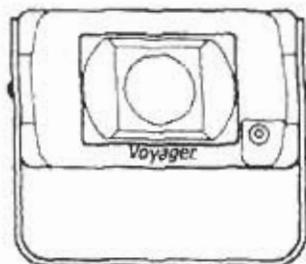


PRODUCTS BY AUDIOVOX

Voyager

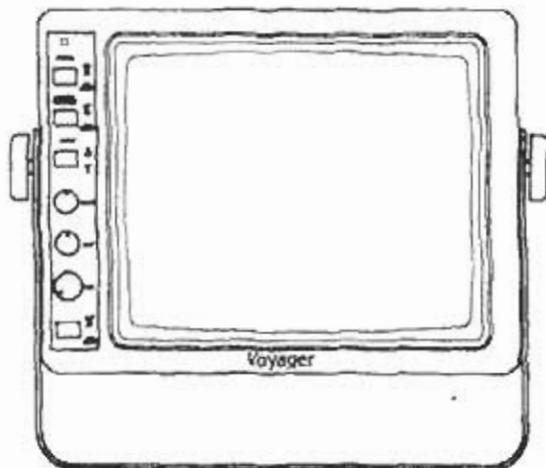
OBSERVATION SYSTEM

AOS-33



AOC-75 Features:

- High Resolution, 1/3" CCD Camera
- Compact/Lightweight Aluminum Die Cast Body
- Waterproof Housing
- Waterproof Microphone
- Waterproof Normal/Mirror Image Switch
- Adjustable Viewing Angle
- Optional Air Deflector



AOM-70 Features:

- 7" Monochrome Monitor
- Dual Camera Input
- Brightness/Contrast/Day-Night Controls
- Volume Control for Internal/External Speaker
- Camera Position Button(Up/Down)
- Power/Stand by Button
- Front Panel Controls Back Lit

AUDIOVOX SPECIALTY
MARKETS CO., LP.
an Affiliate of...

asa[™]
ELECTRONICS
The World's Premier Camera Company

OPERATION MANUAL

AOS-33 OPERATIONS MANUAL

IMPORTANT:

The VOYAGER Observation System (AOS-33) has been designed to provide years of trouble-free operation. Please read this manual thoroughly. This manual contains instructions to ease installation of the camera and monitor. The VOYAGER Observation System is a *supplement* to standard rearview mirror systems, and will provide additional rearview vision when installed and maintained properly. The VOYAGER Observation system is not intended in any way to be a substitute for careful, cautious, defensive driving or for the consistent adherence to all applicable traffic laws and motor safety regulations. This product is not intended to be a substitute for rearview mirrors or for any other motor vehicle or boat equipment mandated by law.

FEATURES:

AOC-75 CCD Camera

- 270,000 pixel image sensor
- 0.1 Lux sensitivity
- Automatic electronic iris provides a clearer, more consistent image in low and bright light
- Wide angle lens provides a broad viewing area
- Compact design and light weight ease installation in most vehicles, including large boats
- Durable, waterproof construction
- Built-in microphone for audio pickup
- Normal/mirror image switch on back of camera
- Wind deflector reduces build up of dirt on lens
- Waterproof cable connection

AOM-70 Monochrome 7.0" Monitor

- Day/night switch
- Brightness and contrast controls
- Volume control
- Camera position switch for a panoramic view or a concentrated view
- Illuminated front panel
- Power/stand-by switch
- Internal speaker with external speaker jack

CONTENTS OF 1 COMPLETE SYSTEM:

AOC-75 CCD Camera:

- 1 - Camera
- 1 - Camera bracket
- 4 - Attachment screws with washers (M4x8)
- 1 - Wind deflector

AOM-70 7.0" Monochrome Monitor:

- 1- 7.0 " monitor
- 1 - Snap-on sun visor
- 1 - Monitor bracket
- 1 - Power harness with locking connector
- 1 - Range markers
- 4 - Thumb screws (M5x12)

OCA-80 Cable:

- 1 - 20 meter cable with waterproof connector. Oil, gas, grease resistant. UV stable

Documents:

- 1- Operations manual

AOS-33 Operations Manual

BEFORE INSTALLATION:

1. This system operates from 10 volts DC to 38 volts DC, negative ground.
2. Please install this system according to the instructions in this manual.
3. **Do not disassemble the camera or the monitor.** This voids the warranty. Disassembling the camera will compromise the waterproof seal.
4. Connect the system to an ignition switched power source. Connection to a battery source will reduce battery life.

