

INTERNAL SYSTEMS

By Sandra Gibson

OVERVIEW

The following is an archival study of an experimental film: *Internal Systems* (1974) by Coleen Fitzgibbon. The scope of this paper is two-fold: 1) to document the preservation of *Internal Systems*, and 2) to state in practical and theoretical terms what is at stake in the preservation of what we will refer to as “imageless” films.

CONTEXT

There is indeed, an “image-free” if not an empty frame, which begins in the late 1960’s to infiltrate advanced work in film. [...] I will now indeed propose it as the icon and the emblem of advanced film-making in this country as it has matured into the energetic and refined exploration of the epistemology of filmic enterprise in all its aspects and parameters. – Annette Michelson, “Paul Sharits and the Critique of Illusionism: An Introduction”¹

It is not until the mid 70’s that film historians and theorists begin to acknowledge what Annette Michelson refers to in the passage quoted as the iconic or emblematic nature of the empty film frame. The absence or evacuation of the image in film is not the negation of film itself, not anti-film, but a certain infiltration of philosophical rigor as an acute filmic concern. Michelson, in the same article, brandishes this as the “ontology of film”.² In our study we will recast this filmic adaptation of ontology in an effort to conceptualize and frame preservation strategies in and around the so-called empty frame, or imageless film.

¹ *Film Culture*, no.65-66, 1978; 84.

² *Ibid.*, 86.

The ontology of film concerns not only the so-called structuralist or materialist film practices of the late 60's and into the 70's but it is becoming an essential aspect informing current debates and practices of the emerging discipline of film preservation. Thus the medium-specificity of formalist and often reductivist logic operating in structuralist/materialist discourse more than often informs the very optic through which film preservationists frame their given object. What Michelson says of "advanced filmmaking" in and around an "image-free" aesthetic, can be said of "advanced film-preservation" (if we can call it that) *not* as an isolated phenomenon but as a collective reality: "The ontology of film is their collective concern".³ A collectivity in and around filmic ontology can indeed be encountered today in progressive preservation circles.

It is with this collectivity in mind that preserving imageless work such as *Internal Systems* preserves not just another work in need of preservation but the ontological apparatus which drives our passion to preserve essential work of this and any other kind that happens to be on *film*. When the novice of cinema handles the materiality of the perforated filmstrip for the first time, he or she is merely restaging the materialist encounter with the object as elaborated and ultimately celebrated (even in its creative demise) in advanced or avant-garde filmmaking. When the student of cinema learns to see the projected film as an intermittent phenomenon composed of the modulated interaction of celluloid and shuttered light, the elementary elegance of this mechanism automatically, as it were, recruits its own militia (its avant-guardians) who remain committed to its perpetual persistence (of vision).

THE FILM

It seemed interesting to make a film that was concerned with no more than its own theory and mechanics as content of the film. Simultaneously, I was interested in logical structures, what the mechanics of logic were. In a recording system could it record its own process, expose its mechanics. A problem like trying to see

³ Ibid., 86.

the back of ones own head. – Coleen Fitzgibbon, Artist statement for *Internal Systems* in EXPRMNTL 5 catalogue.⁴

In 1974 Coleen Fitzgibbon made *FM/TRCS* and described it as “a study of image destruction and its subsequent effect on recognition and suggestion of new images.” In this film she reworked Super-8 reversal footage into a series of reframings: blow-ups, contact printings, and extreme granular manipulation – to arrive at a 16mm film that radically departs from the original camera footage. The film was initially shot with a Super-8 camera strapped to different parts of her body as she dressed and undressed in her studio, while living in Chicago. Her description for the film continues: “The film is a series of images and recorded sound of a woman getting dressed re-edited into short sequences and optically printed until the high contrast characteristics of the film refuses to carry the image. I attempted to combine my images with the film process carried to its extreme processes of disintegration.” The final 16mm film is the result of “processes of disintegration” which as the filmmaker states “refuses to carry the image”. What is radical, if not completely unsettling, is that Fitzgibbon’s following film, *Internal Systems*, takes a completely different approach to the idea of a film that “refuses to carry the image”. The work short-circuits the labor of refusal by dispensing with the image altogether from the outset. It is as if the work of disintegration had already taken place, not in the interface between footage and optical printer but in the interface between the film emulsion sensitive to light, a sound-synch camera, and a film projector as a light source.

