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ROBERT ERSKINE

GEOGRAPHER AND SURVEYOR-GENERAL
TO THE AMERICAN ARMY

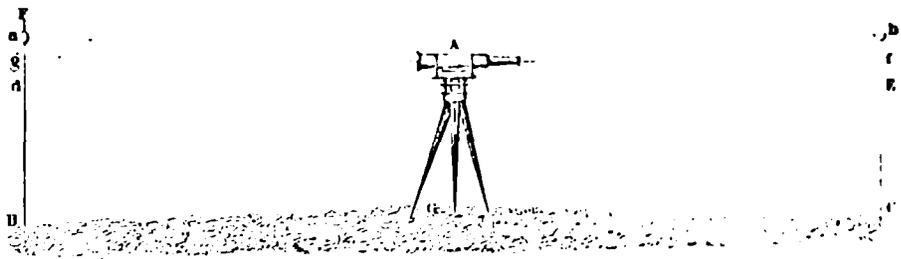
1777

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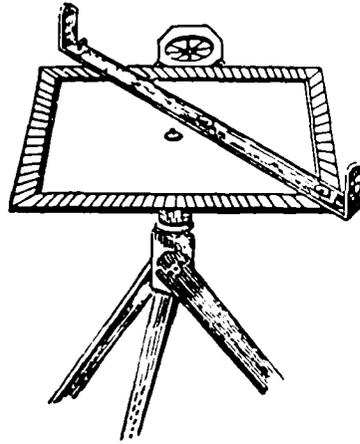
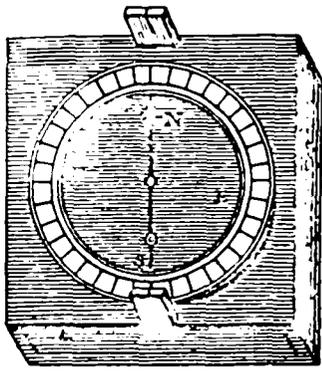
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Cartographers have always been influential upon history. Certainly our Colonial mapmakers did their share in determining strategy during the American Revolution and many a fray was resolved in our favor due to a better knowledge of the lay of the land. Perhaps in some instances this is another case of the pen being mightier than the sword.

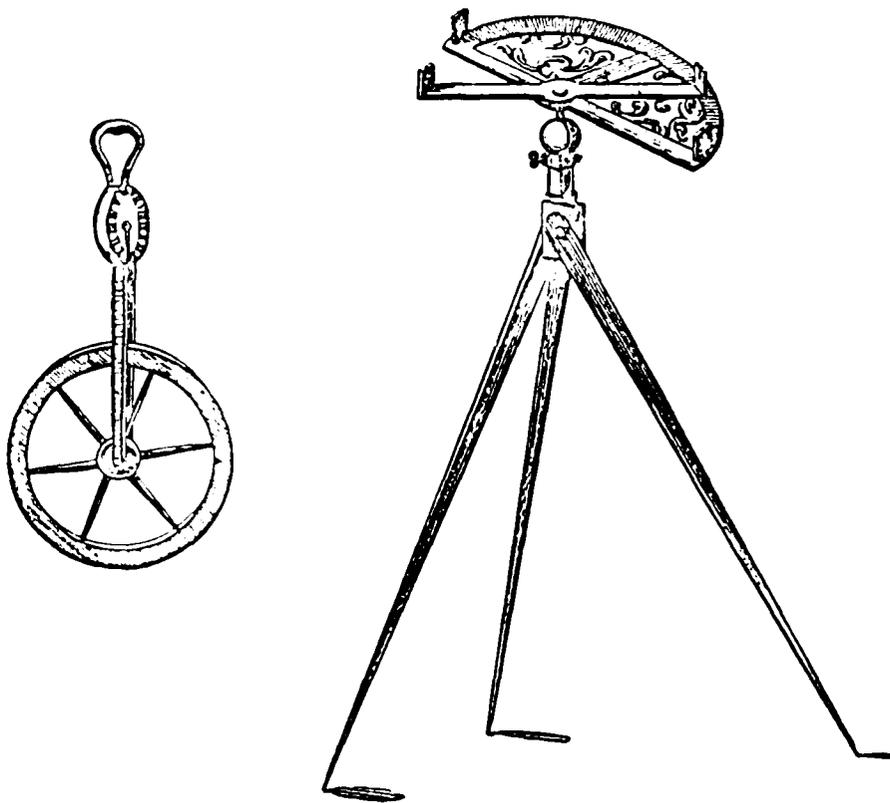
Gen. George Washington saw the need for more comprehensive maps than those at hand and as a result created the office of Geographer and Surveyor-General to the American Army to be directed by an outstanding man - Robert Erskine. We cannot fail to admire the ability of this consummate artist and draftsman who has left such a tangible legacy to historians. Erskine worked at a time when methods and instruments were more primitive than those of today and yet he produced a vast number of maps so accurate that they can be overlaid on modern aerial surveys with precision.

