

A Conquest Imaging White Paper
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The life of an Ultrasound Transducer can reach its potential with proper care, use and maintenance. By optimizing the care of your probe inventory, you are taking proactive measures to drop your total imaging cost of ownership by lowering repair and replacement expenses.

Protecting Your Investment

Ultrasound Probe Care

Bob Broschart

PROTECTING YOUR INVESTMENT

With the high cost of probes at every point, initial purchase, potential repair, and eventual replacement costs, you have to look at ways to protect your probe inventory. Protection is best conducted one probe at a time over the lifetime of the probe.



How long will an ultrasound probe last? Just like an automobile, the longevity of your investment depends on how often it is used, if it is misused, and how well it is maintained. You can protect your investment by monitoring each probe's status on a regular basis (we recommend as often as you perform a preventative maintenance and with every service performed on your ultrasound system), by working with your sonographers, and catching and conducting minor repairs as discovered. In this way you can avoid a detrimental economic impact in overall probe cost in repair as well as replacement. You can't control when probes are going to fail on their own and cause possible down time in your imaging department, but you can protect and predict which probes are going to fail and are being misused.

PROBE CARE AND HANDLING

Some basic ways to help protect your probes:

1. Inspect the probe at every Preventative Maintenance (PM), and every service event, check each and every probe.
2. Complete a good physical examination. Look for physical issues. Examine the probe for cracks, dents, scratches, leaks, pin holes, bitemarks, etc.
3. Make sure they are working properly. Ask the sonographers if they are working properly.
4. Verify the process for all probes undergoing high level disinfection. Each probe should be disinfected properly. Below are links to the OEM's online cleaning and/or disinfection guides.
 - **GE:** This website allows you to select probes or cleaning agents, disinfectants and gels:
http://www3.gehealthcare.com/en/products/categories/ultrasound/ultrasound_probes
 - **Philips:** This website has links to guides for care and cleaning and disinfectants and cleaning solutions:

- <http://www.usa.philips.com/healthcare/resources/feature-detail/ultrasound-care-and-cleaning>

 - **Siemens:** This website has downloadable PDF files by system for probe disinfections guides:
<https://usa.healthcare.siemens.com/ultrasound/transducer-disinfection-guides>
 - **Toshiba/Cannon:** This website provides downloadable PDF files by system for probe guides for cleaning, disinfection, and sterilization of Cannon Toshiba Aplio probes:
<https://us.medical.canon/download/ul-aplio-platinum-guidelines-transducers>
 - **SonoSite/FujiFilm:** This website is a PDF of the cleaning and disinfecting FUJIFILM SonoSite products:
https://www.sonosite.com/sites/default/files/Disinfectants_ENG_P22043-01B_e.pdf
5. Perform electrical leakage tests on probes during the PM. TEE probes are to be tested after every patient procedure. You must follow the OEM’s guidelines found for that particular probe in their corresponding service manual.
 6. Check the cables. Move them while in Doppler and/or Color doppler. Look for flashing and noise. Look for cuts and exposed wiring.
 7. Look at the lens under a magnifying glass; look up and down the insertion tube on a TEE probe and others.
 8. Order any needed repairs discovered as a result of the inspection.

For a video representation of a simple physical inspection, visit:
<https://conquestimaging.com/probe-support-videos/>.

PROBE REPAIR COST SAVINGS

Catching problems and addressing them at a minor stage will protect you and save significant amounts in the long run. This is infinitely better than “waiting” for the problem to worsen and cause a more costly repair or complete replacement. For example, a hole that would cost \$800 to repair could eventually allow for fluid to seep into the probe and destroy the array requiring a replacement of the array at thousands of dollars and potentially a replacement of the entire probe, which is very costly. Protecting future damage to the array guards against potential replacement of the most expensive component of a probe.

The OEM costs only increase as new technologies emerge and complex probe designs are introduced, see my business white paper, “*Why Do Ultrasound Probes Cost So Much?*” The TEE probe category possesses the highest probe costs in any imaging department or facility. Improper disinfection of TEE probes is the number one reason we see these probes for repair. This type of repair can be completely avoided with proper adherence to disinfecting protocol.

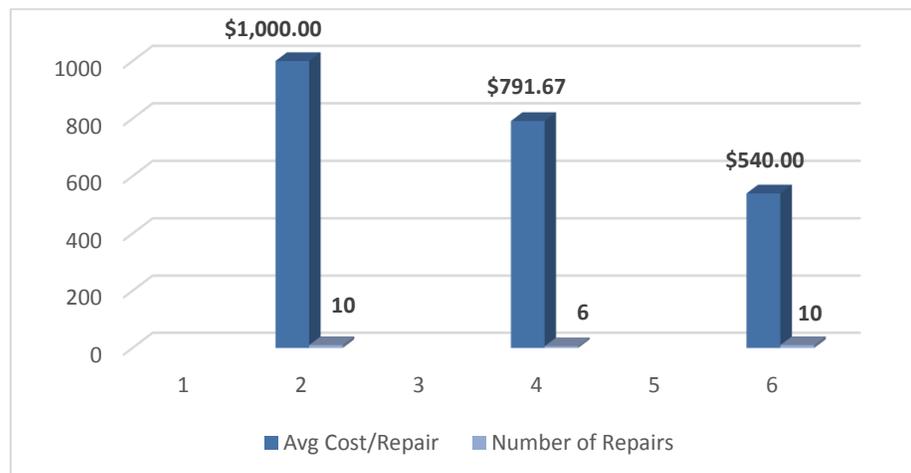


There is enough normal wear and tear causing probe failures; I strongly encourage you not to increase your costs by improperly supporting your probes. If the unit does not pass inspection, take it out of circulation and order a repair—if a repair must wait due to budget reasons, then let it sit without use or added disinfection cycles which could cause greater damage and elevate the cost of the repair, or worse, shorten the life cycle of the probe. Order the repair when financially feasible.

Probe Repair Cost Myth: “If I don’t send my probe in for all these minor repairs, I will save on my repair spend.”

It has been our experience that much like your automobile, if you take care of minor repairs when they arise across your probe inventory, the probe repair spend actually goes down. This is due to the decreased need for costly repairs, such as array replacement or even the need for total probe replacement.

EXAMPLE OF REPAIR COST DOWNWARD TREND



You can only reduce costs two ways: (1) reduce the number of probe incidents, (better care and maintenance), or (2) lower your repair costs by fixing problems at a minor and early level. Many times it is difficult to reduce the incidents of failure. However, as the chart above demonstrates, you can use early detection and repair to dramatically cut your costs.

IN CONCLUSION

By NOT properly implementing an inspection routine, which includes repair of damaged probes, you risk increased probe and probe repair expenses to your department or facility. As probe technology advances, the cost of owning and maintaining probes will increase—if you want to keep a level of control over your cost of ownership over the lifetime of your probe inventory, you must enforce proper use, regular inspection, education of the end-user, and perform repairs when needed.

Your probes will work a long time with proper care, use and maintenance.

Why Do Ultrasound Probes Cost So Much?
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Bob Broschart, transducer expert, has over 30 years of experience in medical equipment manufacturing, engineering, service and sales management. Bob helped to launch Axess Ultrasound, where he built their probe repair lab, R&D and operations. Bob currently serves as the VP of Depot Repair at Conquest Imaging's Fishers, Indiana repair lab facility where he oversees the entire operation.

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