chapter 5

REMOVAL AND REPLACEMENT PROCEDURES

This chapter provides the removal and replacement procedures for the computer subassemblies.

5.1 Serial Number

The computer serial number should be provided to Compaq support when requesting information or ordering spare parts. The serial number ❶ is located on the bottom of the computer (Figure 5-1).

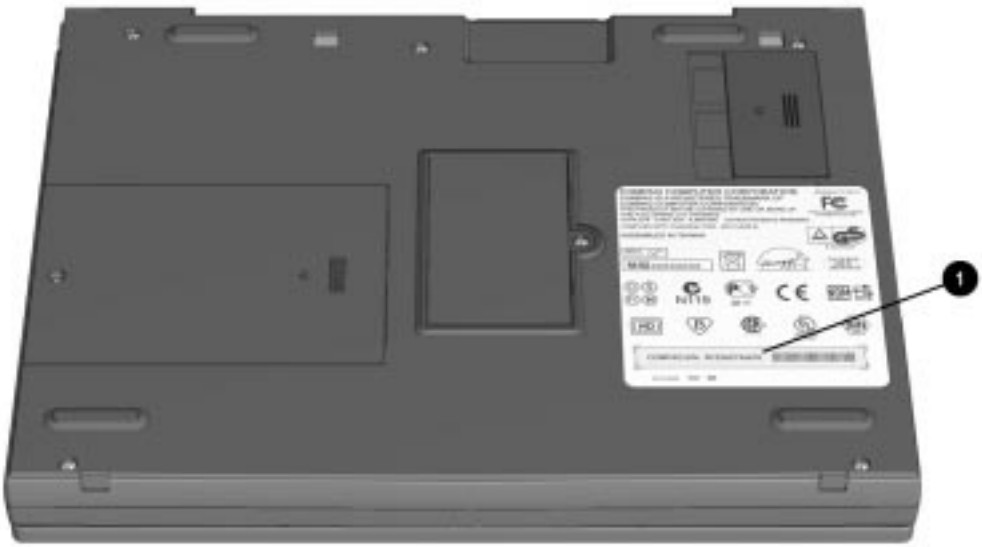

Figure 5-1. *Serial Number Location*

5.2 Disassembly Sequence

Refer to the disassembly steps before disassembling the computer. Disassemble only the components necessary to gain access to the sub-assembly you are servicing.

- **5.3 Preparing the Computer for Disassembly**
  - 5.3.1 Disconnecting the AC Power
    - 5.3.1.1 Convenience Base
    - 5.3.1.2 Mobile 3500 Expansion Unit
  - 5.3.2 PC Card
  - 5.3.3 Battery Pack
- **5.4 Memory Board**
- **5.5 Hard Drive**
  - 5.5.1 Hard Drive Cover
    - 5.5.2 Nickel Cadmium Auxiliary Battery
    - 5.5.3 Lithium Real Time Clock Battery
    - 5.5.4 Hard Drive
- **5.6 Keyboard**
- **5.7 Display Assembly**
  - 5.7.1 Display Hinge Covers
  - 5.7.2 Switch Cover/Status Panel
  - 5.7.3 Display Assembly
- **5.8 Top Cover Assembly**
  - 5.8.1 DC-DC Converter
  - 5.8.2 System Board
  - 5.8.3 Fan
- **5.9 Removing An Optical Disc Bay Device**

5.3 Preparing the Computer for Disassembly

Before beginning the removal and replacement procedures, complete the following:

1. Disconnect the modem line cord.
2. Disconnect the AC power and any external devices.

WARNING: To reduce the risk of personal injury from hot surfaces, allow the internal system components to cool before touching.

5.3.1 Disconnecting the AC Power

Before beginning service procedures on the computer, remove all power from the system to prevent damage to the equipment or personal injury. Select the appropriate steps, depending on whether the computer is docked or not.

5.3.1.1 Removing the Computer From the Convenience Base

If the computer is docked in the convenience base, it must be undocked before performing additional work. Complete the following steps to undock the computer.

1. Close all applications and exit the operating system.
2. Turn off the computer and the convenience base.
3. Disconnect the AC power and any external cables.
4. Close the computer.
5. Pull the docking lever ❶ forward to undock the computer.
6. Release the retaining latch.
7. Lift the computer from the convenience base.

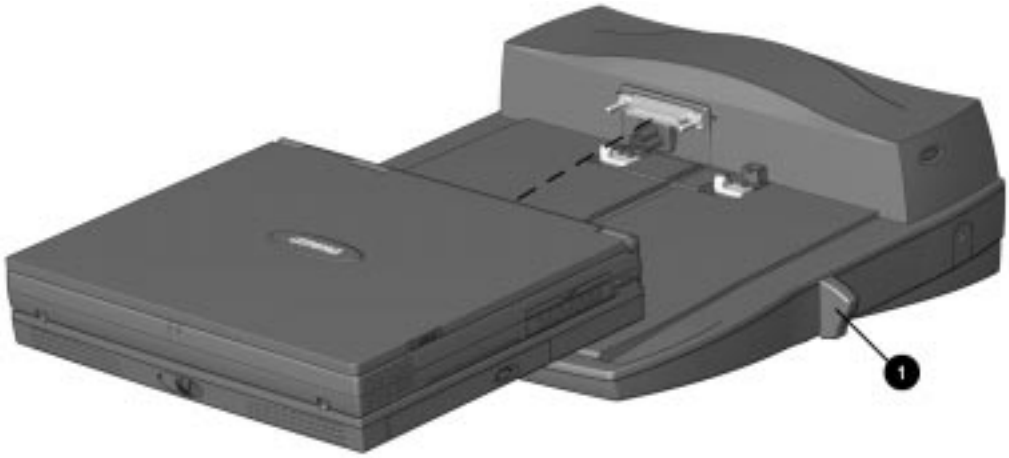

Figure 5-2. *Undocking the Computer and M35EU*

5.3.1.2 Disconnecting the Computer from the Mobile 3500 Expansion Unit

After undocking the computer, begin with step 6. If the computer is not docked, perform the following steps:

1. Close all applications and exit the operating system.
2. Turn off the computer ❶ by depressing the power switch.
3. Turn off and disconnect any external devices.
4. Disconnect the AC power cord from the power source.
5. Disconnect the AC power cord from the computer.
6. Pull the release lever ❷ on the Mobile 3500 Expansion Unit (M35EU) to release the computer.
7. Disconnect the connectors ❸ by lifting the computer from the back corners.

