Friction and Fredericksburg

Looking back at Union movements prior to the Battle of Fredericksburg can tell us something about friction and how it relates to combat. As Burns once said, "the best laid schemes. . . . "

by Maj Allan C. Bevilacqua, USMC(Ret)

Everything in war is very simple, but the simplest thing is difficult. The difficulties accumulate and end by producing a kind of friction that is inconceivable unless one has experienced war. . . . Countless minor incidents—the kind you can never really foresee—combine to lower the general level of performance, so that one always falls far short of the intended goal.

The Prussian military theorist Carl von Clausewitz wrote these words in 1831. Today, more than a century and a half later, most Marines are familiar with them. Friction is accepted by modern military professionals as part of the overall theory of warfare, viewed in casual terms as a sort of fighting man's equivalent to Murphy's Law.

While it is easy to accept friction as a concept, it is less than easy to arrive at an appreciation of friction as an actual event or chain of events that can lose battles and wars, terminate careers, and ruin reputations. Why? Mostly because in practice friction is capable of taking an almost endless variety of forms. At any point where two or more actions interface, and even within individual actions, there exists the opportunity for the moving parts to bind against one another, against their own internal components, and against external events and conditions. The factors that combine to cause friction and the various forms that friction can assume are literally without number.

For this reason, while friction may be perceived in its abstract form, it is far more difficult to visualize its physical manifestations. There are simply too many possibilities to consider. Any attempt at taking all the possible combinations into consideration leads the commander inevitably to a never ending game of "what if . . . ". Mired in the attempt to evaluate every possible misstep, the commander works his way farther and farther from any decision.

But friction is real—it exists and it affects even the wisest of decisions. The commander cannot simply ignore it. How then to arrive at an understanding of it? Perhaps some pages from the past might go a long way toward clarifying the pernicious nature of friction. Perhaps nowhere in that past can there be found a more vivid example of the degree of influence friction can exert on operations than the campaign of Fredericksburg in America's Civil War.

The Plan

In early November 1862, the Federal Army of the Potomac was concentrating on Warrenton, VA. MajGen George B. McClellan was bringing his army there—slowly and cautiously, under much prodding from the Commander-in-Chief—in trace of the retiring Confederates after the bloodletting at Sharpsburg (Antietam) in September.

A fairly good road—the Warrenton Turnpike—led to Warrenton from Washington, and a spur rail line ran south to Warrenton Junction and the main

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line of the Orange and Alexandria Railroad. But McClellan was having second thoughts about both lines of communication. The Warrenton Turnpike was, after all, a dirt road, with all the possibilities for misadventure that could accompany such a trace.

Also, as McClellan was being pointedly advised by the Superintendent of Military Railroads, BGen Herman Haupt, the Orange and Alexandria Railroad was not that much of a bargain. It was Haupt's assessment that even operating at peak capacity the Orange and Alexandria could supply only two-thirds of the army's daily needs at best. It was enough to give even an audacious commander—and no one every applied the word audacious to George B. McClellan—cause for concern over his lines of communication, which were getting stretched ever farther from their base.

Such a concern could be increased tenfold when the enemy situation was taken into account. A little more than 20 miles to the southwest, across the upper reaches of the Rappahannock River, Robert E. Lee had taken position at the little town of Culpeper Courthouse, county seat of Culpeper County. Lee had with him James Longstreet's newly designated First Corps of the Army of Northern Virginia. (Longstreet himself had recently been promoted to the rank of lieutenant general.)

Over across the Blue Ridge another of Lee's freshly promoted subordinates, LtGen Thomas Jonathan (Stonewall) Jackson, was gathering his Second Corps about the scenic town of Winchester in the lower Shenandoah Valley. From Winchester it was a short day's march via any one of a handful of mountain gaps to the Union's road and rail lifeline. There were still frightful memories of August, when Stonewall Jackson's veterans had demonstrated just what could be done to that lifeline. Then, as a preliminary to the complete bamboozlement of Union MajGen John Pope in the Second Battle of Manassas (Bull Run), Jackson's men had descended on the vital Federal supply base of Manassas Junction and sacked it as thoroughly as the Goths had laid waste to Rome.

