FIAF, Berlin
1973

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University
Note Book
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Welcome

Course idea by former FIAF president. Younger FIAF members coming up, pioneers giving way.

1) Knowledge, experience (purpose of course)
2) Know other members
3) Lectures * Ask questions at any time. Practical course.
4) Comprehensive program. Not obliged to attend other ideas.
5) Possible course changes. Make suggestions if want.
6) Today tour of town immediately - first change.

Staatliches staff:
- Director - Mr. Klade
- Ass't. director - summer school arranged at - Mr. Boling
- Features
- Technical director - Mr. Kernstidt

Cataloguing
1) Scientific collaborator - feature films
2) Documentaries dept.
3) Other staff members (well meet next week.

Introduction of participants:
Ray Edmundson - Nat. Library of Australia - archives
Runs day to day operations, small staff, not divided

Mr. Peterson - Norwegian Film Institute
Involved in everything

Mr. Mannerkorpi - Finnish Film Archive
Preservation, esp nitrate

John

David Parker - LOC nitrate films, printed preserved

Inga Adolfsson - Swedish Film Institute
Preservation, restoration of old Swedish films

Regina Krylo - Polish Film Archive, Filmography
3 months has been working

Zdenek Matyasko - Prague, reproduction of photographs
Sam Tyler - Dave Parker's asst. LOC, Nitrate.
   - Rio film archive - just beginning
Peter Schulz - West Berlin, small staff, DoD
   - everything esp. collection & film loan
   - Underdeveloped catalogue
Viera Kinkova - Prague
   - Prepares copies to be printed (technical)
   - Hungary’s scientific film Inst.
   - Head of library dept.
   - Large staff.
Mrs. Szatmary - Austrian film archive.
   - Technical equipment.
   - Also restoration
Mrs. Mrs. Schlemmer - Austrian film museum.
   - Small staff -12
Schlemmers - wks. Catalogue & restoration preparation,
   - tech. side of the business,DET, nitrate.
   - 15 members

Not a perfect archive[1]. But does work. Mutual info.
and help.

Development, structure, of archive.

Past history:
   - First archive to be founded in Germany, 1934
   - Big publicity for the foundation. Hitler, Goebbels
   - took part in opening ceremonies. Unusual for
   - film archives.

1933 - Fascists took power. Way to control media
   - Founded by the fascists. More than just for collecting
   - preserving films. Wanted to propagate by
   - showing, analyzing films. Goebbels, create
   - a "German pattern." Die Nebelungen - Lang - not projected a few.
   - Reich filmarchive couldn't fulfill its task
   - of collection, preservation, etc. Press was
   - Writing & effect a problem now too.
Just before WWII, propaganda companies were founded to film military events. Reich film archive to collect this material and analyze it. Film archive directly subjected to film propaganda ministry. Beforehand, the film archive was part of the film business.

Upto 1945, the most important task of the archive. Other tasks, apart from propaganda, couldn't be developed the same way. End of war, film archive holdings distributed around the country part of it destroyed by the war (bombed). The Allies seized a lot of this archive. The Soviets, the Western allies (incl. commercial distributors). LOC has part of these holdings 3 to be returned. Imperial war museum also. Soviet authorities for 10 years protected the material from being taken by anyone else.

Postwar Germany - difficult situation. Important because some people wanted to destroy documents of the past. 1955 - Soviets returned holdings to GDR. Soviets had preserved the paintings of Dresden, also.
Subject: Filmarchiv activities

The archive founded in 1955.
Bad living conditions, etc., at this time.
No staff. No experience in organization.
No Reich filmarchiv member to help in the beginning.
Miserable storage conditions.
No chairs, no tables; on floor sorting index cards.
The former managers had taken the curatorial cards.
Just a mess of reels.

Important development stages:
1955-9: Cultural (political activities, film clubs, commercial projection, compilation of films made.
Cinémathèque française had showings. 60 yrs. of German films.
Made archive known to the public.
Complete neglect of technical problems.
No technical experience.
Construction of new vaults.
Meanwhile, provisional vaults. 700-300km from Berlin. Extremely bad storage conditions in vaults.
Vacant rooms. No etc.
The films have badly suffered. Even today, trying to overcome the damages.
Cultural activities extended at this time.
Cinema at the archive begun; film festivals.
Publications on the problems of film history.
Increase in staff. Boemployees -> 100 employees.
Movements of staff back, forth.

1967 on, comprehensively tried to solve all the archive problems. Technical, cultural policies. A few corrections had to be made.
Publicity work: the emphasis has been dropped. Abolishment of cinema archive programs too much time & energy. A small turnout.
Not worth it.
New tasks: A greater emphasis on cataloguing of the holdings.)
Editorial restoration—also a new activity. We will get to know this process. Perhaps a specific problem of this archive. Then 3-5 copies of the same film that the archive took over: superfluous to preserve more than one. From neg, or print, all the material physically examined. True for many, many of the archive films. A question of economy. As well wanted to rid of these copies. Thus, there are particular problems of this archive.

On this stage, also a more specialized staff. No longer call around men. Everyone likes participating in film movements in the vaults.

In this third stage, preparation for the fourth stage, incorporation of television in the archive. A decision made 6 years ago—only one archive to preserve TV film production material. TV incorporation is a big problem. All state-owned archives production film. However, film & TV have independent ministries; give rise to jurisdictional problems. These problems are being solved in preparation for stage four.

Starting to create common technical conditions for film & TV. Agreement to construct vaults on these grounds for color material—another decision. Will double the vault size. Next year will start to build the vaults.

Agreement also about laboratory restoration construction.

All this has been prepared for a number of years. Presented many unsolved technical problems. However, the archive development including setbacks, problems, struggle to reach targets.

170 employees, now (including guards, kitchen staff, annual budget 3 1/2 million marks = $1.5 million).
Tasks of the archive:
1) Collection of film and film-related documents (documentation)
2) Presentation of material
3) Cataloguing-classification
4) Despatch - contents, subject index, etc.
5) Usage

The same tasks as big and small archives.
Summer school covers the 1st 4 tasks.
Now, usage being discussed.
Two types of users:
1) Internal users - the majority, trained for every kind of study, film, TV, university, theatre. About 1,000 films/year.
2) External users - the majority, trained for every kind of study, film, TV, university, theatre. About 1,000 films/year.

Usage is used for protection, extraction, etc.

Archive supports 150,000 productions/year.

Mostly for compilation, documentation, etc.

Internal use - archive cinema 2023 x a week. Showings in Berlin + 3 more towns of the GDR. 900 projections/year.

Film clubs - 1,500 showings/year. Retrospectives every year documentary Leipzig organized by the archive. Loans to foreign archives.

Structure and organization of the archive:

1) Feature films incl. cataloguing dept. where editorial, restorations are carried out. Documentation is part of this dept. Also publicity (film clubs, archive cinema, non-commercial internationals relations).

2) Non-fiction incl. cataloguing, restoration dept.

3) Technical dept. incl. vaults, etc.

4) Technical equipment incl. A/C, central repair shop, very necessary.

5) Economics dept. - an administration dept.
An additional department for film documentation. 10 members. Film for documentary purposes. To document historical persons on film - 1 yr. old. Mainly portraits & interviews. Important for the historical archive.

The archive is split up in different places. Very complicated links. During our stay, we can get to know every place. The splitting up of the archive necessitates this structure. For ex. features + documentaries separate cataloguing, vaults. Caused by the archive's splitting up. 60 km from Berlin - Babelsberg does this today, in Berlin - features. Although no necessity for it. As soon as possible, the holdings will be united. But not for a few years because it will be too much. But not for a few years because the vaults will be built.

Better to keep documentaries, features, separate? (Austria). (i.e. More convenient to keep features together).

Future plans: one management of catalogues, although documentaries + fiction films will be separate within the management, in some respects.

Needs preparation, apply cataloguing rules.

Separation of catalogues has adversely affected cataloguing rules - internal problems will be solved.

Facilities tour:
1. Film shipping dock
2. Acetate vaults 120,000 cans/ea
3. Nitrate vaults 40,000 cans/ea
4. Provisional vault - N. Material
5. Repair shop, guard area
6. New vaults to be built
7. New 2 story printing lab to be built
8. Main building: copying, printing
Nitrate vault:
c. 10 cans/loc.
12 locations/cell
4 cells/vault = 40,000 cans
in area for adaptation to outside air.
prevention of water condensation, corrosion
which weakens film.
8 hrs. for the process.
No immediate retrieval.

60°F = 42.8°F
60% humidity
(F: acetate, room temp.)
Dayton: 52-60°F

Acetate-
3 fireproof sections each side.
50 tons in each section.
Same A/C as N.
Also adaptation to air is the same as N.

Traditional storage system.
New system (vaults) will have moveable shelves.
since they have few 16mm, few 70mm films.
they change them to 35mm.
In temporary vaults, expedition cards are
made (7 1/4 x 4 1/4 cards).
In copying, lab building:
3 neg. printing machines.

Scratch remover.
The condition of all new acquisitions are examined.
Cards in vault No. 1, Nbr. A.
Vaults are checked periodically.
Workers work in fireproof cubicles.
Each worker very specialized.
Dupes negs are projected, save time, $ instead
of making positives.
Subject III

3. Preparation for storage

1. Copying of material
   Archive receives different kinds of material,
   difficult to copy the material on a new base.
   Sometimes the simplest way, but this does not
   mean the best way.
   This archive which gets the almost always a pos.
   From combined pos. produce a pix-sound neg.
   (dbi sys) but sometimes a dupe neg (combined).
   Simple, not expensive, but the quality of the
   material suffered, if sought to a dupe neg (combined)
   Duple neg 0.60-0.70 gamma value to be reached (Intensity)
   Duple neg 2.8-3.0 Combined neg - sound quality suffers.
   From dbi system neg, can produce a combined pos.
   Producing sound neg than improve the quality of the
   sound by recording. Variable density area
   Cannot vary intensity by printing.

   BW: N pix Reg N sound neg

   Pix duple pos. / Sound duple pos. (printing master)

   Pix duple neg. / Sound duple neg. (printing master)

   Married print

   For color, only one difference: reversal orig. neg ->
   duple neg. Yet, reduction of quality.
   Sound for color material produced in dbi.
   For color masters, must make separation.
   Need new stock sensitized for all colors so they
   are printed with correct bw shade. Or else, the
   reds will be too dark, etc.
chemical, physical properties of film material
reflect on permanent storage
Composition of film:
blow, color
emulsion
air, humidity
etc.
A very comprehensive subject
Support base: either Nor A.
1881 - celluloid suggested as base
1900 - Paris exhibitron - first acetate film
More expensive than N, worse physical properties.
1955 on - acetate used for 35mm.
Raw material - N stock used
8+16 mm - mostly acetate from the beginning.
because for amateur use. Was improved
Nitrated film = nitric acid + alcohol = nitrate
Flash temp. of 130°C. - new material: cellulosebase
Old material - unstable, self-igniting
From first day of production, decomposition starts.
NO NO₂ released. Attack the support &
emulsion. Esp. silver attacked, which is
there for the composition of the image.
Wair, these gases form aggressive nitrat acid. Disintegrates the nitrate material.
Disintegrating nitrate + H₂O swells base.
Gases give off heat. Endangers material in
Acetate-alcohol + acetic acid. Influences the
material's physical properties also.
Chemicals to make the material elastic.
Flexible)
Tri-acetate no longer satisfactory, esp.
for blow separation.
New basis must be produced.
shrinkage nor curling. i.e. polyester supports. Crotal or similar.

These bases are not yet used but will be important in future. less affected by warmth. don't absorb water as much [...]. low shrinkage, little curling.

Emulsion:

blw gelatin suspended in silver salts (AgBr, etc)
made from skins & bones

ideal properties for light sensitivity

Disadvantages as far as life expectancy.