What is disintegrated into discrete units is the process of *processes* itself, that is the filmic act of filming. The film unfolds with a kind of technical “scroll” which informs the viewer of the entire cast of “technicians” involved – not human agents but the technical ensemble which comprises the totality of the production. The scrolling text is accompanied by the sound of the film’s perforations⁵ – double-perforated footage that is

⁴ EXPRMNTL 5: Fifth International Experimental Film Competition organized in Knokke-Heist by the Royal Film Archive of Belgium from December 25th 1974 to January 2nd 1975.

⁵ Referred in the technical manuals as “motorboating”. *Student Filmmaker’s Handbook*, (New York: Eastman Kodak Company, 1997); 155.

abruptly spliced at the head and tail of the film. The following is an inventory of the equipment used for the production of *Internal Systems*, in the order of appearance:

DOUBLE-X NEGATIVE 7222 DOUBLE B 16MM TUNGSTEN ASA 200
KODAK. 100FT. DAYLIGHT H.S. REVERSAL 6.15 ESP3EI SINGLE B
SHORTPITCH 13573/0301 16MM ASA 160 AGFA-GEVAERT
GEVACHROME ORIG. 1600FT. CM-72A #D6-31656 BACH-AURICON
1/50SEC. 175 DEGREE SHUTTER. K-3278. 2AMP 7V EXPOSURE LAMP.
10X12A/F.12-120MM 1:2.2 # 1245719. ANGENIEUX-ZOOM. RA-31-ADZ
VARIABLE DENSITY BACH-AURICON. MODEL E-6/50 OHMS HIGH
FIDELITY FLAT FREQUENCY RESPONSE. 115V/60CYCLES/35WATTS
MODEL 1552B BELL & HOWELL. EMM 205W 25V 50HR. SYLVANIA.
24FPS SOUND SPEED. 120V/60HZ. 115/VOLTS 60CYCLES CON EDISON.
F/BRN HR/125LBS/1951/J. ELAM. F/BRN HR/135LBS/1950/C. FITZGIBBON

Disintegration of the elements is not arbitrary and random but *systematic* and *internal* to the materials at hand. If an image is “refused” in this particular constellation it is so as to defuse it in order to redirect perception. The formal approach in this case is to ward off or suspend representation in order to allow for something else to enter the picture, so to speak. What is refused in one sense, namely the use of the medium as a carrier of an image, is an act of negation that displaces conventional uses of the medium itself, thus shifting it into (or onto) a place that it has never before occupied – a jolt in the direction of the interior of a system which is none other than its very own reflection (of itself).

This turning-in-on-itself of the apparatus is the ontological moment of self-reflexivity. The *process of processes* takes its cue from post-minimalist process-based art of the 70’s, in particular the aesthetics of dematerialization as heralded by the conceptual title of Lucy R. Lippard’s edited book *Six Years: The Dematerialization of the Art Object*.⁶ Processes of production are clearly marked in the opening and closing titles of the film. With this technical information there is a sense of “testing” the limits of the given media (film, camera, projector light, etc.). But the “testing” of equipment also carries over into the realm of perception. As a viewer, one struggles between an awareness of the known variables (technical schemata) and the phenomenological effects of pure light and color.

⁶ (New York: Praeger Publishers, Inc., 1973)

One lapses between the refusal to be reminded of the technical mastery which fashions this ecstatic experience and at the same time the desire to gain knowledge of the precise procedure used for achieving this or that effect. What is “tested” is/are the limit(s) of one’s perception.

For the duration of 45 minutes, not including the titles which make up less than several minutes, the soft pulse of filmed light from a 16mm projector fades in and out of various hues of color saturation – from red-to-yellow – moving from light-to-dark, from dark-to-light, and so on. To achieve this effect, a mathematical formula was worked out that functioned as the “score” for the openings and closings of the various position of the lens diaphragm (i.e., f-stops) to expose in every possible way the light-sensitive emulsion. A similar process was used to expose a variable density soundtrack with the sound-on-optical film camera. The filmstrip itself can be viewed as a document of a performance of filming the interaction of film, camera, and light. But as an autonomous object, the filmstrip is an aesthetic work that shows every possible variation of light and dark, transparency and opacity, thus exposing the total length and breadth of its emulsive resource. The systematic testing out of every possible orientation is a relentless and exhaustive procedure. *Internal Systems* sustains with utter force its processual integrity.

