

## Learning To Use Your Bioptic With An Eye Toward Driving

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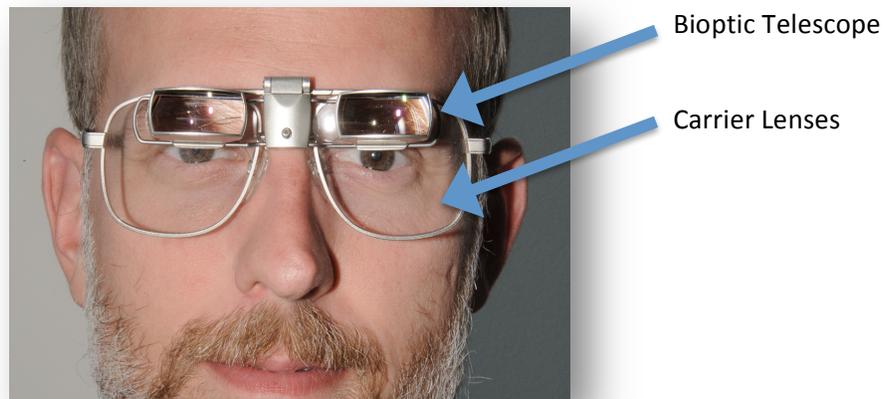
### Definitions:

#### **Bioptic telescope:**

A special pair of eyeglasses with a miniature telescope mounted toward the top of the frame that can be used by one or both eyes to magnify the image allowing the visually impaired user to see further forward.

#### **Carrier lenses:**

The conventional eyeglass lenses that are mounted into the eyeglass frame of the bioptic telescope which contain the user's distance (and sometimes bifocal) prescription (if required for best distance vision). The majority of the driving activity is performed while looking through the carrier lenses.



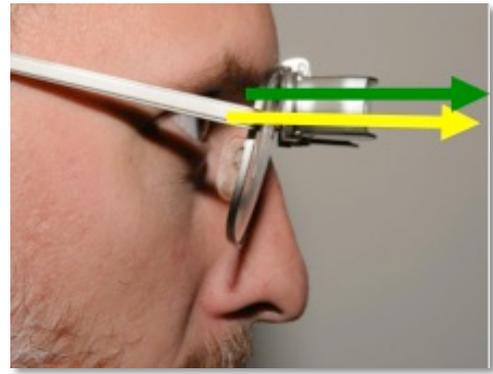
## Basic Bioptic Spotting Movements

### **The "I" Movement**

The most common method you will use to look through the bioptic telescope is the "I" movement. This is a straight up and down head movement where you will shift your head down slightly to look into the telescope. You will want to be looking straight-ahead so that when switching your visual attention from the carrier lenses into the telescope you will be looking in the same place to see the same object. If when you switch your attention from the carrier lenses to the telescope you are not looking in the same place, try first to point your nose directly at the target while looking through the carrier lenses. Try this technique while looking at small targets about a room such as light switches, doorknobs, a clock or small items hanging on the wall. Practice this until switching from the carrier lenses to the telescope becomes accurate, quick and reflexive.



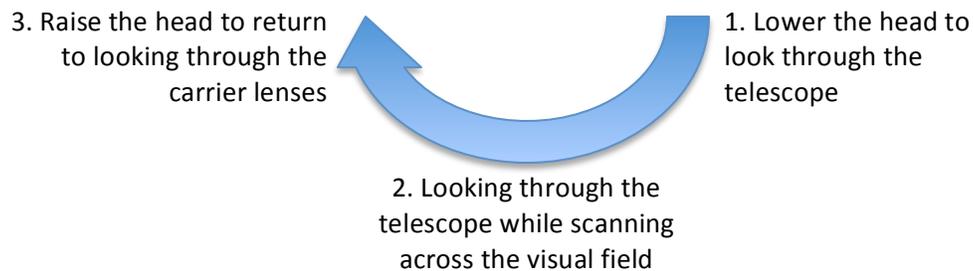
Looking through the carrier lenses of the bioptic telescope. The telescopes are tilted upward and are positioned slightly above the line of sight.



Dropping the head to sight through the bioptic. Make certain your line of sight (yellow arrow) is parallel to the viewing angle of the telescope

### The “U” Movement

The “U” movement is used to scan across the field of vision while looking through the telescope. You drop your head slightly to look through the telescope (1), and then sweep your visual attention across the visual field (2), moving the eyes and head together as one unit, after which you raise your head and return to viewing through the carrier lenses (3).



### Multiplexing Central and Peripheral Images

Since the field of view of your bioptic telescope is rather narrow, perhaps only 15-20% of your normal field of view, you cannot solely pay attention to your vision straight ahead or through the telescope (central vision), but you must also develop a general awareness of everything that is going on around you (multiplexing) and in your side vision. Bioptic drivers only look through their telescope for brief periods of time, while they drive mostly while looking through the carrier lenses.

### Spotting Techniques

**There are four spotting techniques you will need to master**

#### Spotting stationary targets

While sitting or standing still, locate a small object through the carrier lenses, straighten your head posture so that your nose is pointing directly at the object, then lower your head down slightly to look through the telescope using the “I” motion to find (locate) and identify the object. Your goal is to be able to perform this task accurately and quickly and in less than 2 seconds.

### **Spotting moving targets**

While sitting or standing still, locate a moving object (for instance a car, truck, person). Lower your head to look through the telescope and track them across the visual field while continuing to look through the telescope.

### **Spotting stationary targets while moving**

Once you have mastered spotting and scanning while stationary, you will now start to spot stationary objects while you are moving. While a passenger in the car, find signs with your vision through the carrier lenses drop your head to find them through the telescope and track and try to read them while your vehicle moves along. This activity may be more challenging as any motion of you or your vehicle will be exaggerated by the magnification power of the telescope.

### **Spotting moving targets while moving**

It is important to learn to accurately and efficiently spot and track moving objects while you are moving. Always start by locating the object with your vision through the carrier lenses and then transfer your visual attention to look through the telescope to find, scan and identify the object. This activity should also take only 2-3 seconds before returning to look through the carrier lenses.

## **Basic Principals of Using a Bioptic While Driving**

### **1. Objects appear closer:**

The magnification of the telescope makes everything appear to be closer. The benefit to the user is that it allows them to see further ahead by a factor of the power of the telescope.

### **2. 95% of driving will be done while looking through the carrier lenses:**

Since the field of view through the telescope is narrow, the telescope is only used intermittently and for short periods of time to enhance distance detail vision.

### **3. Movement is also magnified:**

Objects will not only appear enlarged by the power of the telescope, but they will also appear to move faster. They may also move around more due to motion from the head and the vehicle.

### **4. Focusing:**

Non-focusing bioptic telescopes are already set for distance viewing. Focusable telescopes should be pre-focused at targets that are more than 20 feet (6 m) away before starting to drive and should not be readjusted while driving.

### **5. Lead with your carrier vision:**

Always start out while looking through the carrier lenses. Switch to the vision through telescope when there are objects that need to be seen more clearly before moving on.