued that the line of least resistance of ice was that presented to an attack from below, for then it was without the natural support of the water. The occasion offered by the visit of the officers from the School of Submarine Defence was too good to be missed—his board of directors would probably have frowned upon a test of that sort—and when the submarine run was finished Mr. Lake deliberately brought the Protector surfaceward under a floe which he had spotted through the periscope shortly before.

It was evident to him, upon reflection afterward, that something might have happened to the Protector's observing instrument, and had it been ruptured the boat might have filled with water if she could not break through the ice and rise clear of the surface. Therefore, as a safeguarding provision, a few days later he fitted the craft with a timber falsework which was designed to act like the inverted runner of a sled and slide along in contact with the nether side of a field or floe of ice.

This arrangement was shaped so that it would protect all structures rising above the boat's deck line, and the slanting portion, forward and aft, was intended to facilitate diving beneath the ice or in breaking through it when returning to the surface. Although rather cumbersome, being in fact merely a temporary makeshift, still the installation was undoubtedly correct in its conception. It happened that a moderation of the weather gave Mr. Lake no further chance to go skating beneath Narragansett Bay, but his experience satisfied the inventor that the time would surely come when his novel scheme would be of pronounced military value.

Designed a Special Ice Type.

The Protector was sold to the Russian Government in 1904 and other boats of similar pattern were built by Mr. Lake's company for the Muscovite navy. This work took him and his staff to Europe, and a year later, after having familiarized himself with seasonal conditions in the Baltic and the strategic limitations imposed by the long winters, he designed an extremely novel type of subaqueous torpedo boat. He offered this to the imperial authorities as a means of carrying on an aggressive naval campaign during any part of the year. In describing his under ice submersible he said:

"This vessel is designed to meet the conditions peculiar to certain northern countries in which the harbors are more or less icebound and navigation is closed during several months of the year. It should be clear to those bent upon the defence of such icebound harbors or bays that the ordinary surface craft are, unless the way is kept open by ice breakers, absolutely useless during this period.

"There are circumstances, however, during such a season under which the foe might get within bombarding distance without fear of retaliation on the part of the icelocked ships of the defence, and because of freedom of movement the enemy might be able to choose positions completely beyond the lines of fire of the defending vessels held immobile by the surrounding ice. Under these conditions the only possible effective retaliation would be by means of submarine vessels capable of running securely under the ice and being provided with facilities especially adapting them for this rather strange or untried field of operation.

"The present boat is designed to meet these circumstances and provides all the elements essential to safety, secrecy and certainty from attack. To this end the present design embraces some very unusual features, and everything has been carefully developed to make her efficient and to make her strong enough to meet securely the hazards involved in this service."

Simon Lake Also Devised Special Type for Russian Conditions, Including Iceboring Periscopes

Details Never Before Published.

Details regarding this type have never heretofore been published, but the distinctive characteristics are thoroughly well known to our present enemies, and therefore there is no impropriety now in revealing some of them to the public.

To begin with, the shape of the upper hull is such as to facilitate just those operations which Mr. Lake had in mind in 1904 when he equipped the Protector experimentally with under ice runners so to speak. Investigation shortly after reaching Russia had made him generally familiar with the nature and the extent of the ice formations in the Baltic. Data in this direction had been gathered some years previously while Vice-Admiral Makaroff was trying out his notable ice-breaker, the Yermak.

As a broad proposition that scientific naval officer had found the Baltic ice where thickest to average not more than two or three feet, and because it was fresh water ice it was firmer than that of the Arctic Sea. But its very hardness made it crack more widely when attacked, this hardness involving brittleness and the rapid spread of an initial cleavage following upon a blow.

The under ice submersible planned by Mr. Lake had a displacement of several hundred tons and its reserve buoyancy was large when in the light condition. Therefore if the craft were brought immediately beneath a floe and given the rising impulse of suddenly exhausted ballast tanks her uplifting momentum would certainly suffice to heave up and break ice of still greater thickness than that generally prevailing in the Baltic.

Necessity May Arise Soon.

From a strategic or tactical viewpoint this procedure might not be the most desirable, for it would probably betray the presence of the submarine to a watchful foe. Manifestly it would be impossible to attack an enemy without knowing his exact position and being able to get near enough to launch the torpedoes directly at their target.

It was equally plain that the underwater craft would have to observe her target and likewise have some way of keeping tabs upon the distance travelled submerged. Here is where the inventor's ingenuity came into play.

A spiked wheel suspended at the end of a freely moving arm was placed at a point on the upper ridge of the hull where the wheel could engage the nether surface of the ice and by means of suitable gearings perform the function of a cyclometer and register within the vessel the number of yards and knots run. The beauty of this arrangement was that it would give a positive record of progress as against the uncertainty existing where

a submarine travels submerged under ordinary conditions.

