SAICA Paper UK: Paper fires and FPP

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BACKGROUND

SAICA Paper, Partington (PM11), experienced two significant fires on our Paper for Recycling Yard in April and May 2019.

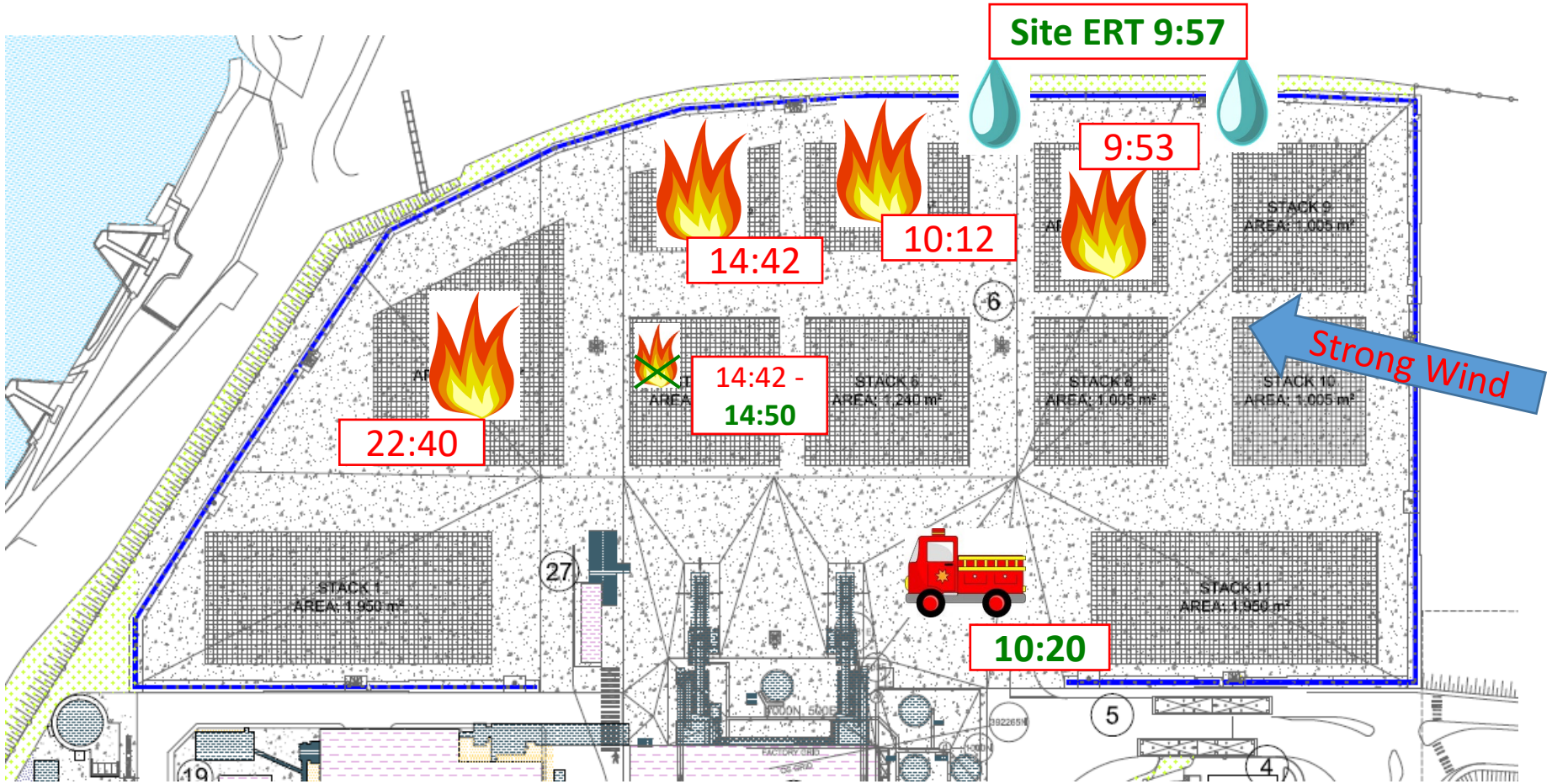
This presentation outlines:
- our experience in dealing with these fires
- our experience in generating a fire prevention plan

At PM11, we process baled paper and card, this being the primary raw material for the production of containerboard, which is typically converted into corrugated cardboard boxes.

