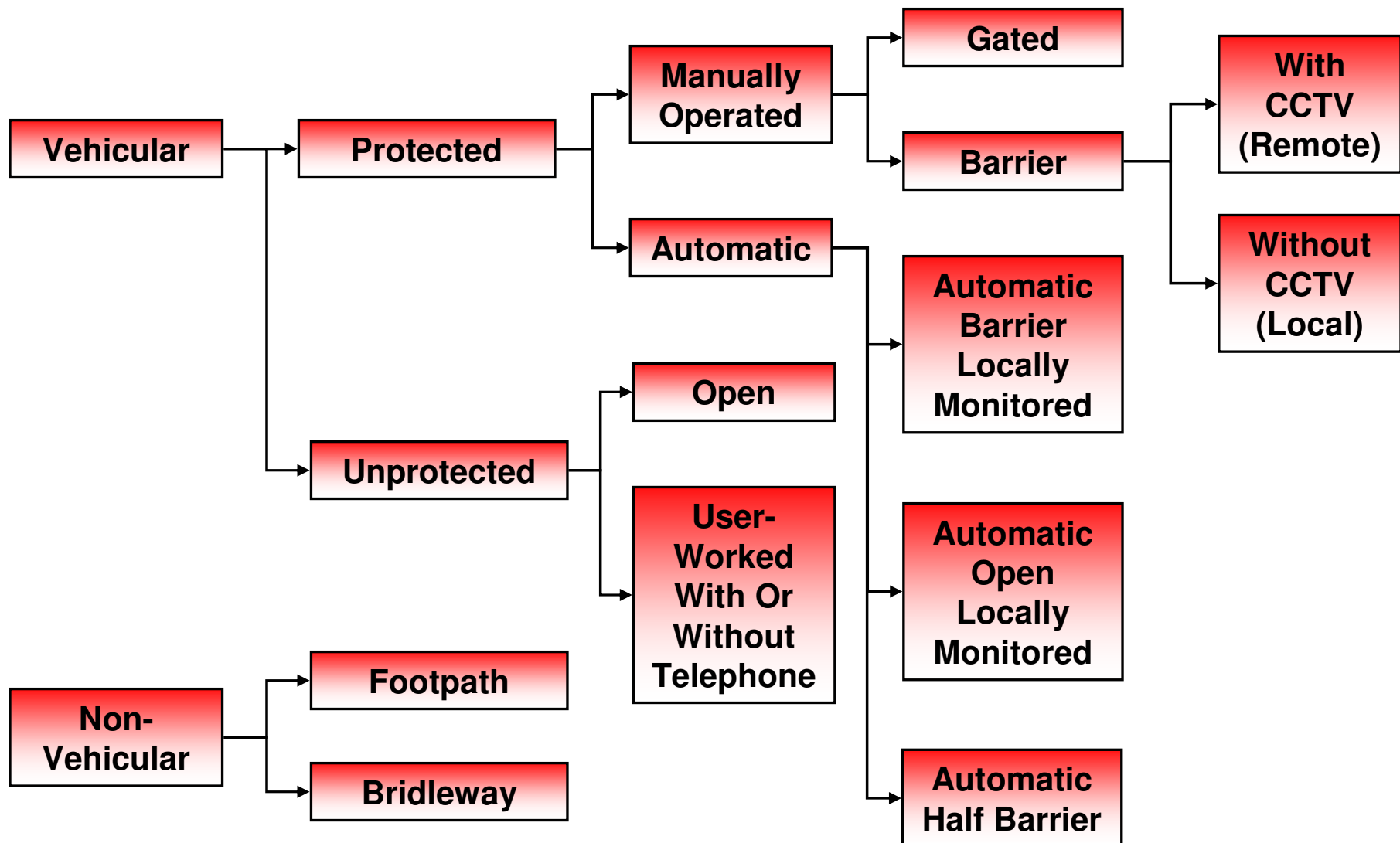


Level Crossing Types and Associated Risks

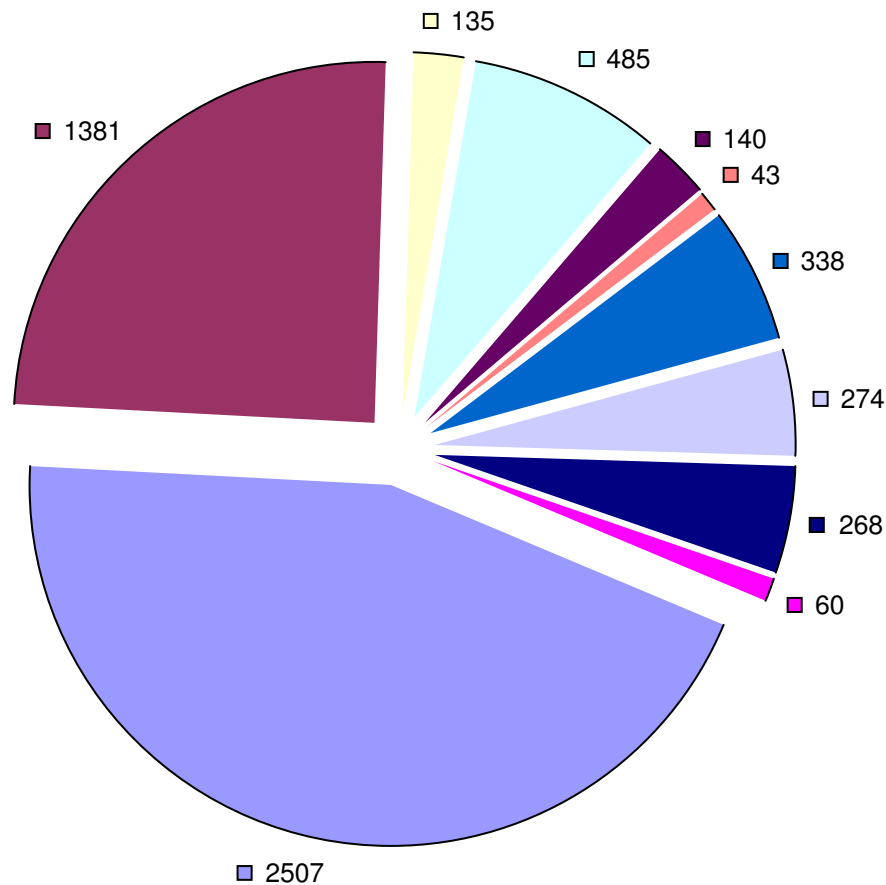
Presented by:
John Lowe
Principal Engineer
Level Crossings

