



# SWOP, Proofing and Color Management Trends in the New Millennium

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# Standards

- ISO - International Standards Body
- ANSI - American National Standards Institute
- CGATS - Committee for Graphic Arts Technology Standards
  - ANSI accredited



# Specifications

## PUBLICATION SPECIFICATIONS

- SWOP Web Offset Publications
- MACS Magazines Canada
- AGASC Australia
- Press4Pass PPA U.K.

## OTHERS ....

- SNAP Coldset / Newsprint
- GRACoL General Commercial



# What is SWOP ?

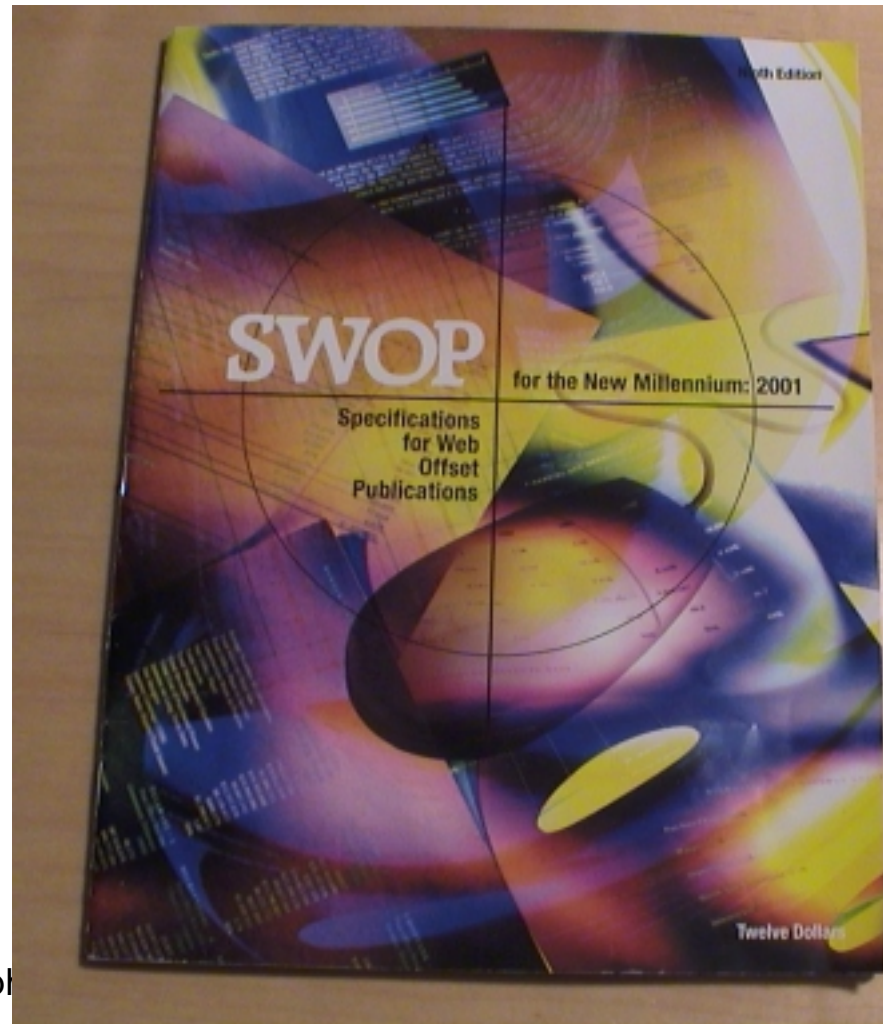
Specifications for  
Web Offset  
Publications

What it's NOT ...

