



National
Transportation
Safety Board

Safety Recommendations and Safety Alert

Safety Recommendations

- Adopted two recommendations
- Addressed to FAA and companies that operate FCTs
- Educate controllers on circumstances of accidents
- Controllers in both accidents made judgment errors

Moncks Corner, SC

- Controller assumptions
 - Cessna would remain in traffic pattern
 - F-16 performance
 - Recommended left turn, but safer options available

San Diego, CA

- Local controller made several judgment errors
 - Exceeded personal workload limit
 - Misidentified and issued instructions to wrong airplane
 - Did not ensure compliance
 - Safety alert not issued

Training and Guidance to ATC

- Enhance training through review of these events
- Ideal opportunity to impart lessons

Safety Alert

- See and avoid
 - Foundation of midair collision prevention
 - Inherent limitations
 - Leaves pilots vulnerable to unseen aircraft

Technologies

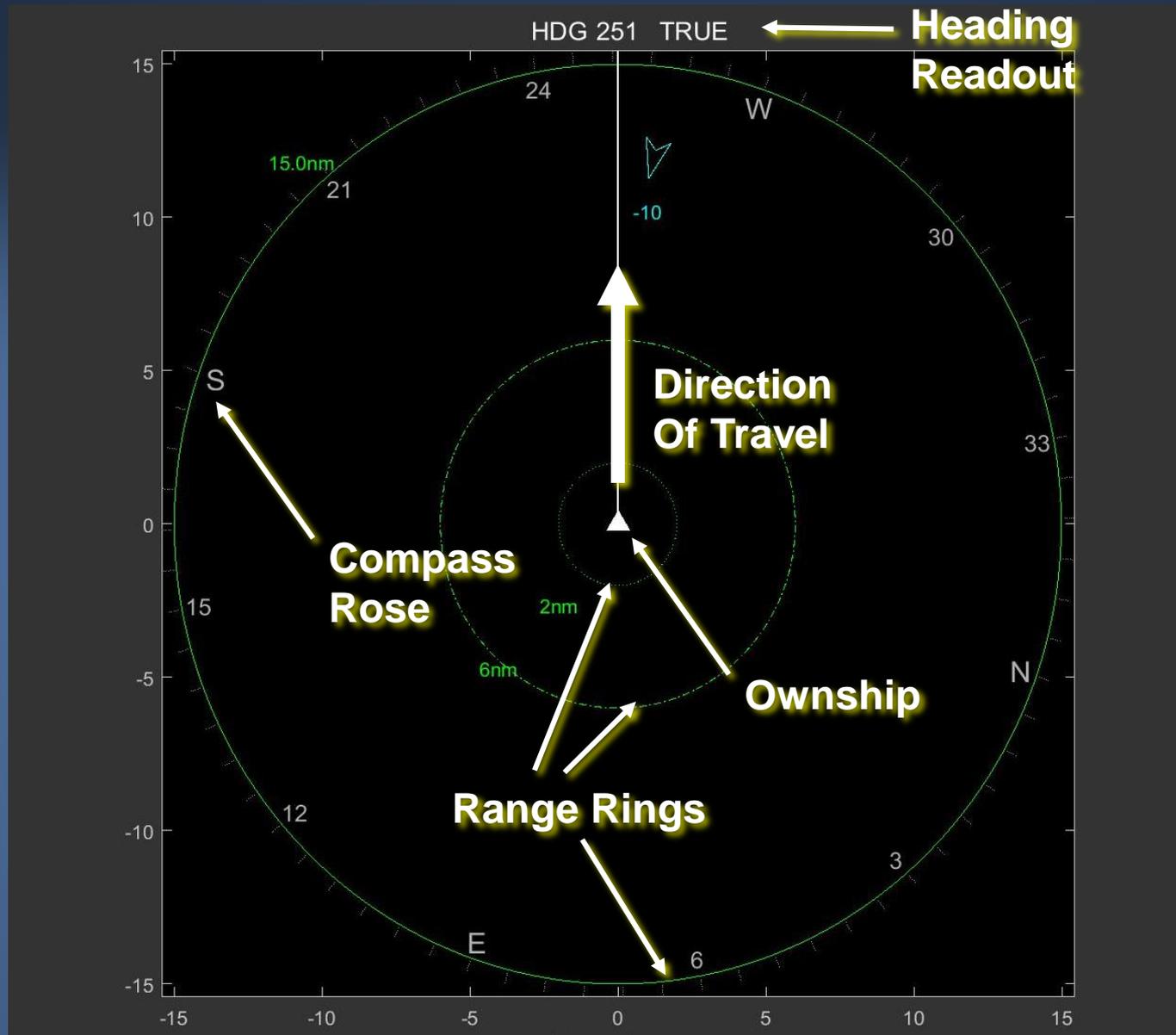
- In-cockpit display or alert of traffic conflicts
 - Traffic advisory systems (TAS)
 - Automatic dependent surveillance-broadcast (ADS-B)
- Can augment reality and compensate for limitations of visual-only search

