

# Preservation Strategies Review

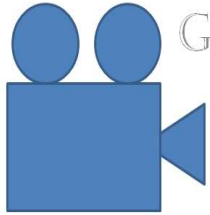


Richard Wright

Preservation Guide, UK

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# Summary

## Background

Me and the UK Oral History Society

The Problem – what's out there?

Strategies – transfers, digitisation, making files, coping with the crunch

Prospects – some statistics on what's entering and leaving audiovisual archives

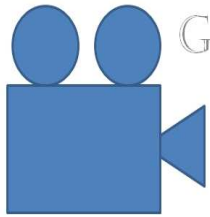
Next 100 Years – the future of storage

Conclusions – about likely successes and failures

The screenshot shows an email client interface. On the left is a sidebar with folders: Inbox, Snoozed, Done, Drafts, Sent, Reminders, Bin, Spam, and Contacts. The main area is titled 'All results' and shows an email with the subject 'analogue oral history media and their imminent danger !'. The email is from 'me to rob.perks' dated '12/02/2013'. The body of the email discusses the author's work in audio editing and their involvement with archive organizations like FIAT-IFTA and IASA, highlighting the urgent need to preserve analogue videotape and audiotape before they become prohibitively expensive to transfer.

“People with decades of experience in the field are saying 'This is it, Birdseye' (or something similar) about video: there is just no time to wait any longer. Analogue videotape needs to be under a preservation plan, now, or it has little hope of survival.”

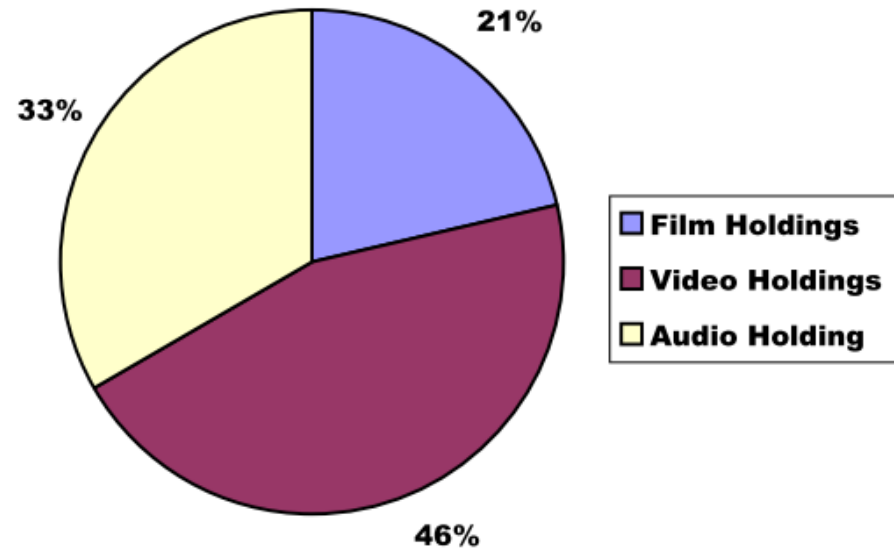
“So that's the message: **do it now, as there is no expectation of affordable or even unaffordable digitisation beyond the next decade.**”



# What's Out There?



Flickr: Cochinogarcia CC



### Holdings:

The survey found about 1 million hours of film, 1.6 million hours of video recordings, and 2 million hours of audio recordings in the ten archives. **Total European holdings of broadcast material are probably ten times larger:**

- **10 million hours of film**
- **20 million hours of video**
- **20 million hours of audio**



## Surveys:

1981: BUFVC - The Researcher's Guide; 2006: 640 audio-visual collections from the United Kingdom and Ireland

2002 **Presto** - 1 million hrs of film, 1.6 million hrs of video recordings, 2 million hrs of audio recordings. "2/3 obsolete, 1/3 damaged, 1/4 fragile"

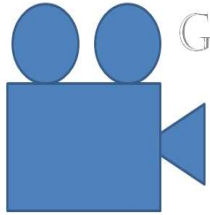
"Extrapolation" (multiply by 10) => 50 million hours across Europe. Doubled for world, doubled again by UNESCO for their website "200 million hours". World Day for Audiovisual Heritage (27 Oct).