AGFA-GAVAERT GEVACHROME

One of the major obstacles in preserving *Internal Systems* is that the original Agfa-Gavaert Gevachrome stock no longer exists. Shot on reversal film, no negative exists, nor was a release print ever made. The film exists as a unique work on 16mm. We cannot even refer to it as a “print” as it is an original. Four 400’ cans of raw stock by the Belgian company Agfa-Gavaert were awarded to Fitzgibbon by EXPRMNTL 5 in Knokke-Heist in conjunction with the Royal Film Archive of Belgium.⁷ *FM/TRCS* was

⁷ “Agfa-Gavaert will offer to the maker of each film chosen by the Selection Jury a quantity of unexposed 16mm colour film, equal to twice the length of the selected film.” (EXPRMNTL 5 poster with film festival regulations.)

submitted some months prior to the festival and the award arrived just in time for a premier of *Internal Systems* in a non-competitive section of EXPRMNTL 5.⁸ The four rolls were shot in one evening at Millennium Film Workshop in New York; the Auricon camera and Bell & Howell projector that was used to make the film were part of Millennium's equipment arsenal at the time. After processing the footage at Palmer Laboratories in San Francisco, the four rolls were spliced together from end-to-end, and the scrolling equipment list was added at the head and repeated at the tail of the 1600' film. The title was shot using Kodak 1722 color negative, double-perforated stock; the positive is at the head of the film and the negative at the tail.

Agfa-Gavaert Gevachrome 6.15 color reversal was considered a high-speed daylight film. In her preliminary production notebook⁹, Fitzgibbon rates its affinity with Kodak's Ektachrome 7241, also a high-speed daylight reversal film with an index exposure of 160. Elsewhere in the notebook, the spectral sensitivity (i.e., the color most sensitive to light)¹⁰ of the Gevachrome stock is rated as red whereas the Ektachrome is cyan. The latter, according to the filmmaker, has a tendency towards brown. In *Internal Systems* the reds are extremely prominent the less exposure there is, whereas with more exposure yellow becomes the dominant color (previous to its disappearance or submergence into white light). The film itself can be viewed as the ultimate vehicle to test the specific spectral sensitivity of Agfa-Gavaert Gevachrome 6.15.

The screening record for the film is extremely vague and suggests that it was rarely projected, beginning with its premier in 1974-75 at EXPRMNTL 5, followed by a one-person show at Anthology Film Archives¹¹, and finally recent programming of the work

⁸ Other films that screened with the Agfa-Gavaert/Royal Film Archive of Belgium award were: *Objection* (1974) by Marjorie Keller, *The Struggle with Meat* (1974) by Anne Severson, and *Leica Job* (1974) by Diego Cortez.

⁹ Green facsimile notebook on *Internal Systems*.

¹⁰ "SPECTRAL SENSITIVITY: The relative sensitivity of a particular emulsion to specific bands of the spectrum within the films sensitivity range." *Student Filmmaker's Handbook*, (New York: Eastman Kodak Company, 1997); 171.

¹¹ The screening, in 1975, was titled "Your Basic Film" and also featured *FM/TRCS* and *Exposed Film* (1975).

by myself and colleague Luis Recoder. In researching Coleen Fitzgibbon in 2005 we discovered that the film, deposited at the Film-makers' Cooperative in New York and never rented (according to their records)¹², was, to our surprise the camera originals.¹³ We immediately contacted the filmmaker and she took swift action to pull *Internal Systems* out of distribution until a suitable replacement could be made. Upon inspection of the film (first on a flatbed, then on a projector), we noticed that the film showed light vertical scratches (base scratch and cinch marks) appearing randomly but consistently throughout.¹⁴ As the film shows nothing but the extremely slow fadings and reappearings of colored illumination, the perceptual effect is that the scratches become evermore prominent, even though they remain the same. And this is precisely the problem we encounter with surface imperfection when it comes to the imageless film.

Other than the light array of scratches, the film, including the pastel palette characteristic of the original color stock, retained its overall integrity. Even the tape splices (5 total) still manage to hold the film together. With the cooperation of the filmmaker, *Internal Systems* was taken in for preservation assessment at Du Art Laboratories, Inc. in New York. Working closely with lab specialist Steve Blakely¹⁵, an inspection of the film was made and possible directions as to how best to proceed with making a suitable, if not faithful, copy from the original. Given the variables and cost, we (Fitzgibbon, Blakely, and myself) agreed that the best and most economical way to make a copy is to strike a Super-16mm internegative of the original reversal, thereby printing both picture and soundtrack at the same time. The main problem we encountered was in the length availability of the polyester internegative stock, which is the stronger base (as compared to acetate) though only available in lengths far exceeding the required 1600'; the solution

¹² A Coop memo lists the film as received on June 17, 1976. A single inspection entry on July 7, 1976 notes in the "additional comments" column as "very scratchy!!"

¹³ Another film by Fitzgibbon, *Restoring the Appearance to Order* (1975), was also original material.

