

Calvine reconstruction using analog camera

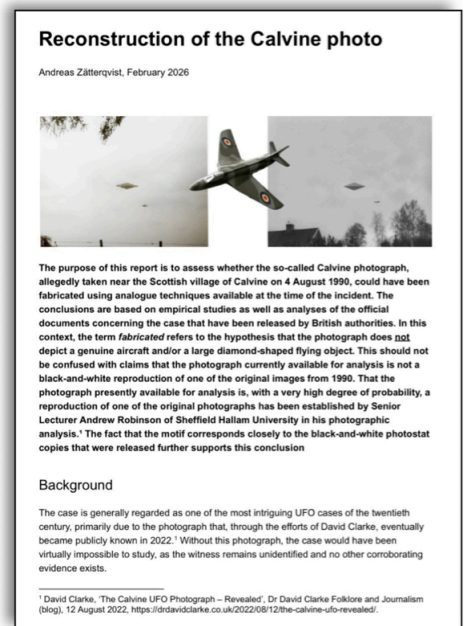
Andreas Zätterqvist, September 2026



In my original report, *“Reconstruction of the Calvine Photo,”* I conducted an experiment in which I recreated the presumed sequence of six Calvine photographs using small-scale models suspended from horizontal fishing lines. The experiment demonstrated that this method could be used to construct a scene in which an aircraft appears to move horizontally across the frame while a diamond-shaped object remains stationary in the air above it.

The experiment did, however, have one significant limitation: it was conducted using digital photographic equipment. For practical reasons, a digital camera was used, meaning that the technical conditions differed substantially from those that would have been available to a hypothetical hoaxer at Calvine in the late summer of 1990. One recurring criticism of the experiment has therefore been that it did not produce a chronological sequence of six photographic negatives and that, consequently, the results cannot be regarded as directly comparable to the presumed sequence of six original Calvine photographs.

In response to this criticism, I decided to repeat the experiment using analogue photographic methods more closely approximating those available in 1990. The primary objective was to determine whether it was possible to produce a chronological sequence of six negatives depicting an aircraft moving across the scene while the diamond-shaped object remained



stationary above it. A further question concerned the visibility of the fishing lines: specifically, whether sufficiently thin lines could effectively disappear when photographed against a bright, overcast sky, or whether traces of them would remain detectable in high-resolution scans of the resulting negatives.

Which Camera?

The type of camera used to take the original six Calvin photographs is unknown. It may have been an analogue compact camera or a single-lens reflex (SLR) camera. The lens and focal length are likewise unknown. For the purposes of the calculations used in this reconstruction, however, I have assumed a focal length of 50 mm. After considering several alternatives, I selected a Canon AV-1 35 mm SLR camera fitted with a Canon FD 50 mm lens for the analogue experiment.

The Canon AV-1 was introduced in 1979 as part of Canon's A-series of 35 mm SLR cameras. Developed primarily for export markets, it employs aperture-priority automatic exposure: the photographer selects the aperture, while the camera automatically determines the corresponding shutter speed. In this respect, the AV-1 differs from the better-known Canon AE-1, which uses shutter-priority automatic exposure.



The AV-1 uses Canon's FD lens mount. For the experiment, the camera was fitted with a 50 mm lens, corresponding to the focal length assumed in the reconstruction calculations. On the 35 mm format, a 50 mm lens provides a moderately wide field of view relative to longer focal lengths while avoiding the pronounced perspective characteristics associated with wide-angle lenses. The combination therefore provided a suitable basis for testing whether the reconstructed scene could be photographed under conditions broadly representative of conventional 35 mm photography available in 1990.

Operation of the AV-1 is relatively straightforward. Focusing and aperture selection are performed manually, while shutter speed is controlled automatically by the camera's exposure system. Available shutter speeds range from 2 seconds to 1/1000 of a second. Unlike some other cameras in Canon's A-series, the AV-1 does not provide full manual exposure control. This limitation was not significant for the purposes of the present experiment, since the principal objective was not to reproduce the unknown camera settings of the original Calvin photographs, but to determine whether the proposed reconstruction method was technically feasible using photographic equipment of the relevant period.

The type and sensitivity of the film used for the original Calvin photographs are likewise unknown. For the analogue reconstruction, I selected Kodak UltraMax 400, a 35 mm colour negative film with a nominal sensitivity of ISO 400. The choice was not intended to reproduce the original film stock, which cannot presently be identified, but rather to provide a readily available colour negative film broadly representative of the type of material that could be used for general-purpose photography.