2004 **PrestoPrime** - 20 European countries, 10 million hours

2007 **CAVPP** California Preservation Survey of Moving Image and Recorded Sound Collections

32 libraries, 1 million moving image and sound recordings.

"A survey instrument specific to audiovisual materials, CALIPR" [worst practice]



## More surveys:

2008 **TAPE** = 374 AV collections across Europe: 25 million hours (5 million hour overlap with PrestoPrime) => 30 million hours documented.

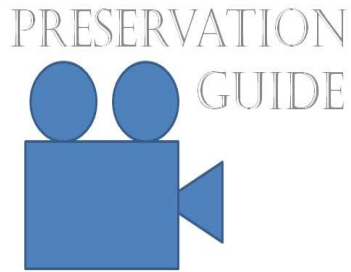
70% in "acceptable" condition, but 50% no controlled storage, 50% no regular equipment maintenance, 70% no preservation plan.

2009 **Indiana University** 560k items on one campus

2015 **British Library Save our Sounds** - 1.8 million recordings, 3000 collections, 488 "collection holders" in UK.

The majority not digitising their holdings, hoping for rescue from "Save our Sounds" project, which aims to digitise 500k of these recordings.

2018 **BFI Heritage 2022** Video Tape Collections Audit



## Conclusions on Surveys

The real question is no longer "what's out there" because the answer is generally well known: lots and lots.

Urgent questions:

what is its condition?

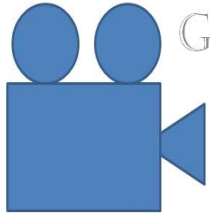
what is its value?

is it included in a preservation strategy?

All at risk AV content should be within a formal preservation strategy (which need not be an expensive or laborious process).

But costed preservation plans do require detailed knowledge of the status (and purpose and value) of a collection.





## Preservation strategies – and Ethics

Ethics – Do your best? Do something rather than nothing? At least try? Do what you can afford? “We all have to be pragmatic.” “The perfect is the enemy of the good.”

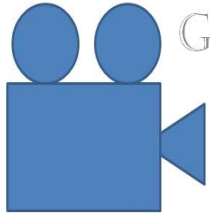
« *Le mieux est l'ennemi du bien* » Voltaire –  
who also said « *La vertu s'avilit à se justifier.* »

Audiovisual archiving: philosophy and principles – Ray Edmundson

“As far as possible, the new preservation copy should be an exact replica of the original” 6.4.9 p67

“If the best equipment is not available, and a lower grade digital copy from an endangered carrier is possible, it is better than doing nothing” 2.8.4 p17





# Preservation strategies – and Technology

1970 – what to do with nitrate film? “Nitrate won’t wait”

1990 – what to do with analogue videotape?

1995 – what to do with sep-mags (acetate magnetic sound tracks)?

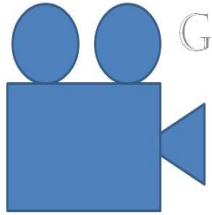
2000 – transferring (digitising, ripping) to create files

- what to do about originals?

- what is the artefact?

- What is the goal?

And now – digital preservation



# Preservation strategies – and Economics

Elizabeth Warren: Death of the Middle Class



2008 – Coping  
with the Crunch

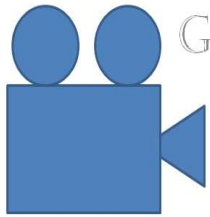
morning joe DEC 9 THE PLACE FOR POLITICS

## DEATH OF THE MIDDLE CLASS? IN AMERICA...

- 1 IN 5** UNEMPLOYED
- 1 IN 9** CAN'T PAY CREDIT CARD
- 1 IN 8** ON FOOD STAMPS
- 1 IN 8** MORTGAGES IN DEFAULT OR FORECLOSURE

TOP STORIES FIERCE WINTER STORM IN THE MIDWEST

2:24 / 5:27



## Flatbed film digitisation

HD Camera added to existing viewing table (Steenbeck).