These were things much on McClellan's mind. From subsequent events, it is obvious that his situation, combined with ever-increasing political pressure for action before winter set in, drove the Federal commander to a decision. Infuriatingly, though, as it often does, history gives no clue as to what this decision may have been. Neither official records, McClellan's personal correspondence, nor his later writing offer any hint.

Was McClellan thinking of bringing his vastly superior numbers directly against Lee and Longstreet at Culpeper Courthouse? Was he, as some historians have speculated, about to abandon the advance along the rail line and shift the axis south? History is silent.

Only one thing is certain. Whatever McClellan's plan of action, it involved a major river crossing. On 6 November, McClellan directed his chief of engineers, Capt James C. Duane, to send the following message:

Rectortown, Va.
November 6, 1861.

Major SPAULDING
Commanding, 50th N.Y. Engrs.
Berlin, Md.

The Commanding General desires that you will take such steps as you deem advisable to accomplish the following objects: Detail a competent officer and one company from your command to take charge of the pontoon bridges at Harper's Ferry.

Send such additional boats and material to Harper's Ferry as may be necessary to secure the maintenance of these bridges and provide for contingencies.

Proceed to Washington with the balance of your command and make up a pontoon train on wheels as speedily as possible, with the necessary transportation, and be prepared to march with the train at a moment's notice.

Have the bridge at Berlin dismantled and sent to Washington as soon as practicable.

I am, Sir, your most obedient servant.

J. C. DUANE
Captain of Engineers

All very direct and straightforward, with nothing in it to confuse the recipient. But for the quaint 19th century style, it might serve as a model of military communications. But it was at this point that things started to go wrong.

The Execution

In 1862, there were three means by which messages could be transmitted. They could, for instance, be sent directly from the originator to the recipient by mounted courier, as was normally the case during the course of a battle in progress. If the circumstances were less pressing, messages might be sent either by military telegraph or the Army's own mail service.

There was no battle in progress at the time Capt Duane drafted his message, but the wording of the message conveyed a sense of urgency. It would be reasonable to expect the order to have been transmitted by telegraph to Harper's Ferry and from there by messenger to Maj Spaulding at Berlin, about 15 miles farther downstream on the Potomac. Certainly, Spaulding's orders—"to get his command to Washington, make up a bridge train, and be ready to move at a moment's notice"—would warrant that mode of transmission.

For some reason that history has never been able to uncover, the order was sent by mail. To appreciate it in contemporary terms, picture a priority message being slipped into an envelope, graced with a $.29 stamp, and dropped in the handiest mailbox. It was delivered to Maj Ira Spaulding at Berlin, MD, at 1400 on 12 November, almost a week after it was sent.

A lot had happened during that time. The day after the message was sent, 7 November—MajGen Catharinus P. Buckingham, adjutant general to Secretary of War Edwin M. Stanton, boarded a train at Alexandria for the trip down to the end of the line. He was carrying with him General Order 182, directing that, by the order of the President of the United States, MajGen George B. McClellan was relieved as commander of the Army of the Potomac and that MajGen Ambrose E. Burnside was to relieve him.

At Burnside's request—the two men were close friends—McClellan remained on for several days while Burnside was brought up to date on dispositions and plans. That completed, on 10 November, George B. McClellan rode away from the army he had created, away from the war, and away from the Army. He would never again hold a military command.

As Burnside saw it, the strategic situation dictated giving up on the present axis of advance. A West Pointer

Rivers could be serious obstacles to the advance of Civil War armies if proper bridging equipment was not available. This map shows the rivers that had to be crossed from Washington to Fredericksburg, where a great opportunity was lost for want of a bridge like the one shown here.

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who had left the Army for railroading after the Mexican War, Burnside knew a rattletrap railroad when he saw one. He was also fully appreciative of the danger posed by Jackson on the other side of the Blue Ridge. Keeping the railroad secure would mean frittering away more and more of his strength in guarding every bridge, every culvert, every grade crossing, until he had half of his army tied down in rear area security. Even then, Jackson could mass his strength at any point of his choice and come down in force upon the outnumbered outposts scattered the length of the line.

