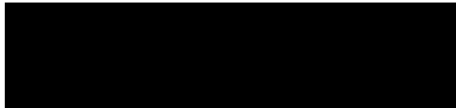


P. O. Box 2143
Main Post Office
Washington, D.C.

6 January 1964

STATINTL



Gentlemen:

An evaluation has been made of the Technical Description of a Proposed Optical Head for the [REDACTED] Panoramic Stereoviewer. No further action will be taken at this time pending the delivery and evaluation of the prototype Panoramic Stereoviewer. STATINTL

I appreciate your interest in taking time to prepare the Technical Description.

Sincerely yours,



STATINTL

DECLASS REVIEW by NIMA/DOD

STATINTL

*See by hand
from 5 Nov 63
27 Nov 63*

Technical Description

Proposed Optical Head for [REDACTED]

STATINTL

Panoramic Stereoviewer

This optical head will be similar to the [REDACTED] Versatile Stereoscope, but some of the optics and mounting will be redesigned to facilitate its use on the Panoramic Viewer.

STATINTL

The Versatile Stereoscope has a magnification range of 3X to 120X in three steps; 3X to 13X, 7X to 30X and 28X to 120X. A magnification of 120X may not be practical in the Panoramic Stereoviewer. High magnification and high resolution require carefully controlled conditions of stability and illumination such as in a microscope.

If the high magnification range is reduced to, for instance, 14X to 60X the mechanical requirements will be less severe. Perhaps the most desirable range may be achieved by two relay lenses, which will result in lower cost and greater simplicity of design. Since the relay lenses in the Versatile Stereoscope would have to be redesigned to fit into the Panoramic Viewer anyway, nothing is lost in the way of costs by changing the magnification range. However the following initial description is based upon the magnifications found in the Versatile Stereoscope.

Magnification change will be accomplished by rotation of a turret containing three relay lenses with .43X, 1X and 4X magnification respectively and rotation of a zoom control knob. The zoom systems for each optical train are coupled by a single control knob. This knob may be disengaged by drawing upward. Then the zoom

*Not Contracted
for*

-2-

systems are free to be varied by two smaller control knobs for individual zoom for viewing photographs with different scales. The head has zoom lenses with a magnification range of .7X to 3X. Eyepieces of 10X will be used.

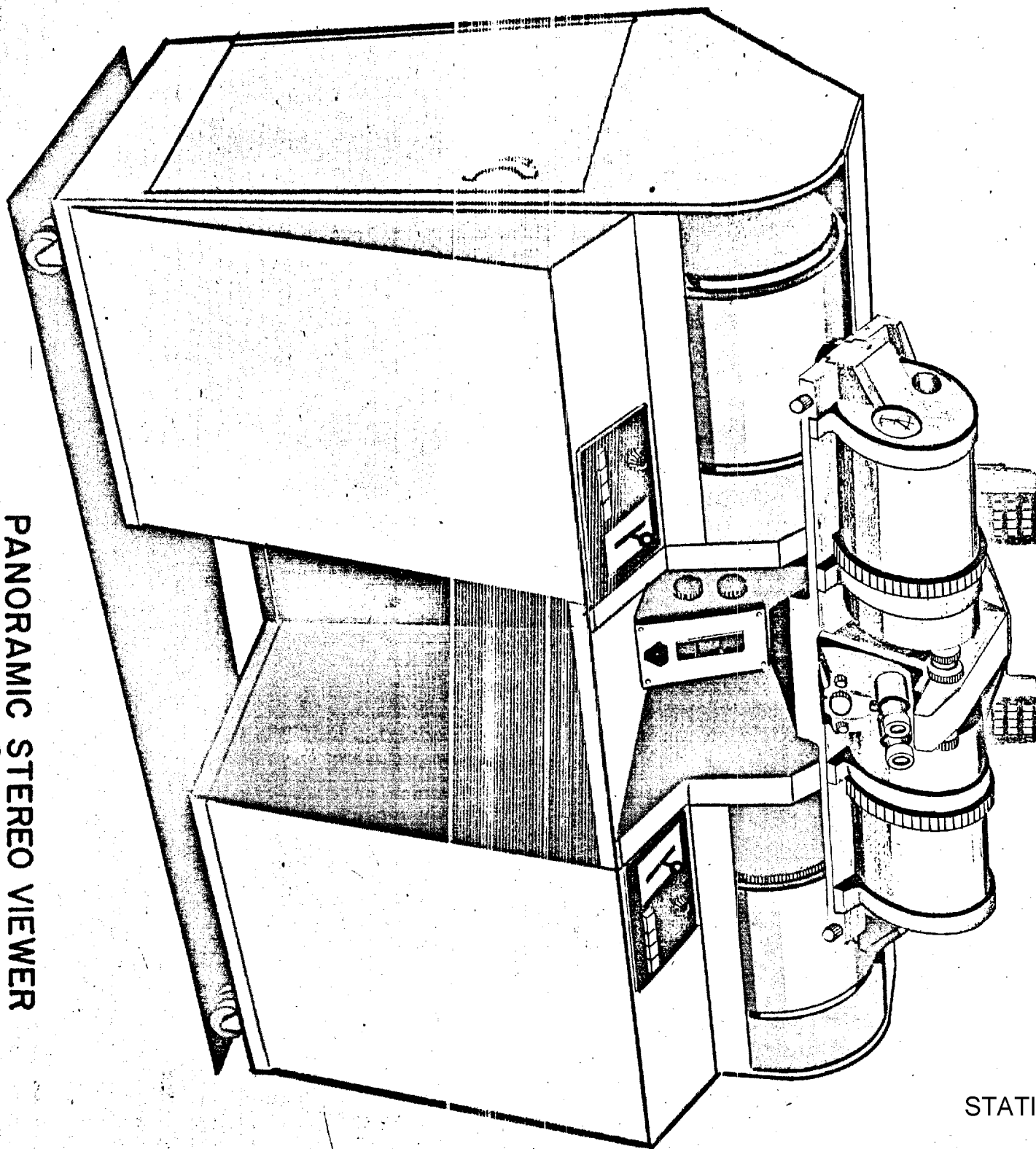
The zoom lenses are from the [REDACTED] StereoZoom Micro- STATINTL scope. They will be mounted in a pod similar to that which was designed for the Versatile Stereoscope. Between the zoom lenses and the eyepieces are a prism erecting system and a Pechan prism which provides 360 degrees continuous image rotation. Difference in focus between relay systems of different power will be achieved by focusing the pod with respect to the relay system. Individual focus between the left and right side of the same relay system will be achieved by sliding the mirror located between the lens and the film plane in a horizontal direction.

