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NASA TECH BRIEF



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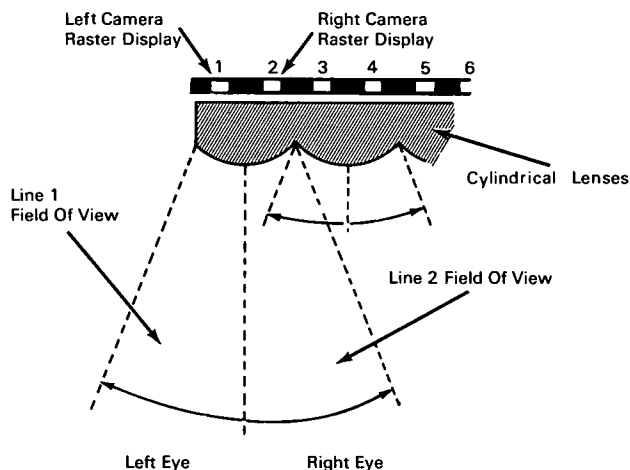
Screen of Cylindrical Lenses Produces Stereoscopic Television Pictures

DATA PRESENTED

CAMERA #1 LINE NO.	1		3		5		7		9		11		13	
CAMERA #2 LINE NO.		2		4		6		8		10		12		14

RASTER LINE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
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ILLUMINATED RASTER														
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The problem:

A device was needed to display stereoscopic television in order to eliminate the use of complex fixed-picture displays that require special techniques and equipment for their production.

The solution:

A colorless, transparent screen of adjacent parallel cylindrical lenses placed in front of a raster from two synchronized TV cameras. Alternate frames from al-

ternate cameras are displayed. The viewer's left eye sees alternate frames from the left camera and the right eye sees the interlaced frames from the right camera.

How it's done:

A vertical field interlace technique uses two separate pictures that are projected sequentially. The first picture appears on all odd numbered lines of the raster and the second on all even numbered lines. Pro-

(continued overleaf)

jection speed of the interlaced image is at rates above the flicker fusion frequency so that the eyes and mind see continuously moving, three-dimensional images with no flicker. By rotating the standard raster so that the lines are vertical and using a screen of proper design, one frame (raster lines 1, 3, 5, 7, etc.) contains the video for one picture and the interlaced frame (raster lines 2, 4, 6, 8, etc.) contains the video for the other picture of the stereo pair. Sensory perception in the viewer fuses the two images into a single three-dimensional picture.

Notes:

1. Alignment of the raster lines and the lenticular screen is critical. Any inaccuracies will result in distortion and a loss of the three-dimensional effect.
2. This same technique can be used to produce three-dimensional motion pictures.

3. Inquires concerning this invention may be directed to:

Technology Utilization Division
Marshall Space Flight Center
Huntsville, Alabama, 35812
Reference: B66-10086

Patent status:

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

Source: Charles L. Nork
of SPACO, Inc.,
under contract to
Marshall Space Flight Center
(M-FS-273)