¹⁴ In a recent interview with the author (December 6, 2008), Fitzgibbon vaguely recalls that the scratches could have been the result of the camera, either dirt in the gate or improper threading.

¹⁵ The text for this and the following paragraph was approved by Steve Blakely in an email confirmation sent to the author on December 8, 2008.

was to use the available in-house acetate internegative stock, Kodak 7272. The problem then was that the available length of the acetate, manufactured in 1200' rolls, was some 400' short than the required length; the solution was to make one cement splice between two lengths of the acetate internegative at exactly the same place where an original splice had been made.

Once the Super-16mm contact internegative had been achieved, a Super-16mm positive answer print was made using polyester base film, Kodak 3383. The print mostly departs from the original in the addition of a greenish hue, noticeable in the brighter passages where there should only be yellowish hues. Another noticeable alteration is in the soundtrack. Because the acetate Super-16mm internegative was never intended for the contact printing of optical tracks, slight muffling of the original sound is apparent, especially in the higher registers. This is not so bad, since the sound recording of the film – i.e., the sound of the camera motor – is on the low end, with long stretches of silence. Even in the original the volume must be raised over the normal position so that when there is silence the sound of film grain and occasional surface noise is audible. Where there is improvement in the original is in the reduction in the number of scratches. A noticeable difference between the original and the new print can be detected. In particular, the finer scratches have been eliminated through wet-gate printing whereas the more dominant ones, which are few in number, remain.

A frame-by-frame comparison of the original film vs. the new print (we will call it the “Du Art” print) clearly demonstrates the changes. (Refer to Appendix 1 for this and the following paragraph.) Beginning with the title sequence, frame no. 410 in the original reversal shows a faint base scratch just to the left of center, faint cinch marks at the extremities of the frame, and overall surface particulates; the same frame in the Du Art print shows the main scratch but in general appears much cleaner, with the removal of cinch marks and debris. What is not in the original is what appears to be a new scratch close to the left edge of the frame. Also, as we have already noted, the overall greenish discoloration. We could also note that the focus on the grain is less sharp in the Du Art print, hence the lettering.

Imageless frame no. 2790 (foot 69: frame 30) demonstrates the excellent wetgate contact printing achieved at Du Art. All but the main scratch on the left third of the frame has been improved. Cinch marks and embedded particulates in the original picture and soundtrack area have for the most part disappeared. Imageless frame no. 63066 (foot 1576: frame 26) shows some inconsistencies in the “improvement” process when exposure of the print is higher or brighter than the original. In this case the extremely fine base scratches and cinch marks, especially to the right of frame, are raised to relief in the Du Art print. Moreover, a dispersed network of lines is clearly visible throughout the frame in the latter whereas this is not the case in the original which conceals these marks.¹⁶

The work at Du Art Laboratories, Inc. was to coincide with a screening of Fitzgibbon’s films, including *Internal Systems*, at Los Angeles Filmforum on November 23rd, 2008. The original film was brought into the lab on November 3rd, 2008 and a print was ready by November 20th just in time for the screening. The next phase of the project is to work closely with the color timer to strike a more suitable color rendition, or at least reduce the greenish hue¹⁷. Another aspect, and far more radical to the task (and I hesitate to say “ethics”) of preservation is in the drastic modification of the original film itself. I am referring to a recent conversation with the filmmaker¹⁸ (not long after the screening of the Du Art print in LA) she revealed that the original film failed to render accurately the mathematical formula – i.e., the “score” modeled around the passage of light as occurs in the changing of the seasons. Basically, the fade-to-black is never dark enough in the film, as the smallest diaphragm along the circumference of f-stops did not prevent light from striking the emulsion. As the film was shot in reversal, and no tests were made prior to making the film, the results of the lab were final. At the moment Fitzgibbon is entertaining the possibility of a new print that would be a more accurate interpretation of

¹⁶ Particulates in the original camera gate must remain as they cannot be removed without turning to digital software. Top and bottom particulates can be masked during projection by adjusting the frameline.

¹⁷ We are currently awaiting a new quote from Colorlab in Colorado.

¹⁸ Coleen Fitzgibbon interview conducted by the author on December 6, 2008.

the original conception. It may be the case that different versions of the film will be available in the future. But that remains to be seen.