The next thing was to provide means by which the air above the ice could be reached for purposes of observation without requiring the craft to break through bodily. For this service Mr. Lake devised a duplex apparatus, a combined omniscope and ventilating duct.

The upper end of this elevating tube, which could be completely housed within the hull when not in use, was fitted with cutting edges like a gear wheel, and the hollow supporting shaft was arranged to be revolved from within by a small electric motor. Upon this apparatus Mr. Lake relied to bore a passage right up through the covering ice field, and except at a very short distance the observing instrument would escape detection.

Once through the ice, the arrangement would serve a threefold purpose. It would facilitate indirect observation of the target; it would permit replenishment of the air within the vessel, and it would act as a fixed point or pivot about which to swing the submersible in aiming her torpedoes.

In order to carry out this latter manœuvre the boat was provided with a propeller aft mounted in a horizontal well or shaft passing from side to side of the hull. By operating this screw it would be quite feasible to swing the craft around in her own length when held up against the ice and kept centred by means of the omniscope tube.

It was conceivable that there might be occasions when it would be desirable to maintain the craft in a fixed position submerged and in contact with the ice while her periscopic device was exposed to the air. Therefore a heavy steel pin, which could be moved vertically by suitable gearing was located just forward of the conning tower. This was designed not only to keep the submersible pointed in a chosen direction, but also to relieve any bending stress upon the omniscope tube when lying beneath the ice in waters swept by vigorous currents.

The navigational conning tower was of a housing or telescopic type and when not in service was withdrawn into the boat so that its top could lie below the contact line of the hull. The plan of the submersible included a second conning tower which was susceptible of providing a means of escape from the vessel when caught below ice twenty or more feet thick and at a time when her supplies of oil, &c., were exhausted.

This long telescopic conning tower rose vertically from the bottom of the boat to the ridge of her upper body. It terminated at the top in a spiked hatch cover, the spikes or points being of tool steel. An electric motor of suitable power in the lowermost compartment was to provide the energy through gear wheels to revolve the conning tower upon its vertical axis. In doing this and forcing the tower upward at the same time the spikes on the hatch cover would bore their way right through the ice and clear a passage to the free air.

Once the conning tower had thus reached the atmosphere it would be an easy thing for the men inside to climb upward, raise the hatch cover and escape, a door in the side of the tower at its lower end offering a means of exit from within the living spaces of the vessel. In concluding his description of this submersible Mr. Lake informed the Russian Government:

"This type will have a wide radius of action when propelled either by her engines or by her electric motors, and it will probably be plain to the strategist that a submarine of this sort is susceptible not only of defensive service, but of offensive usefulness as well.

"Very ample and comfortable accommodations are provided for the officers and crew, and further it may be stated that there are no circumstances under which the boat may operate beneath the ice in which she will not be able to secure and to maintain contact with the air whenever necessary.

"The military equipment will consist of two torpedo tubes for the discharge of the largest and latest types of automobile torpedoes, and will include, besides, a reserve supply of a reasonable number."

The imperial officials did not favor the type simply because the whole idea was too novel, indeed too revolutionary, in 1905, when military submarines were generally in their infancy. To-day, however, this under ice submersible takes on an entirely different complexion and suggests a new agency in dealing with the Teutons.

The Baltic is now pretty well cleared of ice, but the open period is relatively short and winter follows usually after a brief fall season. Just how long the war is going to last no one can predict, and to-day more than ever Germany dominates the Baltic and gains thereby an advantage which may embarrass the Entente cause in the months to come. It is conceivable that much might be gained through submarines operating offensively upon German bases in the Baltic during the ice-bound portion of the year.

How Italian Residents Help to Make New York

THERE are seven hundred thousand Italians in New York. How many do we know?

Mr. Antonio with his hurdy gurdy and plain Tony of the shoe shining "parlors" and Giuseppe, who entices us in the spring with the first arbutus, and Carlo, who wakes us calling "Strawber-rees!" and the sparrowlike little newsboy who waylays us on the corner. And then, of course, Francesco, our favorite vender of fruit.

Sometimes, it is true, we notice the patient faces of men working in the new subway trenches and wonder if they are dreaming of Florentine hills or peach orchards along the Amalfi road.

These are the only Italians who most of us see. If we are rich, very rich, we may go to the opera, where Italy has given us her best. Director, conductors, soloists, dancers, the opera itself, all Italian, while wealthy members of the colony listen and cry "Bravo!"

But we cannot claim these artists as our own. They come as Galli-Curci came, "like flowers in the night," bringing the sunshine of their native skies in the melody of their song.

