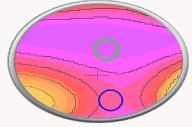


Powerboost Lenses: Understanding the Benefits and Limitations



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1

Michelle J. Hoff, OD, FAAO, ABOM, FNAO




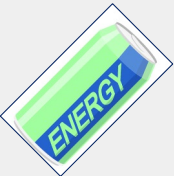


- ❖ University of California Berkeley | Associate Professor of Health Sciences
- ❖ Mindful Eyes Foundation | Founder and Executive Director
- ❖ SightLine Ophthalmic Consulting | Co-founder and CEO
- ❖ Doctor of Optometry (OD)
- ❖ Master in Ophthalmic Optics (ABOM)
- ❖ Registered Spectacle Lens Dispenser (CA-SLD)
- ❖ Licensed Optometrist (CA-DCA)



linqapp.com/michelle_hoff

2


What is a Powerboost Lens?

3

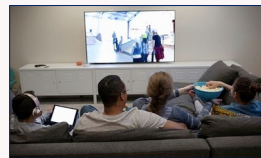
Learning Journey Objectives:

- Historical Background
- Marketing/Fitting Recommendations
- Contour Plot Analysis
 - Design Characteristics
 - Visual Performance
- Discuss Product Portfolios
- Case Example
- Contraindications



4

Technology Timeline



- 1920's - 1930's - Radio
- 1940's - 1950's - B&W TV
- 1950's - 1990's - Color TV
- 1990 - present- HD TV

5

Technology Timeline

Faster pace of development:

1970's Apple Computer, Atari 2600

1980's Personal Computer (PCs), Electronic games, Calculator watch

1990's Laptops, Cell Phones, Game consoles

The INTERNET!



6

Digital Revolution and the Information Age

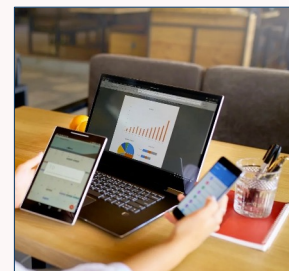


- Shift from mechanical to electronic
- Big instruments compressed into small
- Pocket sized devices
- 50 years from radio to computer
- 20 years to develop handheld devices

7

The Physical and Visual Response

The body's response to increased visual demand



Breakdown of Digital Eye Strain (DES) Symptoms (6 out of 7 adults report)

- 35% Neck/shoulder pain (physical)
- 28% Headaches (physical)
- 27% Dry eyes (ocular)
- 32% Eye strain (visual)
- 28% Blurred vision (visual)

8

Some Perspective on DES

The Vision Council Digital Eye Strain Report

90% of patients do not talk with their eye care provider about digital device usage.

73% of Americans said they did not know about the benefits of computer eyewear.

#1 reason for not wearing computer eyewear:
 "My eye care provider never recommended them"

9

Lens Manufacturers Respond to DES

Compensate for:
DES
Closer working distance

"Power Boost" area in the lower portion of the lens for near-vision work.

... standard vision correction, thanks to the added benefit of "Power Boost" near-vision lens area.

Intended as a first pair or a replacement to single vision lenses.

Power Boost for Up-Close Activities

From Essilor Press Release, US Launch 2009:
 "... Essilor Anti-Fatigue lenses feature a special "Power Boost" area in the lower portion of the lens, to give the wearer's eyes greater clarity and comfort when focusing up-close for extended periods..."

10

Historical Background

Distance power for everyday use

Fitting point

Slight power boost (+0.60D) for near work

Design:

- 0.60D "power boost" in the lower lens
- Minimal peripheral aberration
- Performs like a Single Vision lens; minimal swim and magnification
- Reduces Digital Eye Strain symptoms

11

Marketing Messages

Benefits to your patients

- Stress/strain-free digital viewing
- Comfortable all-day vision
- Relief from Digital Eye Strain

<p><u>Marketing Messages</u></p> <ul style="list-style-type: none"> • Pre and emerging presbyopes • Digital Eye Strain • Excessive Digital Device Usage • 33 cm working distance • Boost of power not an ADD 	<p><u>Alternate Names</u></p> <ul style="list-style-type: none"> • Anti-Fatigue Lens • Single Vision, with a power boost • Starter Progressive
---	---

