49¢

FIAF BERLIN 1973

Herald Square

University

Note Book

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Welcome

28.8.73

Course idea by former FIAF president.
Younger FIAF members coming up - pioneers giving way
1) knowledge, experience } purpose of course
2) know other members
No lectures* Ask questions at any time. Practical course
Comprehensive program. Not obliged to attend if other ideas.
Possible course changes. Make suggestions if want.
Today: tour of town, immediately - first change.

*not teacher-student, but person-person

Staatliches staff:
1) Director - Mr. Klaue
2) Ass't. director - summer school: arranged at - Mr. Beling
3) Features -
4) Technical director - Mr. Karnstädt
5)
6) Cataloguing
7) scientific collaborator - feature films
8) Documentaries dept.
+ other staff members (we'll meet next week.

Introduction of participants
Ray Edmundson - Nat. Library of Australia: archives.
Runs day to day operations.
Small staff. Duties not divided.
Mr. Peterson - Norwegian Film Institute.
Involved in everything
~~7 people~~
Mr. Mannerkorpi - Finnish film archive
preservation. Esp nitrate
Jon G. - E Ass't.
David Parker - LOC nitrate films: printed & preserved
Inga Adolfsson - Swedish film institute
preservation & restoration of
old Swedish films
Regina Kryko - Polish film archive. Filmography
3 months has been working
Zdeněk Matyáško - Prague. Reproduction of
photographs.

Sam Tyler – Dave Parker's asst. LOC. Nitrate.
– Rio film archive – just beginning.
Peter Schulz – West Berlin. Small staff. Does everything esp. collection & film loan. Underdeveloped cataloging.
Viera Kinkova – Prague.
Prepares copies to be printed (technical)
– Hungarian Scientific Film Inst.
Head of library dept.
Large staff.
Mrs Szatmary – Austrian film archive.
Technical equipment.
Also restoration
Mr & Mrs Schlemmer – Austrian film museum.
Small staff – 12.
Schlemmers ← Mr. cataloging & restoration preparation & stills
← Mrs technical side of the business. Det. nitrate.
– 15 members

Not a perfect archive (#). But does work. Mutual info. and help.

Development, structure, of archive.
Past history:
First archive to be founded in Germany. 1934 or 5 founded. 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 for collecting & preserving films. Wanted to propagandize by showing, analyzing films. Goebbels: "create a "German politik"."
Die Nibelungen – Lang – not projected – a Jew.
Reich film archive couldn't fulfill its task of collection & preservation, etc. & press was writing to the effect a problem now too.

Just before WW II, propaganda companies were founded. To film military events.
Reich filmarchiv to collect this material + analyze it.
Filmarchiv directly subjected to film propaganda ministry. Beforehand, the filmarchiv was part of the film business.
Up to 1945, the most important task of the archive. Other tasks, apart from propaganda, couldn't be developed the same way.
End of war, filmarchiv holdings distributed around the country, part of it destroyed by the war (fistfights, bombing raids).
The allies ~~sei~~ siezed a lot of the archive. The Soviets + the Western allies (incl. commercial distributors). LOC has part of these holdings (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 presened the paintings of Dresden, also.

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Subject I

1a. 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.
3 important development stages:
1) 1955-9: cultural [political] activities: film clubs, commercial projection. Compilation 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.
2) 1960-1967: Technical equipment of the archive. Construction of new vaults. 60-63 planning 63-67 construction
Meanwhile, provisional vaults. 200-300 km from Berlin. Extremely bad storage conditions (in an old vacant prison). No a/c.
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. 30 employees → 100 employees.
Movements of cans back & forth.
3) 1967 on. Comprehensively tried to solve all the archive problems: technical, cultural policies. A few corrections had to be made.
Publicity work: this 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. Often 3-5 copies of the same film that the archive took over. Superfluous to preserve more than one FOM, 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 superfluous copies. Thus, there are particular problems of this archive.
In this stage, also a more specialized staff. No longer "all around men." Everyone takes part in big film movements in the vaults.
In this third stage, preparation for the fourth stage, incorporation of television in the archive. A decision made yrs. ago - only one archive to preserve tv & film production material. TV incorporation is a big problem. All state owned (archive, production, tv). However, film & tv have independent ministries. Gives rise to jurisdictional problems. These problems are being solved in preparation for stage four.
Trying 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.
This has been the archives development including setbacks, problems, struggle to reach targets.
170 employees, now (including guards, kitchen staff).
Annual budget 3½ million marks = ca. $1½ million!

Tasks of the archive:
1) collection of film + film-related documents (documentation)
2) preservation of material
3) cataloguing - classification
4) evaluation - ? = contents, subject index, etc.
5) usage
the same tasks as big + small archives.
Summer school covers the 1st 4 tasks.
Now, 5) usage being discussed.
Two types of ~~users~~ users:
external users - the majority, loaned for every kind of study - film, tv, university, theatre
About 1000 films/yr.
Films used for projection, extracts on tv.
Archive supports 150-200 productions/yr.
~~Television~~ Mostly for compilation/documentaries on tv
internal users - archive cinema 2 or 3 x a week. Showings in Berlin + 3 more towns of the GDR. 900 projections/yr. Film clubs - 1,500 showings/yr. Retrospectives every year documentary Leipshitz - organized by the archive. Loans to foreign archives.

Structure + organization of the archive:
5 depts:
1) feature films incl. cataloguing dept (where editorial restorations are carried out). Documentation part of this dept. Also publicity (film clubs, archive cinema, non-commercial international relations). ↘ 4th task
2) non-fiction incl. cataloguing. Restoration dept.
~~3)~~ A/C dept ~~4)~~ Vaults dept.
territorial differences bet. the 2 depts: The only difference here: Lab, film examination, vaults
4) technical equipment incl. a/c, central repair shop (very necessary).
5) Economics dept. - an administration dept.

An addl. dept - state film documentation. 10 members. Film for documentation purposes. To document historical persons on film. 1 yr. old. Mainly portraits & interviews important for the historical tradition.

The archive is split up in 3 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 - Babelsburg - docs } this kept up 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 need to wait for the vaults being built.

? Better to keep documentaries, features, separate? (Austria). (i.e. More convenient if each type of film 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 Cat. rules - internal problem will be solved.

16 Facilities tour:
Film Shipping dock
2 acetate vaults 120,000 cansea.
2 nitrate vaults 40,000 cansea.
1 provisional vault - TV material
Repair shop, guard area
New vaults: to be built
New, 2 story printing lab: to be built.
Main building: copying, printing.

Nitrate vault:
ca. 10 cans/location
72 locations/cell
40 cells/vault = 40,000 cans
in a room
in area for adaptation to outside air.
prevention of water condensation, corrosion,
which wreck film.
8 hrs. for the process
No immediate retrieval.
+6°C = 42.8°F } same for acc. vaults
60% humidity
(LOC: acetate at room temp.)
(Dayton: 52-60°F)
Acetate-
3 fireproof sections each side.
5k tons in each section
Same a/c as N.
Also adaptation to air is the same as w/ 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 10 temporary vaults, expedition cards are
made (~ww/MM cards).
In copying, lab building:
2 neg printing machines
2 pos
scratch remover.
The condition of all new acquisitions are examined,
w/ cards w/ vault no., L, N or A.
Vaults are checked periodically.
Workers work in fireproof cubicles.
Each worker very specialized.
Dupe negs are projected - save time, $ instead
of making positives.

Subject III 29.8.73

3 preparation for storage

① Copying of material
Archive receives different kinds of material.
Difficult to copy the material on a new base.
Sometimes done the simplest way, but this does not mean the best way.
This archive - when gets N almost always a pos.
From combined pos, produce a pix + sound neg (dbl sys) but sometimes a dupe neg (combined). Simple, not expensive but the quality of the material suffers if go right to a dupe neg (combined)
Dupe (pix) neg 0.60 - 0.70 gamma value to be reached (Intensity values)
Dupe (sound) neg 2.8 - 3.0 " " " " "
Combined neg - sound quality suffers.
From dbl system neg, can produce a combined pos.
Producing sound neg - can improve the quality of the sound by recording. Variable density, area (optically - used more by magnetically only)
Cannot vary intensity by printing.

b/w N pix neg N sound neg

Pix dupe pos. Sound dupe pos. (printing master)

or Married print

Pix dupe neg Sound dupe neg or (printing master)

preferred. Then destroy dupe pos.

Married print

For color, only one difference: reversal: orig. neg. → dupe neg. Yet, reduction of quality.
Sound for color material produced in b/w.
For color masters, must make separation.
Need raw stock sensitized for all colors so they are printed in the correct b/w shade. Or else, the reds will be too dark, etc.

2 Chemical, physical properties of film material
effect on permanent storage

Composition of film:
b/w, color
emulsion
air, humidity
etc.
A very comprehensive subject

Support base: either N or A.
1881 - celluloid suggested as base
1900 - Paris exhibition - first acetate film.
More expensive than N, worse physical properties.
1955 on - acetate used for 35mm.
Raw material - N stock used
8+16mm - mostly acetate from the beginning because for amateurs. Was improved
Nitrate film = nitric acid + alcohol = nitrate
Flash temp. of 130°C. - new material: cellulose base
Old material - unstable, self-igniting
from first day of production, decomposition starts.
NO NO_2 released, attack the support & emulsion. Esp. silver attacked which is there for the composition of the image. & w/air, these gases form aggressive nitric acid. Disintegrates the nitrate material.
Disintegrating nitrate + H_2O swells base.
Gases give off heat. Endangers material in can. Pt. of self ignition.

Acetate - alcohol + acetic acid. Influences the materials physical properties also chemicals to make the material elastic (flexible)
Tri-acetate no longer satisfactory, esp. for b/w separation.
New bases must be produced w/no

shrinkage nor curling. i.e. Polyester supports. Cronar Grisuter
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:
b/w 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) + washed out

$$AgNO_3 + KBr \rightarrow AgBr + KNO_3$$

in many layers of the emulsion, on top of ea. other
6 gr Ag / m^2 per

neg	0.018 – 0.020	neg. emulsion } thicknesses
pos.	0.005 – 0.010	pos. emulsion } in meters.
tri-ace	0.13 – 0.14	tri-ace base

for b/w: thickness 0.14 – 0.16 mm

Add'l. sensitizers: b/w sentive only to blue, need addl. pensitizers.
otherwise, yellow green red layers would have incorrect densities. Correct b/w comes across w/sensitizers.

Cellulose ace. base repels water. The emulsion absorbs water. ∴ would tend to separate base (H_2O, that is),
∴ need an adhesive stratum (0.001 mm – 0.005 mm thickness). Adheres base to emulsion.

