

FORESTCITY

Park Road,
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Altrincham,
Cheshire,
WA14 5QX

Sales Tel: 0161 972 0245

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INNOVATION AND PERFORMANCE SINCE 1902



BS EN ISO9001 – Certificate No. 1376

THE FOREST CITY SIGNS LTD. THE FOREST CITY ELECTRIC CO. LTD. FOREST CITY PLANT HIRE LTD.

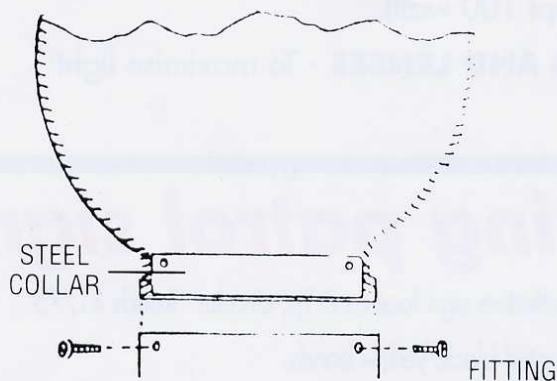
PART 3

Pedestrian Crossing Enclosed Floodlight



- 100 watt/150 watt Tungsten Halogen.
- Die-cast aluminium body. Epoxy coated.
- Totally enclosed and weatherproof to IP55.
- Ceramic Lampholders.
- Bracket for 76mm dia. post. Other size options.
- Anti vandal mesh guard option.
- Integral photo-cell option.

Prevent Globe Vandalism



"STAYFIX" GLOBE

- Uses the standard type of gallery.
- Fitted with internal steel reinforcing collar around neck. The fixing screws pass through the gallery rim and into the tapped holes in the collar.
- A simple solution to a perennial problem.

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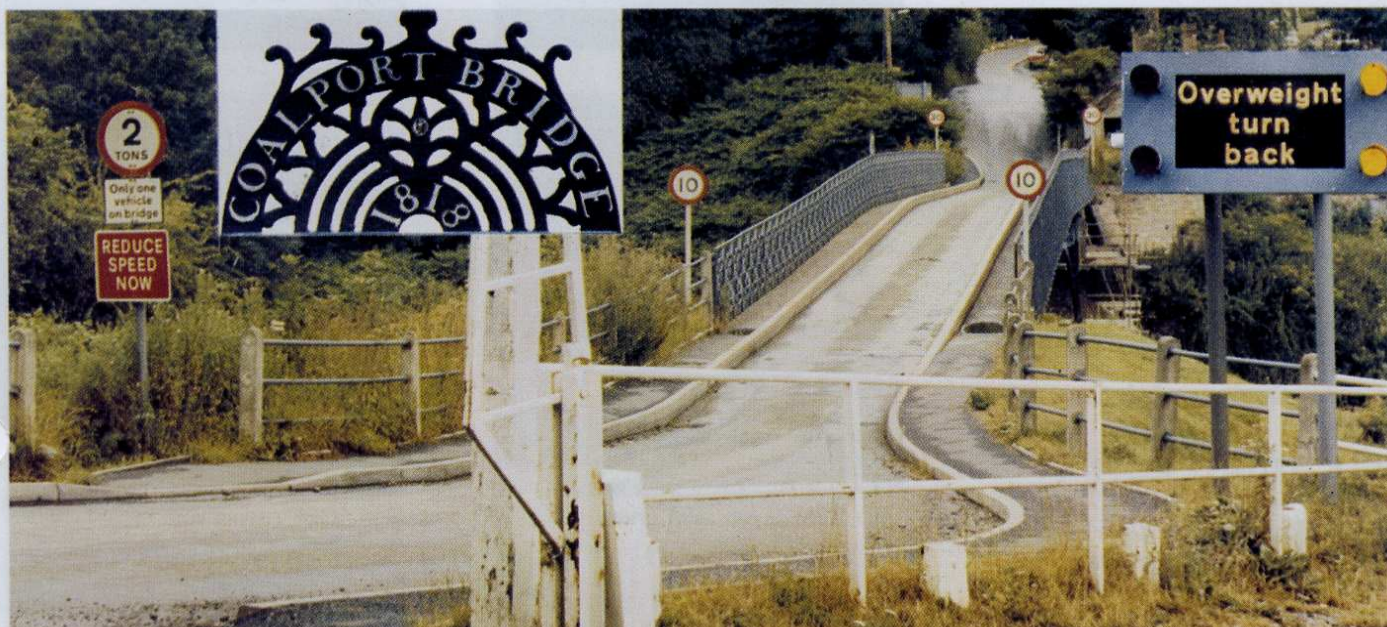
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Forest City fibre optic signs protect historic Coalport bridge from overweight vehicles.

FIBRE OPTIC VARIABLE MESSAGE SIGNS

HOW IT WORKS

The Tungsten Halogen Lamps are fitted at the back of the sign. The light is focused by a special heating filtering reflector onto the end of a bundle of glass fibres. The fibres are led to the rear of the sign face and arranged so as to provide the shape of the sign legend.