The eyepiece tubes adjust for interpupillary separation from 63 to 72 mm and are held by a spring against the adjusting knob. One eyepiece tube is focusable to match the acuity of the operators eyes.

The relay lenses project the photographic image into the object plane of the zoom system objective lens. Each lens has its associative field lens near the intermediate image plane. These are also mounted in a turret which rotates with the relay lens turret.

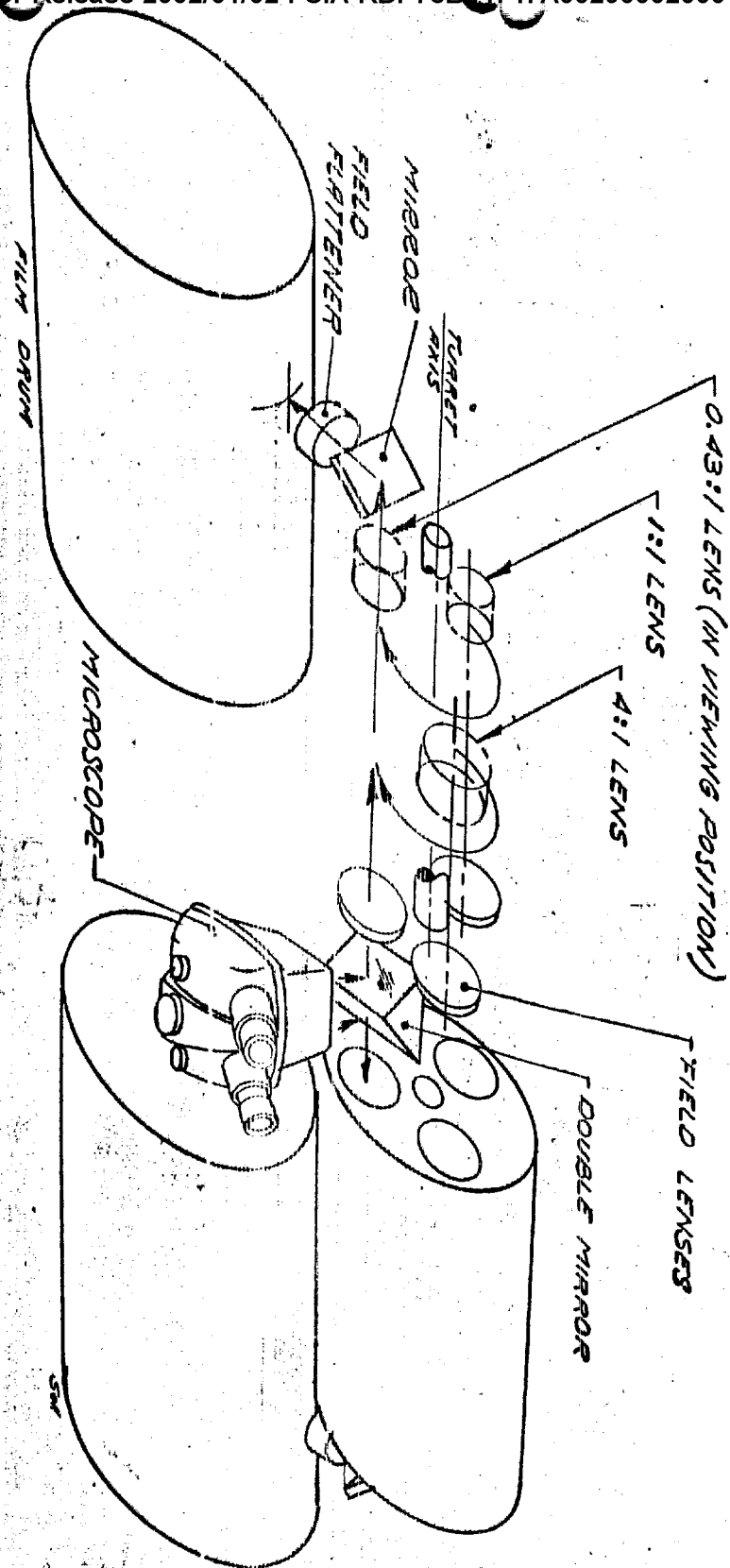
Field flateners will provide for good focus over the entire

PANORAMIC STEREO VIEWER
WITH PROPOSED OPTICAL HEAD



STATINTL

OPTICAL SCHEMATIC



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