Anti-halation backing
Danger of light penetrating emulsion & base. Border area between film & air would make other areas sensitive to light. To avoid the

halo, a special base coating, placed between base & adhesive stratum. Colored gelatin, in most cases. In printing, the color is washed out so remains unnoticed in the print.

Color film:
Analogous to base of b/w,
subtractive method, Mr. Karndstadt will talk about.
3 coatings on the base.

sensitive to:	before developing
blue	yellow
green	purple
red	blue-green

Color films 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:
A reduction process.
The developer is oxidized.
Developer $Ag^+Br^- \rightarrow Ag^{\pm}0 + Br^-$ + oxidized developer.
Developer reduces silver to metallic silver
Bromide and oxidized developer as side products
Metallic silver gives the silver image.
25% of the silver used in this process.

Developer consists of water, developing substances. Sodium sulphate - Na_2SO_3 - to prevent the developing agent from reacting w/ the air. Keeps the developing substances stable. Alkilines is a fourth substance. ph - 10.0, but differs.
Borax, sodium carbonate K_2CO_3, Na_2CO_3
?

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

Need to rinse the material after the developer because of the alkiline in the developer.
The fixing bath. Made of sodium sulfate $Na_2S_2O_3$ and $K_2S_2O_5$ - name?
Sodium sulfate - to rid of the 75% silver that still exists. Without fixing, silver would stay + gray 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 tiosulfate, if remains, attacks the silver.
Evaporation of water - final step

Color film development - somewhat different. (b/w - image formed in silver)
color = oxidizing compounds + dye stuff + metallic silver.
after developing 1. dye stuff + metallic silver
2. 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 w/b w/ film), then rinsing.

factors harmful to permanent storage:
chemical biological factors.
Film material reacts heavily to humidity, temp. light. Mindy of all these components together make the stability.
Residual chemicals do damage to the film.
Film turns to brown. Image silver turns to sulfuric compounds & film can no longer be projected.
Difficult to print such a film.
Tolerance of tio-sulfate for commercial: 0.05mg/6.5cm²
archive: 0.01mg/6.5cm²
Prints produced in commercial labs have much greater level of sodium tio-sulfate than is acceptable for archive copies.*
However, this process is reversible.
Residual hypos for color film also a problem.
A brown fog can occur
*Commercial labs 0.25mg/6.5cm². Much to much.
Colors are also attacked.

Humidity
Micro-biological influences -
organisms everywhere. Need climatic conditions to prevent the growing of these organisms. But still, they are there, & no matter how the film is kept... organisms do not grow unless the humidity is there.
Fungus, 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 micro organisms.
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 40%.
High air humidity quickly destroys V material.
100% humidity 5 day self-ignition 75° Temp.
50% - 30-40 days
?

Temperature. -7°C lowest temp for micro-organisms to exist. 20° to 40°C micro-organisms grow best.
Mesophile <15°C will not grow 20°-40° grow best.
another group < -7°C will not grow
therefore, -7°C is best
w/ relative air humidity of 60%.

at test:
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

	density	18 da	% reduction	
yellow layer	1.03	0.81	75%	≈25%
	1.78	1.51	85%	15%
purple layer	0.65	0.55	80%	20%
	@1.37	1.18	86%	14%
blue-green layer	0.64	0.55	86%	14%
	1.21	1.15	95%	5%

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 blw, color.

Gases: nitrate film
Nitrous gases harm the silver and the images
~~0~~ 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 - sulpher.
esp. for color film.
(this E. Berlin vault in the country - good).

Light is dangerous for the colors of the color film.
protect film from u-V rays.
Yellow, purple, esp. attacked by light.
Does not mean no projection (even after
100 times)

35mm Pos → 35mm Dupe neg → 16mm Pos
16mm Pos → 16mm dupe neg → 35mm Pos

reduction the last step. a special machine for treating the sound.

② preservation of material prior to storage + the washing process.
Material rec'd by the archive has been treated by many labs.
Printing labs ↑ produce in great quantities must economize ∴ little water used. Leaves residual thio-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. Amt. of washing also depends upon the thickness of the material.
Preferable to refix the material in a sodium thio sulfate solution before rinsing
In water 3 min.
Short fixing 5 min.
Rinsing 25 min.
Drying

This washes out the remaining thio sulfate.
Water temp. ≈ 15°C. (18-20°C better).
a slower process if 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.
Old 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 (i.e. if film is coated with lacquer)

Old developing machines are sufficient for washing, see Babelsberg
The Staatliches Archive does not fix its own materials - unfortunate - but needs an acid-proof floor.
The new building will try to solve this problem
After washing, should be almost no thio-sulfate
a test for thio-sulfate content: must be done 48 hrs. after development.
$HgCl_2$ (Mercury chloride). Toxic. Follow special instructions. Need a pipette (don't suck the solution)
$HgCl_2 + Na_2S_2O_3$
mercury chloride + sodium thio-sulfate.
Turbidity measure tells amt. of thio-sulfate left. 0.003 mg / 6.5 cm^2 (per Crabtree an experimenter)
maximum allowable thio-sulfate content
These chemicals must be pure:
Water 750 ml 20°-50°C
Potassium Bromide 25g KBr
Mercury Chloride 25g $MgCl_2$
Water ~~to mark~~ : add
so total is 1000 ml solution.
if precipitation, then filter water again.
0.010g Sodium thiosulfate 5 parts H_2O

Endurance of solution is one week.

Another method to check sodium thio sulfate
CD index
hemistitic

For this method, half the film strip
1/2 for comparison
the other 2 is put in an acid $AgNO_3$ solution
silver nitrate

Residual thio-sulfate left in the base forms a compound w the silver ions
Then brought in a solution containing silver chloride. Then fixed, watered, dried. If thio-sulfate in this sample densotyin of with other sample should become apparent
Staatliches uses only the first method.

This second test recommended for all archive material.

Values for 2nd test cannot be given since Staatliches does not use it.
Can use densometer for measurements.

Sodium thio-sulphate = hypo.

Final rising is 18-22°C.

Nitrous Gas

Nitrate film disintigrates over time
Nitrous gases are formed, attacking the emulsion & base. Also, they attack tin cans 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! nor cans!
Material stored normal conditions.
By the end of '73 or beginning of '74 — we can acquire these bags. The bags last abt. 2 yrs. Use for all N film, because all N films deteriorate. 4 pfenning/bag c. 1½¢/bag.
Being patented by DDR. DDK company to mass produced the bags.
Plastic cans - not used in this country.
W/ these bags, don't need openings for nitrous gases to escape; since the bags react + "nullify" nitrate gases. For N 60% air humidity
Not necessary for acetate. Rust due to air + humidity on cans
* ~~X~~ Do not use plastic cans for any nitrate nor for pre-print acetate [per LOC]

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)
(1) ace. quality may change (a question of storage)
(2) next generation

~~Keep N material~~ — No need to store N valuable orig. negs. separately. only, neg. of same film stored in separate vaults.

New acquisitions; procedure: Positives
the technology of film examination:
the film examiners must follow these regulations because 90% of workers have no knowledge of films).
① all joins must be made to frameline.
② 1.5 meters of raw film beg. leader

③ actual leader: indicates reel, so enough ~~protec~~ protection.
No int'l. (international) 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 measuring at the first title, even if, say, MoMA title or blurb. Goes to end of pix/sound.
these rules must be handed down to the examiner not left to the examiner to decide.

⑤ repairing of mechanical damage: perfs (categories 1+2: repaired)
: damaged reels
also indicated on labels of cans + tech card files. also report to cataloguing dept:
no projection.
: shrinkage is measured after 75 meters from the beginning of the film.
Recheck the reel in the same place.
Titles are of different material, have different shrinkage.
If reel is < 75 m, measure at last meter.
all material, Nor A, is tested. Except new productions, Staatliches printing
New material (acquisitions) gets a temp. storage #

⑥ Mark cans A or N
~~blue~~ red labels
or Margin of ~~can~~ reel is marked (see sticker)

⑦ End leader + 1.5 m protection
ok leader bears vault no., but close to first image*.

⑧ 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 & end.
Repairs are made only for joins - Serf or heavy damage is not repaired. Only done before printing the material.
Because of sound, just try to patch.
If remove a frame, replace by blank frame.
For magnetic sound, stamp.
Tech card for storing, printing

Tech cards introduced at Staatliches 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 3 color layers also notated. For a future check to see if Ja change.
A few years before tech cards will be for all films - MOMA has already (But not in detail)
3 yrs. to design the card because of demands from cataloguer Decided it was a tech, not cataloguer, card. Ja column for remarks.
If changes cross out & put new findings in.
Tech card only for archive purposes.
Sent out films are not checked when returned
(see tech findings p. 10).

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

(p. 3 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 shrunk.
Before printing, test shrinkage beg., middle, end.
This archive. 3.5% - the greatest shrinkage
10 m reduction in reel length.
Later: how to copy shrunk material.
Shrinkage measure designed at this archive.
Staatliches shrinkage gauge. 1 rev. = 0.5 % shrinkage
measured by sprocket hole

A or N test
1) floating test
CCl_2CH_2 specific gravity bet A + N
(trichloroethalene)
N 1.5-1.533
CCl_2 etc. 1.477
A 1.25-1.29
N in CCl_2 etc will sink; acetate will float.

~~2)~~ punch ~~test~~ out
diameter ∅ 1.5-3.0 mm + put in solution.

2) U-V light test. } use only for great quantities are tested because
For Nitrate: green, yellow
Acetate: light blue, dark blue, violet
lamps are 15 min. warming up. Put cans to light (lid open).
For ca. 20 films/day do not use this method.

Subject IV 30.8.73

4/5/6 Optimum storage conditions for film material
Technical requirements for archive film storage / a/c installations
Construction of film buildings - in charge if - 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
-4°C to 4°C anomoly, fluctuations, no stability.
Nitrate film - need pressure operated vents. Must open at p of 12 kilopound. Window must be open a bit: a share of air that can't be controlled.
New design for window to open by its own weight.
1964 - N vaults. No concern for A
A vaults - pressure operated vents.
N - 1,000 kilo film / fireproof section here.
Fireproof section = Cell
First, N vaults
10 fold change per hr.
12% - exchange w outside air. Yet, 8% is already enough. Not a fixed share of incoming air.
Safety appliances against fire.
at +30°C the a/c would switch off, also fire alarm.
Sprinklers - at 72°C, they begin operating.
Their task: not to extinguish fire. To confine non-burned N gases + cool the location covers in the cell. Sprinklers reduce heat 40%
- Staatliches has carried out these tests.
Tests in non a c vaults in a cell. With 9 locations of N film. Made an electric fire to N film in locations. T measured. Room temp. 1,200° only for seconds. To test if surrounding compartments burned. No effect on surrounding areas.
Most that happens: door healed.
Expensive compartments: 1,200 marks for experiments.
~~Then money to build vaults.~~
Then money for building vaults.
Nitrate gases - to keep as low as possible - by means of outside air > 8% : not required.
Even in more industrial areas.

