

Tonight's Speaker

C'est moi

Why?

Not the usual reason

Serendipitous discovery

Hope you will enjoy my ignorance

How Did We Win the War, Grandpa?

D-Day (France to Germany)

6 June 1944 to 7 May 1945

Gerry Glancy

How did you win a war?

Which element of the war was most important in achieving success?

S-1 Personnel— The soldiers

S-2 Intelligence

S-3 Plans/Ops — Leadership

S-4 Logistics — Supplies

(And their delivery)

S-1 Soldiers ?

The Allies or the Wehrmacht



S-2 Our intelligence? Enigma encoding machine



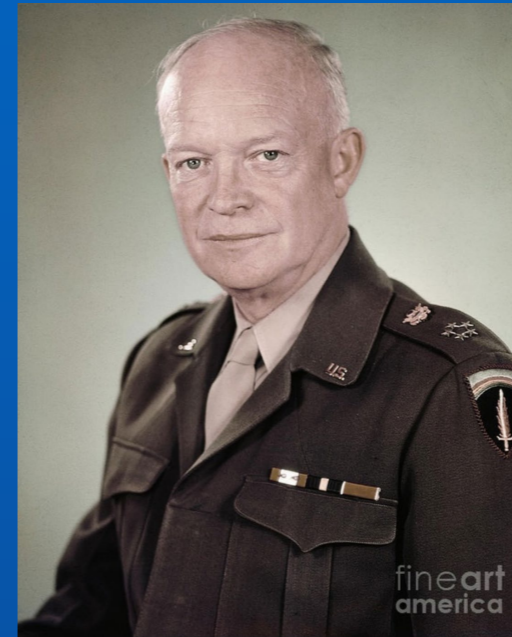
Intercepting and translating code gave the Allied forces a strategic advantage over the Germans.

Oops!
Market Garden
Battle of the Bulge

S-3 Our Leadership ?



Marshall



Eisenhower



Montgomery



Patton

Their Leaders ?



Rommel



von Manstein



Kesselring

S-4 Logistics ?

There is a story that German troops captured an American truck heading towards the front with fresh supplies. Inside, the Germans found this:



That's right, a cake.

After examining it, they realized the cake was less than a week old. How in god's name could the Americans bake a cake, package it and send it to the front within a week while German troops had to wait days or weeks for critical supplies such as water, ammunition, medicine and food?

Chocolate cake story

Delivery comparison



We had
the venerable
deuce and a half

Red Ball Express

When roads are passable



3 million tons over 600 miles

Delivery comparison

The Germans



Horses
3 million



Trucks but no gas

But the Germans had Coal !

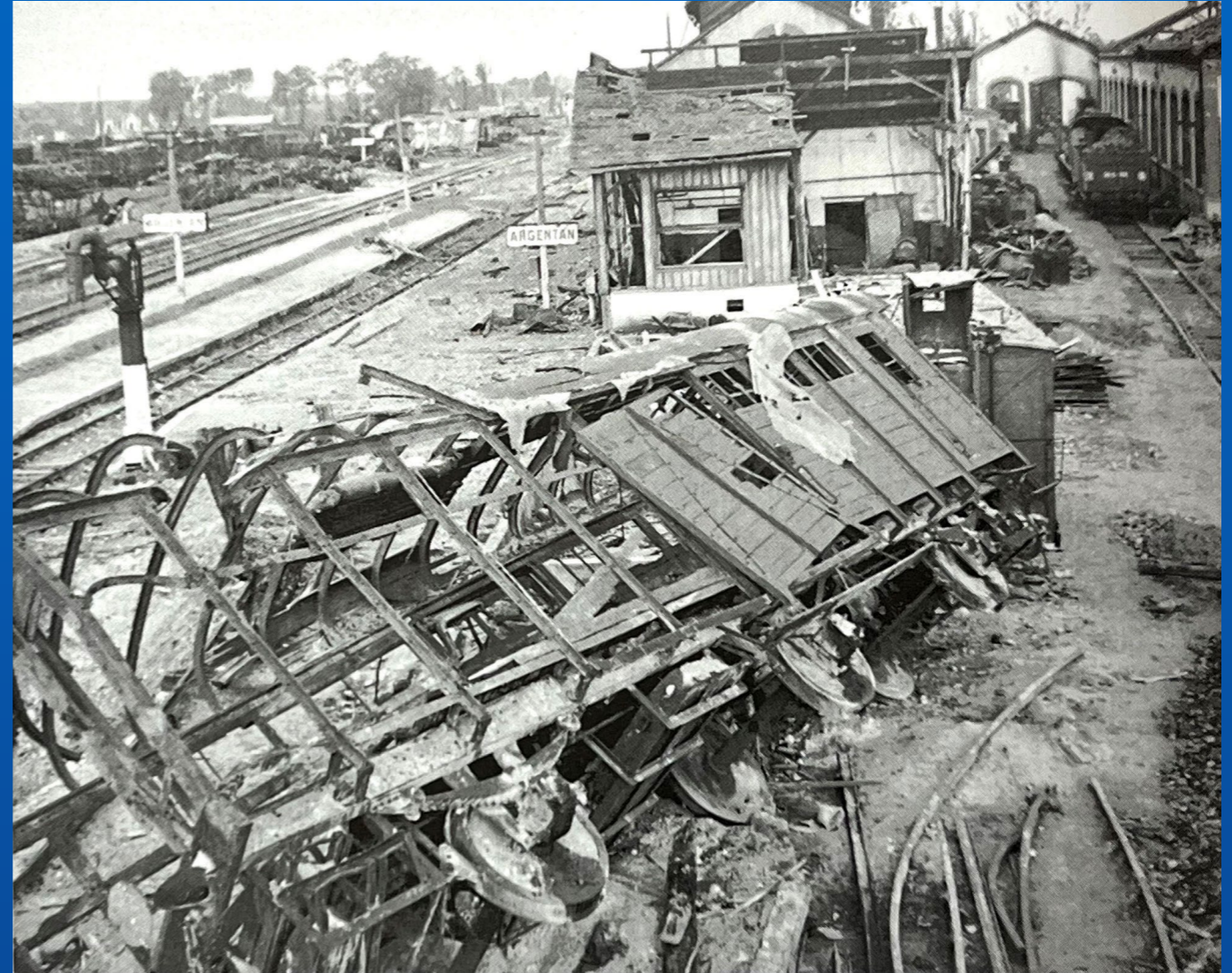
Trains run on Coal

Supplying troops
Moving troops
Withdrawing troops



“Wait, wait !”