Silver nitrate + Potassium bromide yields silver bromide + light sensitive

[Chemical reaction]

\[ AgNO_3 + KBr \rightarrow AgBr + KNO_3 \]

in many layers of the emulsion, onto other

6 gr Ag [Film]

neg 0.015 - 0.020 neg. emulsion 7 thicknesses

pos 0.005 - 0.010 pos. emulsion 7 in meters.

th.ace 0.13 - 0.14 tri-ace base

for blw; thickness 0.14 - 0.16 mm

Add l. sensitizers; blw sensitive only to blue. need addl. sensitizers.

otherwise, yellow, green, red layers would have incorrect densities. Correct blw comes across us sensitizers.

Cellulose acet, base repels water. The emulsion absorbs water. Would tend to separate base. (H2O, that is).

need an adhesive stratum (0.001 mm - 0.005 mm thickness). Adheres base to emulsion.

Anti-halation backing.

Barrier of light penetrating emulsion & base. Border area between film & air would make other areas sensitive to light. To avoid the
Color film: Analogous to base of blue subtractive method, Mr. Karndstedt will talk about sensitive to before developing.

3 Coatings on the base: Green, purple, red, blue-green.

Color film today use the subtractive method. Blue, green, red additive method.

1920s-1930s A few films on the additive method. Today, only printing by additive method.

0.012-0.015mm density for color material.

Anti-halation coatings also in the color film. A yellow filter coating between yellow, purple layer.

AgBr sensitive to blue.

- Also between purple & blue-green layer.

Yellow filter lets yellow light pass only, blocking blue light.

Some film stock makers use a yellow top layer, acts as self-filter.

Emulsion: b/w. AgBr plus colors.

b/w developing:

Reduction process:

The developer is oxidized. Developer AgBr → Ag + O + Br⁻ oxidized.

Developer reduces silver to metallic silver. Bromide and oxidized developer as side product.

Metallic silver gives the silver image. 25% of the silver used in this process.
Developer consists of water, developing substances: sodium sulphate, $\text{Na}_2\text{SO}_3$, to prevent the developing agent from reacting with the air. Keeps the developing substances stable. Alkaline is a fourth substance, pH 10.0, but differs. Borax, sodium carbonate, $\text{K}_2\text{CO}_3$, $\text{Na}_2\text{CO}_3$

The retarder is another substance in the developer. Prevents unexposed silver from fogging.

Rinse the material after the developer because of the alkaline in the developer. The fixing bath. Made of sodium sulphate, $\text{Na}_2\text{SO}_3$ and $\text{K}_2\text{SO}_4$—name?

Sodium sulphate to rid of the 75% silver that still exists. Without fixing, silver would stay in the material.

Several developer steps: in first step, must leave silver in.

A long time for fixing. Final rinsing—most important for archive material. Will have an effect several years after. Sodium thiosulphate, it remains, attacks the silver.

Evaporation of water—final step

Color film development—somewhat different.

[Bl/White image formed in silver]

Color = Oxidizing compounds + dye stuff + metallic silver.

After developing dye stuff + metallic silver:

Follow first rinsing by bleaching bath which turns metallic silver to silver soluble solution.

After bleaching, an intermediate bath, then final rinsing (as important as a B&W film), then

Rinsing.
Factors harmful to permanent storage:
chemical, biological factors, film material reacts nearly to humidity, temp., light. Unity of all these components together makes the stability residual chemicals do damage to the film. Film turns to brown, image silver turns to sulfenic compounds & film can no longer be projected. Difficulty to print such a film.

Tolerance of H2O-sulfate for commercial archive:
- 0.05 mg/16.5 cm²
- 0.01 mg/16.5 cm²

Prints produced in commercial labs have much greater level of sodium H2O-sulfate than is acceptable for archive copies. However, this process is reversible. Residual hygroscopic color film also a problem. Brown fog can indicate commercial labs.

Commercial labs 0.25 mg/16.5 cm². Much too much. Colors are also attacked.

Humidity

Micro-biological influences - organisms everywhere. Need climatic conditions to prevent the growing of these organisms. But still, they will, these organisms matter what how the film is kept. Organisms do not grow unless the humidity is there.

Fungi, bacteria growth especially affects the emulsion. The emulsion is a nutrient to these micro-organisms. Micro-organisms grow above 85% humidity. Whereas, bet. 60-85% is relatively low. <60% there is no micro-organismic growth.

60% humidity ⇒ no growth of microorganisms.

This is why condensed water must be omitted; raises the humidity. Consulted biologists about this.
Color films disintegrate if air humidity is too high. At 60% air humidity color density reduces twice as much as at 40%. High air humidity quickly destroys material. 100% humidity 5-day self-ignition. 75°C Temp. 50°C.

Temperature: -7°C lowest temp for micro-organisms to exist. 20°C-40°C micro-organisms grow best. Mesophile. <15°C will not grow. 20°C-40°C grow best. Another group: >-7°C will not grow. Therefore, -7°C is best. Relative air humidity of 60%.

At 50°C →100 da. nitrate gases. 75°C →8-13 da. nitrate gases. 100°C →1-3 da. nitrate gases. 135°C →4 hrs. nitrate gases.

High temp for color material is also a disadvantage. 50°C Temp. 40% air humidity.

<table>
<thead>
<tr>
<th>Density</th>
<th>% Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yellow</td>
<td>1.03</td>
</tr>
<tr>
<td>1.78</td>
<td>1.51</td>
</tr>
<tr>
<td>Purple</td>
<td>0.65</td>
</tr>
<tr>
<td>0.37</td>
<td>1.18</td>
</tr>
<tr>
<td>Blue-green</td>
<td>0.64</td>
</tr>
<tr>
<td>1.21</td>
<td>1.15</td>
</tr>
</tbody>
</table>

Thus, lesser densities, colors reduced more greatly. Purple, blue-green more stable than yellow. This reduction in all color films except Technicolor. Thus, the temp, the more danger for blu, color.
Gases: nitrate film.

Nitrous gases harm the silver and the images. 0.1% at 24°C is enough to attack the concentration. Silver in a few days. 0.4% at 50% air humidity after 2 hrs, the silver image already reduced. After 48 hrs, gelatin emulsion sticky. 2 weeks—babe deformed.

With acetate material:

Nitrous gases also attack acetate films.

Industrial exhaust fumes bad for vaults—sulphur, esp. for color film. (This E. Berlin vault in the country—good).

Light is dangerous for the colors of the color film. Protect films from UV-rays, yellow, purple, esp. attacked by light. Does not mean no projection (even after 100 times).
35mm Pos 16mm Pos
35mm DP neg 16mm DP neg
16mm Pos 35mm Pos

35mm Pos 16mm Pos
35mm DP neg 16mm DP neg
16mm Pos 35mm Pos

Reduction the first step
a special machine for treating the sound.

© preservation of material prior to storage
the washing process.

Materials selected by the archive has been
processed by many labs.

Printing labs produce in great quantities must
undergo a drying process to be used.

Sodium sulphate harms material.

Orig. neg - difficult to check each scene.

Rinse those materials again.

Rinsing speed depends upon when the material was printed.

If long ago, difficult to wash out the sulphate.

Amount of washing also depends upon the thickness
of the material.

Preferable to fix the material in a sodium sulphate
solution before rinsing.

In water 3 min.

Short fixing 5 min.

Rinsing 25 min.

Drying
This washes out the remaining fix sulphate.

Water temp. 15°C (18-20°C better).

A slower process of the temp is lower.

Consider the pH value. If value not correct, the

color will be attacked.

pH value important for color material.

Do not wash Technicolor. The colors

may dissolve in water.

Aged nitrate material, if decomposing

washing will flake the emulsion. Cannot

be known in advance. Test 2 or 3 frames

first.

The problem of lacquering is delicate.

(If film is coated)
Old developing machines are sufficient for washing, see Babelsdorf.

The Statfot archive does not fix its own materials—unfortunately—but needs an acid-proof floor.

The new building will try to solve this problem after washing, should be almost no thi-sulfate.

A test for the sulfate content must be done 18 hrs. after development.

HgCl₂ (mercury chloride). Toxic. Follow special instructions. Need a pipette (don’t suck the solution).

\[ \text{HgCl}_2 + \text{Na}_2\text{SO}_4 \]

mercury chloride + sodium thi-sulfate.

Turbidity measure tells amount of thi-sulfate left. 0.0175 mg/6.5 cm² (per Crabtree experiment).

The maximum allowable thi-sulfate content.

These chemicals must be pure:

- Water 750 ml 20° 50°C
- Potassium Bromide 25 g KBr
- Mercury Chloride 25 g MgCl₂
- Water 400 ml add.

To total is 1,000 ml solution. If precipitation, then filter water again.

0.010 g Sodium thiocyanate 5 parts H₂O

The endurance of solution is one week.
Another method to check sodium thiosulfate index.

For this method, half the film strip is put in an acid AgNO3 solution. The other half is left in the base. Then, silver nitrate left in the base forms a compound with the silver ions. The solution containing silver chloride, then fixed, washed, dried. If the thiosulfate in this sample density is off from the other sample, the test becomes apparent.

This second test recommended for all archive material.

Values for test cannot be given, since Staathkoes does not use it. Can use densiometers for measurements.

Sodium thio-sulfate = hypo.

Final rising is 18-22°C.

Nitrous Gas

Nitrate film disintegrates over time. Nitrous gases are formed, attacking the emulsion & base. Also, they attack the tin can, which holds the film, rusting the cans. The particles of rust flake off & can do harm to the film. This process can be slowed with low storage temp, but the process of disintegration cannot be stopped.
Important

* Mixture of substances in bags mixes with nitrate gases – does no more harm to the film! Not cans!

Material stored normal conditions.

By the end of '73 or beginning of '74 – we can acquire these bags. The bags last at least 2 yrs.

Use for all N film because all N films deteriorate. Storing bag c. 15 x 10 in.

Being patented by DKR. DKR company to mass produce the bag.

Plastic cans – not used in this country.

With these bags, don't need openings for nitric gases to escape, since the bags react to "nullify" nitrate gases. For N 60% air humidity.

Not necessary for acetate. Rust due to air humidity on cans.

Do not use plastic cans for any nitrate [perloc] nor for pre-print acetate.

Nitrate materials checked 5 yrs is sufficient. Every 2 yrs – too much problem for staff, etc.

Quality reduced by one grade after 5 yrs.

200 tons N stored in archive.

Nitrate valuable negs. kept (but others destroyed)

Face quality may change.

2) next generation

Keep N material – No need to store N valuable

orig. negs. separately, only neg. of same film stored in separateault.

New acquisitions: procedure: Positives

the technology of film examination.

the film examiners must follow the regulations (because 99% of workers have no knowledge of films).

All joins must be made to same line.

1.5 m meters of raw film leg leader.
3. Actual leader: indicates reel so enough product protection, no int'l. standard as to leaders

4. Measure length of each reel:
   Sound - from where it starts
   Also the picture
   Measure from the one that starts earlier.
   Begin the first title, even if say, MOMA title or Blurb, east end of split sound.
   These rules must be handed down to the examiner, not left to the examiner to decide.

5. Repairing of mechanical damage: perfs damaged reels
   Also indicated on labels of cans + tech card files. Also report to cataloguing dept.
   No projection.

6. Nearby measurement after 15 meters from the beginning of the film.
   Recheck the reel in the same place.
   Titles are of different material, have different shrinkage:
   A reel is <75m, measure at last meter.
   All material, NOT A is tested. Except new productions, Staatliches printing.
   New material (acquisitions) gets temp. storage.