An ISO 400 film is sufficiently sensitive for photography under a wide range of lighting conditions, including the bright but overcast conditions relevant to the present experiment. Its sensitivity also permits comparatively short exposure times, reducing the risk of camera shake and subject movement during handheld photography. This was particularly useful when photographing small suspended models outdoors, where even relatively slight movement caused by wind could affect the resulting image.



Kodak UltraMax 400 produces colour negatives with relatively pronounced colour saturation and a visible, though moderately fine, grain structure. These characteristics are of secondary importance to the experiment, however. Of greater relevance is the fact that the film provides a conventional photochemical recording medium on which the visibility of the fishing lines can be assessed directly. Once developed, the negatives can be examined and scanned at high resolution in order to determine whether the lines leave detectable photographic traces when positioned against a bright, cloud-covered sky.

The use of analogue film therefore addresses one of the principal limitations of the original digital reconstruction. Although neither the camera nor the film can be assumed to correspond to those used at Calvin in 1990, the experiment makes it possible to test the proposed method using a genuine sequence of 35 mm photographic negatives rather than digital image files.

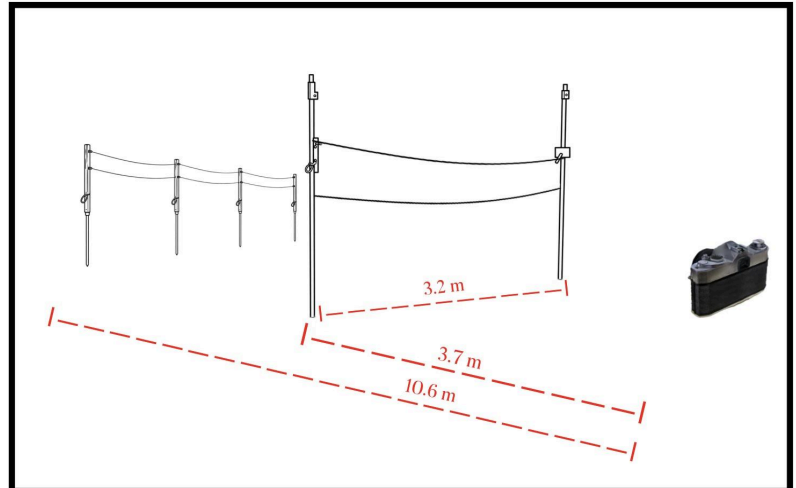
The Appearance, Geometry, and Proportions of the Scene

An important stage of the reconstruction is to establish an experimental arrangement that could plausibly correspond to the scene visible in Craig Lindsay's surviving copy of the Calvin photograph. This necessarily involves a number of assumptions, since the circumstances under which the original photographs were taken remain unknown and the surviving image provides relatively little information about the immediate foreground. Apart from several tree branches, only the uppermost section of a fence is visible. Nevertheless, in his detailed analysis of the photograph, university lecturer Andrew Robinson proposed a method by which the approximate distance between the camera and the fence could be estimated.

Robinson notes that the individual barbs on the barbed-wire fence are sufficiently distinct for their dimensions to provide an approximate reference scale. Using a typical spacing of approximately 10 cm between the barbs, he demonstrates how their apparent size in the photograph can be used to estimate the distance from the camera to the fence. Assuming a focal length of 50 mm, his calculations place the fence at approximately 10.6 metres from the camera. At this distance, the horizontal field of view would have encompassed a width of slightly more than 7.6 metres.

These calculations provide the basic dimensions required for the experimental reconstruction. The fence was therefore positioned approximately 10.6 metres from the camera and constructed so that it extended across, the calculated 7.6-metre width of the field of view.

Three fence posts are visible in Lindsay's surviving photograph, together with a comparatively thin metal support. The surviving image is, however, horizontally cropped and consequently represents only part of the original frame. It is therefore possible that at least one additional post was visible in the uncropped photograph. For the purposes of the reconstruction, four posts were assumed to fall within the original field of view, with an approximate spacing of 2.2 metres between them.



The photograph also appears to show two different types of wire. The uppermost wire is smooth and may have formed part of an electric fence, whereas the lower wire is clearly barbed. Measurements derived from the photograph indicate an approximate vertical separation of 15 cm between the two wires. The total height of the fence is of considerably less importance to the reconstruction, since only its uppermost section is visible and no reliable determination of its full height can be made from the surviving image.

