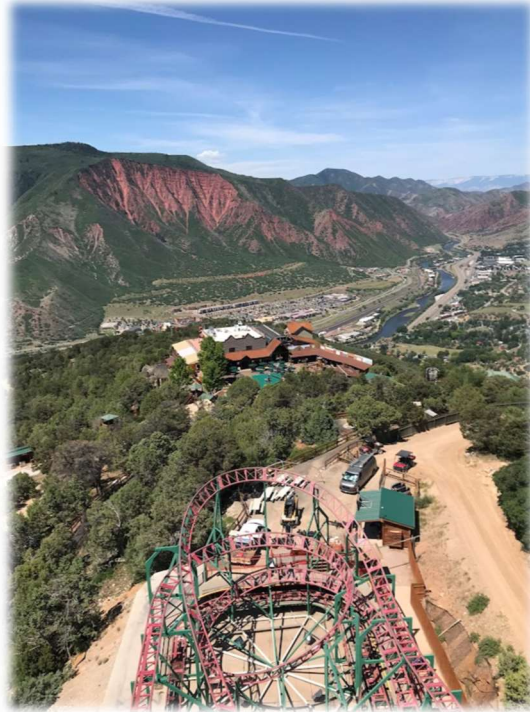


# Case Study: Glenwood Caverns Adventure Park and LTJ Industrial Services, LLC

## *A Partnership in Precision*



**Client: Glenwood Caverns Adventure Park – Glenwood Springs, Colorado**  
**Interviewee: Mike Liebeit, Senior Mechanic and SME**

*This structured case study showcases the collaboration between Glenwood Caverns Adventure Park and LTJ Industrial Services, LLC's Machine Shop, highlighting the key aspects of their successful partnership.*

# Introduction and Background

## Company Overview:

Glenwood Caverns Adventure Park is a renowned amusement park offering a variety of thrilling rides and attractions, including the Alpine Coaster, Giant Canyon Swing, Crystal Drop, Defiance Coaster, and Cliff Hanger. Mike Liebeit, a Senior Mechanic with 14 years tenure with the company, is responsible for the maintenance, repairs, and inspections of these rides, ensuring they operate safely and smoothly.

## Role:

Mike oversees the amusement rides, handles most repairs, and performs safety inspections. He has been instrumental in the development of the Crystal Tower drop ride. *(Mike's responsibilities also include the extensive rebuilding of the Cliff Hanger ride every six months, involving the meticulous process of Non-Destructive Test (NDT) x-ray inspections and bolt and bearing replacements.)*

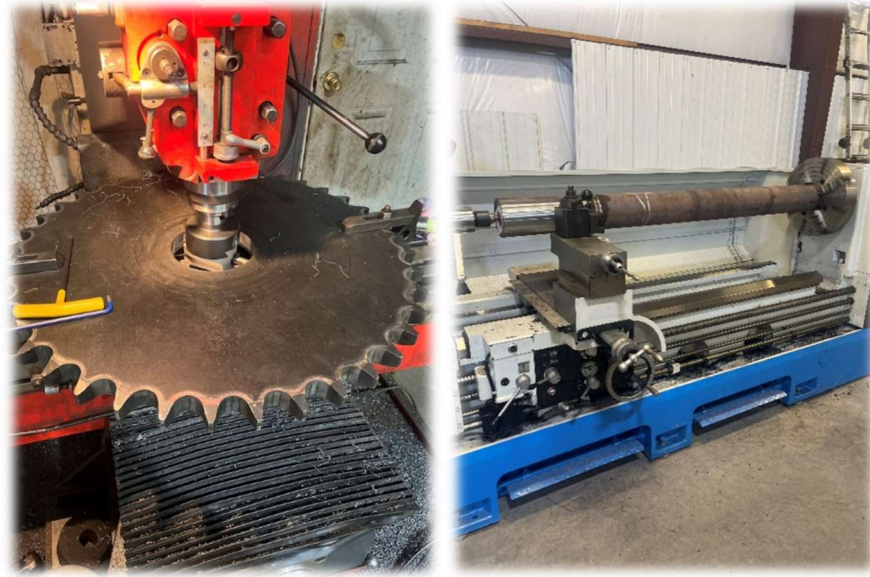
## Fun Facts:

- The Crystal Tower drop goes 110-feet into Iron Mountain
- Riders experience negative 2.5 Gs during descent
- Total ride time is 1:25
- Crystal Tower is the world's only underground drop ride

# Project Overview

## Project Description:

LTJ Industrial Services, LLC has completed several critical projects for Glenwood Caverns Adventure Park. One such project included manufacturing custom parts for the Crystal Tower ride. The shaft needed to be repaired. However, the shaft could not be removed to do those repairs without damaging it. Instead, they decided to manufacture a new one. This involved the motor shaft and the cog that pulls the ride out of the underground pit. The steel shaft is 8 feet long. LTJ has also handled various other tasks such as bushing bearings and wheel assemblies.