A separate lamp and bundle of fibres is used for each different colour area of the sign face. The colour filter is placed immediately in front of the lamp.

Because the panel immediately behind the sign face is matt black there is no possibility of sun phantom, and at the same time the brilliant output from the end of the fibre bundles provides a bright and clear legend.



- Sun Phantom Eliminated
- Bright and Clear
- Multiple Colours and Legends on one Sign
- Reduced Power Consumption
- Lamp Monitoring Available
- No Moving Parts



FACILITIES AVAILABLE

- Automatic "Contrast Control" which adjusts message brightness in steps from ambient direct sunlight to darkness
- Remote Monitoring of all Sign Functions
- Interlocks to Prevent Display of Conflicting Messages
- Anti-condensation Heater
- Activation by Speed, Queue, Long Vehicle, Fog, Ice, and other hazards



Speed activated sign.

DEPARTMENT OF TRANSPORT TYPE APPROVED

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2M297C

FIBRE OPTIC

TRAFFIC SIGNS-GENERAL

All signs are manufactured from corrosion free aluminium with vandal resistant polycarbonate or fibreglass face.

FOREST CITY use a "fail-safe" system by mixing the fibre ends from separate lamps so that the message is still readable in the case of lamp failure.

Photoelectric night time dimming can be fitted and an anti-condensation heater is available for when illumination is intermittent.

Signs can be operated individually or synchronised with traffic signals (as example shown from Prince's Street, Edinburgh).

Can be interfaced to manual switch, timer, UTC computer or remote operation via British Telecom (telephone) line.

Typical luminance 3,000 c/sq.M (white), 600c/sq.M (red).

All types of traffic sign symbols are available.

VEHICLE HEIGHT ALARM SYSTEM

Overheight vehicles are detected in advance by twin photo electric beams to give directional detection (right-hand photo). A loop detector can be used to ensure operation is by vehicle only.

On detecting an overheight vehicle the sign is illuminated and the amber signals flash up and down for a preset time. Optional features include an audible alarm, alternative messages, proving contacts, additional times, etc.

The Forest City Variable Message Sign which uses rotating prisms, can also be used for this purpose instead of the fibre optic sign. (See separate brochure.)

SPEED ACTIVATED SIGN

The sign is illuminated for a preset period on detection of a speeding vehicle. Threshold speed is adjustable.

METHODS OF SPEED DETECTION

1. Speed detection loops are fitted 80M/100M before the sign.
2. A microwave unit is mounted on or near the sign and normally covers at least two lanes.

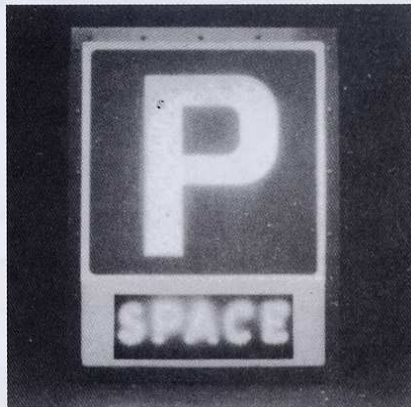
Information on trials of speed activated signs is given in Report 1118 from TRRL Publications, Old Wokingham Road, Crowthorne, Bucks. Price £1.00.

TUNNEL TRAFFIC CONTROL INDICATOR

Example from Suez Canal Tunnel. Multiple English/Arabic legends of various speed limits. Controller provides back indication, detecting lamp failure, open circuit and short circuit. Photo cell Night Dimming.