“Time out”



Didn't we bomb the rail systems, especially in France?

Indeed we did!!

Preclude the Germans from:

- Resupply

- Movement of troops

- Evacuation of troops

Confine them to the roads

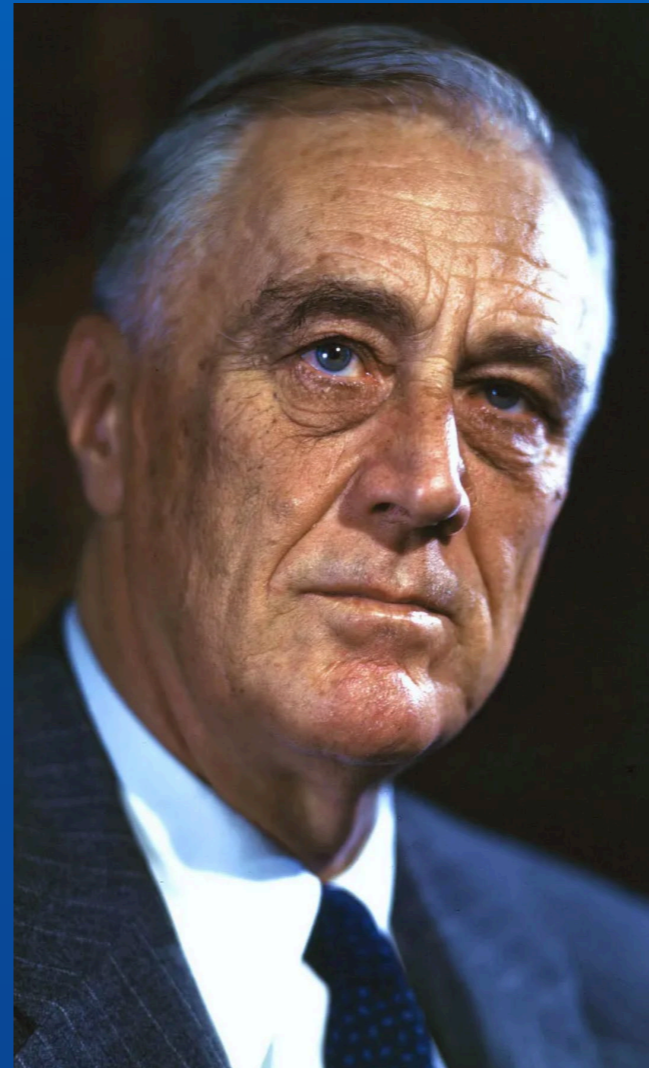
Travel only at night

Ethical misgivings

Collateral damage



Churchill



Roosevelt

From the Air



Furthermore, we trained and supplied The Maquisards (The French Resistance)



Operation Vert

Destroy rail

Blow up bridges

The French Railway workers, the Cheminots, sabotaged their own railroad

Misroute trains



Back shop

Metallurgical mischief

Change lead and antimony content in pistons

Changes antifriction qualities, cracks, loss of pressure



Success of railroad destruction?

60% reduction in rail travel

Germans forced to use road

Use only at night

Use valuable gasoline in trucks

But, 30,000 civilians killed

Bombing

Reprisals

My premise

I humbly submit that the most important element for success from D-day onward was logistics

And the most important element of logistics was the rapid restoration of the railroads

Herein lies my story

The restoration of the railways

- Forethought and anticipation
- Innovation
- Determination
- Courage in a hostile environment

In the Beginning

- Prewar planning
- Training
- Fabrication of locos, rolling stock
- D-day: 4 June 1944

Prewar planning

Lessons from WW1, 1918

USRA



U.S. Railroads

The Military Railway Service

(MRS)



- Class I railroad help elicited
- Railroad Operating Battalions (ROBs)

Railroad Operating Battalions (ROB)

