



Roundabouts, Intersections & Interchanges – Barriers and Benefits to Specialized Transportation Carriers and DOTs

SC&RA

The Specialized Carriers & Rigging Association (SC&RA) is an international trade association of nearly 1,300 member companies from 43 nations. Members are involved in specialized transportation, machinery moving and erecting, industrial maintenance, millwrighting, crane and rigging operations, manufacturing and rental. SC&RA represents both national and multinational companies that operate oversize/overweight loads in every congressional district in the United States. Among others, we serve manufacturers, utilities, shippers in responding to the critical needs of the marketplace.

Background

Over the past decade, there has been an emerging change that is destined to impact intersections and interchanges throughout the United States, and in some states, more rapidly than others. As civil engineers work diligently to increase safety and efficiency at our nations cross roads, the primary focus has been on the volume of cars. The focus is arguably at the expense of trucks, and most notably, permitted specialized transport or oversize overweight (OS/OW) trucks. The increase in this alternative intersection design is occurring while load size and volume is also increasing, and unlike cars, OS/OW trucks cannot use every road and bridge.

A Common Goal – Safety

Specialized Carriers & Rigging Association shares in federal, state, and local efforts to increase safety at our intersections and interchanges. However, we believe this goal can be achieved in harmony with the needs of the specialized carriers operating equipment through these same intersections and interchanges.

Why Our Message is Important to You

Not only do specialized carriers move large and heavy OS/OW loads that are essential to our economy and lifestyle, they are also key partners with the road and bridge building industry carrying equipment and materials to and from DOT and local road and bridge projects. Unfortunately, when intersections and interchanges are designed and built in such a way that makes them impassable to OS/OW loads, our members are forced to travel a longer route that increases transport cost which are substantial (i.e. 100 plus mile detours and delays and associated costs) and ultimately passed on to the consumer, shippers and producers, including DOT's and local governments. This trend will make it more costly for a private company within a city, state, or region to ship their product, reducing their competitiveness which leads to a reduction, if not a complete loss of production and manufacturing, due to closure or relocation. In addition to the loss of existing business, future economic development and business development will not build or expand in these cities and states. For a DOT or local government road or bridge project, this means less work gets done with already limited funding and resources.

Poorly designed intersections and interchanges have a direct impact on transport costs and adversely impact a private company's ability to competitively produce and ship oversize/overweight products by creating barriers for OS/OW carriers.

Roundabouts (circular intersections) are a primary concern for our members as these are the most cumbersome and are by far are the most notable alternative intersection type which states are embracing and building. Absent proper mitigation techniques, roundabouts contain the following design elements that can make the intersection or interchange impassable for OS/OW carriers:

- Barrier/un-mountable curbs throughout the intersection (entry, truck apron, outside, and exit). Roundabouts must be designed with industry friendly curbing. Abuse of tires, suspensions, etc. leads to premature failure.
- Fixed traffic signs, light poles and objects that cannot be removed (guardrail, fence, etc.).
- Center Islands – lacking or containing unusable truck aprons.
- Roadway, truck apron, and raised curbs that collectively cause low profile trucks to bottom out or contribute to rollovers.
- Narrow compact designs and lack of right turn bypass lanes.
- Inconsistent designs – there are no standard design roundabouts. Styles and sizes vary city to city and state to state. Most are too small for OS/OW vehicles and loads.
- Inconsistent signage – it appears there are no standard sign packages for roundabouts.
- High speed narrow approaches may contain a “chicane” (reversing curves) to slow traffic.
- Although it reduces agency cost savings, roundabouts must be designed larger with regard to equipment maintenance.

Other alternative intersection types are presenting challenges to specialized transport:

RTUC/U/Through/ & J Turns – are essentially various forms of a U-turn. Similar to roundabouts, these intersection types are often barriers to OS/OW transport especially those with small diameters and narrow entry with a single lane. This is especially true if the OS/OW vehicle is traveling on the intersecting roadway where barriers have been placed along the opposing roadway and within the intersection that prohibit the truck to continue moving straight through the intersection.

Signalized Monotubes – are fixed features and unlike previous signals, that could be temporarily moved or swung out of the way, monotubes are cost prohibitive to remove and reinstall. Monotubes present challenges for right turns and can be barriers for high loads for left turns and through movements as well.

Other emerging intersection types must be designed and suited to accommodate Specialized Transport:

Diverging Diamond & Single Point Interchanges are typically larger and provide carriers more room to move through and gently turn at an interchange. However these can be a barrier for overheight loads that detour via ramps from the main line to avoid structures. Signs, signal height, type and placement can present height barriers as well. We must insist on mountable or rolled curbs and extended horizontal and vertical clearances to safely transition back to the mainline route. DDI’s built with single lanes and no shoulders on OS/OW routes can be barrier.

Displaced/Continuous Left – are innovative solutions to high volume left turn intersections and can be beneficial and safer for OS/OW carriers moving along multi-lane urban and suburban roadways and turning left onto other multi-lane roadways.

Outreach and Carrier Input Moving Forward

The FHWA is currently reviewing the other alternatives intersections and interchanges listed above and beyond the roundabout and have requested our input. Some states have asked for our input, either directly through the association, our individual members, or our partners in state trucking associations. We welcome these invitations and ask state and local governments to mandate our involvement in the planning design and ultimate intersection and interchange selection. We also encourage states to identify, preserve and protect OS/OW routes and connections to help designs determine where and when OS/OW mitigation is needed. We request a seat at the table to ensure barriers are not created for our members, their customers and the vital products they move, and we all rely on, over our nation's roads and bridges.

We invite and encourage you to utilize these resources well known and respected by our members for innovative contributions to Roundabouts and other alternative intersections.

-Peter Lynch Specialized Freight Solutions – Former freight operations program manager at WisDOT and key architect of the first OS/OW Freight Network and has provided innovative mitigations to roundabout designs and other alternative intersections to ensure these intersections are not a barrier to our industry. plynch@specialized-freight.com (920) 268-1935

-Mark Lenters and his design team GHD and formerly with Ourston Roundabout Design Engineers – has provided leadership and workable effective solutions to roundabout design to accommodate OS/OW while preserving the safety goals of a roundabout design. Mark.lenters@ghd.com (608) 249-4402

-Gene Russell, PhD – KSU Led a study through KSU about OS/OW and Roundabout Designs (Peter and Mark were key contributors to this study as well) which illustrates the need to balance roundabout designs and placement with OS/OW needs. geno@ksu.edu (785) 532-1588

Please feel free to call upon our association on matters related to this or any issue involving specialized transportation.

Specialized Carriers & Rigging Association

Steven Todd, Vice President

5870 Trinity Parkway, Suite 200

(703) 698-0291

info@scranet.org