ESV Workstation

Site Preparation and
Customer Support Guide

EVANS & SUTHERLAND COMPUTER CORPORATION
Salt Lake City, Utah

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Introduction

This document contains the following sections:

- "Introduction" (this section) describes the contents of this document.

- "Site Preparation" contains information that you need to know before your ESV Workstation is delivered and installed.

- "Customer Support" describes the customer support plans available for your ESV Workstation.

- "Safety Precautions" outlines general ESV Workstation safety precautions.

- "Preventive Maintenance" contains maintenance guidelines for your ESV Workstation.

- "Predelivery Planning and Installation" describes things you must do before delivery of your ESV Workstation and outlines the installation procedure.

- "Frequently Asked Questions and Answers" contains frequently asked questions and answers about Evans & Sutherland product support.

- "Field Service Organization" describes the Evans & Sutherland Field Service organization.

Site Preparation

Adequate site planning and preparation eases the installation process and produces efficient system operation. Site planning requirements vary greatly from site to site. The location and environmental aspects of your system are as significant as the equipment itself. The system could prove to be unusable if it is placed in an awkward or inadequately supported location. Space and location are the primary considerations for site selection. Table 1 shows the component dimensions, and table 2 shows the cable lengths.

Table 1. Component dimensions

Component	Length in (cm)	Width in (cm)	Height in (cm)	Weight lb (kg)
Large Cabinet	30.0 (76.2)	17.0 (43.2)	25.5 (64.8)	200 (90.0)
Small Cabinet	30.0 (76.2)	11.0 (27.9)	25.5 (64.8)	150 (67.5)
Monitor	20.8 (53.4)	19.4 (49.8)	17.5 (44.9)	68.5 (31)
RDC	15.0 (38.1)	15.0 (38.1)	3.0 (7.6)	12 (5.4)
Keyboard	18.0 (45.7)	7.8 (19.7)	1.6 (4.0)	5 (2.3)
Mouse	3.75 (9.5)	2.8 (7.0)	1.0 (2.5)	0.5 (.2)
Control Dials	8.0 (20.3)	9.0 (22.9)	5.5 (14.0)	9.5 (4.3)
15x15 Tablet	20.8 (52.8)	20.7 (52.6)	3.0 (7.7)	3.2 (1.4)
18x25 Tablet	30.7 (77.9)	24.1 (61.3)	3.1 (7.9)	23.2 (10.5)

Table 2. Cable lengths

Cable	Length - feet (meters)	
Monitor to Cabinet	10, 20, 45	(3.1, 6.1, 13.7)
RDC to Cabinet	10, 20, 45	(3.1, 6.1, 13.7)
Cabinet to AC Power	8	(2.4)
RDC to AC Power	8	(2.4)
Monitor to AC Power (RDC)	3	(1.0)

Space

The ESV Workstation should be positioned out of direct sunlight and away from all sources of heat, including central heating vents, with a minimum of 2 inches (5 cm) of clearance around the cabinet to allow for air flow and cabling. At least two sides of the cabinet must be left ex-

posed to allow for adequate air flow. The back of the monitor must have at least 6-1/2 inches (16 cm) of clearance for cabling.

The actual floor space required will depend on the system itself, the length-to-width ratio of the area, and the locations of walls, partitions, windows, and doors. To determine the exact area your system requires, prepare a scaled layout that includes all features of the site location. The area allotted should provide for the following: future expansion of the system, storage of related materials, convenient system operation, and easy access for service and maintenance.

Location

Locate your ESV Workstation site near work-related areas for efficient operation. The location of the site also depends on existing or planned facilities at the site. The location must do the following:

- Provide adequate AC power,

- Conform to environmental requirements,

- Conform to safety and fire regulations,

- Provide easy access for equipment delivery and installation,

- Provide for the flow of work in the most efficient manner possible with respect to such considerations as related areas, human factors, storage, and noise isolation.

Environmental Support

When selecting your site, you must plan for adequate power and for environmental support factors, such as temperature requirements and adequate air quality.

Power

You need to provide additional power for any other equipment that will be operated in the area, such as test equipment and calculators.