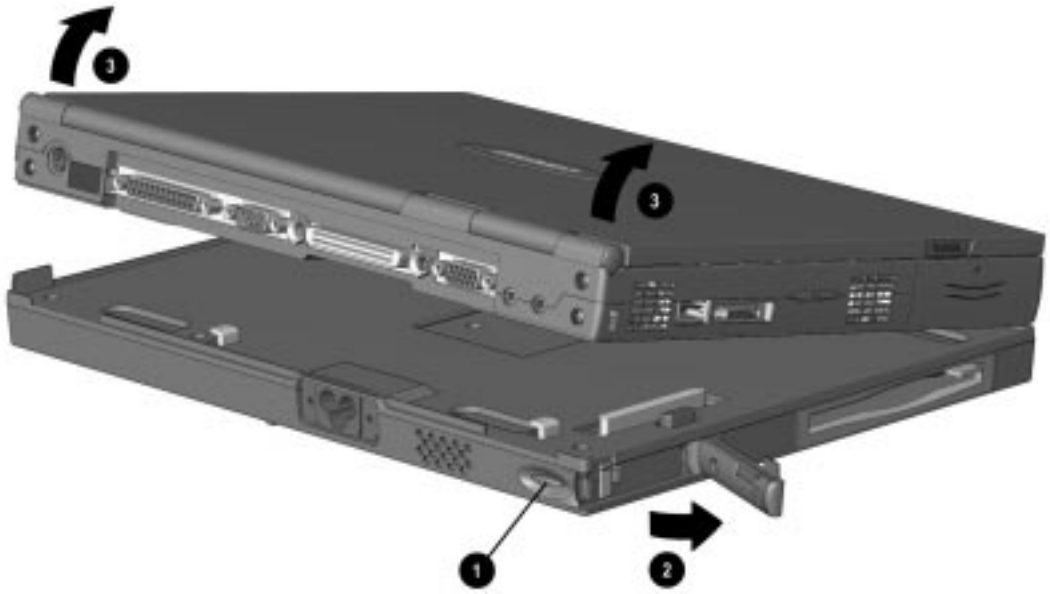

Figure 5-3. *Disconnecting the Computer From the M35EU*

8. Slide the expansion slot cover to the closed position.

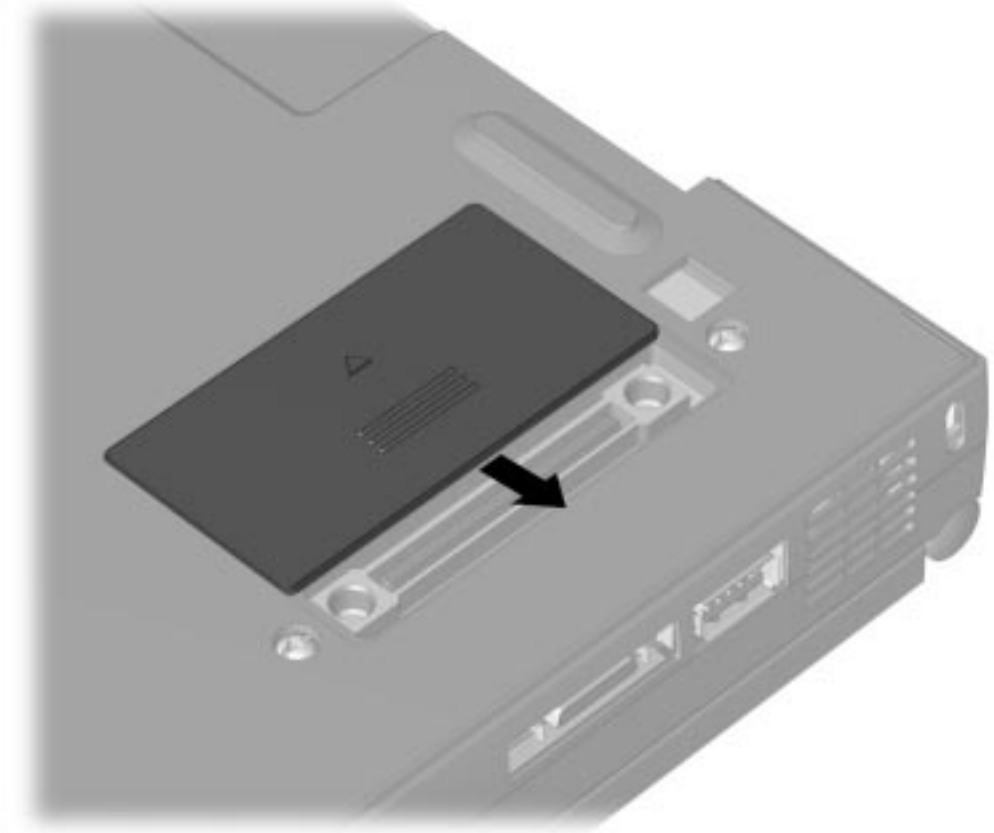

Figure 5-4. *Closing the Expansion Slot Cover*

Reverse the procedure to connect the computer to the M35EU.

5.3.2 Removing the PC Card

Remove any installed PC (PCMCIA) Cards before performing any service on the computer. To remove a PC Card, complete the following steps:

1. Open PC Card door.
2. To eject the PC Card, firmly depress the PC Card eject button ❶.
3. Remove the card ❷.

Figure 5-5. *Removing the PC Card*

5.3.3 Removing the Battery Pack

Remove the battery pack before beginning any internal maintenance on the computer.

WARNING: Metal objects can damage the battery pack as well as the battery contacts in the battery compartment. To prevent damage, do not allow metal objects to touch the battery contacts. Place only the battery pack for the Compaq Armada Personal Computer into the battery compartment. Do not force the battery pack into the bay.

WARNING: Do not crush, puncture, or incinerate the battery pack. Do not dispose of in water. Do not expose to temperatures higher than 60°C. Do not open a battery pack, as this damages the pack, makes it unserviceable, and exposes potentially harmful battery components. There are no field-serviceable parts located inside the battery pack.

To remove the battery pack from the computer, complete the following steps:

1. Open the display to release the battery.

CAUTION: Failure to open the display before removing or inserting the battery pack can result in damage to the battery pack retention features.

2. Slide the battery pack retainer up to release the battery pack ❶.
3. Pull the battery pack ❷ out of the computer.

Figure 5-6. *Removing the Battery Pack*

5.4 Memory Board

If a memory expansion board option has been previously installed in the computer, it must be removed before another is installed. To remove the memory board, complete the following steps:

1. Prepare the computer for disassembly (Section 5.3).
2. Place the computer bottom side up on the table with the front of the unit facing you.
3. Remove the security screw ❶.
4. Lift the right edge of the memory compartment cover ❷ and remove it from the computer.

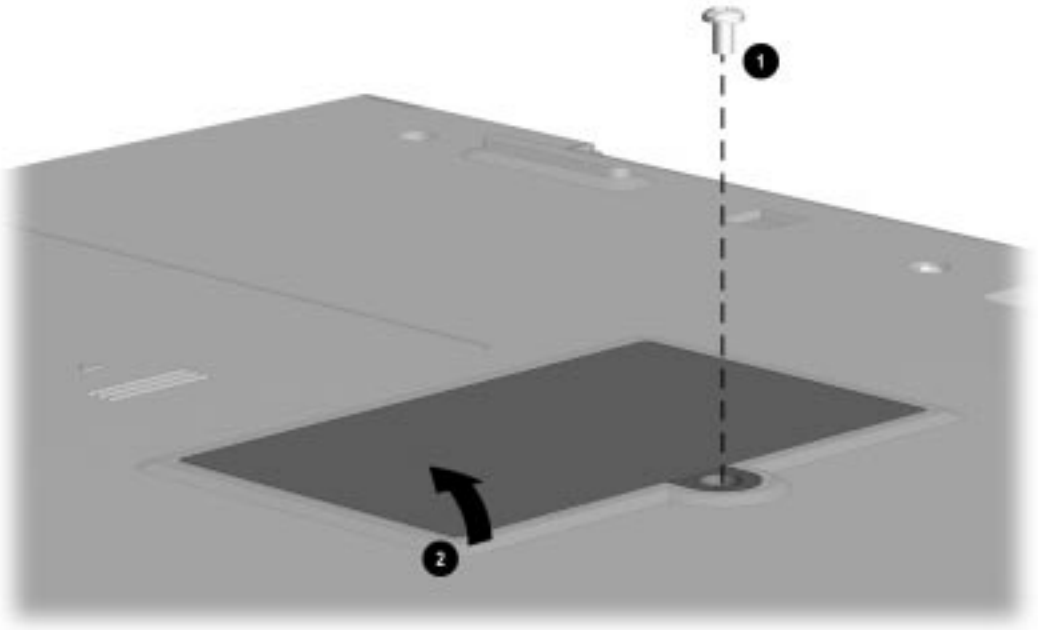

Figure 5-7. *Lifting the Memory Compartment Cover*

5.4.1 Removing the Memory Board

1. Pull out the right and left locking tabs ❶ on each end of the memory expansion board. This releases the memory board and allows it to rotate upward to ease removal.

CAUTION: If you need to remove the memory expansion board, be sure to release the locking tabs that secure the memory board in the slot. The connectors may break and cause irreparable damage to the system board if the tabs are not released.

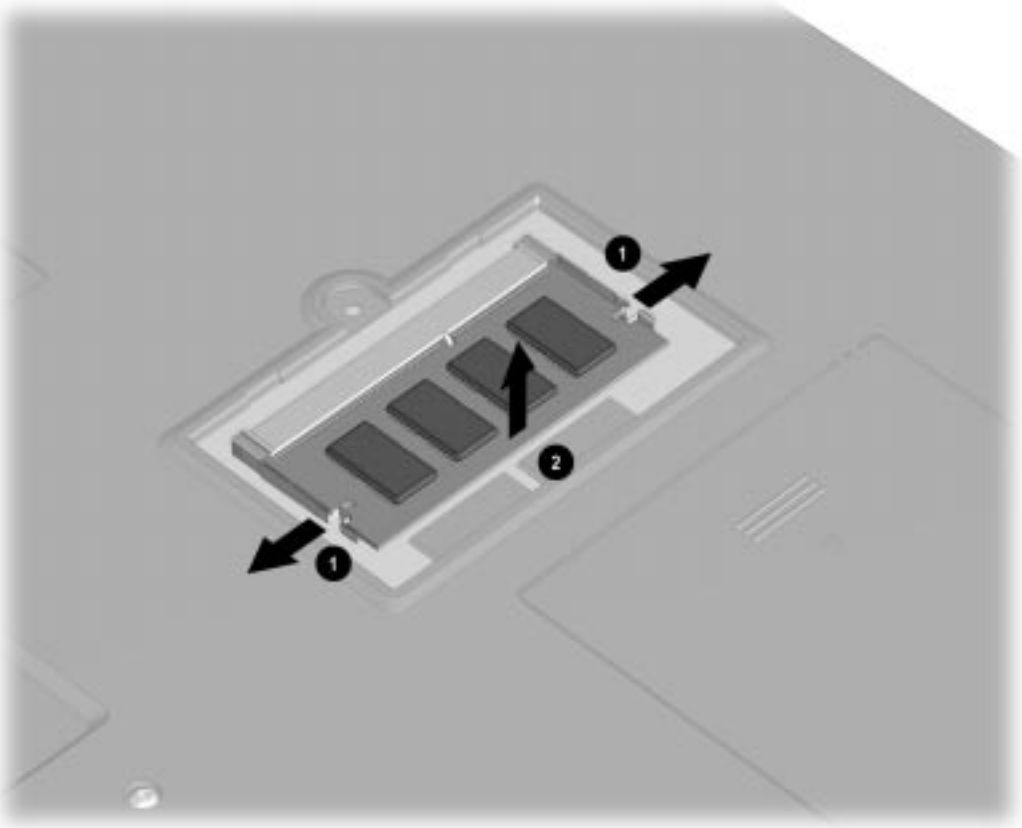

Figure 5-8. *Releasing the Memory Expansion Board*

2. Rotate the free edge ❷ of the memory module upward.
3. Pull the memory module from the slot at a 45 degree angle to the system board.

