.

October 1970

brought to you by T CORE

Brief 70-10360

NASA TECH BRIEF



NASA Tech Briefs announce new technology derived from the U.S. space program. They are issued to encourage commercial application. Tech Briefs are available on a subscription basis from the National Technical Information Service, Springfield, Virginia 22151. Requests for individual copies or questions relating to the Tech Brief progam may be directed to the Technology Utilization Division, NASA, Code UT, Washington, D.C. 20546.

Multispectral Facsimile Reproducer

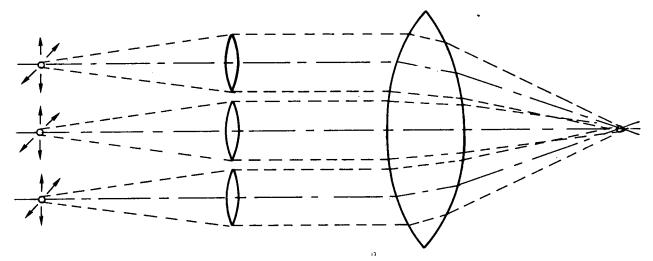


Figure 1. Optical Principle; Schematic

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 wellregistered 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

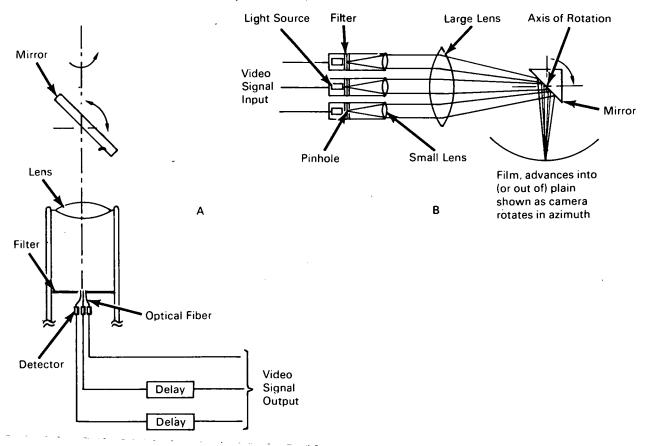
(continued overleaf)

This document was prepared under the sponsorship of the National Aeronautics and Space Administration. Neither the United States Government nor any person acting on behalf of the United States Government assumes any liability resulting from the use of the information contained in this document, or warrants that such use will be free from privately owned rights.

Patent status:

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

Source: F.O. Huck and E.E. Burcher Langley Research Center (LAR-10618)



Category 03