- For the large cabinet, the USA wall receptacle should be a wall plug, NEMA 5-20R **20A or equivalent.**

- For the small cabinet, the USA wall receptacle should be a wall plug, NEMA 5-15R **15A or equivalent.**

For the 220 volt option, the ESV Workstation is supplied with an EE 7/7 ("schuko") 10 A cordset. The power specifications for the components are shown in table 3.

Table 3. Power specifications

Component	Voltage 120/220–240V	Max. Current 120V	Max. Current 220V	Line Freq. (Hz)	Power (Watts)
Large Cabinet	120/220-240	16 A	10 A	60/50	1920
Small Cabinet	120/220-240	12 A	8 A	60/50	1440
Monitor	120/220-240	1.25 A	0.7 A	60/50	150
RDC	120/220-240	6 A	3 A	60/50	720

Following are general notes for table 3:

1) The line voltages shown have a tolerance of +6% to −10%.

2) The power consumption for the RDC is divided as follows: 240 Watts for the RDC and 240 Watts for each of the two convenience receptacles on the back of the RDC.

3) In Japan, ESV systems are designed to operate at 100 V, with a tolerance of +6% to −10%, and 50 Hz.

4) In the United States, ESV systems are designed to operate at 220 to 240 V, with a tolerance of +6% to −10%, and 60 Hz.

5) The cabinet and the monitor run on two-wire-plus-ground circuits. The monitor must share a common electrical ground with its supporting cabinet.

The ESV Workstation requires one dedicated 20 amp service line for the large cabinet and one 15 amp service line for the small cabinet. The system may be damaged if adequate service is not provided. The available supply of AC power must be adequate to handle the power loads represented by the installation of the ESV Workstation as well as any anticipated future loads. The electrical system must conform to applicable national and local codes and ordinances. Check the electrical service prior to system installation to ensure that power levels are within the specified limits.

To ensure proper operation of the ESV Workstation, the following limitations are placed on AC power disturbances:

- A maximum of 10% of nominal power for 0.1 seconds occurring no more than once every 10 seconds,

- Maximum harmonic content of 5% rms, no more than 3% rms for any single harmonic,

- Maximum impulse of 300 V with rise time of 0.1 microseconds or slower, lasting no longer than 10 microseconds for total duration.

Many unconditioned AC service mains exceed these specifications, especially during periods of heavy use and/or electrical disturbances. Ensure that the input power supplied to the ESV Workstation equipment has been adequately conditioned.

Temperature and Humidity

The best way to provide the proper air temperature is to provide a separate thermostatic control to compensate for the heat dissipated by the ESV Workstation and any other equipment and personnel in the area. The air conditioning system must provide sufficient heating and cooling to maintain the environment within the limits shown in table 4.

Table 4. Temperature and humidity limits

	Operating	Non-Operating
Temperature	50°F to 104°F (10°C to 40°C)	–40°F to 122°F (–40°C to 50°C)
Humidity	20% to 80% (non-condensing)	10% to 90% (non-condensing)

In table 4, the operating temperature is measured at the air intake vents. The operating temperatures in the table are at sea level. The maximum operating temperature must be derated linearly 1.8°F per 1640 feet (1°C per 500 meters) increase in altitude.

Heat dissipation factors can be calculated by using the values given in table 5. These values should be added to any other heat generated by equipment and personnel located in the same room.

Table 5. Heat dissipation factors

Component	Heat Dissipated (max.)	
Large Cabinet	6566 BTU/hr	(1920 Watts)
Small Cabinet	4925 BTU/hr	(1443 Watts)
Monitor	512 BTU/hr	(150 Watts)
RDC	2462 BTU/hr	(720 Watts)
One Person	400 BTU/hr	(117 Watts)

Fire and Safety Precautions

• Existing building fire and safety codes should be adequate for the ESV Workstation installation. However, local experts should be consulted about fire prevention and extinguishing devices.

- Do not install the ESV Workstation near the use, storage, or manufacturing of flammable or explosive material.

- For safety as well as operational reasons, each interconnected piece of equipment must be provided with a properly grounded outlet.

- All power circuits must be adequately protected with fuses or circuit breakers of a suitable size.

- No metal should be exposed on the walking surface of floors.

Air Quality

The ESV Workstation equipment is designed for use in a clean environment, where air filtration is not always possible. However, the cabinet should be placed away from high traffic areas because the build-up of potential contaminates is more concentrated in these areas. Airborne dust, dirt particles, and smoke can clog intake air filters and cause damage to the hard disk and tape drive.