6. Mark cans 4 of D
   Blue, red labels

7. Margin of film is marked (see sticker):
   C. End leader +1.5 m protection
   S. Leader bears vault no., but close to first image.
   Labels filled in blue = ace.
   Red = nit.

* Films leaving vault should return to same location
Negatives:
3 meters of protection (not 1.5 meters)
at beginning and end.
Repairs are made only for joins. If
heavy damage is not repaired, only
done before printing the material.
Because of sound, first try to patch.
Or remove a frame, replace by blank frame.
For magnetic sound, stamp.
Tech card for spotting, printing.

Tech card introduced at Staathches 2 yrs. ago.
When material is put in vaults, tech card used.
Notations on card from for printing or checking.
After 2nd inspection, if no changes, mark no changes.
Density of Reel or Layer also noted. For a
future check to see if a change
A few years before tech cards will be for all
films - MOMA has already (But not in detail)
By now to design the card, because of demands
from cataloguer. Decided it was a tech
Spot catalogue card. For columns for remarks.
Changes, cross out & put new finding in.
Tech card for archivist purposes.
Rent out films are, not checked when returned
(see tech findings p. 10).

4 categories:
1) no faults, scratches, not reducing pix. sound quality
2) minor scratches
3) etc.
(see p. 1 tech findings)
3) category 3) justified if just one of the
items occurs. No screening!
4) severe problems
(p. Tech findings)  
(p. 8, abbreviations)  
perforations, abrasions  

p. 13 shrinkage gauge. Important for printing.  
1.1% maximum allowable shrinkage for step printing. Even for high-speed printing machines, material is damaged if printed when too shrink. Before printing, test shrinkage at beg., middle, end. This archive: 3.5% - the greatest shrinkage. Tension reduction in peel length. Later: how to copy shrunk material. 
Shrinkage measure designed at this archive. Staattichis shrinkage gauge.  

A or N test  
D. floating test  

CC: C H O O specific gravity bet. A+ N  

Trichloroethaline  
N: 1.5-1.5 33  
CC: C H 1.477  
A: 1.25-1.29  

Nin. CCl₂ etc will sink; acetate will float.  

4. punch test out  
Diameter Ø 1.5-3.0 mm + put in solution.  

2) U-V light test  
For Nin. rate: green, yellow  
Acetate: light blue, dark blue, violet. Not tested because lamps are 15 min. warming up. Put cans to light (lid open).  
For ca. 20 films/day, do not use this method.
Subject IV

Technical requirements for archive film storage, etc. installations.

Construction of film buildings in charge of Mr. Merkel. His experiences based on practical work.

Contribute abt our experiences.

No secret about Staatliches problems. Problems 4°C-60% humidity but forced to increase temp. to 6°C because of properties of atmosphere + water.

Nitrate film - need pressure operated vents. Must open at 10 psi. Kilogram window must be opened at least 1/2 hour air that can't be controlled.

New design for window to open by its own weight.

1964 - N vaults. No concern for 4 vaults - pressure operated vents.

N - 1,000 kilo film / fireproof section here.

Proof section = Cell.

First vaults 10 fold change.

12% - exchange of outside air. Yet 8% is already enough. Not a fire hazard of incoming air.

Safety appliances against fire.

Fire alarm. Sprinklers at 12°C, they begin operating.

Their task: not to extinguish fire. To confine non-burnt N gas = cool the location covers in the cell. Sprinklers reduce heat 20%.

Staatliches has carried out these tests in non ac vaults in a cell with 9 locations of N film. Made an electric fire to N filmen locations. Measured. Room temp 6°C 200°C only for seconds.

To test of surrounding compartments. Burned. No effector surrounding areas.

Most that happens, door healed.

Expensive compartments: 1,200 marks for experiment, then money to build vaults.

Nitrate gases - to keep as low as possible.

Of outside air > 8%. Not required.
Change of air (-fold/hr) depends on size of a/c plant. Read specialized forms for rates on this.

+6°C ±2°C, 60% ±5% sufficient for a firm to design our vaults. These must be our requirements for storage. Nitrate.

(6°C = 42.8° F) (65%)

Water-piping system ends in each cell at 2 nozzles. Connected to city water system at 3 psi of 4 atmospheres. Nozzles locked by glass filled with alcohol.


No sprinkler in A vaults. Only alarms + pressure vents. With air, only fresh air % can be reduced to 4-5% a 5-fold exchange of air.

Regulate both sides of vault. Not together. For reading T.

Voltage regulates the differences throughout the vault automatically by variance from 6°C, 60%. In both N and A vaults.

Staattiches chose A/C so one central place for a/c heating. Each vault, smaller units to work on those specific variances. Not much staff maintenance. One person can survey the whole plant. A central place recommended. Rather than four different ones. For repair, maintenance, etc.

A/C plant inspection tomorrow.

Requirements of a firm to design film vaults: construction of plant must be considered as a cooling body exceeding normal requirements for house insulation. 

brick

thicknesses per firm.
Must be 50% self
Don't stick to tight pour requirements. Otherwise, firm sticks tight to what they want.

Staaltiche problem because of this.

Ex: 300°F for 3 weeks - slow increase of T because of archive's demand about the roof. Insulation problem.

If can build underground (40°F
Soil: q = T0 + 10°F, nearly stable season
Permits small insulation.

Above ground: q = T0 + 40°F, necessitates great insulation (34°F diff)

If can't insulate, use greater refrigeration.

Depends on country. This vault in sand, rocks - must build above ground. Must be no direct surface exposed to the sun.

New vaults will have 2 underground levels: same as now, upper level.

An add'l. storage would be nice to further reduce heat, but not possible.

Spray H20 on roof also tried - but raises H.

Industrial area vaults
consider location carefully.

Staaltiche: we don't need to treat air. Air must be filtered because of pollution, dust, highway. Not possible to remove air pollution completely (can & do for people, not for films). Consider what is possible per economics.

Defrosting problem: operating the system for 4 hrs. Only a slight frost, doesn't reduce efficiency. Must defrost. An unsolved problem.
cooling plant operated 16 hrs/day. Cooling plant turned off overnight so in A.M. defrosted. Turned off 4 times/day.
Frost forming does not permit the air to move. Then air sucked from elsewhere. Defrost electrically. Heating back 320-330°F.


Humidifiers built, but not put into action. Theory & practice differ. My say: Humidity: Practice says dehumidify. At this have humidifiers, but don’t need them also.

\[ T < H \] - Scientific law

By sea (Río de Janeiro), need corrosive proof coating to protect vault from sea salt.

Shrubs - to keep out dust, particles. Inexpensive filtration method. Add industrial filters, also. Only shrubs increase air humidity. Oak tree, 50-100 yrs. of age - 700-800 liters of water per day. Obviously evaporates into the air, doesn’t enter the vaults. Be informed - as to know something when consult specialists.
Problems of storage of B/W film
No difference N + 4. Fire is only difference danger

Color film: yesterday its structure
Today: storage

-5°C 30% humidity

-7°C ± 2°C 25% ± 5% humidity is the regulation for color film. (preservation commission)

ml. Kodak, Agfa etc.

smaller tests → large film archives.

Dehumidification a problem.
A projected system - film aclimatization room
Many other systems applicable.
Normal air/plants - more problems. On/off every 10 min. to control # of defrosting, etc.

Construction requirements for color storage (based on stack/holes underground condition; adapt for other conditions):

A/C plant must counteract if can't make up for lack in construction.
Airlock for people going in & out: one door open, two doors closed. Close one door, open two doors. To normalize any changes between inside & outside.
Outside air entering affects A/C; be careful.
Law in DDR: 50 min. - worker in vaults at -7°C. Must wear electrically heated 37°C. Otherwise, condensed water heated would form in the body. Food limit to warm clothing - too bulky.
They wear gloves.
Problems changing in temp, not temp itself. Poor blood circulation can't do. Need constant medical examination. 2x/year by law in DDR.
In practice, DDR workers stay in 1/2 hr, 20 min. break.
Nitrates for workers. Ration 2 liters milk/day.
Need good A/C in terms for film cutter, etc.
Change air only 4 x/hr. 
22°C, 60% to humidity.
Acclimatization of films: Vaults—outside air
Do not remove the films immediately except when
the film is close to the outside. Condensed water will
form immediately if variation is great
10 reels—long adaptation period.
Bring vault/ films immediately into
acclimation part of vault. Variables are:
approach outside.

Vault 6°C  60%
outside 22°  30%
18.5° moisture forms
if 90% adjust to 20°

T-H table to make these figures.
Rule of thumb: acclimation room ->2°C Temp.
lower than outside air, 90% fridge humidity

Tropical conditions: acclimation T = outside T.

Acclimatization = refrigerator; adjustable.
Begin w/ vault/ temp. 8 hrs, slow warming.
A heating plant + a cooling device
6°C to 30°F maximum; 8 hrs needed.
A very slow process; will never reach the dew point.
If done too quickly, there will be f-20.

Water vapor emitted by the film absorbed by the air.

WT of -7°C, things are more complicated.
36 hrs. acclimatization time (sure math.
theory w/ a safety margin included).

Outside -> inside: acclimatization the reverse.
-20°C outside +20°C inside vault
acclimatization room: warm from -20°C -> +20°C
otherwise, condensed water formed in vault
-20°C outside +7°C inside. No acclimatization
needed.
-1°C for summer, winter inside vaults. Even 1-20°C outside. No acclimatization needed.
-20°C outside, +1°C inside vaults - acclimatization needed.
General rule: Outside = inside, don't need acclimatization. Vault must always keep below the dewpoint.

If say, vault = 45°F outside = 20°F

Projection room = 70°F. Acclimatize to projection room since outside air time is too short to have an effect.

Air always contains a small bit of vapor, called air humidity. Limited absorption capacity for vapor in the air. Ex: 1 m³, 25°C, 760 torr, max. 23.4 g water vapor. Means the air saturation with water vapor. Maximum air humidity. Excess of this, removed as vapor.

P (total pressure) = P(V parts of dry air) + P(V parts of vapor)

Cooling of saturated air, precipitation.
Dew point = 100% H₂O, precipitation.

Ex: 100 m³ of air, 35°C, 15% H₂O
Cooled to 52°C, 90% H₂O
11 kilo + 19 water is released.

Air is cooled down, saturation reached, precipitation.
Reheat air.

The principle of A/C & acclimatization. A Must prevent reaching the dew point. More problems for designing large acclimatization system. Books can be consulted.

Storage + 60° dew pt
Outside + 25°
A.H. 60%
H can be calculated to $g + \%age$.

-7°C in bdg.

**thermal insulation layer**

+10°C outside (the earth)

In years of time, the outside earth will freeze. Thus, if water becomes ice, it expands. Thus, the earth expands, destroying the building.

In earth or above ground, this is the problem. A partial solution is electric heating element in the insulation if built in measuring devices in the earth. At +10°C earth heat is turned on. Needs great amount of energy.

Air conditioning plant—only generalities, not detail: purpose to maintain low temp., to cool material must withdraw thermal energy to achieve $T$ for thermal storage. Need compressors. All liquids tend to evaporate by adding thermal energy.

---

**Diagram:**

- **Coolant** (Ammonia, Freon)
- **Evaporator**
- **Compressor**
- **Condenser**
- **Cooling Plant**

Since heat taken away becomes liquid ammonia again.
refrigerator principle, as well.
For defrosting the system is turned off. Compressed
hot gas fed right back.
Know the operation—how it works.
valves, pistons, etc.
Will see tomorrow.

Maintenance of cooling plants requires much
knowledge to be in charge of it. Maintenance
can differ. Supplier, service instructions,
inspection, time to time.
Yet if not watched carefully, there might be an
explosion.
In Haattiches' first year, vaults projected to not
reached. Begins at 0°C not 10°C. Decreased
efficiency by 100%. Inspector came, frightened
nothing happened, but only so almost reached
the flame point of oil because didn't know
thought could demand a lot of the machine
Compressor—in cooling room.