THE BASIC APPARATUS

What can we, as aspiring film preservationists, learn from the radical aspirations¹⁹ of the avant-garde? Does the film we take up and preserve prescribe its manner and mode of preservation? And what, in this work of preservation, is the role of the filmmaker in this process? Without the participation of the filmmaker, it is difficult to know much of what informs the efforts that contributed to the production of a particular work. Fortunate for this project, the filmmaker was willing and able to collaborate in the work of preservation. Her scrupulous notes on the film were not only helpful in unfolding the nature of the filmic script but also testifies to the rigor of an approach that any aspiring archivist should be willing and able to emulate. With this in mind, we can return to Annette Michelson's insight and modify it so that it reads: The ontology of film is *our* collective concern.

The preservation of *Internal Systems* demands that we meet it with equal rigor and sensitivity to the materials at hand. If the materials are no longer at hand, as with the Gevachrome stock, we must engage in tireless research to locate the next best possible solution. Even when Gevachrome was an option, the filmmaker did her own research to learn its specific characteristic. She drew up a chart in order to compare it to similar light-sensitive values available through Kodak. (See Appendix 2.) Similar values between different film manufacturers allow for dissimilarities in chemical and dye structure – differences that are maximized in imageless work. The minimalist filmmaker maximizes the differences, and in so doing exposes the radical heterogeneity of manufactured goods. In researching her materials, Fitzgibbon mastered the variables of her medium. Gevachrome was not an option or choice for the young filmmaker but a gift

¹⁹ Annette Michelson, "Film and the Radical Aspiration", in *Film Culture*, ed. P. Adams Sitney, London, 1971.

that posed a problem without a simple solution. That gift was answered with *Internal Systems*. And if a different film were gifted then a different work would, without doubt, have been the case. The rigor is not in the choice but in what to do once the choice has been made.

The preservation of *Internal Systems* presents us with a similar dilemma. We now have a print and it is on the greenish side – a hue that gives off a “cooler” mood overall than the original “warmer” tones. How to correct this? Is it enough to work with a color timer or would it be better to revise the recommended choices (which in a way had already been picked out for us)? Although we proceeded with Du Art’s recommendations it did not occur to us to study such features as the spectral sensitivities of the available internegative and positive stocks. Consulting the production notebook for *Internal System* clearly gives the clue: study the behavioral characteristics of available stocks!

Only recently have I been entertaining the conceptual idea of recreating the “experiment” that is called *Internal Systems* from the ground-up, going back to the original mathematical score and reshooting the film with the Bach-Auricon CM-72A Cini-Voice II, and Bell & Howell 1552B projector.²⁰ What do we mean by *experiment*? Going back to what we said earlier that *Internal Systems* ‘can be viewed as the ultimate vehicle to test the specificity of Agfa-Gavaert Gevachrome 6.15’ why, then, not test it ourselves? Perhaps we could make a case for *Internal Systems* as a system in which to test the spectral sensitivities of available stocks. But are we perhaps not drifting far beyond the scope of preservation? Or can we apply pressure to it in its passage and rethreading of an ontological “system”?

When Fitzgibbon, with her assistant (filmmaker and the “mathematician”) Joan Elam, set up the system, the camera was aimed at a small piece of semi-translucent opaque white paper (rear-screen material) illuminated from the other side by the projector. The set up

²⁰ Perhaps we might even substitute the projector for a light bulb as the filmmaker had no intention to capture the pulsing of light in the interference between camera and projector shutter. (This last bit of information was revealed during the q&a session with the filmmaker after the screening at Los Angeles Filmforum.)

is simple and resembles the optical printer in which a camera faces a projector, except with *Internal Systems* there is no footage to be rephotographed. What is “photo-graphed” is the light-sensitive emulsion itself as there is no photographic evidence of a surface other than the film doing the filming. An ontological system for the testing out of the material.

I [...] was interested in logical structures and what the mechanics of logic were. The camera was a structure thru which the film ran, its logic a system of connecting functions built for human perceptions. The value of the film's subject matter was always considered greater than its process. It seemed interesting to make a film that was concerned with no more than its own mechanics as content of the film. – Coleen Fitzgibbon in an email to the author.²¹