Dust is usually controlled by normal heating, ventilating, and cooling equipment if adequate filters are used. Keep the system area clean and orderly to lessen the concentration of airborne particles and help maintain system reliability. Where excess dust or airborne particles are present, install an electrostatic filter to prevent damage to the system.

Caution: Never place the ESV Workstation in an area containing even small concentrations of corrosive chemicals.

Work Table

The ESV Workstation monitor and interactive devices should be installed on a table or large desk of heavy construction with a durable, non-glare surface. The minimum recommended surface area is 13 square feet (1.2 square meters), and the recommended height is 29.5 inches (75 cm).

In areas where ergonomic compliance is required, the table's height should be adjustable from approximately 27 inches (68 cm) to 30.5 inches (76 cm). It is also recommended that the chair's height be adjustable.

Floor Coverings

The most desirable flooring is a raised floor that includes tile-covered panels supported by a grid system of pedestals. These floors simplify installation and provide flexibility for subsequent layout changes or expan-

sion. They also provide an area through which cables connecting various components of the system can be routed and kept out of the way.

If you are unable to use a raised floor, most floor surfaces are adequate for installation, with the following considerations:

- For any high-grade industrial carpeting with short, closed-loop piles, you should use minimal or no padding. The carpet should have good anti-static properties and/or a low surface resistivity. Shag rug, deep pile and other such carpets are not recommended and can cause serious operational difficulties. These rugs have loose fibers and collect dust particles which can clog cooling inlet filters and generate unacceptable levels of static electricity.

- Most tiles provide a suitable surface, however, specific attention should be given to underlay. There is a tendency for some tiles to build up static charge. This can be minimized by proper application of low-resistivity sealer and polish. This application will need to be repeated at appropriate intervals.

- Wax is not recommended as a protective coating for floors in a computer area as it tends to build up surface resistivity and increase static charge.

- Other surfaces should be evaluated for surface resistivity, ease of cleaning and resistance to decomposition, durability, cost, and appearance.

Cabling

Conduits, cable ramps, and any necessary alterations must be implemented prior to the system delivery. All customer-supplied cables must be shielded.

Networking

If you plan to make your ESV Workstation part of an Ethernet network, you must have an Ethernet thickwire connection to your Ethernet backbone ready when the system is installed.

Partitions

Floor-to-ceiling partitions are an effective way of controlling noise and dust. Partitions must be positioned to avoid blocking air flow to the equipment and to allow for equipment access and cabling restraints.

Acoustics

The ESV Workstation is designed to operate with a minimum amount of noise. Cooling fans within the cabinets are a possible source of audible sound, but in most environments ambient sound will be louder than the ESV Workstation.

If several ESV Workstations are to be operated in close proximity, acoustical damping of the ceiling, floors, and walls might be considered.

Lighting

The ESV Workstation is designed to operate in a normal lighting environment. The optimum lighting for a graphics CRT monitor should be subdued, indirect incandescent lighting. To reduce operator fatigue, avoid lighting that produces glare on the face of the CRT.

Vibration

Vibration can cause slow degradation of mechanical parts and contacts. It should be avoided whenever possible. In cases where structure-borne vibration is negligible, no problems should arise. If there is any unusual or prolonged vibration anticipated, consult an Evans & Sutherland Technical Support representative.

EMI

The ESV Workstation has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the ESV Workstation is operated in a commercial environment. The ESV Workstation generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the ESV Workstation documentation, may cause harmful interference to radio communications. Operation of the ESV Workstation in a residential area is likely to cause harmful interference, in which case users will be required to correct the interference at their own expense.

EMI sources close to computer systems can affect their operation. It is difficult to predict whether or not problems will arise at a particular site. Some common sources of EMI that have been known to cause failures are:

appliances	industrial machines	relay contactors
arc welders	magnetic devices	static electricity
broadcast stations	mobile communications	thunderstorms
dielectric heaters	office machines	ultrasonic cleaners
fluorescent lights	power tools	vehicle ignitions
high voltage power lines	radar	

Consult an Evans & Sutherland Technical Support representative if potential problems exist at a particular site.