A central cooling system. Four vaults, interconnected.

[Diagram of cooling system with labels: water, heat, water, etc.]
AM: 1st hr: a/c  
2nd hr: a/c Friday

This subject now completed except for inspection.  
More go when viewing machines.

Air conditioning plant - preparation, requirements.  
Beginal design of vault, storage capacity  
Existint stock, annual acquisitions, years.  
Until these vaults will be built, how many shelves,  
What kind of shelves, strength of shelves against.  
Having information weight of shelves.  
Transport system:  
Drive in or walk.  
100 m³ storage area,  
one can store 10,000 cans or 25 tons; make best use of storage area; ladder for 4 cans.  
New vaults 2m high, 80cm width between shelves for Haathkic, other info. up to builders.
Film storage building/ generation average.
Often have to take what they build.
Choosing location for film vaults a problem:
good soil, inexpensive digging,
relatively low groundwater level
free from industrial area.
Building a sanatorium,
Wind direction, etc.
10 km away from factory. Only 20 da/yr. does
wind blow from factory. Important to know,
i.e. check industrial areas.
Build in a forest.
Can because trees play a
major role in preventing pollution.
Expert staff for operated technical facilities—
about 50% effects. Others should have knowledge
of effects, mechanics, refrigeration, etc.—
Divided among workers.
Add up costs for different parts of bldg., films, etc.
Cost $10 million.
Stahlbau here costs $10 million.
Whole works.
More now than brickwork, now concrete.
These premises: 3 years planning + 38 mo. bldg.
1961-1964
The most difficult time
convincing people you are right.
13 mo. bldg.
New design: 2 years planning + Aug'74 begin.
Building + 6 mo. for machine equipment.
When building a vault plan for future new
vaults or extensions. But technology changes
so much, should not be plan too much.
Staatliches:
$10 million building of vault
a/c, fire protection 51.5%
filmwork rooms, social 20.9%
preparations for bdg. 6.9%
street, 120, gas, elec., tel., repair shops 14%
projecting, supervision of bdg 4.7%

Shelf measure: from overhead view
60 cm
<table>
<thead>
<tr>
<th>6 cans of film</th>
<th>98 cm</th>
</tr>
</thead>
<tbody>
<tr>
<td>35 mm, 1000 ft</td>
<td></td>
</tr>
<tr>
<td>2.5 ft x 3.7 ft</td>
<td></td>
</tr>
<tr>
<td>6 cans of film</td>
<td>98 cm</td>
</tr>
<tr>
<td>12 cans, 2000 ft</td>
<td></td>
</tr>
</tbody>
</table>

Nitrate vaults:
20 mm asbestos bet. locations 88 locations skell (1x4x2) 400 ft.
11 film reels/loc. air space between locations 8 x 15 room (ea.)
locations divided into cells for extra security
location problems can't calculate beforehand, as avoid decomposition.

Acclimatization Room - 8 hrs. - heat & cool.
200 reels (1/2 ton).
Night - films warmed to go out
Day - films cooled to come in.

In new vault, whole room will be acclimatized, w/a set of moveable shelves, etc.
THE ZERNIK MURDER CASE


Motive: Burglary. Headquarters in 3 Western sectors. Can't prevent 2 more murders. Finally catch the murderer.

Based on real incidents.


Alexander Lang

PAUL & PAULA

Subject VII
31.8.73

Possibilities of manual or machine restoration of film material:
A catalogue of films going to clubs:
Films having category checked once/8 times
Lower category checked more often.

Circ. prints - not stored so carefully. Since
wear & tear & eventual junking.
Stored in non-a/c rooms because a high demand.
Films sent from club to club directly to save time because
of high demand.

Letter to film saying please send to etc.
No problems of loss of films, only that they don't
arrive at a club on time.

Catalogue published:
Will go up through film rental head (Wednesday):

1) Get catalogue
2) # films distributed
3) Club to club distribution - full MO MO
4) Free?

Possibilities of restoration of film material by hand or
machine:
Density of image
Residual hypo
Mechanical damage
Base abrasions / emulsion abrasions
Perf. breaks
Protective coating

Restoration of silver image: afternoon 45 min.
Anti-scratch printing / tour
Polishing etc.

Density of image:
Too light or too dark
Editorial restoration material: average of 10-12
frames for repair; usually pos. print &/or neg.
Material in this archive:
If one light printing, a dupe neg. would
not be uniform. Nor for copies from neg.
not only density problem, but also
gradation problem—dull or brilliant.
But in frames printed separately.
Gradation changed if time of development
changed.
For dupe neg, material, devel. time = 4 min.
Variations from 2 to 8 min.
Then after but in material, rest of
material printed for uniform copy.

Positive

dupe neg

Positive

commercial lab—gradation 2.7—gamma
archiv = 2.4—2.6—gamma /pos
archiv = 0.50—0.60—gamma /neg
commercial lab = 0.60—0.75

If do not do this positive faster high contrast,
too few gray tones.

A printing master of low contrast.
If dupes only made 2—8 min.,
gradation value = 0.70.
Can be balanced by changing developing
time.
So much for changing density.

Residual hypo
this salts attack the silver image, producing silver
sulphur compounds produce light yellow
or brown colors. Destroys the printing master.
A procedure for treating material to
get good masters.
A special developing machine, 175 meters/hr.
12 - 15 min. (In first bath not sufficient.
Treat material 30 - 40 min.
For restoration - making image clear, etc).

1. First bath - oxidation (bleaching) 2 tanks 12 - 15 min.
2. Intermediate rinsing 2 tanks 6 min.
3. Stannous (II) chloride solution 3 tanks 10 min.
4. Intermediate rinsing 2 tanks 6 min.
5. Developing agent 2 tanks 3 - 4 min.
6. Final rinsing 10 tanks

can repeat 2, 3, x times until satisfactory.
For post + neg system both

Q: Repeat process, overdevelops certain scenes? A: No

The oxidation bath:
K$_2$CrO$_7$ (Potassium bi-chromate)
120 g. Made up to 1 liter.
HCl (Concentrated) 14 ml

Potassium bromide 8 g
Made up to 1000 ml

Intermediate rinsing

Solution
Stannous chloride SnCl$_2$ 25 g
HCl 55 ml
Made up to 1000 ml

(yellowing)
causes the silver sulfate compounds to be
destroyed, causing metallic silver to be restored

Developer:
Metal (developing) 2.5 g
Sodium sulfite Na$_2$S$_2$O$_3$ 50 g
Hydroxylone (developer agent) 10 g
Potassium carbonate 60g \( \text{K}_2\text{CO}_3 \)
Potassium bromide 4g \( \text{KBr} \)
all made up to 1000ml

This developer is variable.
just stick to recipe of other 2 (oxidation bath & stannous chloride solution).

Oxidation bath brings out the image.
The bird picture: amazing results!

Mechanical damage to film:

2 abrasion - removing methods:
for pos material w/ predensation abrasions.
printing materials treated w/an
anti-scratch device.

Polishing: a mixture of methanol & acetone
\( \text{CH}_3\text{OH} + \text{CH}_3\text{CO}_2\text{H} \)
1:7

for any material.
The principle of polishing for the base: neg & pos

Anti-scratch:

\[ \text{scratch} \rightarrow \text{light rays} \]
\[ \text{diffraction rays} \]

scratch appears in new copy.
If fill scratch w/liquid, same index
of refraction as material, the beams of
light pass without being refracted.
Scratch does not appear in new material.

\[ \text{index of refraction of base} = 1.48 - 1.52 \]

\[ \text{index of refraction of new material} = 1.50 \]
Rather expensive.

Matting not done nowadays, another method:
for polishing, use glass rollers for the method described above
another method - only known from literature, not widely used.

Emulsion abrasions:
use
\[ \text{NaOH} \cdot \text{C}_6 \text{H}_4 \text{CO}_2 \text{Na} \]
Sammonia solution 0.3% solution/l00 ml

Since Statrichtes has no room for machine,
use developing machines;
developer alkaline, bypass fixer, then final rinsing.

* Check use of base/emulsion, Tues. afternoon/ Wed Am

\[ \text{Na}_2 \text{CO}_3, \text{K}_2 \text{CO}_3 \] alkalai, softens the emulsion.

rollers. Shines the emulsion.
Restoration by hand:
  Bleaching, oxidation 20 min.
  Rinsing 1 min.
  STAMMOLD chlorode solution 10 min
  Rinse 1 min.
  Developer 2-3 min.
  Rinsing
  Fixing
  Final rinse
  Drying

One machine does:
  anti-scratch
  shrunken material
  variable speed (36, 9, 12 fps, slower or faster) for stretch
  printing (repeating frames, Von Stroheim, Ex 16-22 fps)
  does sound
  printing
  1/2 special machines
  can adjust, non-standard perf: [will work on Edisons, maybe not Bios]
  more complex, more perforated, different size
  disadvantage of machine: Must change anti-scratch liquid often

Staatliche set the requirements, designed in collaboration with DEFA.
43,000/hr/machine.
Subject VII

Painting Process

3.9.73

Announcements

Hau Siedermann - historian
Herl Lie - archivist
will work in Babelsberg nonfiction section.

Tomorrow: bus 8:30 to DEFA. Breakfast at 8.
Wednesday: Mr. Volkmann can't come.
Karnstadt 8-10/15 printing process
Then Mr. Lichtenstein - public work of archive
Then theatre (optional)
Thursday AM only: editorial restoration

From last time:
We did abrasions on the emulsion.
Now, protective coating - Staatliches does not use.
For use on positive prints distributed to film clubs.
The emulsion treated with formaldehyde HCHO.
Doesn't reduce the film's flexibility.
Does cover emulsion with soft coating of wax, paraffin,
gelatin, or other organic compounds. Put on spool
holes sometimes over the whole image.

Test: 5% paraffin in CCl4 (Carbon tetrachloride)
solution vs. untreated film material.
Treated film had 850% increase in projection
18.50 more projections.

10% solution - 310% increase (350% more projections)
Disadvantage: dust sticks to wax. Film collects
dirt. Sound quality suffers.

Staatliches Emulsion bake covered with resin or
a cellulose substance. Danger: more absorption
of water. Coating comes off. Film gets edited.

Do not treat emulsion base all silicone 2 oil
Esp. used for 16 mm copes. Yet, remem not magnetic
sound track - the base does not stick to the film.

Coat in big commercial labs before drying.

More procedures put new film producers don't give
formula - = of 4 types above.

staattiches
They plans to coat their circulating films W 74 or 3.

silicone resins
Need a machine to do this. Resin cannot be dissolved in water. Gelatin can be dissolved in water. Test first.

Cleaning

Ulasonic device. Use before anti-scratch device, films w/oil, dirt, marks.

Dupe negs treated by hand w/freon. Not as dangerous as trichloroethylene, but more expensive.

[Printing process—thy practice]

Advantages for an archive's own printing lab: #of people on printing in specialty isabelle. Get samples too early. Will be in projection room. Then correction for light gradings. Should do processes ourselves. Tour at 9:30, groups at 9:30, 2 at 10:00. Continue with correction of Wednesday.

Advantages for archive's own printing lab: Machines equipment very expensive. Staatliches first sent material to commercial lab. Many difficulties. Fight against indifferent colleagues there.# to scratches for light or too dark. The labs are used to treating new materials. The difference. They use machines w/a high output. Difficult for them to make one copy. Used to printing 40, 50 copies. Storing, shrinkage, different photographic properties, etc.
Certain tinted materials labs don't have special machines for old archive material.

Sunrise - residual hypo - deteriorating - residual hypo the reason. Remember: Commercial labs have greater residual hypo.