12

Powerboost Lenses – Fitting Guides

Hoya Sync III

ORDERING

When ordering, please provide the Distance Prescription and the chosen level of progressive functional support:

- MINIMAL OR NO SYMPTOMS**
SYNC 5 (+0.57D)
- MILD TO MODERATE SYMPTOMS**
SYNC 9 (+0.95D)
- MODERATE TO SEVERE SYMPTOMS**
SYNC 13 (+1.32D)

Fitting Zeiss Digital Lens

SELECT LENS
ZEISS Digital Lens is fitted like a progressive lens. ZEISS Digital Lens is available in 4 add powers, ranging from +0.50D to +1.25D. The appropriate add power should be determined by a near refraction.

Fitting Guides

- *By Symptoms?*
- *By Age?*
- *By Add Power? (Boost Power?)*

Essilor Eyezen


Eyezen 0	Eyezen 1	Eyezen 2	Eyezen 3	Eyezen 4
Patients age 17 & under (0.00 diopters)	Patients age 18 to 34 (0.40 diopters)	Patients age 35 to 39 (0.80 diopters)	Patients age 40 to 44 (0.85 diopters)	Patients age 45 to 50 (1.10 diopters)
Typical Patient Profile: Clerk, Nurse	Typical Patient Profile: Student, Young Professional	Typical Patient Profile: Doctor, Nurse, Clerk, Experienced Professional	Typical Patient Profile: Parent of Teen, Manager	Typical Patient Profile: Parent of Teen, Executive

Unity Review	Unity Review
Designed for: • Light to moderate digital eye strain symptoms • Default for patients 34 years or younger	Designed for: • More severe digital eye strain symptoms • Default for patients 35 years or older

13

Deconstructing a Powerboost Lens

- Optical Differences
- How does it perform?
 - Single Vision
 - Bifocal
 - Computer Lens
 - PAL
- Boost = ADD?



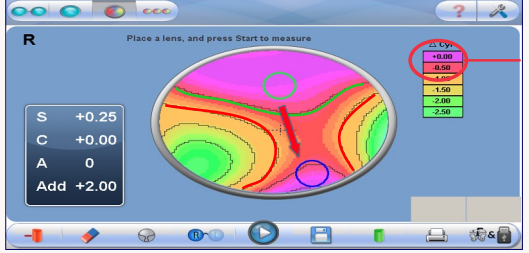
14

How can we better understand?



15

What can we measure?



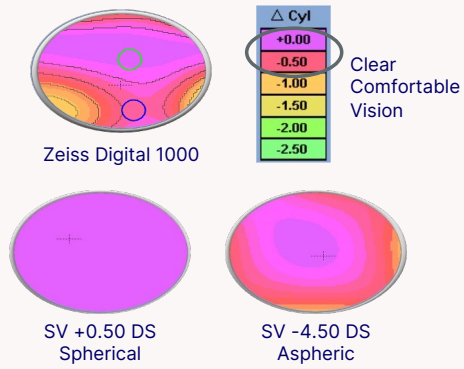
Area of perceived clear vision

Cylinder Aberration Contour Plot

- Perceived clear vision
- Isometric contour lines (unwanted cylinder)

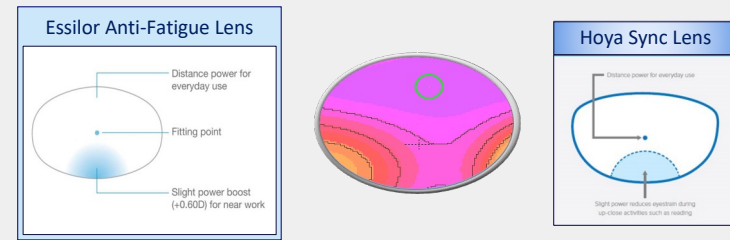
16

Is a Powerboost = Single Vision?



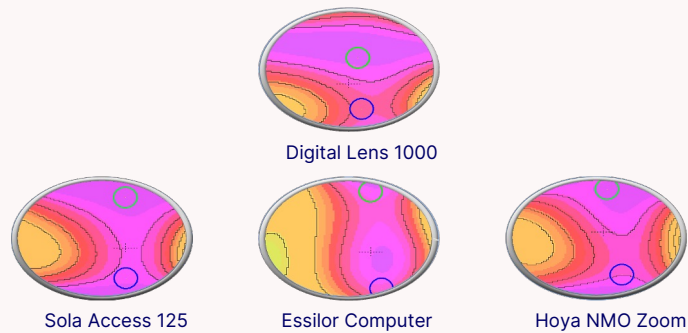
17

Is a Powerboost = Bifocal?