Robert Erskine was born on Sept. 7, 1735 in Dunfermline, Scotland and came to this country on June 5, 1771 to oversee the management of the extensive holdings and 500-600 workers of the American Iron Company based at Ringwood, N.J. His salary was £375 per annum. He became sole agent of the works in June 1774. In England he held the title of Land Surveyor and Engineer and for his many inventions was awarded a Fellowship in the Royal Society of London on Jan. 31, 1771. After having learned the iron business and coming to this country, he temporarily set aside his map-making ability except for a survey of the company's lands done in the winter of 1771-2. Erskine sensed the growing feeling between England and the Colonies and as early as October 1774 predicted a convulsive struggle would erupt. In anticipation, he laid in large stores of materials and food supplies. Being sympathetic with the Americans he began to organize the first militia company in northern New Jersey in June of 1775 (he was commissioned captain on Aug. 17). Its purpose was mainly to protect the ironworks and therefore insure the continuation of iron production so necessary to the Colonial cause.

It is believed that Erskine and Washington met for the first time toward the end of 1776 when Erskine was "introduced by a Card from Genl. McDougall". They met again (probably at Morristown) on Thursday Feb. 27, 1777 when Erskine made a request for exemption from service for his workers which Washington regretfully felt he could not grant. At this time Ringwood's forges were turning out iron points at the rate of 40 a day for the spars that comprised the underwater Chevaux-de-frise (obstruction) between



Portable box compass with alidade and a plane table with compass and alidade



A perambulator or odometer for measuring crooked lines and a semicircle for measuring angles.

18th CENTURY SURVEYING INSTRUMENTS

New Windsor and Pollopel's Island in the Hudson River. Cannonballs and portable camp ovens were among other products being made for the army but recruiting officers had greatly sapped the manpower strength of the ironworks, and soon production would be at a standstill. However Erskine's work was about to take another direction.

William Alexander, better known as Lord Stirling, was a north Jersey ironmaster and friend of Erskine's. Stirling had been appointed Surveyor-General of New Jersey in 1756 to succeed his father, James, and now held the commission of brigadier general under Gen. Charles Lee. Early in March of 1777 Stirling recommended to Gen. Greene that Erskine fill the vacancy of Chief Engineer to the Army that was left open by Col. Rufus Putnam in the fall of 1776. Erskine declined saying "I cannot suppose myself qualified for such an office in many respects, particularly that part which relates to artillery, as I never saw a Bomb thrown in my life, nor a gun fired but at a Review or Birth day; but that branch, to which practical geometry and mechanics is necessary, I could undertake with some Confidence, these studies having been both my business and pleasure." And so the die was cast.

Gen. Lee already knew of Erskine's mapmaking abilities. They may have met between December 1775 and May 1776 when Lee was in New York and Erskine still maintained his house and store in the city. Perhaps Lee stopped at Ringwood enroute from Peekskill to Morristown between Dec. 5 and 9, 1776 or they met when Erskine had his first interview with Washington. At any rate, Lee asked Erskine to draw a map for him. Even though Lee was captured shortly afterward (Dec. 13 at Basking Ridge) Erskine complied with his request the following spring, and as far as is known this is the first map Erskine made for anyone in this country.

Erskine went to Morristown to see Washington again on March 25 or 26, 1777 and may have shown him the map, as Washington asked Erskine at this time to make a large survey for his own use. On his return Erskine wrote Gen. George Clinton from Ringwood that he intended going back to Morristown "next Monday. Lord Stirling has got many materials, from which a map of the Jerseys may be made, which I have undertaken to form (a business which I can do here)," He also asked Clinton for any drafts of the "North River or adjacent Country" that he might have and made a similar request to Capt. Machin. The map produced covers the area from New Windsor, N. Y. to Barnegat, N. J. and from the Hudson to nearby parts of Pennsylvania. The original is in the Pierpont Morgan Library in N. Y. C. and states in Erskine's hand that it was compiled from material furnished by Lord Stirling.

Washington must have been pleased with the results for while he was in Pompton between July 11 and 13 he discussed the position of Surveyor-General with Erskine and wrote to Congress on July 19 from Suffern's Tavern making the proposition. On July 27, 1777 Robert Erskine was officially commissioned Geographer and Surveyor-General to the American Army.

