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25 years after the wildfire disaster in Niedersachsen Modifications of fire protection technique

Nearly 25 years ago, probably the largest forest and wildfire in the history of fire protection in Germany befell the Federal state Niedersachsen. A historical look at that fire shows improvements in the firefighting systems in Northern Germany.

Extent of damage

In August 1975, the "Lueneburger Heide" (heath) in Celle County, northern Germany, burned. Some 6,000 hectares (nearly 15,000 acres) of forest, moor and heath land were lost to flames. At the same time, in neighboring Luechow-Dannenberg County, about 2,000 hectares (5,000 acres) and in Gifhorn County, 650 hectares (1,600 acres) of forest and heath lands were destroyed by fires. Altogether in these regions, 160 fires were counted with 15 structures damaged. Total damage was estimated in those days as 50-55 million German marks (US-\$ 80-88 million). Another 70 million German marks (US-\$ 112 million) was spent for the reforestation of the concerned forest areas. Nearly 32,600 people worked in fire brigades as well as in units of the Technisches Hilfswerk/THW (State Technical Rescue Unit), Emergency Services (Red Cross/DRK, Johanniter-Unfall-Hilfe/JUH, Malteser Hilfsdienst/MHD, Arbeiter Samariter Bund/ASB), the police, the Bundeswehr (German Armed Forces), the Bundesgrenzschutz (German Border Control), the Zoll (German Customs Duty) and the forest service (Forstbehoerde). They were recruited together with more than 4,000 fire and emergency vehicles from all over Germany.

Landscape and climactic conditions

More than 30 percent of the total area of the district Lueneburg, where the 1975 wildfire disaster occurred, is wooded. About 80 percent of the forest is pines growing on usually dry sandy ground. Large sections of the region consist of heath and moorland, thinly settled, and only unpaved forest and heath land trails are available for access.

The summer of 1975 was extremely hot in Northern Germany, with little rain since

May. Daytime temperatures were nearly 35 degrees Celsius (95 degrees Fahrenheit). While relative air humidity in the heath lands usually amounts up to 80 percent, at the time of the fire's outbreak it was only about 20 percent. Also, the nights did not supply protecting and cooling-down humidity, as temperatures stayed at 20 C (68 F). Constant, and partially gusty winds intensified the fire danger situation. On August 8, 1975, the largest German forest fire disaster began at 01.25 p.m. with a wildfire in Gifhorn County. Within just a few days, further large forest and wildfires were announced in the areas of Leiferde/Meinersen, Unterluess/Scharmbeck, in the area of Eschede/Oldendorf and Gorleben/Trebel.

Problematic firefighting operations

The largest problem for the fire brigades assigned to the fires - besides the temperature, the geography and winds - was the acute lack of firefighting water. Natural places to take water from, such as ponds, gravel pits or rivers, were situated far away from the scene of fires. Fire engines had to drive long distances in order to be able to fill up their water tanks. Because individual parts of the fires were inaccessible with fire engines, long hose lines - often more than several kilometers away - had to be laid out in order to bring even a little water directly to a fire. These hoses were not effective destroying the fire, or they had to be moved for tactical reasons. Individual fire crews and fire engines, along with complete units with their trucks, were threatened directly by the fire whipped up by the gusty winds. Five firefighters died near Meinersen Community on August 10, when a wall of fire rolled them and their engine onto a fire line.

More background

In Germany, special organizations for forest or wildland firefighting on the state or national level (like the CDF, USFS or BLM in the USA) are unknown. Likewise, special units like hotshots and smokejumpers are not organized. Forest and wildfires are attacked by regular local community fire services, mostly volunteer fire brigades. Also, special wildland fire apparatus (like brush trucks and wildland fire engines in the U.S.) and special firefighting machinery are rare in Germany. In 1975, there were some few vehicle types (for example, the tanker-pumper type TLF-W) in Niedersachsen; otherwise, regular tanker pumpers (Tankloeschfahrzeuge/TLF), disaster control vehicles (Loeschfahrzeuge/LF) as well as water canons from the police and the German Armed Forces (airbase crash trucks) were used.

For firefighting from the air, only some few helicopters of the German Armed Forces (Bell UH 1D, CA 53) could be used.

To set fire lines, there were no pieces of special heavy equipment within the fire service. Bulldozers and graders had to be recruited from private business firms (perhaps road construction devices), and the German Armed Forces (Bundeswehr) put recovery tanks (Bergepanzer) into action.

This general situation has changed little, although the number and efficiency of

special wildland fire vehicles in the endangered states Niedersachsen and Brandenburg clearly increased.

And today?

So to today's technical equipment of the forest and wildland firefighting in the former disaster area! How did fire protection develop within the last 25 years regarding the still-extreme forest fire danger in spring and summer months? Which new techniques do we find today at the responsible fire brigades? Some of the modifications will be described without laying the claim on completeness.

The number of the special tanker pumpers (TLF-W) for forest and wildland firefighting has clearly increased. Thus Celle County procured Mercedes-Benz Unimog 1300L (on a Schlingmann body) for volunteer fire brigades. The vehicles are equipped with rearside quickattack equipment and an 1,800-litres watertank (nearly 500 gallons) with a jet pipe on the roof over the roof hatch that can be used while driving. The TLF-W replaces the old Unimog trucks used by the German "Disaster Control Units" (Katastrophenschutz).

In Niedersachsen, "Aussenlastbehälter" (external load containers like heli-buckets) were procured for helicopter firefighting. The containers, transported on trailers, can be filled in open waters with 5,000 litres (1,320 gallons) or 900 litres (about 240 gallons) water. They can be emptied from the helicopter by air pressure and soil valve over the fire. Therefore, only helicopters of the German Armed Forces (Bundeswehr) can be used (type CA 53 for the 5,000-litres containers, type Bell UH 1D for the 900-litres container.)

In the inaccessible forest and heath areas, faster approach roads were built exclusively for heavy fire trucks. These roads are closed to private vehicle traffic with a barrier. The roads are to protect the unhindered operations of fire trucks in and from other parts of the forest, moorlands and heath lands.

On waters situated in forest and heath areas (lakes, fish ponds, gravel pits) places to take out water were built. Fixed areas help ensure safe operating with pumps, hoses and vehicles, with roundabouts for fire trucks.

Where open waters are missing, storage places for retired fuel oil tanks were converted to hold supplies of water in tanks in the ground. Together with special deep-grounded water wells and with taking-out water equipment, between 20,000 and 100,000 litres of water (5,000 to 25,000 gallons) is now available for firefighters. And the number of these low-priced tanks is constantly being extended.

The old wooden fire-watching towers (lookouts) in the Lueneburger Heide will soon belong to the past. A "Feuerwehr-Flugdienst" (Fire Air Service) watches the extensive forest and heath areas during the summer months from the air. For that job, small one- or twin-engine airplanes are used, with a pilot, copilot and a special trained flight observer from the local fire services. Forest and wildfires will be located from the air and announced to several county fire dispatch centers. Then earthbound fire engines can be directed to the fire areas. The large endangered areas of Germany,

Niedersachsen, Brandenburg and Bayern (Bavaria) are likely to give problems with forest and wildfires in the future. Lessons learned in the 1975 forest fire disaster as well as new firefighting tactics and equipment will help to reduce the extent of these problems.

Even if forest fires and wildfires in Germany do not affect the number of acres as in the United States, it is nevertheless necessary to give proper attention to fire protection and firefighting.

The Author

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