WARNING

1. To prevent electrical shock, **DO NOT OPEN THE MONITOR CASE.** There are potentially lethal voltages inside the monitor. There are no user serviceable parts inside. If evidence of tampering is detected, the warranty will be considered void.
2. Keep monitor away from leaking water, rain, moisture etc. It is NOT waterproof. Any moisture inside the monitor could cause extensive damage.
3. Use the thumbscrews to mount the monitor to bracket.

CAUTION

1. **DO NOT OPEN THE CAMERA CASE.** This will break the camera's waterproof seal. If evidence of tampering is detected, the warranty will be considered void.
2. Do not mount the camera near the lower area of the vehicle (e.g. Bumper). This reduces the view of the camera and may cause physical damage to the camera.
3. Use only the M4x8 bolts and washers to mount the camera.

INSTALLATION INSTRUCTIONS

AOC-75 CAMERA

1. Attach camera bracket (See Fig 1) to upper portion of vehicle. Attachment point must be sturdy enough to support camera and bracket.
2. Attach camera to bracket using M4x8 bolts provided. Adjust angle as indicated in figure 2 (Use rear bumper and back of vehicle as a reference point).
3. Wind deflector may be installed. This deflector is designed to reduce the build up of dust, dirt and moisture on the camera lens (See Fig 3).

AOM-70 MONITOR

1. Attach monitor inside vehicle in a location convenient to the driver (e.g. center of dash, overhead or in dash). (See Fig 4)
2. Use a compression plate to attach the monitor bracket to the dash or overhead (See Fig 4).
3. Adjust mounting angle of the monitor to allow driver to easily view the screen from all seat positions (See Fig. 5).
4. If necessary, snap sun visor into groove on front face of monitor. Press all (4) sides of the visor to snap it into place.

AOC-80 CABLE

1. The camera-to-cable connection is waterproof. The cable-to-monitor connection is not waterproof. Be sure to orient the cable properly. The cylindrical end attaches to the camera. The rectangular box end attaches to the monitor. (See figure 6)
2. Do not run the AOC-80 cable over sharp edges or corners. Do not kink the cable. Keep the cable away from hot and rotating parts.
3. Place all excess cable in convoluted tubing.
4. Wire tie the cable securely.

AOS-33 Operations Manual

MAINTENANCE:

Remove dust and dirt with a damp soft cloth. Heavier dirt should be removed with a damp soft cloth and mild detergent. Do not use strong cleaning agents containing gasoline, thinner, benzene or alcohol. These substances may damage the exterior surface of the monitor.

CAUTION

1. Before drilling, be sure no cable or wiring is on the other side. Be sure to drill a 16mm (5/8") diameter hole only.
2. Feed as much cable as possible into vehicle and clamp securely. This reduces the possibility of being hooked during production.
3. Keep all cables away from HOT, ROTATING and ELECTRICALLY NOISY components.
4. To increase protection of cable, place all excess wire and extension cable in convoluted tubing.
5. Do not twist camera cable and do not cut camera pigtail or cable.

WIRING CAMERA AND MONITOR

1. See wiring diagram for connections to ignition, ground and back-up circuit (See Fig. 6)
2. Wiring camera:
Drill a 19mm(3/4") diameter hole into vehicle body near the camera and bracket.
Connect camera connector to extension cable in vehicle.
Push extra cable into vehicle (Be careful not to kink cable) and fit grommet into hole.
Apply sealant around grommet to increase resistance to water penetration.
3. Wiring Monitor:
Insert extension cable into camera #1 position if (2) cameras are used, be sure to mark each extension cable properly and plug second cable into camera #2 position.
Bundle excess cable together using a cable tie or vinyl tape. This will avoid possible damage to cable during operation.
4. The red wire marked ACC is connected to an ignition power source, the black wire marked GND is connected to chassis ground, and the blue wire marked BACK is connected to the vehicle's back up circuit

FUNCTIONS AND OPERATION

Monitor:

1. Power switch: STD. BY - Monitor operates when vehicle transmission is switched into "REVERSE"
ON - Monitor and system operate when ignition switch is "ON"
2. Camera position: UP - Panoramic view of the horizon, if camera is in "UP" position
DOWN - Directed view of the rear of the vehicle, if camera is in "DOWN" position
3. Input switch: "A" - used mainly for rear mounted camera or as specified by the installer.
"B" - used mainly for side or mirror mounted camera or as specified by the installer.
4. Contrast: Variable control of contrast. Should be adjusted if the "DAY/NIGHT" switch does not achieve the most desirable picture.
5. Brightness: Variable control of brightness. Should be adjusted if the "DAY/NIGHT" switch does not achieve the most desirable picture.
6. Volume: Variable control of internal speaker and external speaker volume.
7. Day/Night switch: Pre-set brightness and contrast levels optimized for day and night operation.

