

# **EmerCall Disabled Refuge and Fire Telephone System**

# Audix EmerCall

**Fully Compliant to BS5839 Part 9**

# Audix EmerCall

- One System for Fire phones and Disabled persons
  - See BS5839 Part 9
    - Forward, Section 1 Scope,
    - Section 7.1 Purpose
  
- The main purpose of an EVC system is to support the fire safety strategy ... suitably supports the required evacuation and firefighting procedures
  - (5.1 Exchange of information and definition of responsibilities)

# Design and Standards

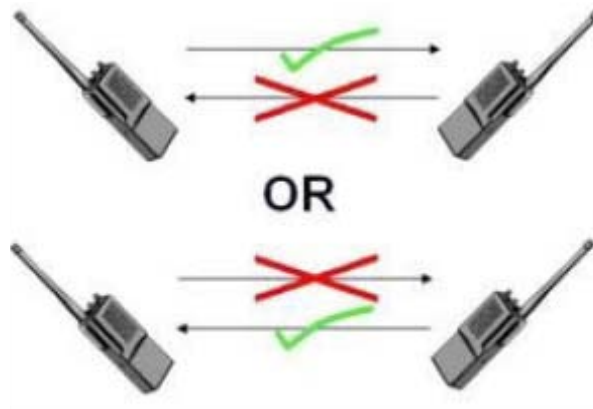
- The design marketing of most disabled refuge systems predates the publication of BS5839 Pt 9:2003, and derives from the definitions posted in BS5588 parts 5, 8, 10 & 11;
- BS5839 pt 9:2003 was written, and should be held as the definitive description of system use and operation.

# EmerCall Compliance

- The *EmerCall* (EVCS) designed to comply fully with the recommendations of BS5839 part 9 2003
- An Emergency Voice Communication System (EVC) is defined as a fixed bi-directional full duplex secure communication system for use in emergencies, and covers the operation of both fire telephone systems and disabled refuge systems. Where both systems are to be fitted to a building these should form a single system.

# EmerCall Compliance

- **Must be Duplex Operation**
  - **(3.2 Terms and Definitions, 9.2 Audio and Data Signal Paths)**

