



US Army Natick Soldier Research, Development & Engineering Center
The Science Behind the Warfighter: Yesterday, Today and Tomorrow



Eyewear Fog Tester

***David Ziegler, Christopher Drew,
Harold Moody, Michelle Markey***

US Army Natick Soldier RD&E Center,
Natick, Massachusetts

508-233-6484

david.p.ziegler@us.army.mil



Problem



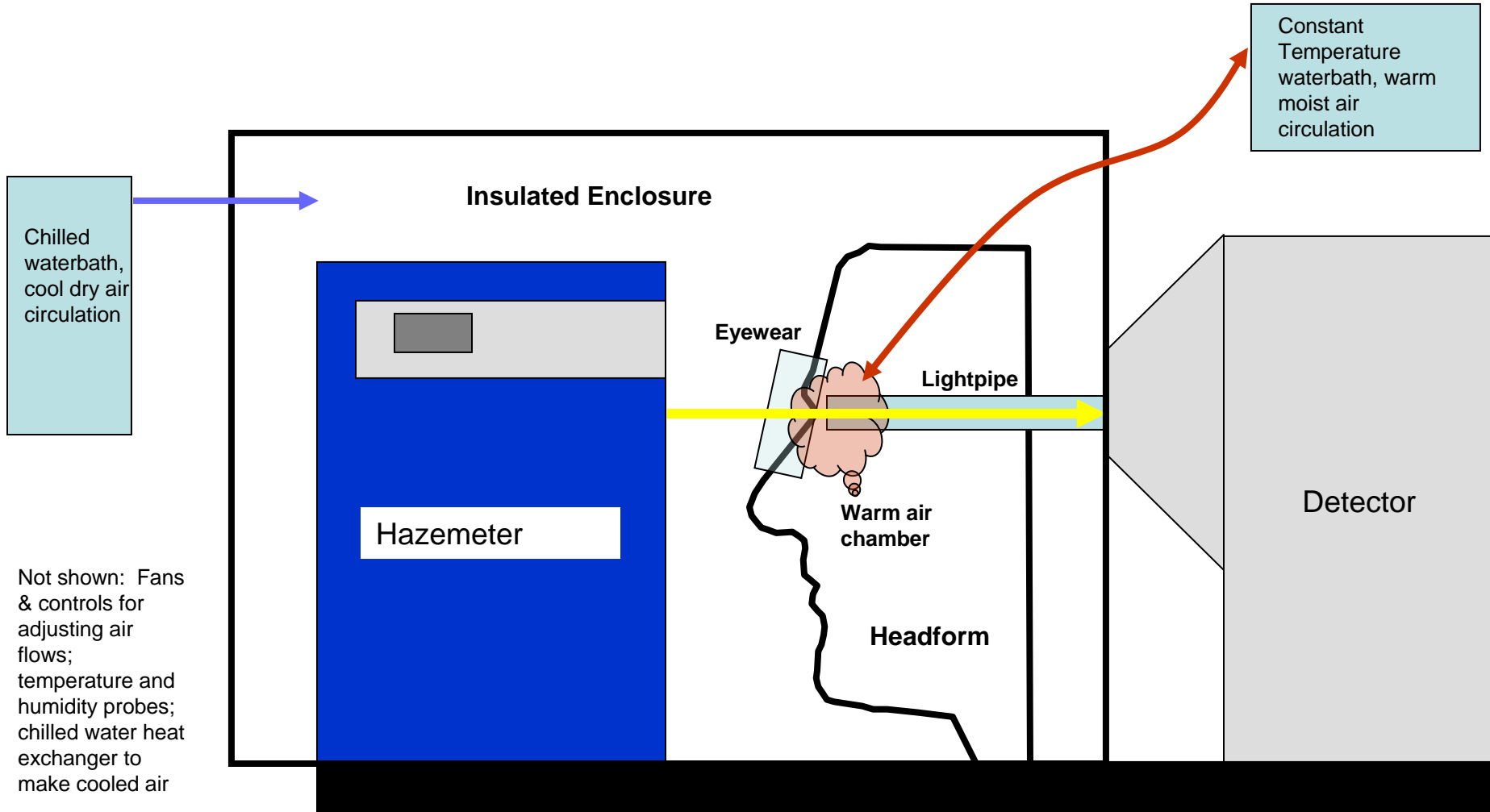
- Protective eyewear needs to be worn to prevent eye injuries, reduce solar glare, etc.
- Under heavy exertion, as well as sudden environmental changes, condensation (fogging) can form inside protective eyewear, obscuring the Warfighters vision
- There is currently no widely-established test method for quantitative assessment of antifogging.
 - ASTM F-659-06 Annex A1: scope limited to ski goggles
 - EN 168: partially covers topic
- While anti-fog solutions are available, the lack of a standardized test for the Army means approved eyewear items can vary in their anti-fogging effectiveness
- Empirical measurements of delta haze can be used to determine effectiveness of various anti-fog coatings under condensation-inducing conditions and improve the safety of the Warfighter

UNCLASSIFIED





Eyewear Fog Tester Design



UNCLASSIFIED





Schedule



April 2008: Initial design finalized and acquiring components

May-June: Assemble components into working prototype machine

July-August: Begin reproducibility study (test to test) with selected eyewear provided by PM-SSV. Prepare paperwork for CRADA's with eyewear manufacturers for industry evaluation. Start process to establish MIL-STD and ASTM standard submission

September-November: Begin industry evaluation of Fog Tester with eyewear manufacturers (provide machine for 2 to 4 weeks) to provide feedback on Fog Tester ease-of-use, like's and dislike's, and improvements

November-December: Modify Fog Tester and test methods as recommended and submit for MIL-STD and ASTM standard

Schedule in months after receipt of funding												
	Feb.		July			Sept.			Jan. 09			
Month/Day:	1					6						12
Design and build machine												
On-site reproducibility study												
Industry machine evaluation												
Prepare and modify documentation and equipment												
Establish MIL-STD and ASTM methods												

UNCLASSIFIED

