RailNewcastle Conference
“A great success”

Newcastle University hosted the first RailNewcastle Conference in July 2015, organised by NewRail’s Education Group. This rail-focused international conference welcomed over 50 participants, from Europe and beyond, in five scientific sessions dedicated to rail operations, engineering, logistics, light rail and education. The event has received praise from academics, researchers and students, and feedback collected is extremely positive.

Dr Marin Marinov and Dr Anna Fraszczyk, from NewRail’s Education Group, are now working closely with peer-reviewed scientific journals to publish five special issues on the rail-related themes of the conference. The peer-reviewed scientific journals and the agreed special issues are:

⇒ Research in Transportation Economics Journal, Elsevier (special issue in rail operations, management and economics)
⇒ Transport Problems Journal (special issue on: Rail engineering)
⇒ Urban Rail Transit Journal (special issue on: Urban Rail Transit and Light Rail)
⇒ Social Sciences Journal (special issue on: Rail Leadership, Education and History)
⇒ European Transport Research Review Journal (special issue on: The Future of Rail Freight Transport and Logistics)

Dr Marinov comments: “Such was the success of the 2015 Conference, we hope to see it become a regular event.”

For more information see: http://conferences.ncl.ac.uk/railnewcastleconference

Hot Topic!
EN 45545 fire safety standard

It used to be that each EU member state had its own specifications, test methods and safety criteria to assess materials for fire safety in rolling stock (BS in UK; NF in France, etc.). Almost all new products weighing more than 100g, made or sold in Europe, now have to undergo EN 45545 fire testing before installation. The standard will also be applied as existing stock is replaced.

So, what are the benefits?

NewRail’s Dr George Kotsikos, accident investigator for the European Railways Agency, believes the standard has succeeded in its aim to make EU cross-border trade and cooperation easier and hopefully without inhibiting innovation: “Some operating companies might see...
it as a prescription for certain materials, but they should not let it prevent them coming up with even better ones in the future!” Overall Kotsikos sees EN45545 as a positive step and even anticipates some non-EU customers will request compliance.

**Rail Interiors**

Conor O’Neill and Emmanuel Matsika will both present at the forthcoming Rail Interiors Expo 15, on 4-5 Nov in Prague. Conor will present the RAMPART project, while Emmanuel will present his research on Rail vehicle wheelchair space for occupant crash safety.

**Royal Geographical Society Annual International Conference**

Tom Zunder and Clare Woroniuk attended the RGS-IBG Conference, in Exeter in September. NewRail organised a special session on ‘Sustainable Freight for City & Global Logistics’, plus Clare also co-organised two ‘Current and Emerging Research in Transport’ sessions, for postgraduates to present their work in progress, and chaired the session on Inclusive Mobility and Networks. All sessions were sponsored by the Transport Geography Research Group (TGRG).

[https://tgrg.wordpress.com/](https://tgrg.wordpress.com/)

**Follow up HEEP visit to China**

NewRail’s Prof Mark Robinson, Conor O’Neill and Emmanuel Matsika have again visited Xiamen University of Technology, in Fujian Province, as part of the China High-End Ex-Pat Programme (HEEP), through which the Chinese government supports collaborative research. All will give lectures to student seminars and discuss mutually beneficial ideas for sponsoring PhD students. Return visits will be made to the materials companies and train manufacturers with whom NewRail has been collaborating, to discuss next steps and how to proceed to commercialisation, as well as introducing NewRail to a new composite materials company and a bus company, to investigate how to transfer technology from rail to road coaches.

**Smartfusion project**

The completed Smartfusion project had a successful final review, with Project Officer Patrick Mercier-Handisyde, at the Covent Garden building in Brussels, at the end of September. The work of Smartfusion continues to be presented and promoted, starting with the ITS World Congress, in Bordeaux, 5 - 9 Oct 2015, where NewRail’s Tom Zunder made 2 presentations, then also at the ECTRI thematic group on freight, at IFSTTAR, in Paris.

