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Brief 70-10360

NASA TECH BRIEF

Multispectral Facsimile Reproducer

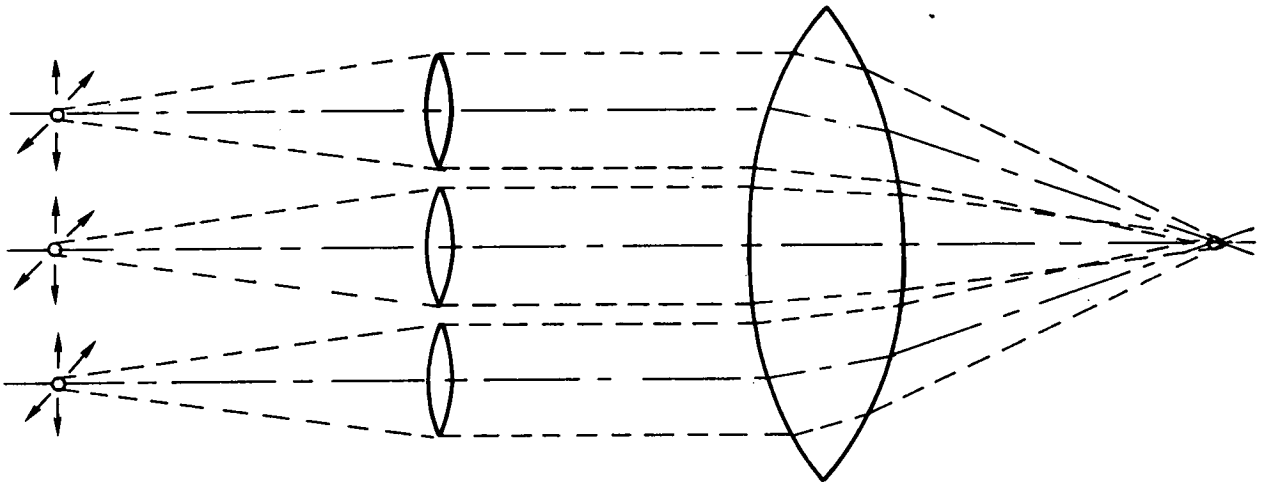

Figure 1. Optical Principle; Schematic

The ability of a monospectral (black and white) facsimile reproducer has been extended to record spatially well-registered true-color and false-color video data on tape. False-color is caused by a wavelength conversion occurring between the scene radiance and the film exposure.

Figure 1 shows the principle of the proposed optical configuration for the recording of spatially well-registered color on film. Each of several electrical signals, derived from different detector-filter combinations in the facsimile camera (Fig. 2A) and brought into proper spatial registration by electronic delays, modulates a different light source in the facsimile reproducer (Fig. 2B). The modulated radiation from each light source is passed through a separate filter and pinhole. Each pinhole is located at the focal point of a small lens which collimates the radiation. The collimated radiation is passed through a larger lens which focuses these rays to a single point. Scanning with this point over a relatively slowly moving color film, in such a manner that successive line scans are contiguous, provides spatially well-registered color exposure of the film.

This optical arrangement also allows the light sources to be adjusted along the mirror scanning direction in such a manner that no electronic delays are required if the reproducer is operated synchronously with the camera. This scheme has operated successfully.

Note:

Requests for further information may be directed to:

Technology Utilization Officer
Langley Research Center
Hampton, Virginia 23365
Reference: TSP70-10360

(continued overleaf)

Patent status:

Inquiries about obtaining rights for the commercial use of this invention may be made to NASA Code GP, Washington, D.C. 20546.

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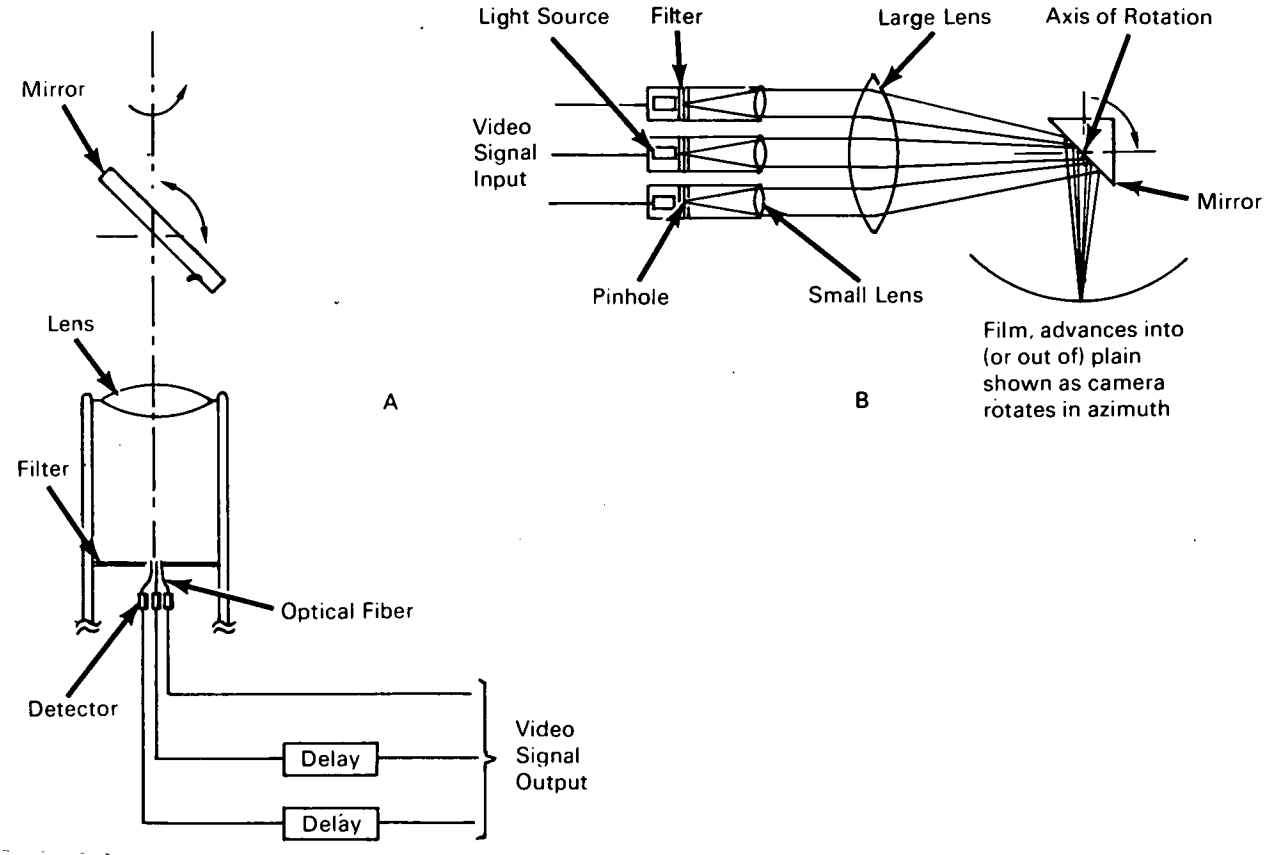

Figure 2. Configurations of Facsimile Camera for Multispectral Images (A) and Facsimile Reproducer (B); Schematic