Companies

Headquarters

Track maintenance

Rolling Stock repair

Operations

Shop Battalions

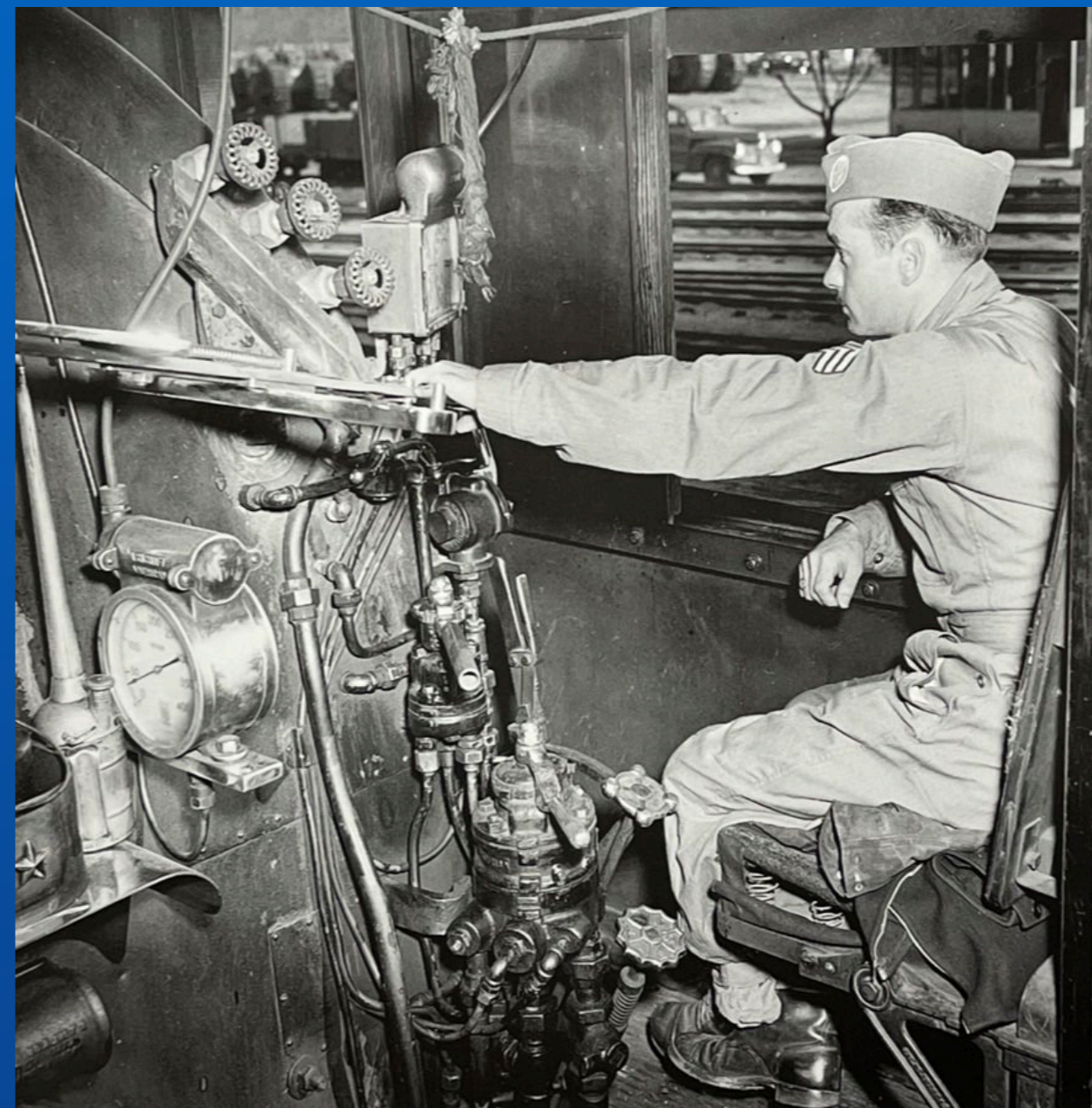
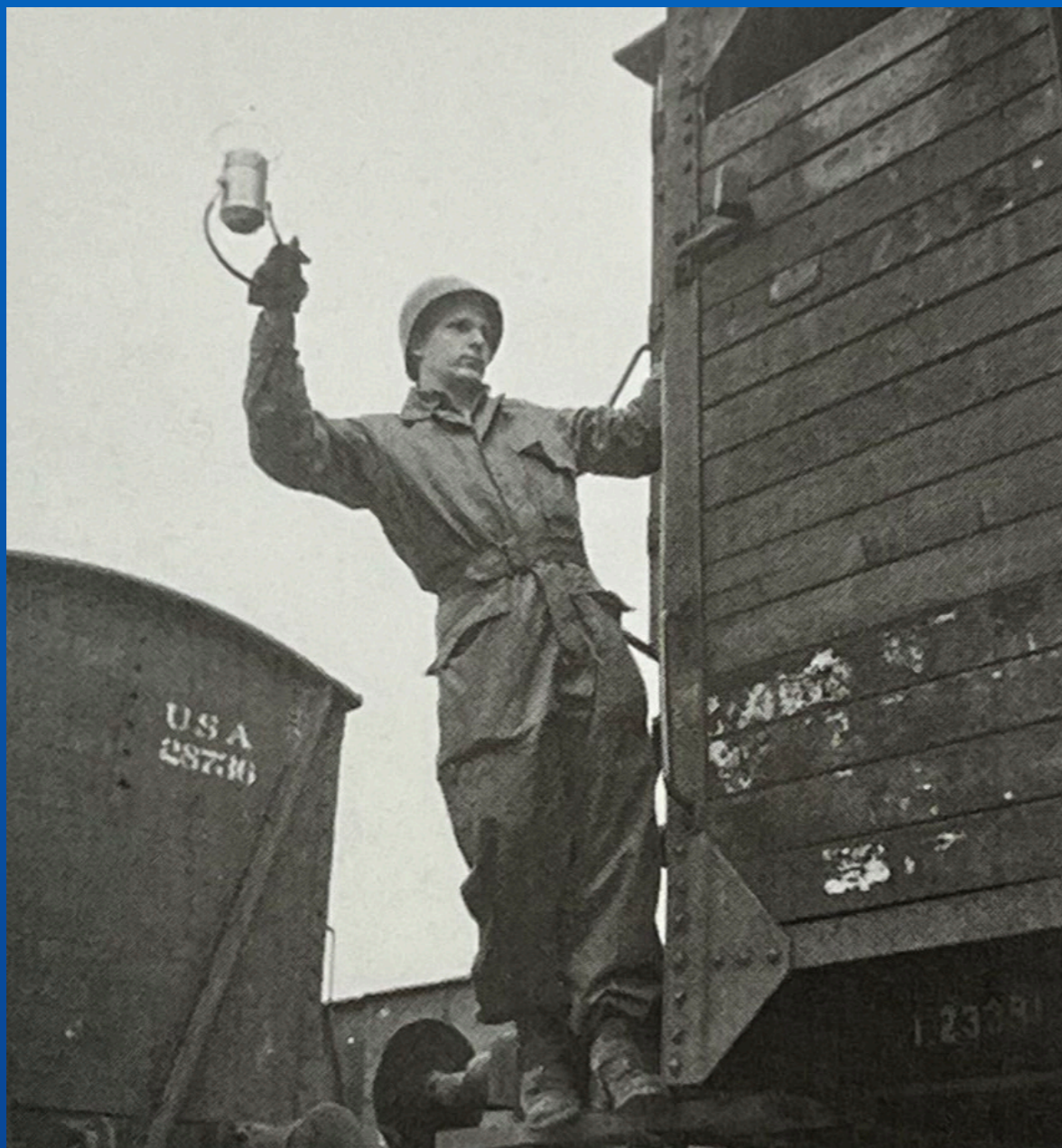
Grand Divisions