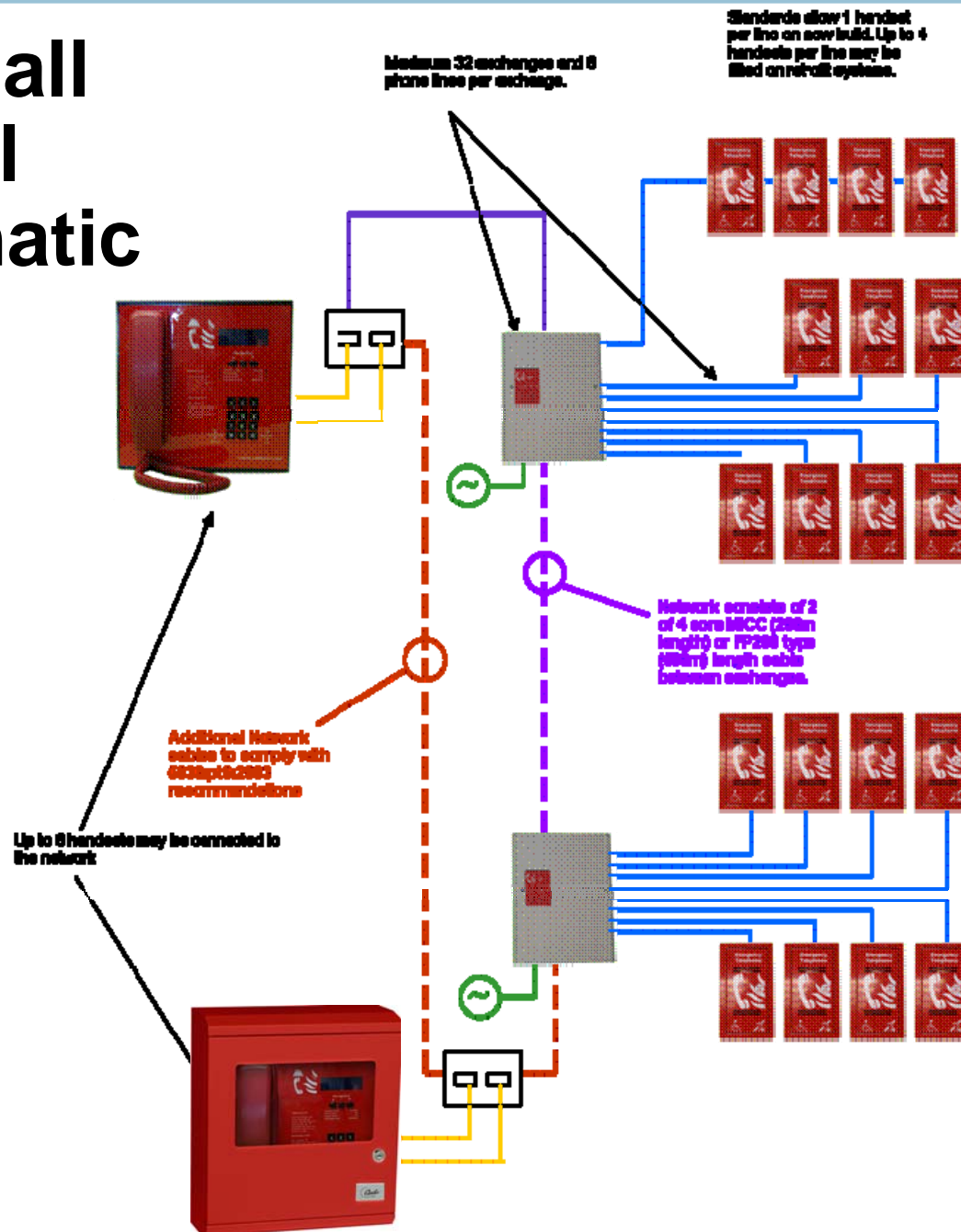


A simple illustration of a half-duplex communication system.



A simple illustration of a full-duplex communication system.

# EmerCall Typical Schematic



# Multiple Masters

- Multiple Master Stations should be considered
- ...located at a central control point ...A master station would be expected to be permanently manned in an emergency... control might be taken over by a fire officer.
- In a large building or complex, there may be more than one point from which evacuation or other emergency situations can be controlled.
- In a complex of different buildings, it may be desirable to have a voice communication link between a master station in one building and master stations in other buildings.
- A master station should be installed in an area of low fire risk
- (3.12 master station, 12 Master Stations)
- To ensure an area of low fire risk a second master away from the main entrance

# EmerCall Main Features

- Network topology (Reduces installation cost)
- Operates on CWZ (category) fire cables
  - (ie soft skin enhanced Draka 4 pair 910245)
- Example
  - Flat campus style installation
  - Modern hospital
  - Shopping centre
  - Football stadium
- Rings of circuits back and forth out through ductwork to remote outlying locations is expensive and problematic

# EmerCall Main Features

- Up to 256 outstations per system
  - 8 lines per exchange x 32 exchanges per network
- 1 outstations handset per line for new systems for compliance
- Up to 8 master handsets
- Maximum spur 500 metres to Outstation Handsets
- Maximum 500 metres between exchanges
  - Example 3 exchange system total network cable length 1500 metres

# EmerCall Technical Features

- Full fault monitoring
  - All critical paths
  - 99 event fault log
- Disk Programming for Outstation Text
  - Password Protected
- Distributed System Allows Phased Purchasing and Installation
- Remote Fault Relay Outputs
- Simple DIL Switch Outstation Enabling

# Who is Disabled?

- Building regulations state buildings should accommodate wheelchair users
- Disable persons not limited to wheelchair users, & not the only users of the system
- The Office for National Statistics census results for 2001 show that 0.47% of the population are wheelchair bound, however 12.7% of the population are diagnosed as unable to walk 200 metres unaided.