Change of air (- fold/hr) depends on size of a/c plant. Need specialized firms to work 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°/5°F) (b/w)

Water-piping system ends in each cell w/2 nozzles. Connected to city water system at p of 4 atmospheres. Nozzles locked by glass filled w/alcohol. Heating at 72°C, glass breaks, nozzle opens, so fine spraying. As water starts flowing, motor begins. Alarm precedes sprinklers. Must take accident, not fire considerations. — Nitrate
No sprinkler in A vaults - only alarms & pressure vents. W/I, H 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. (4 mid areas)

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

Staatliches chose a/c. so one central place for a/c heating. In each vault, smaller units to work on those specific variances. Not much staff: maintenance. One person can survey the whole plant. One central place recommended. Rather than four different ones. for repairs, 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

thicknesses, per firm.

~~Must be 50° to safe~~
Don't stick too tight to our requirements.
Otherwise, firm sticks tight to what they want.
Staatliches problem because of this.
ex/ 300 C for 3 weeks - slow increase of T - because of archive's demand about the roof. Insulation problem.

If can build underground, (4° diff)
Soil - ave T of 8°C to 10°C, nearly stable/season.
Permits small insulation.
Above ground - ave T of 40°C. Necessitates great insulation (34° diff).
If can't insulate, use greater refridgeration.
Depends on country. This vault is 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. (level) story ~~to~~ would be nice to further reduce heat, but not possible.
Spray H_2O ~~as~~ on roof also tried - but raises H.

Industrial area vaults:
consider location carefully.
(Staatliches - ok; don't need to treat air).
Air must be filtered because of pollution, dust, highway. Not possible to remove air pollution completely (can't do for people: not for films). Consider what is possible per economics.

Defrosting problem - operating the system for 4 hrs, only a slight frost ~~on~~ greatly reduces efficiency. Must defrost.
An unsolved problem at Staatliches -

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 bars, or 220 Volts, Ammonia, Freon (like refridgerators). (to +20°C)

Very expensive to operate. Better to operate 24 hrs w/ a shorter defrosting period. Would mean a greater efficiency. Being worked on
When designed, thought no frost formation. But in practice, a problem.
Humidifier built, but not put into action.
∴ Theory & practice differ
They say humidify, practice says dehumidify.
Austria - have humidifiers, but don't need them, also.

$> T \Rightarrow < H$ - scientific law

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

Shrubs - to keep out dust particles. Inexpensive filtering method. Add industrial filters, also. Only shrubs increase air humidity. Ex/ oak tree 50-100 years of age - 400 liters H_2O/24 hours (obviously evaporates into the air: doesn't enter the vaults).
Be informed - us - to know something when consult specialists.

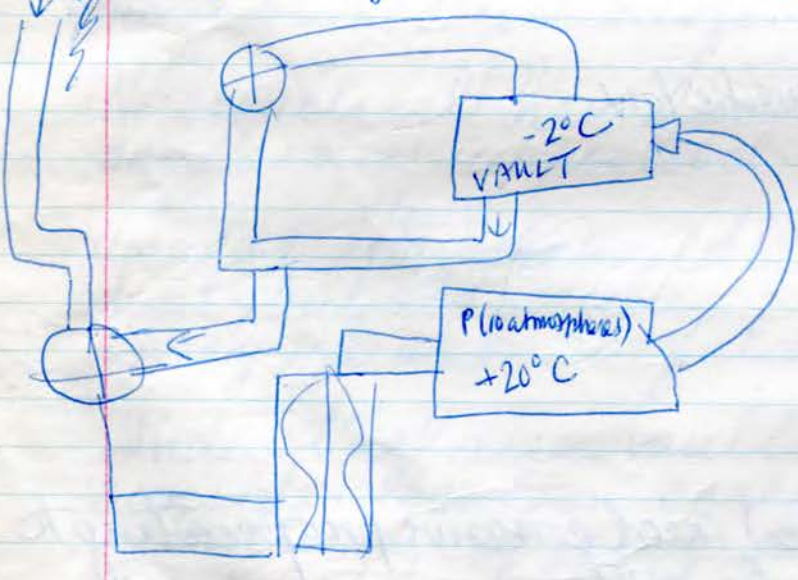
Problems of storage of p/w film
No differs N + A. - fire is only difference
danger

Color film
yesterday: it's structure
today. Storage

-5°C 30% humidity

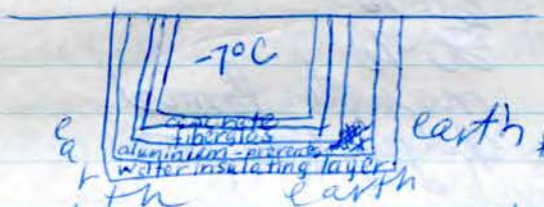
-7°C ± 2°C 25% ± 5% humidity is the regulation for color film. (presenation commission)
incl. Kodak, Agfa rep's., etc.
smaller tests → large film archives.

Dehumidification a problem.
A projected system - film acclimatization room



Many other systems applicable.
Normal a/c plants - more problems. On, off every 10 min. to control H_2O + defrosting, etc.

Construction requirements for color storage (based on Staatliche 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 door closed. Close # two door, open # one door. To normalize any changes between inside + outside.
Outside air entering - affects a/c; be careful.
Law in GDR: 50 min. - workers in vaults at -7°C. Must wear ~~elec~~ electrical heated suit 37°C. Otherwise, condensed water would form in the body.
Fa limit to warm clothing - too bulky.
They wear gloves.
Problem is change 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.
Nitrate film workers Ration 1/4 liter milk/day.
Need good a/c in rooms for N film cutters etc.
Change of air only 4x/hr. " "
22°C 60% humidity

Acclimatization of films: vaults - outside air
Do not remove the films immediately except when the films (↓ temp.) close to the outside. Condensed water will form immediately if variation is great
10 reels - long adaptation period.
Bring ~~vaults~~ films immediately into acclimation part of vault. Variable T to approach outside.

ex/

Vault 6°C	60%
outside 22°	50%
18.5°	no water forms
if 90%	adjust to 20°

T - H table to make these figures.
Rule of thumb: acclimation room → 2° Temp. lower than outside air, 90% (or less) air 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°C maximum: 8 hrs. needed.
A very slow process. Will never reach the dew point.
If done too quickly, there will be H_2O.
Attaches acclimatizes at night.
Water vapor omitted by the film absorbed by the air

W/T of -7°C things are more complicated.
36 hrs. acclimatization time (pure 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 vaults.
-2° C outside +7°C inside no acclimatization needed.

-7°C for summer + winter inside vaults. Even w/ -20°C outside No acclimatization needed.
-20° outside, +7°C inside vaults ~~acclimatization~~ needed.
General rule - if outside = inside, don't need acclimatization.
~~that~~ must always keep below the dew point

If, say, vault = 45°F
outside air = 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 saturated ~~tion~~ with water. Maximum air humidity. Excess of this, removed as vapor.
P (total pressure) PL (parts of dry air) PD (parts of vapor)

Cooling of saturated air, precipitation.
Dew point = 100% H, precipitation.
ex/ 100 m³ of air, 35°C, 75% H
cooled to 5°C, 90% H
11 kilo + 1 g water is released.

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

The principle of a/c + acclimatization. ↑
Must prevent reaching the dew point.
More problems for designing our acclimatization system. Books can be consulted.

~~storage + 6°~~ ~~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 bdg. In earth or above ground, this is the problem. A partial solution - electric heating element in the insulation w/ built in measuring devices in the earth. At +1°C earth heat is turned on. Needs great amt of energy.

Air conditioning plant - only generalities, not detail.

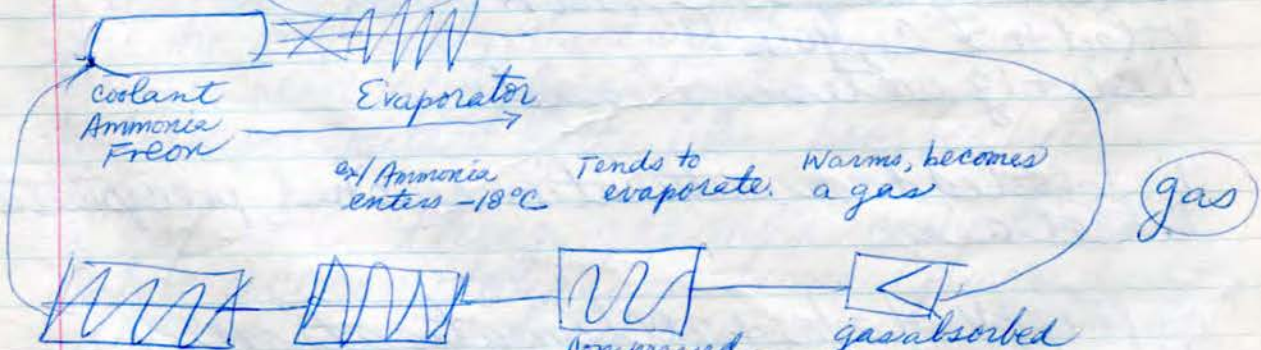
purpose - to maintain low temps.

To cool material must withdraw thermal energy to achieve T for ~~thermal~~ storage.

Need compressors.

All liquids tend to evaporate by adding thermal energy.

~~Coolant~~ liquid



cooling plant

Refridgerator principle, as well.

For defrosting the system is turned off. Compressed hot gas fed right back.

Know the operation - how it works.

