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What struck me most about Aitken's account of Taylorism is the importance of information to the installation and operation of the system. Information gathering is important at each point in the narrative. Barth studies the machine shop extensively before beginning to develop a new organizational plan. Congress later creates a committee to investigate the system. When Wheeler is brought before congress to defend the system he uses extensive statistics. Even the workers bring in an analyst to justify their complaints. The system is installed, justified and eventually removed on the basis of studies, surveys and statistics. Indeed for Taylor, this information gathering is what puts the 'science' in 'scientific management.' Beyond this, though, the management of information is central to the daily operation of the system. The reformation of the material handling system is an example. Under the new system every piece of material is tracked-- from being ordered, to its movement to a work station and its transformation into a part. Parallel to this, the need for the material is followed from the initial specifications of the job, to the working drawings, to the worker at the work station. Similarly the state of the belt drives, the age of the cutting tools and the movement and production of the workers are all carefully tracked, registered and filed. While the new system meant that much more metal was moving through the shop, it also meant that much more information was circulating as well.

Although Aitken details these new information systems, they are not central to his story. When he analyzes the effectiveness of the system the differences in costs caused by this change in information processing are seen primarily as bookkeeping changes that throw off the recorded changes in the cost of jobs. He also questions whether the changes in the tool room and the addition of engineering and routing departments are really central to Barth's innovations. These information moving systems are secondary to Aitken's report because they appear less controversial than discussions regarding the premiums and the work rates. I could imagine, though, that this story could be re-framed around questions of information movement.

Bruno Latour's discussion of metrology in *Science in Action* could provide an interesting start for a re-framing project. For Latour science and engineering are not

applied to the world unproblematically. In order to gather information about the world scientists must extend networks of instruments, practices, and people into new areas in order to learn things about those areas. Pasteur cannot just go into the (literal) field and study microbes; he must extend his laboratory. Latour: "Facts and machines are like trains, electricity ... or frozen vegetables: they can go everywhere as long as the track along which they travel is not interrupted in the slightest." (250). In many cases this extension is a matter of creating paper traces of the world. The world becomes legible to techno-science to the extent to which it can be made to produce pieces of paper. This process can be seen in Barth's reorganization of Watertown's machine shop. There is a proliferation of paper describing the past, future and current state of the shop and its jobs and inhabitants. The foremen, workers, and engineers begin to produce job cards, bills of materials and mater route sheets. From Latour's point of view, these cards are not epiphenomena to the rationalization of the shop, but are exactly what allows management, science and the combination of the two entry into the shop floor. Without these cards the engineering department has no way to interact with the workers.

What is interesting about all these cards is that they are physical objects; that is they have to be produced and circulated. While Taylor, Wheeler, the workers and perhaps Aitken are all concerned with material production, a perhaps more fundamental change is also taking place. Beyond the management-labor struggle that stands at the center of this story, is a second restructuring that may deserve a larger role. This is the introduction of people who are neither bosses nor workers. The foundry strike could be seen as reaction against Merrick's presence. As neither an officer nor an expert molder promoted to a foreman position, the workers might have understood his role in this new system of information processing. To return again to Latour's formulation of these systems: because these systems takes work to produce, it is always possible for them to fail.