Moncks Corner, SC

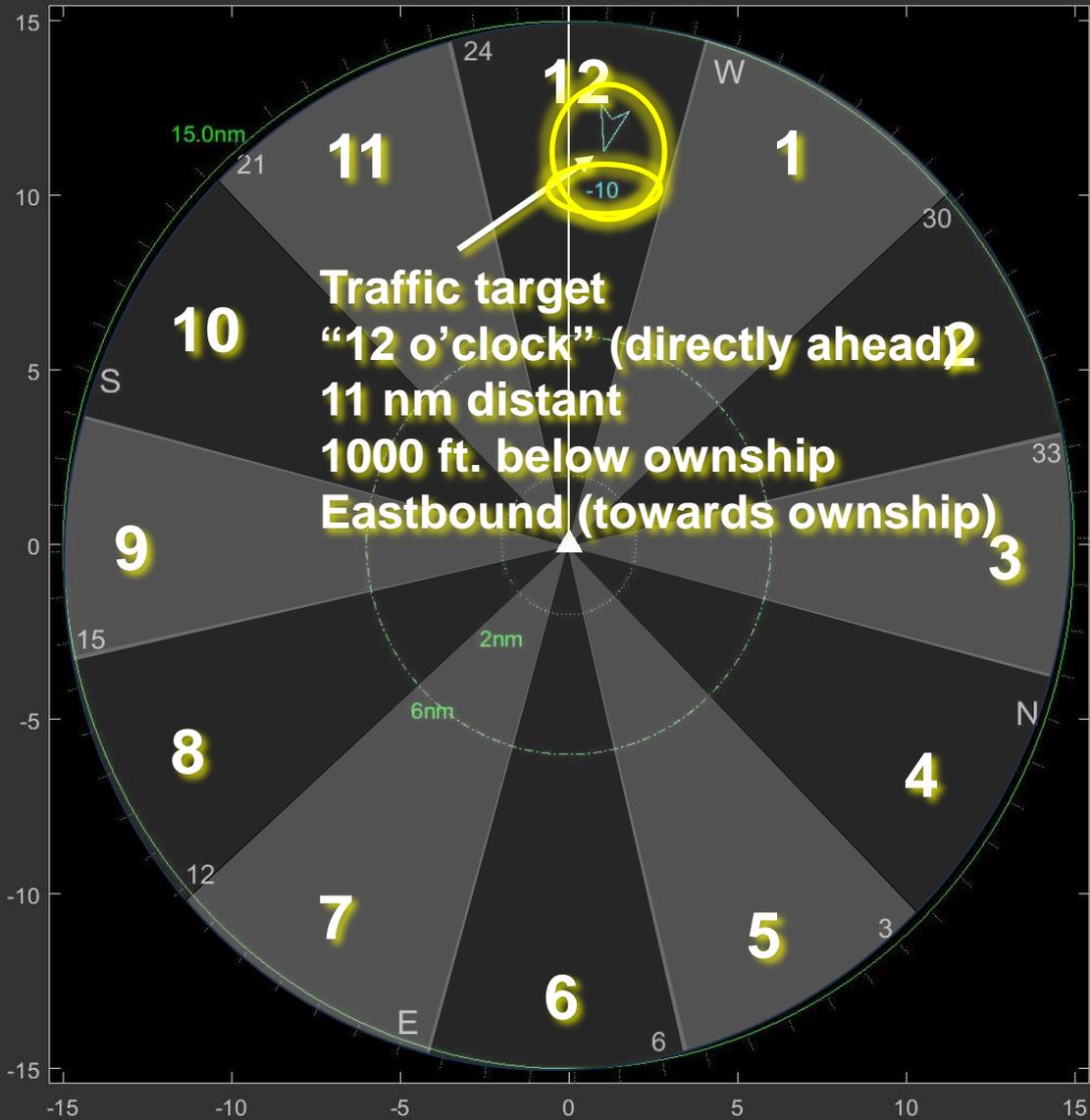
- Pilots had limited opportunity to see and avoid each other
- Not equipped with traffic display or alert technology
- Presence might have changed outcome