Railway Operating Battalions

<u>Unit</u>	<u>Sponsor</u>	<u>Date of Activation</u>
711th	Training Battalion (Not Sponsored)	May 1, 1941
712th	Reading Railroad	October 25, 1942
713th	Atchison, Topeka & Santa Fe Railroad	April 15, 1942
714th	Chicago, St. Paul, Minneapolis & Omaha RR	October 31, 1942
715th	Illinois Central Railroad	October 31, 1942
716th	Southern Pacific Lines	December 21, 1943
717th	Pennsylvania Railroad	December 1, 1943
718th	Cleveland, Cincinnati, Chicago & St. Louis	December 14, 1943
719th	Texas & New Orleans Railroad	September 1, 1943
720th	Chicago & Northwestern Railroad	August 26, 1943
721st	New York Central Railroad	April 14, 1943
722nd	Seaboard Air Line	December 14, 1943
723rd	Union Pacific Railroad	December 28, 1943
724th	Pennsylvania Railroad	December 28, 1943
725th	Chicago, Rock Island & Pacific RR	February 17, 1943
726th	Wabash Railroad	June 26, 1943
727th	Southern Railway	March 15, 1942
728th	Louisville & Nashville Railroad	January 11, 1943
729th	New York, New Haven & Hartford	January 11, 1943
730th	Pennsylvania	May 15, 1942
731st	Union Pacific Railroad	Never Activated

Training

Railroaders into soldiers



Soldiers into railroaders

Welcome to Camp Claiborne, Louisiana

BELOW AND RIGHT. Troops lay track and build railway trestles at Camp Claiborne, Louisiana in 1941. *U.S. Army Transportation Museum*



Camp Claiborne to Ft. Polk
50 miles of track

“Crime and punishment Railroad”

Graduation present, blow up a bridge

Continue training in Great Britain, Scotland

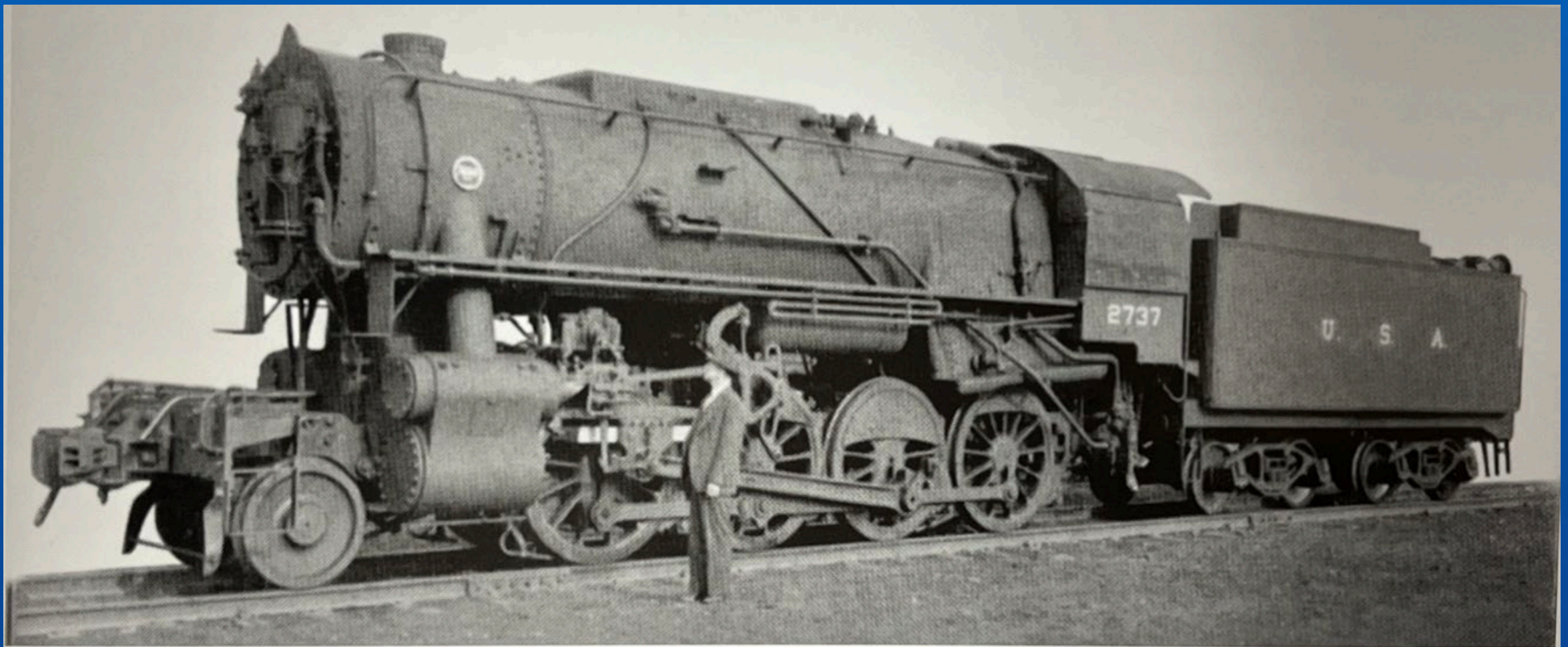
Anticipate needs



S-100

Anticipate needs

“Austerity” 2-8-0



Ralph Kelly, president of the Baldwin Locomotive Works, inspects the 70,000th locomotive which was completed on December 4, 1943. Many

Oops!



