

## Crane Fire on board Barge *Kokosing V*

On October 4, 2022, about 2230 local time, the spud barge *Kokosing V* was dredging the James River near Newport News, Virginia, when the dredging crane on board the barge caught fire.<sup>1</sup> The four crewmembers fought the fire unsuccessfully and abandoned the barge to the accompanying tug, *Justin*. Crews from responding fireboats extinguished the fire later that evening. There were no injuries. The barge and crane held fuel and hydraulic fluid, but no sheen was reported. Damage to the crane was estimated at \$1.4 million.

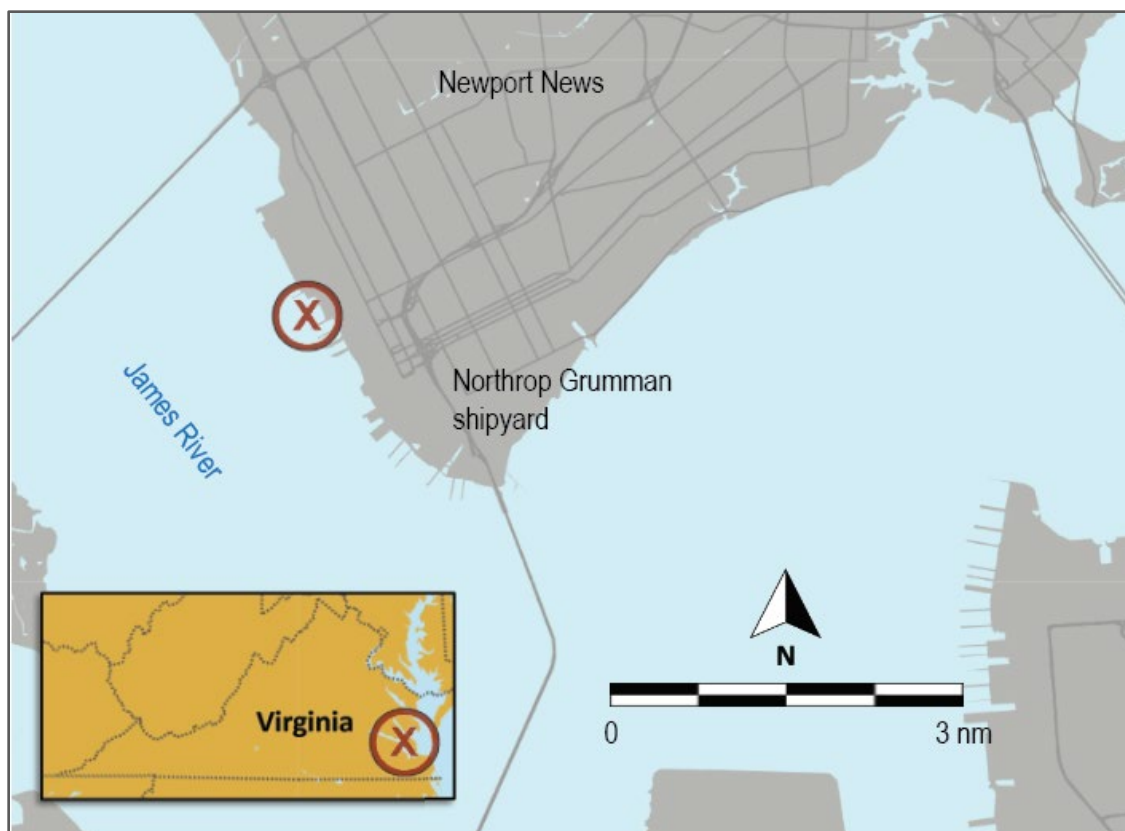


**Figure 1.** The barge *Kokosing V*, with crane. (Source: Kokosing Industrial)

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<sup>1</sup> (a) In this report, all times are eastern daylight time, and all miles are nautical miles (1.15 statute miles). (b) Visit [ntsb.gov](https://www.ntsb.gov) to find additional information in the [public docket](#) for this NTSB investigation (case no. DCA23FM001). Use the [CAROL Query](#) to search investigations.

<b>Casualty type</b>	Fire/Explosion
<b>Location</b>	James River, Newport News, Virginia 36°59.16' N, 76°26.62' W
<b>Date</b>	October 4, 2022
<b>Time</b>	2230 eastern daylight time (coordinated universal time -4 hrs)
<b>Persons on board</b>	4 ( <i>Kokosing V</i> ), 3 ( <i>Justin</i> )
<b>Injuries</b>	None
<b>Property damage</b>	\$1.4 million est.
<b>Environmental damage</b>	Potentially 85 gallons of diesel fuel and 50 gallons of hydraulic fluid lost. No sheen observed.
<b>Weather</b>	Visibility 5 mi, overcast with drizzle, winds northwest 15 kts, gusts 25 kts, air temperature 54°F, water temperature 66°F, sunset 1845
<b>Waterway information</b>	River, width 2.7 mi, depth 33 ft, high tide 3.0 ft at 1931