1. A Print Production Standard
2. Anything but #5, publication

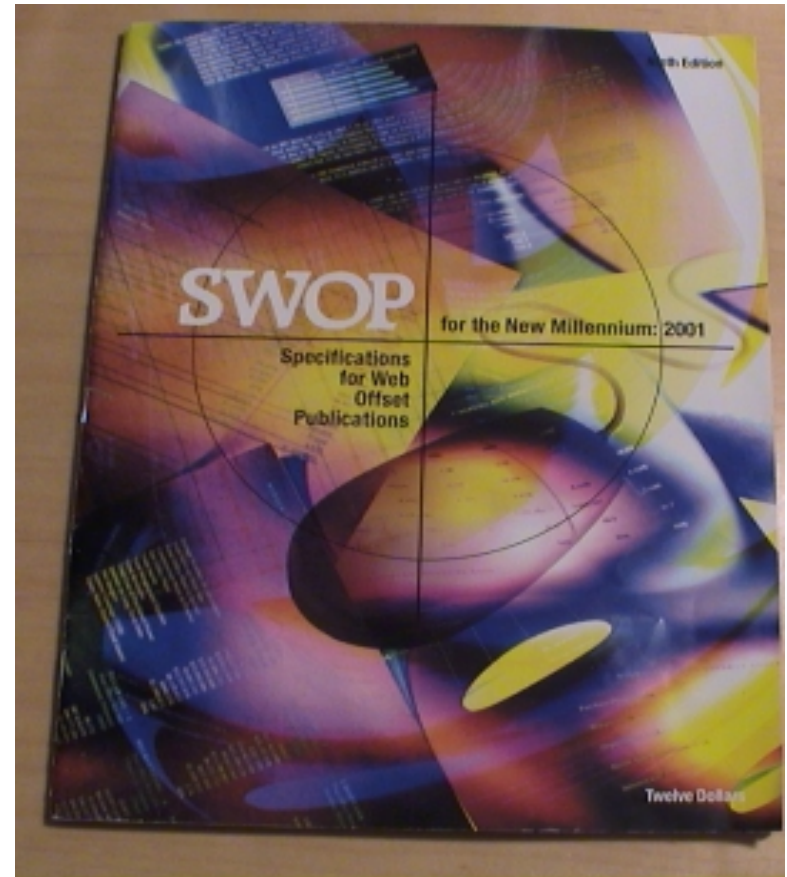


J. Sweeney, Graph



# Who is SWOP ? YOU !

- APC - Ad Prod Club
- IPA - Prepress
- AAAA - Advertising
- GAA - Gravure
- Web Offset Assoc.
- NAPIM - Ink
- MPA - Mag. Publishers
- DDAP
- DAL
- PPA ?



# Getting Digital: Industry Challenges

- The Fundamentals still apply
- Understand the Responsibilities & Liabilities
  - Agency / Advertiser
  - Prepress Supplier
  - Publisher
  - Printer



# How are we doing ?

- Status of Digital Ad Implementation
- Re-run / Make Good are history (largely)
- Ad inspection / rejection NO TIME !
- Standards and Spec's more important then ever ....
  - BUT .... We need more education
    - New people in the business; some who only know the MAC, Quark and Photoshop; Never worked with film.



# SWOP 1997:

## Digital Proofing Accepted

- “SWOP recognizes the use of analog and digital (halftone and non-halftone) off-press proofs when in conformance with the manufacturer’s Application Data Sheet.”



# Proofing

## Application Data Sheet

- A.D.S. = Application Data Sheet
- Manufacturer provided instructions.
- Manufacturer provided attributes
  - Density
  - Dot Gain
  - L\*a\*b\* color data of Paper, K, C, M, Y



### SWOP Off-Press Proof Application Data Sheet

This is an interim SWOP ADS for Kodak Approval. The final text will include density data based on spectrophotometric instruments.

#### KODAK APPROVAL Digital Color Proofing System

The SWOP Review Committee has approved the use of off-press proofs as input material to publications. SWOP Specifications recommend that: "The appearance of an off-press proof used in this application must closely simulate a SWOP press proof." See other explanations and recommendations as outlined on page 18 and page 45 of the 1997 edition of the SWOP Specifications.

**Manufacturer:**

Eastman Kodak Company

**Supplied by**

Kodak Polychrome Graphics  
401 Merritt 7  
Norwalk, CT 06851

Customer Solutions – (877) 574-7274

The KODAK APPROVAL Digital Color Proofing System is a digital color proofing system based on a unique, highly accurate laser transfer process. A four-color halftone image is created on a single intermediate sheet and transferred to a paper stock of the user's choice. Textweb Proofing Paper is required when making SWOP-compliant KODAK APPROVAL Digital Color Proofs. This application data sheet is based on the data contained in ANSI CGATS TR001 as specified by SWOP Incorporated. Therefore, proofs made in accordance with this application data sheet may be identified as SWOP (CGATS TR 001-1995).