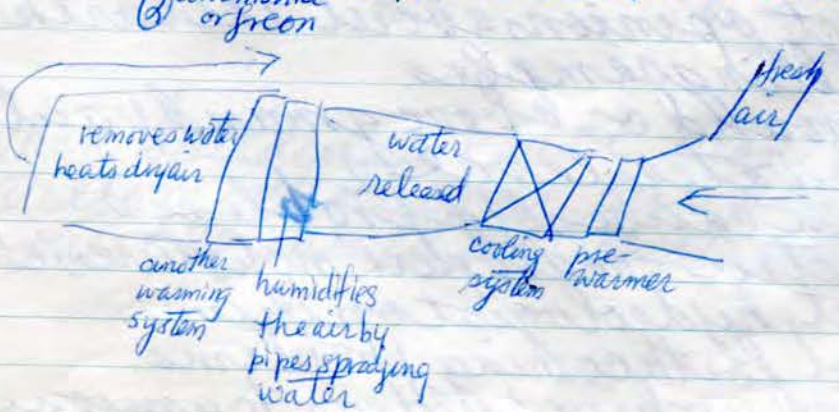
valves, pistons, etc.

Will see tomorrow.

Maintenance of cooling plants - requires much knowledge to be in charge of it. Maintenance can differ. Supplier ~~can~~ gives servicing instructions, inspection from time to time.
Yet if not watched carefully, there may be an explosion.
In Staatliches' first year vaults, projected T not reached. Began at 20°C, not 10°C. Increased efficiency by 100%. Inspectors came, frightened, nothing happened, but ~~only~~ 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. Circulates brine to 4 vaults and back again.



AM: 1st hr: a/c
2nd hr: a/c Friday

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

air conditioning plant - preparation, requirements
Begins w/ design of ~~the~~ vault, storage capacity (existing stock + annual acquisitions + years until next vaults will be built); how many shelves, what kind of shelves, strength of shelves against caving in from weight of shelves; transport system: drive in or walk; 100 m² storage area, one can store 10,000 cans or 25 tons; make best use of storage area; ladder for top cans. new vaults 2m high, 80cm width between shelves for staatliches; other info. up to builders; then gas, electricity, dirty water drainage, feeder lines, am't voltage, am't water, etc.
Then, consider amt. of material to move in & out of vaults. Determines transport system. Staff for a/c, transport system, etc.
Describe requirements to architects. Follow world standards for films + cooling ~~pr~~ regulations, etc.
Consider moveable shelves, safe vaults, automatic system or not.
Need expert opinions about the earth.
Then drilling samples.
Underground or above ground vaults.
Ground water level?
This can cause big problems.
Gas + electric - make sure no moisture, etc. around
Geologist, hydrologist opinion.
Bases for forthcoming problems.
Must give archive ideas to anyone designing bdg: ~~designers~~ builders not used to this kind of thing.

1 film storage bdg/generation average.
Often, have to take what they build
Choosing location for film vaults a problem:
good soil, inexpensive digging
relatively low ground water level
free from industrial area
⇒ building a sanitorium.
Wind direction, etc.
10 km away, tar factory. Only 20 da/yr. does wind blow from tar factory. Important to know.
i.e. check industry in area
Build in a forest if can because trees play a major role in preventing pollution
Get expert staff for operated technical facilities — about 50% experts. Others should have knowledge of ~~experts~~ mechanics, refridgeration, etc. — divided among workers.
Add up costs for different parts of bdg., firms, etc.
Cost / m^3 of cubic space, not total house cost / space.
Staatliches here costs ~~€~~ 10 million marks = $4 million
the whole works (in 64-67)
More now, then brickwork, now concrete
These premises: 3 years planning + 38 mo. bdg.
1961 - 1964
the most difficult time
convincing people you are right
13 mo. bdg.
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%
film work rooms, social 20.9%
preparations for bdg 6.9%
streets, H_2O, gas, elec, tel., repair shops 14%
projecting, supervision of bdg 4.7%

Shelf measure: from overhead view

60cm
6 cans of film: 35mm 1000' reels
98cm
(or 3 cans, 2000' reels)

60cm
12 cans of film 1000' 16mm reels
98cm

2.5ft × 3.7ft.

Nitrate vaults:
20mm asbestos bet. locations
11 film reels/location
88 locations/cell (11×4×2)
air space between
8'×15' room (ca.)
40 rooms (vault) 20 on ea. side.
1000 cans/room = 2.5 tons
locations divided within cells for extra security
certain problems can't calculate beforehand, as acid N decomposition.

Acclimatization Room - 8 hrs. - heat + cool.
200 reels (½ ton).
Night - films warmed to go out
Day - films cooled to come in.

In new vaults, whole room will be acclimatized, w/a set of moveable shelves, etc.

THE ZERNIK MURDER CASE dir.: Helmut Witzschke, Berlin 1947-8. a series of murders. A great search set up - ~~a series of~~ The city is divided into 4 sectors, investigation is difficult because of relationship bet. sectors. Motive: burglary. Hdquarters in 3 Western sectors. Can't prevent 2 more murders. Finally catch the murderer.
Based on real incidents.
P = 1972 DEFA feature film studio.
Alexander Lang

PAUL & PAULA
A pair of lovers. Known each other for a long time, both married couples; Paul - wants to separate. Not enough courage; Paula - has thrown out her lover. Elderly man - offers to marry her. Protection, etc. Paul & Paula meet in a bar & love. Paul - not enough courage to leave his ~~fall in~~ wife. Paula's kid dies in accident. Paula feels responsible - Paul ~~feel~~ realizes he loves Paula.

Subject VII 31.8.73

7 Possibilities of manual or machine restoration of film material
A catalogue of films going to clubs.
Films having category 1, checked once/8 times
Lower categories, checked more often.

① 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.
A letter w/film saying please send to, etc.
No problems of loss of films, only that they don't arrive at a club in time.
Catalogue published.
Will set up time w/ film rental head (Wednesday):
1) Get catalogue
2) # films distributed
3) Club to club distribution - of MOMA
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. prints & no 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.
Cut 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 cut in material, rest of
material printed for uniform copy.

Positive
↓
dupe neg
↓
Positive

commercial lab - gradation 2.1 - gamma } pos
archiv — 2.4 - 2.6 - gamma
archiv — 0.50 - 0.60 - gamma } neg
commercial lab - 0.60 - 0.75

if don't do this positive has too high a contrast,
w/ too few gray tones.

A printing master of low contrast.
If dupe neg made 6-8 min.,
gradation value = 0.70.
Can be balanced by changing developing
time.
So much for changing density.

Residual hypo:
these salts attack the silver image, producing silver
& sulphur compounds produce light yellow
to 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. (1st bath not sufficient.
Treat material 30-40 min.
For restoration - (making image clear, etc.).

1. 1st 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 & drying	10 tanks	

can repeat 2, 3, x times until satisfactory.

for pos + neg system both

Q - Repeat process, overdevelops certain scenes? A No

The oxidation bath:
$K_2Cr_2O_7$ (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 (II) chloride $SnCl_2$ 25 g
HCl 55 ml
made up to 1000 ml

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

Developer:
Metol (developing agent) 2.5 g

Sodium sulfate Na_2SO_3 50 g
Hydroshinone (developing agent) 10 g

Potassium carbonate 60g K_2CO_3
Potassium bromide 4g KBr
all made up to 1000 ml

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!

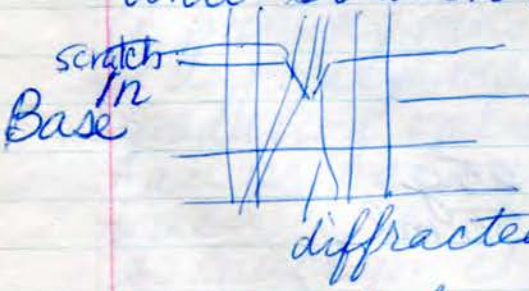
Mechanical damage to film:

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

Polishing: a mixture of methanol & acetone
$CH_3OH + CH_3CO \cdot CH_3$
1 : 7

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

Anti-scratch



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

refraction index of base = 1.48 - 1.52
Tetra Chloroethylene (Carbon tetrachloride $Cl_2C = CCl_2$): index refraction = 1.50

Rather expensive.

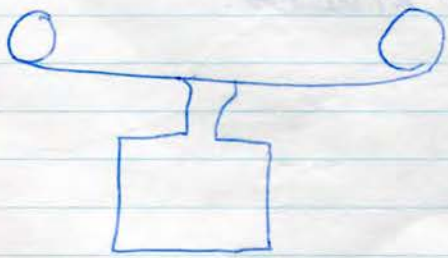
Matting not done nowadays: another method.
For polishing, use a glass roller for the method described above
Another method - only knows from literature.
Not widely used.

Emulsion abrasions:
use
a) $OHC_6H_4COO^{H}_{K}Na$
or
b) ammonia solution 0.3% solution / 100ml

Since Staatliches has no room for machine,
use developing machines:
developer w/ alkiline. Bypass fixer. then final rinsing.

* Check use of base / emulsion Tues. afternoon / Wed AM

Na_2CO_3 } alkalai softens the emulsion.
K_2CO_3 }



rollers. Shines the emulsion.

Restoration by hand:
Bleaching, oxidation 20 min.
Rinsing 1 min.
stannous(III)chloride solution 10 min
Rinse 1 min.
Developer 2-3 min.
~~Rinse~~
~~Fixing~~
Final rinse
Drying

One machine does:
anti-scratch
- shrunken material
- variable speed (3, 6, 9, 12 fps slower ~~or~~ or faster) for stretch printing (repeating frames: Von Stroheim). Ex 16 → 24 fps.
- does sound
- printing.
(2 special machines).
- Can adjust non standard perfs: [will work on Edisons, maybe not Bios-] diff. size perfs

more complex: more perfs, not just different size.

- Disadvantage of machine: Must change anti-scratch liquid often.

Staatliches set the requirements.
designed in collaboration w/ DEFA.
$35,000/machine.

Subject VIII (Printing Process) 3.9.73

Announcements
Frau Sidermann - historian
Herr Lies - archivist
will work in Babelsburg 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.
1) The emulsion tanned with formalone HCHO. However, reduces the film's flexibility.
2) or else Cover emulsion w/a soft coating of wax paraffin gelatin or other organic compounds. Put on sprocket holes sometimes over the whole image.
Test: 5% paraffin in CCl_4 (carbon tetrachloride) solution vs. untreated film material.
Treated film had 850% increase in projection (850 more projections)
1% solution - 310% increase (310 more projections)
Disadvantage: dust sticks to wax. Film collects dirt. Sound quality suffers.
3) or else Emulsion & base covered with resin or a cellulose substance. Danger: more absorption of water, coating comes off, film gets curled
4) or else Treat emulsion + base w/ silicone oil. Esp. used for 16 mm copies. Yet, 16mm mit magnetic sound track - the base does not stick to the film.
5) Coat in big commercial labs before drying.
More procedures, but saw film producers don't give formula - = 1 of 4 types above.
Staatliches
~~They~~ plans to coat their circulating films w/ 4 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

ultrasonic device.
use before anti-scratch device,
films w/ oil, dirt, marks. | for positive prints

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

Printing process - thy + practice

Advantages for an archive's own printing lab
# of people on printing in Staatliches
4 groups w/ negative going through steps.
Will get samples for us.
Will end in projection room.
Then correction for light/gradings.
Should do processes ourselves.
"Tour" at 9:30. 2 groups at 9:30, 2 at 10:00.
Continue w/ 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 not to scratches, too 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.
Curling, shrinkage, different photographic properties, etc.

