

Hot Summer Days and Models

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HOT SUMMER DAYS AND MODELS

A combination that can have dangerous results

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Summer has been here for some time now and it might be a good time to remind modelers of the health effects that high temperatures, high UV concentrations, age, and body mass have when combined at the flying field, or even in the shop if you do not have the advantage of an air conditioned shop.

Heat can be deadly to the relatively sensitive human heat control system, which needs to maintain core body temperature within a range of 97.7 –F to 101.3 – F. If your body senses an abnormally high body temperature it sends a series of cautionary signals even as it reduces the bodies abilities and performance. Your body uses a number of factors to decide how to compensate for overheating. These factors include ambient temperature, exposure to sunlight, your fitness level, the degree of exertion, dehydration, poor circulation, medications, obesity, and even alcohol usage.

The two means with which the body uses to relieve over 85 percent of excess heat load is by radiation cooling and evaporation. The efficiency of these methods varies and it is imperative that you know your personal overheat symptoms. Your body will move warm blood from outward from the bodies core via your cardiovascular and circulatory system to be radiated into the atmosphere. Evaporation of sweat is the other major heat reduction method available to your body. Sweating can account for as much as 26% of total body heat loss.

One significant heat problem is named the *no sweat condition* when you do light to moderate activity in temperatures between 70 F and 75 F in a 50% relative humidity. Under these conditions you can be subject to losing water rapidly, even though you are not perspiring. High relative humidity added to high temperatures can create a very real chance of overheating or heat stroke in a very short time.

Relative humidity is the percentage of moisture in the air at the ambient temperature compared to the maximum amount of moisture that could be held in the air at that temperature. The actual maximum amount of moisture in the air will vary with the temperature, with lower air temperatures able to hold less moisture vapor than higher temperatures. Weather reporters often talk about a “heat index” which combines the relative humidity with the actual air temperature to give an effective heat measure.

Overheating symptoms start with thirst (although very young or older people may get dehydrated without experiencing thirst), tiredness, grogginess, and visual disturbances. Overheating can cause muscle cramps. **Heat exhaustion** and **heat stroke** are the most serious forms of overheating. The symptoms can be gradual and often overlap. When heat illness does occur, immediate action must be taken to reduce the heat stress and re-hydrate the victim until medical help is available.

Heat exhaustion is marked by a weak, rapid pulse, low blood pressure in the upright position, headache, dizziness, and possible vomiting. For heat exhaustion the person needs to be moved to a cooler environment and given cool fluids.

Heat Stroke is the most serious and complex form of heat stress illness. *It is a true medical emergency and requires immediate medical attention!* Body temperature can rise to 106 F. or more, in fifteen minutes. This can result in permanent disability, unconsciousness, or death if treatment is not begun swiftly.

Skin can be red, dry, and hot. Person may have headache; dizziness, nausea; and confusion. Move the person to a cooler environment, apply cold compress', even up to immersing the person in icy water.

When dealing with high heat environments you have to recognize when you are at risk. Wear a good sun screen, wear light and loose fitting clothing that helps circulate air around your body. Wear a large brimmed hat.

Stay hydrated and drink plenty of liquid before you get thirsty. Sports drinks may not be much help because they are designed for athletes in heavy activity. In Iraq soldiers may drink more than a gallon of water a day.

Staying comfortable and safe will help you enjoy your hobby so much more.