

Prototypes to models using 3D printing

One of a kind models for your layout

Steam excursions

TENDERS



MILW 261

Duluth, MN



SOU 630

Tennessee Valley tender



NKP 765 with N&W tender

Lafayette, IN



UP 844 with two tenders

Nebraska



SP 4449

Spokane, WA



CP 2816

Minneapolis, MN



PM 1225 Steam Railroading Institute

Owosso, MI



Reading & Northern

Pennsylvania - the engine house to the right was built from a Walthers model.



Propane tender on 1:8 scale

Thomas in Bloomington, Indiana



My water tender model for steam excursions

Purchased ready to run

Fuel

OTHER TENDERS



CSX

Fuel Tender



UP Gas Turbines

Heavy oil



UP Gas Turbine model

Scale Trains



Compressed Air locomotive

Age of Steam Roundhouse, Sugar Creek, Ohio



Compressed Air Locomotive

Built by Porter in 1915. Used in the sugar cane fields in Cuba and by the Navy to move ammunition to Naval ships. There no possibility of this locomotive to cause a fire in a sugar cane field.



PictureArchives.NET Image Contributed by Bruce Gage

UP fuel tender

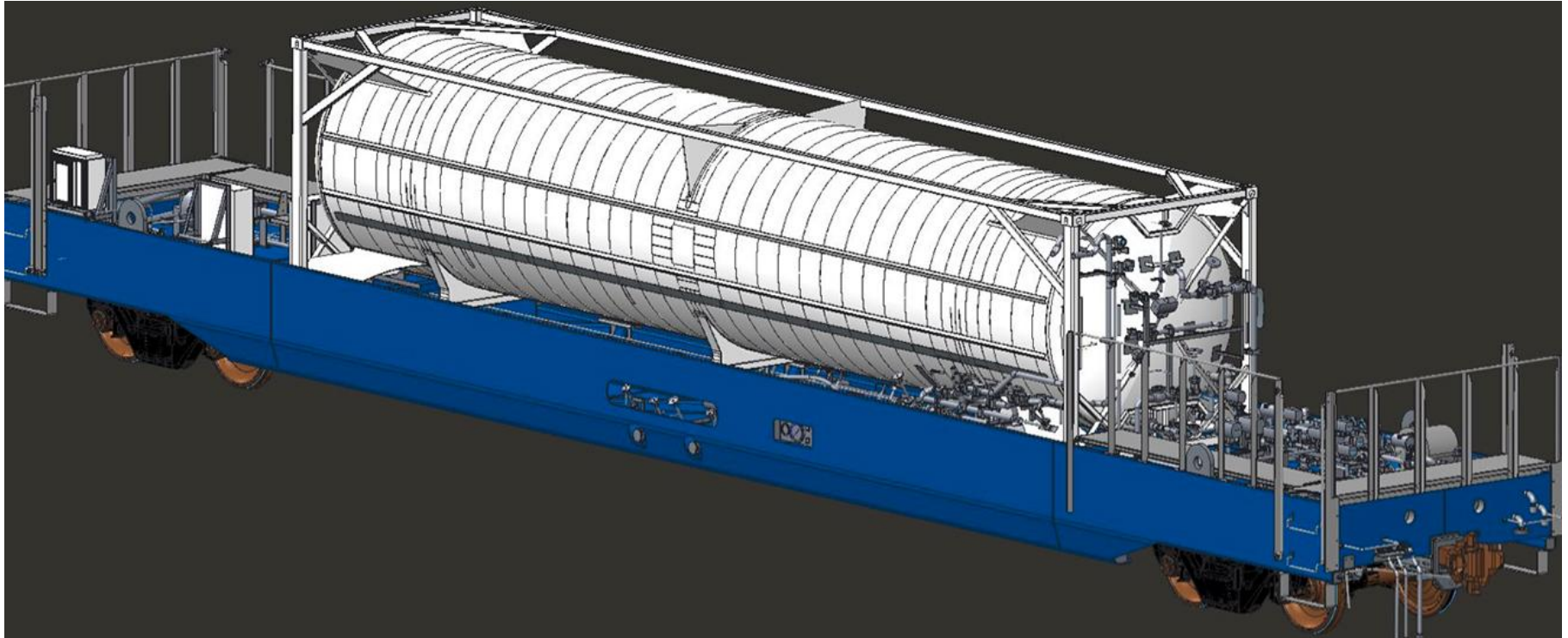


Chart Industries, New Prague, MN

Buils LNG tenders. For modeling purposes I emailed Chart to get specifications. I received a reply that since the tenders were custom built no specs would be provided.



BNSF LNG tender



3D printed N scale BNSF LNG tender



BNSF LNG tender model

Running on Bruce's layout



FEC LNG tender 302

Jacksonville, FL



My N scale FEC LNG tender

Bruce's layout



MY HO scale LNG tender under construction

Well car is a modified InterMountain car. The LNG tank is 3D printed from shapeways.com .



My N scale LNG tank also 3D printed



My HO FEC LNG tender

On Larry's HO layout



My HO LNG tender

Notice the pipes



Paint color (scarlet) and Circus City decals

<https://circusdecals.ecwid.com/>

<http://www.milwaukeeeroadtrainshop.com/>



More 3D printed models

HO LNG tender, Seaboard Sun Lounge, tank and generator for HEP, container, N scale LNG tank, truck tractor, another tank



es.Net - Image Copyright Albert (Rudy) Rodriguez

FEC Santa train with 2015 head end power (HEP)