Taken together, these observations provide a practical basis for reconstructing the portion of the fence visible in the photograph. The resulting dimensions should not be interpreted as an exact reconstruction of the original scene, but rather as a plausible experimental configuration derived from the limited spatial information preserved in the surviving image.

Suspending the Models

The same models were used as in the previous experiments. The diamond-shaped object was represented by a small pyramid constructed from cardboard, while the aircraft was represented by a Dinky Toys model of a Hawker Hunter. As in the earlier experiments, both models were suspended using horizontal fishing lines.

Two separate areas of foliage are visible along the upper edge of the surviving Calvin photograph, demonstrating that trees or other vegetation were present close to the photographer. Such trees could, in principle, have provided convenient attachment points for horizontal fishing lines at the required height. This possibility cannot, however, be established from the photograph itself and should therefore be regarded only as one potential method by which suspended models could have been positioned within the scene.



The selection of a suitable location for the reconstruction was governed primarily by the need to reproduce the relevant photographic conditions rather than the precise appearance of the original landscape. Of particular importance was an unobstructed background in which no nearby objects or landscape features extended into the area of sky behind the suspended models. This made it possible to photograph them against a relatively uniform, overcast sky and, at the same time, to investigate whether the fishing lines would remain detectable under such conditions. As a consequence, the reconstructed scene did not include either the foliage visible in the original photograph or trees positioned so as to provide suitable attachment points for the suspension system.

The fishing lines were therefore suspended between two temporary metal supports driven into the ground on either side of the experimental scene. Functionally, these served as substitutes for the trees or other fixed objects that could hypothetically have been used to support horizontal lines in an original hoax scenario. Their purpose was not to reproduce any feature visible in the Calvin photograph, but simply to provide stable attachment points outside the camera's field of view.

The experiment was conducted at a public bathing area beside a small lake, which was situated directly behind the reconstructed scene. The open character of the location made it possible to obtain a largely unobstructed background and to position the models against the sky without conspicuous landscape features appearing immediately behind them. Trees and more distant vegetation nevertheless provided a broadly natural setting around the experimental area.



The location also introduced certain practical considerations. Most importantly, its exposed position beside the lake meant that wind could cause movement in both the suspended

models and the fishing lines, making weather conditions an important factor during photography. Furthermore, no suitable fence was present at the site. The section of fence visible in the Calvine photograph therefore had to be reconstructed separately, using the dimensions derived from the analysis described above.

Practical Execution of the Experiment

The experiment was conducted shortly after 12:00 on Monday, 31 August 2026, at a public bathing area near Nässjö, Sweden. Weather conditions were overcast, with light rain in the air and an ambient temperature of approximately 17°C. These conditions provided the bright, cloud-covered sky required for the experiment.

The camera was mounted on a tripod at the position and height initially judged most suitable for reproducing the general composition of the Calvine photograph. The experimental scene was then constructed and measured in relation to this fixed camera position. Throughout the process, the camera's viewfinder was checked repeatedly to ensure that the various elements of the reconstruction occupied the intended positions within the frame.

Four fence posts were driven into the ground and arranged according to the dimensions established previously. A smooth wire was attached between the posts in the upper position, with a strand of barbed wire installed approximately 15 cm below it. The reconstructed fence was positioned 10.6 metres from the camera.

The suspension system for the models was then installed closer to the camera. Two heavier metal supports were driven into the ground approximately three metres apart and at a distance of approximately 3.7 metres from the camera. Three horizontal lengths of transparent nylon fishing line, each 0.2 mm in diameter, were stretched between the supports. Two of these lines were used to suspend and stabilise the pyramid-shaped model, while the model aircraft was attached to the lower line using a small piece of transparent adhesive tape. Once the models had been positioned, only minor adjustments to their height and orientation were required before photography could begin.