After yrs. of struggle, the lab set up special dept. for archive film only: grading, preparing, etc. Yet other processes done in main part of lab.

Refused to print shrinkage >1.5%.

Hungary - print in own archive - develop in commercial lab.

Staatliche lab - planned for 50,000 meters/month. Planned commercial lab:scopy, dupe negs. But commercial lab wouldn't agree to new contract. This archive now does 150,000 meters/month.

Now a shortage of space. Had to compromise. 150,000 meters = 75,000 copies used.

15,000 copies for correcting

26 staff members in printing lab:
5 prepare copies (film material for printing), petals, joints, etc. Rounding, cutting, 2x4 plates.
3 in grading dept. 1 table, first light, 2 tables for correction.
3 in polishing by hand or by ultrasonic cleaning.
1 to prepare grad film length according to film.
3 in printing, each use 2 machines. Special printer, 2 step printers (normal), 2 slowstep printers in addition (Smaller, slow lift). Print material of 2% shrinking.
3 in developing 4 machines. 2 for pos. 2 for dup neg + dupe post preprint.
600-700 meters positive material  
400-500 meters dupe material  

In checking copies 2 projectionists who do the checking  
Equipment for parallel viewing  
In lab standards of materials  Residual hypo  
Sets the bath density surveys the development process  
Tests the raw material before printing for photographic properties  
In transport of materials  
In office, dispatching work  

Hastily  
Lab prints only bw, 35mm material  

Ordering of copy  
Preparation  
Grading  
Polishing  
Printing  
Developing  
Screening  
Delivering to orderer  

Preparing the raw film length  

Good if all steps housed in the same bdg.  

If copying comes from feature or short film section,  
If corrections must be made, goes back to grading  
If perf's, etc. problems, goes back to preparation
then again through each step.

Staatliches budget -
much cost consumed by printing lab, esp. raw film (500,000 M/yr = 1/6 of the budget of Staatliches).
This is why there is the "preparing the raw film length "dept." to save money.

But what about short ends?
3/42 meters/reel of raw film.
All off film = 200 meters, splice 100 meters another reel.
Can avoid splice. ... the join is important!
Join/reel allowed from raw film producer.
Join made before printing.

To meet demands of copying/ordering dept., labs should produce 300,000 meters of film (as the capacity for printing).
Labs give feature, non-feature film dept. length they can do/month. The heads of these depts. then decide what to print.

Work evenly divided among printing, grading, etc. so even if people sick, enough work to keep up with.

Some staff familiar with other jobs, but mostly since each job is specialized, the jobs are not considered to be interchangeable. Several all-around colleagues.
A few people go to a special school (part of commercial lab) for 1 yr. course to learn thy small turnover. People only leave at old age or moving.

Preparation:
clear leader, beg for raw stock
film
also patch, splices, etc.
also roll of film, measured.
Grading:
light intensity - density of image

Polishing:
finan

Printing:
24fps: neg → pos

Developing:
Buffer reagent
Developer
Water
Hypo: Na₂S₂O₃
Water
Drying (2 steps: one, to get off excess water, other, to further dry image)

Note: water quality in NYC bad, also, not enough washing; reiodetalk hypo.
HOLIDAY ON THE ISLAND

First 60 minute compilation film.

First film using only documentary footage.

A period of tracking down war criminals.

Documentary on Helene Weigel - the stage.

Great problems to compile grading, etc.

THE THIRD [husband] - 1971

Mother dies - hospital church nurse - evening course for workers - in love with

lecturer - blindman - 3rd man in computer plant.

Very popular in Germany.

Recommend to Adrienne for screening.
Central lab in DDR for making prints. 40,000,000 meters/yr. 35mm production, both blue color and in color production over the past few years. Making release prints, but also nege, intermediate material.

Equipped for fast processing & delivery. 16mm prints are also made.

8mm amateurs, schools, also. 2 70mm films, but very rare.

Technical equipment of lab:
- main bag, accessory bags, heating plant, water supply plant, water preparation plant, power stabilizing plant, etc. (fire protection measures)
- Little processing of N material now, yet this lab originally constructed for N.

After inspection of lab, meet back here. We'll see magnetic tape recordings of 750 colleagues at this lab. This lab trains its own workers through courses for engineers, technicians, etc.

Preparation - perf's, etc.

- polishing machine
- ultrasonic cleaning machine adjustable 16, 35, etc.
- ethyl acetate
- acetone
- dichlor
- butanol
- acetic acid
- (35mm base only)
- base only
- 16mm
- 35mm
Grading - Staatlichen

Differing densities balanced (from exposed film),
then make correction copy
then screening
Then re-grading, if still differences
are of one correction copy, blur film.

Another method, not used here, take 2 frames from each scene + test
light on it, then after joining sections + printing. Saves raw
film stock + money.

Developing machines:
12 for blw 12 for color
Super 8, normal 8, 16mm, mostly 35mm.

Steps:
Wetting bath Wetting bath
Developer Developer
Rinsing Rinsing
Fixing Fixing
Final Rinsing Bleaching

for blw
for color

1700meters/hr.

Developing raw stock for color
PC 7-color
USSR M33-blw
Papier neg, 40cm neg PC-6

A room for adjusting the baths

Printing machines:
2 Bell + Howell color additive machines
2 Subtractive color or blw machines
+ more blw machines + Staatlichen

Grading: color:
Additive & Subtractive method
2-3 gradings average.
Additive:
get first correction print - 1 or 2x
then normal grading
then balancing

Done electronically, now w/ Bell+Howell. Reduces judgement error - in future all will be done electronically

orig neg -> correction print -> dupre neg
for each scene

pre-release ++++++ copies
for filmmakers
etc. to see

Usually color is o.k. by 3rd copy
but depends upon cond'n. of negative.

Although most countries do abbreviated prints,
DEFA, each time does the complete length +
electronically - 10 blue 15 green 25 red

this is the additive process

Another way is to adjust a whole sequence to two frames which have been adjusted already.

Subtractive method -
must be very precise

DEFA workers
majority of staff has basic knowledge training
all, whole lab
then, specialized course for specific jobs
- orig, neg development, sensitometry, Bell+Howell

A problem - turnover (a large female staff)
Each dept. has skilled leaders to train workers
Bring jobs make possibility for people to sign up make more skilled courses.
Planning for workers prescribed by state.
Many females because work rather light but exhausting. Don't make much $, but supplement the family budget. Boys prefer more technical professions.
Mary met in management. Mostly men. Also a generation gap problem.
Men in physical jobs (workshop, etc.)

Increase by 70% in color film production demands new equipment.

Babelsberg
100 tons of film
a/c plant. Innocuous need special electrical power
Former Reich filmarchive: 5 bunkers, bigs for guards.
Modest in film, Germany.

For documentary films.
Screen rooms, catalogue, editorial, restoration.
Overflow store in hall. In summer, 20°7, 60-70% H - over the limit.
Against fire rules, but too much nitrate.
a/c constructed over old fire recommendations.
18° C, 60-70% H; now, accommodated to new I.A.F. regs (see above), summer 15° C max; 10° C ave; H 60-70%.
Fully automated. Vault insulated.
Wilhelmshagen, central a/c - 3 vaults.
Air circulated 1/4 hrs renewed.
a/c 10 yrs. old.

Editorial restoration - clips, splices.
Washing method. No chemicals. To remove dirt, etc.
To check which is best material for restoration.
Inefficient - 200 meters shy.
60% of material washed.
All developing in Wilhelmshagen.
Papered sections, scratch copies, etc.
Q5 Babelsberg - ca. 40 people
  - 5 technical
  - 8 open catalogue
    - 4 for use
    - 4 for cataloguing
  others: guards, maintenance technicians.

Then, regrading - subject 9

Then,

Public activities of archive - subject 10

Archive activities:
(1) Kamera, the archive-owned cinema
(2) Film clubs
(3) Annual Leipzig ca. 2 Short film festival organisation
(4) Retrospectives in other archives

(1) 2 days, 2 shows/day = 4 performances/week.
Done this way since 1966.
Before this, 3x a day, daily performances.
Given up because of publicity, but cut back.
For restoration, evaluation of archive holdings.
There were 4 staff members working on this.
Now there is only one.
(2) Cinema had to be closed down for technical reasons. Had to show in commercial cinemas.
Now, film art cinema - cooperation up them. Documentation dept is where cinema used to be.
Fly programs (we have been given)
Try to supplement art film cinema showings.
Staatliches programs give more attention to film history, programs of directors, actors, epochs, etc., international programs.
Art cinema - modern films.
Staatliches - older films.
We exchange with other archives, get films, non-commercial for art cinema, hard to get.
If did Cuban films, will do Soviet/Baltic films.
Berlin programs shown in Leipzig (the best audience, film club), other cities (Dresden, Rostock).

250 titles in circ, catalogue for film clubs.
10 films added 1 year because of technical reasons (these are special extra copies). Can't afford more than 10 copies for the added cost of replacing old, worn out films.
Staatliches used to be more didactic. Club had to take a whole program. Now, the film clubs choose individual films. These films must only be used for cultural study, not entertainment purposes. Also, the narrator must introduce the film. Films are not meant for nostalgia buffs. Contemporary films must also be studied.
Contemporary films are suggested to the clubs to get. Can use these films only as a supplement.
Censor of 3rd Reich films. Films in service of state (not in catalogue, but possible to get).
250 film clubs, part of # for trade unions.
Archive 35mm feature film.
- charge to film commercial cinema, give lower prices to clubs.
- most film clubs - monthly fee, 1 performance free.
- other performance pay 4/month.
Universities have more performances (month). But clubs start and stop, turnover of students.
Each club 15 to 100 members.
Make back 1/3 on rentals of cost to make films, etc.
PDR has film clubs in the universities but little, if any, coursework film (say thy history, etc.). Only now is film recognized as art at the universities.

3. Leipzig festival—since 1962, annual, mainly political documentaries. Deals with different subjects each year: books on Flaherty, Calvarcanti, Soviet documentary, etc. This year: pre-1933 German proletarian films. Important as concerns DDR contemporary film production. Many of these films are lost, destroyed during Fascism. This will include fiction films for the first time because of the Fascist rule. Can’t draw a sharp line between documentary and fiction film. Put together to show how the films used for struggle back then. Last year, Latino American films. Very successful festival. Some of these Leipzig films are shown in the archive, cinema or among the film clubs.

Austria—shows film 1x a day, 5x a week. Usually, a director’s festival! Rarely actors or genres. Rarely country retrospective (shooting, etc.) too expensive. Also problem of licenses, rights.

MOMA—explained our extensive screenings: DDR, WB, Musicals, Russian, Laurel & Hardy, film history, films for children, films from the archive. The problem of getting foreign films from member archives, destroyed—problems of rights, organization, and shipping. We should try to find programs of the int. archive, securing the rights, put together exchange packages.
Film Program Notes

Can't keep up with them.

Illustration has program notes from film history writing. DOR thinks this is not enough. DR: USA is Film club (universities). Assume knowledge of film, but not part of teacher. Archival showings difficult to educate the audience.

Must explain audience for outdated films of a specific time (formula pictures) so they are not misunderstood.

Should fascist films be shown under this point of view. Impossible for a normal audience.

In Austria, OLYMPA released commercially. Very successful. Recognized as artistically important.

Discussion of fascist films.

How is the film represented important.

Ex-highschool-discussed, analyzed afterwards.

Different in archive, cinemas, no possibility of control after the performances, only a short introduction at the beginning.

Emotions then high, analysis afterwards may not be the answer.

Documentation Dept.

Mr. Weiner

9 staff - 3 scientific training in archival science. 6 hands in photo lab.

Anything that can't film is collected. Upon D45, after D45, producers must handover info. Script material, film stills, 8000 eng. neg. 197 x 2.