5.4.2 Installing the Memory Board

To install a memory board, complete the following steps:

1. Insert the memory board ❶ into the memory slot.
2. Rotate the free edge of the memory board toward the computer ❷ so that it lays flat in the memory compartment.
3. Press the memory board firmly into place to seat the connections and to engage the locking tabs.

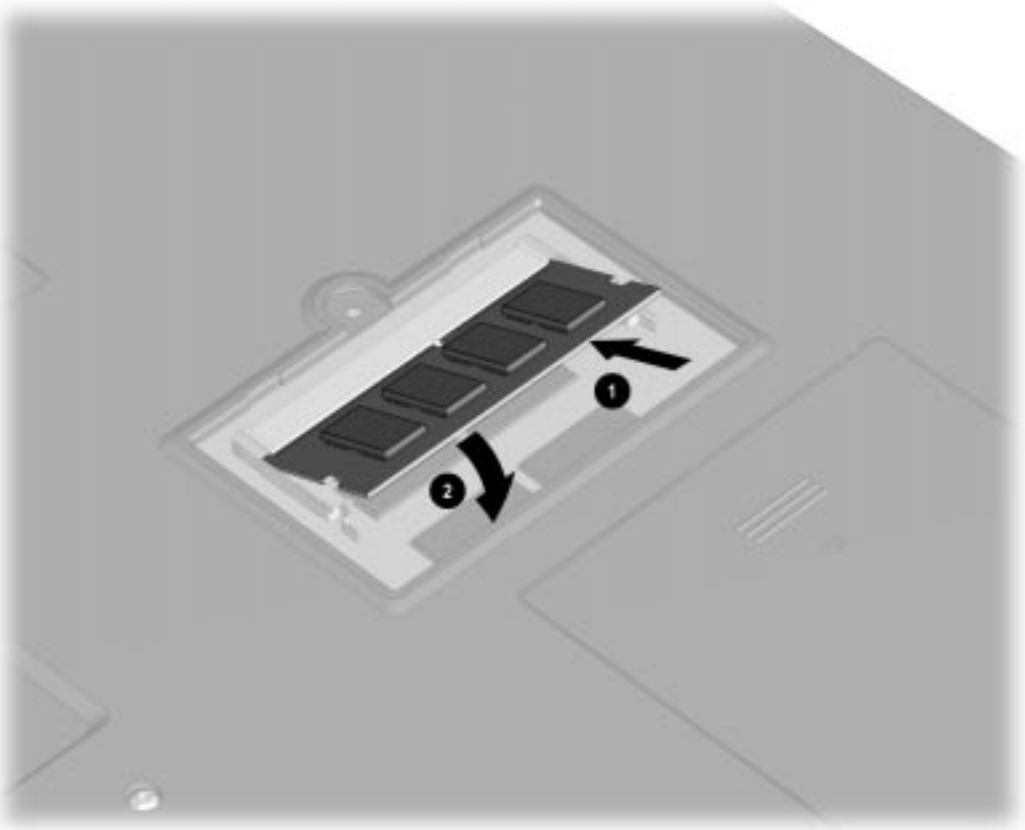

Figure 5-9. *Installing the Memory Board*

Reinstall the memory compartment cover by placing the left edge in the compartment and pressing the right edge toward the system unit. Press it firmly into position until the locking tabs secure the cover into position. Replace the security screw, if one was removed during disassembly.

5.5 Hard Drive

The hard drive cover secures the hard drive, the auxiliary battery, and the RTC battery in place.

5.5.1 Removing the Hard Drive Cover

A security screw holds the hard drive cover in place. To remove the hard drive cover, complete the following steps:

1. Prepare the computer for disassembly (Section 5.3).
2. Turn the computer bottom side up and position it so that the right side of the unit is toward you.
3. Remove the screw from the drive cover.
4. Slide the cover towards you and lift the cover from the computer.

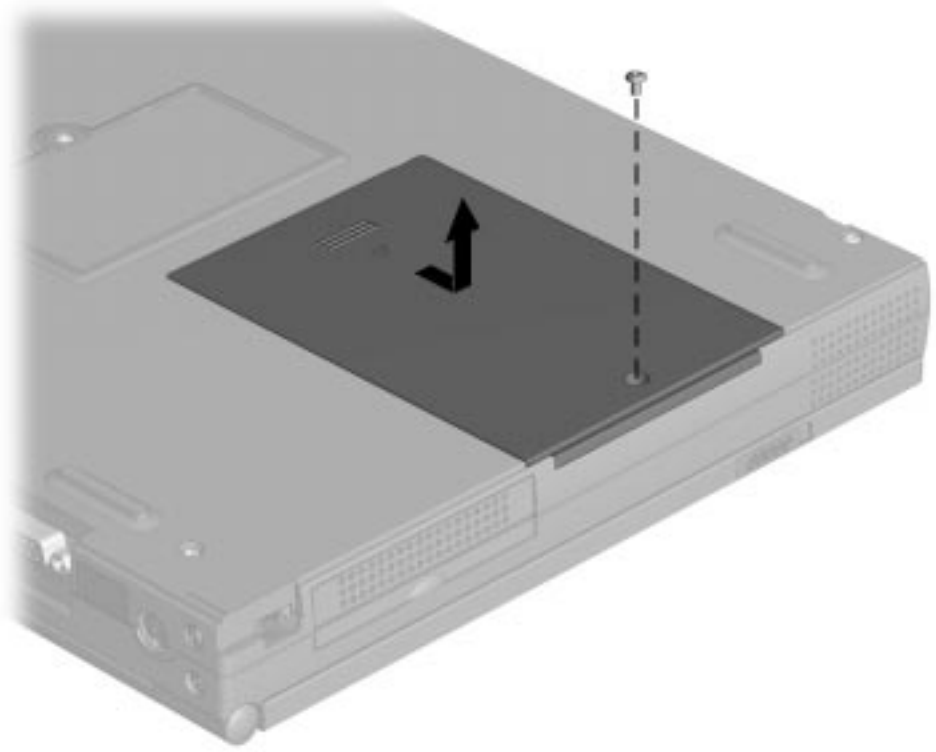

Figure 5-10. *Removing the Hard Drive Cover Security Screw*

5.5.2 Removing the Nickel Cadmium Auxiliary Battery

WARNING: There is a risk of explosion and injury if the battery is incorrectly replaced or handled improperly. Do not attempt to recharge, disassemble, immerse in water, or dispose of it in fire. Replacement should be done using the Compaq spare part for this computer.

To remove or replace the auxiliary battery, complete the following procedures.

1. Prepare the computer for disassembly (Section 5.3).
2. Remove the hard drive cover.

CAUTION: To prevent damage to the battery assembly, do not pull on the battery cable.

3. Using tweezers, disconnect the auxiliary battery from the system unit.
4. Lift the auxiliary battery from the hard drive bay.