Erskine's missive of Aug. 1 to Washington is enlightening as to modus operandi: a surveyor could be expected to plan about 5 miles per day; each surveyor should have 6 attendants, "to wit, two Chain-bearers, one to carry the Instrument, and three to hold flag staffs....three are necessary for running a straight line with dispatch....the director of the Surveyors will have full employment in making general observations, and connecting the different surveys as they come in, upon one general Map;". Erskine was careful to make "capital roads", navigable rivers and those which could not be forded easily very accurate, but in a "Map of a country, the general course of fordable rivers need only be attended to;". He felt the best instrument to use was the "Plain-Table; by this, the Surveyor plans as he proceeds, and - not having his work to protract in the evening - may attend the longer to it in the day. One of these instruments, with a chain and ten iron-shod arrows, should be provided for each of the Surveyors it may be thought proper to employ." He also suggests his fee be a "Guinea a day and all reasonable expenses, such as travelling charges and the hire of laborers and assistants."

In preparation for this work he purchased 27 sheets of drawing paper, which cost £4.1.-, a compass (£1.12.-) and some brushes, while on a trip to Philadelphia in August. Due to the slowdown in production at the ironworks, Erskine felt he could devote part of his time to mapmaking but did not promise full time until spring. During the winter he assisted Gov. Clinton by making surveys for a small fort near the Chevaux-de-frise at New Windsor and also spent some time covering Forts Constitution and Montgomery. Toward the end of March in 1778, Erskine sent the New Windsor survey to Washington who praised it and asked him to come to Valley Forge as soon as possible to organize his department, which he did early in June. (His pay commenced June 1.)

As for the rest of the department members, Washington appointed Capt. William Scull, a mapmaker in the 11th Pennsylvania Regiment, as an assistant. Scull retired from his regiment on July 1, 1778 to attend to his new duties with Erskine and remained with him thru 1779. In the meantime, Erskine applied to Simeon De Witt, who was recommended by DeWitt's uncle, Gen. James Clinton, to assist him at "two dollars per day, an horse and one ration when

at Camp, and travelling expenses when employed at a distance from it,''. De Witt (Dec. 25, 1756 - Dec. 3, 1834) was a private in the army at the time and welcomed the opportunity.

One by one Erskine's staff was built up by able men. Capt. William Gray of the 4th Pennsylvania Regiment contributed surveys of Schoharie, Delaware, Susquehanna and the Hudson Highlands. Lt. Benjamin Lodge of the 12th, 6th and 3rd Pennsylvania Regiments made preliminary surveys of the Wyoming, Susquehanna and Genesee River areas. In August Capt. John W. Watkins, a patriot schoolmaster in Malcolm's Continental Regiment, joined Erskine. David Pye, a prominent south Orange County, N.Y. (now Rockland) surveyor and Clarkstown store proprietor, also worked for Erskine, as did also a man known only as Mr. Henderson. Elijah Porter and David Rittenhouse also contributed work. The last known assistant to join this office was Capt. J. Armstrong (Apr. 20, 1755 - Feb. 4, 1816) of the 12th and 3rd Pennsylvania Regiments who made maps in the fall of 1780 east of the Morristown, N. J. area.

In those six months of 1778 the amazing number of (approximately) 91 maps were turned out of Erskine's Ringwood office. It should be remembered that reliable reference material was rare or non-existent and that maps of large areas were composed of numerous small sketches and sections made in the field by actually traversing the terrain, taking measurements and bearings on features as well as making astronomical calculations from time to time. There were no mechanical reproduction methods. Each map was an original, laboriously produced or copied by man with pen and ink.

Washington began to fear for the safety of this department after a raid was made on the manor house in November of 1778, and in February of 1779 asked Erskine to move his quarters to the vicinity of the army, which he did for a time. In August Washington asked Erskine to lay out a new road along the east side of Tuxedo Pond as a short cut from the Clove road to Ringwood and even today when the waters of the adjoining We-Wah Pond are lowered, the remains of this corduroy road can still be seen. At the close of 1779 the impressive figure of (approx.) 164 more maps had been added to those of the year before. Ringwood had become additionally important to the army as a post for storing provisions and continued as such through most of 1780 while the main army was encamped at Totowa.