2016 FEC HEP car



My updated FEC HEP using 3D printed parts

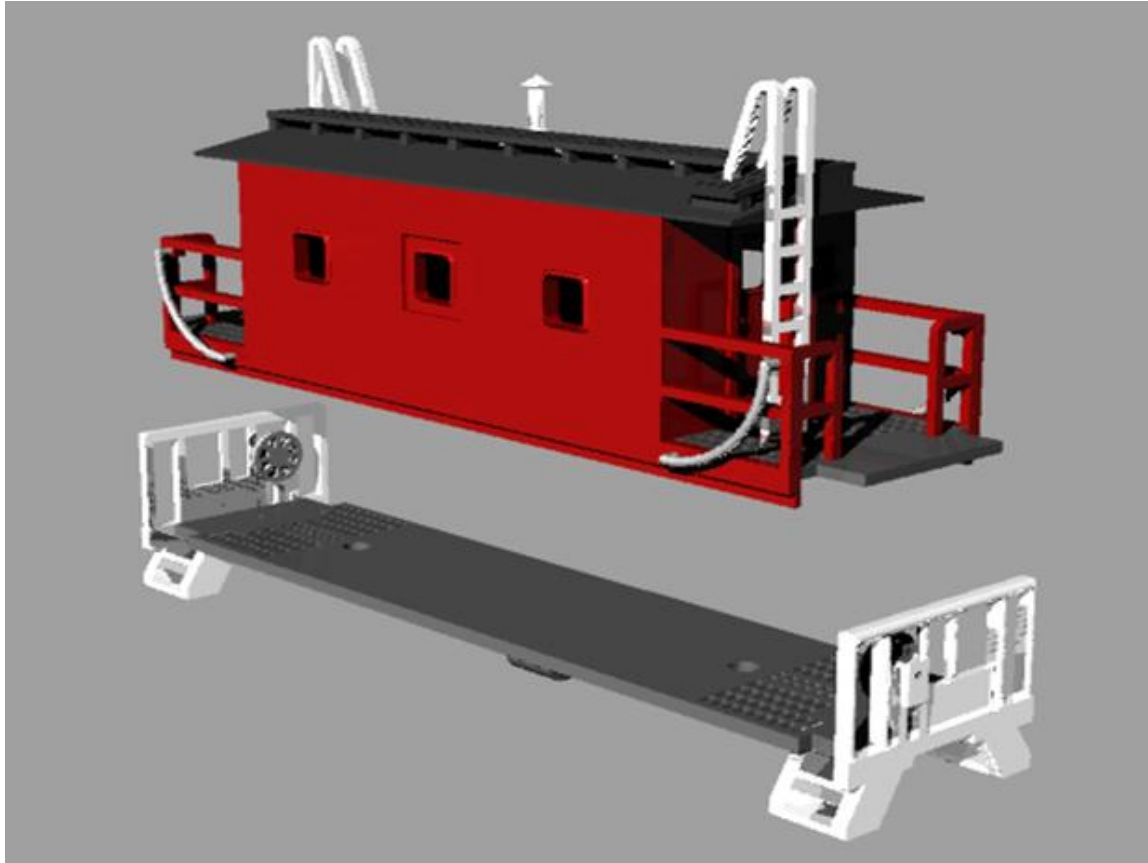
Generator and tank are 3D printed



3D printed Z scale Cessna flying over my limestone quarry diorama now in a museum in Salem, Indiana.