AOS-33 Operations Manual

FUNCTIONS AND OPERATION, CONTINUED....

Rear of Monitor:

- | | | |
|----------------------|---|-----------------------------|
| 1. Power connection: | 1 | not used |
| | 2 | Ground - black wire |
| | 3 | Reverse circuit - blue wire |
| | 4 | not used |
| | 5 | not used |
| | 6 | +12VDC ignition - red wire |
2. Camera A input connection to camera extension cable
3. Camera B input connection to additional camera extension cable
4. External speaker connection center pin is positive audio output. Used to disable the internal speaker and remotely mount a speaker for driver convenience.

CAMERA COMPONENTS AND CONTROLS

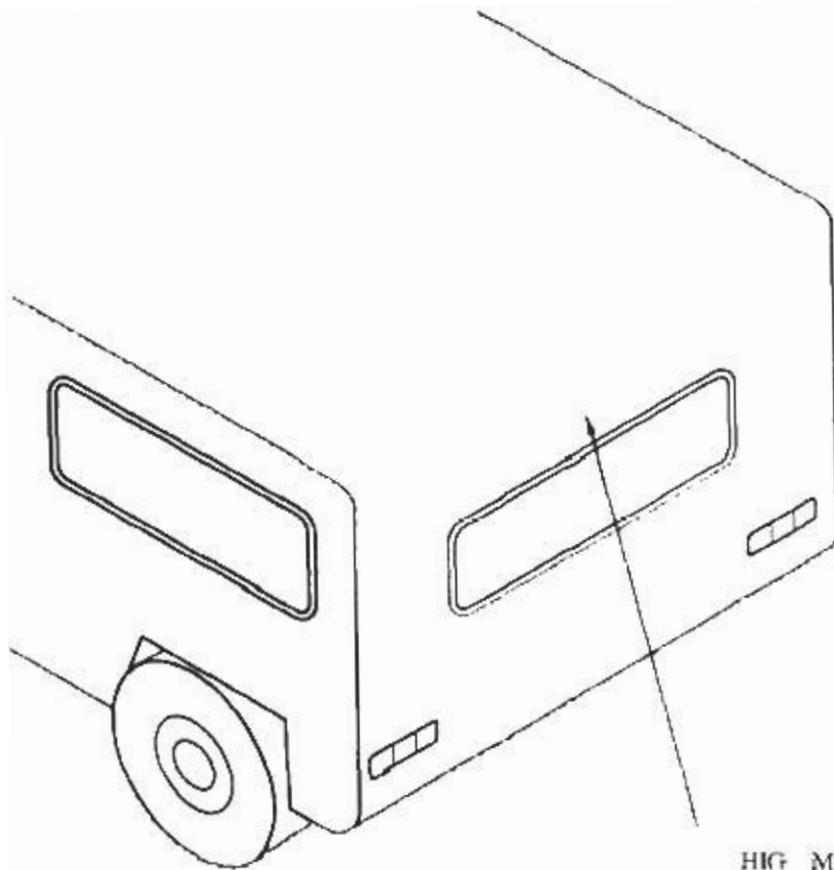
Camera:

1. Microphone - waterproof microphone for audio pickup.
2. Mirror/Normal switch - waterproof switch to change camera image from a mirror view (rear of vehicle mounted) to normal view (side or front mounted camera) See Figure 7.

AFFIXING DISTANCE MARKERS TO THE MONITOR SCREEN

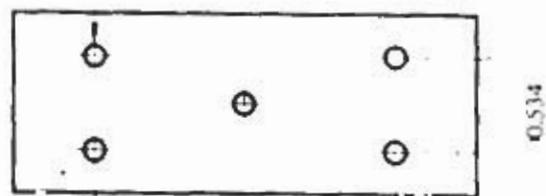
Clean monitor screen surface of fingerprints. Set the camera into the "DOWN" position. Place distance indicators behind the vehicle at (3) feet, (6) feet and (9) feet along the width of the vehicle. These distances are measured from the rear bumper. (Refer to figure 8.)

2. Attach the markers to the monitor screen over the images of the distance indicators. These markers represent a distance of (3) feet, (6) feet, and (9) feet from the back of the vehicle. (See Fig 8).
3. Affix the "STOP" marker on the monitor screen over the image of the rear bumper to locate the rear bumper.
4. The monitor screen is now "calibrated" for distances behind the vehicle of (3) feet, (6) feet and (9) feet.