Among these children of the south other fine arts flourish here, as we have seen in the sculptor Pietro's busts of John Burroughs, Mr. Taft, Mrs. Finley Shepard and others; while Ciavatti is the only painter who could satisfy the famous tenor of the Metropolitan.

To-day we do not think of the Italians as aliens, but as allies. No propaganda is necessary for us to understand them. We have met in Italy. We have known their beautiful land, their treasures of art, their music, their immortal love story, their friendly country, their history and their hopes.

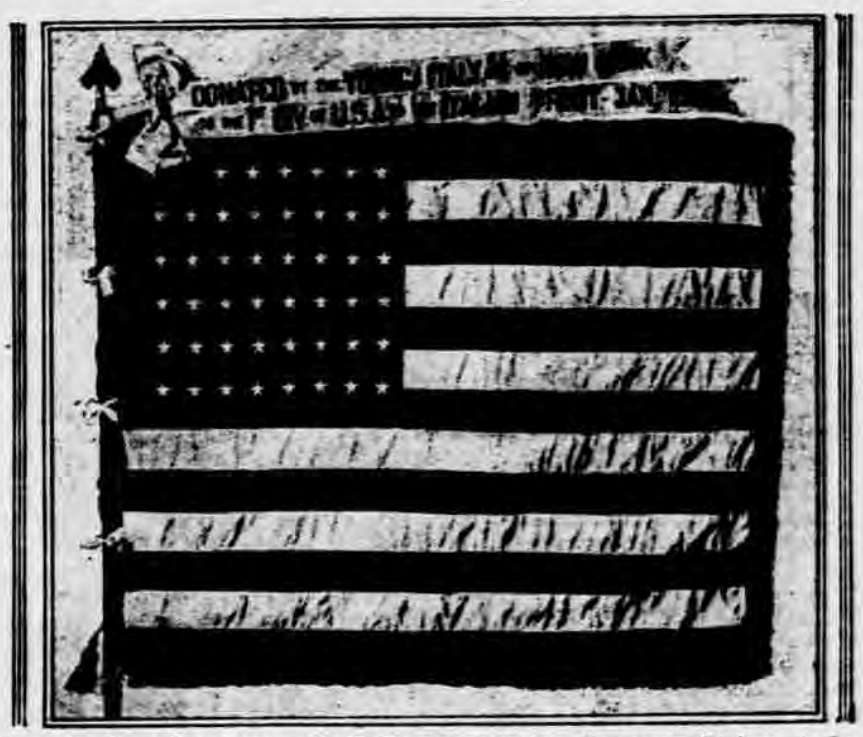
Made Good in Every Endeavor.

Here in New York these versatile people have made good in all phases of endeavor. The first evidence is the press, six daily papers being published in Italian, one well named *Il Progresso Italo-Americano*, and other periodicals dealing with subjects from politics to poetry.

La Follia di New York, a clever weekly, was begun less than twenty years ago by two Italian brothers, aged 15 and 17 years, the former still the business manager. It is noted for its brilliant editorials by Luigi Roversi, LL. D., who is also lecturer for the Board of Education, and it has the added distinction of containing a cartoon by Enrico Caruso in each issue. The poet Arturo Giovannitti edits the latest and most attractive of the semi-monthlies, *Vita*, and writes English verse as well.

A visit to the Italian Chamber of Commerce gives one a glimpse of the imports from the home land: wine of every province, macaroni in all shapes and sizes from "soup to nuts," Florentine straw of fine fibre, pickles from Milan (incredible!), coral and cameo shells from the Bay of Naples, silk cocoons and "trecia" from northern Italy, where we were told "silkworms like the climate," rich olive oil bearing mark of Sicily and Calabria, and there, as everywhere in the colony, a recruiting poster of a fine Italian soldier holding aloft his country's flag.

Seeing these luscious samples of food suggested the happy days of Martinelli, Riccadonna, Moretti, &c., when Mr. Hoover was a baby. However, Italian restaurants still have a waiting list for tables.



Flag for American troops in Italy presented to Secretary Baker at the Metropolitan Opera House celebration.

The Italian quickly adapts himself to conditions. In the Old World he may have built the pretty houses up and down the hillsides, or sold flowers, or sung "Santa Lucia" in gay Napoli; perhaps he was a gondolier or blew dainty bits of Venetian glass, or dived for pennies at Capri; he may have piloted a stranger through the catacombs of Rome or art galleries of Florence, or been just a toiler among the vines and orchards of his native province. In the New World, although considered our best laborer, he wishes a business of his own, however small.

Aspiring members of his race are making fortunes in this city. Among them are architects, contractors, designers of marble and metal work, landscape gardeners, manufacturers of silk, cigars, macaroni and pianos. Besides these are well known professional men, merchants, importers and bankers.