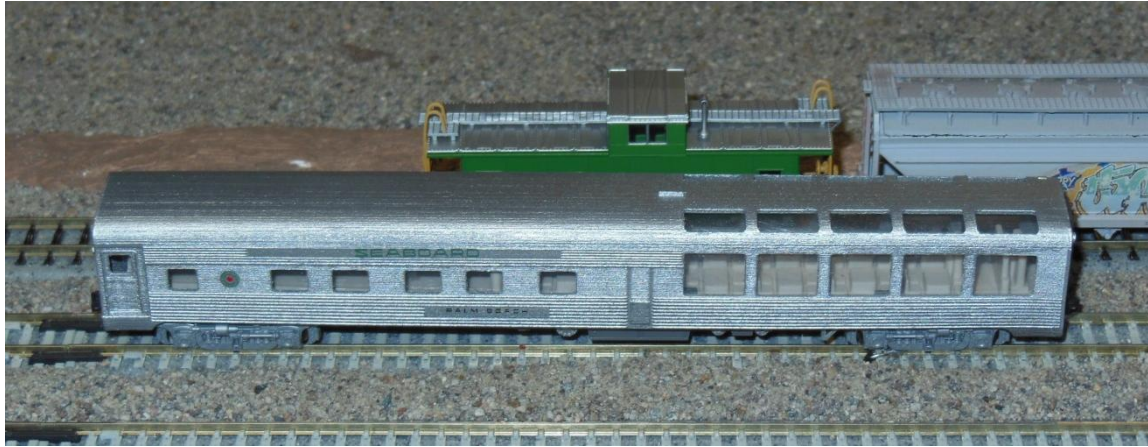
Z scale 3D printed caboose



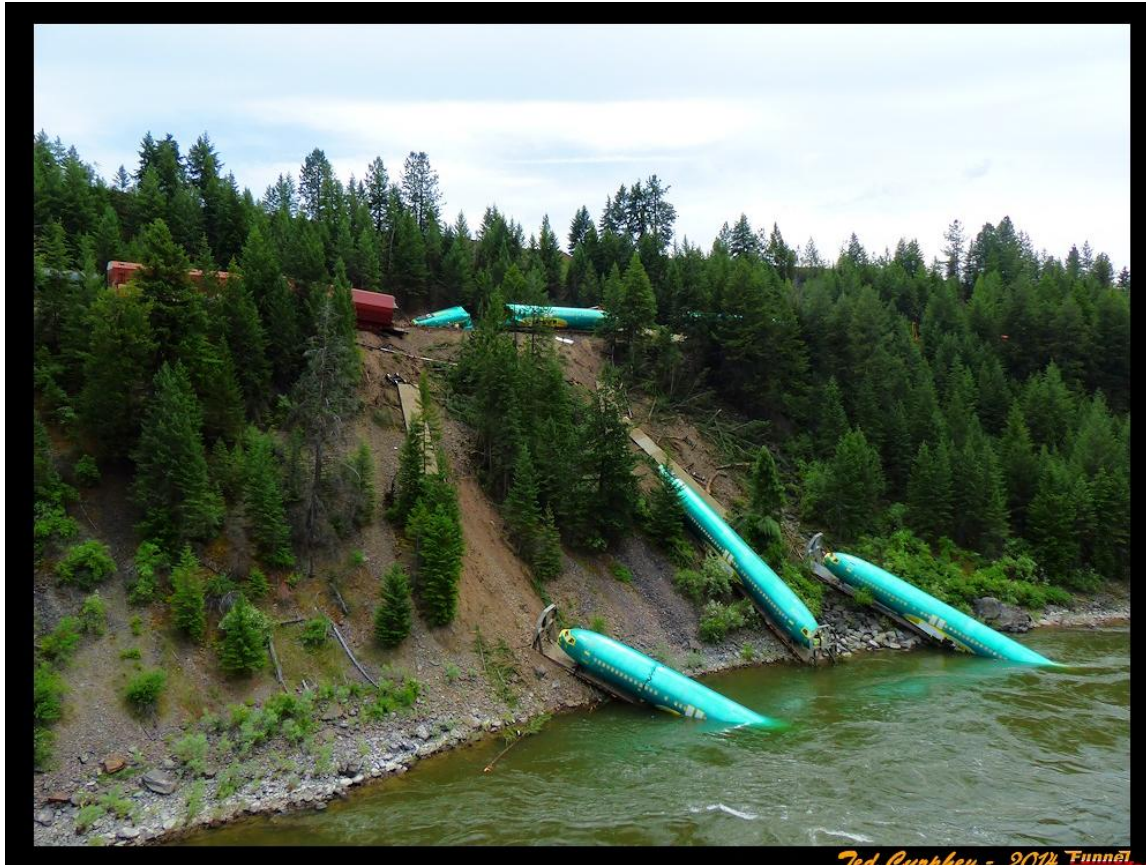
3D printed Monon transfer caboose



Seaboard Sun Lounge prototype



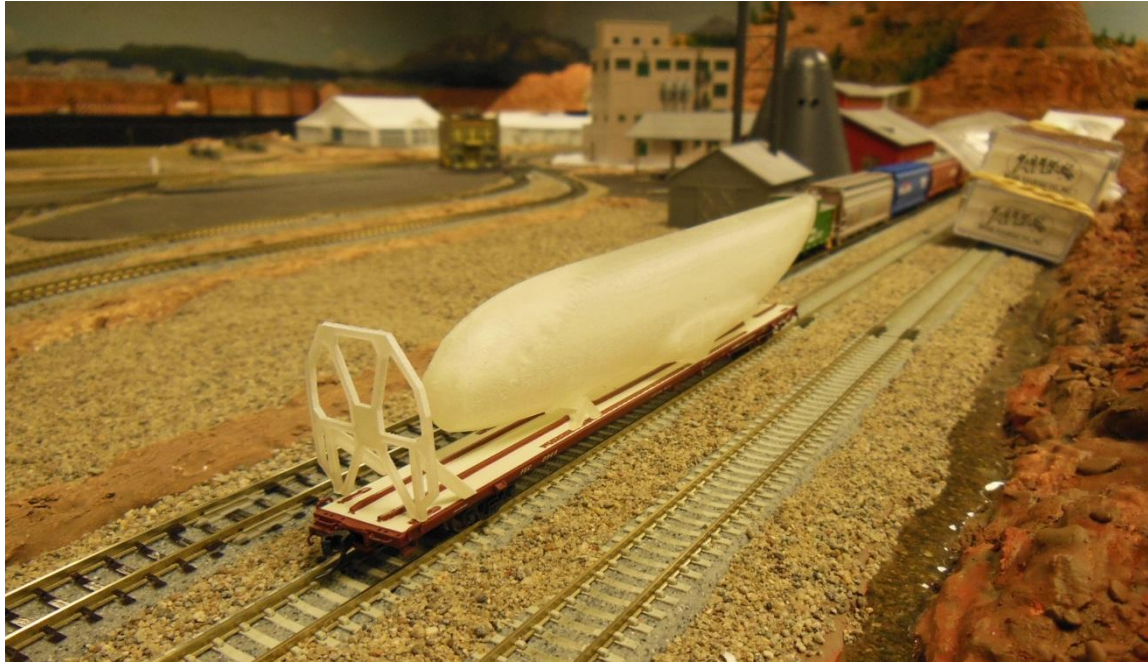
3D printed Sun Lounge N scale model



Ted Cunliffe - 2014 Funnel

Prototype Boeing 737 fuselage

Montana Rail Link



3D printed model of fuselage

NSE Presents

BNSF RAILWAY BNSF's Fire Fighting Train



The BNSF's firefighting train came to be in 2007. The project began with an old log car.

"We took a log car and removed the brackets to create a blank canvas," says Ryan Risdon, Mechanical Foreman, Pasco. "Work equipment built upper platforms on both sides of the car and water services outfitted all of the plumbing and fixtures."