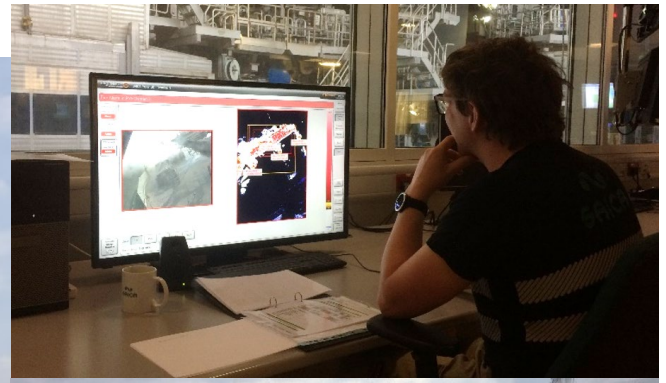
We store these bales in open stacks, located outdoors, to a specific stack heights and footprints, as agreed with Greater Manchester Fire Brigade prior to our mill startup in 2012.

Our paper stacks are many times larger than the maximum size quoted in FPP guidance.

A bit about fires onsite:



PM11 Fires: April 2019



PM11 Fires: May 2019

Fire infrastructure

Onsite firewater supplies
Oscillating fire cannons
Fire hydrants, with hoses and fittings
Pyrosmart fire detection cameras
Trained emergency response team

APRIL FIRE

- One medical treatment case due to eye injury
- 3 reports of smoke/ dust received by EA
- Source Stack consisted of 2/3 of OCC and 1/3 of mixed paper; stack age 1.5 months
- The fire started ~ 5 rows in and between the OCC and mixed area
- Cause of the fire: inconclusive but probably due to contamination in the waste.
- Fire duration – 2 weeks, flames active for 30 hours

MAY FIRE

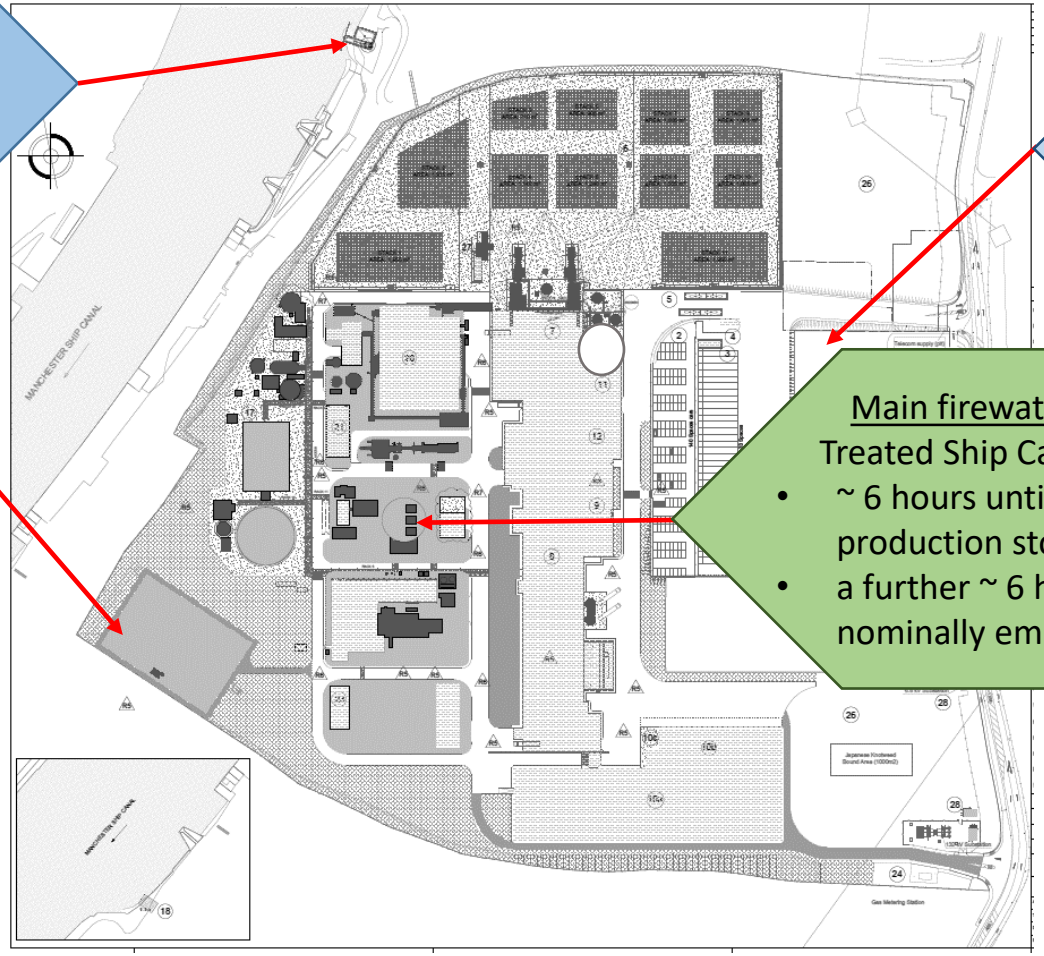
- One medical treatment case due to smoke inhalation
- Stack consisted of clippings and mixed paper, less than 8 days old
- Cause of the fire is AA battery in a toy
- Fire duration – 40 hours, flames active for 2 hours.