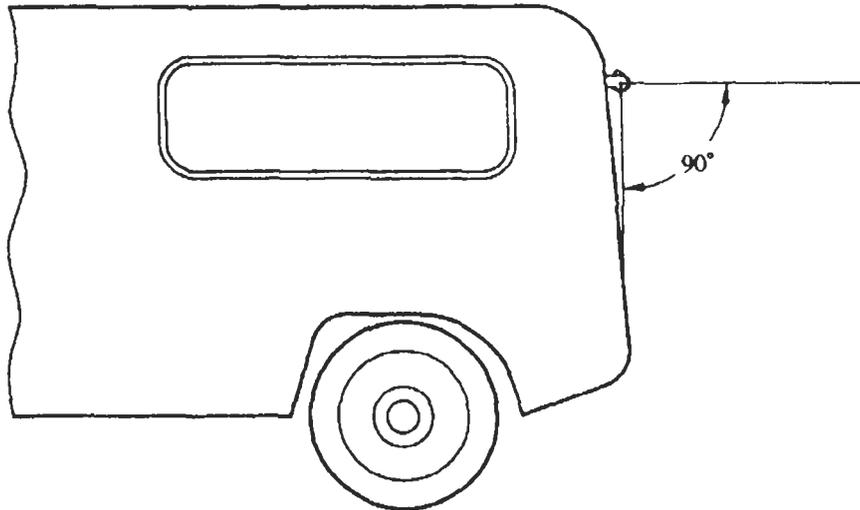


MB
HIGH MOUNTED ENTERY

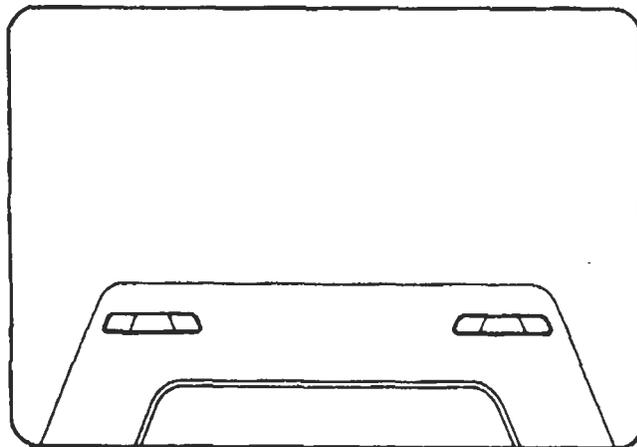
0. DIA HOLE:



CAMERA MOUNTING HOLE PATTERN
FIGURE



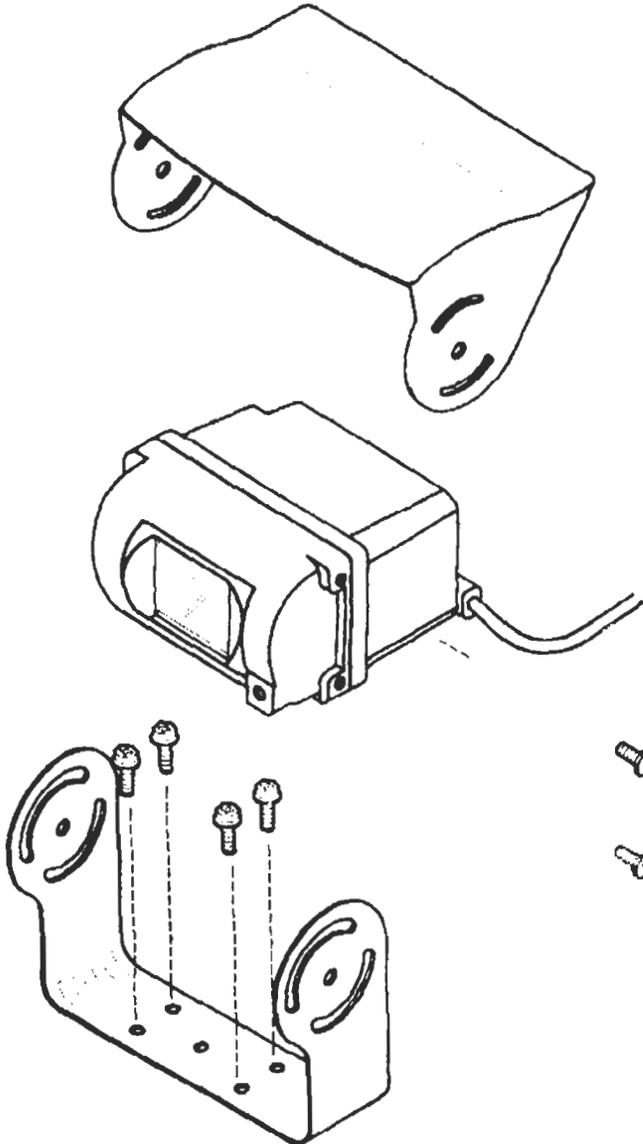
APPROXIMATELY 90 DEGREE FIELD OF VIEW



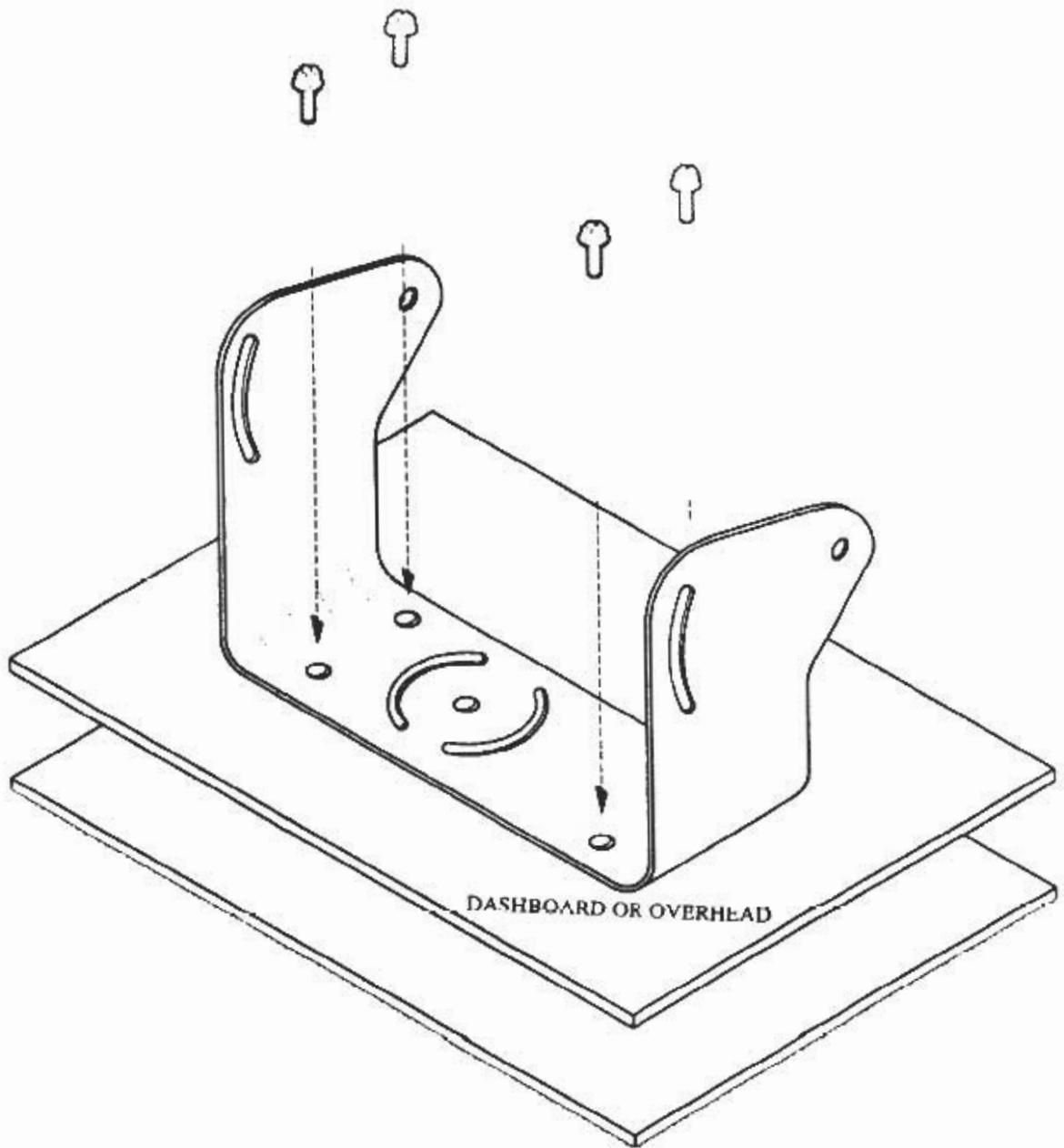
BACK OF VEHICLE, VIEWING AT
MONITOR SCREEN