Even without Jackson, an advance along the line of the Orange and Alexandria would take him absolutely nowhere. Lee could maneuver in front of him indefinitely, giving up terrain of absolutely no strategic value while refusing to become decisively engaged. The Federal Army could advance to Culpeper Courthouse, to Orange Courthouse, to Gordonsville, and even to Charlottesville, accomplishing nothing but stretching its vulnerable supply line ever farther, while offering Lee the chance for a ruinous riposte.

What Burnside had in mind, and what he proposed to Washington, was a feint toward Culpeper Courthouse to fix Lee and Longstreet in place. Then the whole Army would move by forced march down to Stafford Heights, opposite Fredericksburg on the Rappahannock, and cross the river there before Lee could react. From there he could drive south along the line created by Telegraph Road and the Richmond, Fredericksburg and Potomac Railroad, aiming straight for Richmond. Lee would then have to come to him on ground of his choosing, risking defeat in detail.

Up at Berlin, Maj Ira Spaulding, whose command consisted of Companies A, F, and I, of the 50th New York Volunteer Engineers, knew nothing of this. But he did know his orders had been overtaken by events. The whole army by now knew of McClellan's relief. But Spaulding's orders had been promulgated when McClellan had still been in command. What had happened in the meantime? Had the entire situation changed? Were his orders still valid?

Spaulding was a good officer, and he had been in the Army long enough to reason that in the absence of anything to the contrary his orders were still binding. He wasted no time in complying with them. By nightfall, an advance party of Capt John McDonald's Company A was headed up the Chesapeake and Ohio Canal towpath for Harper's Ferry. They took with them 150 worn-out horses, victims of the hoof and mouth disease that was just then ravaging the Army's livestock, to be turned over to the quartermaster there.

For the rest of Spaulding's detachment, it was a night of work. The pontoon bridge across the Potomac—900 feet wide at that point—had to be disassembled, made up into floats, put in the canal, and started on the way to Washington. It was not an easy job. As the balks, stringers, and chesses that made up the roadway of the bridge were taken up, each pontoon in turn had to be towed to the riverbank and manhandled out of the water, dragged across the towpath, and placed in the canal. The pontoons were 15x23 feet in overall dimensions, each weighing more than 400 pounds.

Then there was the matter of rolling stock. Each pontoon came with a transport wagon for road travel. Some of these had to be broken down, their wheels removed, and placed as cargo on the pontoons in the canal. As with hauling the pontoons themselves from the river to the canal, it was a matter of muscle power. Even so, there remained a considerable number of wagons that would have to go down to Washington overland empty, drawn by short teams due to the loss of those 150 horses Capt McDonald's men had taken up to Harper's Ferry.

The New Yorkers put in a night that would have satisfied the appetites of the most determined masochist, but by the next day—13 November—things were all but cleaned up at Berlin. The first floats had started down the canal, Lt Van Rensselaer was about ready to start the overland train on its way, and Capt McDonald had a detail attending to final matters before starting up the towpath to Harper's Ferry. After one last bit of attention to coordination, Spaulding, accompanied by his second in command, Capt Wesley Brainerd, and his assistant quartermaster, Lt Robert Falley, climbed aboard a Baltimore and Ohio passenger train. Spaulding wanted to get together with BGen Daniel Woodbury, commander of the Volunteer Engineer Brigade, and see if Woodbury could shed some light on things.

It was a long trip to Washington—Spaulding and his party had to go by way of Baltimore and change trains

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there—and it was not until almost 2200 that the trio arrived at the Volunteer Engineer Brigade Depot, on the north bank of Anacostia Creek at the foot of 14th Street in Southeast Washington, about a half mile from the Navy Yard. Spaulding immediately borrowed a horse and rode to Gen Woodbury's home in the city. Woodbury was as baffled by the orders as Spaulding had been. Despite the order affecting an element of his command, it was the first Woodbury had seen it.