- **Level crossing types**
- **Risks at level crossings**

Level Crossing Types



Number of Vehicular Level Crossing Types (as at 2000)



- Crossing operated by Road User - no equipment
- Crossing operated by Road User - telephone
- Crossing operated by Road User - miniature warning lights
- Automatic Half Barrier (AHBC)
- Automatic Open Crossing - locally monitored (AOCL)
- Automatic Barrier Crossing - locally monitored (ABCL)
- Manually Controlled Barriers operated remotely (via CCTV) by Signaller/Crossing Keeper (MCB-CCTV)
- Manually Controlled Barriers operated by Signaller/Crossing Keeper (MCB)
- Manually Gated Crossing operated by Signaller/Crossing Keeper (MGC)
- Open Crossings

Risks At Level Crossings

- Human beings:
 - Signallers
 - Pedestrians and drivers of vehicles
 - Driving above the speed limit / ignorance of highway code
 - Complacency, moods, familiarity, alertness, stupidity.
 - Vulnerable groups (school children, the elderly, foreigners)
- Poor visibility of level crossing equipment & signage to approaching road users due to:
 - Background
 - Vegetation
 - Low sunlight
 - Adverse weather conditions (e.g. fog, rain, sleet, snow)
- Grounding of road vehicles over crossing due to unsuitable road profile

Level Crossing Types (Cont.)

- **Automatic Half Barrier (AHBC)**
 - Operating sequence automatically activated by approaching rail traffic
 - Train speed over crossing limited to 160 km/h
 - Barriers only cover one half of carriageway on each road approach
 - Minimum road closure time
 - Minimum visual impact



Level Crossing Types (Cont.)

- **Manually Controlled Barriers (with or without CCTV)**
 - Operating sequence under control of Signaller
 - Barriers cover full width of footway and carriageway effectively sealing off the railway corridor
 - Increased road closure time compared to AHBC
 - Greater visual impact compared to AHBC



Level Crossing Types (Cont.)

- **Gated Crossings**
 - Operating sequence under control of crossing keeper (hand operated or from signal box)
 - Gates cross full width of carriageway - footways sometimes have separate gates
 - Increased road closure time compared to AHBC
 - Usually has separate gates for pedestrians (wicket gates)



Level Crossing Types (Cont.)

- **Automatic Open Crossings Locally Monitored**
 - Operating sequence initiated automatically by approaching rail traffic
 - Train speed over crossing limited to 90 km/h
 - No physical barrier to pedestrians and Road Users during passage of rail traffic



Level Crossing Types (Cont.)

- **User Worked Crossings**
 - Private roads only
 - Operation under control of Road User



Level Crossing Types (Cont.)



Example Of Risks

Census Results from a User Worked Crossing



<u>COMMENT</u>	<u>C/P</u>
A tractor from the farm stopped, opened the gates, telephoned and then crossed, closing the gates without telephoning.	No
Postman opened gates without telephoning and only closed the near side gate leaving the farm gate open.	No
Postman returned, opened the near gate and crossed. A second vehicle from the farm stopped, telephoned and then crossed. The postman closed both gates and the driver of the car telephoned.	No
A Land Rover driver opened the gates without telephoning and drove off without closing the gates.	No
A train passed whilst the gates are still open.	
The above Land Rover driver returned and approached the crossing cautiously. Both gates were closed after crossing but no phone calls were made.	No
A tractor driver followed by a Land Rover opened the gates and then telephoned. Both vehicles crossed and the tractor driver called again then closed the gates	No
A Land Rover driver (from the farm) paused at the crossing before opening the far gate then leant on the near gate (waiting for the train that passed at 10:41:43). The driver then opened the nearside gate and crossed. Both gates were closed but no telephone calls were made.	No
A lorry from the farm used the phone and then opened the gates. The lorry crossed. A Land Rover heading towards the farm followed a few seconds later and paused at the crossing before continuing. The lorry driver then closed the gates and used the telephone.	Yes/ No

Examples Of Risks (Cont.)



Reduction Of Risks At Level Crossings

