SeaLife Tech advice

Date: **9/29/03 (revised 5/11/04)**

Item: **SeaLife Digital DC310 Underwater Camera Housing (SL145, SL148, SL149).**

Subject: **DC310 Navigation buttons not actuating camera function.**

Description: Navigation buttons (NAV buttons) do not reach or activate internal camera functions.

Navigation buttons not activating camera function

Scope: All DC310 with serial number less than 615000.

Solution: Nav buttons have been redesigned to extend the reach and travel of the button. Spring component has been redesigned to allow proper function of camera both at depths and on land.

Warranty: Yes

Repair: Return to Sealife Service for repair.

Distribution: This tech advice may be released to all SeaLife customers.

- Image Sensor   3.3 mega pixel CCD

- Color   24-bit Color (RGB)

- Image Resolution   2,048 x 1,536, 1,024 x 768,   640 x 480

- Lens   Fixed Focus Lens
  - Aperture: f/2.8/7.9
  - Normal: 2ft. ~ inf
  - Macro: 12" ~ 32"

Exposure program: Land & Sea™ Exposure Program
Land mode – for use on land
Sea mode – for optimal exposure underwater
Flash mode – Synchronize camera with external flash

- Focal Length film equiv.   7.9mm / equivalent to 45mm on a 35mm camera

- Zoom   2X, 4X digital at play mode, 2X digital at preview mode

- Shutter Speed   1/10 ~ 1/1000 second

- Exposure   Auto
  Manual: 0.3 EV step, -1.8 ~ +1.8 EV

- White Balance   Auto, Sun, Shade, Fluorescent, Tungsten

- LCD   1.6" color TFT LCD
  Status: flash / red eye reduction / resolution / battery status number of images

- Memory   Internal: 8 MB
  External: SD card support
  Storage: Super Fine / Fine / Normal: TBD images

- Flash   Built - in::   Auto, fill flash, off flash, off, red-eye reduction

- Video   15FPS @ QVGA model

- Web Cam   Frame Rate: 15FPS @ QVGA model

- Self-Timer   10 second delay

- File Format   JPEG (EXIF 2.1), DPOF, AVI (motion JPEG)

- Operating Environment: PC: Windows 98 / 98SE / 2000 / ME / XP
  MAC: OS 8.6 or later

- Software   Driver: for PC and MAC
  AP: MGI Photo Suite IV SE, Photo Vista

- Language Support   English, Japanese, German, French, Spanish, Korea,
  Traditional Chinese, Simplified Chinese

- Power   AC-DC Adaptor port, USB port, Video Output (NTSC/PAL switchable)
                                   2x AA (Alkaline, NiMh, Lithium)
                                   AC-DC Adaptor (3.3V)

- Certification   CE, FCC, VCCI

- Weight   About 120 g (without batteries and SD card)

- Dimensions   105mm x 44mm x 55mm

DC300 Underwater *Dive Advanced* Housing specifications

Item #: SL140 (housing not sold separately)

Depth: Individually depth tested to 200' (60 m)

Controls: Control buttons for power, Shutter and LCD.
                One-button operation to take, review and keep or delete picture with shutter button.

Camera: Design to custom fit SeaLife 2.1 and 3.3 mp digital cameras

O-ring: Black EPDM O-ring rated to 200' (item # SL13007)

Lens port: Optical glass lens port with snap-on ring to adapt accessory lenses.

LCD: Optical Lexan window with mounting frame for sunshade

Tripod
Mount: Standard ¼-20 tripod threads to adapt accessories.

Lanyard: Rubber coated lanyard with swiveled attachment clip

Hardware: 316 Stainless Steel metal hardware.

Material: Full rubber-armored housing over fiber reinforced polycarbonate frame.

Weight: Without Camera = 420gr. (14.8 oz)
                With camera (no batteries) 562gr. (19.8oz)

Size: 3-5/8" H X 5-7/8" W X 3" D inches
                92mm X 150mm X 76.2mm

Operating temperature: 33 degrees F to 110 degrees F
Storage temperature: -20 degrees F to +140 degrees F
Shock resistant: 10 G's (Equivalent to a 3' drop)

Warranty: 1 year limited warranty covers defects in material and workmanship. See full warranty
                description on warranty card or user instructions.

SeaLife Tech advice and Important Product Update

Date: 11/13/03

Item: SeaLife Digital DC300 and DC310 Underwater Digital Camera Housing (SL140, SL145, SL145).

Subject: Camera "locks-up"

Description: The inner camera locks-up. The LED indicating light blinks red. No buttons function. The only way to power off camera is too remove the batteries.

An inner camera in service only experienced this issue when inside the housing. Once removed from the housing, the camera functioned normally. When applying outside pressure to the front and back center of the camera, it would lock up. It appears that the cause is related to the internal PC board. Perhaps a button touches the PC board when the body is pushed slightly. Testing is in progress and more information will be released shortly.