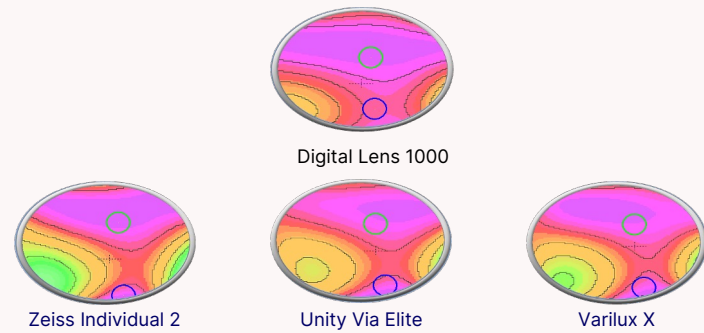
18

Is a Powerboost Lens = Computer Lens?



19

Is a Powerboost = Progressive lens?



20

Powerboost Lens Design Characteristics

The diagram shows four lens designs with their respective power maps:

- Powerboost**: A lens design with a wide clear distance and a wide short corridor.
- Progressive**: A standard progressive lens design.
- Hybrid**: A hybrid lens design.
- Near Variable Focus**: A lens design with a large wide near area.

21

A Powerboost Lens

The diagram compares two lens designs:

- Progressive like design**: A lens design with a wide clear distance and a wide short corridor.
- Dual Centric design**: A lens design with a large wide near area.

Specialized progressive-like or dual centric lens

- reduces digital eye strain signs and symptoms
- compensates for a closer working distance
- Boost = ADD

Prescribing and Fitting

- severity of the symptoms
- patient's age
- exam data (Accom + BV)

22

Powerboost Marketing Material

- Wide clear distance
- Wide short corridor
- Fast access to near power
- Large wide near area
- Low Add Power +0.40 to +1.32
- Very low aberration

23

Powerboost Fitting Guidelines

The photograph shows a person wearing glasses with measurements: 18.5 mm and 17.0 mm.

Lab order

- Which Powerboost lens
- Monocular distance PD
- Fitting height (at pupil center)

Diagram of a lens with fitting points:

- Distance power for everyday use
- Fitting point
- Slight power boost (+0.60D) for near work

Lab Order Form:

Dr. Isabel Kazemi
123 Sunshine St.
Amazing, CA 98765

NAME: Annie

ADDRESS: _____ DATE: _____

	SPHERICAL	CYLINDRICAL	AXIS	PRISM	BASE
R	+1.00	DS			
L	+1.00	DS			
NV					
NA					

REMARKS: Zeiss Digital 1000

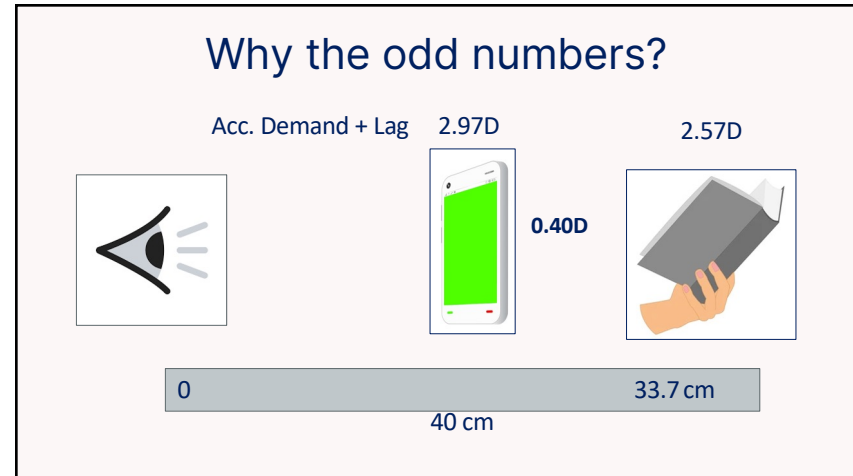
DR: _____

24

Powerboost Lenses Product Portfolio

Power Boost Lenses		Boost at the Bottom
Zeiss Digital Lens	Digital 500	+0.50
	Digital 750	+0.75
	Digital 1000	+1.00
	Digital 1250	+1.25
Eyezen	Eyezen +1	+0.40
	Eyezen +2	+0.60
	Eyezen +3	+0.85
	Eyezen +4	+1.10
Hoya Sync III	Hoya Sync 5	+0.57
	Hoya Sync 9	+0.95
	Hoya Sync 13	+1.32
Unity Relieve	Relieve 50	+0.50
	Relieve 70	+0.70
Shamir Relax	Relax 50	+0.50
	Relax 65	+0.65
	Relax 80	+0.80

25



26

Digital Eye Strain

Digital Eye Strain – Symptoms

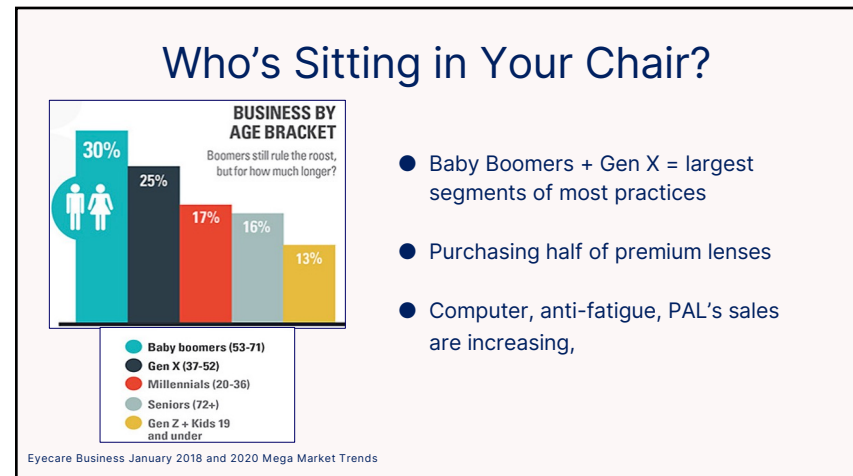
- Red, Dry, Irritated, Sore Eyes
- Blurred Vision at Distance and/or Near
- Eye Fatigue
- Neck and Back Pain
- Headaches

Digital Eye Strain – Areas of Concern

- Refractive Errors
- Accommodative Disorders
- Binocular Vision Dysfunctions
- Dry, Sore Eyes
- Presbyopia

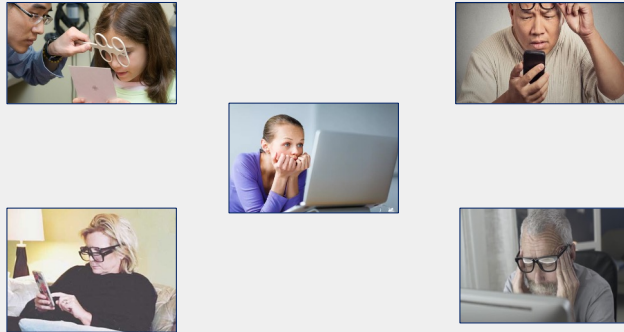
The screenshot shows a 'Lifestyle Index' questionnaire with various questions about digital eye strain symptoms and habits, such as 'How often do you experience any of these symptoms?' and 'How long do you spend on a computer or smartphone?'.

27



28

Powerboost Patients



29

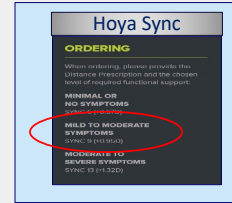
Fit by Symptom and Age



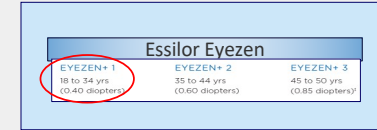
Symptom Severity: Mild
Rx: Hoya Sync 9 (+0.95D)



Age: 32
Rx: Eyezen +1 (+0.40D)



