

wards or forwards presents a point at the center of the plane where a sharp image is formed. Thus, circles that are concentric come into focus at one point and radial lines at another. This creates a situation image blurr occurring in a concentric pattern in the foreground of the focussed object.

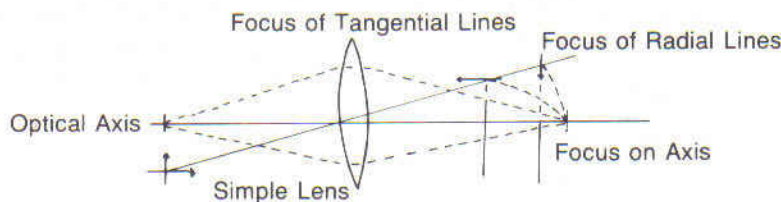
• **Curvature of Field** presents itself as an inability to focus a plane object as a plane image. The net effect is this: if you bring the center of the object into sharp focus, the edges of the object remain out of focus. The image planes that we talked about in astigmatism are curved rather than flat planes. Thus... if two planes are separate, the image plane of practical interest lies between them, and this plane is usually also curved. This curvature is called curvature of field. Like astigmatism, curvature of field can be absorbed by stopping down the lens to increase the depth of focus.⁶

Throughout this entire three part article, we have been discussing the management and alteration of light. Needless to say, optics play a significant role in the craft of quality lighting for television. If we recall a previous discussion where we spoke of the Modulation Transfer Function of a lens, we learned that there are limitations inherent in the system which establish the working parameters for what we do. In spite of the ability of a lens to resolve both qualitatively and quantitatively a great deal, the limiting factor is the bandwidth of the broadcast system. In fact, in a number of instances, it is possible for a lens to be able to resolve more detail than can be passed on through the system to be recorded. We also learned that contrast and resolution of fine detail are closely related and are important for producing pictures of high quality. The role of artistic lighting is integral to producing quality well-defined pictures that have depth, tonal gradation and convey a 3-dimensional sense of reality. It becomes apparent that the key to crafting quality pictures on a consistent basis is a thorough knowledge of the parameters of the system.

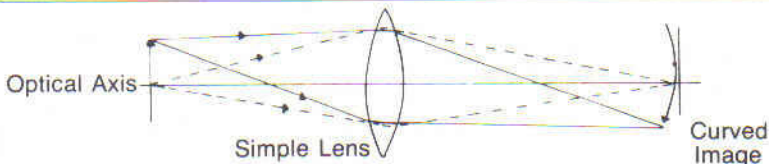
In conclusion, although it is often desirable for artistic reasons to operate a lens at full aperture, one should diligently observe the monitor for any of the aberrations that we have discussed. At full aperture, aberrations and imperfections in the optical system are more likely to impinge upon the picture. Knowing the parameters of the system can also be an aid to creating that visual intangible that imparts a certain pleasing quality or style to your work.

I am deeply indebted to Mr. M. Arase and the staff of the Optical Division of Canon Optical for their help in the preparation of this article.

Bentley Miller is lighting director for City-TV/MuchMusic in Toronto.



Astigmatism



Curvature of Field

THERE'S A VIDEO PATCHING SYSTEM THAT'S BETTER.

HERE IT IS.

HERE'S WHY.

Only THE DYNATECH COAXIAL PATCH Gives You All These Features: normal-thru connection, cross-patching, non-interrupting on-line monitoring of live circuits, AND Coterm's automatic termination of patched-out circuits *within the jack*.

All These DYNATECH Features Plus the least amount of noise pick-up, signal degradation and signal loss. This patented, shielded jack helps reduce interference due to EMI, RFI, hum, noise and cross-talk. Unbalanced line, coaxial equipment transmits signals in excess of 400 MHz with negligible insertion loss, cross-talk or VSWR.

Normal-Thru Connection eliminates patch cords or normalling plugs for dedicated circuits — you get less signal degradation and you get a clean, uncluttered patchfield — reducing the possibility of errors when a patch must be made.

To Break The Normal-Thru Connection, you insert a patch cord that allows cross connections to be made. Sources that are patched-out are automatically terminated *within the jack in the proper impedance*. Test probes may be inserted in the jack to monitor a signal *without interrupting the live circuit*.

TO FIND OUT HOW Dynatech's coaxial patching/switching system can fulfill your requirements, CALL OR WRITE TODAY.



90 NOLAN COURT, UNIT 7
MARKHAM, ONTARIO, CANADA L3R 4L9
(416) 475-8494 TELEX: 06-986741