Firewater infrastructure

Secondary supply:
Canal Water

Added: Cleaning Regime and Vortex Inhibitor to remove stones

Added:
Link to mains-fed firewater tank used by adjacent SAICA Natur waste site.



Added: High volume pump for re-using collected firewater.

Main firewater supply:
Treated Ship Canal Water:-

- ~ 6 hours until paper production stops
- a further ~ 6 hours until nominally empty

Additional equipment purchased since fires

Portable Ground Monitors x 8

Site ERT Trained to use

Reduces time spent by firefighters at fire.

Hydroshields

Used to create a water barrier between stacks.

~12m radius

Headline learnings:

FIRE PREVENTION

Contamination in paper bales is an issue.

- We have held a fire seminar with our suppliers, outlining issues that contamination can cause.
- We have also introduced a more rigorous bale inspection regime, fully breaking open a sample of bales from suppliers of concern.

FIREFIGHTING

Our onsite Emergency Response Team (ERT) can successfully respond to a fire event and support the Emergency Services over an extended period.

- Our ERT chain of command, led by the Shift Manager, worked well
- Good use of firewater from the firewater retention pond, ensuring recirculation back onto the fire, and preventing contaminated firewater escaping site.
- Continue to make paper during the fire situation, consuming both burnt and good paper from yard – this minimises risk of fire spread (fuel removal) and ensures business continuity
- Current paper stack size and layout has been reviewed with EA and GM Fire during debrief and no changes needed
- Engineered solution for removing stones from canal water, with water intake inspection and cleaning regime.
- Yard and drains segregation practices using bales (good pedestrian-vehicle segregation, and keeps drains clear)

Fire Prevention Plan

Live document based on our existing Emergency Response Manual and supporting risk assessments.

The PM11 document was generated prior to the launch of the specific CPI Guidance on FPPs, but general guidance was available from the Environment Agency

We used a consultant to assist us in the writing of our FPP:-

- the consultant had previous, successful experience writing FPPs for the wood industry
- we knew that we did not meet the requirements specified by FPP guidance, in that our paper stacks were significantly larger than those specified in the guidance.
- there was a need to identify suitable additional measures to justify stack size
- had our stacks been the same size as per FPP guidance, we would have needed 52 separate stacks and a footprint twice the size of our existing yard. We do not have room to expand to such an extent.

This was submitted to the Environment Agency in November 2019.
Our FPP is still not approved, pending a number of queries.

Personal opinion:- The guidance on the EA's website and more recently, the CPI's FPP guidance are clear and detailed enough to enable a site to write their own FPP, time permitting.

Fire Prevention Plan

The fire prevention measures in FPP guidance have been designed to meet 3 objectives:

- *minimise the likelihood of a fire happening*
- *aim for a fire to be extinguished within 4 hours*
- *minimise the spread of fire within the site and to neighbouring* sites

A sticking point between SAICA and the EA has centred around our large stack sizes and the feasibility of aiming to extinguish a stack within 4 hours.

Additional information is now in place with the EA's FPP guidance:-
You can propose:
alternative fire prevention measures – if you can demonstrate you will still meet the 3 objectives
that you do not need to extinguish a fire within 4 hours at your site, for example because it is not close to sensitive receptors – but you must still meet the 2 other fire prevention objectives

SAICA has based its firefighting plans on the basis that alternative measures will help us to meet the 3 objectives set by the guidance.

Fire Prevention Plan: Alternative Measures

•Piles are well separated from one another (6-15 meters), and all have large access areas around all sides of the stacks;
•the use of PYROsmart cameras: early fire detection system and Saica's Emergency response team means that fires are detected and responded to swiftly – note new equipment for separating stacks;
•No material is stored on site for longer than 3 months;
•There is a good stock management and rotation procedure in place,
•Having smaller piles would reduce the storage capacity of the yard affecting raw material stock availability.

Following our submission, we have been asked to demonstrate stack dismantling as part of our firefighting strategy.

•As a result, we have run a total of 5 emergency exercises in 2020, incorporating stack dismantling into our strategy, dismantling a 1500m^3 stack in between 2.5 and 4 hours.

SAICA is currently summarising these drills, and presenting them to the EA later this month.

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