Convergence Insufficiency



Caution

Effective Add = +4.00
without glasses

30

Powerboost for the Emerging Presbyope

Power Boost Lenses		Boost at the Bottom
Zeiss Digital Lens	Digital 500	+0.50
	Digital 750	+0.75
	Digital 1000	+1.00
	Digital 1250	+1.25
Eyezen	Eyezen +1	+0.40
	Eyezen +2	+0.60
	Eyezen +3	+0.85
	Eyezen +4	+1.10
Unity Relieve	Relieve 50	+0.50
	Relieve 70	+0.70
Shamir Relax	Relax 50	+0.50
	Relax 65	+0.65
	Relax 80	+0.80



Lisa 43 yo
Rx: +0.25 -0.75 x 180
+0.25 -0.50 x 005 Add +0.75

BV, OH, GH = WNL, unremarkable

31

Accommodative Disorders



Condition	NPA	Flippers	Treatment
Insufficiency	Reduced		(+) Lenses @ Near
Infacility		Reduced	VT (+) Lenses @ Near
Spasm		(+) difficult	VT (+) Lenses @ Near
Ill-Sustained	Reduced on Repeat	(-) difficult	(+) Lenses @ Near

32

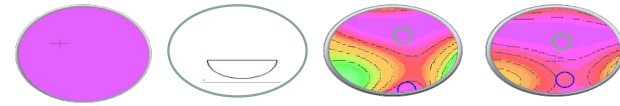
Binocular Vision Conditions



Condition	Treatment
Exophoria	Prism, VT
Esophoria	(+) Lenses, Prism
Gross Convergence Insufficiency	VT
Convergence Excess	(+) Lenses, Prism
Vertical Phoria	Prism

33

Lens Designs for Rxing Near Plus



Lenses	Benefits	Limitations
Single Vision Near	Wide Field of View	Distance Blur
Bifocal	Wide Field of View	Cosmesis Image Jump
PAL	Cosmesis	Small Reading Area Narrow Corridor Cost
SV Distance with Near Power Boost	Wide Field of View Cosmesis Lower Cost	(Practically None)

34

Powerboost for Accommodative Esophoria

Power Boost Lenses	Boost at the Bottom
Zeiss Digital Lens	Digital 500 +0.50
	Digital 750 +0.75
	Digital 1000 +1.00
	Digital 1250 +1.25
Eyezen	Eyezen +1 +0.40
	Eyezen +2 +0.60
	Eyezen +3 +0.85
	Eyezen +4 +1.10
Hoya Sync III	Hoya Sync 5 +0.57
	Hoya Sync 9 +0.95
	Hoya Sync 13 +1.32



Annie: 11yo

Dry/Wet Ret. and Refraction:
Dist. Rx: +1.00 DS ADD +1.00

Dist CT : ortho Near CT: 5 Esophoria
AC/A = 8/1

35

Dr. Isabel Kazemi
123 Sunshine St.
Amazing, CA 98765

Lab order

- which Powerboost lens
- monocular distance PD
- fitting height (at pupil center)

NAME Annie
ADDRESS _____ DATE _____

R		SPHERICAL	CYLINDRICAL	AXIS	PRISM	BASE
D.V.	O.D.	+1.00	DS			
	O.S.	+1.00	DS			
N.V.	O.D.					
	O.S.					

Remarks Zeiss Digital 1000
DR. _____

36

Powerboost for Students

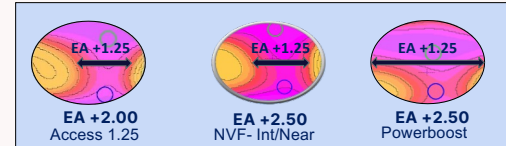
Power Boost Lenses	Boost at the Bottom
Zeiss Digital Lens	Digital 500 +0.50 Digital 750 +0.75 Digital 1000 +1.00 Digital 1250 +1.25
Eyezen	Eyezen +1 +0.40 Eyezen +2 +0.60 Eyezen +3 +0.85 Eyezen +4 +1.10
Unity Relieve	Relieve 50 +0.50 Relieve 70 +0.70
Shamir Relax	Relax 50 +0.50 Relax 65 +0.65 Relax 80 +0.80



Sophie: 20 yo College student
CC: Eye strain and blurry vision in class
Rx: -0.75 DS
-1.00 DS add +0.75
BV, OH, GH = WNL, unremarkable

37

Powerboost for Intermediate/Near Use



Power Boost Lenses	Boost at the Bottom
Zeiss Digital Lens	Digital 500 +0.50 Digital 750 +0.75 Digital 1000 +1.00 Digital 1250 +1.25
Hoya Sync III	Hoya Sync 5 +0.57 Hoya Sync 9 +0.95 Hoya Sync 13 +1.32