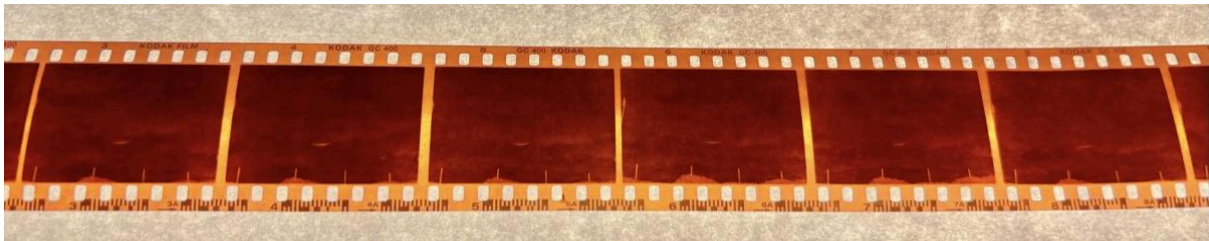


For the experiment, the camera aperture was set to f/5.6. Rather than focusing directly on the models, which were positioned approximately 3.7 metres from the camera, focus was set slightly behind them, at a distance of approximately 4.5 metres. This placed the models close to, but not precisely at, the plane of sharpest focus and allowed the experiment to examine how convincingly objects positioned close to the camera could be integrated into a scene containing more distant elements.

The result of the experiment

The experiment resulted in several chronological sequences of six photographic negatives depicting the diamond-shaped object remaining stationary above the scene while the model aircraft progressively moved across the frame beneath it. In this respect, the experiment successfully reproduced the basic sequence of movements proposed in the reconstruction.

A complete roll of 36 exposures was used during the experiment, allowing different camera positions and focal distances to be tested. Significantly, all 36 exposures produced usable photographs in which the intended forced-perspective effect was maintained. No extensive process of trial and error was therefore required to obtain a convincing sequence. Within the conditions of the experiment, this indicates that producing the required combination of forced perspective and apparent movement was relatively straightforward and could be repeated across multiple consecutive exposures.



Following development, the negatives were printed as 10 × 15 cm photographic prints. They were also professionally scanned at a resolution of 5409 × 3649 pixels. These high-resolution scans formed the primary material for the subsequent examination and analysis of the photographs.

A repro photo

It is important to bear in mind that the Calvine photograph available to us today—Craig Lindsay's surviving copy—is itself a photographic reproduction produced in the *Daily Record* photographic laboratory. The newspaper apparently did not have access to the original negatives at the time the copy was made. Instead, one of the photographic prints was rephotographed using a reproduction camera. The surviving image is therefore not a direct print from the original negative, but a photograph of an earlier photographic print. Since this additional reproductive stage may have affected the appearance and visibility of fine image detail, it is useful to approximate the same process as part of the present experiment.

Ideally, this reproduction would have been produced entirely by analogue photographic means, thereby introducing an additional film generation comparable to that involved in the production of Lindsay's copy. For practical reasons, however, this was not possible within the scope of the present experiment. The reconstructed photograph was therefore rephotographed using a digital camera mounted on a copy stand. The camera was set to monochrome mode in order to approximate the black-and-white appearance of Lindsay's copy, which was itself reportedly produced on black-and-white photographic material. The resulting image was also cropped horizontally to approximate the proportions of the surviving photograph.

A further consideration concerns image sharpness. Lindsay's copy appears to exhibit a degree of overall softness, which may have resulted from imperfect focus during the reproduction process. The experimental reproduction was therefore intended to approximate this general loss of fine detail rather than preserve the full sharpness of the original negative and print.

There are, however, important limitations to this procedure. Most significantly, a digital reproduction does not introduce the additional photochemical grain structure that would result from rephotographing a photographic print onto film. Nor can it reproduce all of the optical and tonal characteristics associated with an analogue reproduction camera, photographic paper, film stock, processing, and subsequent printing. The resulting images should therefore not be regarded as a precise reconstruction of the process by which Lindsay's copy was produced.

Despite these limitations, the additional reproduction stage remains useful as a qualitative test. It makes it possible to examine how rephotographing the experimental image, converting it to monochrome, slightly reducing its apparent sharpness, and cropping the frame affect the visibility of fine details within the scene. The resulting reproduction photographs are shown below.



Conclusions

We must exercise caution in drawing overly far-reaching conclusions from this experiment. Too little is known about the circumstances under which the original Calvin photographs were taken to permit a direct reconstruction of the event. The precise location, photographic equipment, camera settings, film stock, lighting conditions, and other relevant circumstances remain unknown. Furthermore, the only image currently available for detailed examination is Craig Lindsay's black-and-white reproduction photograph, rather than an original negative or first-generation print. Nevertheless, the experiment allows several observations to be made concerning the technical feasibility of the proposed reconstruction.