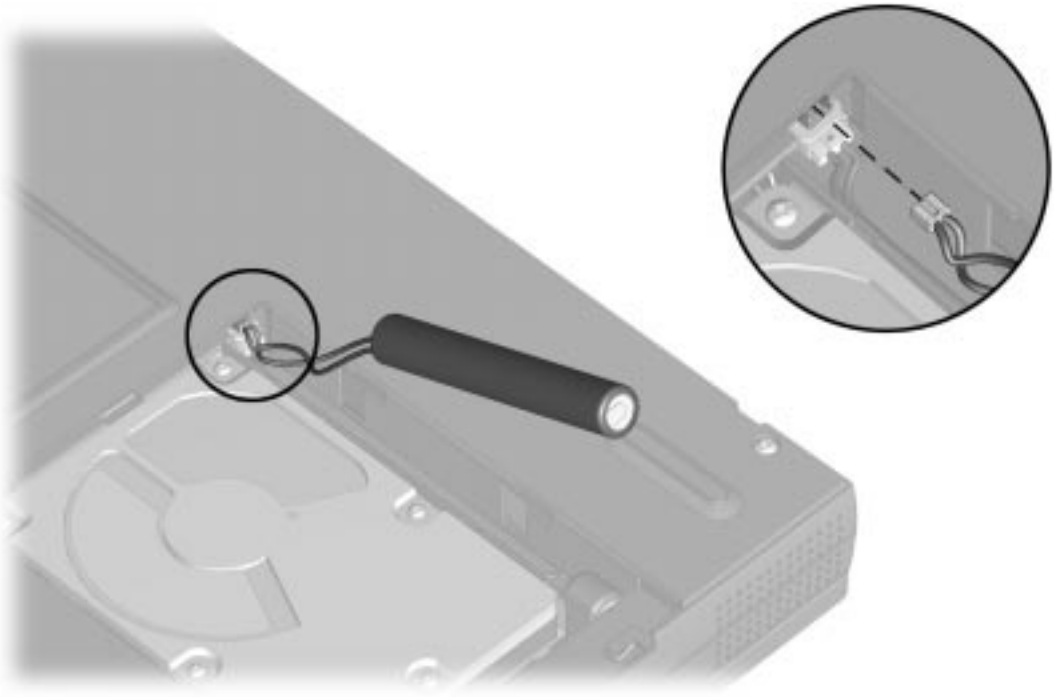

Figure 5-11. *Removing the Auxiliary Battery*

Reverse the procedure to install a replacement auxiliary battery.

5.5.3 Removing the Lithium Real Time Clock Battery

WARNING: There is a risk of explosion and injury if the battery is incorrectly replaced or handled improperly. Do not attempt to recharge, disassemble, immerse in water, or dispose of it in fire. Replacement should be done using the Compaq spare part for this computer.

To remove or replace the RTC battery, complete the following procedures.

1. Prepare the computer for disassembly (Section 5.3).
2. Remove the hard drive cover.

CAUTION: To prevent damaging the battery, do not pull on the battery cable.

3. Using tweezers, disconnect the RTC battery from the system unit.
4. Lift the RTC battery from the hard drive bay.

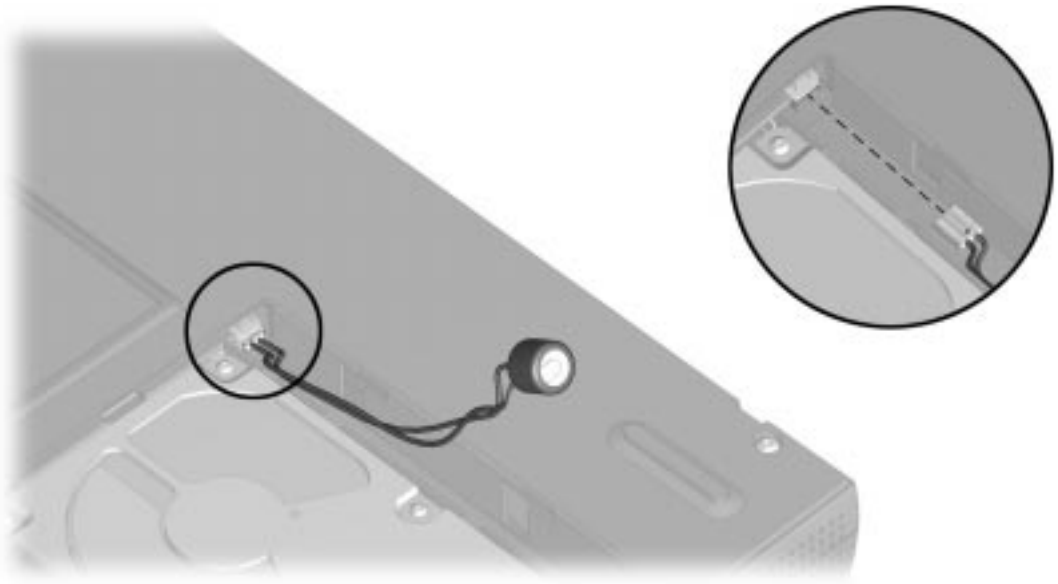

Figure 5-12. *Removing the RTC Battery*

Reverse the procedure to install a replacement RTC battery.

5.5.4 Removing the Hard Drive

To remove the hard drive, complete the following procedures.

1. Prepare the computer for disassembly (Section 5.3).
2. Remove the hard drive cover.
3. Lift the tab on the hard drive from the hard drive bay.
4. Slide the hard drive away from the connector, and using the tab, lift the hard drive from the computer with the tab.

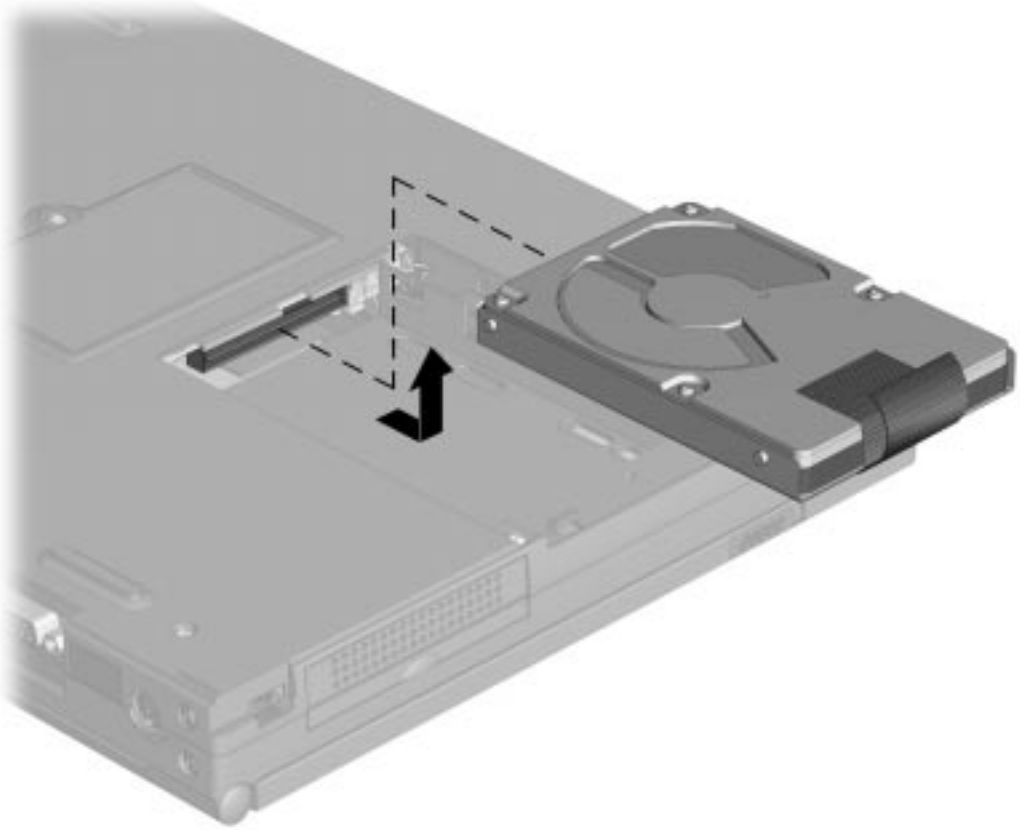

Figure 5-13. *Removing the Hard Drive*

Reverse the procedure to re-install the hard drive.

5.6 Keyboard

To remove the keyboard, complete the following procedures.

1. Prepare the computer for disassembly (Section 5.3).
2. Place the computer on a level workspace with the front of the unit facing you.
3. Open the display to the vertical (perpendicular to workspace to prevent tipping of the unit) position.
4. To release the keyboard, insert the tip of a small screwdriver into the groove above each of the four keyboard latches and slide the latch towards you.

CAUTION: To prevent damage to the keyboard and/or keys, do not use the key caps to lift the keyboard.