**Control Guide**

SWOP Specifications recommend that a control guide such as the GATF/SWOP Proofing Bar be supplied on every off-press proof. As a minimum, this guide should contain solids of the primary process colors and two-color overprints, as well as a 25%, 50%, and 75% tint in 133-line screen ruling of each of the process colors.

The KODAK APPROVAL Control Strip control guide (electronic data resident on the KODAK APPROVAL system) or similar control guide is recommended by Kodak Polychrome Graphics to be used in producing a SWOP off-press proof using the KODAK APPROVAL Digital Color Proofing System.

**System Component/Set Up Conditions**

The following materials and process conditions shall be used with the KODAK APPROVAL Digital Color Proofing System in order to achieve conformance with this Application Data Sheet.



### KODAK APPROVAL Digital Color Proofing Materials

Material	Class/PS	CAT Number	
		XP	XP4
Black Donor	862 4199	104 2910	181 6230
Cyan Donor	814 4628	192 5718	105 5003
Magenta Donor	802 1313	804 9355	816 0459
Yellow Donor	194 9658	164 6405	118 7038
Intermediate	831 5582	816 0319	106 7560
Pre-laminate	173 9671	832 3131	882 3791

#### Screening:

Use the appropriate setup conditions to achieve the following nominal values

Color	Ruling	Angle
Cyan	133	75
Magenta	133	45
Yellow	133	90
Black	133	15

#### Output Color Order:

Black - Cyan - Magenta - Yellow

**Aim Dot Area:** (To derive the appropriate dot gain table see the Dot Gain Set Up Section of the KODAK APPROVAL Digital Color Proofing System User Manual.)

Dot In	Cyan	Magenta	Yellow	Black
100	100.0	100.0	100.0	100.0
95	98.1	98.0	97.8	98.5
90	96.0	95.7	95.1	96.7
85	93.3	92.9	91.9	94.3
80	90.9	90.4	88.6	91.9
75	88.1	87.6	85.2	89.2
70	85.3	84.4	81.7	86.2
65	82.2	81.2	78.2	83.2
60	79.1	78.1	74.7	80.1
55	75.8	74.8	71.2	76.7
50	71.9	70.8	67.2	72.8
45	67.0	66.0	62.7	68.5
40	62.0	61.0	57.5	63.6
35	56.5	55.7	52.1	58.5
30	50.8	50.1	46.3	52.9
25	44.4	43.7	40.2	46.2
20	37.6	36.9	33.4	39.1
15	30.1	29.4	26.3	31.7
10	21.8	21.2	18.6	22.4
5	11.0	10.6	9.2	11.2
0	0.0	0.0	0.0	0.0

All proofs are required to be transferred to Textweb Proofing Paper.

Proofing procedures are described in the KODAK APPROVAL Digital Color Proofing System User Manual.

#### Finishing Procedures

There are no additional steps required for finishing procedures. The proof is considered complete upon lamination of the four-color image to the Textweb Proofing Paper.

#### Finished Proof Characteristics

When properly produced, the following characteristics are to be expected on the KODAK APPROVAL Digital Color Proof.

Process	Color	Dot Gain @50%		
		Density (absolute)	(Murray-Davis)	
Cyan		1.30 ± 0.05	22 ± 2%	
Magenta		1.45 ± 0.05	21 ± 2%	
Yellow		0.85 ± 0.03	17 ± 2%	
Black		1.65 ± 0.05	23 ± 2%	

Process	Color	Color Aims		
		L*	a*	b*
Cyan		56 ± 1.5	-37 ± 1.5	-37 ± 1.0
Magenta		48 ± 1.5	71 ± 1.5	-3 ± 2.0
Yellow		85 ± 1.0	-7 ± 1.0	77 ± 4.5
Black		18 ± 4.0	2 ± 1.0	1 ± 0.5
Paper		88 ± 3.0	0 ± 2.0	4 ± 2.0

Densitometry (Status T) per ANSI/CGATS.4 – 1993 "Graphic technology – Graphic arts reflection densitometry measurements – Terms, equations, image elements, and procedures" using an X-Rite 408 densitometer. Colorimetry should conform to ANSI/CGATS.5 – 1993 "Graphic technology – Spectral measurement and colorimetric computation for graphic arts images."