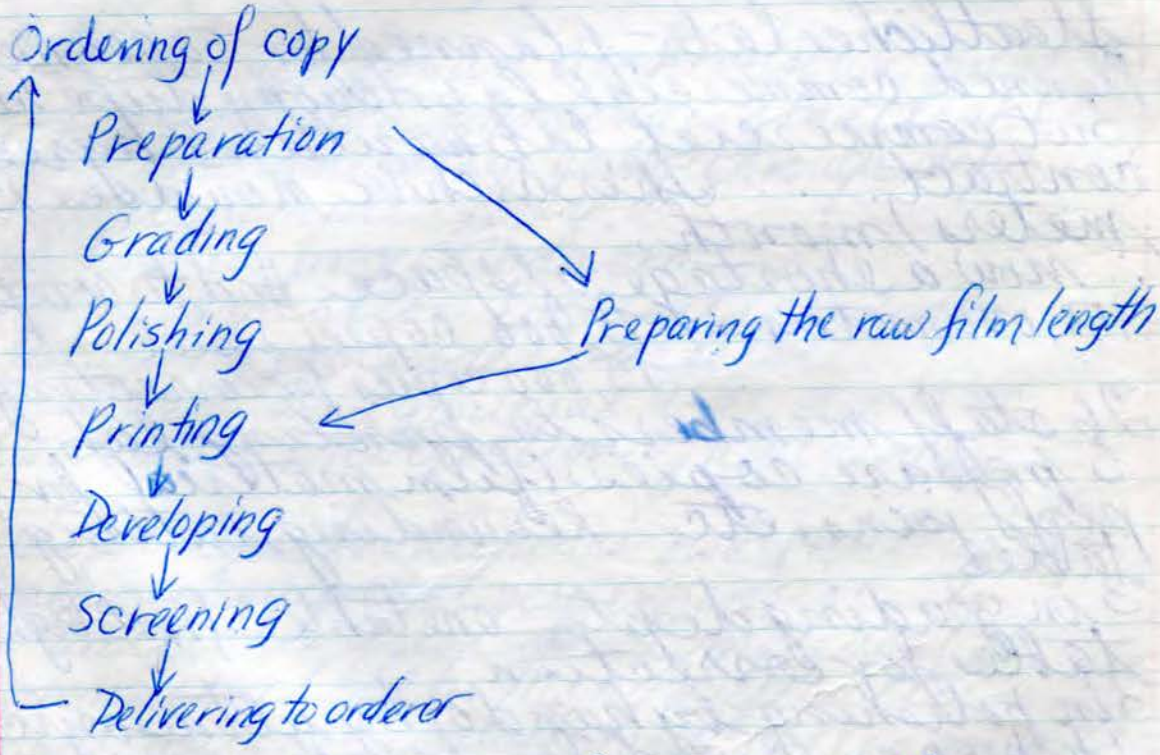
dupe
Certain tinted materials * labs don't have special machines for old archive material.

SUNRISE - ~~residual hypo~~ deteriorating - residual hypo the reason. Remember: commercial labs have greater residual hypo.

after yrs. of struggle, the lab set up a special dept. for archive film only; grading, prepping etc. Yet other processes done in main part of lab.
Refused to print shrinkage > 1.5%.
Contract with the lab.
Hungary - print in own archive
- develop in commercial lab.

Staatliches lab - planned for 50,000 meters/month. Planned commercial lab to copy 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
75,000 copies for correcting
26 staff members in printing lab.
5 prepare copies (film material for printing) perfs, joins, etc. Rewinding, cutting, 2+4 plate tables.
3 in grading dept.: one table: first light. 2 table for correction
3 in polishing by hand or by ultrasonic cleaning
1 to prepare raw film length according to l. of printing master
2 in printing. each use 2 machines. 2 special printers, 2 step printers (normal), a slow step printer in addition (smaller law lift). Print material of 2% shrinkage.
3 in developing. 4 machines. 2 for pos. print 2 for dupe neg. + dupe pos 2½ preprint

600-700 meters - positive material
400-500 meters - dupe material
4 in checking copies. 2 projectionists.
2 who do the checking. Equipment for parallel viewing
1 in lab - steadiness of materials Residual hypo.
sets the bath.
1 on density. Surveys the development process.
Tests the raw material before printing for photographic properties.
1 in transport of materials
3 in office, dispatching work.
Staff likes
1 Lab prints only b/w, 35mm material.



Good if all steps housed in the same bldg.
~~Ordering~~ of prints comes from feature ~~or~~ or short film section.
If corrections must be made, goes back to grading
If perfs, etc. problem, 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 abt. short ends?
300 meters/reel of raw film
If 1 of film ≒ 200 meters, splice 100 meters a/another reel.
Can't avoid splice. ∴ The join is important!
1 join/reel allowed from raw film producer.
Join made before printing.

To meet demands of ~~copying~~ ordering copies dept., labs should produce 300,000 meters of film (2/3 the capacity for printing). Lab gives feature non-feature film depts. 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 w/ other jobs, but mostly since each job is specialized, the jobs are not considered to be interchanged. Several all-around colleagues.
A few people go to a special school (part of commercial lab) for 1 yr. course to learn the trade.
Small turnover. People only leave w/ old age or moving.

Preparation:
clear leader } beg & end for protection
raw stock }
film
also perfs, splices, etc.
also, l of film measured.

Grading:
light intensity – density of image

Polishing:
freon

Printing:
24 fps: neg → pos.

Developing:
Buffer region
Developer
Water
Hypo $Na_2S_2O_3$
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: Residual hypo.

HOLIDAY ON THE ISLAND
First GDR compilation film.
First film using only documentary footage.
A period of tracking down war criminals.

Documentary on Helene Weigel - the stage.
Great problem to compile - gradings, etc.

THE THIRD [HUSBAND] - 1971
Mother dies - hospital church nurse - evening course for workers - in love w/ lecturer - blind man - 3rd man in computer plant.
Very popular in Germany.
Recommend to Adrienne for screening.

DEFA

4.9.73

1 central lab in DDR for making prints.
40,000,000 meters/yr. 35mm production, both b/w, color
Increase in color production over the past few years.
Making release prints, but also negs, intermediate material
Equipped for fast processing & delivery.
16mm prints are also made.
8mm amateur, schools, also.
2 70mm films, but very rare.

Technical equipment of lab:
main bdg, accessory bldgs., heating plant, water supply plant, water preparation plant, power, stabilizing plants, a/c + 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 → optical recordings.
750 colleagues at this lab. This lab trains its own workers through courses for engineer, technician jobs.

Preparation - pers, etc.

2 polishing machines * ~~16mm 35mm~~ ~~for b+w, other for emulsion~~ only
ultrasonic cleaning machine adjustable 10, 35, etc. mm

* ethyl acetate
acetone
dioxan
butanol
acetic acid
(35mm)
base only

* pure acetone
ethyl ether
methanol
(16mm)
base only

Grading ~ Staatliches
Differing densities balanced (from exposed film).
Then make correction copy
Then screening
Then re-grading, if still differences
ave. of one correction copy / blw film.

another method, not used here, take 2 frames from each scene + test light on it x ~~the~~ 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:

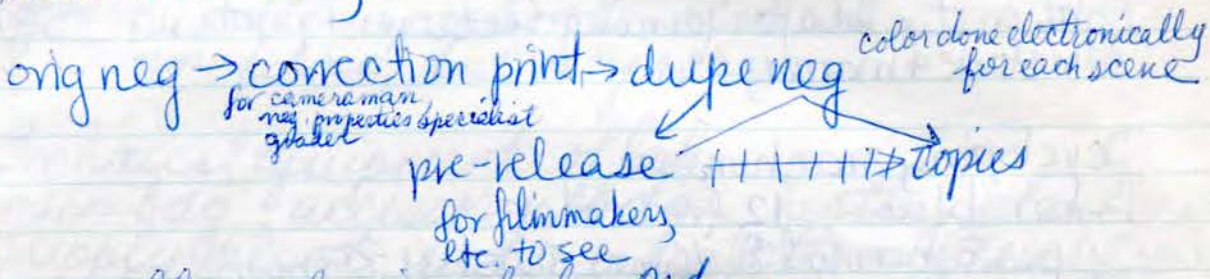
wetting bath	wetting bath
Developer	Developer
Rinsing	Rinsing
Fixing	Fixing
Final Rinsing	Rinsing
	Bleaching →
for blw	Rinsing ← redevelopment of sound
	Final Fixing
1700 meters/hr.	Final rinsing w/ stabilizer

Developing: raw stock for color
PC 7-color
USSR MS 3-blw
Pupe neg from orig neg AC-6 830? meters/hr.
A room for adjusting the baths.
Printing machines:
2 Bell + Howell color additive machines
2 subtractive color or blw machines
+ more blw machines ~ Staatliches

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



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~~ which have been adjusted already.

Subtractive method -
must be very precise

DEFA - workers
Majority of staff has a basic knowledge + training abt. whole lab
then, specialized courses for specific jobs
- ex/ orig. neg. development, sensitometry, Bell & Howell
A problem / turnover (a large ~~woman~~ female staff).
Each dept. has skilled leaders to train workers

Boring jobs/make possibility for people to sign up & take more skilled courses
Planning for workers prescribed by state.
Many females because work rather light/clean but exhausting. Don't make much $, but supplements the family budget.
Boys prefer mod. technical profession.
Women in management. Mostly men. Also a generation gap problem.
Men in physical jobs (workshops, etc.)

Increase by 100% in color film production demands new equipment.

Babelsberg
100 tons of film
a/c plant. In country need special electrical power
formerly Reich film archive; 5 bunkers, bags for guards.
Modest in c to Wilhelmshagen.
For documentary films.
Screening rooms, catalogue, editorial restoration.
5 bunkers: N film. Bad storage conditions. Wood racks.
Overflow stored in hall. In summer, 12°T, 60% H — over the limit! against FIAF rules but too much nitrate.
a/c constructed ~~over~~ under old FIAF recommendations.
T 18° C; 60-70% H. now accommodated to new FIAF regs (see above), summer 15° C max; 10°C. ave; H 60-70%.
Fully automated. Vaults insulated.
Wilhelmshagen. Central a/c → 5 vaults.
Air circulated 1/4 hrs renewed.
a/c 10 yrs. old.

