



## Counter Terrorist Vulnerability Assessment Programme

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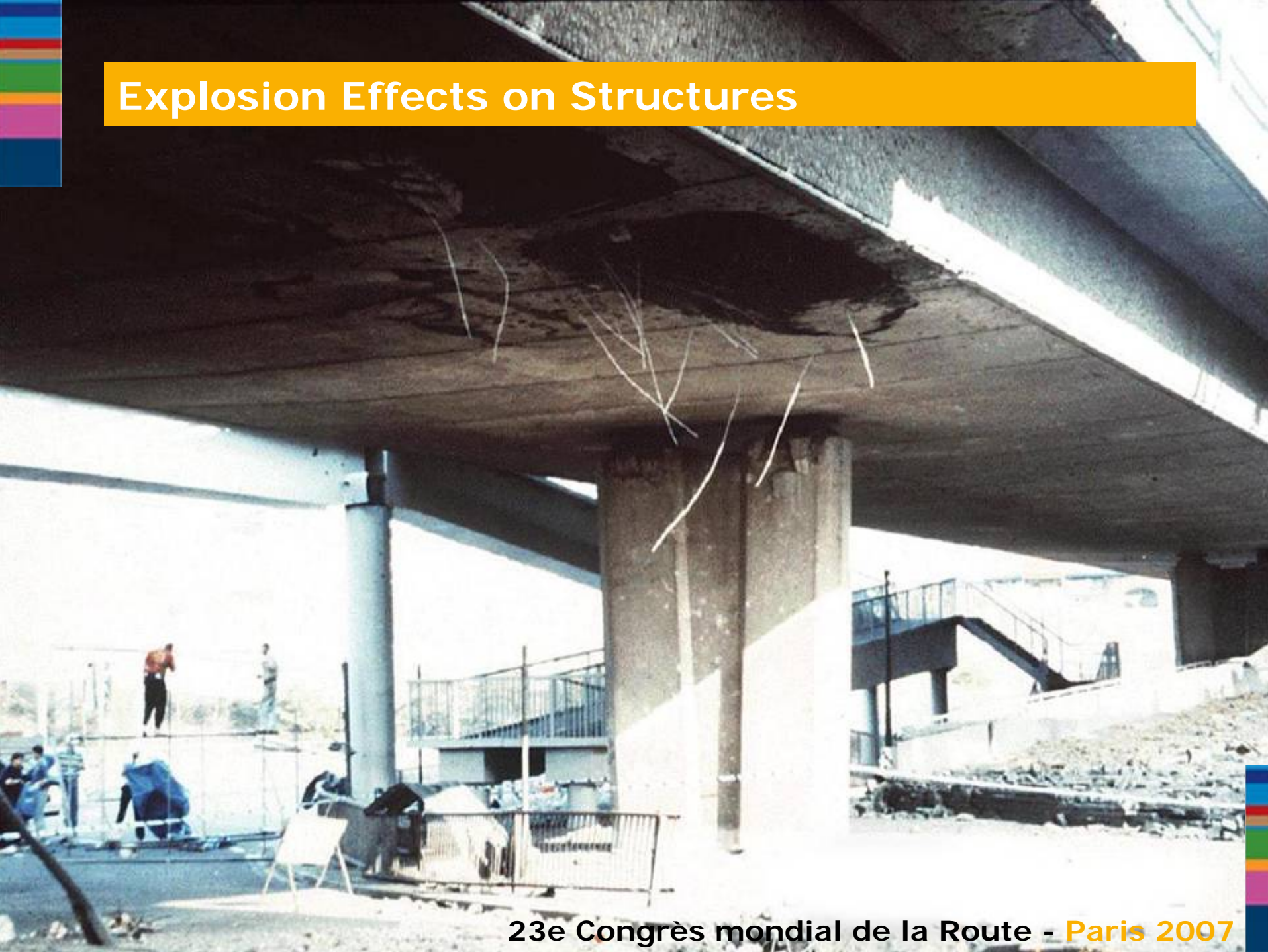
# Highways Agency Network Resilience



# Explosion Effects on Structures



# Explosion Effects on Structures



## What prompted the Agency?

- 9/11 & 7/7
- General awareness of resilience within the Agency  
Bridges
- Unable to quantify risks
- Unable to manage risks

# High Level Requirements

- Cost effective
- General Inspection – every 2 years
- Simple/robust/consistent
- SMIS (the Agency's structures management system)
- Utilise a commercial partner with bomb blast experience
- Resilience measures included in maintenance programme
- Update every two years

# The Risk Assessment

Risk = Likelihood versus Consequence

**Table FSRA3 – Risk Analysis Matrix**

| Likelihood     | Consequence   |       |          |       |              |
|----------------|---------------|-------|----------|-------|--------------|
|                | Insignificant | Minor | Moderate | Major | Catastrophic |
| Almost Certain | M             | H     | H        | E     | E            |
| Likely         | M             | M     | H        | H     | E            |
| Possible       | L             | M     | M        | H     | H            |
| Unlikely       | L             | M     | M        | M     | H            |
| Rare           | L             | L     | L        | M     | M            |

# Likelihood parameters

## **Likelihood:-**

- Threat Activity – package, vehicle & hoax bombs
- Desirability/Vulnerability of Target
- Deterrence
- High Profile ('Post Card') Target



# Consequence Parameters

## Consequence:-

- Capacity/Importance
- Long Term Closure
- Diversionary Routes
- Recovery Duration

# Mitigation

## **Deterrence Measures:-**

- e.g. Security mesh to protect against package bombs
- e.g. Bollards, ditches, crash barriers to protect against vehicle bombs
- Low tech solutions encouraged

## **Structural Enhancement – Expensive**

## **Planning - Holistic**



# Implementation

- Assessment Technique Piloted
- National Training Programme – Feb/Mar 2007
- CHE Memo April 2007
- 760 Assessments to date (target 1,000 for first year)
- Allocation of funding for mitigation, based on identified priority



## Further Work

- Monitoring and auditing
- Review of risks and pursue mitigation funding
- SMIS Enhancements
- New build/major refurbishment
- Value engineering/good practice guidance
- Competition and promotion of the technique

Any Questions?

