

Dublin Tunnel Newsletter

January 2017 – December 2017

Introduction

2017 marked the third year of the Operation and Maintenance of Tunnels and Traffic Control Centre contract awarded to Egis Road and Tunnel Operations (ERTO) by Transport Infrastructure Ireland (TII). ERTO are proud to have completed another year in the 6-year contract and continue to strive for safe operations and maintenance of the Dublin Tunnel, the Jack Lynch Tunnel Cork, Motorway Traffic Control Centre and the Average Speed Enforcement Office with thanks to 107 members of staff providing 24/7 service year-round.

2017 saw a large increase in economic activity with economic renewal being reflected heavily by traffic levels. For example, the Dublin Tunnel traffic saw an increase of 5.4% with a total of 7,940,964 vehicles.

The Dublin Port is a large contributor to Dublin Tunnel traffic and also reported a strong performance in 2017, with imports increasing by 3.9% to 21.5 million tonnes and exports raising by 4.9% to 14.9 million tonnes.

ERTO had another successful year of preventative maintenance to reduce planned disruptions and reduced capacity, resulting in only 36 tunnel closures throughout the year, ensuring maximum availability for tunnel users.

The MTCC provides 24-hour point of contact to motorists to assist in distress and manage incidents as safely and efficiently as possible. Thanks to their hard work year-round, there were 9,812 incidents recorded and managed on the network this year.

Egis Road and Tunnel Operation Management

Dublin Tunnel Traffic Volumes

Key Metrics

The total traffic through the Dublin Tunnel in 2017 reached a staggering 7,940,964, proving significant increases to imports and exports through Dublin Port and excellent service and maintenance from the ERTO staff. The monthly traffic is up by an average of 5.4% from 2016.

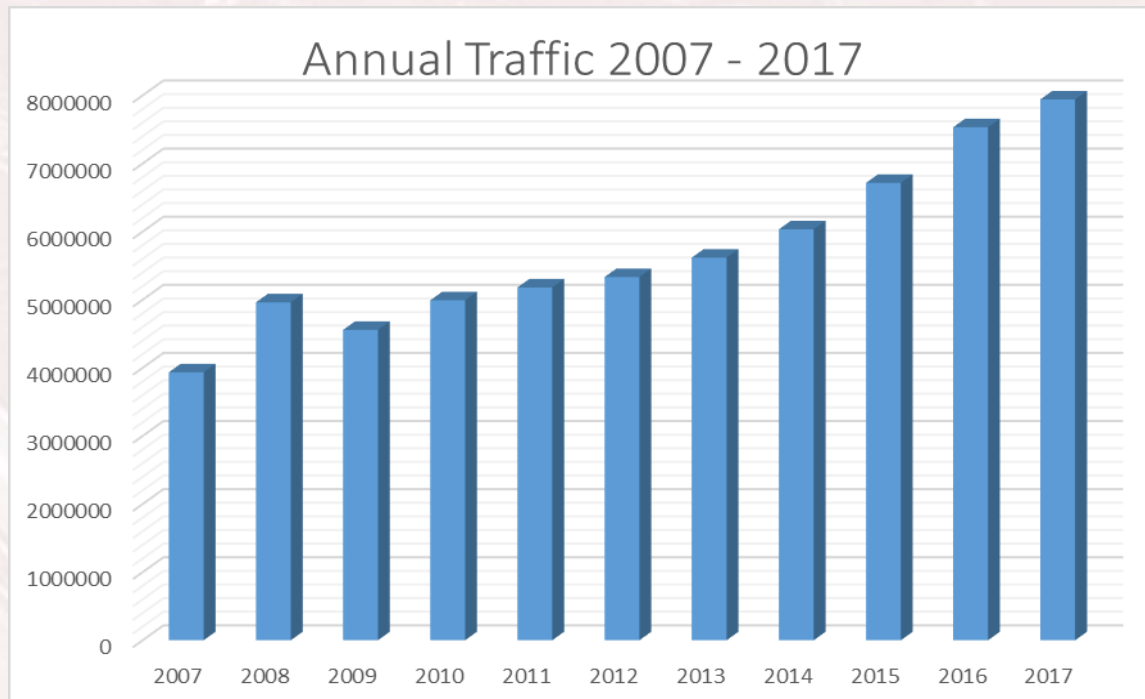
The highest ever traffic volume in a single month since the tunnel opened in 2006 was recorded in November 2017 at 721,132 vehicles and May 2017 was the first month to record traffic volumes over 700,000 with 705,119 vehicles recorded that month and steadily increasing throughout the remaining of the year. The highest volume of traffic in a single day was recorded on 6th October totalling 30,929 and the lowest number of vehicles to pass through the tunnel was recorded on 25th December at 2,322.