LANE CONTROL SIGNALS

(ARROW/CROSS) See separate leaflet



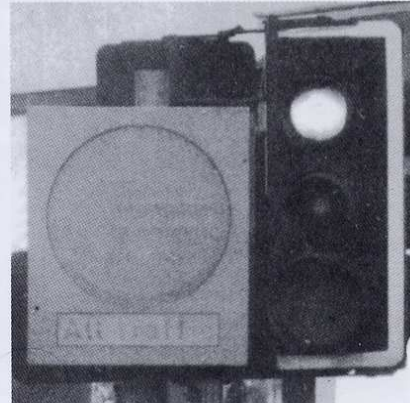
Message 1



Message 2



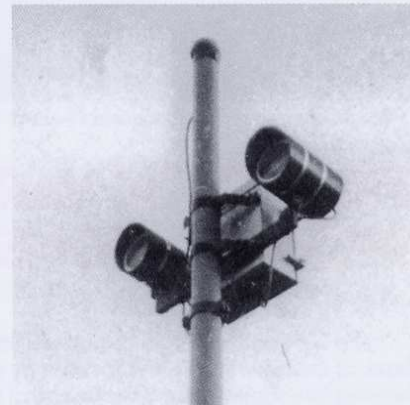
Sign "ON", sync. with green



Sign "OFF", sync. with red



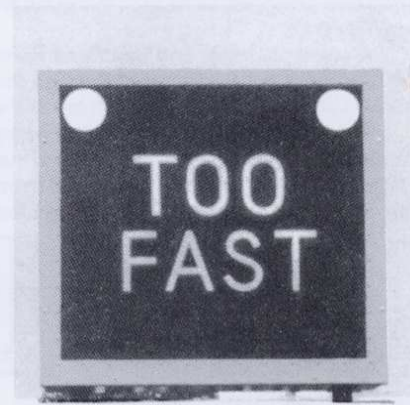
Controlled by Overheight System



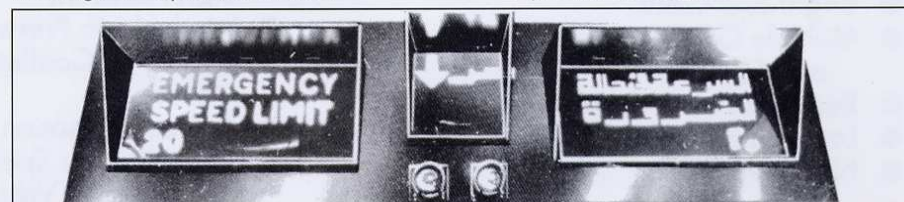
Overheight Detector



Message 1 - Speed Activated



Optional Message 2



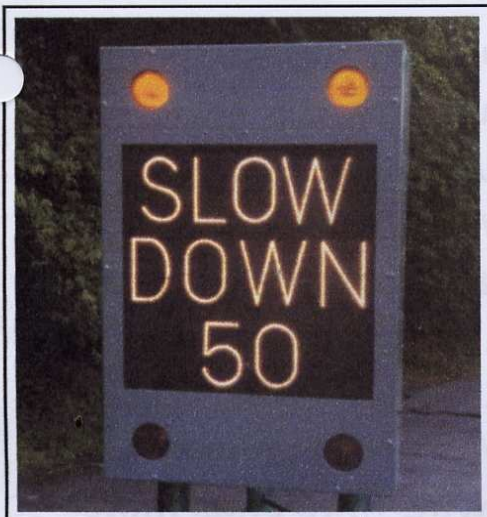
Suez Canal Tunnel Indicator

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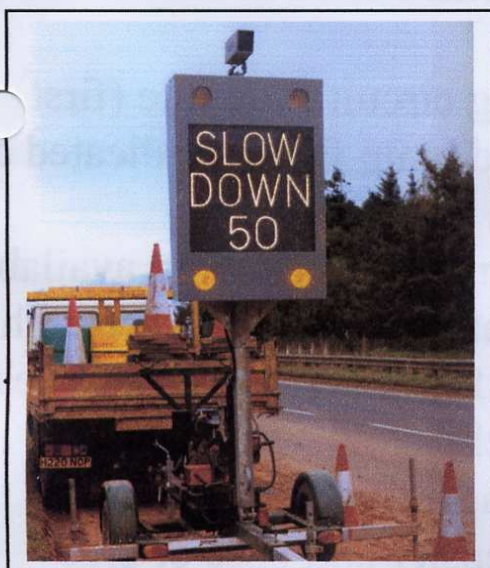
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SPEED AND ICE ACTIVATED SIGNS



Permanently Mounted Sign



Trailer Option With Radar

FIBRE OPTIC SIGN

- High visibility and "Phantom" free.
- Overall size -
970mm wide 1,420mm high 200mm deep with 200mm capitals.
OR 600mm wide 800mm high 200mm deep with 100mm capitals.
- Removable front face for access.
- Case welded aluminium polyester coated.
- Multi-stage auto night-time dimmer.
- Fibre ends mixed so that message is still displayed on lamp failure.
- Any message available e.g. "SLOW DOWN 40" "TOO FAST" "ICE" etc.
- Demist / de-ice thermostatic heater.
- Adjustable "Sign On" time delay.
- Corner flashing ambers, 60/90 fpm.
- Adjustable speed threshold.
- Trailer mounted option with integral diesel generator, 26 hour fuel tank and outriggers for stability.
- Department of Transport type approved.

MICROWAVE SPEED DETECTION SYSTEM

The Microwave Detector is fitted on top of the sign or at some convenient point where approaching traffic will come within range.

Detection speed is set at 3 m.p.h. above the display speed. A variable adjustment is provided from 25/70 m.p.h. (85/125 k.p.h.). Typically vehicles are detected at 80 M distance to an accuracy of +/- 5% approx.

LOOP SPEED DETECTION SYSTEM

Speed Detection Loops are buried in the roadway 80M/100M before the sign. The amplifier /logic may be fitted inside or adjacent to the sign. These loops are the same as those used all over the world for vehicle detection at traffic signals.

OTHER HAZARD DETECTION SYSTEMS

Loop Systems can also be used to detect and display many other hazards such as : "QUEUE, "TOO CLOSE", "LONG VEHICLE", etc.