Fred: 61yo w/multiple screens
CC: Trouble seeing at near w/ Access 75
Rx: Plano OU, Int. +1.25, Near +2.50
BV, OH, GH = WNL, unremarkable

38

Master Rx

Dr. Michelle J. Hoff
123 Sunshine St.
Amazing, CA 98765

NAME: Fred
ADDRESS: _____ DATE: _____

	SPHERICAL	CYLINDRICAL	AXIS	PRISM	BASE
D.V.	Plano	DS			
O.S.	Plano	DS			
N.V.	+2.50				
O.S.	+2.50				

Remarks: Intermediate = +1.25
DR: _____

Powerboost Rx

Dr. Michelle J. Hoff
123 Sunshine St.
Amazing, CA 98765

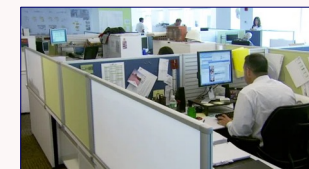
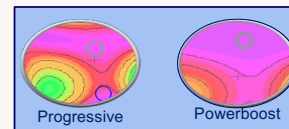
NAME: Fred
ADDRESS: _____ DATE: _____

	SPHERICAL	CYLINDRICAL	AXIS	PRISM	BASE
D.V.	+1.25	DS			
O.S.	+1.25	DS			
N.V.					
O.S.					

Remarks: Hoya Sync 13 for Intermediate/Near
DR: _____

39

Powerboost for Progressing Presbyope



Power Boost Lenses	Boost at the Bottom
Zeiss Digital Lens	Digital 500 +0.50 Digital 750 +0.75 Digital 1000 +1.00 Digital 1250 +1.25
Eyezen	Eyezen +1 +0.40 Eyezen +2 +0.60 Eyezen +3 +0.85 Eyezen +4 +1.10
Hoya Sync III	Hoya Sync 5 +0.57 Hoya Sync 9 +0.95 Hoya Sync 13 +1.32

Walter: 57yo IT Support
CC: Trouble seeing at near current PAL
Current PAL: +1.00 DS OU add +1.50
RX: +1.00 DS OU Int: +1.25 Near +2.25
BV, OH, GH = WNL, unremarkable

40

Example: Powerboost as Intermediate/Near

Rx +1.00D, add +1.25 intermediate, add +2.25 near

Zeiss Digital 1000 (+1.00 boost)

Powerboost Lens	Power at FRP	Distance (above FRP)	Near (below FRP)	Power at near
Zeiss Digital 1000	Intermediate add	No distance	14mm	Boost power

41

Powerboost for the Traveling Presbyope

Power Boost Lens	Boost at the Bottom
Zeiss Digital Lens	Digital 500 +0.50 Digital 750 +0.75 Digital 1000 +1.00 Digital 1250 +1.25
Eyezen	Eyezen +1 +0.40 Eyezen +2 +0.60 Eyezen +3 +0.85 Eyezen +4 +1.10
Unity Relieve	Relieve 50 +0.50 Relieve 70 +0.70
Shamir Relax	Relax 50 +0.50 Relax 65 +0.65 Relax 80 +0.80

Evan: 56 YO retired traveler

CC: PAL not ideal for viewing seat-back screens in flight

Rx: -5.00 DS OU Add +2.00 Seatback screen EA +1.25

BV, OH, GH = WNL, unremarkable

42

Clinical Pearls

- Developed to relieve DES, closer WD
- Cat = SV, but more like hybrid variable power lens
- Prescribe using visual assessment data
- Not just for Pre-presbyopes/Digital Eye Strain
 - Accommodative Disorders
 - Binocular Dysfunction
 - 1st time PAL
 - Task Specific/Advanced Presbyope

43

Contraindications

- Not for everyone
- Reason for non-adapts
 - Signs & Sxs similar to other conditions
 - Convergence insufficiency
 - Moderate exophoria at near

44

At the End of the Day



- Did I address the chief concern with appropriate recommendations?
- Is what I am prescribing an improvement over what the patient has or is used to?

45



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mhoff@berkeley.edu
mhoff@sightlineoc.com

46