Based out of Spokane, Wash. the firefighting train is made up of two tender cars, a fire car and a caboose that serves as a command center. The tender cars contain thousands of gallons of water and the fire car is equipped with aqueous fire-

fighting foam (AFFF). An on board generator in the caboose provides power for the cars and can also be used to power work lights, radios and other emergency equipment.

The fire car has approximately 30,000 gallons of water on board. Tank cars can be connected to the firefighting train for increased water capacity.

The fire car carries a reserve of aqueous fire-fighting foam. BNSF has also placed several water-filled tank cars in strategic positions along the Northwest Division according to a fire protection plan. Each car is equipped with the proper connections so that

local fire fighters can refill their equipment or rig hoses directly to the cars to spray water. "[The firefighting train] and our tender cars allow BNSF to get water into spots where fire departments traditionally cannot".

The firefighting train has been dispatched to help

fight fires in Washington, Idaho, Oregon and Colorado.

"Anytime there is a fire within five hours of Spokane we'll usually send [it] out to help," says Ahif. "Hopefully the fire is out before we get there, but if not our equipment can help."



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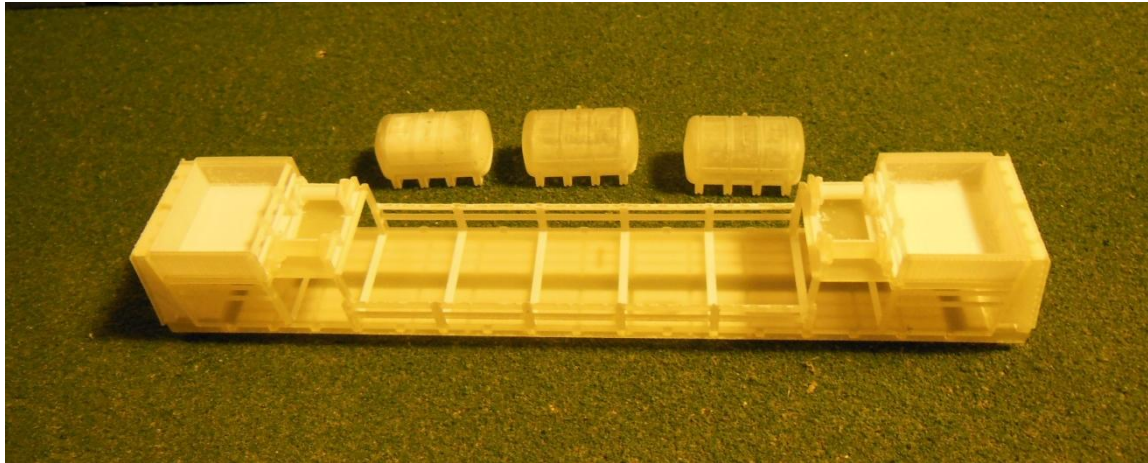
www.NScaleEnthusiast.com