It was all a bit late to do anything, Woodbury concluded. If anybody would know what the situation was it would be MajGen Henry W. Halleck, the General-in-Chief of the U.S. Army. Halleck, to Woodbury's certain knowledge, had returned only that evening from a 2-day meeting with Burnside at Warrenton. The subject had been Burnside's proposed plan of action. Come morning, Woodbury would go to Halleck's headquarters and see what was what.

Woodbury and Spaulding both would have been intrigued to know that in outlining his plan to Halleck, Burnside had stressed the importance of that bridge train Capt Duane had ordered a week ago. Fredericksburg was not important. What was important was getting across the the Rappahannock at Fredericksburg before Lee could do anything about it. When Halleck departed he left behind his assurances that the pontoons would arrive in 3 days time.

But neither Woodbury nor Spaulding knew anything of what had transpired at Warrenton, so neither attached any great importance to the instructions Woodbury brought back from Halleck. As soon as Spaulding's men and equipment began arriving at the depot, the equipment was to be put into storage and the men into camp. The word—at least as far as Woodbury and Spaulding knew—had changed.

That was not exactly the case. What was the case was that Henry Halleck was being Henry Halleck. From the time the General-in-Chief of the U.S. Army donned the insignia of a second lieutenant, Henry Halleck had assiduously avoided ever making a decision if there was any way out. Now that he occupied a position roughly akin to the present-day Chief of Staff, Halleck was running true to form. The decision would be kicked upstairs to the President.

So as soon as Spaulding's men started to arrive they were fed a hot meal and then turned to the job of getting all those pontoons out of the water, onto their transport wagons, and hauled off to the storage yard. Once again it was a matter of sheer muscle, as each of the ungainly brute pontoons were dragged ashore and hoisted aboard their wagons. But Spaulding's men knew their work. They were good at what they did, and the job moved right along. Still, there would have been more than a few lifted eyebrows had they been privy to a telegram that along about then was being sent down to Ambrose Burnside at Warrenton.

Washington, D.C.
November 14, 1862

Major-General BURNSIDE.
Warrenton, Va.

The President has just assented to your plan. He thinks it will succeed, if you move very rapidly; otherwise not. See General Wright's telegram in relation to the movement of Jackson on Romney and Cumberland.

H.W. HALLECK
General-in-Chief

By no less an authority than the President of the United States Burnside's plan was approved. But Burnside had better move fast, and move fast is exactly what Burnside did. At 0400 the next morning—15 November—MajGen Edwin V. Sumner's Right Grand Division was on the move, pounding down the Warrenton Stage Road toward Falmouth at a pace that would eat up 17 miles the first day. For the men in the ranks, accustomed to McClellan's glacial 5 or 6 miles a day, the pace was phenomenal. And the key ingredient in it all, Spaulding's engineers, were completely unaware of it. The first inkling that anything was amiss came in the form of two telegrams Spaulding was shown when he visited brigade headquarters to inform Woodbury of how things were progressing.

Warrenton,
November 14, 1862

Capt BOWERS
Adjt. Gen. Engr. Brig.,
Washington, D.C.

On November 6, Captain Spaulding was directed to move bridge material from Berlin to Washington, and mount at once one complete bridge train in Washington. Is that train ready to move, with horses and everything needed supplied; if not how long before it will be ready?

C.B. COMSTOCK
Lieutenant of Engineers

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1stLt Cyrus Ballou Comstock had assumed duties as chief engineer of the Army of the Potomac when James C. Duane left for a field assignment upon McClellan's departure. It was obvious he did not know of Spaulding's promotion to major the month before. It was just as obvious that Army Headquarters at Warrenton had a completely different understanding of things than Spaulding had. If the first message made Spaulding's pulse beat a bit faster the second may have raised the hair on the back of his neck.

HEADQUARTERS ARMY OF THE POTOMAC,
November 14, 1862—2.45 p.m.

Capt BOWERS
Adjt. Gen. Engr. Brig.,
near Navy Yard, Washington

In addition to the bridge train which Captain Spaulding has been previously directed to fit out in Washington, General Burnside desires to have one more complete train mounted and horsed as soon as possible, and, with the other, sent with a company, at least, and Captain Spaulding in command, by land to Fredericksburg, Va, the eight tool wagons from drawbridge to accompany the trains. Please advise me how long before they will be ready, and, on their starting, advise me of that.