First, the experiment demonstrates that thin fishing lines can become effectively invisible when photographed against a bright, overcast sky. It has sometimes been argued that, had fishing lines been used to suspend models, traces of them should have been detectable when the original negatives were examined. The present experiment indicates that this need not necessarily have been the case. The 0.2 mm transparent nylon lines used in the reconstruction did not produce readily detectable traces in the resulting photographs, despite the models being positioned only a few metres from the camera. The apparent absence of fishing lines in the Calvin photographs therefore cannot, by itself, be regarded as sufficient evidence that no such lines were present.

A second question concerns the chronological sequence of negatives reportedly handed over to, and subsequently examined by, the military. It has sometimes been argued that producing a convincing sequence of photographs showing apparent movement would have presented a significant practical difficulty for a hypothetical hoaxer. The present experiment does not support that assumption. Several sequential series were successfully produced using small models suspended on horizontal fishing lines, with the aircraft progressively changing position while the diamond-shaped object remained stationary above the scene.

It is important, however, to distinguish this observation from what is known about the original Calvin negatives. Although at least six photographs are reported to have existed, there is presently no way of determining how many exposures were actually made during the original photographic session. Six photographs may have been taken, or a larger number of exposures may have been made from which six were subsequently selected. The available evidence does not allow these possibilities to be distinguished. What the experiment demonstrates is more limited: using photographic technology available in 1990, it was technically feasible to produce a consecutive series of negatives displaying the apparent pattern of movement proposed in the reconstruction.

A third consideration concerns forced perspective. The reconstructed composition proved particularly suitable for creating the impression that small objects positioned relatively close to the camera were substantially larger and more distant than they actually were. The limited amount of landscape visible in the surviving Calvin photograph is important in this respect. The absence of a clearly defined distant background not only complicates attempts to identify the original location, but also removes potentially useful spatial references by which the apparent size and distance of the objects might otherwise be assessed. It likewise makes analysis of focus and depth of field more difficult. Under different photographic

circumstances, such information might have provided evidence capable of distinguishing a nearby model from a large object at a considerable distance.

One conspicuous difference between the experimental photographs and Lindsay's surviving reproduction concerns the tonal contrast between the upper and lower surfaces of the diamond-shaped object. In the reconstruction, the underside of the cardboard pyramid appears considerably darker than its upper surface and, in some photographs, is rendered almost entirely black. This contrast is substantially less pronounced in Lindsay's reproduction.

The reason for this difference cannot presently be determined. One possible explanation is that the lighting conditions differed between the two photographic sessions. The reconstruction was conducted shortly after midday under an overcast sky, whereas the original Calvine photographs were reportedly taken later in the day. If that account is accurate, differences in the direction and intensity of ambient illumination could have affected the relative brightness of the object's upper and lower surfaces. This remains speculative, however, since the precise time and lighting conditions of the original photographs cannot be independently established from the surviving image alone.