FIGURE 2

OPTIONAL W' D DEFLECTOR

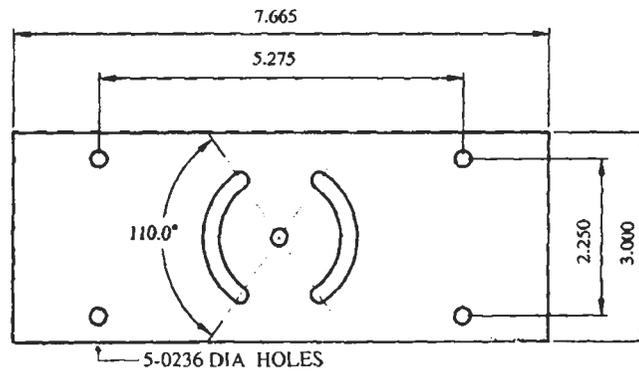
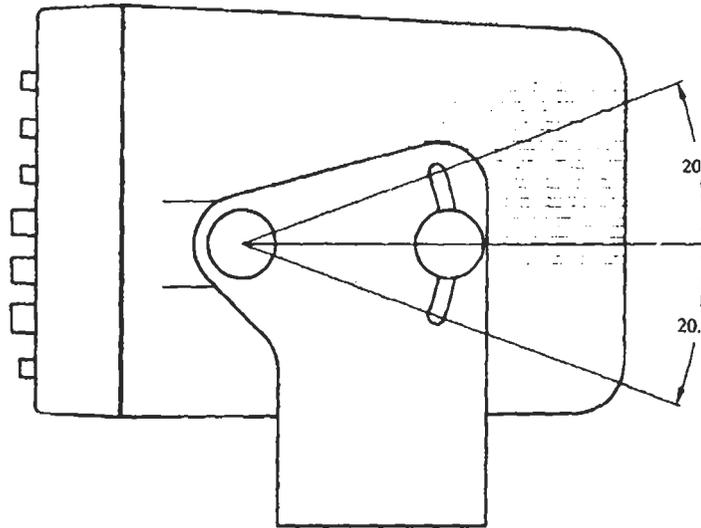


FIGURE



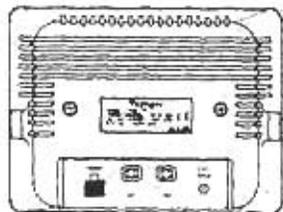
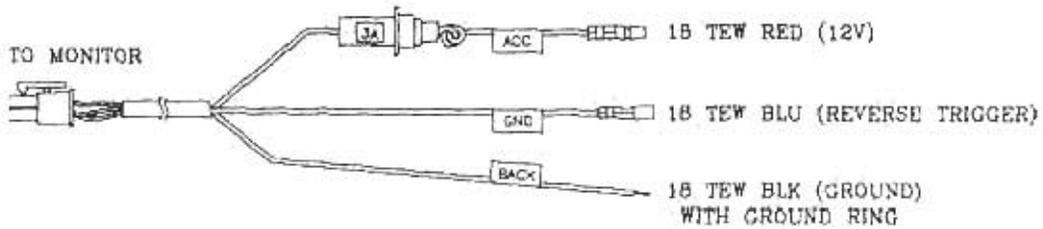
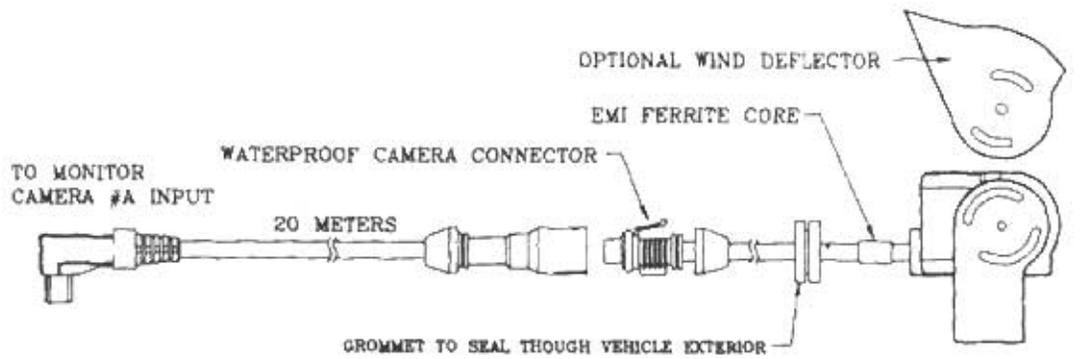
STEEL PLATE FOR REINFORCEMENT(RECOMMENDED) OR SECURE MOUNTING

