The Heath Robinson guide to anamorphics

Colin Pelton

What's the oceanographic connection between a vintage wind-up gramophone, a Goblin vacuum cleaner, 2 scaffolding poles, some 'Handy Angle' framework, a 35mm aerial survey camera, a large supply of black mounting board, glue, a rubber roller, and some floodlights? The answer, (pub quiz goers take note), is the Mk I GLORIA anamorphic camera.

It was around 1970 that Bob Belderson and Ray Graves from NIO visited the Royal Aircraft Establishment at Farnborough to meet K.R. (Ken) Honick. He was a remarkable research engineer whose work on developing flight navigation systems for military aircraft, led him to produce a prototype anamorphic* camera which could stretch the scale of maps to a desired distortion ratio. As early as 1961 he was writing papers that described using roller strip maps driven from Doppler groundspeed data to demonstrate the advantages of a pictorial display of ground position to pilots. (**Having or producing unequal magnifications along two axes perpendicular to each other.)*

His camera looked an ideal, if Heath Robinson, method of taking the raw GLORIA seafloor survey output and correcting it along track for the ship's speed over the ground. RAE donated this extraordinary piece of its history to NIO and the result was the production of the first large-scale GLORIA image mosaics of the seafloor.

When I joined NIO, the impressive bulk of the Mk 1 GLORIA side scan sonar vehicle had already been tried and tested in the calm summer waters of the Mediterranean, so fortuitously, this was to be its cruising ground for many years, and the location for my first seagoing experiences. However, I was not to see the sun for much of the cruise. As a man who knew his way round a photographic darkroom I was 'volunteered' by Arthur Stride, Head of Geology, as the ideal person to tackle the Honick camera system and produce the daily supply of anamorphically corrected GLORIA images to the team of Stride, Belderson and Kenyon, (see papers var.) who were luxuriating on the upper sun-lit lab decks of Discovery.

Each morning I would take the previous day's track plots (courtesy of the world's first seagoing mainframe computer, the IBM 1800) and calculate GLORIA's average speed over the ground at four hourly intervals. The anamorphic ratio required to correct each image was that which would basically stretch the hourly time stamps on the raw GLORIA images to fit the respective hour marks along the plotted ship's track. I would then collect the raw black and white print output from the GLORIA team and, with a wistful glance at the sun-dappled waves, disappear down to the Discovery darkroom for the morning.

The raw images were sprayed with mounting glue and, using the rubber roller, stuck (in vertically mounted pairs) squarely onto a large piece of black mounting board. The board was then offered up to a heavy vertical plate drilled with a system of holes which led via a hose to the aforementioned Goblin vacuum cleaner. Once switched on the Goblin's suction held the board and its images firmly to the plate. I then took a winding handle and inserted it into the guts of a 1940s wind up gramophone, which was attached to the top of the plate by a long wire running over a pulley. The plate was mounted on wheels running between 2 scaffolding poles and the winding action raised it to the top of the poles.

Using the prepared anamorphic ratio calculations, I adjusted the calibrated disc and ball speed governor on the gramophone to the correct ratio setting for each image. In front of the images was a venerable 35mm aerial survey camera which looked as though it had seen some useful action over enemy territory in WWII. Every few days I would take off the camera's capacious film cassette and load several feet of Ilford FP4 film. This film spool was driven by the dropping plate and its wire-driven output via the gramophone speed governor set at the correct ratio between the speeds of the advancing film and the image as it dropped past the lens. The result was a stretched image of the raw output exposed onto a strip of 35mm film. All I had to do was switch on the floodlights, push the start lever and let gravity take its course.

After the day's output had been filmed I would then retire to the inner sanctum of the darkroom where, under cover of complete darkness, I would retrieve the film, develop, fix and wash it ready for the afternoon's print run. This involved much use of red lighting, an enlarger, a clockwork timer, hand-cut strips of printing paper, unpleasant chemicals, and a ruler to accurately determine the final dimensions of the corrected image. Finally I would emerge into the failing daylight to deliver the strips of true-plan images to the assembled scientists. Using a scalpel, a trained eye and copious Sellotape, a mosaic of the Mediterranean seafloor would painstakingly be assembled for later interpretation and scientific publication.

Footnote

During these cruises various illustrated examples of top-shelf (WH Smith not NIO Library) vertebrate morphology were donated to me and offered up to the camera for the annual Miss Anamorphic competition. Few required any enhancement, either vertically or horizontally, but sadly no examples remain in my collection to prove it. Neither do I have any images or illustrations of the Honick camera either, despite extensive research, so if anyone out there does, please let me know and I'll add it to this article.

Editor's note. *The RAE has a trust devoted to preserving its history, The Farnborough Air Sciences Trust (http://www.airsciences.org.uk/museum.html). We have enquired whether they have information on the Honick camera.*

HONICK, K.R., 1971: ANAMORPHOSIS BY CONTINUOUS FLOW PHOTOGRAPHY. JOURNAL OF PHOTOGRAPHIC SCIENCE, 19(1), 23-

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