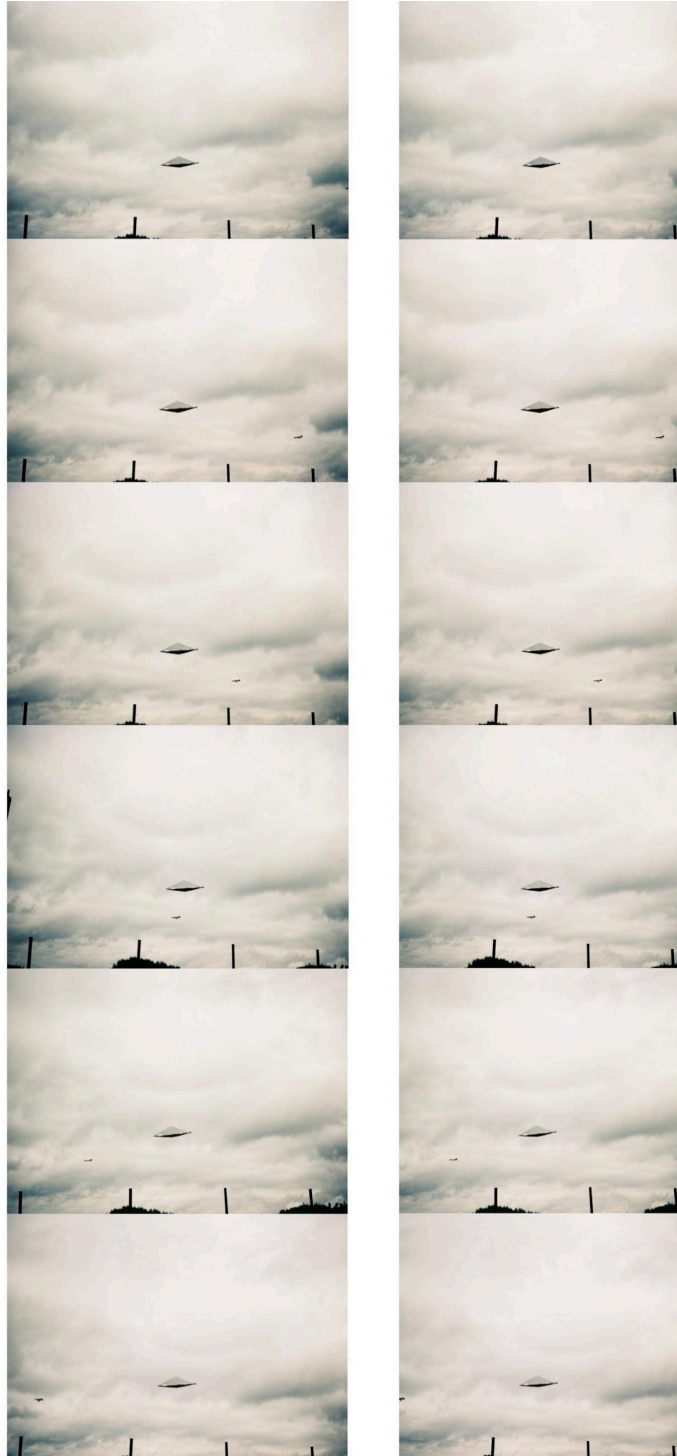
An equally important possibility is that the geometry and surface properties of the original diamond-shaped object differed substantially from those of the simple cardboard pyramid used in the reconstruction. The pyramid was intended to reproduce the approximate two-dimensional appearance of the object rather than to establish its actual three-dimensional form. Differences in shape, surface reflectivity, orientation, or material could therefore produce substantially different tonal relationships under otherwise similar lighting conditions. Since determining the precise physical form of the diamond-shaped object was not an objective of the present experiment, this discrepancy cannot be resolved here and remains a subject for further investigation.

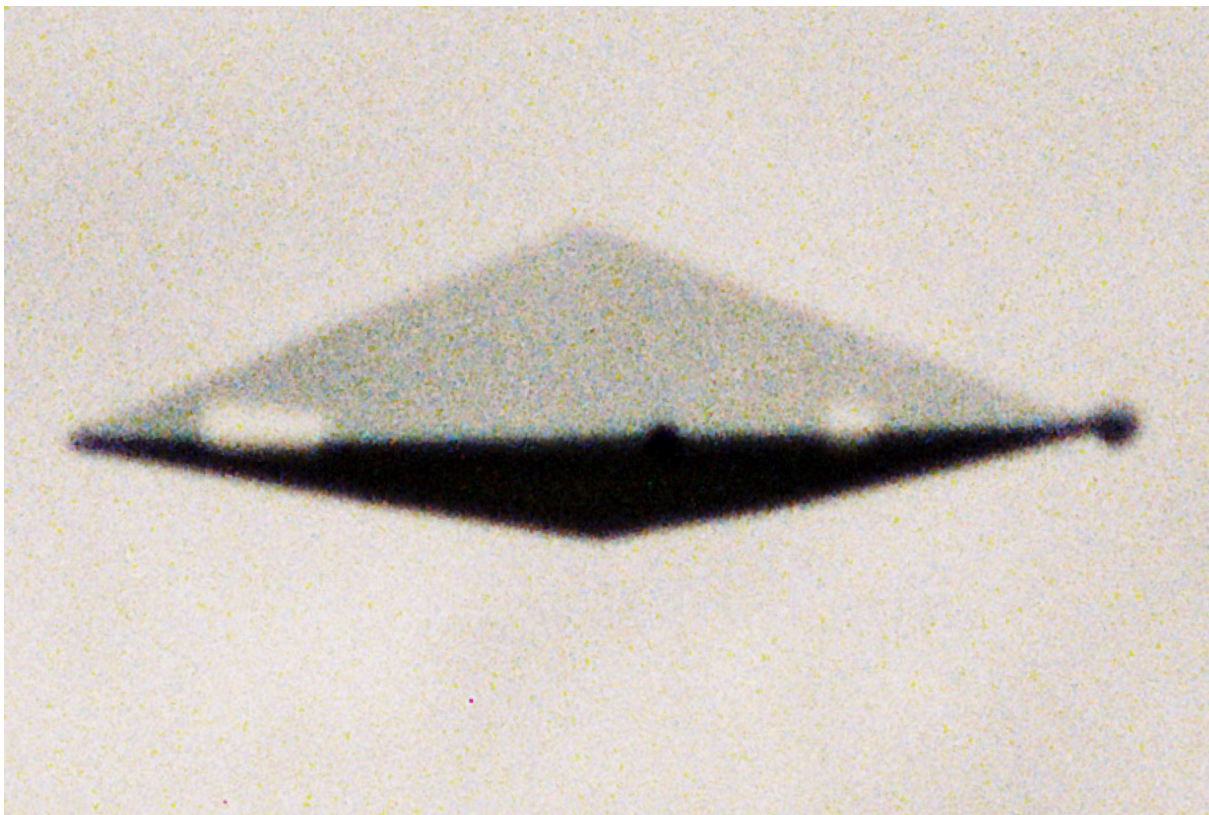
In summary, the experiment demonstrates that an analogue sequence of consecutive 35 mm negatives reproducing the basic apparent movement proposed for the Calvine photographs can be produced using small models and comparatively simple equipment. It also demonstrates that 0.2 mm transparent fishing lines can become effectively invisible when photographed against a bright, overcast sky, even when positioned relatively close to the camera. The failure to detect such lines in a photograph therefore does not, in itself, establish that they were absent from the photographed scene.