FIGURE



MONITOR MOUNTING HOLE PATTERN

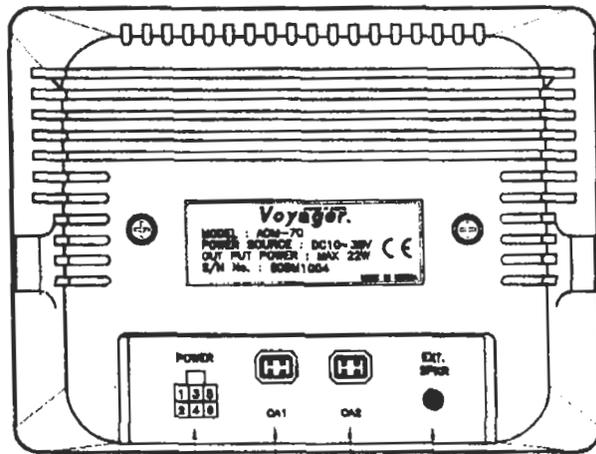
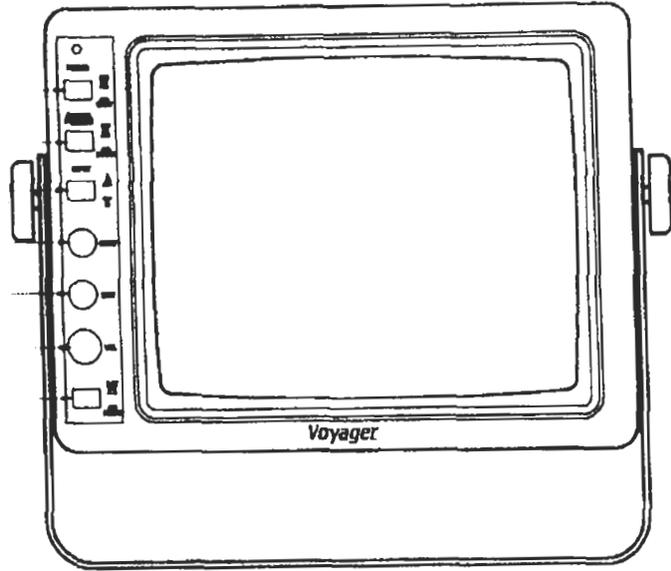
FIGURE



REAR OF MONITOR

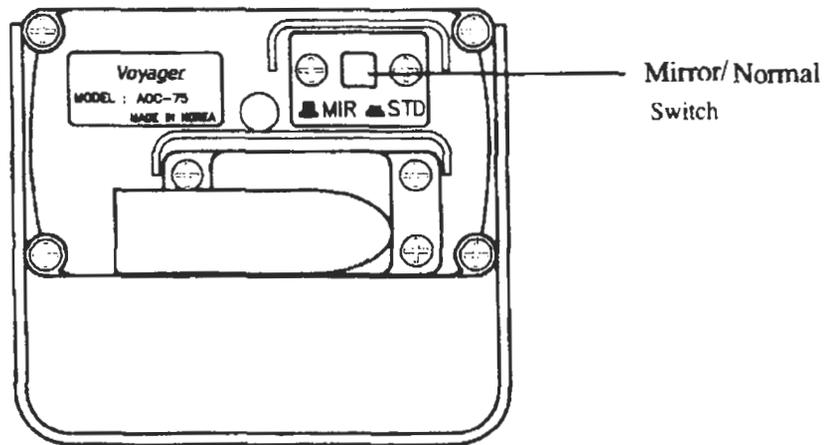
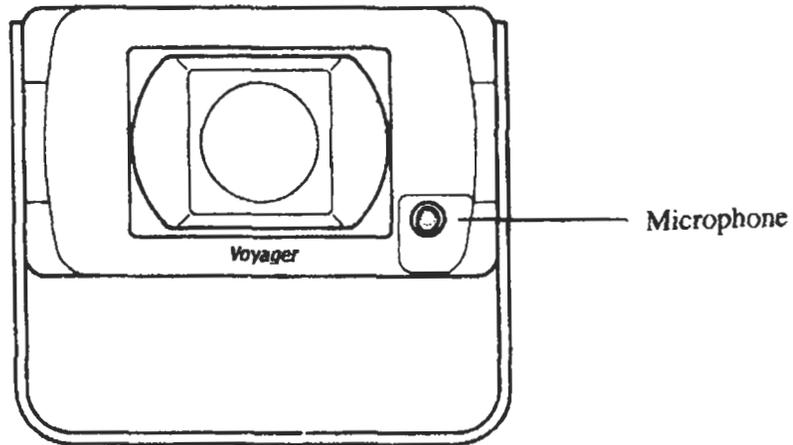
FIGURE 6