NOTE: An application note addressing measurement differences between the X-Rite 408 and DTP 41 instruments may be found on the Kodak Polychrome Graphics web site, [www.kpgraphics.com](http://www.kpgraphics.com).

The tolerances reflect normal system variability. Measurement system inaccuracy is not represented in the tolerances and should be added to the tolerance shown. The use of certified reference materials is highly recommended; see ANSI/CGATS.11 PIMA/IT2.11 "Graphic technology and photography - Reflection and transmission metrology – Certified reference materials – Documentation and procedures for use, including determination of combined standard uncertainty."

#### Sample Proof

Kodak Polychrome Graphics has supplied KODAK APPROVAL Digital Color Proofs that conform to the Application Data Sheet to the SWOP office for analysis and retention.

For additional information visit us on the Web at [www.kpgraphics.com](http://www.kpgraphics.com) or call 1-877-KPGGRAPHICS

01-01 Second Edition  
©Kodak Polychrome Graphics, 2000  
Printed in USA KPG-79 049-8808

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# Production guidelines changed

- **TVI (Dot Gain) changed from 24% to 22% to embrace positive printing, and sharper printing.**
- **Density center point changed to proofing center point to reflect improvement in production capabilities, higher densities.**



# Related Standards

- ISO 2846 -- Worldwide Ink color and strength specifications
- ISO 12647 -- Process Control
  - Parameters and measurement methods
  - Offset process control
- CGATS.6 Characterization of Type 1 printing (based on reference SWOP press proof)
- CGATS TR-001 (Technical Report)



# SWOP Certified Systems

- New in 1999



# SWOP Certified Proofing Systems



September 1999

- Capable of producing a SWOP Proof
- ADS - Application Data Sheet on file at SWOP, or PDF's at [www.swop.org](http://www.swop.org)
- Target is TR-001

Why should you care ?

- Publishers and Advertisers can specify SWOP Certified Proofs.



# 14 SWOP Certified Proofing Systems (blue = digital)

AGFA Pressmatch® Aqueous Negative

AGFA Pressmatch® Dry Negative

DuPont Digital Waterproof® AX4 Negative

DuPont Waterproof®

FUJI Color-Art® System CR-T4 SWOP

FUJI Luxel FinalProof 5600

Imation SWOP Matchprint® Negative

Imation SWOP Matchprint® Positive

Imation Rainbow ® 4700

Imation Matchprint ® Laserproof (CREO or PRESSTEK)

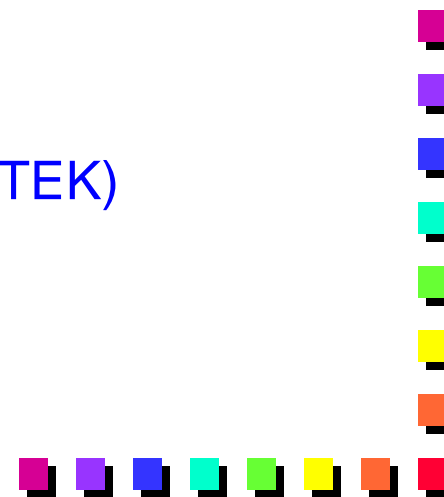
IRIS Pro SWOP

Kodak APPROVAL ® Digital Color Proofing

Polaroid PolaProof ® Digital Halftone Proofing



September 1999



# www.swop.org

- Latest list of Certified Proofing Systems
- PDF's of all ADS
  - Proofing Application Data Sheets
- Download order form for booklets
- Download order forms for calibration kits



# SWOP - New Millenium Edition

## ■ File Formats: TIFF/IT and PDF/X Only.

- SRDS Wake-up Call.
- GAA / Gravure endorses this specification.