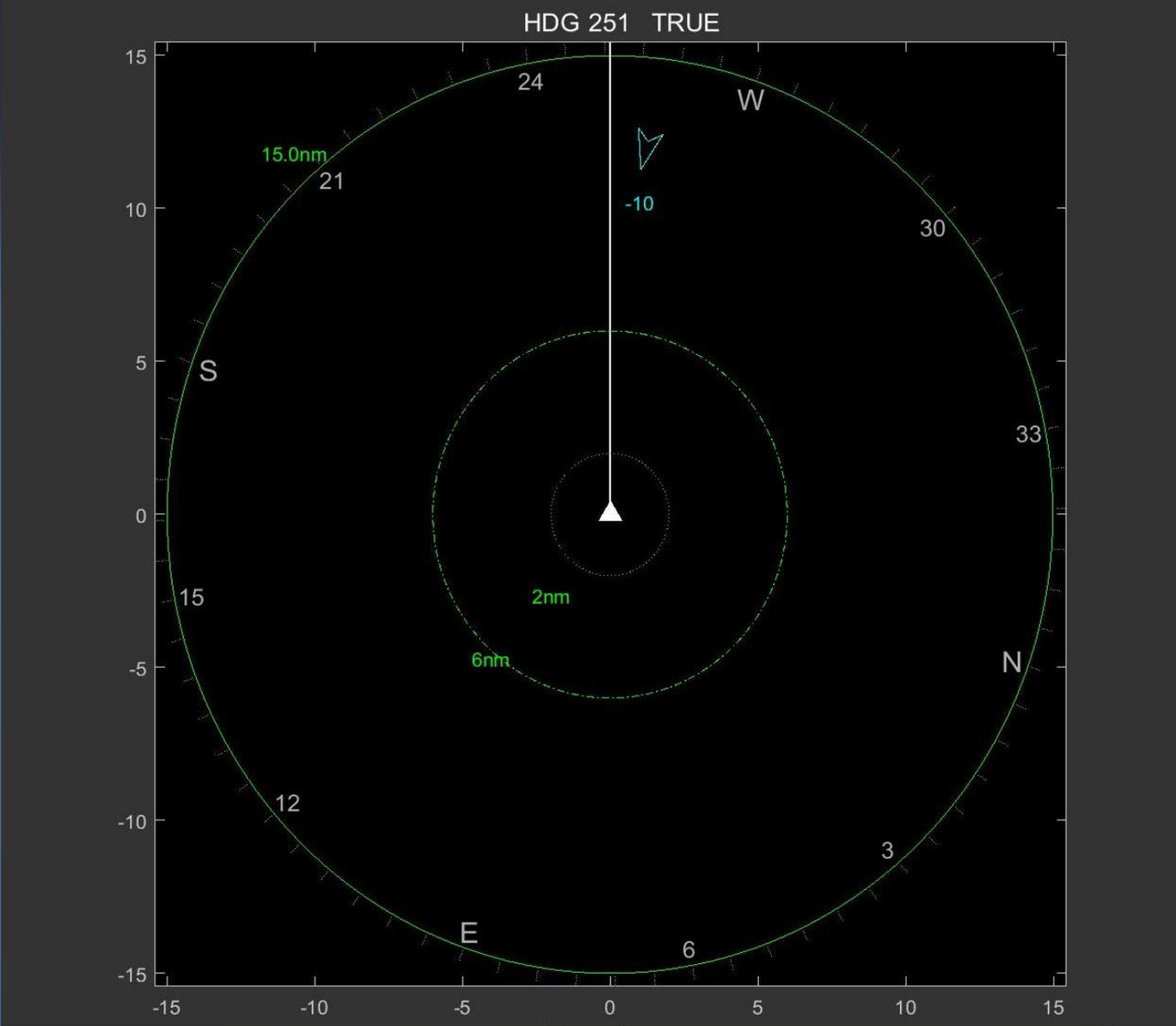
Display and Alerting of Traffic

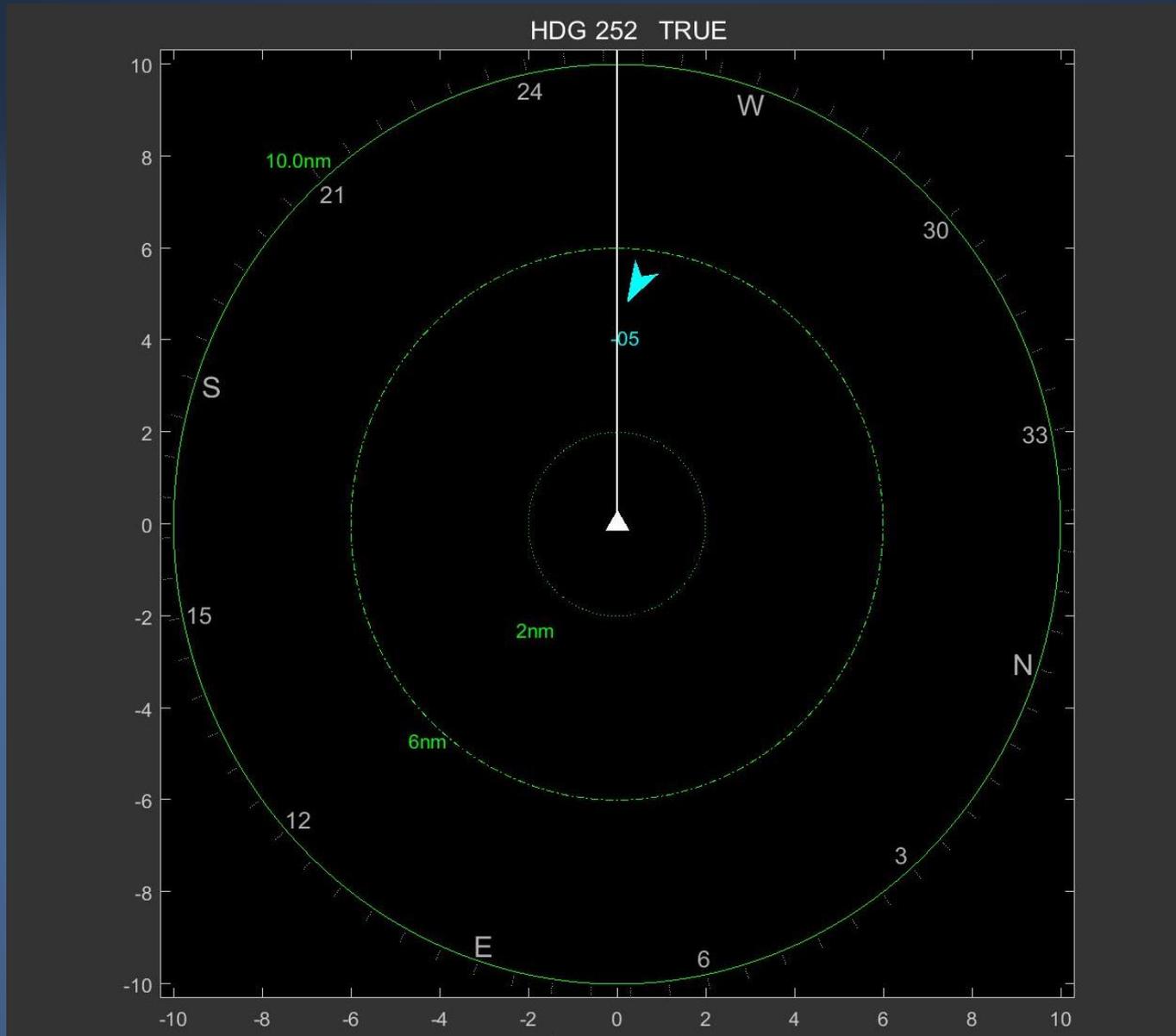
- Simulations from perspective of each pilot
- Does not duplicate any particular display

