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### The Linköping City Library Fire

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Linköping Library Fire

The Linköping City Library Fire

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Author Note:

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taught by Professor Emily Holmes for the Fall 2020 semester.

On Friday, September 20<sup>th</sup>, 1996 the two-story Linköping City Library in Sweden was destroyed by arson. In the month's prior, several threats had been made to the immigration information office housed within the library on the second floor. Earlier that month, a decision to change locks and install security cameras had been made but unfortunately had not yet been implemented and the arsonist was never caught.

That evening at 11:06 pm, the culprit lit a fire using rolled paper and possibly an accelerant on a leather chair in a room on the second floor (Cullhed, 2003). Just down the hall in the lecture room, around 400 people were attending a bi-annual cultural event on humanistic thought (Aronsson, 1996). They were alerted to the fire by the heat-sensitive alarm, there were no sprinklers in the building. The crowd of people were ushered out by library staff after an unsuccessful attempt at extinguishing the fire was made. The flames quickly moved from the leather chair to a decorative wooden lattice on the wall, and then to acoustic fiber-boards on the ceiling. As the fiber-board burnt, they fell from the ceiling causing the fire to spread quickly around the room. By 11:11 pm, the Linköping fire brigade had arrived to the 2<sup>nd</sup> floor room engulfed in flames. After attempting to extinguish the growing fire, the firemen were called out of the building for risk of an explosion. Ten minutes later, a smoke-gas explosion ignited the entire library (Cullhead, 2003). Seeing the fire's potential to spread to the surrounding houses and retirement center, the firemen decided to stop their extinguishing efforts and focus on preventing it from growing. The decision to limit the amount of water used on the fire at this point may have not only saved lives and the surrounding houses, but the remaining books that were still in the basement of the burning library.

Around 150,000 monographs were destroyed along with periodicals, audio-visual materials, and the card catalog describing the 300,000 – 400,000 remaining books. Many other materials were badly damaged by soot, the change in temperature and humidity, and some water damage. The basement was opened about 40 hours after the fire started but the ceiling was unstable and needed to be reinforced to prevent it from collapsing. While waiting for the ceiling to be reinforced, it became clear that water damage to the collections was minimal but heat was radiating from the remains of the fire above, causing the temperature in the room to increase and the relative humidity to drop. Six hours after the basement was opened, the temperature had reached almost 185 degrees Fahrenheit and the relative humidity was only 10%. To help alleviate these problems before they could evacuate materials, a hole was opened up in one of the walls and fresh air was blown in. When they were given the green light to go in, a local salvage company along with conservators from Uppsala University Library went in to retrieve the 250,000 books, archival documents, and other materials that had been housed in the basement.

The books and manuscripts were stored in cardboard boxes and palletized; the pallets were then covered in plastic sheeting to prevent sudden changes in moisture. The plan was to remove the plastic after a few days, but because the evacuation lasted longer than anticipated, the plastic was left on for several weeks. This could have led to mold growth on the materials, but because of the extreme dryness, it was unable to grow. There were a few materials that had water damage, mostly from broken pipes that had burst in the fire. These items were sent to a local ice-cream company to be treated in their freeze-dryer. This allowed the books to be dried through sublimation where the ice turns to vapor without melting in the process (Cullhead, 2003). The rest of the materials had soot damage, but were otherwise fine. The salvage company decided not to clean the materials with ozone to prevent further oxidizing the older books whose backs

contained animal glue. Instead, cleaners used soot-sponges to wipe off the soot. This tedious process took a year to complete (Cullhead, 2003). There were two older collections that were saved from the main building. These books had been displayed in book cabinets behind glass, saving them from being completely destroyed by the fire. Most of the damage to these 1000 plus leather bound books occurred in the spines. Conservators lifted the extremely fragile spines and re-backed the books with new leather. They then mounted the old spines onto the new ones to keep them as usable books and to preserve what was left of their original bindings (Cullhead, 2003).

The library was insured, but the card catalog had been destroyed and a copy had never been made. It took years for the library to re-catalogue the several hundred thousand books that had been in the destroyed library and it took over three-million euros to create a new online catalogue. Linköping librarians started another project to slowly build back their reference collection of books with items on local history, similar to what was destroyed in the fire. They had a list of 13,600 books they were looking for in the antiquarian book market as well as other libraries and archives (Cullhead, 2003).

Looking back at the quick spread of the fire and the damaged materials, there are several things we can identify that could have been done differently. The interior decorations and the acoustic materials should have been tested in their suitability in the case of a fire. The wooden lattice and the acoustic fiber-boards on the ceiling proved to be very flammable and helped the fire spread quickly around the room. There was no automatic sprinkler system in the library, which would very likely have extinguished the fire when it was still small in the second floor room. The fire detectors were heat sensitive and went off two minutes after the fire had been started. A smoke-sensitive detection system along with the automatic sprinklers would have been

a better choice. The library staff that had first come across the fire attempted to put it out with a fire hose from a fire-post 28 meters away. They were unable to turn the water on. They had also attempted to use a hand held fire-extinguisher to no avail (Cullhead, 2003). Proper training of library staff in how to use these tools may have prevented the fire from spreading. Lastly, the library's unique catalog should have been copied as a preventative measure in the case of a disaster. This is less of an issue in the age of computers but it is essential that the catalog is backed up on an online server (like WorldCat) or somewhere off-site in case the local server is damaged. A new library building was built in Linköping in 2000, still containing the city archives and municipal information office.

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