1920 x 1200, 8 bit

24 fps; can transcode to PAL or NTSC HD video

Cost: £60/hr instead of £500

Sited 'in-house'; quick turn-around; can be operated by archive's own staff

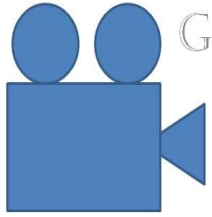
Not 2k; not 14 (or 12 or 10) bits

But: "production use it"

3000 items/6 months vs 220/yr

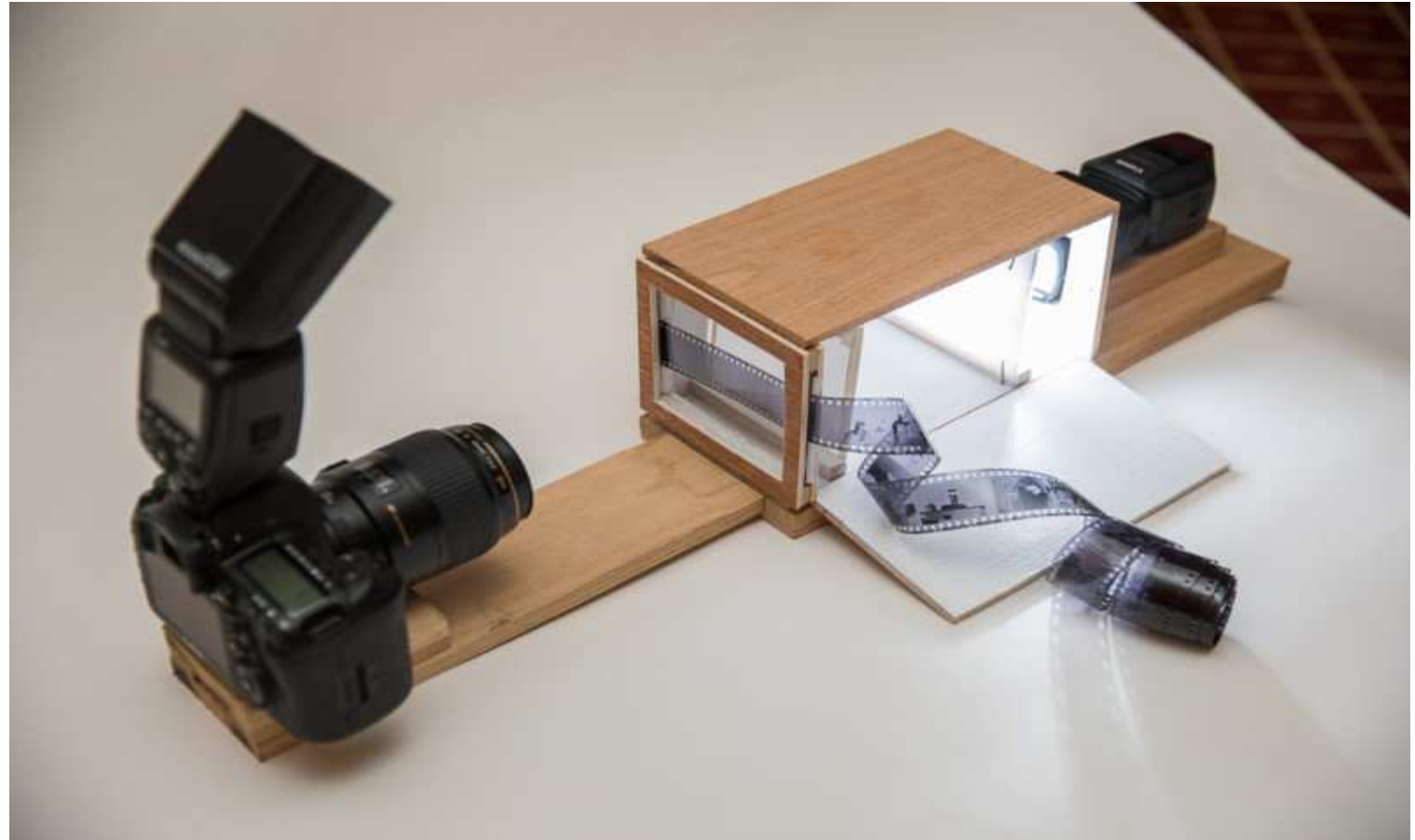


Wikimedia: DRs Kulturarvsprojekt from Copenhagen, Danmark

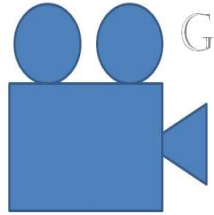


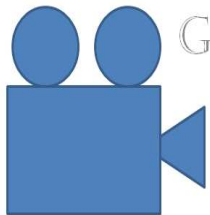
## But where does it end?

Youtube: Digitising  
the BBC Film  
Archive with  
Fastforward



PRESERVATION  
GUIDE



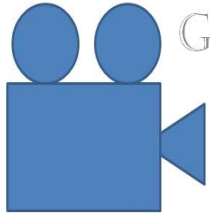


## Super 8

Reflecta budget film scanner £400







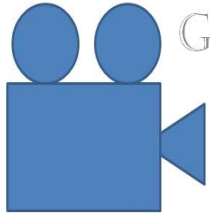
## 'real world digitisation':

AMIA 2016: "...these organizations cannot afford to wait for the perfect circumstances to achieve "archive quality" A/V digitization..."

Responses:

- **Univ Wisc:** RADD
- **Iowa State:** "Building a Video Preservation Rack for In-House Digitization AV CLUB"
- **XFR Collective:** pop-up video transfer stations
- **DC Public Library** Memory Lab - for use by the public





# RADD: Recover Analog and Digital Data

## University of Wisconsin

\$22 per tape; \$15 for state institutions

No mention of Timebase Corrector or of time code

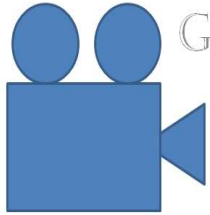
2018: U-Matic and Betacam "out of service"

<https://radd.dsalo.info/>