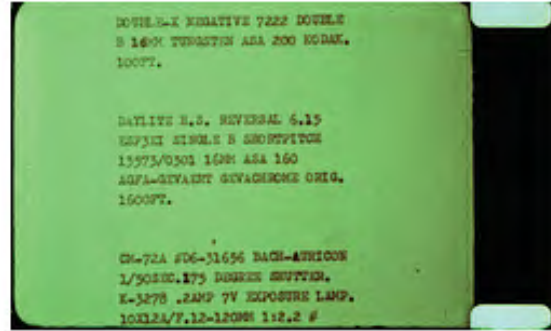
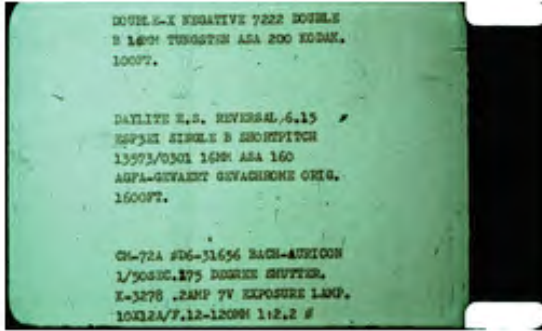
Imageless films are produced through this system *in which a camera functions as a “structure” thru which to run the unexposed film.* Thru which to run through the gamut of spectral sensitivities. *Imageless sensitivities: spectral images.* We say “image-less” but is there such a thing? The spectral image of *Internal Systems* is imageless. In the end it is an image of the imageless. Not a play on words but an empirical testing of the ontological limits of processes (of processes) which suspend images as we have become accustomed to knowing them. Imageless films force us to attend to the materials themselves, even if that entails circumventing the so-called intentions of the artist. In this sense we strive in our preservation efforts to attend to: “a film that was concerned with no more than its own mechanics as content of the film”.

²¹ December 9, 2007. (See Appendix 3. I have included the full text of the email with both recent artist statements for *FM/TRCS* and *Internal Systems* to give a sense of the practical and philosophical thinking which animates these works.)