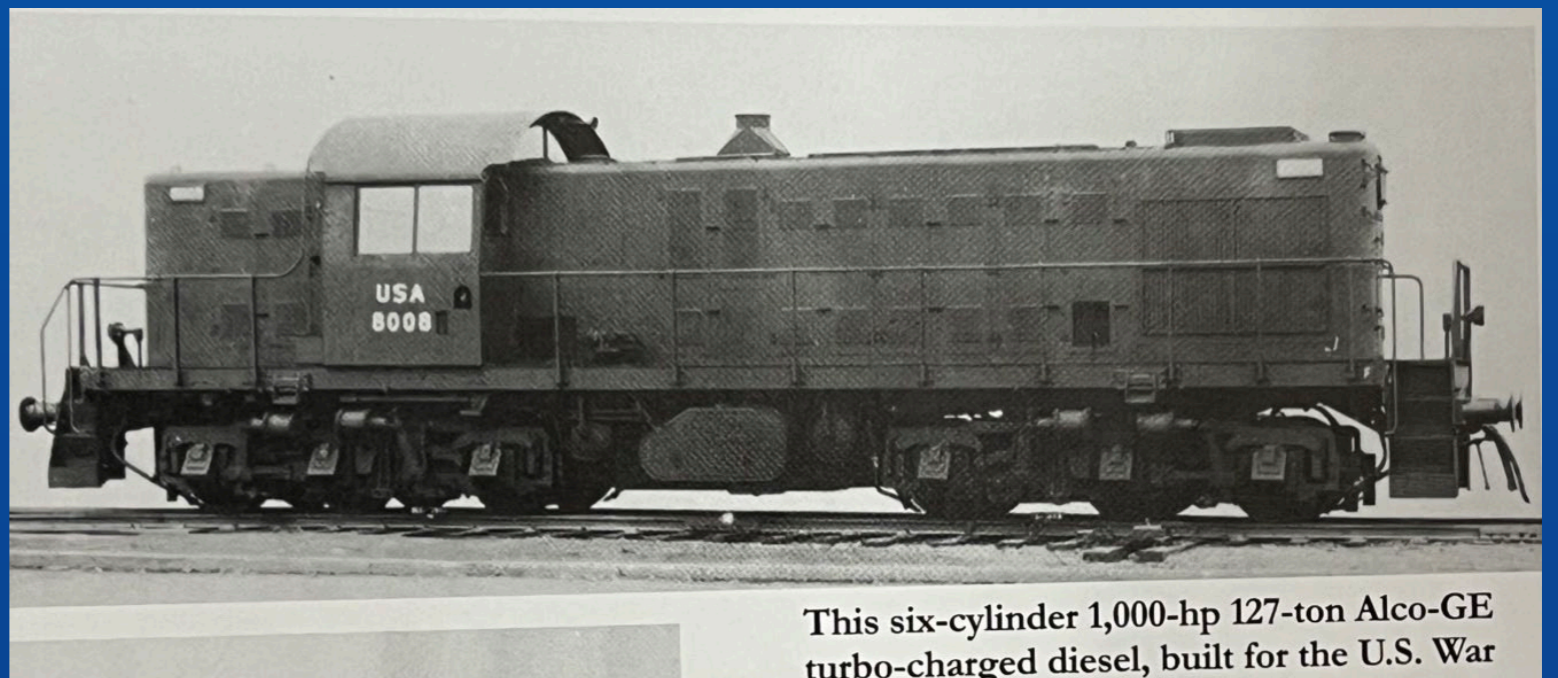
Most of the locomotives brought over from the US were Austerity class engines that were hastily built, occasionally leading to boiler explosions with tragic consequences.

Anticipate needs

Ist generation diesels

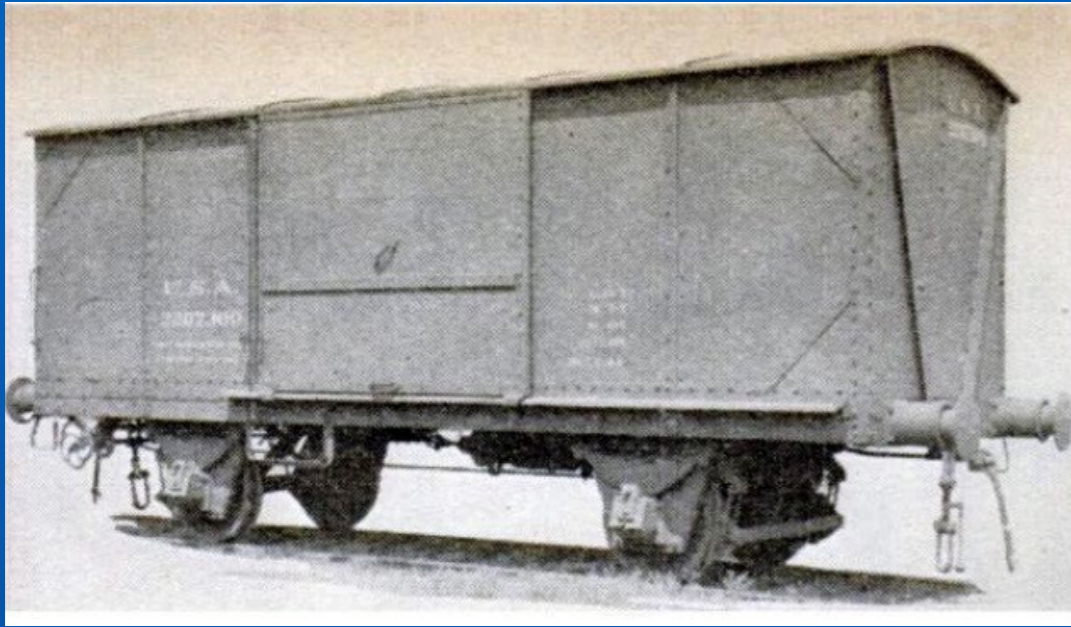


A new 250-ton USA diesel is loaded in England in September of 1944 for trans-channel shipping to France to be used for switching cars in

