Chancery Papermaking 2016 - 2000 Sheets in One Day

https://www.youtube.com/watch?v=bggttPftmVs

Narrator Timothy Barrett: On June 10th, 2016, a team of 12 people working at the University of Iowa Center for the Book attempted to make 2,000 sheets of handmade paper in a 10-hour work day. An earlier attempt in 2014 yielded only 1,350 sheets. But this time we were successful.

We made three changes during this new attempt. First, we switched from cotton rag half-stuffed to cotton linter fiber for our raw material. Second, we beat the fiber to yield the fast-draining pulp with, for those familiar with the industry standard test, a corrected Canadian standard freeness between 400 and 450 milliliters. And third, we incorporated a set of 20 extra felts in additional to the 52 felts needed to make our regular stack or post of 50 sheets. This allowed the vat person and coucher to begin work on the next post as soon as a new charge of pulp was mixed into the vat.

To reach 2,000 sheets by the end of the day we needed to form and press one post of 50 sheets and start another within 15 minutes. We reached 2,000 sheets at nine hours and 15 minutes by having everyone continuously take turns at each of the vat positions. Everyone else packed-pressed the sheets that had been separated from the felts, parted them, and hung them to dry in groups of four sheets.

It is important to emphasize that during the history of the craft, the three-person team at the vat was supported by eight or more additional people, working in the background, who sorted rags, beat the rags into pulp, hung the sheets to dry, and finished, counted, and packed the paper for market. The paper machine was invented around 1800. When making paper by hand between 1300 and 1800, a day's work varied considerably depending on the size, thickness, and quality of the sheets being made. Smaller, lightweight, poor-quality grades such as wrapping paper, could be make in quantities as high as 9,000 sheets in a day. Very large, heavyweight, high-quality sheets, for watercolor paper, for instance, might carry with it an expectation of as few as 1,000 sheets in a day.

Why attempt making 2,000 sheets in a day to begin with? Why bother? We had two reasons for trying. First, the most obvious perhaps was simply to see if we could do it. In hand-papermaking craft today, 2,000 sheets in 10 hours is a lot. Was it possible, we wondered. Secondly, we wanted to see how making that much paper that fast would impact the characteristics of the finished paper. Modern handmade paper used in the conservation of rare books needs to have quality similar to the historical sheets. If we employed production rates used to make paper as a utilitarian commodity,

would we end up with sheets that exhibit an attractive tension between unavoidable marks or defects on one hand, and skillfully executed uniformity on the other? Or would the paper automatically just be poor in quality?

The answer to this question is confounded by the wide range of skills in our particular 12-person team. But by considering the better-quality sheets made by the more skilled workers, we found many of the characteristics we see in well-made historical sheets that are both skillfully formed and couched but also possessed the various marks remaining from the hand-papermaking process. More slowly made, more perfect sheets may eliminate any of the so-called defects. But we question if they embody the spontaneity and authenticity we see in historical utilitarian papers.

What we learned: Number one: With the right number of workers on a team, 1500 or so sheets in a modern eight-hour work day are possible. Number two: Attempts to replicate historical work routines provide real insights about historical production details that were never documented. Good examples are the necessary pulp drainage rate or freeness as well as the level of skill that was necessary to do the work. We realized fast-draining pulp permits high production rates in a given amount of time. But it also increases the amount of skill required on the part of the vat person to shake and even the sheet in just a few seconds of time before the wet pulp solidifies on the mold surface. Number three: Finally, experiments such as this greatly enhance the already high-level of respect we have for the quantity and quality of the paper routinely made by historical workers. The dried sheets made during this experiment were humidified, damp-pressed, and then dry-pressed to flatten them. As a final step they were graded for thickness and quality, and the finished sheets were sold for use in letter-press printing and dummy text blocks in bookbinding models.

Vatman: Ready?

Everyone is cheering and clapping the last sheet of paper, “Yay!”

The coucher, pronouncing it in French with an accent on the second syllable: Coucher!

Vatman: Yes! Awesome!

Timothy Barrett: Right, so the front is all cleaned up, and all we have to do is rinse down the vat. Looking good and we timed this right. [inaudible instructions to the student to clean up the work area.]

End of narration.

The following text appears on film with the sound of music in the background.

For background videos related to this one, on YouTube search:
Chancery Papermaking 2013
Chancery Papermaking 2014
or Hayle Mill

Music by
W.W. Lowman
From the album PLAIN SONGS
Available on iTunes

Narration
written and performed by
Timothy Barrett

Cinematography by
Barry Phipps

Produced by Timothy Barrett and Barry Phipps
for
The University of Iowa Center for the Book

Papermakers:
Tim Barrett, Thomas Helmers, Elise Hochhalter, Sarah Luko, Julie McLaughlin, Lisa Miles, Radha Pandey, Amy Richard, Johan Solberg, Mary Sullivan, Peter Thomas, Ellen Wrede