

ScanStone—Automated Exposure

The Granite Mountain Records Vault is home to about 2.5 million rolls of microfilm which can contain on average 1000 frames. To increase accessibility to these records, an ongoing scanning effort is moving forward to digitize them. Filming has been occurring since 1938 and since that time has experienced a number of changes both in material and process in an effort standardize the quality of the filmed records. Due to the wide range of film quality archived at the vault, past scanning efforts have required considerable manual intervention.

During the filming process, slight differences in exposure result in variable film thickness, or density. These density variations require an adjustment in the amount of light used during the scanning process to ensure reasonable and consistent image quality. This potentially has to be done for each roll. In addition, density variations can exist within the same film requiring further adjustments. Compounding the problem, original records were microfilmed at varying degrees of miniaturization, called the reduction ratio. Configuring the scanner for different reduction ratios changes the focal length which also impacts the light setting. Finally, due to variations in light output from scanner to scanner, the same film would require a different setting on each scanner. All of these adjustments require manual intervention which interrupts the scanning process.

With the large volume of film, it is necessary to create a system that can handle film and scanner variations while maintaining consistent image quality with a minimum of manual intervention. We present a method which minimizes dependence upon the lamp setting by adjusting the contrast of the scanned output automatically. By adjusting the contrast, image quality is controlled and consistency maintained in the presence of density variations, and changes in focal length and scanner light output. We will present the results of this approach and compare them with the results generated through a manual auditing process.