External Factors Weather: Ice

A hand-formed snowball with a diameter of about 10 cm can be enough to cause extensive damages in smaller engines.



Illustration 5.1.4-6: This diagram shows a 2500 kW helicopter engine (from Ill. 5.1.4-5) after a heavy ice strike. All the rotor blades are mostly destroyed. The sudden relaxation of the combustion chamber blew the fragments forward and most of them lay in the engine inlet.

Similar damage was reproduced in a test by throwing a handmade snowball with about 10 cm diameter into the running engine.

The relatively filigreed structure of the compressor blading, the front section of which is made of titanium alloy, makes it even more vulnerable to this type of damage. Less damage would be likely occur in a radial compressor due to its more robust blading.