

XVth International Winter Road Congress Gdańsk 2018

“Providing Safe and Sustainable Winter Road Service”

Call for Papers

The World Road Association is calling for individual contributions on selected topics for the XVth International Winter Road Congress to be held in Gdańsk (Poland), 20-23 February, 2018.

All accepted proposals will be presented during poster sessions and will be included in the Congress proceedings. Outstanding contributions will be selected for oral presentation during the technical sessions of the Congress.

Publication of the accepted papers is subject to the registration of at least of one of the co-authors to the Congress.

SUBMISSION OF ABSTRACTS AND FULL PAPERS

Contributions are invited only on the topics described in the following pages. Authors are invited to submit an abstract before **28th February 2017** using the on-line facility from the Congress website at:

<http://abstracts.gdansk2018.piarc.org/>

The abstract must be written and submitted in either **English** or **French**, with a maximum of 400 words. Abstracts written in **Spanish** may also exceptionally be accepted. However, in case the abstract written in **Spanish** is accepted, please note that the full paper must be written and submitted in **English** or **French**.

All papers must be original work available to be released for publication. Material that has been previously published will not be accepted. Any reference of a political, commercial or advertising nature must be excluded from the papers. The indication of a brand name should be excluded in the title and in the abstract. The abstracts will be reviewed anonymously by the PIARC Technical Committees and decisions will be notified to the authors by e-mail before **1st April 2017**.

Authors of accepted abstracts will be invited to submit a full paper on-line before **31st July 2017**. These will be reviewed by the PIARC Technical Committees and decisions regarding publication and requests for amendments will be notified to the authors before **31st October 2017**.

The full papers can be submitted in **English** or **French**.

The criteria to assess the papers will be based on the originality of the content, the technical interest and the applicability and transferability of the results.

DATES TO REMEMBER

Call for papers	From June 2016
Deadline for abstracts	27 th February 2017
Notice of acceptance of abstracts	1 st April 2017
Deadline for full text of papers	31 st July 2017
Notice of review of papers	31 st October 2017
XVth International Winter Road Congress Gdańsk 2018	20-23 February 2018

PIARC PRIZES 2018

A prize will be awarded to the best papers among individual contributions as a result of the call for papers.

More information will be released at a later date on the Congress website.



CONTACT INFORMATION

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E-mail: gdansk2018@piarc.org
For more info: <http://www.piarc.org>

TOPICS FOR THE CALL FOR PAPERS

Papers are solicited on the following topics exclusively – Papers that fall outside this scope will not be considered.

“Providing Safe and Sustainable Winter Road Service”

1/ Extreme situations, disasters

During extreme winter events standard response plans are no longer valid, with consequences for society. How can we cope with these challenges as regards organization, management, planning, equipment, contracts, information, and how can we act in emergency situations? Many countries have roads in areas with extreme conditions such as mountain passes requiring convoys, roads in open areas exposed to snow drift and roads vulnerable to avalanches. Extreme weather conditions can also happen anywhere; examples include heavy snowfall, freezing rain, extreme cold, high temperature and melting snow which causes landslide. The combination of a natural or anthropogenic disaster and an extreme winter event can create the worst scenario (e.g. volcanic eruption and intensive snow falls).

Papers shall deal with the following topics:

- definition and qualification of the concept of an extreme event;
- organization in exceptional situations, management tools, modes of activation, evaluation;
- communication plans and management of crisis information;
- operational implementation for extreme climate events;
- strategic management of salt storage, controls and inventory;
- debriefing, assessments and fields analysis of the event;
- new rules, staff management, engaging with stakeholders/external partners (e.g. private individuals, the army, fire service and other emergency services).

2/ Climate change and the environment

How will climate change affect winter conditions and how will it impact winter service? Will winters be harsher or milder? How can authorities in charge of winter service respond, while considering benefit/cost analysis, and with appropriate planning periods? What are the opportunities offered by technology? New or updated strategies and quality control of performance are therefore necessary to respond to climate change and environment problems.

Climate change

Papers shall deal with the following topics:

- methodological approaches to climate change and how to simulate its evolution;
- projecting the incidences on winter service taking regional differences into account;
- taking the increased variability in the events into account (occurrence and amplitude);
- impact of climate change on *“winter road climatology”*;
- operation solutions to meet climate change and how they will evolve to suit changes in the future;
- changes required in organizations, manpower, equipment and materials (to meet the needs in case of extreme events).

Environment

Papers shall deal with the following topics:

- theoretical approach and specific studies;
- how to improve the operational approach?
- 50 years of de-icer use and its environmental impact;
- carbon footprint of the winter service activity;
- lifecycle of the materials (from the mine to the environment);
- impact on the road environment; environmentally friendly approaches;
- comparison of the impact of the various modes of treatment in winter;
- how can we improve the environmental impact of winter service?