Editorial restoration — clips for splices.
Washing — just H20. No chemicals. To remove dirt, etc. to check which is best material for restoration.
Inefficient — 200 meters/hr. 60% of material washed
All developing at Wilhelmshagen.
Papered sections, scratch copies, etc. for studios to etc

5.9.73

QS
Babelsberg - ca. 40 people
ca. 15 technical
ca. 8 ~~users~~ catalogue
- 4 for use
- 4 for cataloguing
others: guards, vault workers, 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 doc. & short film festival organization
(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 (a) publicity work cut back for restoration & evaluation of archive holdings. Were 4 staff members working on this. Now there ~~are~~ is only one.
(b) Cinema had to be closed down for technical reasons. Had to show in commercial cinemas. Now, film art cinemas - cooperation w/ them.
Documentation dept is where cinema used to be.
4/4 ly programs (we have been given)
of ~~the~~ archive cinema (Plus programme, ~~cat~~ retrospective booklets)
Leipzig (see p3)

Try to supplement art film cinema showings.
Staatliches programs give more att'n to film history: programs of directors, actors, ~~epho~~ epochs, etc. Also national programs.
Art cinema - modern films
Staatliches - older films.
Wi exchange of other archives, gets films ~~non~~ commercial or art cinema can't get.
ex/ did Cuban films; will do Soviet / Baltic films.
Berlin programs shown in Leipzig (the best audience & film club), + 2 other cities (Dresden, Rostock).

(2250 titles in circ. catalogue for film clubs.
10 films added / year because of technical reasons (these are special extra copies). Can't afford more than 10 copies / yr w/ the add'l 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 manager must introduce the film. Films are not meant for nostalgia buffs.
Contemporary films must also be studied.
∴ Contemporary films are suggested for the clubs to get & to 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. 100 clubs have existed for 10 yrs.
Archive 30M feature film.
commercial cinema - give lower prices } charges to film clubs.
most film clubs - monthly fee. - 1 performance free, 1 other performance pay / month
Universities have more performances / month. But clubs start + ~~sta~~ stop. Turnover of students.
each club 15 to hundred + members
Make back 1/3 on rentals of cost to make films, etc.

DDR has film clubs in the universities but little, if any, courses on 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 w/ different subjects each year: books on Flaherty, Cavalcanti, soviet documentary, etc. This year: ~~DDR~~ 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 w/ proletarian film, can't draw a sharp line bet. documentary & fiction film. Put together & to show how the films used for struggle back then. Last year, Latin American films. A very successful festival. Some of these Leipzig films are shown in the archive cinema or among the film clubs.

Austria - shows films 1x a day, 5x a week. Usually a director's festival. Rarely actors or genres. Rarely foreign country retrospective (shipping, etc.) too expensive. Also problem of licenses, rights.

MOMA - explained our extensive screenings: DDR, WB, Musicals, Russian, Raoul Walsh, hist. of film, films for children, films from the archive.

The problem of getting foreign films from member archives, discussed - problems of rights, organization and shipping. We should try for 3-4 programs, the intl. archive securing the rights, put together & interchange packages.

SUMBOSIA
SOUL

1427 m

GEHEIMNIS-

Film Program Notes

can't keep up with them

Australia has ~~program notes~~ trailers for cin. ~~catalogue~~ dialogue but not up to date

MOMA - we have only ~~the catalogue~~ - not enough info. abt. film itself.

West Berlin - reprints program notes from film history writing. DDR thinks this is not enough

DR-USA ~ film clubs universities) - assume knowledge of the hist. on part of teacher. Archive showings - difficult to educate the audience

Must explain to 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, OLYMPIA released commercially. Very successful, recognized as artistically important.

Discussion of fascist films.

How is the film represented is important

Ex/ high school - discussed, analyzed afterwards

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

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

Documentation Dept.

Mr. Weiner

9 staff - 3 scientific training in archival science
6 hands in photolab

anything that is on film is collected

up to 1945 after 1945, producers must hand over info. script material, film stills 800 orig. neg. 32x24 production feature film - production stills, film papers

Illustrated Film Courier - complete set; extra copies traded for material in other archives, advertising

material, posters, reviews, clipping files, before 1945, censorship, index cards: orig. & dialogue info. on foreign films dubbed in the DDR, records of famous actors (phonographs), tape recordings of premieres, etc., costume, set designs, 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 photo negs.
Still must rely on memory.
Publishing houses, writers, amateurs want info. Takes time. Quality not speed counts.
No library in documentation dept. But when dept. moves to Wilhelmshagen will have library there.
Must rid of excess material.
good relations w/ W. Berlin, Prague.
DDR getting int'l. recognition now, so very busy.
No int'l agreement on how to store posters.
2 different kinds of canvas. Must be the same tissue. Leave a strip of canvas for tacks.

E

Subject II 6·9·73

Editorial Restoration

Another bdg. at Wilhelmshagen - editorial restoration.
Questions as we think of them.

Technical restoration ⇒ technical + catalogue
Today: transition of technical part of work to ~~atchr~~ catalogue
Editorial restoration - Staatliches 2nd Stage - 1967,
1st stage - no knowledge of condition of the material.
Some titles 3-13 positive, nitrate copies.
At first, determined most complete prints by length.
Yet, found some prints had same l., but different parts missing. ∴ Difficult to cf film. The result is editorial restoration.
- Take this archive's material cf all other ~~ar~~ archives.
- Metropolis
different way to inspect films - Staatliches cf pos + neg.
in sum, much material on same film to sort out.
Basic requirement for editorial restoration: exact knowledge of all material on the 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 the cataloguing dept.
also a group in non fiction: 1 cutter, 1 examiner, 1 archivist: the basic staff for editorial restoration.
At first thought to use screening room.
But added staff: 2 projectionists, 1 ass't. cutter, 1 research worker. Not economical, ex if one projectionist absent, other 3 couldn't do job. Also, screening room needed for other work
Cutting table redeveloped for viewing table w/ 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. Is together, so all material on one film is available.
Then, the editorial (contents) side. Used all available documentation material located before editorial restoration begun.
Try to get the original length of the title.
Goal: most complete print cut from all prints to obtain an optimum print.
Large screen area is preferable, but studio spaces had 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 ~~pos/neg~~ condition put in.
Editorial restoration often falls in categories III & IV (see Karnstadt's explanations).
A B C introduced, esp. for neg. material.
* only may be ~~used~~ viewed at cutting table.
If all material for one ~~copy~~ title is examined, then, discard all material of poor technical quality.
7 (this is if this material is in a better copy)
If a good complete print is available, bad material rejected.
If 2 pos, check both together
If pos + neg, neg viewed at 4 plate table.
If pos + neg determined to be the same, check sound of neg.
Technical editorial cond'n. checked.
The credit titles must be shot copied - the primary source.
Ass't cutter fills in right sides of frame for missing material.
Research worker, ass't. cutter decide on material for the archive.
w/ negs, 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 orig. material is stored in any case.
# of prints for distribution or exchange is low.
Archives keep asking abt. this - why not exchange other copies - but cutting out parts from them, + bad cond'n., of no use to other archives.
The next step, taking down the results, contents, etc.

# of titles covered / yr.
Nonfiction dept - only done this year. A higher # (documentaries less long than features).
10 reels / print, 120 titles / yr.
so far 800 titles have been done.
A considerable reduction of N stock -
16 tons max, 7-9 tons / yr. abv. discarded because of this process.

This process exists because there are many prints acquired from the Reichsfilmarchiv.
The c/s is important & between copies.

For security reasons a card for material restored material put in can w/ 1st reel.
necessary because printing behind editorial restoration.
Often, printing behind 3 years. ∴ want no mistakes.

If Masterpieces & Staatliches) has incomplete print, other archives ~~has~~ are consulted for their material.
Nazi entertainment films restored - not important if 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
for T.V.).
If no printing master, then no screening.
Editorially restored material fns as printing
masters — ∴ rarely used until pos & neg*
made. Then nitrate master discarded,
or kept for permanent storage if important.
* make neg from pos. Then pos. from neg.
the essential material ~~is to be~~ * proj. print, not FGM.
If a foreign archive wants a certain copy, must be
editorially restored first. ∴ User requirements
often decide this work (what is to be restored).

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

Herr Lichtenstein - will answer qs of acquisition.
Now try to avoid accepting so many copies.
Also TV distributors like to have material
stored. presents 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 Nare limited.

Value of film, tech cond'n determines work done
to it.

Note: Most complete copy aimed for, regardless of
incomplete parts.

censorship cards stated of films & details :. Use of them is a great help of ten times
Production Stills, or missing scenes from films also is a problem.
Sometimes cannot answer these qs.
Only done if I differs from orig I. quoted.

METROPOLIS Lang 1926
First film of editorial restoration.
4189 meters - info that I at premiere. Yet 2500 meters in all the archives at most.
:. Where is the rest? Possible that combining copies result in original I.
Naively assumed orig. copy, cut in info. from other copies.
letters to FIAF archives - copies of METROPOLIS? Source.
Unknown source for some archives.
No longer had to ask Moscow for their copies.
get ?: London, Prague, NY, Haifa, Weisbaden, W. Berlin.
Also outtakes from Gosfilmofond.
Also Staatliches copy
Found it impossible to get 4189 meters. Some expected scenes (from contemporary info.) lacking in any copy.
:. again checked "splices (newspapers, etc.)
Looked for censorship cards.
2 yr. after premiere producer shortened by ca 950 meters. Not only sequences but subplot lines (= BREED) cut.
:. Restored only first cut copy of Staatliches.
First inspection showed 3 distrib. copies: (1) Germany showing, German inserts + titles. Exists no longer.
(2) N neg. from Reichsfilmarchiv has Eng titles (Paramount - UFA in Berlin), but German insert shots (newspapers, etc.). Staatliches copy
(3) Paramount edited copy for USA. No UFA collab. Came to Europe afterwards. Prague has such a copy. Eng titles + Eng. insert shots. Contents

greatly changed. Am. editor said for broad public: symbols, metaphors wouldn't be understood by them. Also 11 montage reduced to simple montage.
Paramount copy only to add to Staatliches copy (see 2)
Even in the 20s, distribution copies differed from the original
check other films like this? —
Contacted Fritz Lang. Scarce information.
But sent photostats of Paramount changes.
NY Times 1927
Paramount press book
American distribution cos. poorly handled films from Europe.
One more problem: 2 orig. negs from multiple takes.
Have found scenes that slightly differ because of this. ex/ conversation between actors — one copy they are separate; other copy — one slightly blocks the other. One copy, catacombs — hero & Mary in catacomb, about to part, man lower than woman, shyly kisses hand. Other copy, man stands higher, kisses her mouth. 2nd kissing scene & Moscow outtakes copy only. Never put in original version, unknown.
All the other Moscow outtakes appear in an oreginal version. ∴ probably the kissing scene in an original version.
Titles greatly differ. One set, pathetic, accenting the film.
English version — prosaic short sentences.