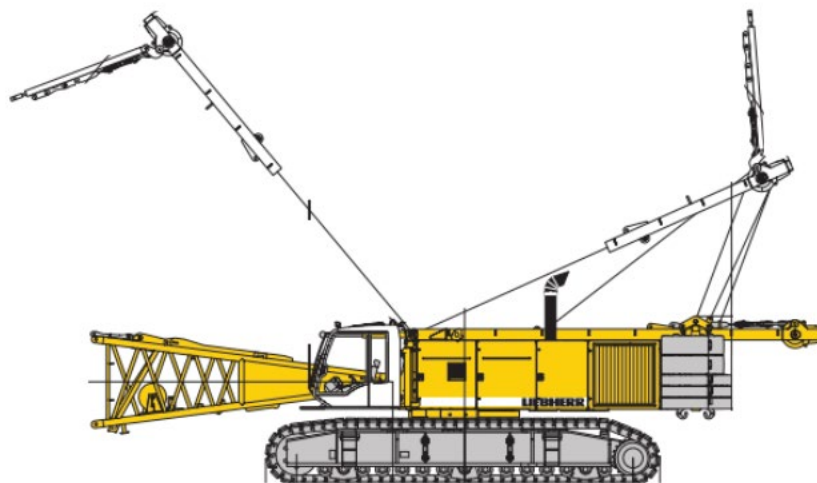


**Figure 2.** Area where the *Kokosing V* caught fire, as indicated by a red X. (Background source: Google Maps)

# 1 Factual Information

## 1.1 Background

The *Kokosing V*, owned and operated by Kokosing Industrial, was a 150-foot-long steel spud barge built in 2020 in Belle Chasse, Louisiana.<sup>2</sup> The barge was outfitted with a Liebherr 895 crawler crane. Liebherr 895 cranes can be configured for a variety of work tasks. The crane on board the *Kokosing V*, outfitted for marine construction work, had a clam shell bucket and drag line for dredging.



**Figure 3.** Profile drawing of a Liebherr 895 crane, with similar configuration to the barge crane. (Source: Liebherr)

## 1.2 Event Sequence

On September 23, 2022, the *Kokosing V* arrived at its work location to dredge the James River near the Northrup Grumman shipyard in Newport News, Virginia. The tug *Justin*, a 73.8-foot-long towing vessel operated by Skiff's Creek Towing, accompanied the *Kokosing V*. The *Kokosing V* crew used the crane's clamshell bucket to load the dredged soil onto an empty barge.

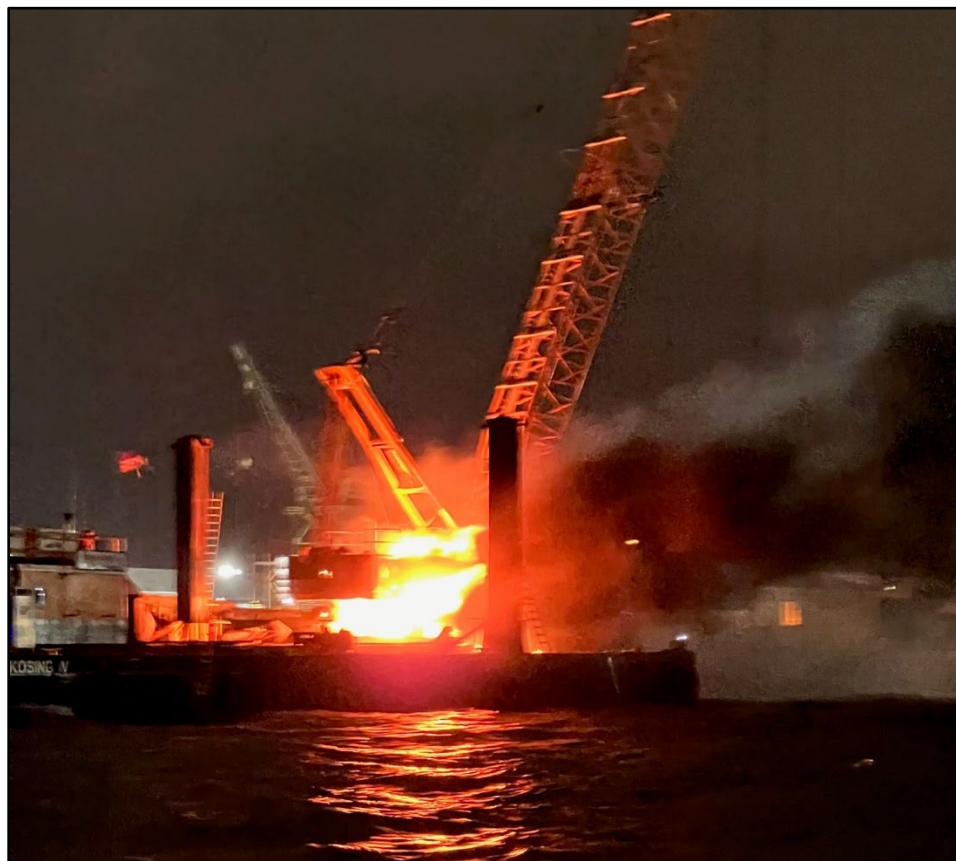
Eleven days later, about 2230 on October 4, the barge was dredging about 75 yards off the shipyard, with the tug *Justin* still nearby, when the foreman stepped out of his office on board the barge and saw a burning liquid fire dripping from underneath the crane. He signaled the crane operator to stop work and exit the crane cab. The crew discharged several extinguishers on the fire without effect. They also

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<sup>2</sup> (b) *Spuds* are steel shafts or through-deck pilings, which are driven into the seafloor to moor the barge.

used the barge's portable pump and the tug *Justin's* fire pump to apply water on the fire without success. The crew then evacuated to the *Justin*.