ICE DETECTION SYSTEM

The sign can be supplied to display "ICE". It can be operated by a simple thermostat or by a sophisticated ice predictor using moisture and temperature probe buried below the road surface.

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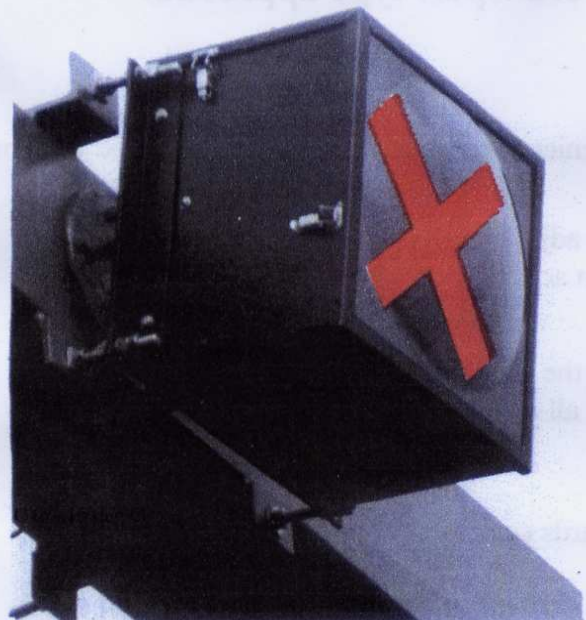
FIBRE OPTIC LANE CONTROL SIGNALS



Typical morning display



Typical afternoon display



TECHNICAL INFORMATION

Standard size: 450mmX450mmX330mm
 Weight: 20 kilos (25 Kilos Dual symbol).
 Standard symbols:
 Diag. 5001 Arrow 450mm
 Diag. 5003 Cross 450mm
 Other sizes of symbol available.
 Electrical load: 200 watts per symbol.
 Fixing centres:
 380mm vertical, 500mm horizontal.
CERTIFIED TESTS: Wind 162 Kph.
 Driving rain.
 Temperature +50 deg C to -15 deg C.
 Bump. Vibration.

PHOTOMETRIC DATA

Vertical	Horizontal	White Arrow Candelas/sqm	Red Cross/ Green Arrow Candelas/sqm
0°	0°	15,000	6,500
0°	±10°	13,500	3,800
0°	±15°	11,500	2,100
-10°	0°	14,000	3,800
-10°	±10°	11,500	2,300
-10°	±15°	11,000	1,200
-15°	0°	11,500	2,000
-15°	±10°	9,000	1,200
-15°	±15°	8,000	600

- DoT type approved and fully environmentally tested.
- Fixed Cross, Arrow or Variable (Cross/Arrow on same face).
- Vandal resistant face, domed for anti-phantom plus phantom free fibre optic display.
- Double lamp/transformer circuit for each symbol with fibre ends mixed so that symbol still shows in case of lamp failure.
- Lamp proving circuit available (first and/or second lamp failure indicated as requested).
- Interface for remote switching available
- Polyester coated aluminium case with front access. Front secured by stainless steel toggle clips.
- Vertical fixing angle adjustable.
- Reduced intensity and base or side access available for Tunnel use.

- **LAMP DIMMING** Night-time lamp dimming available as option.

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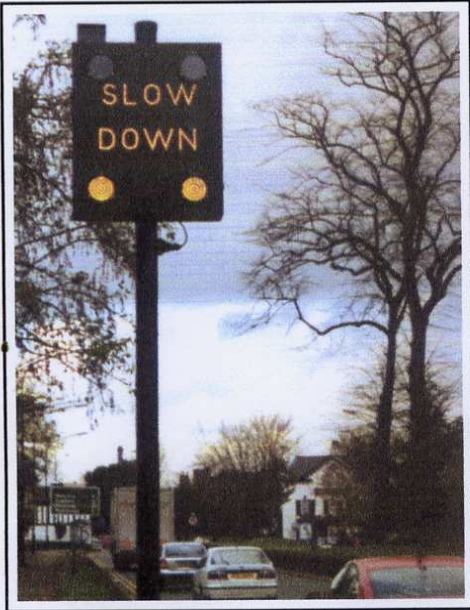
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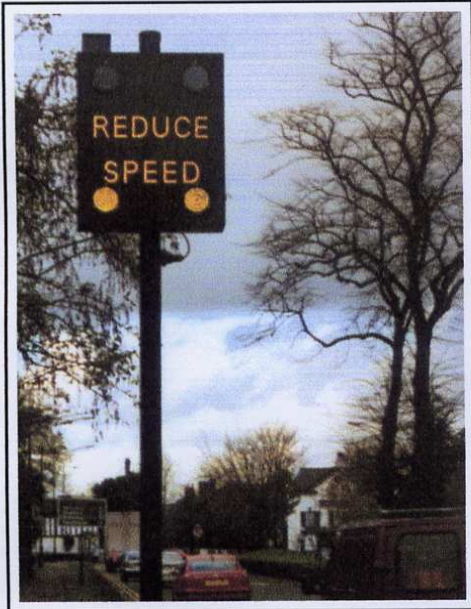
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Multiple Message Speed Activated Fibre Optic Sign (radar activated)



Message 1



Message 2



◀ Fixing Method



◀ Reflective
Plate Sign

- Single message or multiple messages displayed in sequence for each activation.
- Radar detector with adjustable speed threshold mounted on top of sign to activate display.
- Variable timer for “on” period.
- L.E.D corner flashers (optional).
- Ideal for multi-site use.
- Quick release pole fastening with plug and socket electrical connection.
- Unskilled personnel can remove and re-install the sign quickly.
- Any number of poles and fixing plates can be provided.
- Reflective plate sign ie “watch your speed” available for sites when the speed activated sign is not fitted.

