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Personal Flotation Devices in Recreational Boating

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PFD Technology and Wearability

[Power Point slide numbers in brackets coordinate with this basic narrative.]

[1] PFDS, lifejackets, lifevests…. It doesn't matter what you call them, they won't work unless you wear them…… getting people to WEAR them, that's the tricky part ! Rational, thoughtful boaters with PFDs on board do not perceive the risk of going into the water unprotected. Yet most accidents allow no time for donning a PFD.

Every year we look at Coast Guard statistics that tell us that approx. 85% of the drowning might have been prevented with a lifejacket. Said like that… in one sentence, sounds like an easy task to fix….. but when you drill into the why, where, what, and how, the quest of getting that 85% to wear jackets becomes a much more complex matter.

[2-17] There are many different types of boating. Each of these types attracts different people, with different mindsets, different objectives, ambitions, with different boating conditions, in different extremes of water temperature, weather, etc….

[18] Why is there no perfect PFD? …because "perfect" changes with each set of conditions. To be perfect a PFD must always protect the airway, always be ready to function flawlessly, and always be on the user when needed. We make PFDs as wearable as the performance requirements will allow. With the best of intentions our regulations and standards have emphasized effectiveness and reliability to the extreme. All components and designs must go through tremendous testing and review to ensure a near fail-safe level of compliance.

[20-27] Let's look briefly at some of the performance characteristics tested by Underwriters Laboratories to evaluate effectiveness and reliability. These include buoyancy, buoyancy distribution, turning, freeboard, face plane angle, body torso angle, tensile strength, and a host of others. Note that performance requirements for inflatables are significantly higher than for inherently buoyant devices approved for the same applications. We could make inflatable devices cheaper with pool toy technology and materials, but without the reliability necessary for a life saving product. Our philosophy has been to "do no harm." We do not want the public to switch to inflatables unless we are confident that inflatables will perform when needed. High standards give us that confidence.

[28] There have been tremendous innovations in the PFD industry. PFD manufacturers throughout North America, Europe, and Asia have responded very well to consumer needs, by constantly updating the design, fit, comfort, and performance characteristics of the product. There are about 800 USCG approvals that define literally thousands of approved models, styles, sizes, and shapes to fit a multitude of intended uses. Ninety-five UL listed component suppliers are constantly innovating better flotation foams, fabrics, and hardware.

[29] Each innovation represents a major financial and time commitment for product development, UL testing, and USCG approval. Unlike many other consumer

products, manufacturers cannot market new or improved products without first subjecting them to a thorough investigation by Underwriters Laboratories to ensure that they are in compliance with the latest standards. UL is the only PFD laboratory authorized by USCG for compliance testing. Depending on project complexity, an investigation can take several months to complete and cost in excess of $20,000.00 for a single inflatable PFD model, for example. This is just the PFD manufacturer's project not counting the individual components used that likewise must pass their own UL testing requirements. Testing is rigorous and, at times, subjective, since variations in each group of human test subjects can alter the outcome of the investigation. There is no rebate if the project fails. Even approved designs continue to be monitored by UL's Follow-up Service inspections billed to the manufacturer.

[30-32] In spite of tremendous up-front approval costs and continuing follow-up inspection expense, PFDMA members provide the American consumer with a vast array of U.S. Coast Guard approved choices, most for less than the cost of a shirt or tie. We constantly strive for an even higher level of safety, comfort, and selection to meet ever-changing consumer demands.

Here are a few examples of the advances in PFD technology:

- [34] Insulation to keep you warm and protect from cold shock and hypothermia… better materials and designs for vests, coats, and suits for cold water
- [35] Mesh or open designs to keep you cool
- [36 + live PFD fashion show] Neat graphics and styling to keep you really "cool"
- Broad range of sizes to accommodate the demographic shift to larger Americans
- Softer and more durable flotation foams
- Body hugging neoprene and stretch fabrics
- Special designs for women and children
- Improved in-water performance, ride-up suppression
- Adjustable shoulder straps
- Quick, positive closures not prone to inadvertent release
- Improved ergonomics, easy to reach adjustments, easy to operate
- Enhanced freedom of movement for swimming, hunting, and fishing…wide open and large armholes for easy rowing, paddling, and casting
- Short, long, and in-between torso designs for different body types and activities
- Pullover designs – side zip designs
- Increased Type V categories for many specialized, restricted use applications
- [37] Tow belt attachments, safety harnesses, tether straps, grab straps
- Location aids - Personal Locator Beacons (PLB), Lights, Retro-reflective materials, whistles
- [38] Inflatables, hybrid inflatables, and user assisted inflatables for superior performance in a compact package.
- Cylinder readiness indicators for inflatable lifejackets

That's a lot of innovation….. and the inflatable era has just begun, representing only 2% of the total production.

The innovation never stops…..

[39-62] The inflatable deserves further discussion to reveal some of its complexities.

[63] It's enough to confuse even the experts. Yet each device is equipped with a label, PFD Pamphlet, and other supporting literature to define the product for the user. Efforts are always underway to better serve this purpose.

[64] PFDMA promotes boating safety through continuing research and development. We also partner with other organizations (such as National Safe Boating Council and National State Boating Law Administrators). We work with the UL Standards Technical Panel and the International Standards Organization to develop better standards. We conduct PFD University training classes, and distribute various safety messages at both the national and local level such as Facts About Life Jackets, etc. We also provide a vital link between retailers and boating safety organizations.

[65] We have come a long way in providing the optimum wearability possible, consistent with the required performance. Yet, many rational, thoughtful boaters still refuse to wear our products. The potential result of mandatory wear legislation is complex. Emotions run deep on both sides of this divisive issue.

Supporting mandatory wear legislation could be viewed by some as a self-serving attempt for manufacturers to sell more PFDs. In defense of PFD manufacturers, the law already requires purchase and availability of PFDs. We just want people to use our products! PFDMA members 100% support education as a means to achieve this objective.

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