These findings do not demonstrate that the Calvine photographs were produced using suspended models, nor do they establish the circumstances under which the original photographs were taken. They do, however, address a narrower question that can be tested experimentally. Under the conditions examined here, a model-based reconstruction using forced perspective, horizontal fishing lines, and conventional 35 mm photographic equipment was technically feasible and capable of producing a sequence with several of the principal visual characteristics attributed to the original Calvine photographs. Consequently, the use of small suspended models remains compatible with the photographic evidence considered in this experiment and cannot be excluded solely on the grounds that such a sequence would have been too difficult to produce or that supporting lines should necessarily have been visible.

Appendix 1 - Six sequential photographs no. 1

Here, six photographs taken in sequence show the model aircraft progressively moving across the scene while the diamond-shaped object remains stationary above it. The complete frames are shown on the left, with corresponding cropped versions on the right.





Appendix 2 - Six sequential photographs no. 2

Here, a second sequence of six photographs shows the model aircraft progressively moving across the scene while the diamond-shaped object remains stationary above it. The complete frames are shown on the left, with corresponding cropped versions on the right.



Appendix 3 - The jet in the photographs

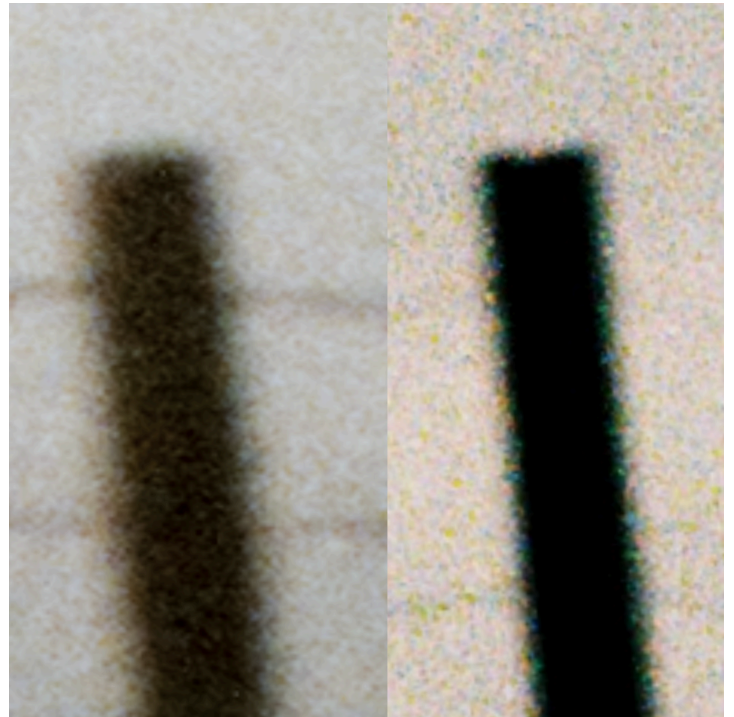
Here, the aircraft in five of the reconstruction photographs have been enlarged and placed side by side for comparison. Their silhouettes can also be compared with that of the aircraft visible in Craig Lindsay's photograph (to the right). It is noteworthy that the aircraft in the reconstruction photographs retain considerably more visible detail than the aircraft in Lindsay's reproduction. One possible explanation is the difference in photographic generation. Lindsay's surviving photograph is a second-generation reproduction, whereas the reconstruction images examined here are derived from high-resolution scans of the original negatives. The additional reproduction stage may therefore have resulted in a loss of fine detail in Lindsay's photograph. Other factors may also have contributed. The aircraft in the original Calvin photograph may, for example, have been less sharply focused. Differences in lighting conditions, film stock, photographic equipment, exposure, and subsequent processing could likewise have affected the amount of detail preserved in the resulting image. It is therefore not possible to attribute the difference in apparent sharpness to any single factor.