# What is Disabled Refuge?

- A disabled refuge is defined as a location for people who are mobility impaired who will impede the general egress from the building, or need assistance in leaving the building.
- This obviously includes wheelchair users who may have used the lift, but also covers the elderly, pregnant women over 6 month term, people with arthritis, in fact anyone who cannot walk 200 metres without a break.

# Outstation Types

- Section 11 of BS5839 Pt 9:2003 deals with outstation types
- 11.1.2.a Type A for evacuation or fire fighting use
- 11.1.2.b For disabled refuge types A or type B can be used, See also 11.6.2 (i)
- however ...
- Must be Full Duplex, (section 9.2)

# Outstation Types

- System may require a combination of type A and type B outstations.
- Intercoms for disabled people may be included as forms of outstations, but there will often be several outstations specifically located for use by persons such as firefighters,
- Surface, flush weatherproof, open or lockable Type A or B outstations should be available as appropriate.
- (11 Outstations)

# Type A Outstations

- Monitored phone handset
- T coil in all handsets
- High volume ringer
- Optional lock
- Optional strobe (requires additional supply and cables)
- Surface, Flush, Lockable, IP66, Stainless Steel Options



# Type B Outstations

- BS5839 Pt 9:2003 compliant
- Hands Free Operation
- Echo cancellation and noise reduction
- Compact design
- High volume ringer
- Flashing Status LED
- Braille Signage
- Duplex Speech
- 20mm cable glands
- Fully monitored
- Stainless steel Bezel, Flush, Surface Options



# Roaming Phone Outstations

- Flexible Roaming Phone
- High Quality Telephone Jack
- Full Duplex Conversation
- Flexible 30cm Roaming Cable
- Telecoil for Hearing Impaired Users
- Low Noise, High Quality Telephone Jack
- Fully Monitored
- Stainless Steel Jack



# Master Handset

- Monitored phone handset
- A 4 line 20-character LCD display for displaying calls, faults and status
- 12 key keypad for dialling
- 3 menu keys for menu navigation
- 4 Indicator LEDs (General Fault, Supply Fault, CPU Fault and Supply Healthy)



# System operation

- System under the control of the master handset
- If more than 1 master then 1<sup>st</sup> operated takes command
- When outstation operated then identifier message appears on master handset ie “Floor 1 Riser E”
- If more than 1 outstation is calling then all lines show on the display and may be scrolled through
- If the control wishes to contact an outstation then either by calling the number or scrolling through the display names

# System operation

- Where more than one master station the EVC should be controlled from only one master station at any given time.
- (12 Master Stations)
- ...no delays in voice communication should be introduced by the system. Conversation should be possible exactly as if no electronic communication system were involved.  
...operate within three seconds of the initiation.
- (9.2 Audio and Data Signal Paths)

# System operation

- A key performance requirement to be determined in relation to EVC systems is whether there is a need for calls to be made to, as well as from, outstations.
- (5.1 Exchange of information and definition of responsibilities)
- Where the EVC system is required to have the facility to call outstations, a “make call” switch should be provided to initiate a call to each outstation individually ...
- (12 Master Stations)

# System operation

- Configuration password protected.
- (8.2 System Circuitry and Software)

# Exchange

- AC mains supply with a 1.5A monitored maintained battery charger
- 8 telephone line interfaces
- Connection matrix
- Fault relay output (either Local Fault or General Fault)
- 2 Network interfaces with supply addition
- Line Fault Indication (8 LEDs, per line)
- Supply status (3 LEDs, AC Present, DC Present, Supply Fault)
- General fault LED



# Exchange

- Battery standby for a quiescent state of operation for at least 24h, plus voice communication in an emergency situation for at least three hours
- (13.3 EVC System Power Supply units)

**Thank You**  
**Any Questions?**