## Formats

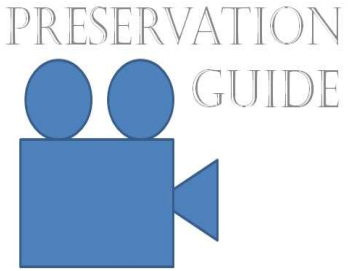
- VHS and VHS-C
- Mini-DV
- HDV
- Betamax
- Betacam (temporarily out-of-service)
- U-Matic (temporarily out-of-service)
- Hi8
- Digital8



## Iowa State: "Building a Video Preservation Rack"

- **Iowa State:** "Building a Video Preservation Rack for In-House Digitization AV CLUB"
- **Explains a full, professional rack**
- **Exemplary**





# XFR Collective



## XFR Collective

XFR Collective is a non-profit organization that partners with artists, activists, individuals, and groups to lower the barriers to preserving at-risk audiovisual media – especially unseen, unheard, or marginalized works – by providing low-cost digitization  
[MORE](#)

ABOUT

COLLECTION

139 RESULTS

SORT BY VIEWS · TITLE · DATE ARCHIVED · CREATOR

Search this Collection

- Metadata
- Text contents (no results)

PART OF

[Arts & Music](#)

Media Type



**Topless**  
by Cara Perlman

2,654 1 0



**Andy and Neal's Pre-Wedding Dessert**  
by Andrew Ingall

2,345 0 0



**Marx Brothers on Horseback Salad**  
by Elevator Repair Service

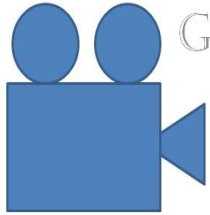
532 0 0



**Telsey Family Home Movies [segmented]**  
by Felicia Telsey

488 3 0

pop-up video transfer stations;  
for 'indies'  
"providing low-cost digitization services"



# DC Public Library Memory Lab

for use by the public

- VHS
- VHS-C
- DV
- MiniDV
- Audiocassette



The Memory Lab is now at [Northeast Neighborhood Library](#) at 330  
7th St. NE.