***BUT.... Native PDF's, Application files used***

## ■ Screen Angles

- If the agency specifies screening, must have prior agreement.
- Responsibility is with plate maker / printer.

***BUT.... Stochastic usage increasing (no screen)***

## ■ Proofing

- SWOP Certified Proofing Systems ONLY, made in conformance with ADS (Application Data Sheet).

***BUT .... Publishers will accept anything***



# SWOP - New Millenium Edition

- New section: Color Management
- SWOP Products
  - Digital Calibration Kit
    - PDF/X1 format to be added to Digital Cal Kit
  - Film Calibration Kit
  - Hi-Lo Color References
- **SWOP, Inc.** office now in Marblehead, MA.
  - Barbara Hanapole is new Director.
  - Now part of DDC (Digital Delivery Corp).
    - SWOP, DAL, DDAP



# SWOP - New Millennium Edition

## ■ **Printing Guidelines**

### ■ **DENSITY**

■ WAS: +/- .14 Density

■ IS: +/- .10 Density (*A barn door*)

## ■ **TVI Tone value Increase (Dot Gain)**

■ Same as prepress

■ 4 point range for C,M,Y color balance

K 22, C 20, M 20, Y 18

■ **CTP CURVES** should be adjusted to best match the supplied SWOP proof.



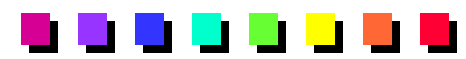
# SWOP - Action Items

- Buy the new edition FOR EVERYONE
- Adopt the tools:
  - SWOP Digital Calibration Kit
  - Rorke TIFF/IT, Apago PDF/XI generator, DDAP PDF verifier, Markzware, Extensis, Enfocus
- Embrace the new edition
  - Enforce SWOP when you buy prepress and printing
  - Put the words “all film, proofing, files and printing shall be made in accordance with SWOP 9'th edition, 2001” in your contract with prepress and printers.



# SWOP Issues

- Paper Textweb is no longer made
  - If change the paper, is TR-001 valid ?
- SWOP ICC Profile ?
  - PhotoShop 6 – SWOP Coated
  - [www.profilecity.com](http://www.profilecity.com)
- Request to certify soft proofing
  - No protocol exists



# Where do we go from here ?

- SWOP Trademark
  - Letters being sent to non-compliant users
    - Eg. New Pantone book will NOT say SWOP.
- Publish just updated spec's on [www.swop.org](http://www.swop.org)
- \$\$\$ Budget problems.
  - Sale of booklets does not support expanded activities