Photos by Dean Daughenbaugh

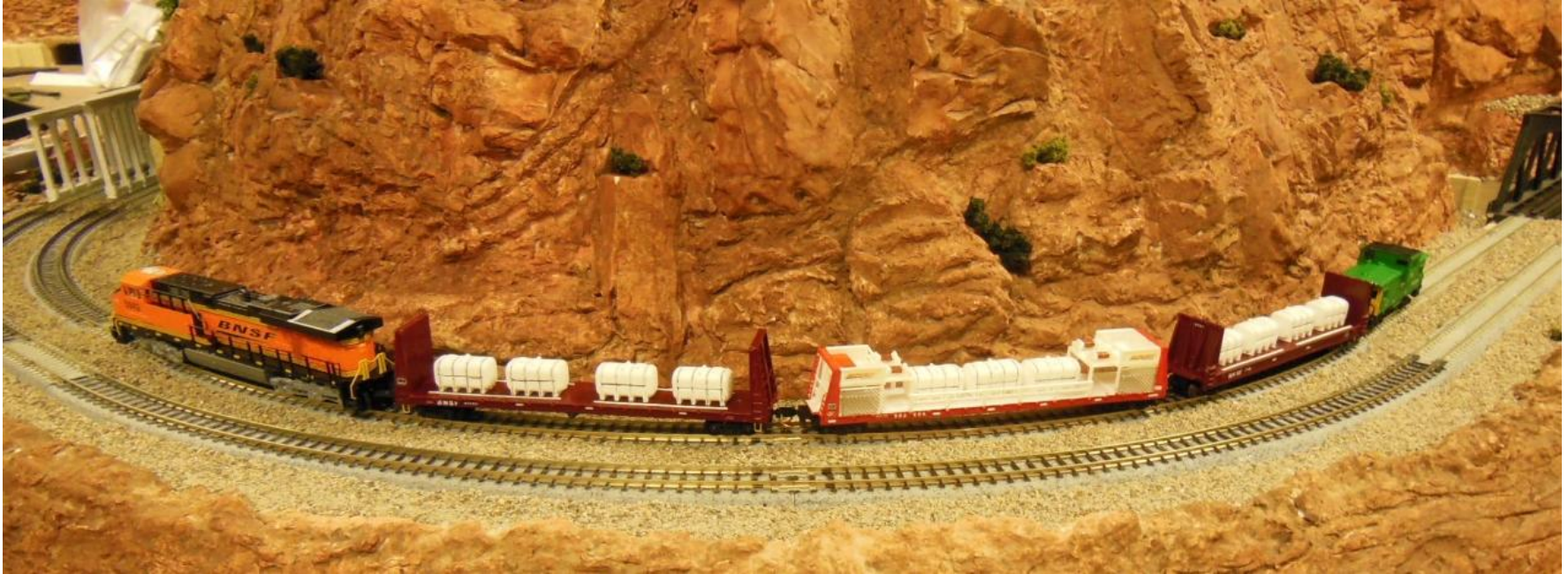
BNSF fire train

Available from Nscale for \$264.50



3D printed BNSF fire car

Water tanks are a separate order.



BNSF fire train, 3D printed water tanks and the fire car

Bruce's layout



3D printed rotary snow plow



3D printed models must be scrubbed and primed

Oil based paint does not dry on a shapeways.com model. All primer and most top coats are acrylic.

All of our 3D models are from shapeways.com

Additive technologies like 3D printing are revolutionizing manufacturing in much the same way the internet transformed information and shopping. Instead of removing material, these techniques grow parts from the ground up by either depositing or fusing layers of material. Engineers can design parts on their computers and then send their drawings directly to a 3D printer. The machines break down the design files to individual layers and join them together in the right pattern. “There are no limits to complexity,” “You can create hollow structures if you want, or something like a bone.”