3/ Road weather information

MDSS (maintenance decision support system), ITS (intelligent transport systems) and the use of mobile data are new tools which can assist in delivering winter service operations and providing information to the public. Proposals will be made for updates on innovations, technology and information for decision-making such as meteorology and advanced forecasts, road weather information systems and the next generation of winter maintenance interactive decision support systems.

Papers shall deal with the following topics:

- policies and management of road weather data;
- integration of weather information with predicted traffic, planned maintenance, anticipated incidents, etc.;
- using road weather information to enhance infrastructure resilience;
- using road weather forecasts to benefit winter road operations;
- best practices in using road weather information including increasing user acceptance and public support, dissemination of weather, traffic and operations information, the use of real time information;
- using road weather information to model and forecast surface transportation and road weather conditions;
- road weather and surface condition data collection, including mobile data;
- sustainability and liveability issues pertaining to road weather activities;
- the role of weather information in operations decision support systems.

4/ Road users and road safety

There are different types of road users (e.g. lorries, cyclists and pedestrians) and they have specific requirements that need to be addressed in winter maintenance. They can also be affected differently by winter and winter maintenance, including in how they react to road user communication. In addition, road safety is a significant objective for winter service organizations.

Papers shall deal with the following topics:

- types of road users and their special requirements for winter maintenance (e.g. lorries, cyclists and pedestrians);
- road user equipment in winter: winter tyres, studded tyres, snow chains and related regulations and controls;
- traffic flow under winter road conditions, traffic management for special road users (e.g. lorries);
- road safety; influence of winter road conditions, influence of winter maintenance;
- accident rates, types and severity;
- road user behaviour analysis in winter to improve road safety;
- accident analysis, and characteristic of the accidents in winter period;
- traffic signal optimisation to improve road safety;
- economic effects of winter and winter maintenance, better traffic flow, travel time reliability;
- communication and road user information, social media, user feedbacks, complaint management;
- driver education for winter driving;
- global advice and information to users when travelling.

5/ Winter maintenance management and planning

This topic updates winter service management activities. When budgets are increasingly constrained it is necessary to optimise the use of road networks in all circumstances, and winter service too should rise up to the ambition. Levels of service, the relationship between operational strategies and mobility and on accident rates (types and severity), travel time reliability etc. will be covered.

Papers shall deal with the following topics:

- road users' needs; how to define the right level of service;
- understanding the economic impact of accidents; defining the acceptable level of risk;
- integrating winter service into a sustainable development strategy;
- cost-benefit: achieving the optimum balance?
- improving training for winter service professionals;
- strategic planning and organization (what rules, standards, evaluation, legal aspects);
- relationships between all parties / stakeholders (managers, operators, road users etc.);
- quality and performance management;
- outsourcing the service versus in-house implementation.

6/ Equipment and products

This topic covers all subjects concerning innovation in equipment and products.

Equipment

- New equipment and new techniques e.g. rotary brushes, trailers, etc.;
- winter service vehicle markings and lighting;
- choice of versatile equipment, lower fuel consumption;
- specifications for equipment, optimized spreader controls, work on standardization, maintenance;
- protection against snow-drifts and avalanches;
- fixed auto-spray systems.

Products

- New or alternative materials;
- specification of materials, work on standardization;
- improvement in the use of abrasives (types, dosage);
- best practice for the complete range of de-icers;
- surface treatments, innovative surfacing materials;
- self-maintaining structures (bridges and sidewalks).

7/ Winter service in urban areas

Maintenance of the urban network has specific needs because traffic can vary significantly between major highways and dead-end roads. It is of great importance since a large part of the population lives or works in urban areas.

Papers shall deal with the following topics:

- strategy to deal with a dense road network with large variations in traffic volume;
- optimization and minimization of the routes for maintenance vehicles;
- treatment methods and vehicles for winter on bicycle lanes;
- how to create a continuous bicycle lane network with different types of infrastructure during winter event?
- sidewalk and pedestrian areas, accessibility (for those with reduced mobility), tactile paving maintenance;
- equipment and layout of urban areas; what to do with the snow, remove or thaw?
- best practices for tramways, buses and other public transportation, including the tracks and access to stations;
- solutions to ploughing different surfaces without disadvantaging any transport mode.

8/ Tunnels and bridges

Bridges and tunnels face specific issues and require specific solutions in winter maintenance.

Papers shall deal with the following topics:

- design for maintenance under severe winter conditions;
- measures to improve safety and to mitigate the risks due to the winter conditions;
- drainage and formation of ice stalactites;
- management of snow clearance on bridges;
- alternative methods of bridge surface de-icing;
- impact of anti and de-icers on construction materials of bridges and tunnels;
- methods to protect reinforced/prestressed concrete surfaces exposed to de-icers;
- estimation and measurement of snow load on structures;
- specific methods and strategies for winter road service on bridges and tunnels;
- rehabilitation methods to damaged structures due to de-icers;
- inspection and damage assessment techniques for bridges exposed to de-icers.