Traffic movements

Traffic volume often follows a pattern through each week and month however, it reaches peak points on certain days due to motorists using the tunnel to access sporting events, entertainment venues and commuters also using the tunnel to avoid associated traffic congestion on busy days such as these. For example, the 24th March saw a huge number of motorists gaining access to the Aviva Stadium for a soccer match, totalling 28,737 vehicles. On the 6th October, Dublin enjoyed both a soccer match in the Aviva Stadium and a music concert in the 3Arena, leading to 30,929 vehicles through the tunnel. The Irish Rail Strike action on 7th November led to 29,091 vehicles using the Dublin Tunnel to gain access to the city centre and commute to surrounding areas.

2017 was a year of record setting for traffic volumes in the Dublin Tunnel, recording the highest volume of annual traffic. The highest volume in a month was set in November 2017 and the highest ever volume of traffic in a single day was set on 6th October. With the economy on the rise and increases to both imports and exports through Dublin Port, ERTO expects volumes of traffic using the toll plaza and tunnel to continue to increase and is working to continue improving service and assistance to motorists in the coming year.





Abnormal Loads, Accidents, Over-heights, Breakdowns and Rescues

Over-height vehicles, accidents, abnormal loads and breakdowns require constant diligence and vigilance from the operational duty staff and requires a large workload to manage, ensuring the safety of tunnel users and motorists at all times. Although safety is the highest priority, ERTO staff also work hard to maintain maximum availability to the tunnel. However, disruptions such as over-height vehicles, abnormal loads and breakdowns require frequent intervention by the Duty Staff.

In 2017 alone, 5,685 over-height vehicles caused disruptions and decreased accessibility to the tunnel. ERTO staff were also required to supervise and escort 445 abnormal loads, largely including wind turbines through the tunnel, ensuring the safety of all tunnel users at all times. During the year, patrollers and vehicle recovery intervened and assisted with 235 breakdowns of all types of vehicles including buses, HGV's and light vehicles, achieving an average recovery time of 43 minutes.

Notable Events

HGV Incident – 30th June 2017

On 30th June, the Dublin Tunnel was closed in both directions for a total of 3 hours and 32 minutes due to a HGV losing a wheel after the wheel nuts detached as it moved through the north bore of the tunnel. The Fire Brigade was called in to assist with recovery and ERTO provided assistance and worked to provide availability to the tunnel in a safe and efficient manner.

HGV Fire – 15th August 2017

Dublin Fire Brigade was called in to take control of a HGV fire in the north bore of the tunnel on 15th August. Once the fire was extinguished and the HGV was stabilised and removed from the tunnel, ERTO staff conducted a review and safety check of the scene before reopening the tunnel. Thanks to teamwork and diligence, the tunnel was reopened after a mere 1 hour and 22 minutes and we are glad to report no injuries as a result of the incident.

Ex-Hurricane Ophelia - 16th October

With Cork IICG expecting a major hit from Storm Ophelia, a Major Emergency Management plan was enforced to ensure safety of residents. In Dublin, citizens were advised to remain indoors and the majority of businesses closed for the day to prevent accidents and emergencies. This constituted a busy period for ERTO staff to prepare for the upcoming storm and providing the safest possible environment in the Dublin Tunnel, the Jack Lynch Tunnel and the motorway network.

Storm Brian - 21st October

October was hit once again with a storm as Brian brought strong winds, heavy rainfall and strong Atlantic waves. The west of the country saw major flooding, including Cork but there were no major incidents reported and there was minimal disruption to the Dublin network and Tunnel.

Emergency Management Exercise 2017

A table top exercise was successfully run by ERT0 at DT in December 2017. The exercise was attended by all the Emergency Services, all relevant stakeholders and ERT0 staff. The exercise scenario was based around a vehicle collision, followed by a vehicle on fire in the Southbound bore of the tunnel during morning peak traffic. This was to test DT Emergency Management Plan and the Communication processes with the Emergency Services and how to proceed during a serious incident. The exercise was very well received by all that attended and proved that hands on instructions are a great way to develop and hone skills.