Production featuring film, production stills, film papers.

Illustrated film course - complete set; extra copies traded for material in other archives, advertising.
Material, posters, reviews, clipping files, before 1945, censorship index card, old (dialogue, info on foreign films dubbed into DE, record of famous actors/phonographs), tape recordings of premières, etc., costume, set design, technical equipment - projector, Edison phonograph.

In near future there will be a Film museum.

Cards:
Material for same film that is the same size is kept together.
A special numbering system for photos, negs.
Stills must rely on memory.
Publishing houses, writers, amateurs want info. Take time. Quality, not speed counts.
No library in documentation dept. But when dept. moves to Thelma Shagin, will have library there. Must rid of excess material.

Good relations with Berlin, Prague.
DKE getting until recognition now, so very busy.
No until agreement on how to store posters.
Different kinds of canvas. Must be the same tissue. Leave a strip of canvas for tacks.
Another bdg. at Wilhelms stair editorial
restoration.

Questions as we think of them.

Technical restoration ⇒ technical + catalogue
Today: transition of technical part of work to catalogue
Editorial restoration ⇒ caves + 1967
2 stage: The knowledge of condition of the material.
Some titles 3-13 positive, indeterminate copies.
At first, determined most complete prints by length.
Yet, found some prints had same l. but different
parts missing. Difficult to a film. The result
is editorial restoration.
-> Take this archive's material to other archives.
Metropolis
Different way to inspect films ⇒ caves of pos + neg.
In sum, much material on same film to sort out.
Basic requirement: for editorial restoration: exact
knowledge of all material on film in the
archive. At first, used material in easy reach,
but this is bad.
Card: title, tech, material, length.
A special form for editorial restoration.
Staff: 2 cutters, 2 examiners (for tech. quality), 3
research workers (contribute to editorial evaluation).
These 3 have other tasks in cataloguing dept.
Also a group for non-fiction: 1 cutter, 1 examiner.
Archivist: the basic staff for editorial
restoration.

At first, thought to use screening room.
But added staff: 2 projectionists, 1 ass't cutter,
[research workers. Not economical, w/o one
projectionist absent, they 3 couldn't do job. Also,
screening room needed for other work.
Cutting table redeveloped for viewing table, 2
prints at same time. Also a 4 plate + 2 plate table.
The basic equipment needed.
Next problem, making material available. Wanted to store material together. So together, so all material where needed is available. Then, the editorial (contents) side used all available documentation material located before editorial restoration began. Try to get, the original length of the title, God. Most complete print cut from all prints. To obtain an optimum print. Large screen area is preferable, but that might hold to compromise. Also need close working group, esp. projectionist who knows what is going on.

See editorial restoration card. This is used for each copy of the same material. First, technical post-condition put on. Editorial restoration often falls in Categories III-IV (see Karcher's explanations). A B C introduced, esp. for neg material. Only maybe viewed at cutting table. If all material for one copy is examined, then, discard all material of poor technical quality. If a good complete print is available, bad material repeated. If 2 pos, check both together. If pos+neg, neg viewed at 4 plate table. If pos+neg determined to be the same, check all end of neg. Technical editorial condition checked. The credit titles must be sheetropped—the primary source. Pass clutter fills in right side of frame for missing material. Research worker, ass't. cutter decide on material for the archive. If neg, often must declare pos. copy to use. Then cutter begins working to produce...
the complete print. Then, decision on whether or not to copy the material. Try to keep the neg. (orig.). To save money, if neg is in good condition, do not preserve. When cutting finished ass't. cutter gives recommendations to head of dept. preserve, etc. Valuable org. material restored; in any case, prints for distribution preferable. Archives keep asking abt. this - why not exchange other copies - but cutting out parts from them. Ball cond. m. ofouse to other archives. The next step, taking down the results, contents, etc.

# of titles covered / y.
Nonfiction dept. only done this year. A higher.
(Features, documentaries, less than features, less.)
120 prints/yr.
So far, 800 titles have been done.
A considerable reduction of stock.
Up to max. 7-9 tons / y. are discarded because of this process.
This process exists because there are many prints acquired from the Richly Film Archiv. The CS is important between copies.
For security reasons, a card for material restored material put in cur. w/ treel.
Necessary because printing behind editorial restoration. Often, printing behind 34 years. Want no mistakes.
Masterpieces + flat cheeks has in complete print, other archives are consulted for this material.
Nazi entertainment film restored - not important. Some unimportant material missing, may exist in other archives. However, Metropolis is another story.
If complete version before 1945
+ cut version after 1945

 Aim is to preserve 2 copies.
 Although general aim is to preserve
 original, not cut copy.

 For important material, 2 prints: archive print
 (no projection) + one projection print (mostly
 soft, v.)

 No printing master, then no screening.
 Editorially restored material fsn as printing
 master (-rarely used until pos + neg*
 made. Then nitrate masters discarded
 or kept for permanent storage if important.

 * make neg from pos. Then pos from neg.

 In foreign archive want a certain copy, must be
 editorially restored first. User requirements
 often decide the work (what is to be restored).

 Now only 2-3 copies/titles for feature films.
 (did away with 13 copies stored already by now).
 Mistake of this archive: everything accepted
 from distributors. Too much material

 Herr Lichtenstein - will answer questions of acquisition.

 Try to avoid accepting too many copies.
 Also TV distributors - like to have material
 stored. Present difficulty.

 In 3 yr. interim of restoring, printing, viewing only in this
 archive, if any viewing permitted by technical category.
 In archive, screening possibilities for nonlimited.

 Value of film tech. cond. determine work done
 to it.

 Note: Most complete copy aimed for, regardless of
 incomplete parts.
Censorship card state of film & detail. Use of them is a great help of sometimes.
Production stills or missing scenes from film also a problem.
Sometimes cannot answer these q's.
Only done if I differ from orig & quoted.

METROPOLIS Lang 1926
First film of editorial restoration.
4189 meters in that lat premiere. Yet 2500 meters in all the archived, at most?
Where is the rest? Possible that combining copies result in original.
Naively assumed orig copy, cut in info from other copies.
Letter to FIAT archive - copies of Metropolis? Source.
Unknown source for some archives.
No longer had to ask Moscow for their copies.
Also out takes from Gosfilmofond.

Also Staatliche copy.
Found it impossible to get 4189 meters. Some expected scenes (from contemporary info) lacking many copy.
Again checked "special" later newspapers, etc.
Looked for censorship cards.
2 yrs. after premiere, producer shortened by 942 meters. Not only sequences but sub-plot lines (a breed) cut.

Restored only first cut copies of Staatliche.
First inspection showed 3 distinct copies:
1) Germany showing, German insert + titles. Exacts no forge.
2) N. me, from Reel at Filmarchiv has Eng. titles
(paradount-UFA in Berlin), but German insert shots (newspapers, etc.). Staatliche copy.
3) Paramount edited copy for USA. No UFACollab.
Came to Europe afterwards. Prague has such a copy, Eng. titles + Eng. insert shots. Content
greatly changed. Am. editor said for broad public, symbols, metaphors wouldn't be understood by them. Also if montage reduced to simple montage, Paramount copy only to add to Stahlches copy.

Even in the 20s, distribution copies differed from the original check other films like this. Contacted Fritz Lang, scarce information. But sent photostat of Paramount changes.


One more problem: orig. negs from multiple takes.

Have found scenes that slightly differ because of this conversation between actors. One copy they are separate, other copy one slightly blocks the other. One copy calcdmbks-her in catatonic about half, man lower than woman, lightly kisses hand. Other copy, man, stands higher, kisses her mouth, 2nd kissing scene. Moscow outtakes copy only. Never put in original version, unknown. All other Moscow outtakes appear in original version... probably the kissing scene in an original version.


Although knew couldn't restore orig. film, nor calcdmbks shots. Existing material by 100 meters. London copy—supplement to Stahlches copy. Films of reel by reel, shot by shot. London version—add few additional frames, transferred to the orig. copy.
Other archive, loan copies - printed by Staatliche.
Some copies had omitted sequences.
So from other copies added many details bit by bit.
After copies had. Trees added in meters.
The result of this work.
2850 meter copy - close to the original.
Eng. titles shorter to orig. titles.
Also cut back content of titles.
Experience gained from this work; fully distrustful
of foreign distribution copies. Fortunately, had
Censorship cards in Germany. A useful base for
checking
Inspectors, more difficult. Changes, while shooting
Director, etc. info can't fully be trusted.
No censorship card for Membranes. Strange!
Asks abt. it abroad, also. Maybe due to the fact
that producer in Berlin, exchanges made, may
have destroyed the card.

Technical problems - no "viewing table.
Only one reel at a time possible to view.
Other reel not on screen, but on editing table.
Whenever a cut, made sure cut on 1/2 copy.
No cut, but add'l. frames - cut out + transferred.

4/89 meters - reports in newspapers, but originate
from censorship cards.
1. lost footage, 11 stories, 1000 meters.
METROPOLIS

Staatliches copy. Known missing parts:
- Detective to observe son
- Female - mistress of inventor
- Father robs woman from inventor
- Son here is son of the feminine
- woman
- told in flashback
- an idyl of her in inventor’s house.

this length, ca. 2850 meters.

Check out our archives for material.

Original German titles are lost.
Other German titles to be cut in soon.

Cl anti-Hitler, Caligari, King Kong, Feminism, Modern Times, Joan of
Arc, Montage, Men on scene, triangular relationships.

Copy will be timed (graded)
Metaphor:

The memory of a knotted thread, a web of tangles, a tangle of wires. The moment of the present is like a continuity of the past. It is a web of connections, a network of memories and experiences. The past is like a web of threads, each one connected to the others, forming a complex and intricate pattern. The present is like a thread in the web, a moment of continuity, a moment of connection.
Recommendation of IDA on cataloguing:

First situation of cataloguing in archives:

- In the majority of archives, underestimated.
- Only a few archives where cat. based on research.

Because of other work, the catalogue has been largely neglected.

Within the past few years, this has been changing because:

1. Greater amt. of acquisition, more info. needed. Limits to the memory of individual cataloguers.
2. Increased acquisitions = increased users.
3. More retrieval needed.
4. Electronic data processing.

Caused IDA to establish a cataloguing commission:

Goal to collect experiences of different archives & to make recommendations. Not the intention to establish rules. A cataloguing draft:

- Will talk abt. most important recommendations of manuals
- Define in a catalogue in an archive. Hold on for political, cultural, restoration, inner archive structure. A catalogue:
3. Show holdings of archives
4. Collect info. on films
5. Process the information on film holdings
6. Filmography - info. collected, processed on films... dependent on archive's holdings as opposed to cataloguing, which does the same only for the archive's holdings.

In any case, make no hasty conclusions on alteration, etc. of catalogue. Plan for the future.

This is essential. Must have the mistakes—too hard to correct later.

Ex: Staptovics collection - 10 yrs. ago, catalogue introduced. Info. is now incomplete. New system must be introduced.

Ex: Egypt archive - working on catalogue system for 4 yrs. Now found impractical, can't
be extended. Cataloguing of films documented on prod. #5 of Egyptian films but for foreign films acquired, no compatible system.

The necessity to think carefully about a new cataloguing system. Archive should write down principles to be applied. Has rarely been done in practice. Principles lost the moment the senior cataloguer left the archive. Not a problem for us. We have a set of rules.

Sources of information for the catalogue:
- Two types of sources:
  - Primarily: the film itself - filmographic technical data, dubbed versions, etc., versioning, etc., correct credits, but in any case the film is the primary source.
  - Documents from authorities (censorship, studios, distributors, records).
- Secondary: Documentation from advertisements on the film (newspapers, etc.). Temp. correct in its data. The catalogue card should mark secondary source.