*Woroniuk, Aditjandra and Carnaby receive the Newcastle University Best Environmental Initiative Award 2015 on behalf of the Smartfusion team from Vice Chancellor, Chris Brink*
Horizon 2020

Building on our success in the EC’s FP7 programme, NewRail has started work on new projects awarded under the H2020 Programme for Research and Innovation.

SETRIS

“Strengthening European Transport Research and Innovation Strategies”

SETRIS brings together 5 European Technology Platforms (ETPs) for Transport, coordinated by ECTRI and Newcastle University, and aims to deliver a cohesive, coordinated approach to research and innovation strategies for all transport modes in Europe, ensuring ETPs strategically plan and work together, so increasing the cross-modal delivery outlined in the White Paper “Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system”.

ETPs, created by the European Council in 2000 and endorsed by the European Commission, form an instrument to strengthen the European research and innovation area. The 5 Transport related ETPs act as industry-led forums, defining the medium-long term research agendas and developing the roadmaps to achieve them. In SETRIS, the partners will draw upon the expertise of their respective memberships, through already well-established networks and expert groups.

Z_LIM

Predictable and optimised braking: zero slip linear induction motor

Funded by RSSB on behalf of Future Railway, as part of the Predictable and Optimised Braking Challenge, Z_LIM launched in July 2015.

The concept aims at reducing dependence on friction between wheel and rail for traction and braking forces, requiring little or no change to existing rolling stock and infrastructure. This approach maximises the potential impact, as it also opens up the possibility of retrofitting. The concept is based on the well-known linear induction motors technology (LIM), successfully employed in the railways through the deployment of Eddy Current Brakes (ECBs). Concepts using similar solutions based on magnetic force are being explored in other advanced railway systems, notably in Japan, highlighting the scope and true potential of the proposed research.

Z_LIM is led by a multi-disciplinary team at Newcastle University, drawn from three research centres, including NewRail.

NewRail success in FP7

In Framework Programme 7, NewRail had the most FP7 projects in Newcastle University, as well as the largest number of projects and the highest research income within the SAGE Faculty.
Some Recent Publications


Dampier & Marinov, A Study of the Feasibility and Potential Implementation of Metro-Based Freight Transportation in Newcastle upon Tyne, 2015, Urban Rail Transit, http://v.gd/Qt3tOC, Article

Abbott & Marinov, An Event Based Simulation Model to evaluate the Design of a Rail Interchange Yard, which provides Service to High Speed and Conventional Railways, 2015, Simulation Modelling Practice and Theory, http://v.gd/h3POHS, Article


Powell & Palacin, A comparison of modelled and real-life driving profiles for the simulation of railway vehicle operation, 2015, Transportation Planning and Technology, http://v.gd/PYsXLD, Article


NewRailer news

IMechE Chartership for Jonathan

Newrail PhD student Jonathan Powell has recently been awarded Chartered Engineer status (CEng) by the Institution of Mechanical Engineers (IMechE). This designation recognises that Jonathan meets the professional standards of the Institution, and is awarded based on competence gained from education, training and professional practice.

Out with the old…

Newrailers Ross Jackson and Bruce Carnaby have both moved on to jobs outside of academia. Ross has joined business process outsourcing company Capita, as a project manager, while Bruce’s work in the Smartfusion project was so successful that, at the end of the project, one of the partners - Clipper Logistics plc - has made him their Business Development Manager! Completing PhD student Aleksandrs Rjabovs has also accepted a job with DB Regio, working with the Newcastle Metro. Congratulations to all of them – we are delighted by their success.

…and in with the new

The new academic year sees 3 new PhD students join us at NewRail:

John Morris is working on improving the design of the short neutral section, through dynamic modelling of performance.

Dongjun Li will be researching how to increase profits for both rail infrastructure managers and freight service operators.

Anthony Gallagher will be imaging railway substructure, using ground penetrating radar.

A huge NewRail welcome to them all.