CASE STUDY
Whittier Tunnel
FAdC® and RSR180

REQUIREMENTS
The Alaska Railroad Corporation decided to modernize the signaling system of the Anton Anderson Memorial tunnel, better known as Whittier Tunnel. The key point was to replace existing track circuits, which were deemed unreliable having less than optimal availability. Those had to be replaced with a more reliable and robust system, that would not be affected by water logging, moisture, fouled track, dirt crust or other contaminants within the tunnel.

SOLUTION
An evaluation by Burns Engineering, Inc. recommended the use of modern Axle Counters. The Frauscher Advanced Counter, FAdC, was chosen. The functionality of the FAdC is to provide a track clear/track occupied indication for the one track section that covers the Whittier Tunnel. This system has a proven track record to provide the exeptive performance under all wheater conditions with highly reduced maintenance work. FAdC complies with the highest safety standards defined by the SIL 4 requirements.

BENEFITS
FAdC stands out with the ease of its installation procedure and the simplicity with which it is integrated into the existing MircoLok interlocking system. Precise and safe diagnostic options can be accessed remotely. The life-cycle costs are further desirable benefits of this solution.
At 13,300 ft. the Whittier Tunnel is the second longest highway tunnel and longest combined rail and highway tunnel in North America. It is the only land access to Whittier and an important cruise ship and freight port. About 50,000 vehicles passing the tunnel per month make a reliable monitoring system absolutely vital. The project solution is to provide train detection, so that safe signaling may be provided to regulate the two way train traffic and car traffic that is plying over the one single embedded track. The FAdC will interface with the interlocking and energize a relay with its signal. This vital signal emulates the input from the track circuit in all interlocking functionality.

**Frauscher Advanced Counter: FAdC®**

The FAdC represents the latest state-of-the-art technology in axle counting. Given an open interface it can be easily integrated into the consisting network. The Axle Counter is designed to allow the operator maximum independent control with minimal help from the vendor. Thanks to its flexible interface the configuration is extremely simple and allows an uncomplicated adaptation for the needs of individual applications. It provides both the possibility of a relay interface and a soft interface via an open and easy to implement protocol. Thus giving much flexibility in project implementation.

**Frauscher Diagnostic System: FDS**

In addition, the Frauscher Diagnostic System enables the Alaska Railroad Corporation to monitor the system, real time via web browser, from its remote location in Anchorage. The preventative maintenance, the optimization of fault rectification, the unrestricted online access to the Axle Counter system data and the minimization of maintenance work lead to a reduction in life-cycle-costs. The FDS features the possibility to totally integrate the FAdC diagnostics via a software interface into the operator’s overall diagnostic and maintenance system.