Static Electricity and ESD

Static electricity is the result of physical action. Vibration, friction, and separation of materials are common static generators. People and furniture are the most common static storage collectors. Static may be generated by walking, rising from chairs, moving objects, or pushing vehicles with nonconductive wheels. Voltages of 16 KV have been measured on plastic-covered metal desk chairs as a result of a person standing up. This often occurs at low relative humidities (0 to 20%).

Do not locate the ESV Workstation in an area where potentially large charges of static electricity may gather. For information on floor conductivity, see *IEEE Standard 142-1972*. Although the ESV Workstation has been engineered to resist the harmful effects of ESD, every effort should be made to reduce the possibility of ESD directly to the equipment.

Corrosive Environments

Operation of the ESV Workstation in a corrosive environment results in damage to electronic components and circuitry. Some common corrosive substances are:

ammonia	nitrates	sodium chloride (table salt)
hydrocarbons	nitrogen oxides	sulfur dioxide
hydrogen sulfide	ozone	

Consult an Evans & Sutherland Technical Support representative if any of these contaminants are present in the intended environment.

Altitude

System operation at high altitudes may be affected by low air density. Heat dissipation problems may occur at altitudes greater than 7,000 feet (2,000 meters). If high altitude operation is anticipated, additional air flow around the cabinet should be provided.

Customer Support

Hardware Support Plans

Three hardware support plans are available from Evans & Sutherland.

- *Class A Hardware Service* offers the most complete hardware service plan. It is designed for customers who require the best response time for system repairs.

- *Class B Hardware Service* offers a reduced service, customer-assisted repair service plan with module exchange.

- *Class C Hardware Service* offers a customer-assisted repair service plan for workstation locations with special needs, such as classified government sites or security areas.

Class A Hardware Service **Features**

- Guaranteed next-day response from a qualified Field Service Engineer, Monday through Friday, 8:00 a.m. to 5:00 p.m. (local time).

- On-site repair by Field Service Engineer, with travel, parts, and labor included.

- System installation cost is included if a *Class A Hardware Service* contract is purchased with the ESV Workstation.

- Guaranteed customer site visits at maximum intervals of 180 days.

Class B Hardware Service **Features**

- Modules are shipped to the customer within one business day. Evans & Sutherland pays for the freight charges both ways.

- Customers may purchase on-site repair by a Field Service Engineer at a fixed price.

- DST (Diagnostic System Test) right-to-use license, DST updates, and DST phone support are included.

Prerequisites

- Customers must complete an Evans & Sutherland training class.

- Customer contacts are limited to individuals who have completed an Evans & Sutherland training class (no more than three contacts).

Class C Hardware Service Features

- DST right-to-use license, DST updates, and DST phone support are included.
- Customers can purchase modules at a discount price. Prices for module repair or module exchange are determined from the current published price list.

Prerequisites

- Customers must complete an Evans & Sutherland training class.
- Customer contacts are limited to individuals who have completed an Evans & Sutherland training class (no more than three contacts).

Pricing Zones

Class A Hardware Service is priced by service zone. The optional *Class B Hardware Service* on-site repair is also priced by service zone. Distances are determined from the center of the metropolitan city nearest an Evans & Sutherland Service Center. Following are the three zones:

- Zone 1 is within a 100 mile radius from the Evans & Sutherland Service Center.
- Zone 2 is within a 200 mile radius from the Evans & Sutherland Service Center.
- Zone 3 is everywhere else. All locations in Canada are zone 3.

Your Sales Representative will assist you in determining your zone.

Software Support Plans

Two software support plans are available from Evans & Sutherland.

- *Technical Phone Support Service* gives customers toll-free telephone access to Evans & Sutherland Technical Support personnel.
- *Software and Documentation Update Service* enables customers to maintain their system software and documentation at the most current revision levels.

Technical Phone Support Service **Features**

- Up to three customer contacts may call the Dispatch Hot Line for assistance in resolving problems with the operation of the ESV Workstation. A one hour call-back is guaranteed during Dispatch Hot Line hours of 7:00 a.m. to 5:30 p.m. (Mountain Time).

- Customers are provided with periodic updates to both the ESV Workstation software and documentation.

- Update service for software options, and additional copies of media and documentation, are provided at additional cost to the customer.

- Telephone support for software options is provided at additional cost to the customer.

- All systems at a customer site are required to be at the same level of support for the basic system software.