C.B. COMSTOCK
Lieutenant of Engineers

It was plain to see that the General-in-Chief of the U.S. Army and the commander of the principal army in the field were not singing from the same sheet of music. It was so plain that Gen Woodbury went directly to the War Department to sort the whole thing out. There Woodbury received orders that were even more baffling. Now Spaulding was to make up one land train and two boat trains. The land train was to proceed down Telegraph Road to Stafford Heights opposite Fredericksburg. The boat trains would be picked up by a steamer and towed down the Potomac to Belle Plain, not far from where Aquia Creek flows into the larger river. The orders were not accompanied by any particular expression of urgency. It was almost an afterthought. As the order read: "Go down to Fredericksburg and see if anybody needs you for anything."

Maj Spaulding immediately realized the work that lay ahead and directed his men to begin undoing everything that had been done and get the boat trains ready to go by morning. And when morning arrived, ready they were, for the steam tug *Hero* was to pick them up at first light. No one was very upset when the *Hero* promptly ran aground on a sandbar at the mouth of Anacostia Creek. High tide would soon come and float them all free enabling the boat trains to be at Belle Plain long before the land train made it to Stafford Heights.

Before that land train could go anywhere there was the little matter of all those worn-out horses that had been turned in when the detachment left Berlin. Spaulding would need every one of them and more. In all, he would need 270 horses in addition to those he had, as well as 60 sets of harnesses.

Thanks to Gen Woodbury running interference with the Quartermaster Department, Lt Falley was able to secure the needed harnesses before noon. They were all new, factory fresh, and still in boxes unassembled. All those flaps, snaps, buckles, and straps had to be put together by hand in order to make 60 sets of harnesses for 6 horse teams. Yet nowhere on the rolls of an engineer regiment was there anyone designated as a harness maker. But there were enough country boys who could do the job, and they got to it.

The needed horses were procured from the Alexandria Remount Depot, but with one small problem—they were all unbroken. Not a single horse had ever worn a harness. So for the next 4 days, the New York engineers had their own wild west show, trying to sort out 270 horses into 6 horse teams that could work together in harnesses without wearing themselves out.

While Spaulding's engineers were struggling through an impromptu rodeo, Sumner's lead elements—BGen Thomas Francis Meagher's Irish Brigade—were arriving opposite Fredericksburg on 17 November. It was as Burnside had hoped—there was nobody minding the store. Ambrose Burnside had done what nobody else but Ulysses S. Grant would ever do—he had left Robert E. Lee flatfooted. Fredericksburg was defended by a regiment of Confederate cavalry and one lonely battery of artillery. The town was Sumner's for the taking—if he had a way to get across the river.

The land train finally started rolling out of Washington over the Long Bridge around noon on the 19th. Almost as soon as the head of the long rumbling train of pontoon wagons started out it began to rain. It rained without letup for the next 3 days. Telegraph Road soon became a river of bottomless liquid mud.

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Spaulding could at best manage 5 miles a day. By the evening of 22 November, the bridge train had made a grand total of 15 miles to the north bank of Occoquan Creek. The ferry located there did little good for the long-suffering men of Spaulding's detachment. To get across the Occoquan, they would first have to build their own bridge.

While they were doing this—another all-night undertaking—Spaulding gave some thought to his next obstacle, a creek called Chopawamsic another 15 or so miles on. (Marines who have spent some time at Quantico know that Chopawamsic Creek separates Officer Candidate School from Mainside.) Spaulding sent Lt Van Rensselaer to reconnoiter Chopawamsic Creek's ford. The bottom lands along Chopawamsic Creek were notorious for their swampy nature, and Spaulding wanted to know how 3 days of constant rain had affected them.

Lt Van Rensselaer returned late on the afternoon of 23 November with disquieting news. The approaches to Chopawamsic Creek, and the creek bed itself, were one vast bog. He had taken more than two dozen soil samples without encountering anything resembling bottom. Chopawamsic Creek was too thick to swim in and too thin to walk on. Any attempt to ford it would find them still there when summer came around again.