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VARIABLE MESSAGE SIGNS



MANDATORY SIGN



ENTRANCE SIGN



CAR PARK DIRECTION SIGN

Up to 3 messages on one sign

These highly visible signs carry up to three messages on triangular vanes which rotate automatically at preset times. Selection is by programmer (time switch) or remote switching (e.g. via UTC). Typical Uses – 'Part-time Pedestrian Only' areas, Tidal Flow Schemes, Lorry Prohibitions and Car parking.

They are custom-made to any size with message for every requirement. They are simple to install and virtually maintenance free.

The integrally illuminated unit is only 135mm deep.

Programmers (Time Switches)

Type 1 – Simple daily control of two faces.

Type 2 – Complex weekly programmes for up to three faces.

Both programmers have mains failure battery and facility to be overridden by computer.

- D.O.T. Type Approved.
- Operation by local or remote switching. U.T.C. or via British Telecom (telephone) line.
- Variable section totally enclosed with vandal resistant polycarbonate window.
- Integral illumination of variable panels by fluorescent tubes.
- Up to three messages on each variable panel.
- Back indication contacts (proving) to indicate actual message status back to control system.
- Sign face plain or reflective. Outer case and vanes in corrosion-free aluminium.
- Moving parts virtually maintenance free.
- Drive cam parts are self-lubricating heavy-duty nylon.
- Triangular vanes only 31mm wide and can carry standard or reflective finish.
- Nationwide installation and full aftersales service.

PEDESTRIAN ZONE

VARIABLE MESSAGE SIGNS



SIGN WITH FULLY VARIABLE LEGEND



SIGN WITH FIXED 'ZONE' AND
VARIABLE LEGEND

- D.O.T. TYPE APPROVED.
- CONTROL NORMALLY BY PROGRAMMER, LOCAL OR REMOTE MANUAL SWITCHING.
- SIZES TO SUIT CUSTOMER REQUIREMENTS.
- LEGEND MAY BE FULLY VARIABLE OR PARTLY FIXED.
- INTEGRAL ILLUMINATION BY FLUORESCENT TUBES.

CAR PARKING VARIABLE MESSAGE SIGNS



TWO EXAMPLES OF SIGNS WITH VARIABLE PANELS INTEGRALLY ILLUMINATED BY FLUORESCENT TUBES

- D.O.T. TYPE APPROVED.
- CAN BE OPERATED AS PART OF AN INTEGRATED SYSTEM OR CAN 'STAND ALONE'.
- CONTROL BY UTC, PROGRAMMER, LOCAL OR REMOTE MANUAL SWITCHING.
- VARIABLE PANELS CAN SHOW UP TO 3 MESSAGES WITH INTEGRAL ILLUMINATION BY FLUORESCENT TUBES.
- SIZES TO SUIT CUSTOMER REQUIREMENTS.