Software and Documentation Update Service **Features**

- Customers are provided with periodic updates to both the ESV Workstation software and documentation.

- Update service for software options, and additional copies of media and documentation, are provided at additional cost to the customer.

- All systems at a customer site are required to be at the same level of support.

Warranty

The warranty period for the ESV Workstation is 90 days after installation. Warranty service is at the *Class A Hardware Service* and *Technical Phone Support Service* levels. After the warranty period has expired, service is delivered under the terms specified on the customer's service contract.

Educational Programs

Evans & Sutherland Field Service offers a 25% discount on all service plans for educational institutions.

Safety Precautions

General

1) Only Evans & Sutherland Authorized Personnel are permitted to install and service the ESV Workstation. Customers should not attempt to service any equipment, including, but not limited to, the front and back access panels on the cabinet, the RDC, and the monitor.

2) The ESV Workstation cabinet and RDC are designed to meet UL Standard 1950. Formal approval is in progress.

3) The ESV Workstation cabinet and RDC have the GS safety mark. The video card is part of the cabinet.

4) Changes or modifications to the ESV Workstation that are not expressly approved by Evans & Sutherland may void the customer's authority to operate the equipment.

Cabinet

1) The lower front panel is not an operator accessible area and can be accessed by Evans & Sutherland Authorized Personnel only.

2) The rear access panel is not an operator accessible area and can be accessed by Evans & Sutherland Authorized Personnel only.

RDC

1) The convenience receptacles on the back of the RDC are still energized when the power switch on the front is set to the OFF position.

2) The inside of the RDC is not an operator accessible area and can be accessed by Evans & Sutherland Authorized Personnel only.

Preventive Maintenance

Most of the ESV Workstation preventive maintenance will be performed by your Evans & Sutherland Field Service Engineer during periodic site visits. However, you should keep the following tips in mind and make periodic checks.

- Performance and dependability of the ESV Workstation can be affected by user neglect or a poor choice of operating site.

- Cleaning intervals should be based on the amount of ESV Workstation use and the quality of the operating environment.

- Check all cables for visible damage and wear.

- Check connectors to ensure that the cables are mounted tightly, that retaining screws are tight, and that there is no strain on the connector/cable junctions.

- Make sure your ESV Workstation receives proper air ventilation.

- Always follow the proper procedure for shutting down and powering off your ESV Workstation.

Monitor Cleaning Instructions

- Always unplug the monitor before cleaning.

- Wipe the screen and cabinet front and sides with a soft cloth.

- If the screen requires more than dusting, apply a household window cleaner to a soft cloth to clean the monitor screen.

Caution: Do not use benzene, thinner or any volatile substances to clean the unit as the finish may be permanently marked. Never leave the unit in contact with rubber or vinyl for an extended period of time.

Care of the Keyboard

The keyboard is a rugged unit that should provide trouble-free service. It may be damaged if liquids are spilled on it. If an accident should happen and liquid is spilled on the keyboard, let it dry and then try its operation. If the keyboard doesn't operate properly, contact Evans & Sutherland for repair or replacement.

Care of the Mouse

The optical mouse requires little maintenance. The mouse pad should be kept clean and dry and should be protected from scratches and dents. Clean the pad occasionally with a damp cloth. If the pad should get wet, dry it thoroughly before using. The mouse itself requires no maintenance, but can be cleaned as required with a damp cloth.

Care of the Tape Unit

Optimal recording and readback performance of the tape unit requires proper head cleaning at frequent intervals. The manufacturer's recommended equipment for head cleaning is the Tandberg Data "TDC Cleaning Cartridge Kit." Cleaning kits other than the Tandberg have also proven satisfactory. The kits most suitable for the ESV Workstation tape unit are designed to operate by capstan motion.

Caution: Do not use any sharp objects when cleaning the head. Even small scratches may damage the head permanently.

The following guidelines can be used to determine cleaning intervals:

ESV Usage	Cleaning Interval
8 hours per day	Daily
Daily	Weekly
Weekly	Monthly

Always clean the head immediately after using a new cartridge.

Performance of the tape unit depends on the quality of the medium used. For writing, the ESV Workstation tape drives need DC600XTD, DC6150 tapes, or equivalent, to work properly. Do not use worn or audibly noisy cartridges. Cartridges which repeatedly require rewriting should be discarded.

