Congressional Document.

Letter from the Secretary of War, transmitting a Report in relation to the Improvement of the Navigation of Ocracock Inlet.—December 29, 1828.—Referred to the Committee on Commerce.

DEPARTMENT OF WAR, Dec. 29th, 1828.

SIR: In obedience to a resolution of the House of Representatives of the 24th instant, I have the honor of transmitting herewith a report from the Chief Engineer, showing "what progress has been made in executing the act of 23d of May last, so far as relates to the improvement of the navigation of Ocracock Inlet, in the State of N. Carolina," accompanied by a copy of a report made to the Engineer Department respecting the same.

I have the honor to be your obedient servant,
P. B. PORTER.

Hon. ANDREW STEVENSON,
Speaker of the House of Representatives.

Engineer Department, *Washington, Dec. 27th*, 1828.

To the Hon. P. B. PORTER, Secretary of War.

SIR: In compliance with your instructions to report on the subject of a resolution of the House of Representatives of the 24th inst. relating to the improvement of the navigation of Ocracock Inlet, I have the honor to state that the superintendence of the operations for that purpose was entrusted to the officer of Engineers who directs the construction of Fort Macon. That officer has made an examination of the Inlet and Bar, and has also made arrangements for the construction of a dredging machine, agreeably to the provisions of the act of 23d of May last: he has also made a report, containing the evidence of the importance of the improvement, and showing his views of the nature and extent of the operations required, and of the best mode of effecting them; in which views I fully concur, and beg leave to recommend their adoption. A copy of his report and also of Capt. Bache's map of the Inlet, accompanies this report.

I have the honor to be, Sir, very respectfully,
Your obedient servant,
C. GRATIOT, Col. of Engineers.

Report upon the improvement of the navigation immediately within Ocracock Inlet.
December 24th, 1828.

The consideration of the improvement of the navigation immediately within Ocracock Inlet in North Carolina, involves the investigation of two important questions—the extent within which the labor and cost are limited, and the importance of the improvement when completed; which necessarily present themselves for determination, before the mode of operation, and the effection of the cost thereby, can be treated of.

The coast of North Carolina has always been dreaded by navigators. The gulf stream, and prevailing winds, cause the navigators to pass so near the heads of the capes of this coast, that vessels are not unfrequently embayed, the safety of all concerned is dependent on the ability of the mariner to keep the sea; and this is especially so on that part of the coast between Capes Hatteras and Lookout; because Ocracock Inlet is, on the interior, shut up by shoals of sand penetrated by insufficient channels. The formation of a sufficient channel will at once render Ocracock Inlet a haven to the distressed, and thus the project is rendered important (regarded in the most general points of view) and the Union have an interest independent of that which a *whole* must feel in the fate of *a part*.

The interests of North Carolina are involved to an extent which demand the extreme of exertion under very disadvantageous circumstances. This extent will be shown by the statement below, submitted rather as an hypothesis assumed below the truth than above.

Let the tonnage employed by the section of N. Carolina, whose trade must pass over the obstructions at Ocracock be stated as low as 75,000 tons, (whereas it has been stated at 200,000) and the imports and exports at 3,000,000, (and the exports alone have been stated at 5,000,000) the following items will be found to tax this commerce.

Expense of lighterage and detention, (see notes 2 and 3)	$75,000
Advance of insurance on produce passing to and fro, value 3,000,000, at 1 1-2 per cent. advance, (see notes 4 and 6)	45,000
Advance of insurance on vessels employed, value 3,000,000, at 1 1-2 per cent. advance, (see notes 5 and 6)	45,000
Advance of seamen's wages, (see note 7)	10,200
Advance charged in the way, exaggerated statements of value insured, intended to cover delay of recovery, say 10 per cent. on the whole at 1 1-2 per cent. (see note 8)	9,000
Making the sum of	$184,200