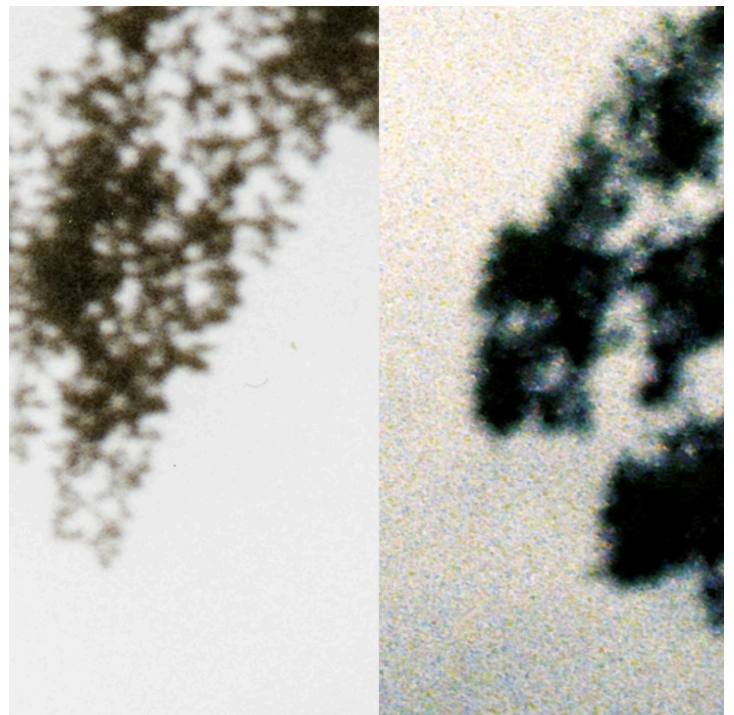
Appendix 4 - Details in the photograph

This appendix presents a comparison between selected details in Craig Lindsay's photograph and the corresponding details in the reconstruction photographs. Such a comparison is useful given the limited information available concerning the physical location and circumstances under which the original Calvine photographs were taken.

This comparison shows the fence posts visible in Lindsay's photograph alongside those used in the reconstruction. In the experiment, the reconstructed fence was positioned 10.6 metres from the camera. Each post measured approximately 8.5 cm in width and was constructed from weathered pine.



The next comparison concerns a branch visible in the upper section of Lindsay's photograph and a similar branch appearing on the right-hand side of one of the reconstruction photographs. In the reconstruction, the branch was located approximately 30 metres from the camera.



The following comparison concerns the barbed wire visible in Lindsay's photograph and that used in the reconstruction. The wire used in the experiment was not genuine barbed wire, but a mock-up constructed from softer materials to reproduce its approximate appearance. The individual barbs were positioned at intervals of approximately 10 cm.



A final detail worth examining more closely is the vegetation visible in the background. Lindsay's photograph appears to show what may be distant trees beyond the fence. Trees are also visible in the reconstruction photographs, where the corresponding vegetation was located at a distance of approximately 400 metres from the camera.

