**From:** Elizabeth Becker <becker1458@gmail.com>
**Sent:** Wednesday, August 7, 2024 9:06 AM
**To:** MDOS-BiopticSOS
**Subject:** Fwd: PUBLIC COMMENT - Pending Rule set R 257.1-R 257.5
**Attachments:** image004.png; image005.png; MOA 7-24-24 Response to SOS ARS R 257.1-R 257.5.docx



---------- Forwarded message ---------
From: **Jeff Towns** <Jeff@themoa.org>
Date: Wed, Jul 24, 2024, 11:20 AM
Subject: PUBLIC COMMENT - Pending Rule set R 257.1-R 257.5
To: MDOS-BiopticsSOS@Michigan.gov <MDOS-BiopticsSOS@michigan.gov>
Cc: Sarah B Hinkley <SarahHinkley@ferris.edu>, becker1458@gmail.com <becker1458@gmail.com>, Deol, Ramanpal <rdeol1@hfhs.org>, Day, Sherry <sheday@med.umich.edu>, Gormezano, Susan R. <SGormez1@hfhs.org>

Michigan Department of State

Attention: Driver Assessment Section (Manager)

PO Box 30810, Lansing, MI 48909-9832

Thank you for the opportunity to provide the Michigan Optometric Association's public comment regarding Pending Rule set R 257.1-R 257.5.

Please Acknowledge Timely Receipt. Thank You.

Response to ARS - Administrative Rulemaking System:  Pending Rule set for R 257.1-R 257.5

Michigan Optometric Association Vision Rehabilitation Committee

**Background**

Founded in 1896, the Michigan Optometric Association (MOA) is one of the state's oldest organizations and was created to provide leadership for the development of optometrists to provide comprehensive eye care for patients in the state of Michigan. The current strategic plan calls for continued work in the area of advocacy for optometrists and their patients. With 1,124 members, it is Michigan's largest professional organization for optometrists. Its mission is to advance and support optometry in serving Michigan's eye care needs and it serves as the recognized authority for vision and primary eye care in Michigan.

The MOA's Vision Rehabilitation Committee consists of MOA volunteer leadership and members committed to the provision of the highest level of care to visually impaired patients. These optometrists keep abreast of state-of-the-art diagnostic and therapeutic techniques, develop rehabilitation plans with related professionals, and serve as advocates for the blind and visually impaired. By helping the visually impaired reach functional visual potential, vision rehabilitation specialists assist in the achievement of educational, career, vocational, and independent living goals. The committee administers a certification process for providers of low-vision rehabilitative care. The group represents some of the state's foremost experts in the field of low-vision rehabilitation, including bioptic telescopic driving.

# Comments

The following views and comments represent the consensus of the MOA Vision Rehabilitation Committee as input was sought from every member. They are also supported by the Michigan Optometric Association at large.

## R 257.3  Restricted drivers' licenses.

We support the change from "permitting" to "allowing" in the document. We support the change from "he" to "the applicant or licensee." We support the spelling correction for "ophthalmologist."

Regarding the following proposed change:

(4) A restricted driver's license for the use of a telescopic or bioptic lens may be issued to an applicant or licensee who has not less than 20/50 visual acuity in 1 eye if the following are satisfied:

(a) The applicant or licensee receives satisfactory behind the wheel training in the use of telescopic or bioptic lens from a qualified individual as specified by the department.

(b) The applicant or licensee passes testing as specified by the department.

**we support statements (a) and (b) as these components of the rule are already in place and understood throughout the optometric and vision rehabilitation communities. We believe driver's education with driving rehabilitation instructors and assessment is a wise and prudent approach for new bioptic drivers.**

Regarding the following proposed change:

(c) The biocular acuity through a carrier lens is not less than 20/200.