SCHOOL ZONE

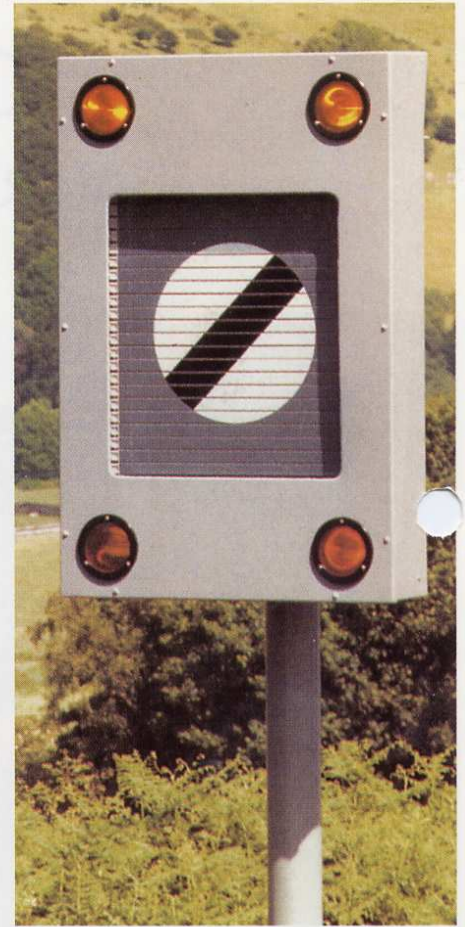
VARIABLE MESSAGE SIGNS



EXAMPLE OF NORMAL DISPLAY



EXAMPLE OF 'SCHOOL HOURS'
DISPLAY



DE-RESTRICTION DISPLAY

- D.O.T. TYPE APPROVED.
- AUTO PROGRAMMER IS SWITCHED ON MANUALLY AT THE START OF EACH SCHOOL TERM.
- FITTED WITH 2 PAIRS OF FLASHING YELLOW SIGNALS.
- FULL RANGE OF SIZES.
- INTEGRAL ILLUMINATION BY FLUORESCENT TUBES.
- IN ACCORDANCE WITH D.O.T. WORKING DRAWINGS NP402 AND P670.

BACK ILLUMINATED 'SECRET' SIGN



State 1



State 2

- New low-cost design.
- 'Secret' message only visible when illuminated.
- 'Secrecy' achieved by use of special plastic window with rear illumination by fluorescent tubes for low power consumption.
- 'Secret' Sign can stand alone or be combined with standard illuminated or non-illuminated signs as illustrated
- Various colours available for message.
- Any message, symbol or size of sign.

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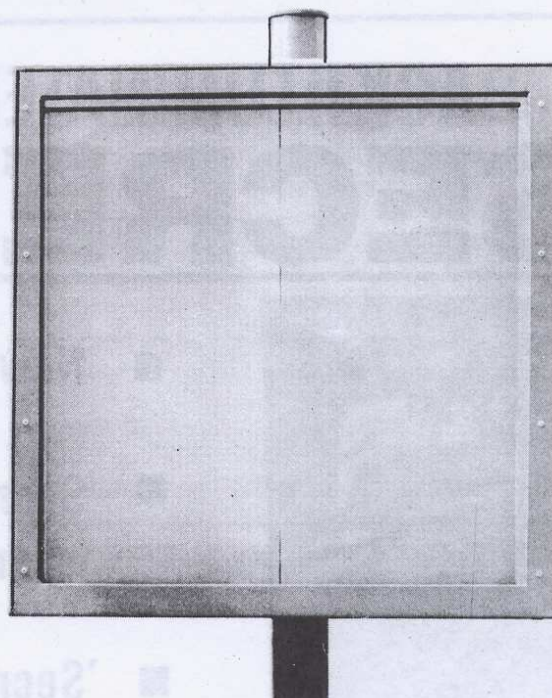
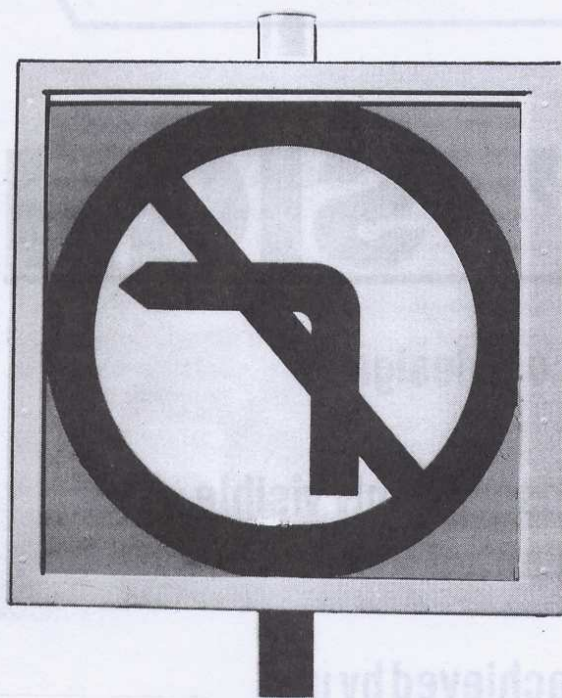
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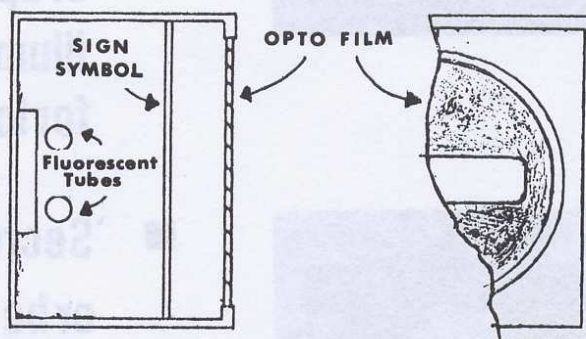
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LIQUID CRYSTAL VARIABLE MESSAGE SIGN LC-VMS

Our unique Liquid Crystal Variable Message Signs work with sunlight, including direct sunlight, to create sharper and bolder characters. Interior fluorescent lighting is provided to assure visibility under low light conditions.

The LC-VMS is designed to provide high visibility without trade offs, both maintenance costs and power consumption are kept low.