Erskine had now caught up somewhat with Washington's requests for maps and by February his staff had dwindled from six surveyors down to just DeWitt and Lodge. The latter made a plea for higher wages in keeping with the pay scale of the rest of the army,

and Erskine himself had to ask for the years salary due him. (He had set his own fee at \$4 a day). In order to continue working he felt he needed "one Assistant Draughtsman, three field surveyors, and eighteen chain-bearers from the Line." But by May he had only De Witt's assistance plus chain bearers detailed to him occasionally by Washington, so only about 19 maps were produced in the 9 months of 1780. In making a summation in the early part of the year, Erskine wrote to Hon. Philip Schuyler: "From Surveys actually made, we have furnished His Excellency with maps of both sides of the North River, extending from New Windsor and Fishkill, southerly to New York; eastward: to Hartford, Whitehaven, etc., and on the west to Easton in Pennsylvania.....contained in upwards of two hundred and fifty sheets of paper."

Perhaps he tried too diligently to carry on the business with so little help. According to his nephew, Ebenezer Erskine, his uncle, on the 18th of September, "caught a severe cold and sore throat, which produced fever, and within the space of a fortnight terminated in his dissolution." Robert Erskine died on October 2, 1780. This was the same day that Major Andre was hanged in Tappan and Erskine's biographer, Albert H. Heusser, believed that Washington did not stay in Tappan that day but was at Erskine's bedside. Erskine was only 45 years old but accomplished a great deal for our new nation in the short time of 9 years and 4 months that he was here. He is buried on the manor grounds alongside his favorite clerk, Robert Monteath, who had died in 1778.

On Nov. 10 Capt. John Watkins sent a sample of his work to Gen. Anthony Wayne in hopes of succeeding Erskine as Surveyor-General but the more logical successor was the faithful Simeon DeWitt. Washington made his recommendation to Congress: "The death of that useful and valuable Officer, Mr. Erskine, Geographer to the Army, makes it requisite that a successor should be appointed. I beg leave to recommend Mr. Simeon DeWitt, an assistant of his, His being in the department gives him a pretension, and his abilities, a still better. From the character Mr. Erskine always gave of him and from what I have seen of his performance, he seems extremely well qualified." And thus DeWitt acquired this high position while only 24 years of age. He was appointed on Dec. 4, 1780 and on the 16th was ordered to headquarters to be attached to the main army.

De Witt turned out about 61 maps in the year that followed and after the victory at Yorktown established his headquarters at Philadelphia. On May 13, 1784 he resigned and accepted the appointment as Surveyor-General of the State of New York which he

held until his death. He was offered the post of Surveyor-General of the United States in 1796 but reluctantly declined. Fortunately he and his descendants treasured these early maps, enabling all future generations to peruse and mentally traverse these roads of the past. A grandson, Richard Varick De Witt, presented the Erskine-DeWitt collection (comprising appx. 278 maps) to the New York Historical Society in 1845 where they are carefully enconced for all time and will insure that our first Geographer to the Army will not be forgotten.

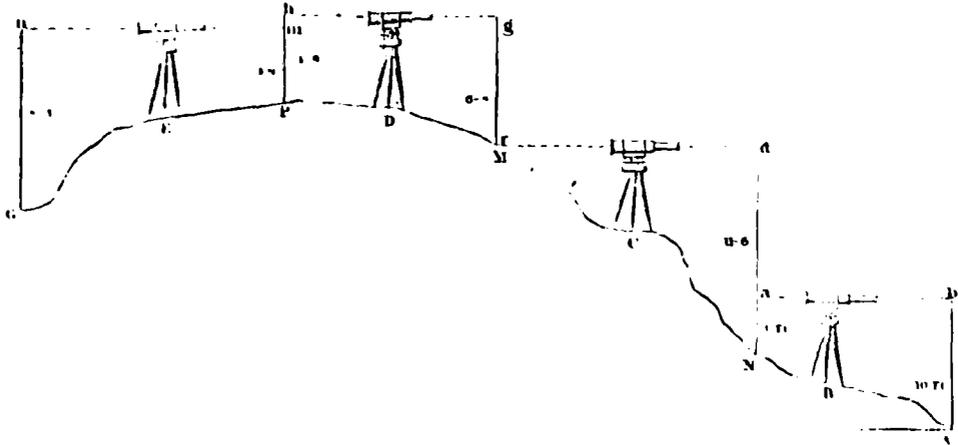


TABLE.

Miles	Acres.	Roods.	Sq. Chains.	Perches.	Sq. Links.
1	640	2560	6400.0	102,400	64,000,000
	1	4	10.0	160	100,000
		1	2.5	40	25,000
			1.0	16	10,000
				1	625

1 square mile = 6400 square chains = 640 acres.