**we oppose this change for the following reasons:**

- **Using a carrier lens acuity of worse than 20/200 to disallow bioptic driving would negatively impact MANY bioptic telescopic drivers who are already licensed in Michigan. As vision rehabilitation optometrists, we have existing patients using telescopic systems safely and effectively who would not pass this criteria. These patients rely on the ability to drive for employment, independence, and family management. This change would prevent many of our patients from maintaining income and supporting their families, contributing significantly to society, and supporting the Michigan economy. It would have negative financial implications on the state. We are happy to provide testimony from our patients who would lose their licenses should this rule be promulgated.**
- **We, as vision rehabilitation optometrists, carefully screen candidates for bioptic driving, considering factors such as motivation, functional implications of their diseases, meeting the current legal standards, and overall health and safety. We are selective in who we allow to move through this process. There are safeguards in place with the driver education/testing requirements and the state-level assessment before a bioptic driver is licensed. If a person is unable to drive safely with a telescope despite proper fitting and training, they will be identified in the long and laborious process that already exists.**
- **We support maintaining the current standard for vision achieved through the bioptic telescope. This standard requires adequate visual acuity through the telescope. Based on the laws of optics, a patient cannot practically achieve the current required visual acuity if their unmagnified vision through the carrier lens is too poor. For example, a patient with 20/600 vision would be extremely unlikely to achieve 20/50 with the practical strengths available in bioptic telescopes on the market. Thus, we feel that the standard requiring achieving the visual acuity standard through the bioptic telescope is sufficient.**

- **The 20/200 or better carrier proposal is too stringent. Optically, a patient with this visual acuity would be able to achieve legal driving standards with only a 3-4X telescope. Bioptic telescopes can be prescribed in 5-6X realistically. Should you require a carrier lens visual acuity minimum, we would only be comfortable with worse than 20/400 for the reasons described.**
- **Significant research does not show a link with distance visual acuity and driving risk of morbidity. Other factors such as reaction time, cognition, distractibility, and visual factors such as visual field are known through research to be more significant factors impacting driving safety.**
- **Bioptic drivers undergo extensive training to learn cautious, thoughtful, self-limited driving. They drive far fewer miles than the average driver and are trained to exhibit discretion with road and weather conditions, and time of day. They learn strategies to best protect themselves and others, being much more attentive to driving than the average driver.**

## R 257.4 Denial or suspension of drivers' licenses.

Regarding the following:

Rule 4. A driver's license shall must be denied or suspended indefinitely if an applicant or licensee has visual acuity less than 20/60 with recognizable progressive abnormalities affecting vision; visual acuity less than 20/70 without recognizable progressive abnormalities affecting vision; visual acuity of 20/100 or less in 1 eye and less than 20/50 in the other; or an unaided peripheral field of vision less than 90 degrees.

**We support the changes proposed to rule 4. We believe (and research supports) that visual field deficits are more impactful than visual acuity on driving safety. While visual field-enhancing devices can be helpful for functional vision and mobility, we do not feel that using them to meet the visual field driving standard is in the best interest of public safety.**

## Rationale

Our rationale for these views is a result of our combined hundreds of years of clinical experience caring for patients with (low) vision rehabilitation, including patient screening, patient education, interprofessional collaborative care with other professions including occupational therapists, vision rehabilitation therapists, and driving rehabilitation instructors, referral, fitting and evaluation of bioptic telescopes for driving. In addition, our rationale represents a review of the optometric, ophthalmic, and driving rehabilitation literature.

# Conclusion

We, as the Vision Rehabilitation Committee of the Michigan Optometric Association, support the proposed changes to the Rule Set for R 257.1-R 257.5 with the following exception:

We strongly oppose the addition of the 20/200 or better visual acuity requirement in the carrier lens for bioptic telescopic driving. We feel this proposed change is unnecessary and will negatively impact many of our patients who rely on bioptic driving for their independence and financial support of themselves and/or their families. We ask that you strongly consider eliminating the visual acuity carrier requirement in the proposal.

We are happy to share our concerns personally, whether by call, text, email or meeting and work with you on alternative solutions should this be necessary. We can be reached through the MOA's Executive Director, Jeff Towns at 517-482-0616, or via email to Jeff@themoa.org.

Thank you for your consideration,

Sherry Day, OD and Donna Wicker, OD (chair and vice-chair) on behalf of the
Michigan Optometric Association Vision Rehabilitation Committee

**References**

[1] Zhou AM, Flom RE, Raasch TW, Segerstrom EE, Dougherty BE. Vision, Driving Exposure, and Collisions in Bioptic Drivers. Optom Vis Sci. 2022 February 01; 99(2): 121–126. doi:10.1097/OPX.0000000000001836

[2] Federal Highway Administration. Manual on Uniform Traffic Control Devices. 2003 Edition, Revision 1. Washington Dc: U.S. Department Of Transportation; 2003.