Although knew couldn't restore orig. film, nor cut version, shorter existing material by 100 meters. London copy: supplement to Staatliches copy.
Films of reel by reel, shot by shot.
London version — but a few addl. frames, transferred to the orig. copy.

Other archive loan copies - printed by Staatliches.
Some copies had omitted sequences.
So from other copies added many details bit by bit.
After 5 copies had 1 reel add'l. in meters.
The result of this work.
2850 meter copy - close to the original.
Eng. titles shorter to orig. titles.
- also cut back contents of titles.
Experience gained from this work: fully distrustful of foreign distribution copies. Fortunately, had censorship cards in Germany. A useful base for checking.
w/ scondris, more difficult. Changes while shooting. Director, etc. pm's. can't fully be trusted.
No censorship card for METROPOLIS. Strange!
Asked abt. it abroad, also. May be due to the fact that producer in Berlin, after changes made, may have destroyed the card.

Technical problems - no 11 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 11 copy.
No cut, but add'l. frames - cut out + transferred.

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

METROPOLIS

Staatlickes 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 idol 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.

cf w/ anti-Hitler, CALIGARI, KING KONG, formalism, MODERN TIMES, JOAN OF ARC, Montage, Mise en scene, triangular relationships.

Copy will be timed (graded)

Subject 13

13a **Cataloguing** 7.9.73

13a Recommendations of FIAF on cataloguing.
First, situation of cataloguing in archives.
In the majority of archives, underestimated.
Only a few archives where cat. based on research & rules: ex/ LOC, Norwegian archive, Ntl. archive (London).
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. More retrieval needed (3) electronic data processing.
Caused FIAF to establish a cataloguing commission (in 1968).
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.
(1) Define fn of a catalogue in an archive. Holds a key fn for political, cultural, restoration, inner archive structure activities. A catalogue:
(a) Show holdings of archives (b) collect info. on films
(c) Process the information on film holdings.
Filmography - info. collected processed on films independent of 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 no mistakes - too hard to correct later.
ex/ Staatliches 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 impracticable, can't

be extended. Cataloguing of films, documentation on prod #s 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:
primary: the film itself - filmographic technical data. dubbed versions, orig. versions w/ incorrect credits but in any case the film is the primary source. Documents from authorities (censorship, studios, distributor records)
secondary: Documentation from advertisements on the film (& newspaper reviews, etc.). less correct in its data. The cataloguing card should mark secondary sources. (such as) Ntl. Film Archive uses square brackets.

MoMA

Filmographies - important for cataloguing.
Library bibliographies
UNESCO - film & t.v. Council recommends establishing centers for organizing filmographies.
For tradition & research work, should be filmographies. England only country to put this in effect. Ntl. film catalogue comprising the latest film productions
Archives need filmographies to catalogue at the present time
∴ FIAF archive members have volunteered to elaborate filmographies. ex/ Belgium

Belgium, the DDR. Important because archives-
ntl. productions.
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.A. b/w color videotapes.
within different materials according to sizes.
neg & pos of a title should be in different bldgs.
Unique copies vs. copies of frequent distribution.
MOMA This is very complicated. Yet the catalogue must
survey and control this. The problem of
numbering the films. Correct storage system
the basis for proper retrieval. Number accessorily
for the different categories the archive sets up
(arc, etc.)
? Some archives catalogue the material from its
origin.
Not recommended that location = vault #ing
system.
ex/ catalogue: vault 3, section 4, shelf 5.
Bad system. Films moved many times).
MOMA x Loc #s on cards.
With a separate #ing system, not this problem.
Location can serve as additional information.
Recommended: allocate one vault # to each
print of any title. Do not allocate one
number/location to all material of the
same title.
ex/ Staatliches - 200 cans from a prod. co.
They then asked for the neg. of the film. Had
to go through everything.
MOMA Will Rogers
Yellow, red colors on cans is an add'l.
marking. Not sufficient to use just color
(in the catalogue, that is). Electronic system

destroys this possibility.
∴ Numbering system + location #.
Codes for yrs. of production etc.
But these numbering systems should not be too complicated: Movers 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.
title, # reels, gauge, source - minimum inf.
(2) short technical examination: visible faults, wash & recan the film
(3) registration of the new acquisition.
(4) technical inspection, marking the film as part of the archive by filling in labs on films, numbering of film.

Between accession time & cataloguing time: give a provisional number

Cataloguing:
original title, alphabetically filed, w/ cross-reference card
For serials: under serial title, arrange chapters chronologically ex/ MARCH OF TIME.
MOMA
Edisons

neglect definite, indefinite articles.
(List of these in FIAF cataloguing books).
Take into account library principles when catalogue. But FIAF intl. standard.

Collecting information on a film.
Timely, expensive to cull detailed information.
In many cases completeness is not necessary.
Must consider the demands on the archive.

In practice, often a compromise between maximum & minimum information.
A complete list exists in FIAF manual
Basic info: orig. title, country of origin, director, prod. co., yr. of prod., language version. (minimal).
(p. 21 FIAF manual).
But different recommendations for different types of films (newsreels etc.) if want to be complete.
Complete info. for ntl. productions.

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

MOMA The contents depends on the archives capability. A task of the catalogue. Should be as objective as possible (not an analysis). If it is a critique it should be noted as such. Note reviewer.
Contents description: goal: to be used in as many ways as possible. Theory, not practice. No contents is objective. The film itself, not secondary materials, should be used for the contents.
∴ Don't provide contents per books etc. (If do, note as such).
Three contents methods:
(1) narrative method. Complete sentences, great detail for plot. Sometimes 2 or more large pages. Notation of 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: no int'l. standard. Two tendancies: genres (see FIAF book for genre list). The commission has failed to establish a definition of genre. Too much subjectivity.
Key words. UDC method. Personalities under personality name
Few archives adopt this system.
Most archives using key words have their own system.
Only 4 archives use keyword system.

Post-cataloguing

Technical Index card
~~Card~~ Film movement card

3 card indexes per Commission rec's:
(1) basic catalogue, filmographic info.
(2) technical catalogue. Record changes in tech cond'n on these cards
(3) movement of films. Exact records of loans, returns.

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 is possible.
FIAF 3 methods: duplicate x times the index card. Time consuming. Voluminous.
cumulative cards under one descriptive title (by director, actor, prodcos, etc). Add to list as films acquired.
Index

More economical systems. Manually punched systems. New for archives, ∴ some reservation for the introduction of these cards. Advantage; great flexibility. Can combine various information.

Two kinds of punched cards:
edge-notched cards. Surrounded by holes. Notch them to codes. Sorted mechanically or manually by needles put through them. Shake the stack: desired cards fall out. Very short retrieval time.
Director 1 yr. prod b&w etc. combined info. produced;
Costs are low. Relatively simple. Low storage space.
Recording of information very fast.
2 disadvantages: (1) must code the information. Can't record much written information.
(2) 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
ext director card, "Destruction of Berlin card", genre files.
punch number per film title,
organizing principle: the title of film gets a number (punched holes)
Only numbers can be used
Can combine these cards in many ways.
Pull cards + overlap. Light shines through.
∴ an optical card.
No limitation on types of information - just make up new cards.
Can accomodate only 7,000 titles. → 7,000 new cards w/ different color
More cards, a bigger problem. Must ask twice.
Quick & flexible. 90% faster to index than traditional systems.

Electronical methods
80 column punched card.
Sorted mechanically at high speed.
Limited input capacity - only 79 places.
Can be read, also - printed on top of card.
The only type of electronical equipment an archive can afford.
Yet input, coding, etc, expensive.
Abandoned by Staatliches. Couldn't stand the experiments.
Use - expense disproportionate.
a/ electronic methods one must be realistic,
Cost more money, more staff than traditional methods. Don't help/ collecting information
No archive has had extensive experience in this field. Demand more exact cataloguing ~~systems~~ information.
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. Schultz 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 material: 20:1 documentation: film. Lose track of films vs. documentation.
also security; documentation in/s. open to public, catalogue no.

Size of index card: no FIAF standard. Pessimistic that there will be a standard. Size of cards depends upon data.
Staatliches has changed size for maximum

information.
Store indexes in fireproof, metal cabinets.
Limited staff working at the catalogue - recommendation.
Recommended to microfilm catalogue for security reasons. (though no archives do this).

A short survey. Many explanations missing.
Staatliches in many cases doesn't conform to FIAF

Schulz
13b Now, practice. + & −. Not perfect.
4 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. Don't use memory of people
(4) ~~dispersal of ed~~ division of catalogue - feature, documentary.
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 new acqs), must keep or 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 w/ German title.
Cross-reference to original title.
Sometimes only know title on copy. Use this

title/notation.

New acquisitions - films not inspected.
Cans not opened.
of 4 copies
① catalogue, ② director, ③ vaults, ④ ~~feature~~ fiction film catalogue
(nonfiction film)

Technical examination card:
even before storage.
Every card registered in a book.
(in case a card lost).
(current #, title, reels, source
~~acquisition #~~
#Entered on upper left side of card, also.
Book checked 14ly, for return of technical card.
When technical card returns, has been
stored & inspected technically.
in vaults

Vault storage ~~duty~~ system: #s + letters:
~~Alter~~ A; neg, pos, dupe pos (FGM), gauge; fiction + nonfiction
N P L S N

S = substandard
V = 65, 70 (widescreen)

color ① b/w
C nothing

N: Numerical storage system, written in red only.

Tech inspection card goes to vaults cataloguer.

The cataloguing begins.
All cards filed by German distribution title

MOMA

MOMA - we should have standards for tech category 1, 2, 3, 4 on curatorial card.
~~Do we have tech code~~
Existence of tech card or not noted, esp 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 b/w old vaults # source signature, date, of registrar

register books separated by numbering systems

Then, evaluation.