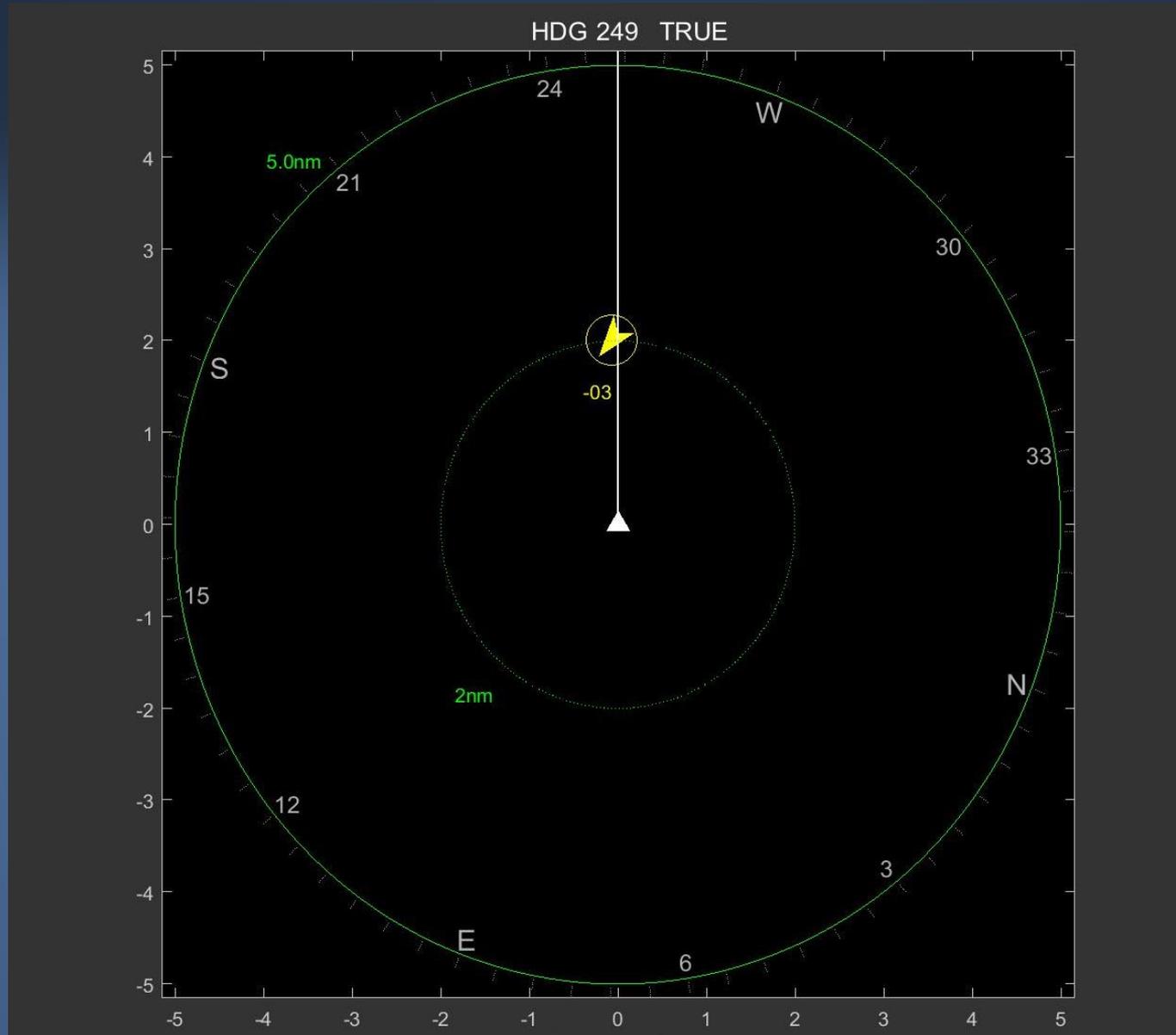


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