APPENDIX 1

*INTERNAL SYSTEMS: FRAME COMPARISON ANALYSIS OF ORIGINAL FILM
(ON LEFT SIDE) AND DU ART PRINT (ON RIGHT SIDE)*

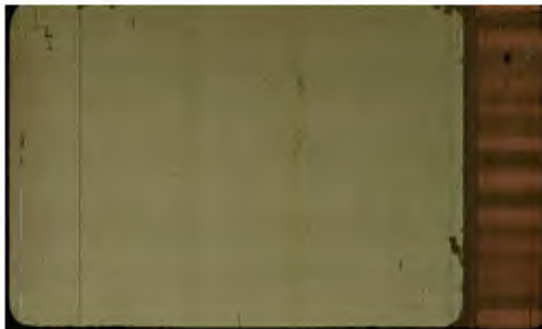
Frame No. 410

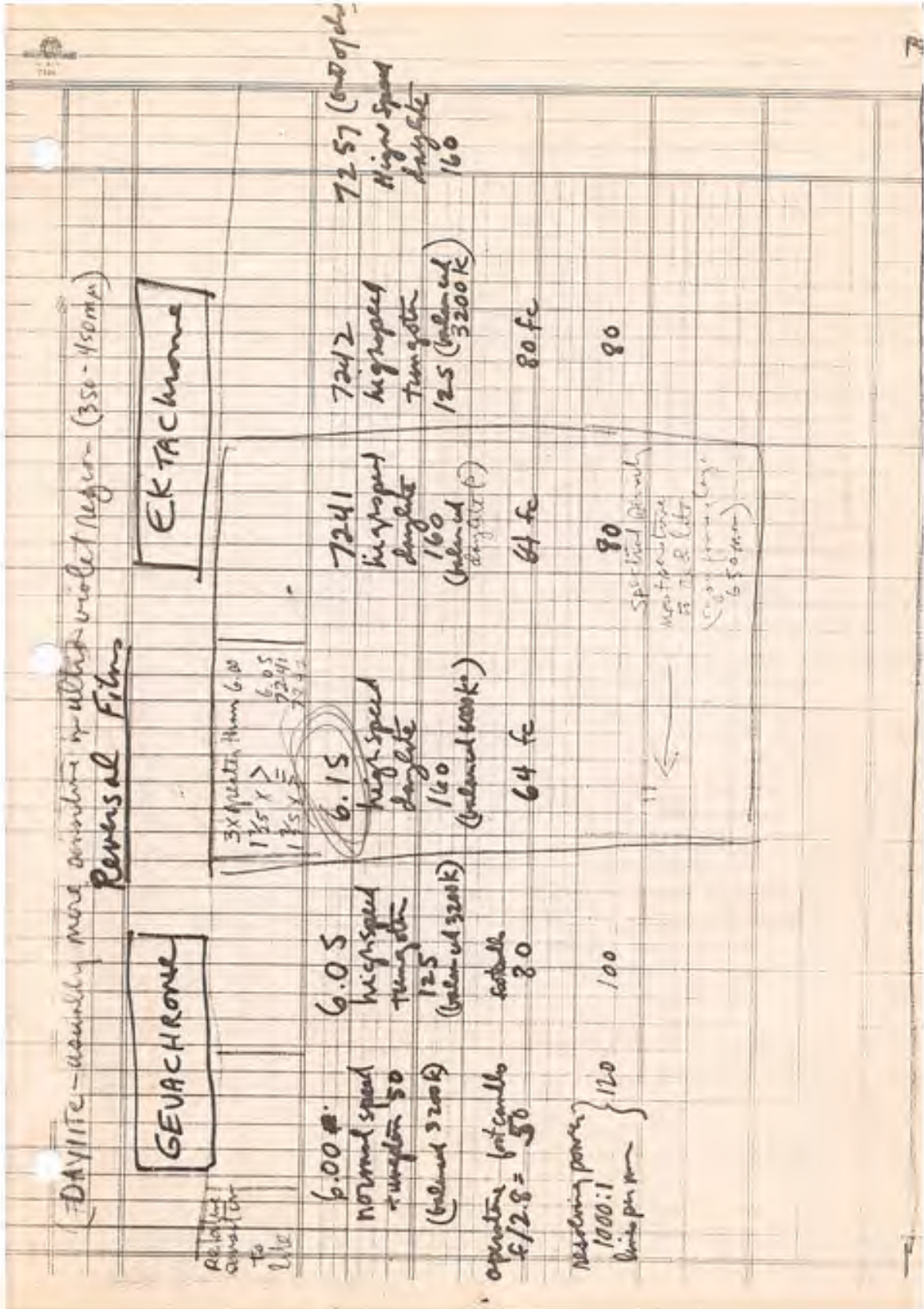


Frame No. 2790



Frame No. 63066





APPENDIX 3: Unedited email from C. Fitzgibbon to the author on December 9, 2007.

TRCS/FM (Traces)

I believe I shot "Frame of Mind" (eventually turned into TRCS/FM in 1974) in the late spring of 1973 at the end of being officially at the School of the Art Institute of Chicago (SAIC 1971-73). I stopped going to SAIC classes April '73 but still continued to use SAIC's facilities after moving to NYC to go to the Whitney Independent Study Program run by Ron Clark. SAIC considered me a student who was on a special program at the Whitney Museum (see letter from SAIC Dean of Students Roger Gilmore).

Frame of Mind (FM) was shot in my basement apt/Chicago on super8 ektachrome 160 color film with about twenty minutes of film. I then blew up the super8 to Kodachrome II 16mm film stock (500ft) on SAIC's 8mm to 16mm optical printer starting in January 1974. I think Bill Brand and Louis Hock had put this optical printer together for SAIC; Bill was instrumental in teaching me how to use it in the beginning. Jan/Feb. '74 I was making 16mm tests including negative and positive masks with different film stocks, f stops, filters and exposure times. I kept detailed test notes from which I based decisions on constructing the final print with Palmer Labs in Chicago in July/August of '74 (see TRCS/FM test notebook -I used both Palmer and Douglas labs in Chicago while working on the film).

The 16mm blow up print was optically printed onto 7362 high contrast film (first a negative print then a positive print from the negative, together comprising two masks (matts) for a double exposure of the original onto the print. The reason for the traveling matts is to radically change the amount of light allowed through the original 16mm blow up onto the final print (400ft of 16mm KII and 7362 neg. and pos. hi con 16mm film to 16mm KII asa 40 camera film stock using a Baltar lens, both originals a/b rolled at F22 + .72ND + 81A + 2UV + .05M filter).

How I found the exposure time per frame for the tests was based on the calculation of 1 divided by (360 divided by N times 24) or when N equals the number of degrees the shutter (of the camera gate) is open, so I obtained the following results of 45 degrees = 1/192sec., 64 degrees = 1/135sec., to 235 degrees = 1/37sec, etc.

Film sequences that are more light than dark or equal light and dark composition allow more light onto the high contrast negative and in sequences more dark than light there is less light allowed through. The reverse filtrations are used for the positive print from the negative. The reason for this procedure is to create expansion and reduction of the image composition so that a distortion of the original occurs. The distortion of image by reprinting comes from the peculiar property of light on film that with greater intensity seems to spread, not just to etch more deeply into the silver layers but to move outward into areas not in its definition (expanding the outline of the image). In equal areas of light and dark the light still expands into the dark and not visa-versa because high contrast film

is sensitive to light and not the absence of light. The use of masks will in the negative allow the least intensity of light through and in the positive allow through only the most intense light from the original. I was trying to create in a short time what naturally occurred to films over many years of reprinting.