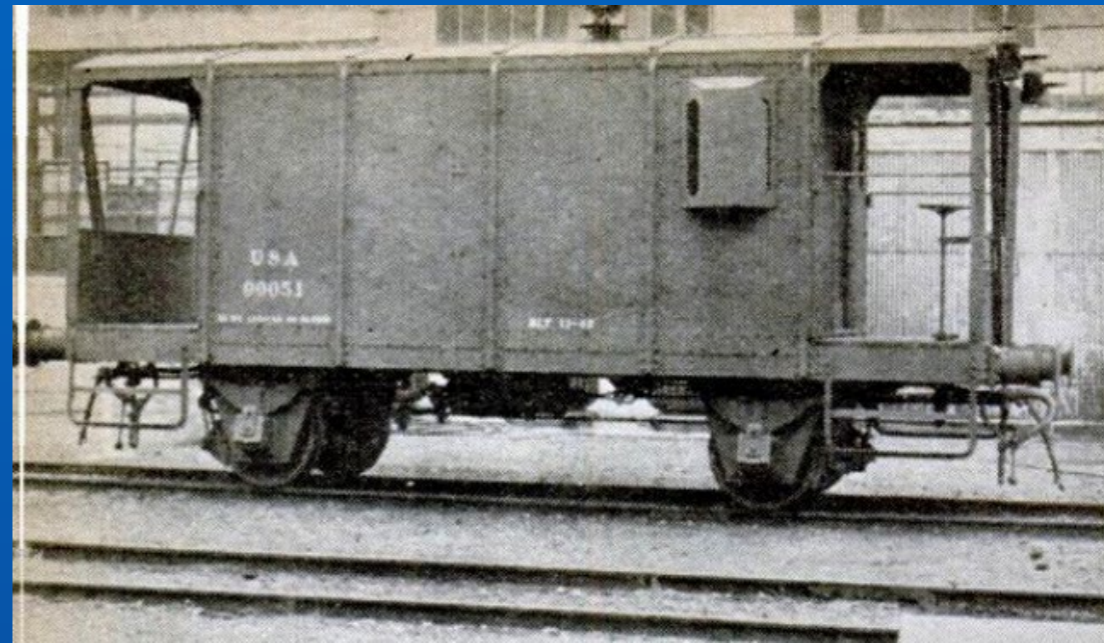


This six-cylinder 1,000-hp 127-ton Alco-GE turbo-charged diesel, built for the U.S. War

Anticipate needs



Box Car



Caboose

Rolling stock

Prefab in the US

Assemble in Great Britain

A clarification

The Brits duplicated our
railroad rehab efforts

MRS activity started with our
first campaign

North Africa-1942

Sicily, Italy - 1943

Iran - 1941

What !!?? Iran?



Persian Corridor

Operation Desert Storm a la 1941



Today, The Stans

Iran, 1941



The Problem:

The sitting Shah
Was a Germanophile

What's a righteous, law abiding
country like England
to do?

Invade Iran Depose the Shah

Gulf War 1941 — The Forgotten Allied Invasion of Iran

🕒 2 NOVEMBER, 2017



A British supply convoy is escorted through Iranian territory by Soviet troops. (Image source: WikiCommons)

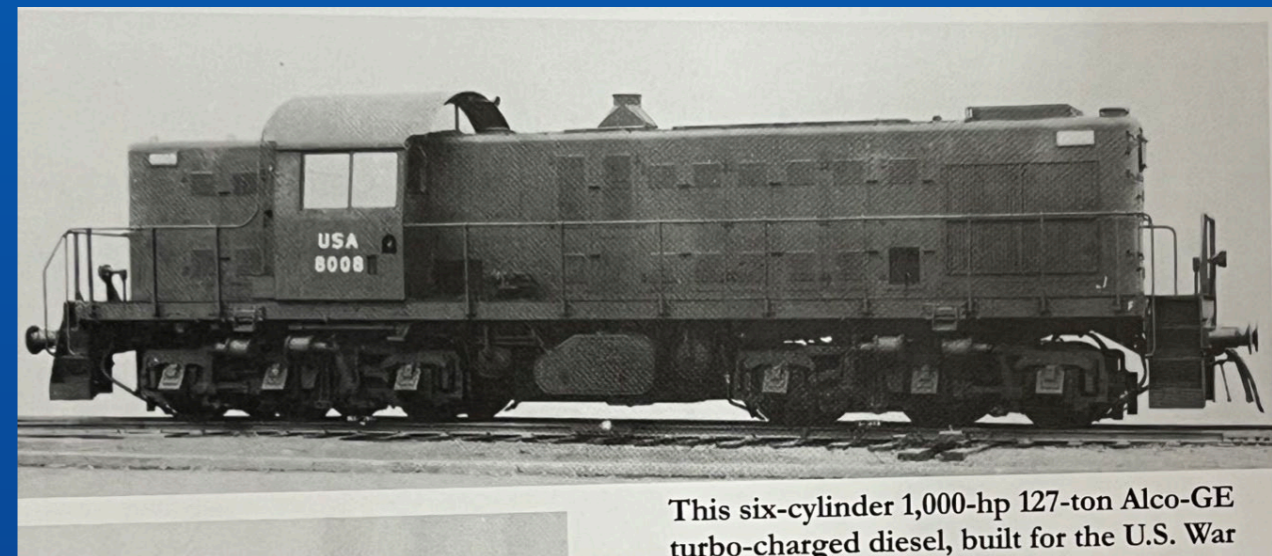


British troops guard an Iranian oil refinery. (Image source: WikiCommons)

25 Aug to 31 Aug, 1941

Americans brought in to run
the railroad

144 tunnels in 165 miles of track



This six-cylinder 1,000-hp 127-ton Alco-GE turbo-charged diesel, built for the U.S. War

