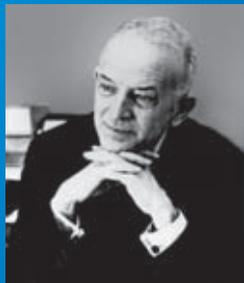


## ***A Brief History:***

### **The Doriot Climatic Chambers**

are named for BG George F. Doriot, who during World War II worked with a staff in the Quartermaster Corps to develop clothing and equipment for the individual soldier, test those items under severe climatic conditions and quickly field the improved items. He determined that an "Institute of Man" was needed to test soldiers and their equipment at environmental extremes. The Doriot Climatic Chambers building was built between 1953 and 1954. A two-year renovation was completed in 1996 so that vital research may continue into the next century.



## ***Points of Contact:***

For more information about the Doriot Climatic Chambers, please call us:

COMM: (508) 233-5294

COMM: (508) 233-5295

or

COMM: (508) 233-4246

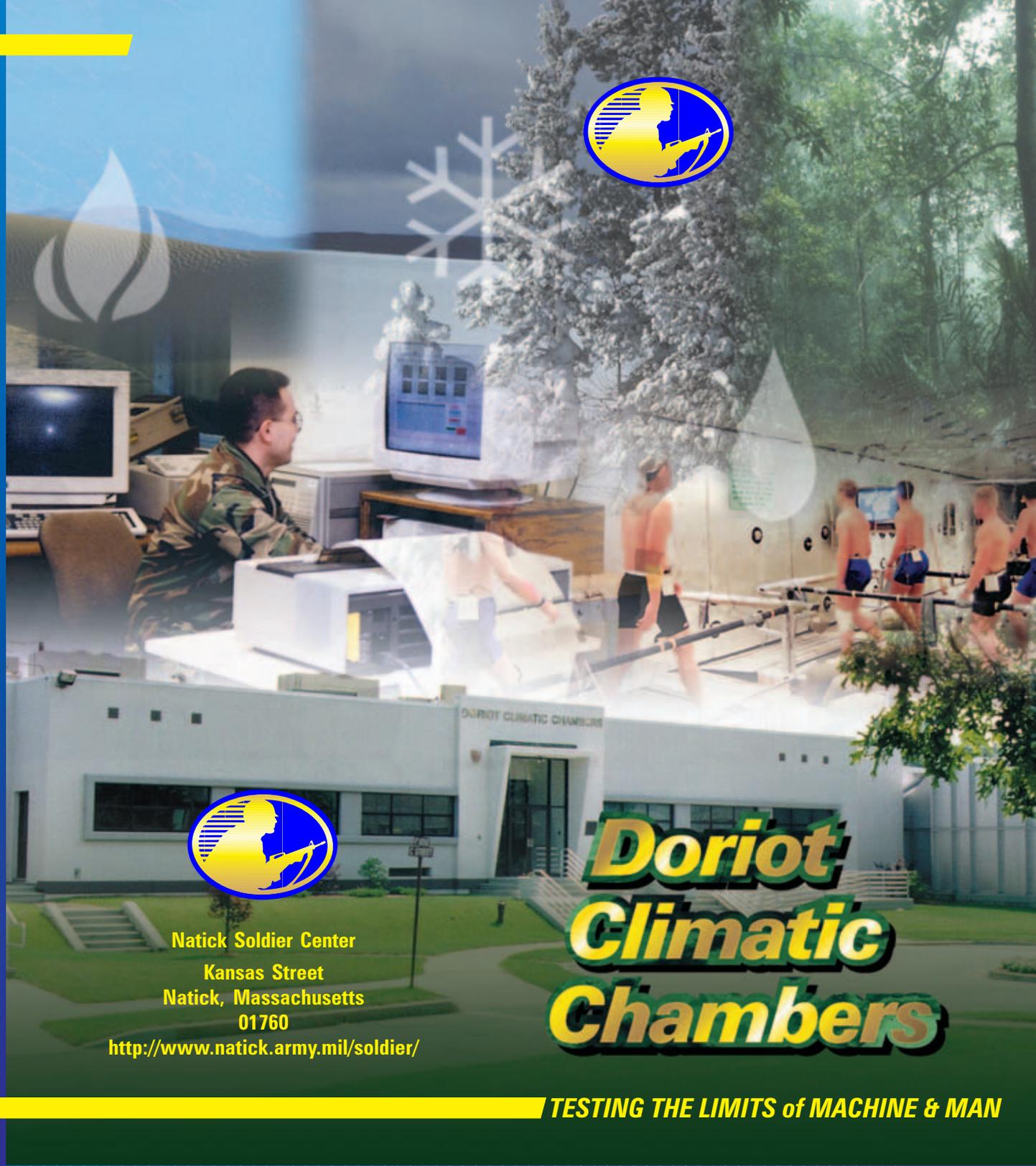
or fax us: (508) 233-5898

or visit our page on the NSC website:

<http://doriot.natick.army.mil>

or

<http://www.natick.army.mil/soldier/facilities/modsim/index.htm>



Natick Soldier Center  
Kansas Street  
Natick, Massachusetts  
01760

<http://www.natick.army.mil/soldier/>

# ***Doriot Climatic Chambers***

**TESTING THE LIMITS of MACHINE & MAN**

The Doriot Climatic Chambers, a facility unique to Natick Soldier Center, performs many different types of evaluations and tests. These include:

**Human Research Testing:** A dedicated group of soldier volunteers provide critical guidance to field commanders operating in the Persian Gulf, Somalia, Bosnia or anywhere in the world.

**Physiological Testing:** measuring human adaptation to heat and cold;

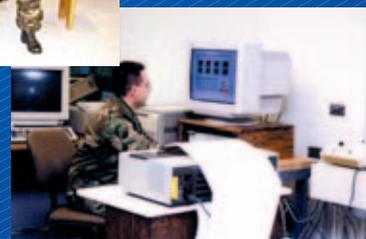