But when it is considered that the whole value of shipping, produce, &c. &c. is actually detained more than five days per annum, constituting a dead capital, on which 1-2 per cent. or $5,000 is chargeable, (see note 9) the above amount is raised to $189,200; and further reflection will show that this amount is more likely to be too small than too large. Again, it is entirely proper to add the amount obtained by the calculation on an allowance of freight 5 per cent., additional insurance 1 per cent., commissions 2 1-2 per cent., and storage, handling, interest, and delay, &c. at no more than 1 1-2 per cent., and suppose that 2,000,000 now go coastwise, that require, and ultimately find a foreign market, and would go direct when practicable, another $200,000 is involved; and when every item is stated, it seems highly improbable that the tax now sustained by the State of North Carolina, by reason of the obstructions at this Inlet, is less than half a million of dollars annually, as it will be shown, when it is proved or admitted that the value of shipping, &c. is one fourth greater than stated, the elements of the calculation submitted will produce the amount of more than half a million, without following up the calculation, as it obviously may be, into farther detail. The interests of commerce at large, and of that of North Carolina, in particular, make demands for exertions which can scarcely be increased by motives of humanity and duty, in reference to human life, and the miseries so extensively entailed on society by calamities at sea.

Though Ocracock Inlet serves at present to discharge the greater part of the waters drained into Albemarle as well as Pamlico Sound, to consider the question of improvement, it is not necessary, after settling the relation of force, to recede farther from the Inlet than the basins immediately adjacent. Let it be assumed that the force accumulated in the cul de sac of each basin is equal.

The basin north and east of Long and Royal Shoals discharges much of the water accumulated in it by channels penetrating Royal Shoals, the most important of which are Blair's and Teacher's Hole. Teacher's Hole is only important as abstracting a part from the whole force; but Blair's channel discharges its current so immediately across that of the Old Ship channel, as at all times to effect it, and when prevalent, to interrupt it, and raise eddies and precipitation of sand, &c.

The effect of Blair's current is greater when Teacher's Hole is less; that is, Teacher's Hole diminishing, Blair's increases; and the phenomenon is such as might be expected. Blair's current has, by its encrouchment in late years, shown an increased power; and though at first the effect of precipitation would be looked for at the point of meeting with the Old Ship Channel's current, it will be found at a point where an additional cause acts with the one stated; that is, where the current spreads itself into the waters of the southern basin; it seems, therefore, apparent that these currents act upon each other injuriously, and present thus an obstruction to improvement.