Tape media are very susceptible to moisture. If exposed to a high humidity environment, it may take several days to bring a cartridge back to a normal humidity condition. Running high humidity tapes over a long period of time may severely reduce the life of the tape drive head. If in doubt, let the cartridge dry out in a normal humidity environment (less than 50-65% relative humidity at 20°C) for three to four days prior to use.

Filter Cleaning

The black "sponge-like" material visible through the slots of cabinet side panels are the air filters. The black filter material will slowly turn grey from the dust collected. This dust should be periodically removed from the filters so that the fans to can maintain proper operating temperature inside the cabinet. The filters can be cleaned by vacuuming the exposed areas of the filters.

Caution: The cabinet power must be shut off before vacuuming the filters.

Shutdown and Powering Off

To avoid corruption of the resident file systems, the ESV Workstation should never be turned off or unplugged without following this shutdown and powering off procedure:

- Login as **root**.

- **cd /**

- **/etc/shutdown -y -i0 -g60 <cr>**

  "60" can be replaced with any grace period (in seconds) you decide to allow users to log off prior to shutdown.

- Wait for the **>>** prompt.

- It is now safe to remove power from the ESV Workstation.

Predelivery Planning and Installation

Predelivery planning is essential for smooth installation and acceptance of your ESV Workstation. It is important that you prepare a detailed schedule of installation activity as soon as possible after the equipment has been ordered and the site selected and prepared.

Once the installation has taken place, you are responsible for the disposal of the packaging material. Preparations should be made in advance to remove the empty packaging material from the installation site when installation is complete.

Delivery Constraints

The largest box fits through a 36-inch (92-cm.) wide doorway. Ensure the route the equipment is to travel from the receiving area to the installation site allows the equipment to move freely. The packaged equipment must be able to fit through any halls, doorways, around any bends, or in elevators.

Equipment Packaging and Handling

It is your responsibility to transport the system from its unloading site to the actual installation site. This should be done prior to the system installation date. Do not subject the equipment boxes to any hard bumps or shocks. Keep the boxes in a vertical position as indicated on the box surface. Do not open them.

For shipment, the ESV Workstation and peripherals are packed in a reinforced cardboard box which is attached to a pallet. The monitor box is banded to the top of the ESV Workstation box. The dimensions of the shipping box are as follows:

- English units: 35.0 in (length) x 23.5 in (width) x 34.0 in (height)

- Metric units: 89 cm (length) x 60 cm (width) x 86 cm (height)

Evans & Sutherland has adopted the *shockwatch* label and the *tip-and-tell* label as a way to safeguard the ESV Workstation during shipment. These labels are simple and effective warning devices that tell you if a shipment has been roughly handled.

The *shockwatch* and *tip-and-tell* labels help identify responsibility for products damaged during shipping. Since mishandling the product activates the devices, the presence of these labels encourages careful handling for the ESV Workstation. If the product has been mishandled, the labels indicate the following: the *shockwatch* label indicator in the center of the label turns bright red and cannot be reset; and the *tip-and-tell* label indicator turns blue and cannot be reset.

Receiving Procedure

You must follow this procedure when the ESV Workstation is delivered to your site:

1) Upon receipt of your shipment, note the color of the *shockwatch* and *tip-and-tell* indicators. If you receive more than one carton, check all of the labels. Do not refuse shipment.

2) If any of the labels have been triggered, note the cartons that have been mishandled on the delivery ticket and request that the carrier's driver sign a receipt acknowledging that the labels have been activated.

3) If the product is visibly damaged, note this on the delivery ticket receipt and contact Evans & Sutherland immediately by calling:

   - In the USA, 800-582-4375,

   - In Europe, your local sales office.

   All boxes, with the exception of boxes containing documentation, must be opened and unpacked only by an authorized Evans & Sutherland Field Service Engineer. Unpacking by unauthorized persons may void the warranty on this equipment.

   If you must open the boxes to move the system to the installation site, please contact the Evans & Sutherland Service Center and request authorization to open the boxes.

   Should you unpack or inspect any of the equipment without an authorized Evans & Sutherland Field Service Engineer present, or without authorization from Evans & Sutherland, you assume all responsibility for any damage or shortage claims with the carrier.

Installation Procedure

1) After the ESV Workstation is shipped, a representative from the Evans & Sutherland Field Service Department will contact the customer to verify delivery.