**Protective Clothing Testing:** for determination of how well new clothing items keep humans warm in cold or cool in heat, and the heat-transfer properties of clothing;

**Physical Performance Testing:** walking/running on treadmills in environmental extremes. The Chambers have two five-person treadmills in each wind tunnel, which go up to 15 mph and up to a 12% grade to simulate a variety of work rates.

**Nutrition:** in-house kitchen can be used to prepare meals for soldiers testing in chambers, to test the effects of nutrition on physical performance.

**Equipment Testing:** The large size of the Chamber's wind tunnels make them ideal to test large pieces of equipment. Items can be brought into the testing area through the loading dock at the front of each tunnel. The doors are 8 feet high by 10 feet long (2.4m x 3m). Tents, heaters, parachutes, airbeams, medical devices and windmills have all been tested in the wind tunnels. Smaller items of equipment can be tested in the arctic or tropic conditioning rooms.

The Chambers also contain a dormitory facility for sleep-over studies, and dressing rooms with shower and laundering facilities.



## Technical Capabilities:

- **Tropic Wind Tunnel:**
  - 18° to 74° C (0° to 165° F)
  - 10-90% relative humidity
  - rain up to 4 inches/hour
  - wind up to 40 mph
  - solar capability
- **Arctic Wind Tunnel:**
  - 57° to 49° C (-70° to 120° F)
  - 10-90% relative humidity
  - rain up to 4 inches/hour
  - wind up to 40 mph
  - solar capability
- **Dimensions of Wind Tunnels:**
  - 18x4.5x3 meters (60x10x15 feet)
- **Dimensions at Back of Each Tunnel:**
  - 9x5.5x3 meters (30x18x14 feet)
- **Other Capabilities:**
  - 2 five-person treadmills in each wind tunnel, capable of up to 15 mph and up to a 12% grade
- **Tropic Conditioning Room:**
  - 4° to 65° C (40° to 150° F)
  - 10-90% relative humidity above 40° F
- **Arctic Conditioning Room:**
  - 45° to 21° C (-50° to 70° F)
- **Dimensions of Conditioning Rooms:**
  - 7.6x4.5x3 meters (25x15x10 feet)
- **Data acquisition systems available to monitor test parameters**
- **Customized plotting, graphing and print outs**
- **Constant control of temperature with wind and relative humidity to ± 1° Fahrenheit**