

## Photogrammetric Brief

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# A Stereoscopic Field Viewer

A simple and light device for stereoscopic viewing of transparent 35 and 70 mm aerial or other stereophotographs in the field is described.



FRONTISPIECE. The field transparency viewer in use with a stereo pair of 70mm aerial photos.

**I**N RECENT YEARS color films and 35 and 70 mm format aerial photographs have become widely accepted for various types of interpretative projects (Myers, 1974). For photo-interpretation, transparencies viewed by transmitted light are generally superior to paper prints viewed by reflected light. One major drawback is the difficulty of viewing transparencies in the field, because they require transmitted light.

Several workers have overcome this problem by constructing portable light tables powered either by batteries contained within the table itself or in a separate pack (Wear 1960; Parker 1971; Totterdell and Nebauer 1973). The weight of batteries generally limits the practical use of such devices, particularly when working some distance from roads in rough terrain or densely forested areas. Bird, of the Forestry and Timber Bureau's Tasmanian Research Station, Hobart, (personal communication) constructed a 70 mm light table weighing only 2.5 kg. including batteries, which utilizes a portable fluorescent torch to illuminate a white perspex viewing platform.

Another method of viewing transparencies in the field is to attach them together with a stereoscope to a transparent piece of perspex and holding it up to the sky for viewing. This is a very uncomfortable position, and under forest viewing conditions, crown foliage frequently prevents a clear view of the sky and

the resultant dappled light makes photo interpretation difficult.

To overcome these problems a very light, compact, and simple device was developed, which eliminates the necessity for batteries, fluorescent tubes, wiring, switches, and heavy framing while still maintaining a comfortable position for viewing. The viewer utilizes sunlight or skylight reflected from a white board through a transparent viewing stage, to which the photos and a light lens stereoscope are firmly attached. The viewing stage is hinged to the reflecting board and may be fixed at angles of up to 60° by an adjustable supporting arm in order to obtain the maximum reflected light. The entire device, including the stereoscope, weighs less than 500 g. When set up for viewing with the stereoscope in place it measures 280 × 180 × 140 mm (See Frontispiece). When not in use it folds into a flat shape 210 × 170 × 25 mm.

The reflecting board is a 210 × 140 mm piece of 8-mm-thick plywood painted flat white. The viewing stage is a 210 × 100 mm sheet of transparent perspex, which is hinged to the front edge of the reflecting board. The two small butt hinges are recessed to allow the viewing stage to lie flat when folded. The supporting arm, cut from thin sheet aluminum, allows the viewing stage to be set at various angles by means of a knurled nut, which slides along the arm and is attached to the stage. The stereo pair is held to the view-

ing stage by two heavy rubber bands running across the edge of the photos. The stereoscope is clamped to the viewing stage by means of two bulldog clips lined with thin rubber to prevent the metal legs of the stereoscope from slipping. The viewer can be constructed in a few hours, and the materials cost about \$5.00

Field trials of the viewer have been carried out under varying conditions of forest cover, cloud, and sun angle. The amount of illumination was satisfactory except in the dark conditions found under dense wet sclerophyll eucalypt forests in mid-winter (solar altitude 22° at noon). Any combination of sun angle, cloud, and forest type which provides equally dark conditions would necessitate using some form of portable light table. The main advantages of the viewer are its light weight, compact size, simplicity of

design, and convenience of use when the stereoscope and photos are firmly held to the viewing stage. The main disadvantage is the reliance on adequate natural illumination for effective use.

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