The run up to D-Day

A geographic orientation

D-Day
beaches



Antwerp

Liege

Rhine River

D-Day 6 June 1944

First military objective was to secure a deep water port



Cherbourg

D-Day 6 June 1944

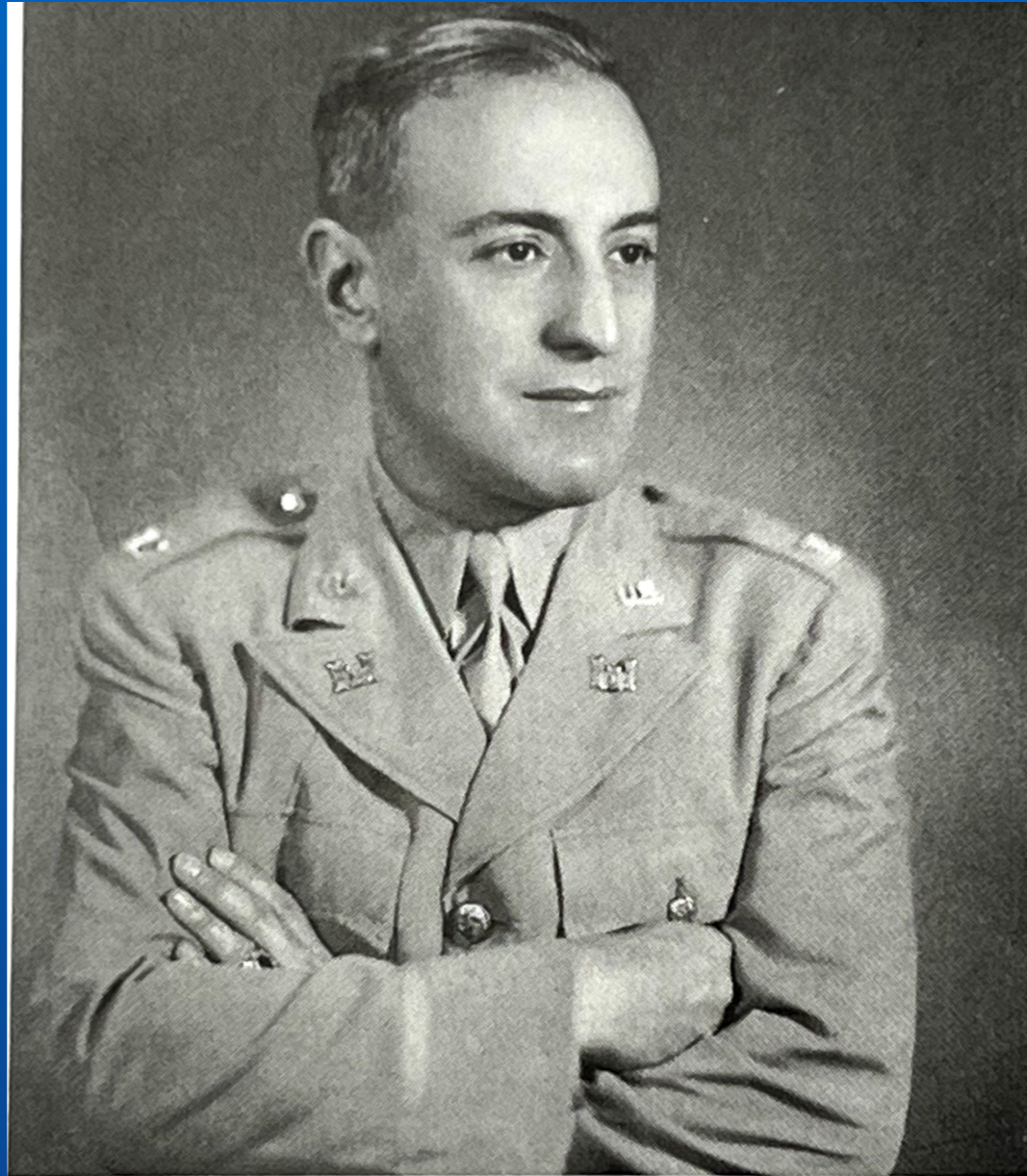
- First MRS soldier: D+4
- Assess damage
- Begin repair, restoration
- Bring end of line as close to front line as possible



★ The goal of the MRS
Bring the track
as close to the front line as practical



CO of the 2nd MRS



Colonel Emerson C. Itschner oversaw the reconstruction of railways, roads, and ports as the chief engineer,