Don't think that all Italians in New York live on Mulberry and Bleecker streets. Many live on Riverside Drive, one at least in a real palace, statuary and all.

Help Their Compatriots.

Well to do Italians have been generous in helping their compatriots, who sometimes reach our shores with little more than a bundle of clothing, a guitar and a cheerful spirit. Overlooking the river at East Eighty-third street is the Italian Hospital, its stone balconies and roof suggestive of the homeland; Columbus Hospital shares in this work, the San Rafael Society takes care of immigrant girls, a savings bank encourages thrift, a school under patronage of Queen Margherita shows skilful needlewomen making lace, while musical studios provide for the national talent.

None of their philanthropies seems more efficient than the Society for Italian Immigrants. It does everything for everybody, having time even to talk with the writer of this article. Stars in the service flag of their "case" window means that the president, Major Ernesto Fabbri, U. S. A., is Red Cross Deputy Commissioner to Italy, that his brother, Lieut. Fabbri, the treasurer, is in charge of a radio station "Somewhere in America," that the managing director, Mr. Catelli, is prisoner of war in an Austrian camp.

Meantime the work goes on, 20,000 Italian reservists having found not only a welcome, but food and care here en route to Italy. Here came for a few days like any humble soldier Giuseppe Garibaldi, eldest of the seven grandsons of the famous liberator. Dedicated at birth to the cause of freedom he was on his way to join the foreign legion and fight for France. Now among the Alpini he serves his native land.

One Was Director of Museum.

We need not be concerned about the representative members of this colony. They are public spirited, responsive to needs for money and service, some having held positions of public trust, notably Gen. di Cesnola, formerly director of the Metropolitan Museum of Art.

We are concerned about the thousands of Italians born here, who are citizens in the making. What kind of citizens will they be? That depends partly upon us. We are helping them in two ways at least: through the schools and community centres.

South of Washington Square is the densest population. It chanced to be the day before Washington's Birthday that the writer, studying Italian life here, wandered into a school. Here were tiny tots in the nursery of the Mothers' Relief Society, which means that their mothers were at work. It was their first day, yet in half an hour they were marching around with American flags.

From this grade up there was abounding patriotism—speeches, songs, hatchets, flags, shining eyes, merry voices, all praising the Father of his Country, "the boy who couldn't tell a lie," and singing "Sweet Land of Liberty"—some wistful little creatures wondering what it was all about, this busy new world!

In the industrial department of a school with over 2,500 Italians was a class of girls giving their hour to make clothes for Belgian children, others making garments for the Red Cross. In the gymnasium girls from 12 to 15 were going through fine physical drill, while the graduating class assembled to sing for the visitor, who believed everything their teacher said about them. Later two little chaps from the kindergarten, not so large as the words, sang "The Star Spangled Banner" before going down to a two cent lunch. Of course Italian children follow the courses in the public school.

Community centres, however, try to guide them when planning vocations into forms of expression natural to their race and away from what is strictly commercial, like factory work, &c. Here are classes in modelling, which are popular, fifty-two artistic trades requiring it; music, especially singing and the violin; sculpture and pottery, weaving, embroidery and lace making; costume designing and millinery; sewing and cooking and all work needed in home making.

Has Healthful Recreations.

Dancing, dramatics and music form the chief recreation. Sunday morning finds fathers, mothers and children at the Italian Church of Our Lady of Pompeii, which seems like a leaf out of Baedeker.

One blessing of these centres is an employment bureau to investigate positions offered to the young, especially girls. There are also first aid work, an emergency clinic and at present a war service bureau. But their ultimate aim is to develop in our future citizens a community spirit, a responsibility for the welfare and happiness of the neighborhood.

A city history club studies points of interest, visits the Museums of Art and Natural History, &c. On Christmas Eve groups sing carols under lighted windows and pageants have been successfully given.

Through this spirit of comradeship in work and play we hope to have our new allies wish to live with us always and not "go home to die" like the Chinese. We hope to teach them the duties and benefits of citizenship. We hope also that some day they will love our fields and hills as they love God's out of doors on the shores of the Mediterranean, that they will call America home and find here the fulfilment of that longing for freedom which has always lived in the great heart of the Italian people.

An Able Two Hander

THE organ grinder, as everybody knows, is ambidextrous; he has to be to get through the day.

Here was a man grinding an organ who was using both hands at once, though in different ways.

This was a Salvation Army man who was making music to attract money for the Salvation Army's war work in France. As he turned the crank of the hand organ with one hand he held to his lips with the other a cornet on which he blew the tune in unison.

Perhaps this player could not with absolute accuracy be described as an ambidexter, but he certainly was a very capable two hander.