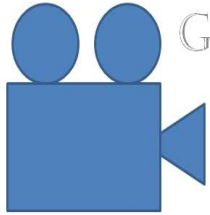
Hours are:

Monday-Thursday: 10 a.m. - 8:30 p.m.

Saturday: 10 a.m. - 5 p.m.

Closed Friday and Sunday

[Reservations can be made below.](#)

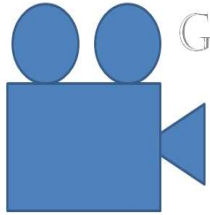


## "archive quality" A/V digitization

2015 Indiana University – and now other universities following their lead

Tate Galleries + MOMA (+ others)

Committed to highest quality, owing to the nature of their holdings



## Issues (or slogans)

### **No Time to Wait**

- doing something is better than doing nothing

### **You Won't Get a Second Chance**

- so do it right the first time

It comes back to STRATEGY

Where are you going? Preservation, Access, Both?

## Sample map: BBC 16mm film

<b>Format</b>	<b>Age</b>	<b>Storage</b>	<b>Genre/value</b>	<b>Condition</b>
16mm B&W film negatives	1950 to 1970	archive; uncirculated	Unique master material	good
16mm Ektachrome	1968 to 1982	office for first 5 yrs, then archive	News; high re-use	some colour fade
16mm B&W film prints	1950 to 1970	archive;	No permanent value: use negatives instead	fair: have been circulated
16m mag sound track	1950 to 1980	archive	Masters	vinegar syndrome!
16m mag sound track	1950 to 1980	archive	Duplicates; no permanent value	vinegar syndrome!

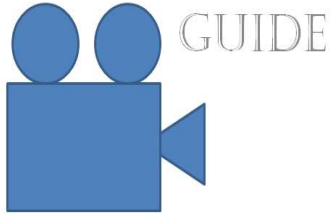


## Preservation Strategy: BBC 16mm film

Type of material	Condition	Action needed	Timescale	In-house or contracted?
16m mag sound track - masters	vinegar syndrome!	digitisation to file formats; destruction of originals	2 years starting immediately	Contracted; checking in-house
16m mag sound track - duplicates	vinegar syndrome!	destruction (after respective masters are transferred and checked)	2 years starting immediately	In house
16mm Ektachrome	some colour fade	Access copies made on digibeta and DVD	Starting when budget allows: in 2 years	Preparation and checking in-house; telecine contracted out
16mm B&W film negatives	good	Maintain in appropriate storage conditions; review condition at intervals	Review plan and condition every five years	Review is done in-house
16mm B&W film prints	fair: have been circulated	Maintain in appropriate storage conditions	Keep until preservation actions taken on negatives	Storage is in-house

## Preservation Plan: BBC 16mm film

Type of material	Preservation Action	Service Provider	Batching	Outcome	Quality Control
16m mag sound track – masters	Digitisation at CD quality: 44.1 kHz sampling @ 16 bits; synch pulses recorded on 2nd CD channel	Three outside contractors selected by competitive tender	Monthly basis	One audio CD and one BWF file (on CD-ROM) per original mag sound track	Internal spot checking of each CD. Selective end-to-end checking. Done in-house.
16m mag sound track – duplicates	None				
16mm Ektachrome	Conservation for 2 more years; 10° C; 35% rh	In House			
16mm B&W film negatives	Conservation for 5 more years; 10° C; 40% rh	In House			
16mm B&W film prints	Conservation for 5 more years; 17° C; 35% rh	In House			



# Preservation Prospects

Analogue digitisation 2000-2010: 1.5% per year (EU Broadcasting)

Which implies 67 years to digitise analogue holdings as of 2000

BUT – new material, still not on files, coming in at 4% per year

Since 2010

Budgets cut in archives (and broadcasting); has digitisation slowed down?