The inquiry can now be carried to the southern basin, bounded (see the annexed diagram) by the banks in which the Inlet is situated, Bluff and Royal Shoals, &c. The Islands across by Harbor Island to Cedar Island, and receiving from the main land Neuse. Bay and Tar rivers, and many smaller streams, whose waters are discharged by channels south of Royal Shoal the most important of which are the Old Ship Channel, Flounder's Slue, and Shell Castle Channel, and one called the Six Foot Channel, south and west of, and falling into the latter channel. The capacities of these channels certainly indicate the existence of a force capable of resisting the efforts of the sea to close up the outlet, from the basin, and in some degree indicate the measure of the force; for let it be assumed that no such force exists, the operation of the sea, as is shown throughout the extent of the coast, will be to close the outlet; but a more direct and conclusive proof is furnished in the fact that the bar at this Inlet is penetrated by different channels, which have by turns been the one better than the others; but that the sum of their capacities has very probably been nearly the same, viz: that, when one channel had fourteen and more feet, the others had less than eight.—This fact is well known, and the inference is clear, as the force was obstructed at its accustomed point, it sought a new outlet; but this force is derivable only from the basins within, through the debouching channels; and it is the fact that the capacities of these channels themselves have for many years been very much as they are at present. The inquiry seems to be, from this, confined to the practicability of diverting more or less of the present dispersed forces, and concentrating on one channel enough to repel, to the desired extent, the aggression of the sea, permitting, of course, an increased aggression to produce its effects on the other channels, and thus give some tendency to the favored channel to remain stationary; and it is now necessary to inquire to what extent the concentration must be carried, or what effort is necessary to supply the entire or partial absence of the amount of force. It will be evident that artificial confinement of the horizontal dimensions of a channel will cause an increased rapidity of current, and that the effect will be to increase the vertical, as the horizontal dimension is diminished. This mode of operation is objectionable in most, if not all situations, and impracticable in this. It remains to inquire if the reverse operation of first increasing the vertical dimension will sufficiently tend to cause a diminution of the horizontal, without producing the prejudicial effects of suddenly increased forces, which are again allowed to diminish as suddenly, viz: deposites where the diminution of force takes place. By examination of the chart, it will be seen that the proposed increase of section is a small part of the area of the channels now existing; and this fact will be useful in the investigation; and though this relation is not accurately measurable, it does not exceed one tenth. The water, passing through the Inlet, enters a basin made up of Wallace's Channel and Beacon Island Roads, which presents a great increase of section over the Inlet, and is confined in this basin until rise enough takes place to throw it over the opposing waters. It is certainly necessary that greater deposites take place in the basin than in the channels through which the accumulated force urges the water, and the final deposite takes place when the water ceases to move, as is almost the case at the mouths of the basins in the Sound. The place of deposite being thus ascertained, the amount is to be inquired for. To make an exact amount is obviously impracticable. Minimum is not important. Let an assumed maximum be used to inquire if the result from it is such as is known to exist, or if it be the reverse. One mile square and three feet deep contains 83,625,200 cubic feet. Now suppose the channel it is proposed to open contains, as it does, very nearly, 5,400,000 cubic feet, and that enough sand is thrown into and deposited in it to fill it up in four years, it follows that the process going on, in 15 × 4=60 years, the shoal will be one mile square by three feet deep: but there is no reason for this deposite by the postula, why every part of the various channels should not receive the same amount of deposites, and passing over immaterial variations, this must be so, or every sixty years this place should present the phenomena of a shoal formed five miles long, two broad, and three feet deep; because, as before stated, the proposed channel is not one tenth of the area of channels by the rule receiving equivalent proportions: but this result is very much greater than the known result at this place; and the quantity assumed, as thrown in and deposited, must be too great.

But even admitting that 5,400,000 feet are thrown in and deposited every four years, it is seen by reference to the estimate made by Capt. Bache, of the Topographical Corps, that an engine worked at an expense of $15,958 for the first, and $5,358 for the succeeding years, will remove 5,400,000 cubic feet; that is, counteract the effects of deposite; and a similar cost for four years will render it unnecessary to encounter more than $6,000 per annum expense to maintain the channel; or $64,000 will be the cost of opening the channel, and less than $6000 per year, the cost of maintaining it, though the amount of deposites will, in some degree, correspond to the amount of water passing through the channel; the whole amount of deposites, as a sum, is but little affected. But from the above calculation, and the fact that the water is, as it were, *persuaded* instead of being *coerced*, the additional labor of removing the increase of deposite scarcely deserves consideration, when regarded as a tax on the enjoyment of so great a benefit as this channel will prove.

Besides the above, other items must make elements of the cost of this undertaking, which cannot be precisely stated; as the raising wrecks, ballast, spars, anchors, &c., and risks to be joined to imperfection of the machinery itself: but from the foregoing calculation, it will certainly seem that sufficient allowance is made by giving 5,400,000 cubic feet for excavation; the same to counteract the effect of the currents, and the same for expense of raising wrecks, &c. to constitute a maximum of labor to be performed. By reference to the chart, it will be seen that the middle channel can be made to receive the currents from the inner basin, in the most direct and easy course that, protected on one side by the Shell Castle, rock shoals, and on the other by the reefs, it is less liable to be injured by cross currents; and that it joins the outer basin in a less exposed situation than the Old Ship Channel; it will, therefore, appear quite evident that improvements in it will not be so soon injured as in the Old Ship Channel; besides, it has a good basin opposite Shell Castle rock, which can be made useful.—This channel (called Flounder's Slue) is therefore selected, and it is to be opened by dredging, and maintained by the same means, the cost of which will be found estimated in the accompanying document, marked A; and this process of opening a channel, and permitting the sea by natural operation to choak up the others, may be (at least theoretically) carried on until one channel only exists, fully equal to the task of discharging the great drainage of water which will be accumulated in the Pamlico Sound.