Tunnel Run FOCUS Ireland 26th March

Ireland's longest tunnel was closed to vehicles on the 26th March to provide a unique opportunity to serious runners and fun seekers and to raise funds for FOCUS Ireland, who do brilliant work to ease and diminish homelessness in Ireland. Over 5,000 runners took part in the 10km underground run and spectators, family and friends were delighted with a tunnel laser light show, urban themed aid stations, entertainers, UV lighting and live kilometre markers, contributing to what was a very successful and fun day out, providing vital funding for a great cause.

Project Management Office (PMO)

Permanent Average Speed Detection System

In 2017, ERT0 introduced the first permanent average speed detection system to Ireland, installing and deploying the system in the Dublin Tunnel to improve safety of tunnel users. On 1st June, following a testing and validation phase carried out in conjunction with An Garda Síochána, the system was accepted and enforcement began. The deployment immediately affected driver behaviour and improved safety in the tunnel by substantially reducing the number of offenders.

Dangerous Goods Vehicle Camera System



To ensure that ERT0/TII can quantify and assess the number of dangerous goods in the tunnel at any one time, the Dangerous Goods Vehicle Camera System was installed. The system reads and records the Orange ADR (Kemler) plates on each DGV that accesses the tunnel, providing vital information and a valuable benefit to the emergency services in determining an appropriate response should an incident occur.

ISO / OHSAS Certification

Demonstrating its commitment to upholding the highest industry standards, in 2017 ERT0 maintained its certification awarded by the International Organisation for Standardisation and Occupational Health and Safety Assessment Series of Standards for:

- Quality (ISO 9001:2008)
- Environmental (ISO 14001:2004)
- Health & Safety (OHSAS 18001:2007)
- Asset Management (ISO 55001:2014)
- Information Security (ISO 27001:2013)



Environment

The air quality metrics for the Dublin Tunnel bores remained consistently within the limits set forth in applicable regulations in terms of environmental safety and emissions. Fortunately, there were no reported environmental incidents throughout the year.

Tunnel Safety

The highest priority to ERTO staff is to provide a tunnel that is safe for tunnel users and operational staff. To ensure the safest possible service is provided, all aspects of the tunnel infrastructure, operation, maintenance and training are reviewed on an on-going basis. Throughout the year, a programme of reviews, training and emergency exercises was completed with close co-operation with the emergency services, the Tunnel Safety Officer and other Stakeholders.

Training and Exercises

ERTO are constantly developing our Operational Staff, Maintenance Technicians and Engineers skills and capabilities through both in-house and external training courses, some of which include; Auditor Training, Certification in Industrial Automation (awarded by Institute of Technology Blanchardstown), Traffic Management, Train the Trainer, Fire Warden Training and Management Tools.

Enhanced Systems

To enhance and utilise systems and assets to the best of their abilities, ERTO have introduced a number of inhouse improvement programmes, including; the Over Height Detector local reset switch, Tolling System local reset switch, installing larger PV solar panels, fault diagnostic regulators and increased capacity batteries to Emergency Roadside Telephones and installation of water bottles with a float switch to prevent the burn out of pump wash motors. Nano technology was also introduced on camera lenses, over height detectors and environmental sensors.

The three phase tunnel lighting breakers were reconfigured to single phase circuit breakers with parallel I/O to SCADA to reduce the number of lights extinguished during a fault. Transformer conditions have been monitored through transformer oil sample testing i.e. Dielectric testing and quality analysis. There was also an upgrade trial begun on the Haultausen Jet Fan Vibration System and new hot swappable stack power supplies were installed on the Radio Equipment Racks.

Improved Management

In the last year, the Maintenance Management System, Maximo has seen a number of enhancements to improve visibility of each systems performance and to assist ERTO's reliability analysis and reporting capabilities. A new position was created in the Maintenance Department of a Senior Maintenance and Planning Technician to actively assess management and reliability of the assets and systems used in the Dublin Tunnel, Jack Lynch Tunnel and Motorway Traffic Control Tunnel as well as guide the development, focus and time management of the Planning and Reliability Engineers and Maintenance Technicians. This position was internally appointed and the gap in the maintenance department was filled by an external M&E Maintenance Technician.

Tunnel Maintenance and Closures

The Dublin Tunnel carried out 42 tunnel closures in 2017, 36 of which were planned maintenance closures and totalled 249 hours 45 minutes or 2.85% of the year. Planned tunnel closures occur at night to reduce impact on tunnel traffic. There were 3 planned closures for project upgrade works, amounting to 21 hours 15 minutes and the tunnel was also closed for the Dublin Tunnel Charity Run for 20 hours 20 minutes. Training exercises accounted for a further 7 hours or 0.0799%.