2) The customer will call the Field Service Department to initiate the installation.

3) A representative from the Field Service Department will contact the customer to verify that the site preparations have been completed and adequate electrical service is available. An installation appointment will be scheduled with the customer.

4) The Evans & Sutherland Field Service Engineer will arrive at the customer site and install the workstation.

Customer Checklist

- Have you selected an appropriate site for your ESV Workstation?
- Does the selected site have adequate power and environmental support?
- Have the work facilities for the selected site been prepared?
- Have all of the predelivery conditions been met?

If the answer to all of the above questions is yes, then you are ready to schedule the installation of your ESV Workstation. To schedule an installation, call:

- In the USA, 800-582-4375,
- In Europe, your local sales office.

Frequently Asked Questions and Answers

Q: How many versions of the system software are supported?

> Evans & Sutherland supports the current version and previous version of the system software.

Q: What is the time from the report of a serious problem until a fix is provided?

> Evans & Sutherland policy is to resolve a work stoppage situation as soon as possible. The resolution may be a work around, a patch, or a new version. Evans & Sutherland has an escalation procedure which ensures that open problems are resolved.

Q: Can I elect to not upgrade to a new release until it is convenient for me?

> Yes, that is why we support the current version and the previous version of the system software.

Q: What is your policy regarding upward and downward compatibility of releases?

> Evans & Sutherland tries to make system software releases as compatible as possible with previous system software and applications. However, providing new technology and fixing problems means that a new software release sometimes not be completely compatible. If possible, we will try to limit the incompatibility to a requirement to recompile and relink.

Q: Will the same Field Service Engineer come to my site for every visit?

> Generally, our policy is to assign a primary Field Service Engineer and a back-up to each customer site. This allows the Field Service Engineer to become well acquainted with the customers needs and communicate those needs to the rest of Evans & Sutherland.

Q: Are there any restrictions as to the number of support calls or who may call?

> The number of customer contacts who may call is limited to three. The number of calls to the Evans & Sutherland Dispatch Hot Line is unlimited.

Q: Is there a newsletter available to provide the latest information?

> Yes, Evans & Sutherland is planning to publish a newsletter at regular intervals.

Q: Is there any provision for on-site help?

> Yes, at our option we will send support personnel on site to resolve problems. Also, we will be happy to discuss consulting contracts to provide help in applying the system to a customers particular needs.

Q: If I elect to not take a contract, what are my options?

> We will provide requested (time and materials) service to all owners of
> Evans & Sutherland equipment on an as-available basis. We will be
> happy to discuss contracts for systems that have not been on service for
> a period of time, subject to a review of the systems status. If the system
> is not supportable in its present state, the customer will be required to
> pay requested rates to restore the system to serviceable condition.

Q: How long will your company support your product?

> Evans & Sutherland will send a letter to all customers announcing the
> fact that a product is no longer available for new equipment purchase and
> listing the support period. Generally, due to GSA requirements, that sup-
> port period will be at least seven years.

**Q: Can I buy *Technical Phone Support Service* for the UNIX operating system and
not buy it for software options?**

> Yes, but we do not recommend it.

**Q: What is your policy regarding third-party hardware installed in an ESV Work-
station?**

> Customers who install third-party hardware in a ESV Workstation
> should do everything they can to assure themselves that a system prob-
> lem is not the fault of the third-party hardware. If a Field Service Engi-
> neer makes a site visit, and it is determined that the problem is with the
> third-party hardware, the customer will be billed for the expenses asso-
> ciated with the visit.

Evans & Sutherland Field Service Organization

Corporate Headquarters, Salt Lake City, Utah	801-582-5847
Dispatch Hot Line	800-582-4375
Gordon Scott, Director of Field Service	801-582-5847
Maurice Smith, Technical Support Manager	801-582-5847
Ted Gregorius, Eastern Field Service Region Manager	518-885-4639
Jim Blatz, Western Field Service Region Manager	916-448-0355

Who to Call

- For normal Field Service business, call the Dispatch Hot Line.
- To schedule an installation, call the Dispatch Hot Line.
- For pricing information, call your local Sales Representative or Corporate Headquarters.
- If you feel you are not being well served, call any person listed above.

Dispatch Hot Line

800-582-4375