5. Lift the back edge of the keyboard. Be careful not to stress the cables.

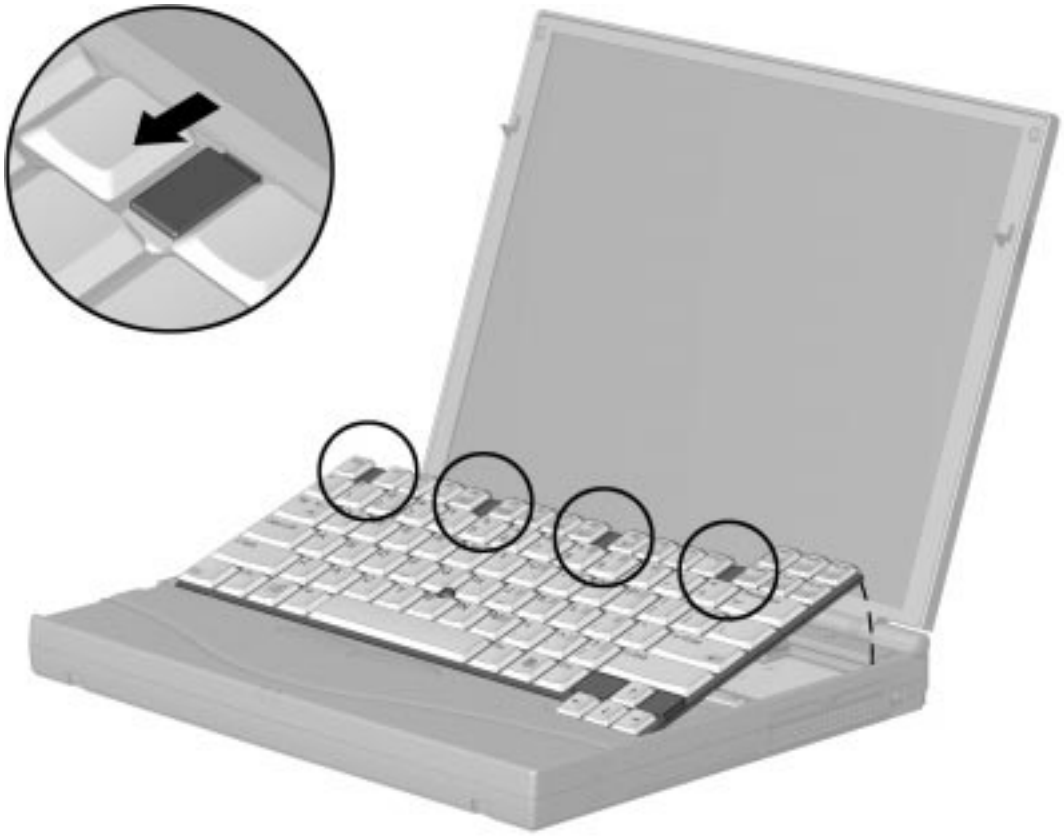

Figure 5-14. *Releasing the Keyboard Latches*

6. Slide the keyboard toward you to gain access to the keyboard and pointing device cable.
7. Release the strain relief.
8. Using tweezers or the tip of a scribe, release the latch on the keyboard and pointing device ZIF connectors.
9. Disconnect the keyboard and pointing device cables.
10. Lift the keyboard from the system unit.

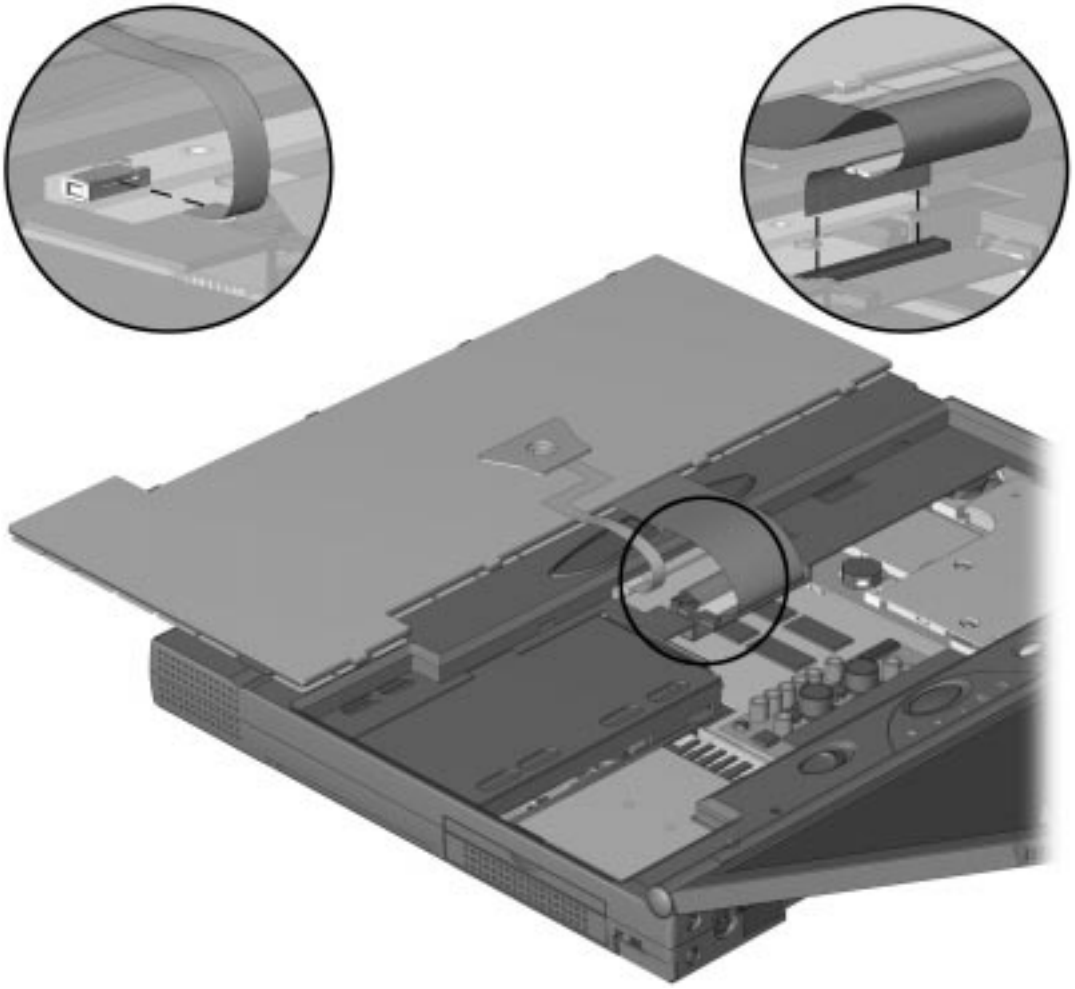

Figure 5-15. *Disconnecting the Keyboard and Pointing Device Cable*

To replace the keyboard, reverse the procedure above.

5.7 Display Assembly

To remove the display assembly, complete the following steps:

5.7.1 Removing the Display Hinge Covers

1. Prepare the computer for disassembly (Section 5.3).
2. Place the computer on the table right side up and with the rear facing you.
3. Slide the hinge covers away from the system unit.

Figure 5-16. *Removing the Hinge Covers*

5.7.2 Removing the Switch Cover/Status Panel

1. Prepare the computer for disassembly (Section 5.3).
2. Remove the keyboard (Section 5.6).
3. Close the display.
4. Remove the hinge covers (Section 5.7).
5. Place the computer bottom side up and with the front of the unit toward you.
6. Remove the screw from the left rear corner of the base enclosure.

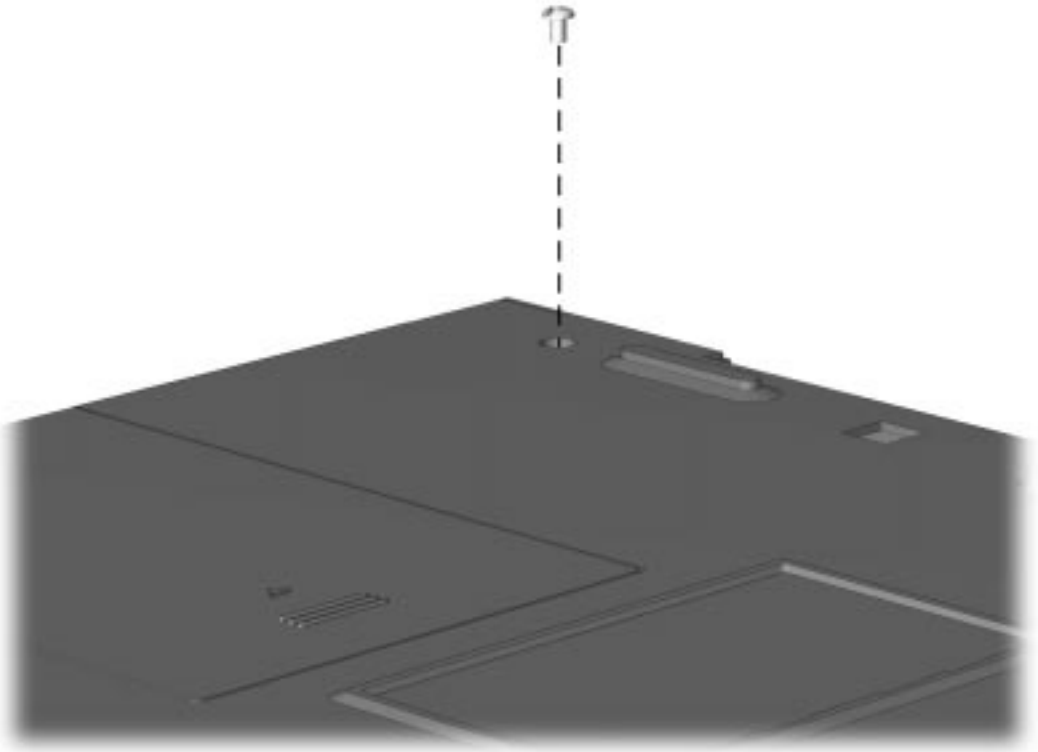

Figure 5-17. *Removing the switch cover screw*

7. Turn the computer top side up with the front of the unit toward you.
8. Open the display.
9. Lift the switch cover / status panel from the computer.