I have the honor to submit the foregoing report and accompanying papers to the Chief Engineer.

Very respectfully,
WM. A. ELIASON, *Lt. Eng.*

To Col. CHAS. GRATIOT,
Chief Engineer, Washington City.

Notes on the improvement of the navigation of Ocracock Inlet, N. C.

Note 1.—The tonnage employed and passing through this inlet, has been stated at 200,000 tons; but yielding the question, and admitting the amount to be too great, the amount, as estimated by the Collector of Ocracock, viz: 75,500, seems to be too small; but 75,000 tons only is assumed in the calculations in the foregoing report.

Note 2.—The expense of lighterage has been stated by merchants engaged in the trade at $1 per ton, and by none at less than 60 cents. The accounts of the schooner Henry Waring show 60 cents.

Note 3.—The time of detention, from lighterage, and chance of weather, by delay in loading, is stated generally, and with much apparent accuracy, at five days, each day costing $8; making the expense on every 100 tons $40, or, per ton, 40 cents.

Remarks on Notes 2 and 3.

When the navigation admits, large vessels are preferable by more than the amount of lighterage and detention as long as the article will bear it, as shown by the common consent of merchants and vessel owners, whose means allow them to consult their best interests.

It is not strictly true that every ton of the 75,000 assumed pays 60 ⋈ 40 cents per ton lighterage and detention, because the returns are not as great and bulky as shipments; but it would be much more nearly true, were it for more than countervailing disadvantages; and as the amounts involved are of a varying nature, it does not seem improper to obtain certain data by accommodation.

Note 4.—I am not entirely satisfied with the manner in which I produced the amount of imports and exports, but as by statements, for the intended accuracy, of which unlimited assurance can be given. Newbern shipped, as exports, foreign and domestic, (foreign being obtained in return for domestic,) coastwise, $632 800, and to foreign ports $70,457, making $703,257; and Washington, under the same head, except transshipment of foreign produce, is stated at $493,952; making for the two towns $1,197 209; and, as it is to be remarked that much of the above is taken from merchants' books in the towns specified, and that much produce is shipped from smaller settlements and large plantations, direct to markets without the State, it does not seem probable that the amount of exports is overstated for the southern countries, viz: bordering on Pamlico Sound and its tributaries, at $1,500,000. Though I have entirely failed to form any thing like a detailed statement of the imports and exports of the northern counties, and country borbering on Albemarle and its tributaries, it seems very probable that it is understated at $1,500,000 exports, making $3,000,000, exports, and more; vague statistical calculations increase this amount, but the report assumes only $3,000,000 for imports and exports.

Note 5.—The sails, rigging, fitting, and finding with painting, &c. generally cost as much as the hull of 100 ton vessels, and the hull, for the most part costs $25 per ton, but say $40 per ton for the vessel of 100 tons, and 75,000 tons, at $40, amounts to $,0 0,000.

Note 6.—By reference to the shipping and commercial lists, published in New York by Wakeman, Burritt, and E. B. Clayton, the rate of insurance over Ocracock is 2½ per cent., while to Wilmington, Charleston, and Savannah, it is but 1, (sometimes, to the last two places, 1¼). It will also be seen that insurance to Canton, and to most parts of Europe, can actually be made on the same terms as to Ocracock. But as Wilmington, Charleston, and Savannah have bars seaward, the difference must be mainly attributable to the obstructions within Ocracock, and very probably entirely so.

N. B. As late as January, 1828, a gentleman connected with the insurance companies declared that experience showed the necessity of advance in the rate of insurance: as to that period, the danger exceeded what had been supposed.

Note 7.—The risk of life, and hard labor, undergone, at the Swash, is made evident in the foregoing report and notes, nor does it seem that the amount, as stated, is more than a fair equivalent; and it matters not whether it is or is not actually paid, as the rate of freight is predicated on its being paid, and the burden is, therefore, immediately borne by the commerce.

