

Evacuation trials Buses and Coaches

Summary of an Article published in *Scandinavian Journal of Trauma, Resuscitation and Emergency Medicine* - 2006

Background

- Performed in 2005
- 3 models of buses
 - "Citybus" (CB), 3 axles, two doors, low floor, single-deck
 - "Line bus" (LB), 2 axles, two doors, steps, single-deck
 - "Double-decker" (DD), 3 axles, two doors, low floor, double-deck,
- 52 passengers
 - Age: 17 – 82 (32 passengers up to 18 y, 9 passengers over 70 y)

Background

- 12 test scenarios (each tested 3 times)
 - Full access to doors
 - Prams, walkers, wheelchair
 - Front door blocked
 - Impaired passengers (blind folded)
 - Smoke
- Times presented as mean time of the 3 tests

City bus

- Two test scenario
 - Full access (CB1) – 28 sec
 - 1 pram and 2 walkers (CB2) – 48 sec

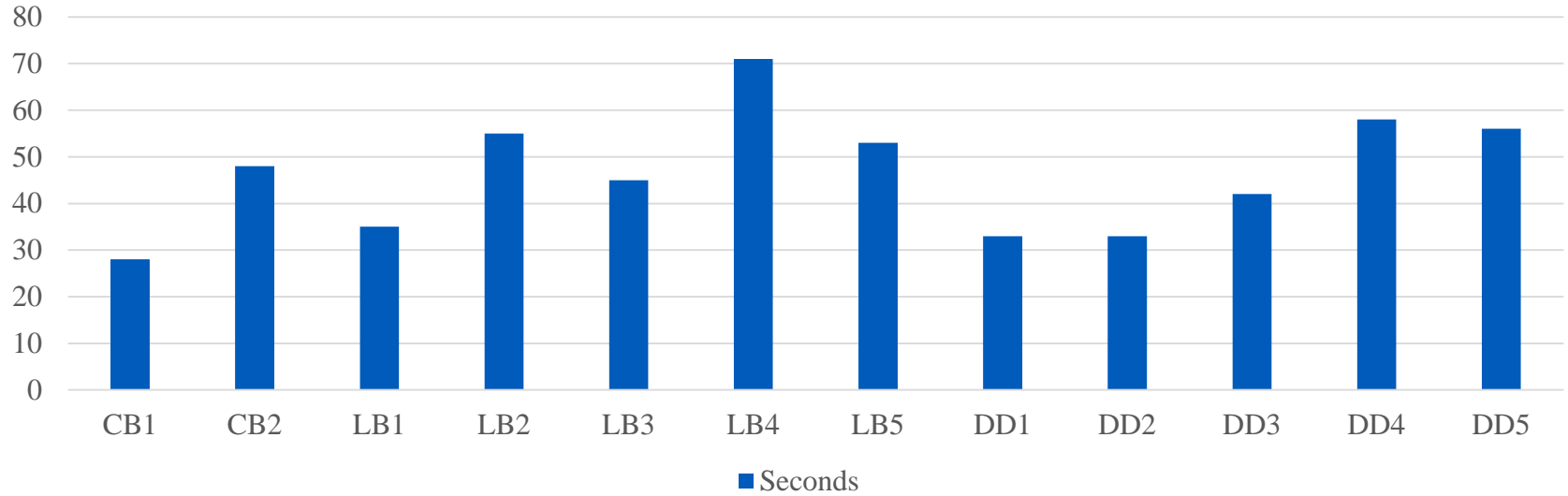
Line bus

- 5 test scenario
 - Both doors (LB1) – 35 sec
 - Mid door blocked (LB2) – 55 sec
 - Both doors, 3 impaired passengers (LB3)– 45 sec
 - Mid door blocked, 3 impaired passengers (LB4) – 71 sec
 - Both doors, smoke (LB5) – 53 sec

Doble-decker

- 5 test scenario
 - Both doors, belted and unbelted (DD1 and DD2) – 33 sec
 - Front door blocked (DD3) – 42 sec
 - Both doors, 1 pram, 1 walker, 1 wheelchair (DD4) – 58 sec
 - Both doors, smoke filled (DD5) – 56 sec

Seconds



Summary

- Access to both service doors is important
- Mobility of passengers is a major factor for evacuation
- Limitation in visibility (smoke) is prolonging evacuation
- "Cuing" – staircases and single door evacuation.
- Recommendation for a "opposite side" e-door

Remarks

- Outdated vehicles
- Excluded other emergency exits
- Simulated situation
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