At 2237, municipal authorities were notified; the crew of the tugboat *Justin* informed the US Coast Guard of the fire via VHF radio channel 16 at 2241. The Newport News, Northrup Grumman Shipbuilding, Suffolk, and Hampton fire departments and Coast Guard Station Portsmouth were dispatched, with the first units arriving on scene within minutes. Newport News *Fire Boat 1* extinguished the fire shortly after midnight.



**Figure 4.** The *Kokosing V's* crane ablaze about 2240. (Source: Coast Guard)

### 1.3 Additional Information

The next day, investigators from the Newport News Fire Marshal's office inspected the barge and crawler crane. On the crane, they found a "clean engine bay with no signs of a fire happening on top of the [crane] engine." In the battery compartment, located behind the driver compartment on the crane's left side, they found the battery bank destroyed by fire. They also found electrical cables under the

crane with “a lot of beading and fusing.”<sup>3</sup> The fire investigators concluded that the fire was likely accidental due to an electrical failure at the crane’s battery bank.

Investigators from the barge’s insurance company found significant smoke and heat damage to the crane’s underside and rear sections. They reported fire and burn patterns that were directional toward the right side of the crane near the fuel, hydraulic lines, and exhaust system.

About 8,900 gallons of diesel fuel were on board the *Kokosing V*. The crane held another 85 gallons of diesel fuel and 50 gallons of hydraulic oil, all of which were reported to be burned or lost overboard. At the time of the fire, there were high winds, and a small craft advisory was in effect.<sup>4</sup> The fire department determined it was not feasible to deploy booms around the barge due to the high winds.

The crane, valued at \$1.4 million, was a total loss. The *Kokosing V*’s wooden deck mat was also destroyed, and subsequently replaced.



**Figure 5.** The damaged crane postfire. (Source: Coast Guard)

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<sup>3</sup> A *bead* is a rounded mass of resolidified metal on the end of the remains of an electrical conductor or conductors. Beads are caused by arcing and are characterized by a sharp line of demarcation between the melted and unmelted conductor surfaces.

<sup>4</sup> A *small craft advisory* is an advisory issued to alert mariners to sustained winds and/or sea conditions, either present or forecast, that might be hazardous to small craft. The general threshold is sustained winds between 20 to 33 knots, but the sea/wave threshold ranges from 4 to 10 feet or greater.

## 2 Analysis

The foreman on board the *Kokosing V* first observed a burning liquid fire dripping from underneath the crane. The crew attempted to put out the fire with portable extinguishers and water, but they were unsuccessful, and they evacuated the barge. A responding fireboat crew eventually extinguished the fire.

Investigators could not rule out a hydraulic or fuel leak as a cause of the fire. However, the crane's battery compartment, located behind the driver compartment on the left side of the crane, was destroyed, and fire patterns indicated that the fire spread from the left side under the crane. There were no signs of fire around the crane's engine. Further, fire marshals also documented electrical "beading and fusing," indicating arc damage on the electrical cables under the crane. Therefore, it is likely that the fire originated in the crane's battery compartment and was electrical in nature. Potential ignition sources within the battery compartment include loose electrical connections and chaffed or damaged wiring. The extensive damage to the compartment precluded examination of components, and therefore the ignition source could not be determined.

## 3 Conclusions

### 3.1 Probable Cause

The National Transportation Safety Board determines that the probable cause of the crane fire on board the spud barge *Kokosing V* was an undetermined electrical ignition source in the crane's battery compartment.

Vessel	<i>Kokosing V</i>
Type	Towing/Barge (Barge)
Owner/Operator	Kokosing Industrial Inc. (Commercial)
Flag	United States
Port of registry	Baltimore, Maryland
Year built	2020
Official number (US)	1302565
IMO number	N/A
Classification society	N/A
Length (overall)	150.0 ft (45.7 m)
Breadth (max.)	55.0 ft (16.8 m)
Draft (casualty)	11.0 ft (3.4 m)
Tonnage	693 GRT
Engine power; manufacturer	N/A

NTSB investigators worked closely with our counterparts from **Coast Guard Sector Virginia** throughout this investigation.

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For more detailed background information on this report, visit the [NTSB Case Analysis and Reporting Online \(CAROL\) website](#) and search for NTSB accident ID DCA23FM001. Recent publications are available in their entirety on the [NTSB website](#). Other information about available publications also may be obtained from the website or by contacting—

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