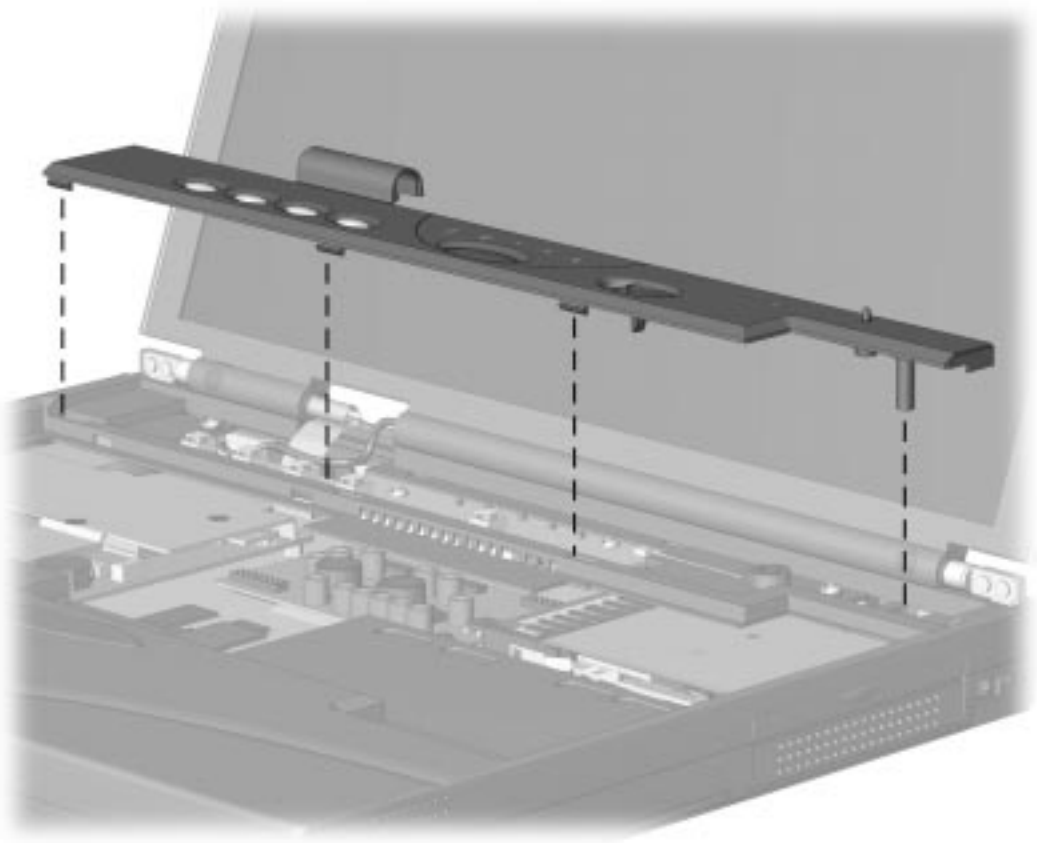

Figure 5-18. *Removing the switch cover/status panel*

To replace the switch cover, reverse the procedure above.

5.7.3 Removing the Display Assembly

CAUTION: Do not reuse the hinge screws removed from the previously installed display. These screws may back out of the display hinges and cause the display assembly to loosen from the base enclosure.

To remove the display assembly, complete the following procedure:

1. Prepare the computer for disassembly (Section 5.3).
2. Remove the keyboard (Section 5.5).
3. Remove the hinge covers (Section 5.7).
4. Remove the switch cover assembly (Section 5.7).
5. Using tweezers, separate the backlight power cable and the display cable from the system board.

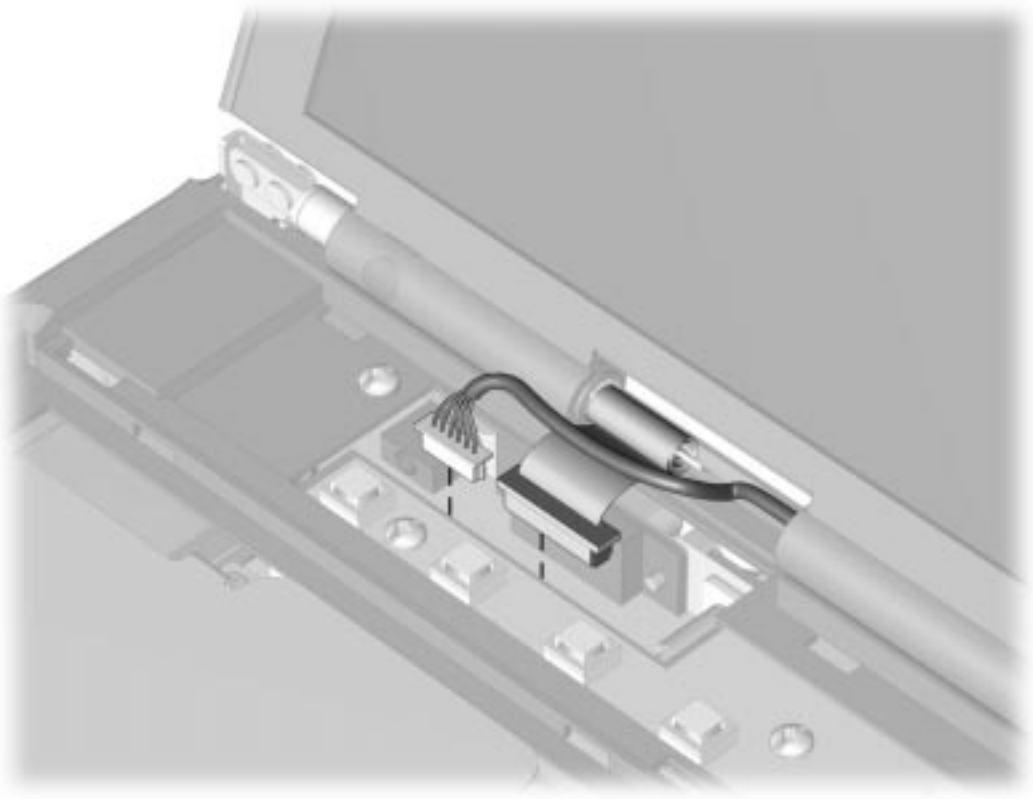

Figure 5-19. *Disconnecting the Display Cables*

CAUTION: Do not pull the connector from the socket by the wires. Pulling on the wires may damage them, rendering the display inoperative.

6. Close the display.
7. Remove the two screws from the left display clutch and the two screws from the right display clutch.
8. Lift the display assembly from the base enclosure.

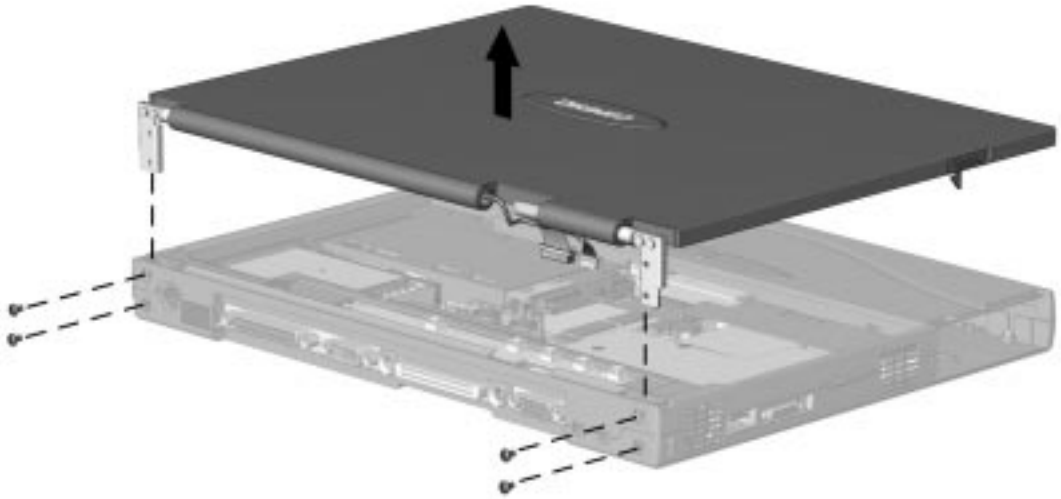

Figure 5-20. *Removing the Display Assembly*

Reverse the procedure to replace the display assembly.