Van Rensselaer had also returned with a sergeant and three men—mud-caked and bedraggled—from the 1st Maine Cavalry. They had been sent north in an attempt to locate Spaulding and determine his whereabouts. Spaulding sent the sergeant and his men back with a message. There was no hope in attempting to go any farther along Telegraph Road. He was going to put everything in the Occoquan, procure a tug, and take the train down to Belle Plain. The horses would continue overland and join him there.

There was no sleep that night for Lt Van Rensselaer. On a fresh horse he went splashing back up the trail to Alexandria with directions to return with a tug if he had to commandeer one at gunpoint.

Here a picture begins to emerge of Spaulding as a man who did not give up easily. Thwarted one way, he would do it another. After yet another night of backbreaking manual labor, the entire train had been unloaded, hauled into the chilly waters of the Occoquan, reloaded, and was ready to go when Lt Van Rensselaer showed up aboard a steam tug. Soon, with its string of pontoons firmly in tow, the tug set out for Belle Plain and within an hour ran aground on a sandbar at the confluence of the Occoquan and the Potomac.

There everything stayed for nearly 24 hours until high tide on the morning of the 25th floated the train free. The pontoon bridges that McClellan had ordered more than 2 weeks earlier arrived at last that afternoon. By that time James Longstreet's Confederates were firmly ensconced on the heights behind Fredericksburg and Edward Porter Alexander, commander of Longstreet's big corps artillery battalion, was telling his chief that not even a chicken could cross the open fields between the edge of town and the Rebel batteries.

If that was not enough, Stonewall Jackson had his corps on the march and was closing fast. They would cover more than 175 miles in 10 days and arrive just in time to tilt the scales a little farther out of balance.

The Result

There you have it, the practical nature of friction. A reading of it sounds like the stuff of novels. Surely all those things could not possibly have gone wrong. No single unit could have suffered the misadventures and trials of those New York engineers.

Incredible as it seems, it all really did happen. It is all there for the reading in official messages and reports, and the old diaries and letters of the men who struggled through it. Friction in its most ghastly form.

In the end, what could have been done easily was now going to be done at ruinous cost. The plan that could have worked—should have worked—was not going to work at all. Instead of victory, there would be bloodsoaked defeat. Where once there had been every reasonable expectation of an end to the war, there was now going to be more than another 2 years of fighting, and thousands of men—blue and grey—were going to die.

The Blame

It is characteristic of human nature to seek a determination of responsibility when things go awry. Where there is catastrophe, there must be corresponding human fault, an apportionment of blame to take the sting out of things. With friction, however, the search for human shortcoming can often be futile.

Who sent the order to Maj Spaulding by mail? Did Capt Duane, who drafted the order, err in its transmission? History fails to tell us, and we are left with a score of other possible explanations.

Were Capt Duane and Lt Comstock a pair of bumbling incompetents, incapable of following up on something of such obvious importance? It is possible, as almost anything is possible, although the record does not bear it out. Both Duane and Comstock served with distinction throughout the war. Each eventually served as chief of engineers for the U.S. Army before retiring.

What of Halleck? Halleck's performance was decidedly less than stellar. Halleck was at best a blunderer, but if total culpability is laid at Halleck's doorstep, what of all the unassembled harnesses, those unbroken horses, two tugs run aground, a 3-day monsoon that turned an uncomplicated journey into a nightmarish quagmire?

All these things occurred, as Clausewitz noted, because of friction—not one isolated condition, but a long string of interconnected incidents, none of which can be foreseen with any degree of accuracy. In varying degrees friction is always there, between planning and execution. The prudent commander recognizes this and avoids giving orders that are cut to overly tight tolerances. The prudent commander never loses sight of the adage that nothing is as easy as it seems. Ask Maj Ira Spaulding.

>Maj Bevilacqua, a long-time contributor to the *Gazette*, retired from active duty in 1980 following 32 years of service. He has recently completed a book on the Fredericksburg campaign.

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