ERTO have 68 approved subcontractors for use in the Dublin Tunnel. ERTO employs approximately 28 subcontract companies for maintenance works (25 of which operate under a signed contract), with an average of 52 workers engaged on the tunnel closure nights. ERTO engage approximately another 25-30 sub-contractors and suppliers (78 in total on our approved suppliers list for DT, JLT & MTCC) on an add-hoc basis.



In an effort to further improve the operation and reliability of Transport Infrastructure Ireland's (TII's) asset portfolio, all this work has further culminated in the production of a 36-month Forward Capital Works Programme (FCWP), detailed Annual Asset Management Plans with clearly defined Asset Management Strategies and Objectives for 2017/2018. These documents set out for the Service Manager a detailed capital works investment programme for all the assets and systems of the Dublin Tunnel, the Jack Lynch Tunnel and the Motorway Traffic Control Centre. The FCWP is reinforced by System Asset Group Status Reports (12 No. for DT), General Inspection Reports, Special Reports, and in 2017 Principal Inspection Reports.



DT Jet Fan
Vibration Sensors

ERTO are making every effort to manage system or parts obsolescence/end of life and manufactures no longer trading by undertaking the following:

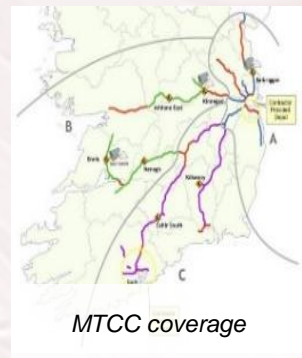
- Sending obsolete parts to a local electronics company for repair/refurbishment
- Sending obsolete parts to specialist companies for testing and recertification
- Finding more cost-efficient alternatives to current parts
- Sourcing alternative manufacturers

Motorway Traffic Control Centre (MTCC)

The MTCC monitors and responds to incidents on all major motorways in the Republic of Ireland. Last year we responded to 9,812 incidents reported on the network. When a road user calls, the MTCC responds by arranging assistance for the caller and bringing the matter to a safe conclusion. The MTCC is available on a 24/7/365 basis to the public should they require help and assistance on the motorway network.



There were 5,788 ERT calls to the control room in 2017. This can involve people in a distressed state with no means of recovery. Callers are typically in trouble having broken down, or being involved in an incident which requires emergency intervention. Motorists often use these phones to report accidents or debris, in the safe knowledge that they are in direct contact with someone who can act instantly and have an exact location. There are 1,346 ERTs on the motorway network.



MTCC coverage

The MTCC have a state-of-the-art camera system (127 CCTV cameras) which are primarily located on the M50 but there are also some located on the M1, N4 and N5. This allows for constant monitoring, helping to respond to and clear incidents as quickly as possible.

Variable Message Sign (VMS) are located on all major roads. MTCC control these signs to inform motorists of possible delays, due to collision, breakdown, roadworks etc. This helps to save motorists time in making informed decisions in planning their journey, or to be observant of possible obstructions that may be in their path.



VMS

There are 104 VMS on the network. The VMS network have been used to inform motorists of incidents on the network and also used to support An Garda Síochána in the safety campaigns in an effort to reduce fatalities on the network.



In 2017, the MTCC took over management of the Average Speed Enforcement Office (ASEO). This system is the first of its kind in Ireland and is run in cooperation with TII and An Garda Síochána. The system monitors a driver's average speed while travelling through the Dublin Tunnel and if a driver is above the 80 km/h speed limit the driver will be in violation and enforcement penalties will apply. The system has proved to be a success and there has been a noted improvement in driver behaviour and speed limit compliance since the system went live.

The MTCC conducted a survey online between January and September 2017 that asked questions pertaining to driving through the tunnel and using services managed by the MTCC such as motorways and VMS. Over 5,100 surveys were taken and proved to be successful as the large majority of results were positive. The survey was a great help to MTCC staff as it provided multiple insights into drivers' experience using tunnels and the greater motorway network and also provided some extra motivation to continue to aid and assist motorists to such a high standard. The results of this survey are due to be presented to TII in early 2018.

With a view to the new Motorway Traffic Control Centre (MTCC), ERTO has initiated a new concept of a universal shared position/role. In late 2017, ERTO commenced cross training with an existing member of staff in tunnel operations and recruited for the new role of Control Room Operator.

This new position will be cross trained across tolling, tunnel and MTCC operations and will be a shared role across these business functions. The new operator commenced in January 2018 and will be initially trained in MTCC.

