

In September, he created the Ecole Polytechnique. That school constitutes, thanks to the pedagogical genius of Monge, one of the world's most beautiful monuments to the human spirit. In a few years, the best European scientists were formed there. It was to become a model for the whole world in the nineteenth century.

The creation of the Ecole Polytechnique is a most striking example of a "negentropic process." A social situation characterized by entropic disorder and miseducation is transformed, not because of a simple, formal reordering, which in any case could not have functioned, but through the concentration of the greatest possible quantity of free intellectual and economic energy. The outcome is a new and qualitatively superior solution to the problem of education.

It is interesting to cite the description which Prieur de la Côte d'Or gave of the school to Hippolyte Carnot:

"We had often discussed, your father [Lazare Carnot] and I, the necessity of creating a school for the recruitment of diverse classes of engineers; it was one of our favorite occupations. But the torrent of immediate business dragged us along, urgent matters tyrannized us. After the 9th of Thermidor [July 27, 1794], we talked about it again. Carnot had stayed in the Committee, I had left it; he told me to use my leisure time to develop that idea; which I did. As soon as the idea seemed to be ripe, we conferred with Monge, our former professor from Mézière, who took hold of it with his usual enthusiasm, and became the cog of the Commission to prepare the teaching program. . . . Its direct aim was the application of scientific studies to all the needs of the state."<sup>24</sup>

24. Ibid.

## Carnot: Beat the English with flanking operations

*From Lazare Carnot's "General System for Military Operations in the Next Campaign," Jan. 30, 1794:*

All the armies of the Republic must act offensively, but not everywhere with the same extension of their means. Decisive blows must be delivered at two or three points only; otherwise, we would have to spread out our forces rather uniformly on all borders, and the campaign would end, on each, with a few advantages that would not be enough to prevent the enemy from starting up again next year, while the resources of the Republic would be totally drained.

The point where everyone thinks we should deliver the major blows is the North [held by the British], because that's where the enemy, already master of a portion of our territory, himself is directing the largest portion of his forces; that is where he is in the best position to threaten Paris and carry off its provisions; lastly, that's where he is most easily attacked, since it is open country, far from the city, where the enemy has no strongholds, where our armies could live at his expense, and where there exist the seeds of insurrection, which successes could develop.

The army of the North is therefore where we should principally fix our attention. . . .

There remains discussion of operations that must be undertaken by the armies of the Coast of Brest and those of Cherbourg, which we should consider as acting as one. These armies have three objectives to fulfill: 1) finish the war in the Vendée; 2) guard the coastline; 3) carry out a

projected landing on the shores of England. For the first, we need light cavalry, several massed infantry corps, and very little artillery; for the second, good garrisons in the forts and good guard corps on the coasts; for the third, the same arrangements as the second, with a numerous and ever-ready flotilla.

It should be noted, on the subject of this landing, that even were we unable to carry it out this year, the preparations alone would hold all the English naval forces in check during the campaign, and would prevent them from attempting anything substantial elsewhere. They would force the English to have a considerable land army on foot, which puts their constitution in great danger, drains their finances, and prevents them from bringing help to the Low Countries. It is therefore essential to push forward the preparations with all possible vigor and to be ready to take advantage of the first opportunity to carry it out.

To the system laid out above, we need add several general rules, which had been taken as basic in all the ordinances of the Committee of Public Safety on military operations.

These general rules are to always act *en masse* and offensively, to maintain a discipline in the armies that is severe, but not nitpicking; to always leave the troops out of breath, without exhausting them; to leave behind no more than is absolutely indispensable to guard a place; to make frequent changes in the garrisons and residences of the general staff and temporary commandants, so as to break up the plots which proliferate as a result of staying too long in the same place, and which give rise to the treachery that hands the defenders over to the enemy; to exercise the greatest vigilance at the guardposts; to obligate general officers to visit these very often; to engage in bayonet combat on every occasion; and to constantly pursue the enemy to his complete destruction. . . .