# Sweeney's 4 Bold Predictions



# Sweeney's bold predictions

- 1. Color Management is the norm



# Do it yourself...



Automated



Manual /  
Semi-auto



# Profile services

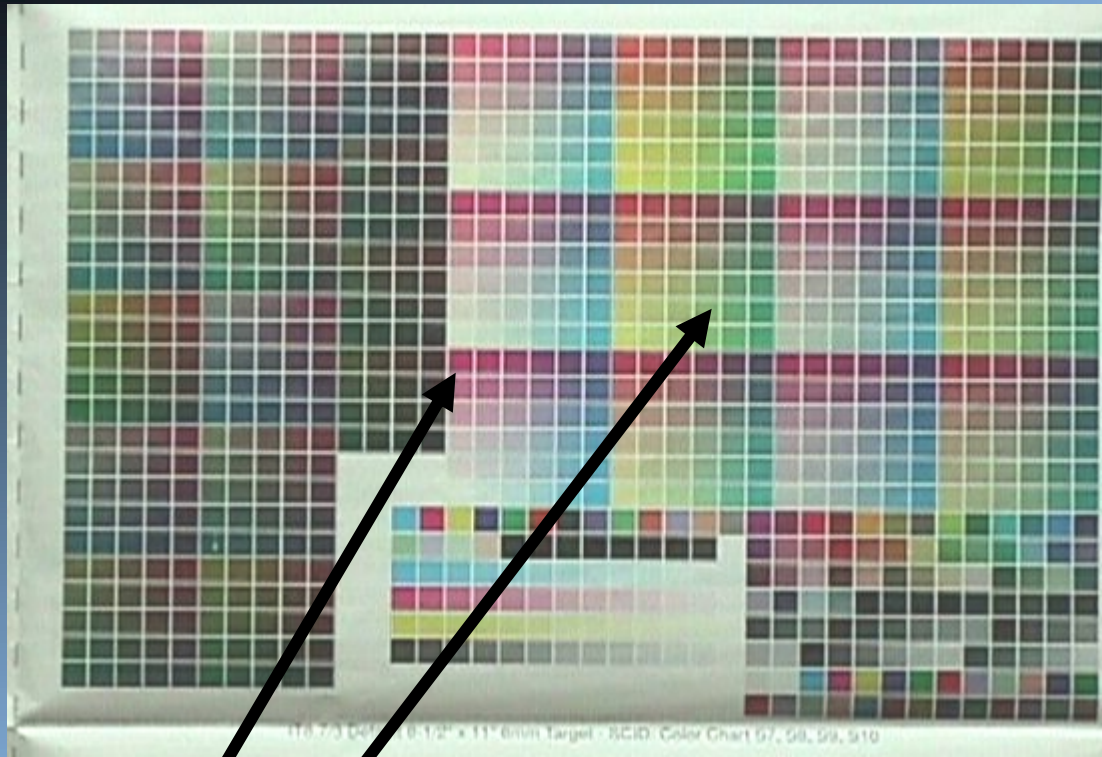
- [www.profilecity.com](http://www.profilecity.com)
  - Download target
  - Output and mail
  - Profile at [www.profilecity.com](http://www.profilecity.com)
- More good consultants



# Sweeney's bold predictions

- 1. Color Management is the norm
- **2. Standard Reference Printing**
  - Drive presses to print “the same”
  - EXAMPLE: CGATS TR-001
    - ANSI            American Standard
    - CGATS        Committee for GA Tech Stds
    - TR             Technical Report
    - 001            #1





# IT8 7/3 Target

1. Image known tints
2. Print to standard
3. Measure

K C M Y = L a b

● 0, 45, 90, 5 = 50, + 60, + 20

● 0, 60, 0, 75 = 80, - 80, + 20

■ K,C,M,Y % IN ==> L\*a\*b\* OUT



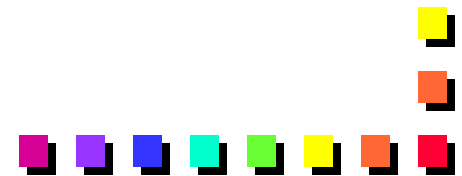
# Sweeney's bold predictions

- 1. Color Management is the norm
- 2. Standard Reference Printing
- **3. Closed-Loop Color Standard on heatset web presses.**

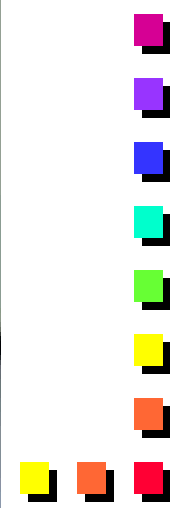


# Standard on Sheetfed

- Heidelberg CPC and Image Control
- Komori PDC-S
- GMI Autocolor (pictured)



# Web Press



J. Sweeney, Graphics Microsystems, 2002

# Why Closed-Loop ?

- **Print by the Numbers**
- **Eliminate Color Guidance Proof at press ?**
- **SPC Reporting (proof of color quality)**
- **TR-001 conformance**



# Sweeney's Bold predictions

- 1. Color Management is the norm
- 2. Standard Reference Printing
- 3. Closed-Loop Color Standard on heatset web presses.
- **Remote Digital and Soft Proofing**
  - **No more transmit the file, and FedEx the proof.**