Index by director
by country, ~~&~~ filed alphabetically

If now 2ndary sources, viewed immediately after accession.
For editorial restoration, viewing only done later.

Card 6 is evaluation.
Credits
Staatliches is preparing a list of defns. of jobs in credits for countries.

Then these forms are filed alphabetically.

FIAF demand: provide max. info. ow ntl. production.

Note: this archive has too many forms.

Genres – couldn't agree within FIAF.
Horror, detective, James Bond film etc.
espionage, adventure

Problem – the genre titles don't tell enough.

FOR EYES ONLY – DDR film. Problem of genre classification.
∴ DDR divides by subject more than genre.
- new wave, slapstick, psychological films.
- define list of subjects/adjectives such as "chauvinist films". Combined w/ other list. Adventure, mountain, animal, country, horror, gangster etc. films.
∴ 3 lists

~~tendencies~~ movements	adjectives	contents
new wave	chauvinist	Western
		music

Genre – ~~too specific~~ 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 esp. for users.

~~Evaluation~~ ~~now made by a library system~~ ~~method.~~ Key words.
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 key words. Retrieval.
Coordination of institutions that evaluate (analyze).
Institutions aren't ready to cooperate.

Form 8, Ea destruction of material.
form
8 sent to vaults to be destroyed.
notation for corrections on catalogue cards, as well as tech cards etc. after destruction
Records filed by vault numbers.

Subject 14

14

Filmography

10.9.73

The importance of ntl. filmographies - particularly for int'l. exchange, saves 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 - Staatliches does filmography.
Prior to 1946 must still be worked out.
Lambrecht - did german silent films & fiction
Bower - 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
do contemporary productions
So far, DEFA 1946-1964 filmography is completed for fiction films.
" " " for non fiction films, also.
DEFA 1955-1965 " " " for cartoons, also.

Decided filmography should be as complete as possible since 10 yrs. 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 of a filmography.
Now, 1945-1964 popular science films
1953-1964 short fiction films
1946-1964 DDR periodicals - sports, culture, etc.
newsreels - descr. of subjects & subject index.
just being completed.

Research divided by topic (fiction, nonfn)
each studio divided into doing one of

these tasks :. Easy to collect.
New project: 1946-1964, all fr + nonfiction 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 work.

Now, contemporary productions & related literature.
Division in book, between DDR prod's + foreign films released in the DDR. 2 reasons: (1) try to be complete per ntl. filmographies per FLAT. (2) go by (P), not (R) date, because some films not ascertainable for (R) yet foreign films registered by DDR release date :. Do separately.
Now, studios receive index cards.
Difficult to cover amateur films :. Institutions researched: studios, state film units, German high school for film + t.v., Studio for ntl. people's army.
problem of secrecy :. Included only those films distributed publicly.
Annotation for contents ~~&~~ by-by. Bibliog. annex — covers fiction films. A question of time. 5 yrs later, (P), contents difficult to ascertain :. should be annotations.

For pre-1945, Staatliches relying on two publications previously mentioned. (Thought 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 authorized sources - must have signatures 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 wages ∴ important.
then
C advertising materials. In these cases, advisable to indicate the source. Because advertising material completed before (P) finished.
Be wary of newspaper clippings. Names written in different way, esp. Soviet names. Mutilation of names. New directors names appear
D Inquiries. Even for films 1946-1950. Old age a problem.
∴ Give sources of information.

Indicate different stages of authenticity. ? a problem
Important to have a personality (incl directors) index. To conform names, so don't get different

spellings for the same 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).
For actors, too voluminous. However, a card index can counterbalance these problems w/ actors.
∴ Good relations w/ cast office is important.

Problem also w/ preview date first public showing date. Must verify that the studio date is actually the first public showing date. Do Must apply to cinema to see if actually a public release date.

t.v. a problem - which productions to register.
∴ Staatliches registers only fiction films produced, broadcast in DDR.
Tendency: film & tv archives combined
∴ Should get an idea of what t.v. involves.
In Federal Republic, t.v. plays list - helpful.
Should do documentary transmissions, also
~~DDR not sure who~~ Staatliches not sure how to approach the problem + volume of t.v. material + the collecting of information.

Now, Staatliches beginning w/ electronic processing.
Given up 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 doco films cartoons later. More info can be stored.
Must have much prepared data when begin feeding in info.

Material must be evaluated } subject
Must work out a thesaurus } index

Check out credits in these annual filmographies
Mutually help each other.
subject XV
15 Collection + selection rules at Staatliches
Collection & acquisition of films:
Two parts: present stage of things
: future stage of things

Rules for collection of films in Staatliches archive.
First rule, collect films of ntl. film production completely. All films made 1946 on in the territory of the DDR w/ the exception of the amateur films.
Also pre-1945 films collected.
Foreign films - selective collection
Second rule, 1 pos print, 1 neg (or good dupe), 1 dupe pos master.
another positive for film clubs.

For ntl. production, orig. & dupe neg.

Principles are outdated. Too ~~many~~ much material stored.

The present situation:
Source of material. Distrib. co. one new pos. print. to archive - a regulation.
After all the copies are printed, the archive gets printing masters.
Buy, collect early films (pre 1945)
Very rare. → Reich filmarchiv

Foreign prod's source:
Reich filmarchiv
Distrib. co's - deposit one copy
exchange w/ 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 principles of foreign films:
According to historical, artistic value & importance.
Somewhat different in practice.
Commercial cos - no selection
The only influence on selection is exchange w/ other archives etc.
Many titles given to archive (foreign ones) of no value.

The future
Cannot keep multiple holdings of same ~~co~~ 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. (esp. per contents).
Pos. print, printing master (negative, sometimes dupe pos.) enough to keep. used very little...
The film title is safe w/ 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.
∴ Trying to reduce storing the material in duplicate. Yet not a sufficient reduction.
∴ selection according to the contents of

the film.
In practice, certain principles of selection are given. Much untouched material. Need objectivized 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 & t.v. material. Television co. has certain demands. Interrelated cataloguing, subject index problem, t.v. material can easily be retrieved by tv co's. - should be made more easily retrievable, a justifiable demand. Meet demands only if the quantity of material is reduced.

Principles for selection - see mimeod sheet
Films divided into 3 categories
limited storage time (5 or 10 yrs.) future decision as to keep or rid of
partial production collection
complete production collection

In the ~~real~~ 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.

Staatliches is not a stock shot library. This is the responsibility of the tv people

tomorrow: summing up 9:30 - Klaue
breakfast 8:30
lunch here
free time in afternoon - heninplatz tv tower shopping
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 archive (2 members). Commission will deal with selection of all film material from their contents.
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 - consider artistic, historic value (important in its time & a document of its time). Check (evaluate) the film from different points of view. ∴ Sociological & art 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 that DDR does not collect works in orig. release form. Ex: sound film is dubbed]
Note: this is just a draft.
With experience, Staatliches 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 Staatliches.

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 (1923)
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 Gosfilmofond. Was a lost film. Abt. a strike of the Hamburg dockers.

THE BLOODY MAY
2 incomplete copies → 1 final copy
Hand-held camera
Begins w/ demonstration forming, ends at funeral of citizens killed by police, someone saying, wake up slaves of work.
cf to Vertov etc.

BROTHERS
Based on real strike, but a fiction feature.
The history of mankind is the history of class struggle.
Combines montage (Eisenstein: people-statues, series of faces reaction) + mise en scene (German: extensive pans)
Typage. Controlled camera placement. Mise en scene scenes alternate w/ montage scenes
ex/ mise en scene - family in house
montage - workers going to work
- Eisenstein's oeuvre: STRIKE, POTEMKIN, ST. PETERSBURG
A film about strikers for better wages
The montage arrest scene is excellently executed. feet of police. angel breaks father's hand stuck in nail (martyr idea) Husband finally arrested. Workers go back to work - strike fails. Power triumphs. Despite all this, the workers will continue. By Feb 1897,

enthousiasm ignited in thousands of hearts.

Summing Up 11.9.73

Summer school is over - such a short time.

Staatliches:
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.
In Rumania, Fa system. But it is not mechanical.
There will be a new manual on this, now in German draft version. Ideas incl. electronic methods.
One of the biggest problems for the archives.

Ntl. film archive - aging test. Stages of deterioration. "scientific method"
FIAF p. 39-40
also see FIAF p. 6 - five stages of decomposition. visual method

500 meters/hr. - inspect nitrate

Fn 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 -
→ use computer for indexing. A long term program. 2-3 yrs.
Esp. long time for preparation.
No FIAF recommendations - the first time this discussed internationally.
→ Optical ~~index~~ feature card tendency for index. Stopped this system because got a computer offer.

→ → Staatliches.

Vault storage system: 2 reasons
(1) ~~tell~~ general area; if move films a lot, storage #s a pain to change.
(2) computerize

Look for a constant system in an archive that doesn't change when one moves films. a commission recommendation.

Film = ↑ one equal plane with to other arts here.

p. 39 chloroform + methanol tests not recommended.

We have a draft in German on storage of videotapes. We have catalogued correctly mat. on deposit = videotape; + type = television.

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

It is feasible to separate materials for storage per FIAF film cataloguing draft p. 14.
Basic storage should be
b/w ↑ N → color+ b/w ↑ A → color+ + storage T -T°C, different from b/w.
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.

Staatliches 3.5 Million Marks - expenditures
1 Million Marks - income
but the one does not go directly back to the other.

unasked answered qs. p. 28 acclimatization, room map. optically punched card system; explain ECC - for docu. films only

Talk about the summer school:

General or specific topics?
Lectures vs. entertainment?
Methods to convey info., esp. theory & practice?
Outside archive lecturers?
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
Sam Tyler : good for new workers - this schools.
: divide subject: tech. vs. cataloguing
Ray : meet people from other archives - invaluable, esp being from Australia
Klaue : all we have said is useful.
: for 1st school - general was important
: 2nd school - will adapt to more specific problems.
: greetings from general sec'y. of FIAF could only have done so the 9th September. Decided not to come - we were in Dresden; he wanted to see lecture.
: Prof. Toffelitz: summer school force: Australia.
: continuation of summer school. Final decision not yet taken. Hopes to continue. Must be regarded as a success.

Klaue: Staatliche didn't know who would come, who we were. Expected protest to military schedule/ie. that we wouldn't show up at 8 A.M. Admired everyone's showing up. Shows our interest, etc.
Young staff members meeting each other. Hopes 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.
Spit. cooperation important.
Confirm our participation. A letter. Important for our careers. Orig. for us. Copy for archive.
Photo book.
Volkmann material on preservation.