Filmographies important for cataloguing.
- UNESCO film centre recommends establishing filmographies. UNESCO film centres.
- Film archive in England only country to put this in effect. Until film catalogue comprising the latest film productions. Archives need filmographies to catalogue at the time.
- I.A.F. film archive members have volunteered to elaborate filmographies.
Belgium the DDR. Important because archives—
production difficult because production of film—collection of data
often a long period.

Influence of the catalogue on the structure
of the film collection:

The catalogue guides structure organization
of film collection. Each kind of material needs
separate storage: N/P, b/w color videotapes
within different materials according to sizes.
Neg + pos of a title should be indubitably kept.
Unique copies + 4 copies of frequent distribution.
This is very complicated for the catalogue must
survey and control this. The problem of
numbering the films, correct storage system
the basis for proper retrieval. Number accessibly
for the different categories the archive sets up
are, etc.

Some archives catalogue the material from its
origin.
Not recommended that location = vault # ing
system

(e: catalogue: vault 3, section 4, shelf 5.
Bad system, films moved many times).

With a separate # ing system, not this problem.
Location gives spread additional information.
Recommended allocate one vault # of each
print of any title. Do not allocate one
number allocation to all material of the
same title.

Vilna Statulai 200 cans from a production
they then asked for the neg of the film. Had
to go through everything.

Rogers

Yellow, red colors on cans is an addl.
marking. Not sufficient to use just color
in the catalogue. That is). Electronic system
destroy this possibility.
- Numbering system + location +
codes for use of production etc.
but these numbering systems should not
be too complicated. Most of films have only
medium education.
No FIAF standard on colors system

Working process before catalogue-pre-cataloguing.
Acquisitions- new ones. Must be done with
great accuracy.
Steps:
1) registering, passing on inf. of new acq.
2) title, #reels, gauge, source, minimum inf.
3) short technical examination. Visible faults, wash &
   scan the film
4) registration of the new acquisition.
5) technical inspection, marking the film as part
   of the archive by filling in labs on film, numbering
   of film.

When accession time & cataloguing time: give provisional
number

Cataloguing:
original title, alphabetically filed, w/ cross-
reference card.
For serials: shorter under serial title, arrange
chapters chronologically, ex: March of Time.

neglect definite, indefinite articles,
(But of these in FIAF catalogue book).
Take into account library principles when
catalogue. But I maintain standard.

Collecting information on a film:
timely, extensive & pull detailed information.
In many cases, completeness is not necessary.
Must consider the demand on the archivist.
In practice, often a compromise between maximum & minimum information.
A complete list exists in IA manual.
Basic info: orig. title, country of origin, director, prod. co., yr. of prod., language, version (minimal).
But different recommendations for different types of film (newsreels, etc.) if want to be complete.
Complete info. for ntl. productions.

Indexing of filmographic data: information is of different values. Artistic, technical, organizational data. Most archives catalogue the artistic quality: director, country of prod., yr. of production.

The contents depend on the archive's capability. A task of the catalogue: Should be as objective as possible (not analysis). If it is a catalogue, it should be noted as such. Note reviewer's content description: goal is to be used in as many ways as possible. Advisory: Not practice. No contents is objective. The film itself not secondary materials. Should be used for the contents.

Don't write contents per books etc. I'd do note as such.

Three content methods:
1) Narrative method. Complete sentences, great detail for plot. Sometimes 2 or more large pages. Notation for every scene. Good for feature films. Can be applied to documentaries as well.
2) Descriptive method. Keywords describing contents. Mainly for doc. films.
3) Brief summary.

Method depends on possibilities, necessities, of an archive.
The indexing of the contents: notation
standard. Other tendencies: genres (see Feist book for genre list). The
Commission has failed to establish a definition of genre. Too much subjectivity.
Keywords, UDC method. Personalities under personality names.

Few archives adopt this system.
Most archives using keywords have their own system.
Only 4 archives use keyword system.

Post-cataloguing

Technical index card
+ Film movement card

3 cards indexed per Commission record:
1. Basic catalogue, filmographic info.
2. Technical catalogue. Record changes in tech condn on these cards

Practical methods for handling data in the catalogue:
The traditional index card. Cheap. Can be filed only one way (one system).
Can use more systems by applying colored markers, etc.

Most archives use this system, although can be used for only one heading.
An index for different headings impossible.
3 methods: duplicate entries, the index card. Time consuming. Voluminous!
Cumulative cards under one descriptive title (by director, actor, producers, etc).
Add folio as films acquired.

Index

Two kinds of punched cards:
- edge-notched cards. Surrounded by holes. Noted them to codes. Sorted mechanically or manually by needle put through them. Shake the stack. Desired cards fall out. Very short retrieval time.
- Director by year, production, etc. Combined info. Produced.
- Costs are low. Relatively simple. Low storage space. Recording of information very fast.
- Disadvantages: must code the information. Can't record much written information.
- Limited capacity for coded information. Hard to foresee quantity of info. needed.

Despite these restrictions, recommended. Perhaps more useful than old card system.

Also, peekaboo system. 7,000-14,000 pieces of information. Punched holes.
- One card/piece of information.
- File director card; Destruction of Berlin card; genre files. Punch number per film title.
- Organizing principle: the title of film gets a number. Only numbers can be used.
- Can combine these cards in many ways. Pull cards, overlap light shades through.
- No limitation on types of information—just make up new cards.
- Can accommodate only 7,000 titles. >7,000 new cards w/ different colors.

More cards, a bigger problem. Must ask twice. Quick & flexible. 90% faster to index than traditional systems.
Electronical methods.
- Column punched card:
  - Sorted mechanically at high speed.
  - Limited input capacity — only 14 places.
  - Can be read, also printed on top of card.

The only type of equipment an archive can afford.

Yet input coding, etc., expensive.

Abandoned by Staatliche. Couldn’t stand the experiments.

Use — expense disproportionate.

All electronic methods, one must be realistic.

Cost more money, more staff than traditional methods. Don’t help collecting information.

Archive has had extensive experience in this field. Demand more exact cataloguing systems.

Long retrieval time.

Too expensive for archives to own computers.

Time to prepare a program at least 3 yrs. to do.

Translate to machine language.

Many more problems.

Mr. Schutz can give more information.

Don’t be too optimistic. Practice makes problems.

Practical recommendations:

- Vaults separate from the catalogue itself.
- Put catalogue as close to documentation as possible.
- Catalogue for film movement — near vaults.
- Combining film material, documentation.


Also security, documentation info. open to public, catalogue no.

Size of index card: no. First standard. Optimistic that there will be a standard. Size of cards depends upon data.

Staatliche has changed size for maximum...
information.
More indexes in fireproof, metal cabinets.
Limited staff worked at the catalogue recommendation.
Recommended to microfilm catalogue for security reasons! (though I archive didn't do this).
A short survey. Many explanations missing.
Staatliches in many cases doesn't conform to TAR

Schuld
136 Now, practice. + & -. Not perfect.
Essential problems:
1) underestimated the # of catalogue staff needed.
2) moving of film not considered properly - needed much re-registering.
3) results of evaluation must be registered.
4) don't use memory of people.
5) dispersal of cat: division of catalogue feature.

The archive's second phase:
Registering, arranging, cataloguing, evaluating.
Register the accessions at one place in the archive. New acquisitions.

New acquisitions form - passed on to the catalogue weekly. 4 copies.
At Staatliches feature film dept (records all subheads), must keep all.
Send to documentary dept.

Problem of title - what to use? 
This card uses polish title.

A German title also.
Use original title. German DDR doesn't do this. Use distribution title.
Easier to work at German title.
Cross-reference to original title.
Sometimes only I know the title on copy for this
New acquisitions - films not inspected.
Caps not opened.
@Catalogue Director, @vaults, @feature film catalogue
(Non-fiction film)

Technical examination card:
even before storage.
Every card registered in a book.
(In case a card lost).
(current #, title, reels, source)

# Entered on upper left side of card, also.
Book checked weekly, for return of technical
card.
when technical card returns, has been
stored & inspected technically.

Vault storage system:
\#5 & letters:
A, A, neg, pr, dup, pos, gauge, fiction, non-fiction
N, P, L (rem)

S = substandard
V = 65, 10 (widescreen)

Color: b/w
C: nothing

N: Numerical storage system, written in red only.
Tech inspection card goes to vaults catalogue.
The cataloguing begins.
All cards filed by German distribution title.
MOMA—we should have standards for tech category 1, 2, 3, 4 on curatorial card.
We have tech card or not noted, for printing.
Alphabetical file for catalogue cards.
Tech, etc. cards—by numbers.
Cataloguing rules—published for use by this archives,
Follows library rules where possible.
Small staff members for catalogue so cards not lost & misfiled.

Large books
Vaults# Title color of vaults source signature

Register books separated by numbering systems
Then, evaluation.

Index by director
by country
filed alphabetically

Know 2ndary sources viewed immediately after accession.
Editorial restoration, viewing only done later.
Card # is evaluation credits.

Stattliche is preparing a list of defns. of jobs in credits for countries.
Then these forms are filed alphabetically.
I demand: provide max. info. on int'l. production.

Note: this archive has too many forms.

Genres – couldn’t agree within DVD.
Horror, detective, James Bond, film etc.
Espionage, adventure

Problem – the genre titles don’t tell enough

For eyes only - DVD film. Problem of genre classification
- DVD divided by subject, more than genre,
- new wave, slapstick, psychological films,
- define list of subject (adjectives) such as
- chauvinist films. Combined into other list.
- Adventure, mountain, animal, country, horror,
- gangster etc. films.

3 lists
- tendencies
- movements
- adjectives
- contents
- new wave
- chauvinist
- Western
- music

Genre – this exists as a definable term?
All the above is too specific for ‘genre’ term
to be applied to it.

The viewer applies the category.

Form #7: further content classification
zip for users.

Evaluation now made by a library system
method: keywords.

Thesaurus: one in DDR designed for the
council of ministers. One is being
prepared for the mass media, will be completed in 2 yrs. Electronic system needs thesaurus first. For keywords. Retrieval. Coordination of institutions that evaluate (analyze) Institutions aren't ready to cooperate.

Form 8. 9a) destruction of materials.
     From Sept. to vaults to be destroyed.
     Notation for corrections on catalogue cards as well as tech cards etc. after destruction.
     Records filed by vault numbers.
The importance of ntl. filmographies—particularly for int'l. exchange—has kept a lot of time. UNESCO has submitted a proposal to make national filmographies. Only England has a comprehensive ntl. filmography, great difficulty in collecting all the details.

1946 on—Staattliches das filmography. Prior to 1946 must still be worked out.

Bamberger—did German silent films & fiction.
Bourne—sound films to 1955.
Documentary film has been neglected.
Scarce pre-1945 sources.

This project begun in 1960, two tasks: look backwards, retrospectively, & make filmography to contemporary productions.

So far, DEFA 1946-1964 filmography is completed.

Fiction films:
DEFA 1946-1964
for fiction films, also.
DEFA 1955-1965

for cartoons, also.

Decided filmography should be as complete as possible, since, early, later, would be nearly impossible to find out facts.

Film production records—not that exact.
1946-1950, should incomplete dates be published?
Abbreviations for credits, facilitating working with a filmography.

Now, 1945-1964 popular science films.
1946-1964 DDK periodicals—just being completed.

Research divided by topic (Section, nonfilm), each studio divided into doing one of...
These tasks: Easy to collect.
New project: 1946-1984, all five non-fiction films
released in the DDR.
Always a problem: publish incomplete data.
Better this, than not doing anything.
Disappointment: no letters, giving lacking details. Few
people read the filmographies. Either advertise
for participants from these films or, archive
must do special research urk.