- **FULL VISIBILITY IN DIRECT SUNLIGHT.**
- **NO MOVING PARTS—LOW MAINTENANCE.**
- **LOW POWER CONSUMPTION.**

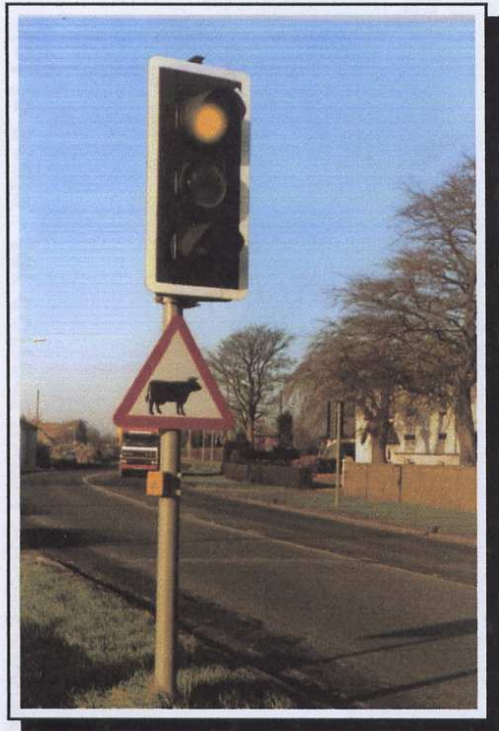
IDEAL FOR USE WITH
TRAFFIC SIGNAL -
CAN BE FITTED INTO
300mm MELLOR HEAD

Engineered for ruggedness, the LC-VMS will stand up to winter and summer conditions. The operating temperature range is -30° F to +160° F.

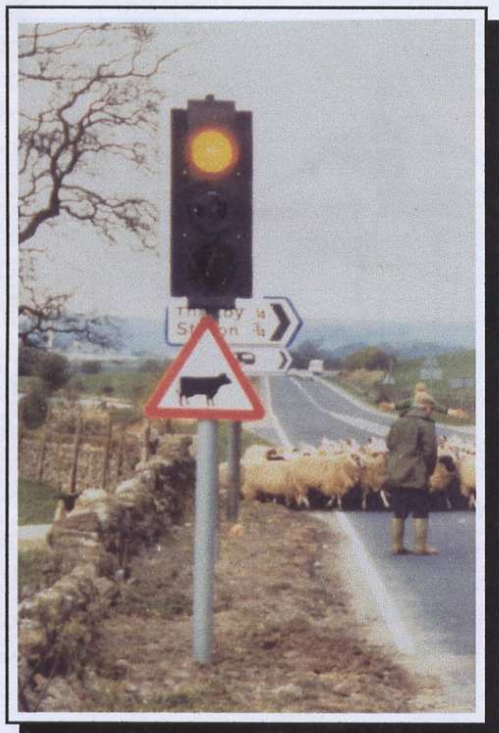


LIQUID CRYSTAL SIGN
FITTED TO TRAFFIC SIGNAL

Twin Amber Flashers For Cattle Crossings



Flasher and Sign diag.548



To give warning of cattle crossing in accordance with DoT requirements designed to comply with DoT specification MCE 0148. Siting is normally on either side and in advance of the crossing.

- **SIGNAL** - Standard DoT approved "Mellor" Polycarbonate Signalhead. 200mm lenses, High Intensity tungsten halogen 50 watt with backing board.
- **POLE** - 115mm (4½") diameter x 4.5m (14' - 5") overall. Planting depth 600mm (24"). Plastic coated. Height to accommodate signal and sign dia. 548 (600mm).
- **CONNECTIONS** - Signal connections under removable pole cap as standard traffic signal. Cable entry in base of pole.
- **CONTROLLER** - Housed in unused central lens aperture with lockable door.
- **SWITCH ON** - By key switch normally mounted in weatherproof box on pole. Flashing time can be preset from 30 to 300 seconds in 30 second steps. This is followed by an "INHIBIT" period of 300 seconds to prevent continual reactivation by the user.
- **LAMP MONITORING** - Available if necessary due to site layout or if one controller operates more than one set of lights.
- **REMOTE SWITCHING** - Unit available fitted with Lamp Monitoring.
- **ILLUMINATION** - of sign dia. 548 (if illuminated) is switched on and off by the flasher controller.
- See overleaf for typical installation.
- DoT approved for use on Public Roads.

The definition of "CATTLE" is any "stock" that is being herded, including sheep and horses.