Note: Always replace the four loctite screws with the replacement screws supplied in the service kit.

5.8 Top Cover Assembly

To remove the top cover assembly, complete the following procedures:

1. Prepare the computer for disassembly (Section 5.3).
2. Remove the keyboard (Section 5.6).
3. Remove the hinge covers (Section 5.7).
4. Remove the switch cover assembly (Section 5.7).
5. Remove the display assembly (Section 5.7).
6. Turn the computer bottom side up.
7. Remove the seven (7) screws from the bottom of the system unit.

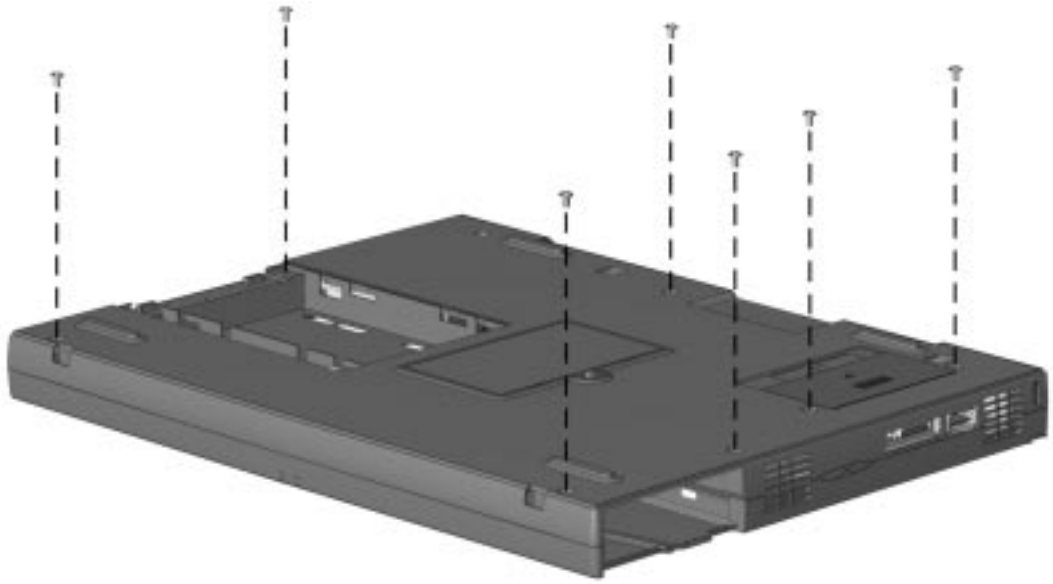

Figure 5-21. *Removing the screws from the bottom of the system unit*

8. Remove the screw from the rear of the unit.
9. Remove the two screws from the top cover.
10. Lift the top cover from the base enclosure assembly.

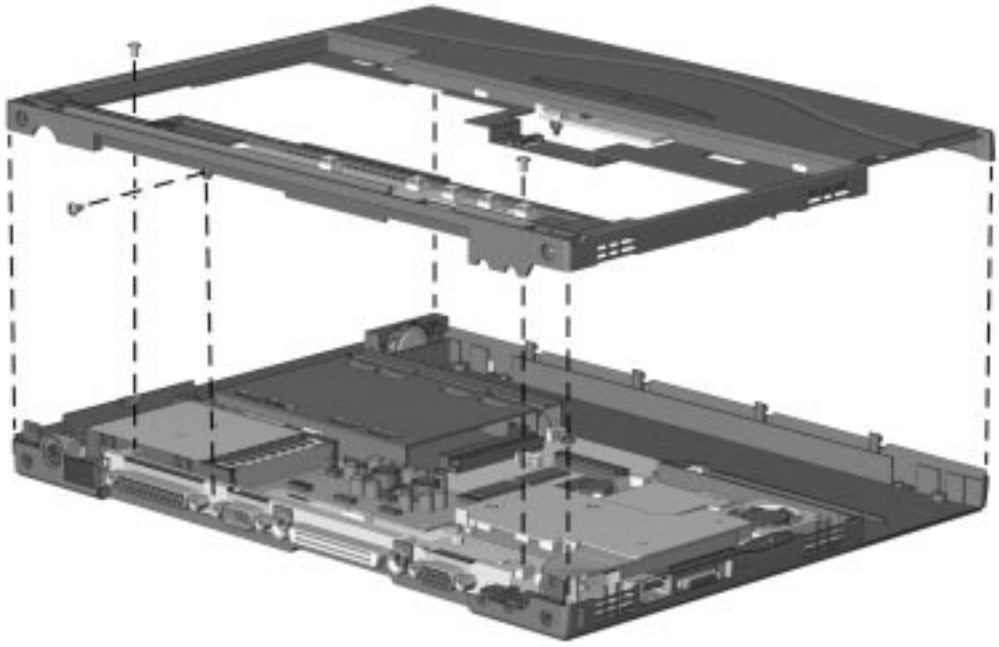

Figure 5-22. *Removing the Top Cover Assembly*

5.8.1 Removing the DC-DC Converter

To remove the DC-DC converter, complete the following procedures:

1. Prepare the computer for disassembly (Section 5.3).
2. Remove the keyboard (Section 5.6).
3. Remove the display assembly (Section 5.7).
4. Remove the top cover assembly (Section 5.8).
5. Remove the screw from the converter board.
6. Remove the DC-DC converter

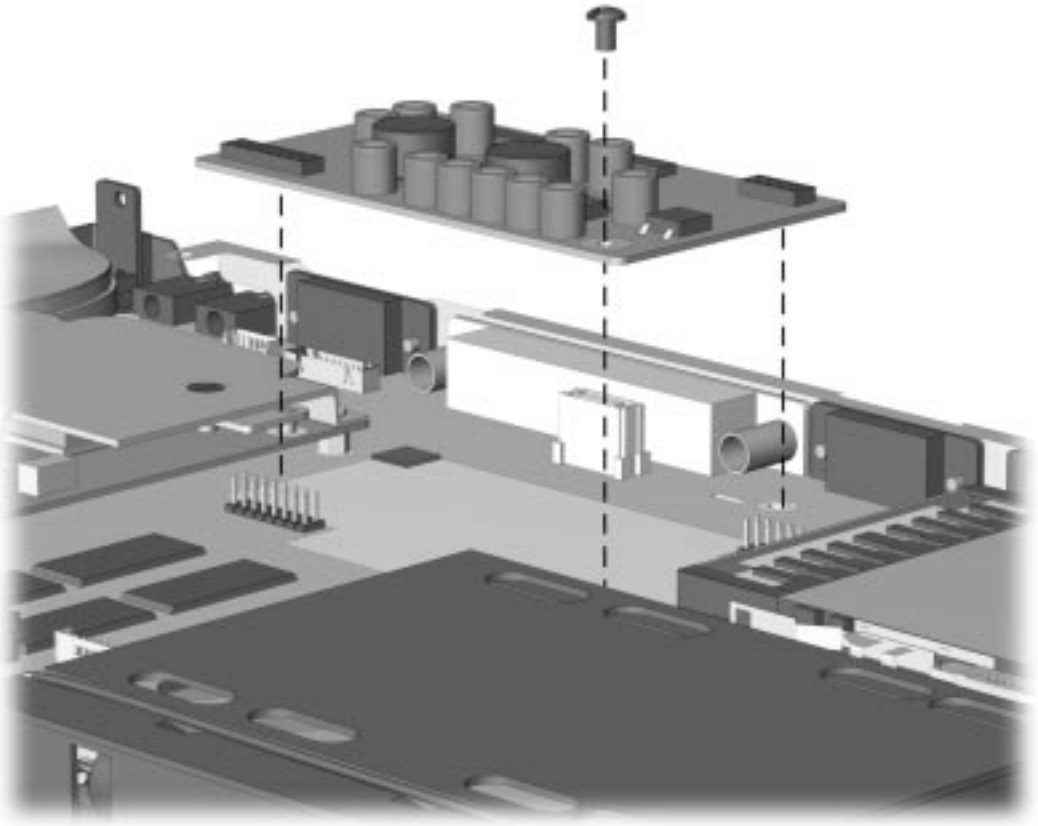

Figure 5-23. *Removing the DC-DC Converter*

CAUTION: Failure to use the nickel colored screw to secure the DC-DC Converter to the system board may result in damage to the system board.

To replace the DC-DC converter, reverse the steps.