Now, contemporary productions & related literature.
Division in book, between DDR prod. + foreign films
released in the DDR. 2 reasons: (1) try to be complete
per ntl. filmographies per FSAF. (2) go by (P) not (R)
date because some films not ascertainable for (R)
yet foreign films registered by DDR release date.

Now, studios receive index cards.
Difficult to cover amateur films. "Institutions researched:
studios, state film units, German high school
for film + tv, studios for ntl. people's army
- problem of secrecy. Included only those films
distributed publicly.

Annotation: For contents + bibliography:
- covers fiction films. Questions of time,
5 yrs. later, (P), contents difficult to ascertain.
- should be annotations.

For pre-1945, Staatlichen relying on two publications
previously mentioned. (I though it important
to annotate, have contents), esp. to identify old
films.

The two cards supplied to the studios.
Theoretically expected the cards to work, but in
practice, only one studio uses them. Other
studios: often inaccurate facts. Problem
- card filled in when (P) began, instead of when
completed... no changes were recorded.
Does not imply cards are useless. Only means the studios must be dedicated.

Another problem would have desired more complete info on cards—names of characters, but not the parts they play. For example:

Need help from the casting office.

Studio title lists authorizes sources—must have signature of casting director, director, executive producer. They have a primary character. These sources esp. important for little released films.

On documentaries, speakers never referred to. Must fall back on studio records.

Need secondary sources for a maximum national filmography. Must track down most reliable person.

Sources for filmography:

A. Credits on film—primary source.

B. Secondary sources:
   production studio documents
   1) Titles list, signed by several people
   2) Production data
   3) Credits, cast parts, i.e., casting office. Related to actor's wage: important.

C. Advertising materials. In these cases, advisable to indicate the source. Because advertising material completed before (P) finished.


Give sources of information.

Indicate different stages: authenticity. Problem important to have a personality (incl. directors) index.

To confirm names, so don't get different
spellings for the name thinking they're different people.
Also, pseudonyms are a problem.
Also, women who marry.
These problems only solved by making a personalities index (for directors).
Indicators too voluminous. However, an card index can counterbalance these problems factors.
Good relations, head office is important.
Problem also is preview date first, public showing date. Must verify that the studio date is actually the first public showing date. To see if actually a public release date.
T.V. is a problem - which productions to register.
Staatsliches registers all the fiction films produced broad cast in D.R.
Tendency: film, T.V. archive combined.
Should get an idea of what T.V. involves.
In federal republic, T.V. plays last - helpful.
Should do documentary transmissions, also.
Do not sure who. Staatsliches not sure how to approach the problem volume of T.V. material + the collecting of information.
Now, Staatsliches beginning with electronic processing.
Given the idea to keep all records in compiling filmographies: too voluminous.
Users wouldn't want all this information.
Fiction film records are being stored electronically. Will do index films cartoons later. More info can be stored.
Must have much prepared data when begin feeding in info.
Material must be evaluated and a subject index must be worked out a thesaurus.

Check out credits in these annual filmographies. Mutually help each other.

15.

Collection: selection rules at Staatsliches Kino-Archiv. Collection & acquisition of films:
Two parts: present state of things, future state of things.

Rules for collection of films in Staatsliches archive:
First rule, collect films of ntl film production completely. All films made 1946 on in the territory of the DDR and the exception of the amateur films.
Also pre-1945 films collected.
Foreign films - selective collection.
Second rule: 1 print, 1 neg. (neg long neg add dupe). 1 dupe pos.

Another positive for film clubs:
For ntl. production, org. & dupe neg.

Principles are outdated. Too much material stored.

The present situation:
Source of material, distrib. co. one new pos. print.
A regulation of archive - a regulation.
After all the copies are printed, the archive gets printing masters.


Foreign prod's: source:
Reich Filmarchiv
Distrib. co.'s deposit one copy
Exchange with other archives.
of course, exceptions to these categories.
Don't collect films commissioned by
institutions, they preserve their own films.
Films for commercial distribution dubbed in West
Germany, get films after shown in cinemas.
Certain companies stipulate that when rights are
over, prints must be destroyed.
Editorial restoration - a big problem. Many versions
- to cut into one version.

Selection principle of foreign films:
According to historical, artistic value & importance.
Somewhat different in practice.
Commercial loss - no selection.

Only influence on selection is exchange w/ other
archives.
Many titles given to archives (foreign ones) of no value.

The future
Cannot keep multiple holdings of same film &
collect t.v. productions.
Also, can't accept everything.
Would be 110 tons of film. Impossible. Means
new vault every 5 yrs. Economically
infeasible.
Also, not necessary to collect such a large
extent of film. Each title must be evaluated.
(e.g. per contents)
Post print, printing master (negative, sometimes dye pos.)
enough to keep.
Used very little...
The film title is safe or the negative? Neg. quality
must be checked. Favorable storage conditions
needed.
Tv, reversal, videotapes - no printing masters -
get 2 copies, treat one as the master.
I. Trying to reduce storing the material in duplicate.
Not a sufficient reduction.
II. Selection according to the contents of
the film. In practice, certain principles of selection are given. Much untouched material needs objectified standards very complicated. What will be interesting or important in 10-20 years time?

Other items play a role in reducing film material: an archive for film & TV material, television co. has certain demands, interconnected in cataloguing, subject index problem. TV material can easily be retrieved by TV co. & should be made more easily retrievable, a justifiable demand. Meet demands only if the quantity of material is reduced.

Principles for selection - see microcode sheet. Film divided into 3 categories:

- limited storage time
- future decision to keep or rid of partial production collection
- complete production collection

In the true sense of the word, advertising films are not kept: only films showing factories, etc. There may be a device for viewing negs at a table.

Statistically is not a stock shot library. This is the responsibility of the TV people.
tomorrow: summing up 9:30 - Klaus
breakfast 8:30
lunch here
free time in afternoon - kunstplatz tv tower
see Mr. Belling about departure Wednesday.

Organization problems in the selection of film
A staff that selects per established principles. Must ensure all material is delivered to the archives. Also that all exchanges are effected.
Commission to be set up: representatives from t.v. ministry of culture, the archives
Commission will deal with selection of all film material from their context.
Studios will give recommendations about films, but the commission will make a final decision.
Experts from different fields will be included in the commission I will be consulted.

Permanent storage - considers artistic historic value (important in its time & a document of its time). Check (evaluate) the film from different points of view: sociological & historical considerations also. However, aesthetic historic points of view are primary. Film as an art is the primary consideration.

See mimeo III criteria of evaluation, p. 10
[Note: DDR does not collect works in org, release form]
Ex: Sound film in dubbed
Note: this is just a draft, with experience, Haacke will be able to rid of more material. If any question about preservation, the film will be preserved, however, a danger that something discarded can't be recovered.
Believes all archives will face these problems in the future. These regulations will be instituted soon in the state.
Screenings

The history of German Films

2 short films of Karl Valentin
Bavarian popular actor. Different from slapstick comedies.
Spoken word relied upon, not adaptable to film, yet he had a special way to play (act).
Karl Valentin's Wedding (ca. 1912) - poorish quality, flash titles
Mystery of a Barber Shop (1920)
2 proletarian films, pre-1933
The Bloody May 1929 (1929) Documentary. Workers shot at by the police, demonstrations, etc.
Brothers (1929) Fiction Film. Rediscovered in Gosfilmoфон.

The Bloody May
2 incomplete copies -> 1 final copy
Hand held camera

 Begins with demonstration, funeral of
workers, killed by police, someone saying, wake up
of slaves of work
c/ to vector etc.

Brothers
Based on real event, but a fiction feature.
The history of mankind is the history of class struggle.
Combines montage (Eisenstein: people's faces, sick faces
reaction) + mise en scene (German: extensive pans)
Typage: controlled camera placement. Mise en scene
Scenes alternate with montage scenes
e/ mise en scene - family in house
    montage - workers going to work
Eisenstein's sequence: strike. Pottmakir, St. Petersburg
A film about strikers for better wages.
The montage arrest scene is excellently executed,
feet of police, angel breaks father's hand, mackinazid
(martyr idea). Husband finally arrested. Workers go back to work. Strike fails. Power triumphs. Despite
All this, the workers will continue. By Feb 1929.
enthusiasm ignited in thousands of hearts.
Summing up

Summer school is over—such a short time.

Staatliche:
3½ million marks—expenditures but no interrelation
income
Cannot break down budget.

Most recent storage recommendations:
N → 4°C ± 2°C H 60%
b/w ace → +4°C to +12°C H 60%
color → -5°C H 30%
magnetic tapes → +4°C to +12°C H 50%
color N—store under color conditions.

Storage of:
Restoration of color material—no system yet.
Inhumane. 54 system. But it is not mechanical. There will be a text manual on this, now in German.
Draft version, ideas include electronic methods.
One of the biggest problems for the archives.

FIAP 79-80

500 meters/hr. —inspect nitrate.

Fno of bleaching for color films:
makes silver bromide to silver soluble so that in next step, fixing, only the color image is left.

Subject index—
Desire computer for indexing. A long-term program 2-3 yrs.
E.g. long-term for preparation.
No FIAP recommendations—first time this discussed internationally.
Optical index, lack tendency for index. Stopped this system because got a computer offer.
(1) General area: if move films a lot, storage #5 a pain to change.
(2) Computerize

Look for a constant system in any archive that doesn't change when one moves films. A Commission recommendation.

Film to other archive?

p. 39 Chloroform + methanol tests not recommended.

We have a draft in German on storage of videotapes. We have catalogued correctly:

Material deposit = videotape; type = television.

For stages of deterioration, we can use the 5 stages in the 2nd preservation book, p. 6.

It is feasible to separate material for storage per 2nd film cataloguing draft p. 14.

Basic storage should be:

- bw color
- bw color
- Storage T - PC, different from bw.

Negs one vault, pos another vault.

Loan prints should be separate.

p. 23 film cataloguing draft does mean 3 indexes:

by director, country of origin, year of production.

Staetliche 3.5 Million Marks - expenditures
1 Million Marks - income

but the one does not go directly back to the other.

Unmasked, answered p. 28 acclimatization form map.

Optically punched card system, VDL, for data. Film only.
Talk about the summer school:

General or specific topics?
Lectures vs. entertainment?
Methods to convey info., esp. theory & practice?
Outside archive lectures?
Enough printed material?
Language problem?

More specialized courses - Ray
Schlemmer: every 2 or 3 yrs. archive heads. General problems on special subjects
JG: problem understanding technical
but overall understanding was valuable.
Bring back problems to fellow workers
If more summer schools, shouldn't be too specializing.
Schlemmer: data - important to have gotten so much of it.
should be broad knowledge.

JG: practice essential
more time on cataloguing - expectation
David: Questions beyond printed materials. To use as ammunition
in his archive.

Finnish:
summer school absolutely necessary.
can't get this information by just visiting archives.
learned mistakes his archives was making

Sim: Tyker: good for new workers - this schools.
divide subject: tech. vs. cataloguing

Ray: meet people from other archives - invaluable, esp. being from
Australia.

Klause: all we have said is useful.
for 1st school - general was important
2nd school - adapt to more specific problems.
greetings from general secrecy of ISAF
could only have done so the 8th September, decided
not to come - we were in Dresden, he wanted to see
lecture.
Prof. Telgfort: summer school free, Australia.
continuation of summer school, final decision
not yet taken. Hope to continue. Must be regarded
as a success.
Staatliche didn't know who would come who we were. Expected, military schedule in that we wouldn't show up at 8411. Admired everyone's showing up, shows our interest, etc., young staff members meeting each other. Hope this won't be the last time. Will return in higher spirits than when we came.

Buoyant for the staff.
The archive will be open for us.

Int. cooperation important.

Photo book.
Volkmann material on preservation.