The steps after blowing the film up from 8mm to 16mm were to:

- 1/print the negative of the original (16mm)
- 2/print the positive of the negative
- 3/intercut negative and positive to make a traveling matt for the original (16mm)
- 4/print this traveling matt over the original (16mm)
- 5/take this print and bi-pack it with the original (16mm) for the final print

The sound was recorded wild onto 1/4" cassette tape at the same time of shooting the original Frame of Mind (FM) super8 film and transferred one hour of 1/4" magnetic film sound stock at Columbia College, which was then edited with the 16mm KII blow up print and finally laid in as an optical track on TRCS/FM's finished print. The sound was put through a similar rerecording and filtration process paralleling the film reprinting and was finally equalized by the lab so that the high and low frequencies were cut out.

I was greatly influenced by films that through years of reprinting were beginning to halo and lose part of their image (especially films such as Faust by Murnau because of his original high contrast lighting). It made me start thinking of the threshold of image perception, such as the story of Flaherty's Nanook where the Inuits could not at first see their own images on film, the paintings of Turner's or subliminal tv advertising in the 1950's.

I don't remember or have in my notes exactly when I applied for the Knokke-Heist Bruxelles exprmtl 75 film fest and film stock grant (from Mr. Le Doux) but TRCS/FM was the film that I applied with, and the subsequent Agfa-Gevaert film stock was what I used to make Internal Systems from. Both films were shown in Dec 74/Jan 75 at the Knokke-Heist festival; TRCS/FM was bought by the Palais des Beaux Arts in Bruxelles by Monsieur Le Doux.

INTERNAL SYSTEMS

I received 1600 ft of 6.15 high speed (asa 160) Agfa-Gevaert Gevachrome color film from the Bruxelles Knokke-Heist exprmtl 75 film festival to make a film for the festival. I decided to make a film that would use the mechanics of a camera that used light to record both light and sound (optical sound track); an Auricon camera shutter/gate recorded the light at 24fps from a projector that ran at 24fps and had a contact microphone placed on the camera motor which ran at 24fps. The technical specs of the equipment used are the titles of the film.

Dissatisfied with the metaphoric use of film where light was being used to record reflection and preserve previous sensibility why not a film that was active as music, its

referent itself. Sound on film seemed to have more immediate presence than recorded images. I thought of the influence light fluctuations have upon the nervous systems of organisms. The eye warns us of springing tigers but shortening wavelengths of sun send geese southward. I wanted to use the film to be able to see the process, to see the back of the head in a mirror.

I simultaneously was interested in logical structures and what the mechanics of logic were. The camera was a structure thru which the film ran, its logic a system of connecting functions built for human perceptions. The value of the film's subject matter was always considered greater than its process. It seemed interesting to make a film that was concerned with no more than its own mechanics as content of the film.

Internal Systems was made in four parts of 400 ft each for a total of 1600ft, each part was a variation of film exposure to light, both thru the gate and from optical sound exposure from a variable density lamp. All four sections are unique patterns of light and sound fluctuations. All are proportionally balanced between half dark and half light, from the the aperture most open to most closed.

400ft. X 40 frames per foot equal 16,000 frames (15,998 frames), which divided by 24fps would equal 666.6 seconds. The total film runs approx. 45minutes. Between aperture f stop 2.2 (most open) to f stop 22 (most closed) there are 8 stops. There are 10 graduations between stops or 80 graduations.

"Two quantities are said to have linear relation when multiplying one by a given factor automatically multiplies the other by the same factor. Thus there is a linear relation between the distance a car travels and the number of times its wheels revolve." Is there a linear relation between recorded image and sound? Light and sound are recorded at 24fps on film as that is the closest approximation to human brain's eye/ear time perception.

The auricon has 1/50th of a second at a 175 degree shutter opening. The optical sound track is recorded 26 frames _____ light has been recorded in the film gate. The ear is sensitive to 25 to 15,000 Hz (dynamic range is about 120 dbs). Machine noise comes in at 50dbs or lower, music is 16 vps to 30,000 vibrations per second.

Variable density subjects each point on the sound track to exposure of constant intensity of light, but of a duration determined by the character of the electric signal from sound vibrations. The variable density modulates a beam of constant intensity light by a light valve onto film running at a uniform 24fps through the gate with a shutter speed of 1/50th per second. The light valve is two magnetic ribbons forming variable widths according to an electric pulse or current from the microphone which allows the beam to pass through to the film. Sound recording is really ultraviolet recording. There is a filter on the recorder bulb and lens system that transmits waves as short as 3500 angstroms.

6.15 hs daylite 160 gevachrome is balanced for 6000K (sunlite) and its spectral sensitivity most sensitive to red light (the cyan forming layer).