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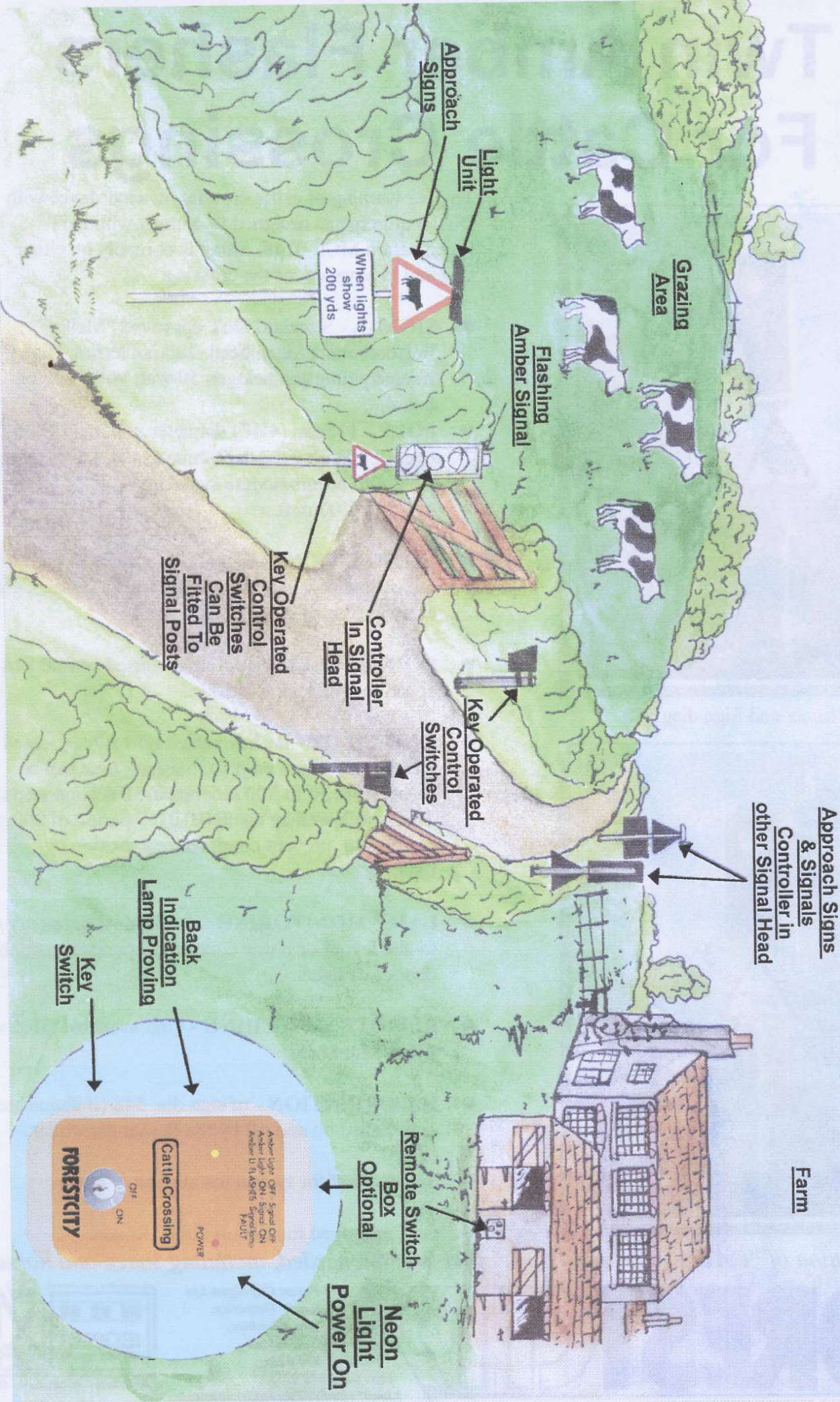
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EXAMPLE OF CATTLE CROSSING SYSTEM

SHOWING THE VARIOUS ALTERNATIVE ITEMS OF EQUIPMENT AVAILABLE

Not to scale - for correct Sign / Signal spacing see D.O.T. Advice Note (Currently TA 56/87)



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FLASHING SIGNALS HAZARD SIGNS

FOR MOTORWAYS AND HIGH SPEED ROADS

SPEED-ACTIVATED SIGN

- Trailer or post-mounted
- Microwave (Radar) or loop speed activation
- Trailer unit self-contained with integral diesel generator with 26 hour fuel tank. Fitted with outriggers
- Message provided by Phantom Free Fibre Optics. D.O.T. Type approved
- Adjustable Speed Threshold
- See separate leaflet for sign details



Trailer Mounted Speed Activated Sign



ADVANCE SPEED LIMIT WARNING

- 4-300mm (or 200mm) high intensity traffic signals flash alternately up and down (see separate leaflet for full details of traffic signals).
- Reflective or plain sign face.
- External illumination if required.
- Power supply from portable generator or mains.
- Standard sizes 258" x 170" (6.55M x 4.37M) and 93" x 85" (2.36M x 2.15M).

"ROLLING ROAD" VEHICLE SIGN

- Adjustable arrow (left or right) or various other symbols e.g. diag. 858.1 road closure (height 1350mm) or diag. 564 road works (height 1200mm), also fitted with plate below.
- 4-300mm high intensity traffic signals flash alternatively up and down.
- Reflective.
- Power supply from vehicle battery.
- Standard size 2.5M x 2.5M. (To D.o.T. standard TD 29/87).
- Forest City will supply signals and flasher unit only, for fitting to customer's sign panel if required.



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