Indicator light blinks red - Camera buttons do not function

Scope: TBD – There have been 3 phone calls from customers describing this issue. We have seen about 4 cameras in service with this. Full scope is being explored.

Solution: TBD

Warranty: Yes

Repair: Return to SeaLife Service for immediate repair and replacement.

What to say: Return to SeaLife Service for immediate repair and replacement.

Distribution: This tech advice may be released to all SeaLife customers.
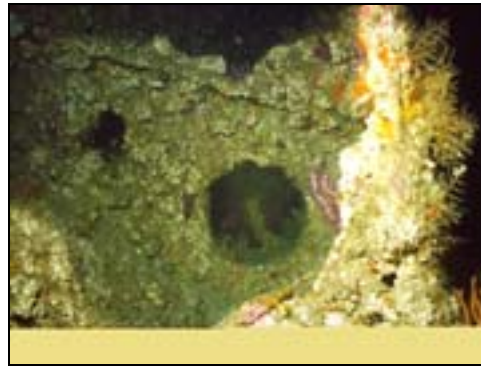
SeaLife Tech advice and Important Product Update

Date: **2/10/04** (revised on N/A)

Item: **SeaLife Digital DC300 and DC310 Underwater Camera (SL140, 145, 148)**

Subject: Error pictures that appear as a split image or can't be opened.

Summary:

Sample of discolored split image
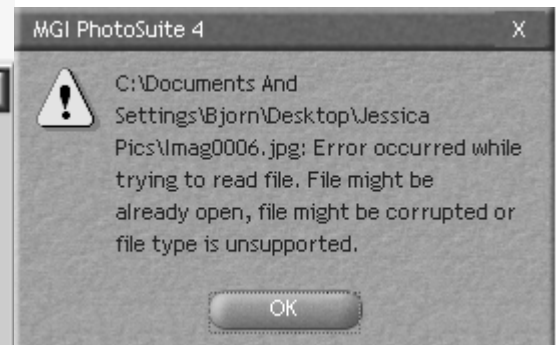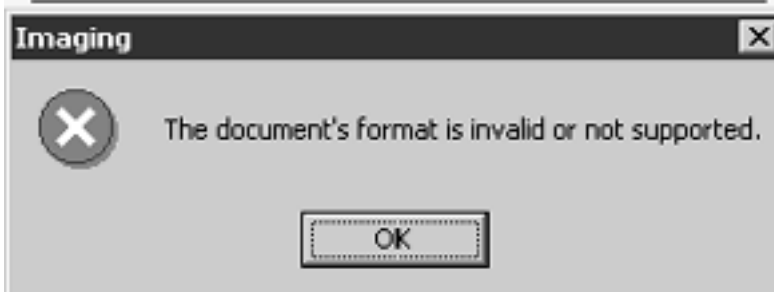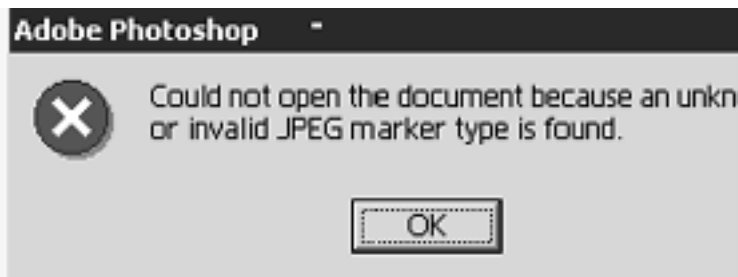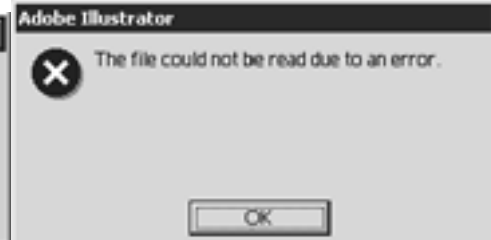

Sample of split image with tan or black strip on bottom

Images may also appear completely white or black.
Some images may only be seen as thumbnails but cannot be opened with an imaging program. It is also possible that no thumbnail image appears.

The above samples represent the most common corrupt images that may occur with the DC310 or any digital camera. When trying to open a corrupt image using an imaging program, like MGI PhotoSuite or Adobe PhotoShop, you may see error message windows like this:

Microsoft Photo Editor   ⚠ Can't open file.   OK

ImageR Windows Application   ⚠ File type not supported...   OK

Adobe Illustrator   ✖ The file could not be read due to an error.   OK

Adobe Photoshop   ✖ Could not open the document because an unknc or invalid JPEG marker type is found.   OK

Imaging   ✖ The document's format is invalid or not supported.   OK

MGI PhotoSuite 4   ⚠ C:\Documents And Settings\Bjorn\Desktop\Jessica Pics\Imag0006.jpg: Error occurred while trying to read file. File might be already open, file might be corrupted or file type is unsupported.   OK

If the DC310 takes a corrupt image, it may also slow down the review of images stored in the cameras memory. Sometimes a 30 second delay may occur when reviewing a corrupt image. Other times a false message, like "FLASH ON/OFF", may appear on the cameras' LCD monitor.