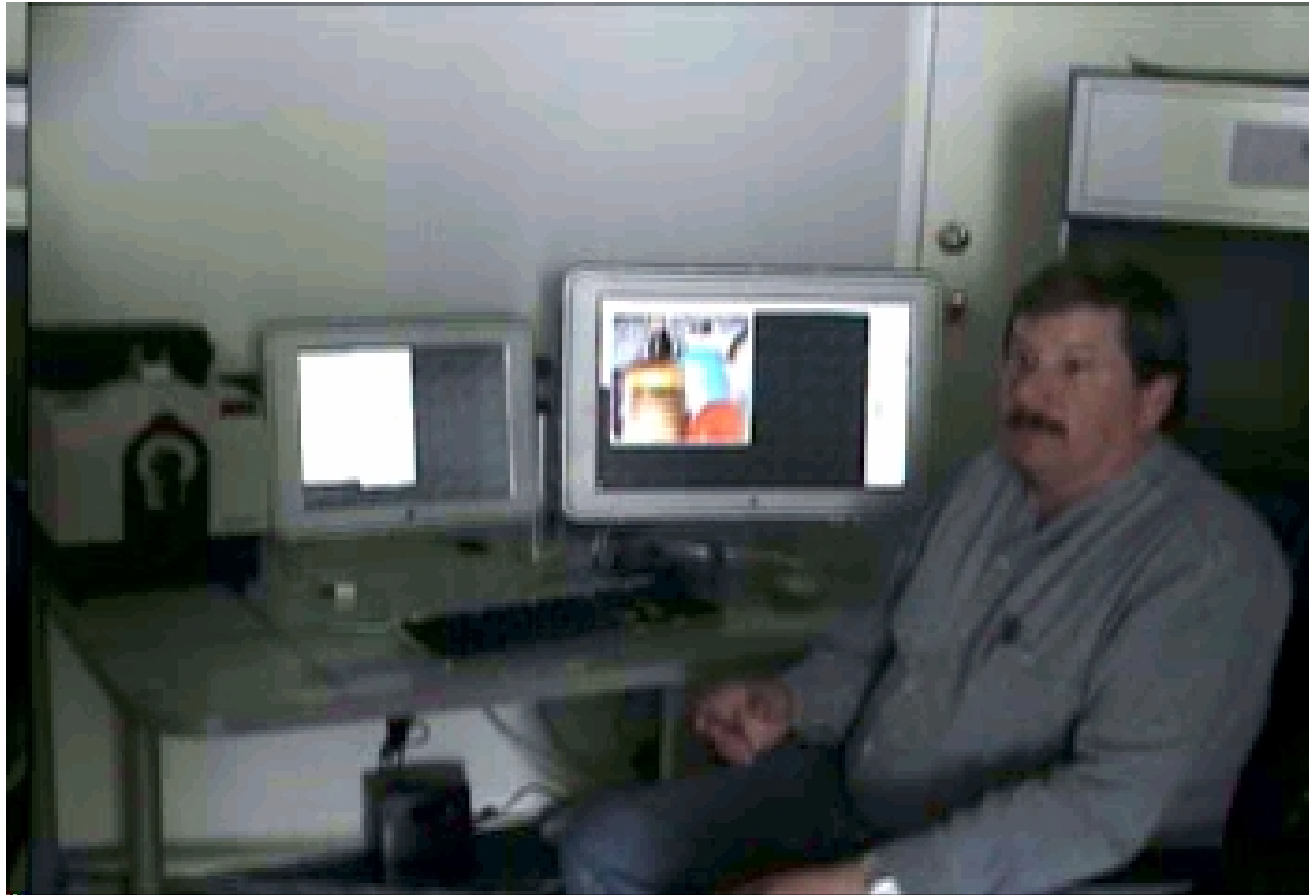


# Digital Proofing

- Remote Proofing system US\$ 4000
  - Ink jet, RIP, Spectro
- HP 10/20/50 PS
  - Embedded sensor / self calibration
  - US\$ 1000



# Remote Soft Proofing



# News from DAL USA

- Updated Web site at DDAP conference
  - [www.digitaladlab.com/DAL](http://www.digitaladlab.com/DAL)
- Chapters in New York, Chicago, L.A., Detroit.
- New York chapter Digital Proofing study to be launched at DDAP Conference.
- DDAP is in NYC, Feb. 27 - March 3.



# Thank You

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[www.swop.org](http://www.swop.org)