Note 8.—The delay in recovering the amounts insured will justify the advance of 10 per cent. on the amount insured; and whether made or not by the insured, is ultimately a tax on the means of the commerce over Ocracock, as it only varies the relation of underwriters, when it makes its appearance in charges of profit. But it is believed to be usually made, particularly for short and dangerous voyages, such as indicated by high rates of insurance.

Note 9.—The detention is stated at 5 days (see note 3) per trip. Interest is therefore chargeable for that time on the whole amount of capital employed, viz: $6,000,000.

A.

Estimate of the cost of opening a channel 400 feet wide, and 10 feet entire depth, through the sand shoals, immediately within Ocracock Inlet, in North Carolina.

Cost of a steam dredging engine, fitted to a proper vessel,	$7,500 00
Cost of a vessel of 90 tons, at $35 per ton,	3,150 00
Cost of 6 relieving lighters, at $200 each,	1,200 00
Cost of 1 towing lighter for relieving, each	750 00
Cost of cables, cordage, and blocks and anchors, with contingencies,	2,400 00
Cost of dredging engine & apparatus	$15,000 00
The above engine, &c. will require to be manned by one captain and steam engineer, at $75 per month,	900 00
By one pilot and mate, at $30 per month,	360 00
By 3 men, each at $15 per month, $45,	540 00
By three men each at 12½ per month, $37½,	450 00
By three men each at 10 per month, $30,	360 00
By four boys each at $5, per month, $20,	240 00
Cost of wages of crew, of machine, &c. per year,	$2,850 00
It will require 400 cords of wood per year, at $3 per cord,	1,200 00
For towing boat 100 cords, at $3 per cord,	300 00
Subsistence of eleven men, at $5 per man per month, for one year,	660 00
Subsistence for four boys, at $3 1-2 per month, per year,	144 00
Cost of subsistence of crew, machine, &c.	$804 00

Recapitulation.

Cost of engine and apparatus,	$ 15,000 00
Wages of crew,	2,850 00
Cost of wood for fuel,	1,500 00
Subsistence of crews	804 00
Contingent and unforeseen expenses,	846 00
Making the total of	$21,000 00

The outfit and cost of one year's operation of an engine and apparatus, estimated to be capable of raising and removing to the required distance about 50 cubic yards per hour. And the cost per year after the first year, will, from the above, appear to be $6,000.

Now, suppose the maximum of labor to be performed, as stated in the report, is equal to that of excavating and removing 3 times 5,400,000 cubic feet of sand, or 16,200,000 cubic feet. This engine, working ten hours per day, for 200 days per year, will perform the task in six years; but the injury stated in the report contemplates that the operation be performed in 4 years; the difference of aggression, therefore, still remains to be performed, so that the whole cost may be stated as follows:

Expense for the first year,	$21,000 00
Expense for 5 succeeding years,	30,000 00
Expense of removing effects of aggression in the two years,	4,000 00
Making a total cost of	$55,000 00

But, in consideration that $4000 for actual additional labour is paid, because the operation is not completed in four years, and that each engine, if two be used, can be worked at somewhat reduced cost, the actual cost of using two dredging machines, to complete the work in three years, and one to complete it in six years, will not greatly differ.

It is therefore suggested as highly expedient to use two dredging machines, saving a large amount thereby to the State of North Carolina, and greatly facilitating the execution of the work at little, if any, additional cost. It may also be suggested that the amount vested in engines cannot be regarded as inactive, as much of the original cost, if not the whole, could be obtained for them after three years' operation, during which the qualities of them would be amply tested. It will be observed that I have relied upon Captain Bache's survey and calculation of the actual quantity of excavation, modifying as appeared to me to be prudent to do. I have also been governed by Captain Bache's survey, approved by my own reconnoissance.

Respectfully submitted to the Chief Engineer,
by WM. A. ELIASON,
Lt. of Engineers.

City of Washington, Dec. 24, 1828.

BREVET RANK.

The following copy of a Memorial from Major General Scott, recently presented to Congress, will be interesting to all our readers:

Memorial of Gen. Winfield Scott.