What to say: A corrupt image is any image file that has a minor flaw or bug, which is typically caused by some external interference (Static charge, magnetic inference, etc.) or using a defective SD memory card. A corrupt image stored on the DC310's memory card or internal memory can cause the camera to malfunction, like displaying a false "Flash ON/OFF " message.

The first thing to check is the brand of memory card. We recommend using only SanDisk, Panasonic, Kingston, Delkin, Lexar, PYN, Pretec, Ritek and Kodak SD cards.

If that does not correct the problem, please return the camera, memory card and housing to SeaLife se4rvice for evaluation.

Scope: All Digital cameras

Warranty: If the above does not correct the problem, please return the camera, memory card and housing to SeaLife se4rvice for evaluation.

Firmware Updating Procedure

Effective on: 2/6/03   Created by: Bjorn Harms
Revised on: 4/5/2004   Distributed to: SeaLife Technical Service
                                                File Path: I:\Training and Seminars

Legal notice: All SeaLife Digital camera firmware is proprietary software that is copyright protected. It is only intended for authorized use with SeaLife digital cameras. This software may not be used in whole or in part for any other application without the express written consent of Pioneer &Co., Inc.

<u>Firmware installation instructions if you don't have a SD memory card reader/writer:</u>

1. Insert SD card into camera, turn camera power ON and connect camera to computer USB. Do not use battery power during firmware uploading – <u>only use the DC250/DC300/DC310 3.3volt AC power adapter (item #SL932)</u>. Important: Do not use the DC200 or DC100 AC power adapter or it will damage the camera.

2. Download the firmware file by clicking the above "download link".

3. Locate firmware file named '*3000APP.bin*'. Copy the *'3000APP.bin'* file and paste into 'Removable Disk (_:)". Make sure to past the file into the root directory folder titled "Removable Disk (__:)" and not one of the folders under the root directory. The SD card now has the new firmware on it.

4. Disconnect camera from computer and turn camera OFF.

5. With SD card inserted in camera, set mode dial to 'Record' mode, open lens cover and turn camera ON. The camera-ready light will flash and you will here some beeps. The LCD monitor will NOT display messages during the firmware uploading process. When the camera ready light turns off and there is one final beep sound, which indicates that the uploading process is complete. The new firmware is now uploaded on the camera.

6. Disconnect power and remove SD card from camera.   To update firmware for more than one camera, insert the SD card into other camera(s) and repeat step 4.

7. With SD card removed from camera, turn camera power ON. Insert SD card into camera while camera power is ON.

8. Select "format media" and reformat CF. This will delete the *"3000APP.bin" file* from the SD card. It will also delete any other items stored on the SD memory card.

Important:

1. **Some SD cards brands will not work for this procedure. If the camera does not behave as described in step 4, repeat all steps using a different brand/type of SD card.**
2. **If you have a SD card reader/writer follow the above instructions # 2, 4, 5, 6 and 7.**

DC310 Underwater *Dive Advanced* Housing specifications

Item #:   SL118 (housing not sold separately)

Depth: Individually depth tested to 200' (60 m)

Controls: Control buttons for power, Shutter, Mode, Menu, Navigational and LCD.
One-button operation to take, review and keep or delete picture with shutter button.

Camera: Design to custom fit SeaLife 2.1 and 3.3 mp digital cameras

O-ring: Black EPDM O-ring rated to 200' (item # SL13007)

Lens port: Optical glass lens port with snap-on ring to adapt accessory lenses.

LCD: Optical Lexan window with mounting frame for sunshade

Tripod
Mount: Standard ¼-20 tripod threads to adapt accessories.

Lanyard: Rubber coated lanyard with swiveled attachment clip

Hardware: 316 Stainless Steel metal hardware.

Material: Full rubber-armored housing over fiber reinforced polycarbonate frame.

Weight: Without Camera = 434gr. (15.3 oz)
With camera (no batteries) 576gr. (20.3oz)

Size: 3-5/8" H X 5-7/8" W X 3" D inches
92mm X 150mm X 76.2mm

Operating temperature: 33 degrees F to 110 degrees F
Storage temperature: -20 degrees F to +140 degrees F
Shock resistant: 10 G's (Equivalent to a 3' drop)

Warranty: 1 year limited warranty covers defects in material and workmanship. See full warranty description on warranty card or user instructions.