- 1
- 2
- 3
- 4
- 5
- 6
- 7



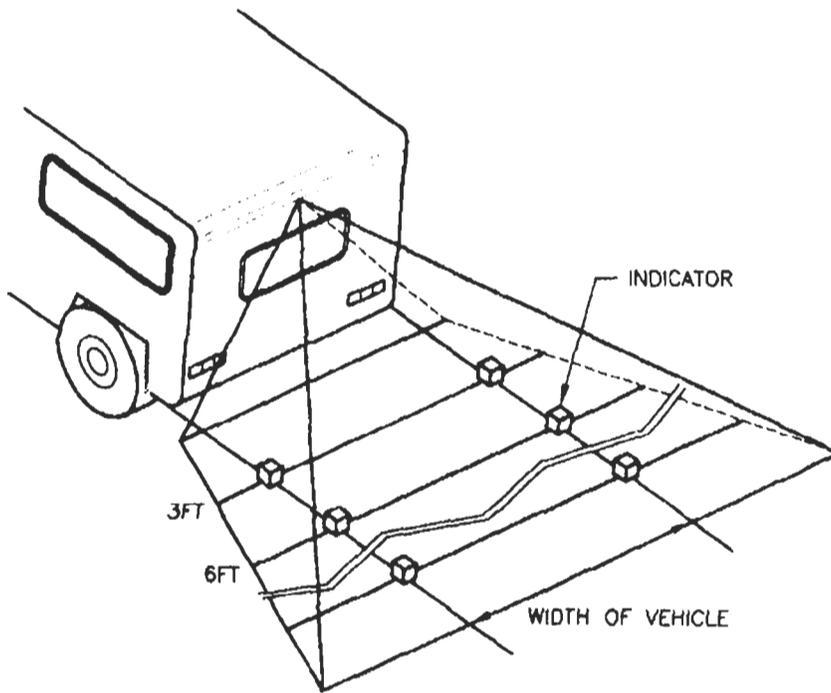
- 1
- 2
- 3
- 4

Monitor Operating Controls and Connections



Camera features

FIGURE 7



MARKERS EXAMPLE

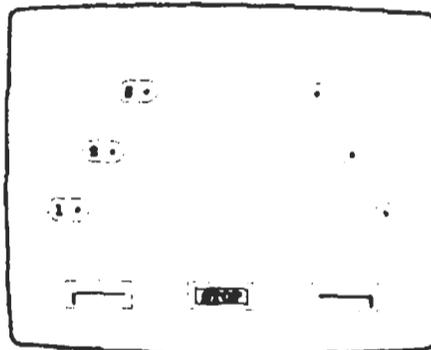


FIGURE 8

AOS-33 Operations Manual

SPECIFICATIONS:

AOS-33 system, 1 camera	Rated voltage	12 volt DC, negative ground
	Operating voltage	10 to 38 volt DC
	Current consumption	1.5 amperes
AOC-75 Camera	Sensitivity	0.1 lux
	Signal system	NTSC
	Image sensor	1/3" B/W CCD w/electronic auto-iris 270K picture elements
	Viewing angle	110 degrees (H), 90 degrees (V)
	Outer dimensions	2.44" x 1.50" x 1.96" (W x H x D) 6.20 cm x 3.81 cm x 4.98 cm (W x H x D)
	Weight	0.8 lbs. 0.36 Kg
	AOM-70 Monitor	Signal System
	Picture tube	7.0" Monochrome
	Outer dimensions	7.45" x 5.60" x 8.63" (W x H x D) 18.92 cm x 14.22 cm x 21.92 cm (W x H x D)
	Weight	4.8 lbs. 2.18 Kg.

DISCLAIMER: The use of the VOYAGER Observation system does not guarantee or promise that the user will not be in an accident or otherwise not collide with an object. The VOYAGER Observation system is not intended in any way to be a substitute for careful and cautious driving or for the consistent adherence to all applicable traffic laws and motor safety regulations. This product is not intended to be a substitute for rearview mirrors or for any other motor vehicle or boat equipment mandated by law.