*Machining the Crystal Tower Parts*

## Requirements and Expectations:

The projects required precision design and engineering, which was overseen by Apollo Engineering out of Utah. Apollo provided the specific engineering specifications for the new parts. The park needed these parts to be completed within a couple of weeks due to the operating schedule of the amusement park. Glenwood is only open from Memorial Day through after Oktoberfest. This is a limited to timeframe to generate its revenue for the year. The project was time-sensitive, with a completion deadline set for a few weeks to ensure readiness for the summer season.

## Experience and Satisfaction

### Overall Experience:

Mike described his experience with LTJ Industrial Services, LLC as excellent. He appreciates their convenient location, the availability of necessary equipment like forklifts to unload and load projects, and the friendly and knowledgeable staff. He particularly valued their willingness to discuss projects in detail and the full range of services offered including welding, fabrication, machining, cutting and field service.

### Quality of Work:

Mike rated the quality of LTJ's Machine Shop's work as outstanding, always meeting

Glenwood's high standards for precision and reliability. This is very important because safety is so important to Glenwood.

### On-Time and Budget:

LTJ consistently met Glenwood's high requirements and expectations, providing excellent service regardless of the timeframe. Mike highlighted their readiness to answer calls and their proactive approach to project discussions. The project was completed on time and within budget, aligning perfectly with Glenwood's operational needs.

### Challenges and Solutions:

There were no significant challenges in communication or project management. Mike said that LTJ Industrial Services, LLC has always gone the extra mile to work with Glenwood Caverns Adventure Park.

## Results and Impact

### Business Improvements:

Mike mentioned that the local presence and growing capabilities of LTJ Industrial Services, LLC is invaluable, especially as other local businesses have shuttered. Their ability to meet the unique demands of Glenwood Caverns Adventure Park has contributed to operational efficiency and reliability.

### Positive Impact Examples:

LTJ's work has supported the park's operations significantly, providing essential components and ensuring that rides are maintained to the highest standards, thereby enhancing the overall guest experience.

## Recommendations and Feedback

### Recommendation:

Mike would highly recommend LTJ Industrial Services, LLC to other businesses due to their excellent location, skilled team, and high-quality equipment. LTJ's ability to handle diverse projects and their growth in capacity make them a preferred partner.

### Strengths:

- Location convenience
- Skilled and friendly team

- Advanced equipment and technology
- Reliability and consistent high-quality work

### Areas for Improvement:

Mike suggested that adding a focus on painting services could be beneficial to Glenwood Caverns, specifically mentioning that soon Glenwood would have to paint the entire Cliff Hanger ride. Collaborating with LTJ on that project would be beneficial to Glenwood.

## Future Collaboration

### Plans for Future Work:

Glenwood Caverns Adventure Park plans to continue working with LTJ. Now that LTJ is expanding its Machine Shop, Mike foresees an increased collaboration. The potential projects include gear and seal replacements and a variety of mechanical items, which Mike describes as an "endless list." Specific examples include rebuilding SEW Eurodrives and Bravini gearboxes.

## Additional Insights

### Comparison to Other Providers:

According to Mike, LTJ Industrial Services, LLC stands out due to its larger size, wider service offerings, and ability to meet tight schedules, unlike other local providers.

### Importance of Location and Expertise:

Mike values the machine shop's convenient location and his decade-long working relationship with LTJ's staff, which has built trust and confidence in their expertise and services. Mike expressed his continued satisfaction and emphasized the crucial role of LTJ Industrial Services, LLC in supporting the operational needs of Glenwood Caverns Adventure Park.



## Conclusion

The partnership between Glenwood Caverns Adventure Park and LTJ Industrial Services, LLC highlights the importance of reliable, high-quality machining services in maintaining and enhancing amusement park operations. LTJ Machine Shop's precision, flexibility, and excellent communication have significantly contributed to the park's success, ensuring that the thrilling rides remain safe and operational for all visitors.

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