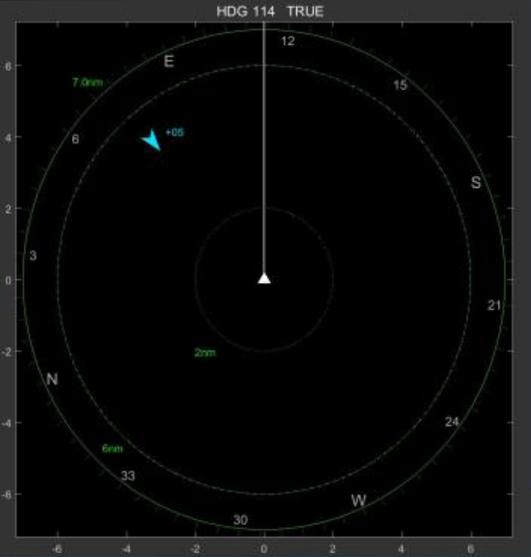




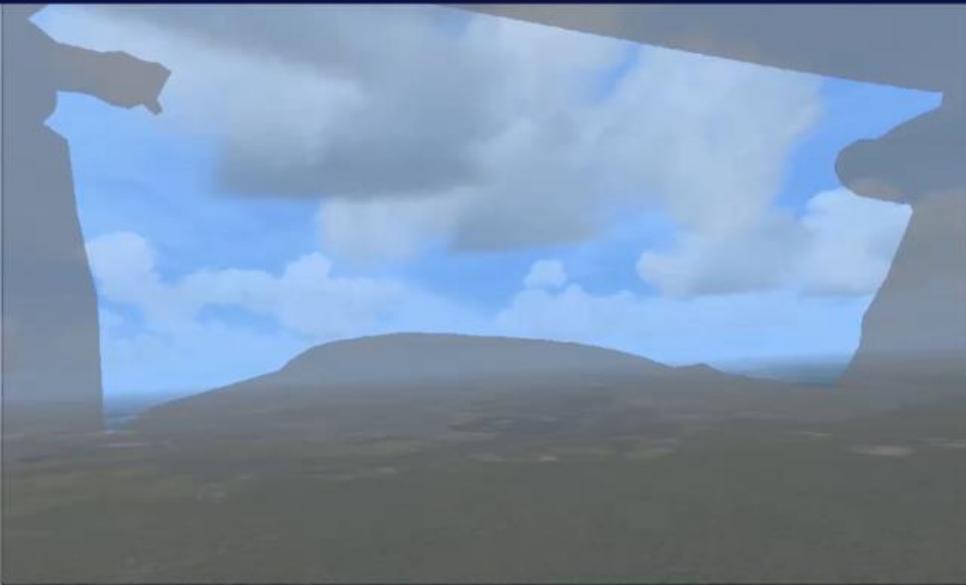
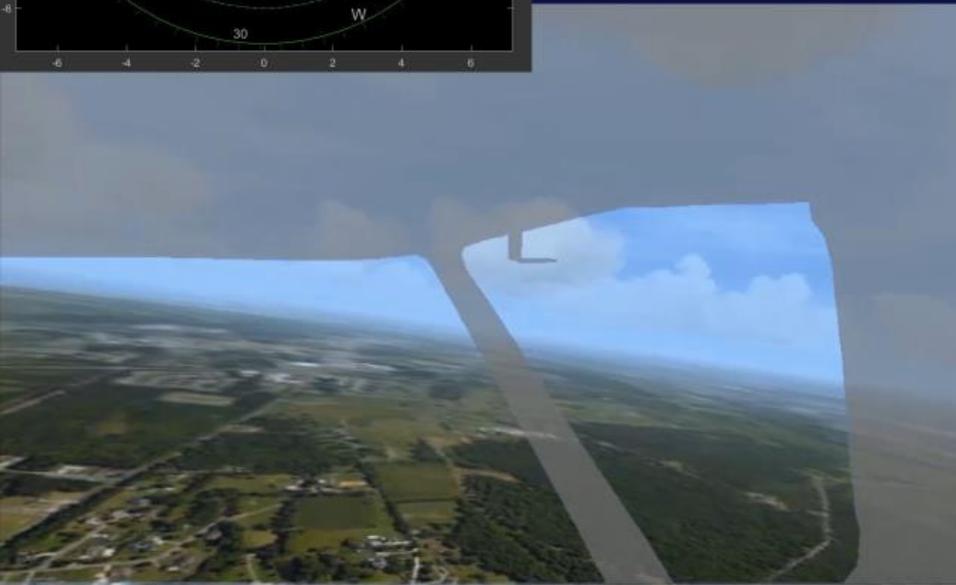




