



Mobile Ventilation Unit Test Report

Date: May 14th, 1996

Place: Habsburgtunnel N3, Effingen-Birrfeld, Switzerland

Length of the tunnel: 1.550 m, approx. 1 mile

Entrance size: 56.435 square meter

Weather: Partly clouded, temperature 20° Celsius
wind from south-west.
Nature airflow inside the tube from south to north

Special Problem: Inside the tunnel the alley warp interconnecting both tubes wasn't to be sealed off.

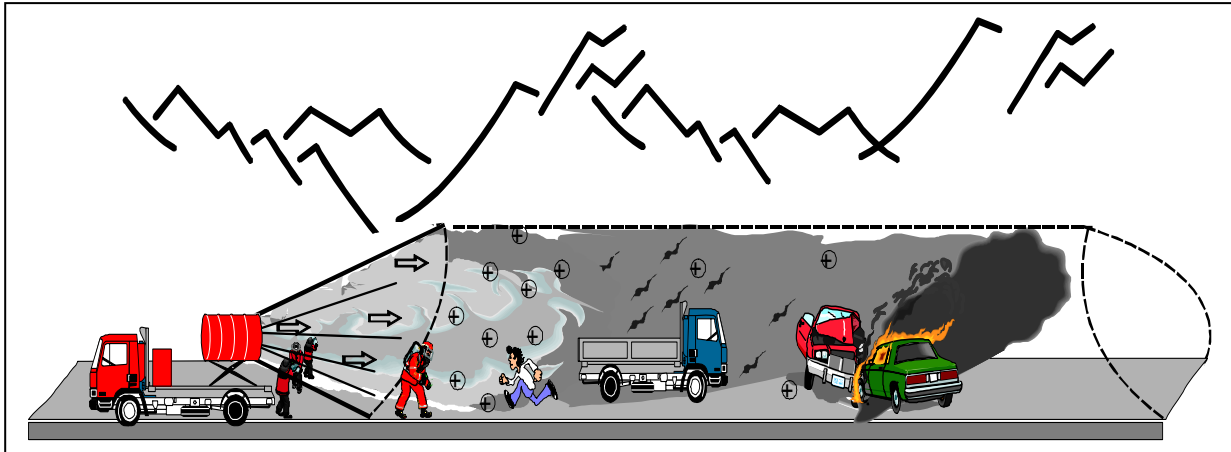
Test No. 1: Placement of the 48" size MVU on the north entrance.
Sealing the entrance with the cone of air.
After 6 minutes there was an airflow of 2,1 m/s (7 feet per sec.) continuously inside the tube. The elevation from south to north are 40 m.

Test No. 2: Placement of the 48"-MVU on the south portal for an airmovement in opposite direction.
After 6 minutes there was an airflow of 2,3 m/sec. /7,6 feet per sec.) continuously.

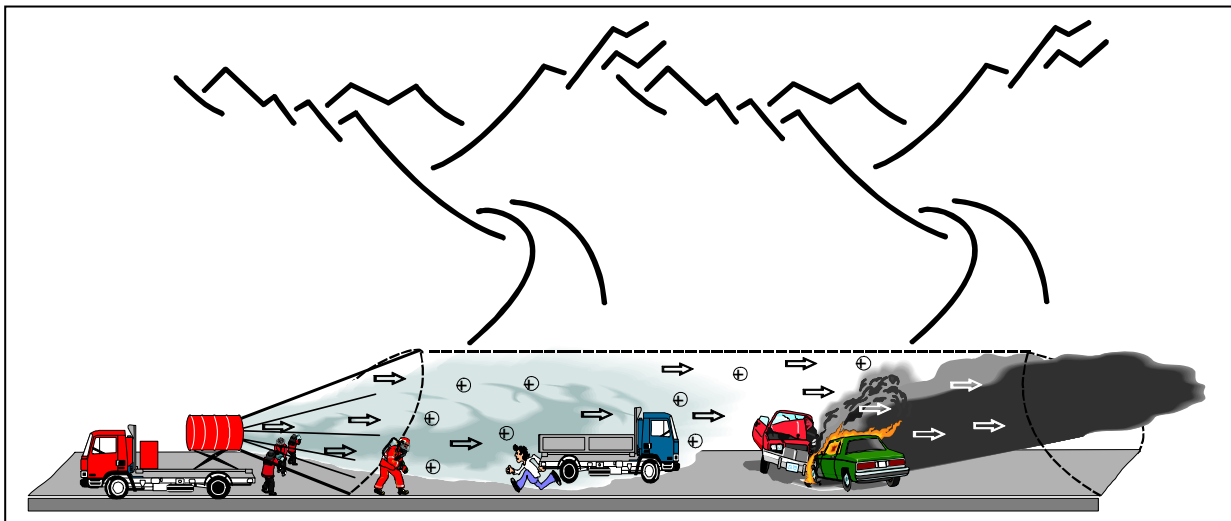
Total airflow: Test 1: 406.332 m³/h (239.018 cfm)
Test 2: 467.282 m³/h /274.870 cfm)

Positive Pressure Ventilation of Tunnels

Full coverage of the tunnel entry by the cone of air produced by the MVU is the primary condition for generating positive pressure inside the tunnel volume.



The cone of air covers entry opening – positive pressure (\oplus) is created and evenly expands inside the enclosed tunnel volume.



The atmosphere inside the tunnel is only forced to escape through vents and/or the exit at the opposite end as long as the ventilator operates and the cone of the air covers the entry opening.