[3]Owsley C, Mcgwin G. Vision and Driving. *Vision Research*. 2010;50(23):2348-2361.

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[6]Owsley C, Stalvey BT, Wells J, Sloane Me, Mcgwin G., Jr. Visual Risk Factors for Crash Involvement in Older Drivers with Cataract. Archives of Ophthalmology. 2001;119:881–887.

[7]Cross JM, Mcgwin G, Jr, Rubin GS, Ball KK, West SK, Roenker DL, Owsley C. Visual and Medical Risk Factors for Motor Vehicle Collision Involvement Among Older Drivers. British Journal of Ophthalmology. 2009;93:400–404.

[8]Marottoli RA, Richardson ED, Stowe MH, Miller EG, Brass LM, Cooney LM, Jr, Tinetti ME. Development of A Test Battery to Identify Older Drivers at Risk for Self-Reported Adverse Driving Events. Journal of The American Geriatrics Society. 1998;46:562–568.

[9]Ivers RQ, Mitchell P, Cumming RG. Sensory Impairment and Driving: The Blue Mountains Eye Study. American Journal of Public Health. 1999;89:85–87.

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[16]Owsley C, Ball K, Mcgwin G, Jr, Sloane ME, Roenker Dl, White MF, Overly Et. Visual Processing Impairment and Risk Of Motor Vehicle Crash Among Older Adults. JAMA. 1998a;279:1083–1088.

[17]Rubin GS, Ng ES, Bandeen-Roche K, Keyl PM, Freeman EE, West Sk. A Prospective, Population-Based Study of The Role of Visual Impairment in Motor Vehicle Crashes Among Older Drivers: The See Study. Investigative Ophthalmology & Visual Science. 2007;48:1483–1491.

**Jeff Towns**
Executive Director

530 W. Ionia St, Suite A | Lansing, MI 48933
Phone: 517.482.0616 | Fax: 517.482.1611

www.themoa.org

**MOA Mission:** To advance and support optometry in serving eye care needs in Michigan.

July 20, 2024

Comments concerning: Administrative Rules for Visual Standards for Motor Vehicle Driver's Licenses Rule Set 2023-55 ST

Draft Rule Document:

There are several spelling and grammar changes which are appropriate for the document.

- 4 a-c adds detail concerning drivers training and a visual acuity of at least 20/50 with the bioptic telescope.
- There is a spelling error in 4c "biocular acuity" should read "binocular acuity".
- 4c also introduces a NEW requirement of the carrier lens acuity of 20/200 or better.

This is an unnecessary standard. By requiring a Bioptic acuity of 20/50 the carrier lens acuity is also controlled. The telescopes that are available today and to our knowledge in the foreseeable future used for driving are 2-6X power. When training with a stronger bioptic the image movement is too sensitive when the power is higher. Future designs may change this, but it would need to be a dramatic development. If the carrier lens acuity is restricted to 20/200 this may eliminate the driver using a 5 or 6X telescope. These drivers are typically those that started with a 4X telescope and have then chosen the stronger telescope for better acuity (maybe 20/30) or have a small change in their eye condition and the 6.0X telescope provides the needed 20/50 vision. In this situation the carrier lens acuity may not reach the 20/200 range.

- In the document Regulatory Impact Statement (RIF) page 6 the question.below is addressed:

A. How were estimates made, and what were your assumptions? Include internal and external sources, published reports, information provided by associations or organizations, etc., that demonstrate a need for the proposed rules.
It was not necessary to make estimates. The American Association of Motor Vehicle Administrators published an overview and update on bioptic driving in May of 2023 which included vision standards for restricted driving privileges. Those standards were consistent with the current Department policy

The above mentions publication is useful for driver, prescriber, and trainer. This is a list of each State's visual acuity and visual field requirements. It does not provide any information as why each State has their requirements. There is no research, survey, or study showing that one standard is safer than another.