To the Honorable the Speaker and Members of the House of Representatives of the U. States.

The Memorial of Winfield Scott respectfully represents:

That your memorialist entered the Army of the United States a *Captain*, May 3, 1808; that he was promoted to the rank of *Lieutenant Colonel*, July 6, 1812; to the rank of Colonel, March 12, 1813, to the rank of *Brigadier General*, March 9, 1814; and for services set forth in the body of his commission to the rank of *Major General* by brevet, July 25, 1814.

That from this date, until very recently, your memorialist had always been considered and employed in respect to all the rights of rank or command, as a Major General; that within the same period, he had under his orders at different times, two Major Generals of the Army and three of the Militia, neither of whom could he have legally commanded, if his brevet commission or brevet rank had not been perfectly valid and effective; and that for the whole period in question, he was never under the command, nor was it ever attempted to subject him to the command, of any officer not of the same grade, and his actual senior in that grade. Your memorialist would most respectfully affirm, and he is ready to sustain by proof, every proposition he has advanced, or shall advance, that the office of 'Commander-in-chief,' 'Commander of the Army,' or 'the Maj. General,' as importing either, is at this time, unknown to the laws; that there now exists in law, or in fact, no higher title or grade in the Army, than that of Major General—a title or grade which your memorialist has the honor to hold in common with two officers; that military rank or command (convertible terms) is always determined in the foreign armies, as well as in our own, *first* by difference in grade, and *secondly*, by priority of date in the same grade; that from the commencement of our Revolutionary war down to the present year, brevet rank has uniformly been held to give command in common with ordinary rank—except only (for reasons easily explained) within the body of an unmixed regiment, or detachment of the same regiment, that this is evidenced by every decision of the Executive and every precedent of the Army recorded or remembered; and that your memorialist cannot fall within the exception mentioned, is evident from the fact, that he is in rank and title equally above every regiment in the service of the U. States.

Such, your memorialist humbly conceives, has been the law, the construction of law, and the settled practice in the Army, down to a recent event—the death of Maj. Gen. Brown; who, under an arrangement purely Executive, and by virtue of his seniority in the highest grade, that of Major Gen. had commanded the army from June, 1821, to February 24th, 1828, the date of his decease.

On the promotion of General Macomb to the vacancy of the deceased, with rank as Maj. Gen. from May 24, 1828, the President of the United States, without any new legislature changing the law and principles, which have been stated, by an order bearing date May 28, 1328, placed Maj. Gen. Macomb in command over the Army, and required all officers, &c. to obey his orders, without any exception in favor of your memorialist, the senior, and therefore, the superior Major General.

Against this order, which your memorialist has honestly believed to be equally repugnant to his rights and to his honor, he has, from the first, respectfully and steadily protested; he has humbly prayed to be sent before a court martial on the charge of disobeying the commands of the alleged superior Major General, in order that the law and the principles involved in the case might be judiciously, promptly and definitively settled; and he has respectfully suggested an exemption from the commands of his inferior Major General, by an arrangement of the several general officers of the line, to separate geographical districts or departments, as prior to the Executive arrangement of 1821. His entreaties have all been rejected, and finally, without any trial by his peers, your memorialist has been suspended from all command in the Army.

By these decisions, contrasted with the prior decisions of the Executive, and the usage of the army, your memorialist finds himself in the most painful situation. To submit, would, in all probability dishonor him in the opinion of his brother officers and most certainly in his own; and not to submit, does great violence to the sentiments of duty and respect which he is proud to owe to the Constitutional Chief of the Army.

Under these circumstances, your memorialist prays your honorable body, so far to entertain his case, and that of other officers similarly interested, as to determine by a *declaratory statute*, the rights and duties appertaining to brevet rank; so that your memorialist, and others alluded to, may have the benefit of a certain and fixed rule for their conduct, in common with the rest of the Army, and their fellow-citizens in general.

And your memorialist as in duty bound, will forever pray, &c.

WINFIELD SCOTT,
Major General U. S. Army.

Washington, (D. C.) Dec. 29, 1828.