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BOOK REVIEWS

Dams and Other Disasters

By
ARTHUR E. MORGAN
Porter Sargent. 1971
Pp. 422, \$7.50

Arthur Morgan, eminent engineer and public servant, is well past his 91st birthday. More than a generation separates him from the biologist Barry Commoner. The latter in turn is of parental age as compared with the youthful activists who, in their dedication to environmental problems, sponsor Earth Days. These facts should give pause to anyone who insists that serious attention to such problems is merely a jejune, transient blowing off of steam.

Following the disastrous Dayton flood of 1913, Dr. Morgan designed a series of reservoirs for the temporary storage of flood waters. Wholly financed by the state of Ohio, these reservoirs have done the job for which they were intended. After a period as president of Antioch College, marked by fresh and original ideas, Dr. Morgan became first chairman of the Tennessee Valley Authority, applying his professional skill with a rare understanding of the region and its people.

Still later one of his many acts of public service was to head a committee that served under two successive governors of Ohio, a Republican and a Democrat. The result was a plan of resource management that was a model until a return to the spoils system through executive interference a number of years later.

Thus Dr. Morgan's long career has exemplified his doctrine of *conclusive engineering analysis*. Quite simply this means that the slide-rule must be the servant, not the master, in making technical decisions. Inevitably such a philosophy must lead to a critique of the engineering profession and its training. While Dr. Morgan might have had a good deal to say about engineering school in general—at least until their recent attempts at reform—he has concentrated on the one whose graduates have had a profound and continuing effect on the American landscape—West Point.

Dr. Morgan's thesis, strongly documented, is that the Napoleonic pattern upon which our military academy was founded has a rigidity ill suited to the carrying out of civilian projects. Its objective is to break the enemy's will, regardless of waste. Casualties to civilian personnel, communities, and institutions, however regrettable, must yield to military necessity. To which we may add that military

training does not exactly nourish a spirit of tolerance toward opposition, leisurely reflection, or even innovation (Witness Marshall Haig's disastrous scorn of tanks.)

Let us see, then, whether Dr. Morgan has any evidence on these counts:

1. Waste: on page 36 is a list of nine projects on which the original estimate was overrun by 39% to 391%, only three of the nine by less than 122%.

2. Disregard of civilian impact: see Chapter 3 on the need for conclusive analysis for human well being for accounts of insensitive treatment of the Upper Missouri, Sioux, Papago, and Seneca Indians, as well as a white community in Kansas.

3. Opposition to new ideas: Chapter 5 recounts in detail the protracted efforts of the Corps of Engineers to thwart the building of the Mississippi bridge at St. Louis by James B. Eads, one of America's great engineers. Later chapters record similar opposition to the establishment of a hydraulic laboratory on the grounds that all was known that need be known and to Dr. Morgan's idea of reservoirs for flood protection. In fairness, the Corps as of today is not oblivious to growing pressure and hopefully not to the conditions that are causing it. Several years ago a highly competent ecologist was added to its staff. And under date of 15 April, 1971, an excellent nine page pamphlet on the Corps and Environmental Conservation was issued from the office of the Chief.

A study made some years ago of young men headed for various professions showed future engineers at the top in intelligence tests. High ranking graduates of West Point have been given first choice of the Corps of Engineers. U.S. Grant III who, as I recall, was second to MacArthur in his class, became a Chief of the Corps, and a good one.

Until the recent liberalizing of engineering curricula in civilian schools, such excellent men were vulnerable to the charge of narrow training, offset to some extent by a remarkable discipline in responsibility lacking in many other types of education. Before blaming this profession for the undesirable results of its powerful activities we must recall that engineers work under contract *to carry out the wishes of others*.

For the army engineers, however, this involves some peculiar features. It has been said that they represent the one branch of the armed forces not under control of the Commander-in-Chief; much is made of their primary responsibility to Congress. Yet President Grant (pp. 113 and 156) in the matter of the Eads bridge, peremptorily asserted his authority. Brass had no magic for him.

Described as one of the most powerful lobbies in the country is the

Rivers and Harbors Congress (pp. 69-73). Its membership includes officers of the Corps, contractors and suppliers and a list "as long as the dictionary" of special interests. It would be hard to devise a more effective instrument for ramming through pork barrel legislation. Even when the professional integrity of army engineers results in an adverse report, it may be overridden by pressures for favorable review. It is heartening to know that the Corps pamphlet referred to above ends with a strong appeal for citizen participation.

To insure such participation, intelligently and effectively, is Dr. Morgan's intent. Nor should it be assumed that he is lacking in respect for the character and independence of many individual members of the corps. (p. 73)

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