11:00:04

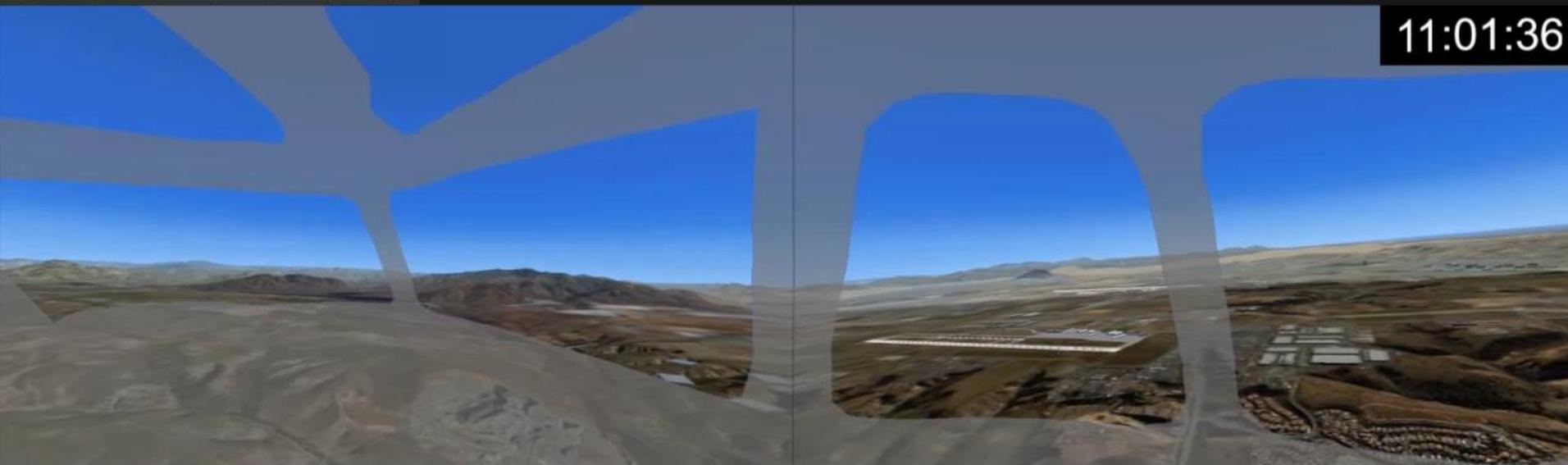
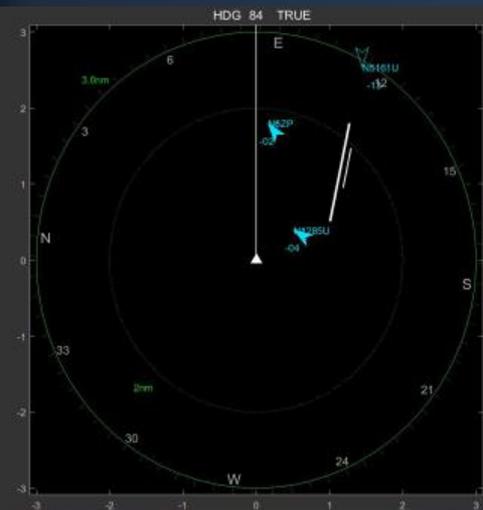