5.8.2 Removing the System Board

To remove the system board, complete the following procedures:

1. Prepare the computer for disassembly (Section 5.3).
2. Remove the lithium real-time clock battery (Section 5.5).
3. Remove the auxiliary battery. (Section 5.5).
4. Remove the hard drive (Section 5.5).
5. Remove the memory board (Section 5.4).
6. Remove the keyboard (Section 5.6).
7. Remove the display assembly (Section 5.7).
8. Remove the top cover assembly (Section 5.9).
9. Remove the DC-DC Converter (Section 5.9).
10. Remove the three screws from the system unit.
11. Remove the docking guides from the rear panel.
12. Disconnect the speaker cable from the system board. The speaker is located in the front right corner of the system board.
13. Lift the right edge of the system board to a 45-degree angle and lift from the base enclosure.

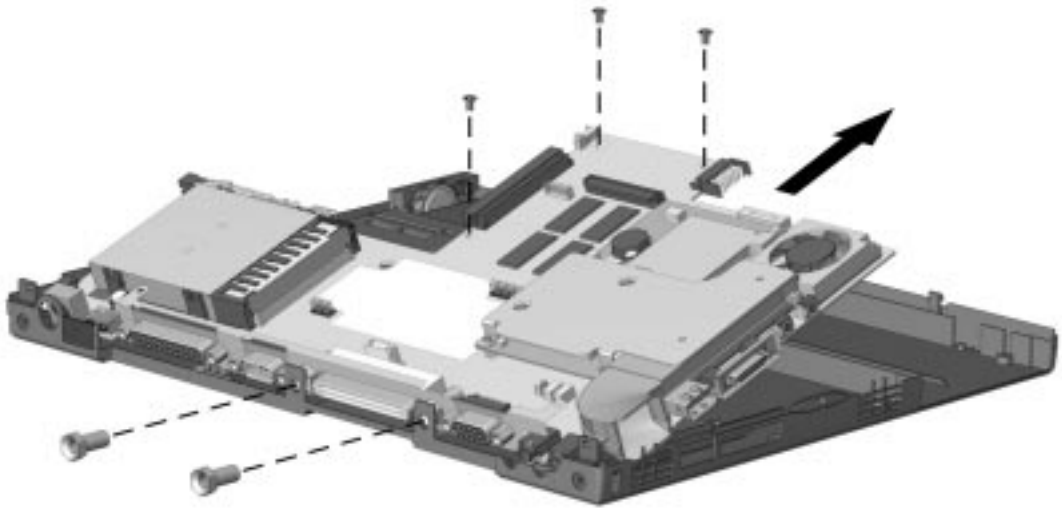

Figure 5-24. *Removing the System Board*

To replace the system board, reverse the steps.

5.8.3 Removing the Fan

To remove the fan, complete the following procedures:

1. Prepare the computer for disassembly (Section 5.3).
2. Remove the lithium real-time clock battery (Section 5.5).
3. Remove the auxiliary battery. (Section 5.5).
4. Remove the hard drive (Section 5.5).
5. Remove the keyboard (Section 5.6).
6. Remove the display assembly (Section 5.7).
7. Remove the top cover assembly (Section 5.9).
8. Remove the system board (Section 5.8)
9. Disconnect the fan connector.
10. Remove the fan screws.
11. Remove the fan.

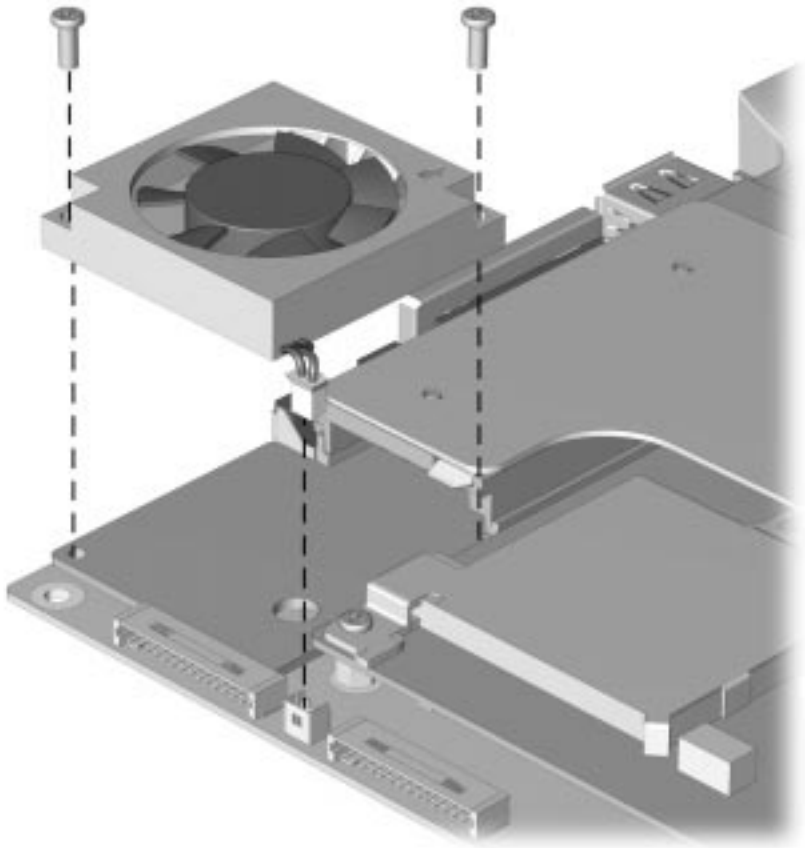

Figure 5-25. *Removing the Fan*

To replace the fan, reverse the steps.

5.9 Removing An Optical Disc Bay Device

To remove an Optical Bay device from the Mobile 3500 Expansion Unit, complete the following procedures:

1. Disconnect the computer from the M35EU.
2. Place the M35EU bottom side up, on the table with the front of the unit facing you.
3. Remove the two screws ❶ from the Optical Disc Bay retainer cover plate.
4. Remove the cover plate.
5. Slide the Optical Disc Bay device from the connector ❷.
6. Remove the Optical Disc Bay device from the expansion unit ❸.

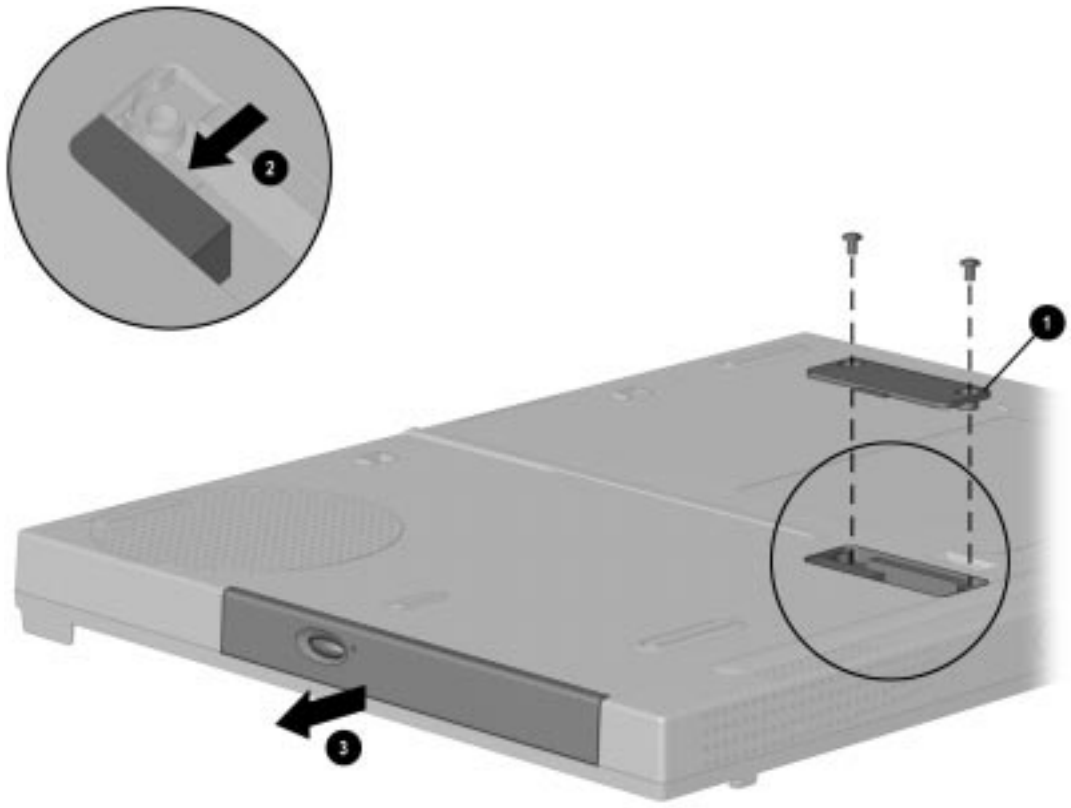

Figure 5-26. *Removing the Optical Disc Bay Device*