Studies that have addressed the general safety of bioptic driving show that the trained bioptic driver had similar near collisions as the normal sighted driver. Also like the "normal sighted " driver, they performed better than the mildly cognitively impaired driver. (1)

- I request that the carrier lens requirement be eliminated as the bioptic acuity of 20/50 already limits the potential visual acuity of the carrier lens. Setting a carrier vision requirement has no logical basis, or study suggesting it is needed.

I appreciate the ability to provide comments and hope that Michigan will continue to support this accommodation. The majority of the bioptic drivers I work with are working adults. Bioptic driving allows many of my patients to be active in the workforce supporting families and avoid using the backup of disability allowance, medicaid, food stamps or other State and Federally funded programs. The fiscal impact to the individual is huge if employment is lost. The State of Michigan will then lose tax revenue and start supporting these patients if the bioptic driving option is lost.

Thank you for your time reviewing these comments.

Elizabeth M Becker OD
Certified Low Vision specialist
Past President Michigan Optometric Association
Past MOA Chair Low Vision Committee
becker1458@gmail.com

(1)_" Evaluation of the Driving Safety of Visually Impaired Bioptic Drivers Based on Critical Events in Naturalistic Driving" Mojtaba Moharrer1, Shuhang Wang1, Bradley E. Dougherty2, Walter Cybis3, Brian R. Ott4, Jennifer D. Davis4, and Gang Luo

# RESPONSE TO ARS - ADMINISTRATIVE RULEMAKING SYSTEM: PENDING RULE SET FOR R 257.1-R 257.5

# MICHIGAN OPTOMETRIC ASSOCIATION VISION REHABILITATION COMMITTEE

## Background

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## COMMENTS

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***education/testing requirements and the state-level assessment before a bioptic driver is licensed. If a person is unable to drive safely with a telescope despite proper fitting and training, they will be identified in the long and laborious process that already exists.***

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Rationale

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## CONCLUSION

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*We are happy to share our concerns personally, whether by call, text, email or meeting and work with you on alternative solutions should this be necessary. We can be reached at _____.*

Thank you for your consideration,

Sherry Day, OD and Donna Wicker, OD (chair and vice-chair) on behalf of the Michigan Optometric Association Vision Rehabilitation Committee



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## References


[1] Zhou AM, Flom RE, Raasch TW, Segerstrom EE, Dougherty BE. Vision, Driving Exposure, and Collisions in Bioptic Drivers. Optom Vis Sci. 2022 February 01; 99(2): 121–126. doi:10.1097/OPX.0000000000001836

[2] Federal Highway Administration. Manual on Uniform Traffic Control Devices. 2003 Edition, Revision 1. Washington Dc: U.S. Department Of Transportation; 2003.

[3]Owsley C, Mcgwin G. Vision and Driving. *Vision Research*. 2010;50(23):2348-2361.

[4]American Association of Motor Vehicle Administrators. State Vision Requirements for License to Drive. Arlington, VA: 2006. Apr 13.

[5]Hills BI, Burg A. A Reanalysis of California Driver Vision Data: General Findings. Crowthorn, England: Transport And Road Research Laboratory; 1977.

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[12]Higgins KE, Wood JM. Predicting Components of Closed Road Driving Performance from Vision Tests. Optometry & Vision Science. 2005;82:647–656.

[13]Szlyk JP, Pizzimenti CE, Fishman GA, Kelsch R, Wetzel LC, Kagan S, Ho K. A Comparison of Driving in Older Subjects with And Without Age-Related Macular Degeneration. Archives of Ophthalmology. 1995;113:1033–1040.

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[15]johnson CA, Keltner JL. Incidence of Visual Field Loss In 20,000 Eyes and Its Relationship to Driving Performance. Archives of Ophthalmology. 1983;101:371–375.

[16]Owsley C, Ball K, Mcgwin G, Jr, Sloane ME, Roenker Dl, White MF, Overly Et. Visual Processing Impairment and Risk Of Motor Vehicle Crash Among Older Adults. JAMA. 1998a;279:1083–1088.

[17]Rubin GS, Ng ES, Bandeen-Roche K, Keyl PM, Freeman EE, West Sk. A Prospective, Population-Based Study of The Role of Visual Impairment in Motor Vehicle Crashes Among Older Drivers: The See Study. Investigative Ophthalmology & Visual Science. 2007;48:1483–1491.

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