New material no longer coming in on physical media

New material probably coming in 6 to 8 times faster than digitisation



## A lucky audiovisual archive in 2040

Half their analogue holdings of year 2020 will be gone, if they can manage to digitise the other half (which requires digitisation at a rate of 2% per year)  $(1.02)^{20} = 1.5$

Growth: twice as big as in 2020 (6% growth pa)  $(1.06)^{20} = 3.2$

Year 2000: AA analogue archive, digitising at 2% => half digitised in 20 yrs

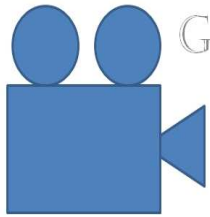
Year 2020: AD + P + BB growth: physical media to 2010, 4%, files since @ 6%

$(1.04)^{10} = 1.5$   $(1.06)^{10} = 1.8$

Year 2040: DD BBBBBB half the 2020 analogue and physical has become files D  
the BB has tripled to BBBBBB;  $\frac{1}{4}$  of analogue from 2000 is lost

So: 75% of their holdings will be from post 2010; 50% post 2020

And mainly nobody will notice that  **$\frac{1}{4}$  of the analogue was lost.**



# An Unlucky Audiovisual Archive

Year 2000: AAA analogue archive, digitising at 1.5% => 1/3 20 yrs

Year 2020: AAD + growth

growth: physical media to 2010, 4%, files since @ 6%

$$(1.04)^{10} = 1.5 \quad (1.06)^{10} = 1.8$$

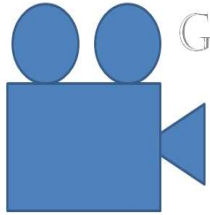
Year 2020: AAD + 1.5P + BBB

Year 2040: AA->0.5A another 1/3 of analogue should have been digitised, but work on the physical media interfered, so only half got done, but all the physical got ripped to files. The BBB has tripled to BBBBBBBBBB.

Result: 1.5D from Analogue plus 1.5D from physical media = DDD.

Half the original analogue is gone. The Archive is DDD+BBBBBBBBBB

7/8 is post 2000, half is post 2040; **half the pre-2000 analogue is lost.**



## The next 100 years

Datatape from 1950s was read 50 years later [Ovation Data Services]

Data has survived for long periods already

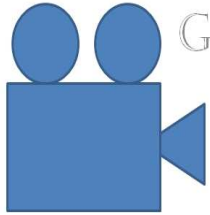
US Government has my social security number (from 1964) and my pension entitlements.

Continuous migration

looks much easier now that it did in 2010, because service providers do it as their daily business.

Fearless prediction: in 10 years, people won't even mention migration.

Storage as a service will be taken for granted.



## In Conclusion

Equipment is lasting longer than I forecast

film equipment: obsolescence not a problem;

deterioration of film itself (colour fade, vinegar ...) remains a problem

videotape equipment: service providers snap it up. **No Time to Wait**

audio equipment: vinyl lives; open-reel tape on life support.

Prices have come down (and quality is variable)

There is much more "out there" than I estimated 18 years ago (by ?10x)

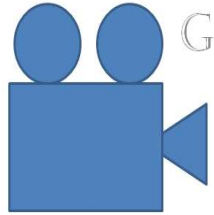
Which means the rate of digitisation now totally inadequate

“2/3 will never be digitised”

**Efforts need to be doubled.** If 1/3 doesn't need digitisation, doubling our efforts will mean the bulk of needed work will be done!



PRESERVATION  
GUIDE



Thank you

@Richard Wright