PIARC Road Safety Audit Guidelines

ROAD SAFETY SEMINAR
PIARC/AGEPAR/GRSP
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PIARC TC 3.1 Outputs

- PIARC Technical Committee 3.1 on Road Safety has focused on Road Safety Audit (RSA)
- RSA Guidelines will be an output of TC 3.1 for current cycle (2004-07)
- Informations on current practice and experiences in different countries have been collected, analysed and discussed.
What is Road Safety Audit?

« A formal road safety examination of the road or traffic project, or any other type of project which affects road users, carried out by an independent, qualified auditor or team of auditors who reports on the project accident potential and safety performance for all kinds of road users »
What is Road Safety Audit?

- Systematic process for checking road safety implications of new schemes and highway improvements
  - New motorways to
  - Small local improvements eg ped crossings
- Carried out at formal design and post-construction stages
- Requires independent staff with experience of road safety engineering to undertake Safety Audit
What is Road Safety Audit?

- Safety Audit report is a formal document, describing a problem...
  - “who can be hurt and in what way?”
- ..and a recommendation
  - How the risk can be removed or reduced
- Report is produced for the scheme client
- Client decides how to respond to the recommendations
Road Safety Audit Phases

- Planning
- Design phases
- Building
- Maintenance
- Road Safety Audit Phases
- Systematic Road Safety Inspections in cases of rehabilitation and widening
Safety Audit Process

- Ordering
  - Ordering the audit
  - Selecting the team
  - Providing background information to the Audit team leader
  - Commencement meeting
Safety Audit Process

- Reviewing
  Analysis of background information
  ▼
  Site inspections
  ▼
  Audit finding
  ▼
  Written Audit report
Safety Audit Process

- Completion
  - Completion meeting
    - Written
      - Respond to the audit report (Decision to make changes or not)
      - Follow up
Costs and benefits of Safety Audit

- Main benefits of RSA are to prevent road users from being injured or killed due to poor road design and avoid the expenditure of money for redesign and reconstruction to improve the situation.

- Some evidence of improvement in design due to a reduction in Safety Audit comments made in reports over time.
Costs and benefits of Safety Audit

- Difficult to quantify economic benefits of a process because a before/after accident study is not possible
- Some studies point to quantitative benefits
Costs and benefits of Safety Audit

**Costs**
- Undertaking the audit
- Re-design following early stage audit (1% scheme cost)
- Re-construction following scheme completion (more expensive)

**Benefits**
- Surrey CC found savings of 1 casualty per year per site on minor audited schemes
- New Zealand benefit to cost ratio 20:1
- TMS found accidents predicted in audits did occur if scheme left untreated
Checklists

- To ensure that safety aspects have not been overlooked during the procedure
- To identify issues and problems that can arise at the relevant stage
- Different checklists for different stages
- Questions regarding the safety of all users
International development of Safety Audit

- New Zealand: 1993
- Australia: 1994
- Denmark: 1997
- PIARC June 2005 survey – 21 highway authorities from around the world, 16 carrying out Safety Audit
PIARC survey of active Safety Audit

- 38% have “law or Ministry decision” and 62% are road administration decision
- 81% have written guidelines
- 38% have external auditors
- 68% audits carried out by “safety experts”
- all requests for safety Audit were derived from roads administrations
PIARC survey of active Safety Audit

- 75% carry out audit at least one design stage, 56% at post-opening
- 75% undertake night time audits
- 63% audit teams selected by roads administration
- 56% audit teams from private sector
- 44% audit teams from public sector
PIARC survey of active Safety Audit

- 56% audit teams require a qualification
- 81% clients require a formal report
- 38% require a formal response to audit
- 50% undertake some evaluation of benefits of process
- 38% where liability issues are not formally addressed
Methodology for developing safety audit

- Main requirements
  - Examine current best (relevant) international practice in order to develop guidelines
  - Decide how to train and accredit safety auditors
  - Develop institutional support for the process so that it is sustainable
Methodology for developing safety audit

- Method statement
  - Convene working party including international experts and national stakeholders
  - Develop draft safety audit procedure based on best relevant practice
  - Consult on draft procedure at national and local level
  - Adopt procedure within national design standards
Methodology for developing safety audit

- Determine training needs and design appropriate training courses
- Seminars to start process to raise awareness, and to launch procedures
- Ongoing training programme for national and local staff
- Install an independent RSA Centre
Final remarks

- PIARC survey demonstrates desire for Safety Audit to be developed in Africa
- Concern has been expressed about the legal implications of Safety Audit, but this should not preclude its development
Final remarks

- The development of procedures, training of auditors, and compliance with procedures should ensure safety benefits and minimise the risk of litigation.
Audit at design stage

Island design

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Road safety seminar in Lome, 11-13 October 2006
Audit at design stage

- Large diameter (60m)
- Multiple lane in the circular road
- Left turning lane
- Right turning lane

Pedestrian crossing is very difficult
Roundabout functionality is reduce for all users
Audit at design stage

Obstacles located within the clear-zone distance must be removed, relocated, redesigned or shielded by traffic barriers.
Audit at Post-opening stage
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Option 1 | Masquage partiel du panneau avec un matériauopaque.
Une bande d'environ 80 mm située dans la partie inférieure du panneau reste exposée.

Bande rétroréfléchissante orange (type VII) d'environ 200 mm x largeur du support (OPTIONNELLE)
Thank you for your attention!