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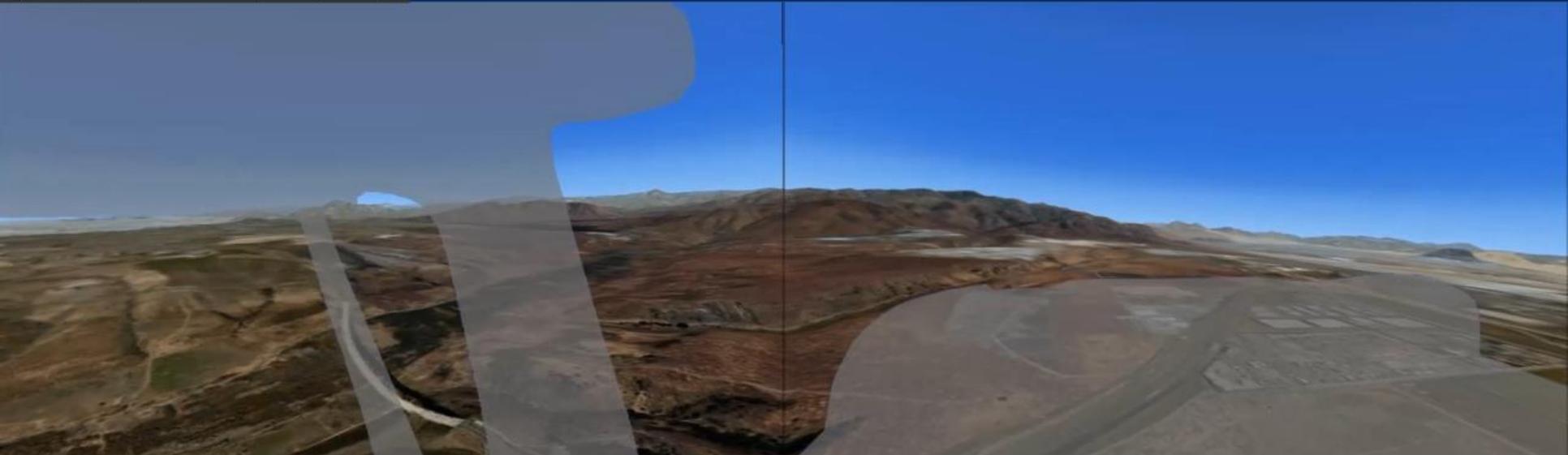


San Diego, CA

- Pilots' fields of view limited and partially obscured at times
- Not equipped with traffic display or alert technology
- Presence might have changed outcome



11:02:30



What can pilots do?

- Recognize benefits of technologies
- Become familiar with limitations
- Use information to separate before evasive maneuvers necessary
- Most technologies (without RA) should aid visual search and separation
- More information in our safety alert at www.nts.gov



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