Assess railroad damage



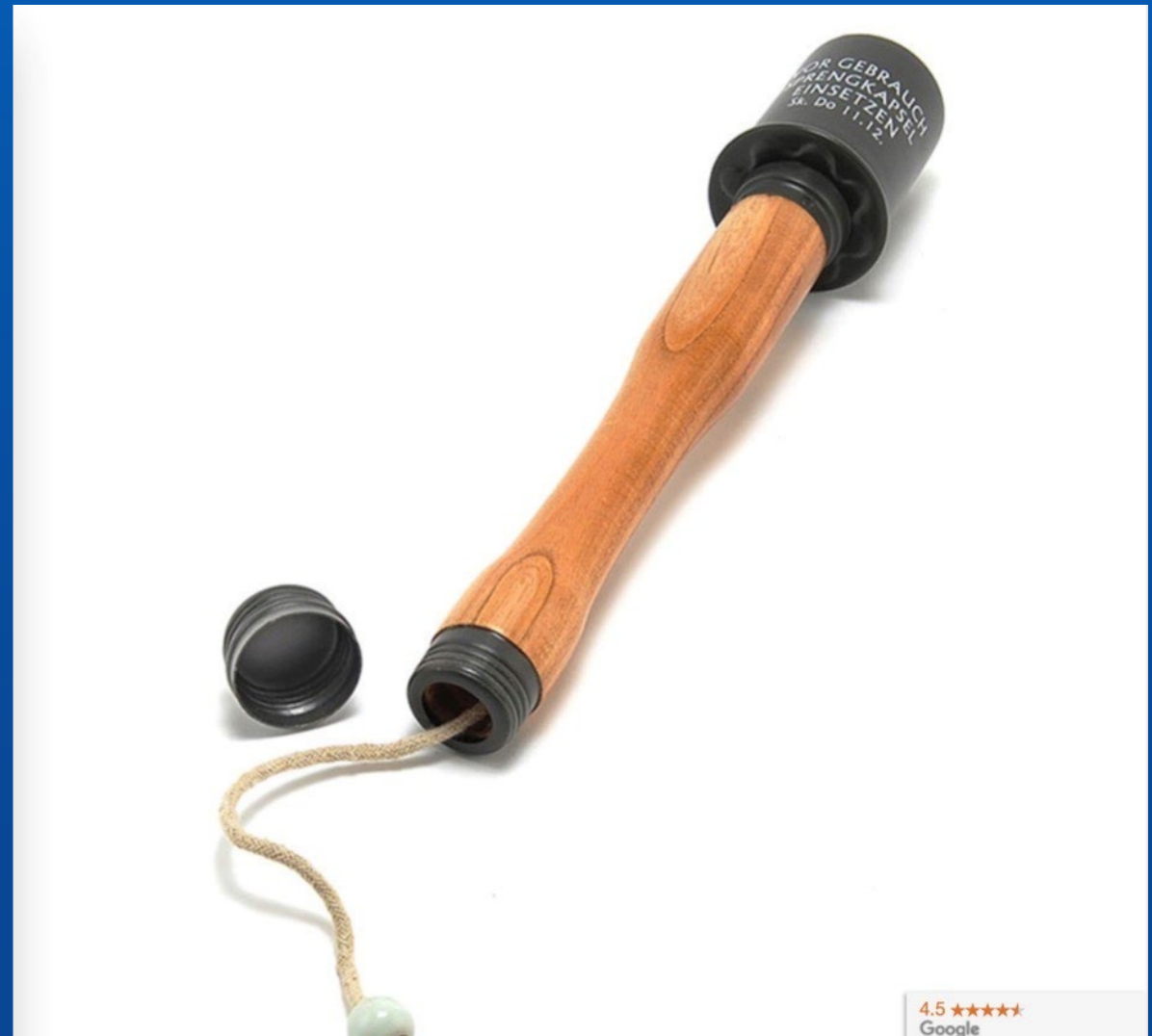
Dangers to Railroaders

Artillery

Unexploded ordinance

Snipers

Booby traps



Where's the front line?



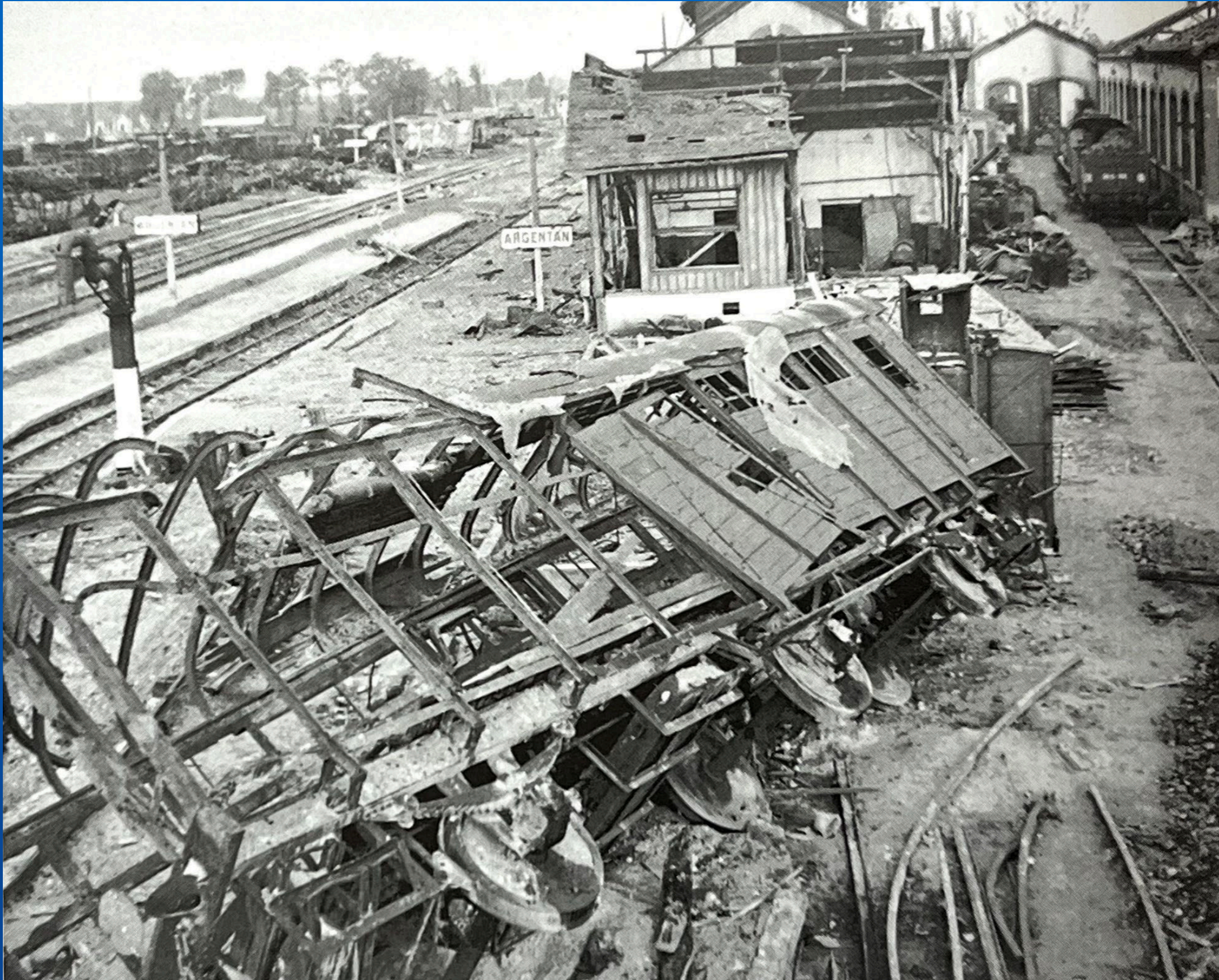
Repairs



Some repairs easy



A little more difficult



Cherbourg D+21



The devastated state of Cherbourg when Allied troops first arrived to start repairing the port and railway facilities in early July 1944.

Railroad mostly intact
Harbor thoroughly sabotaged
Supplies piling up on beaches

The Tides at Normandy



Mont-Saint-Michel at low tide

Mont Saint Michel

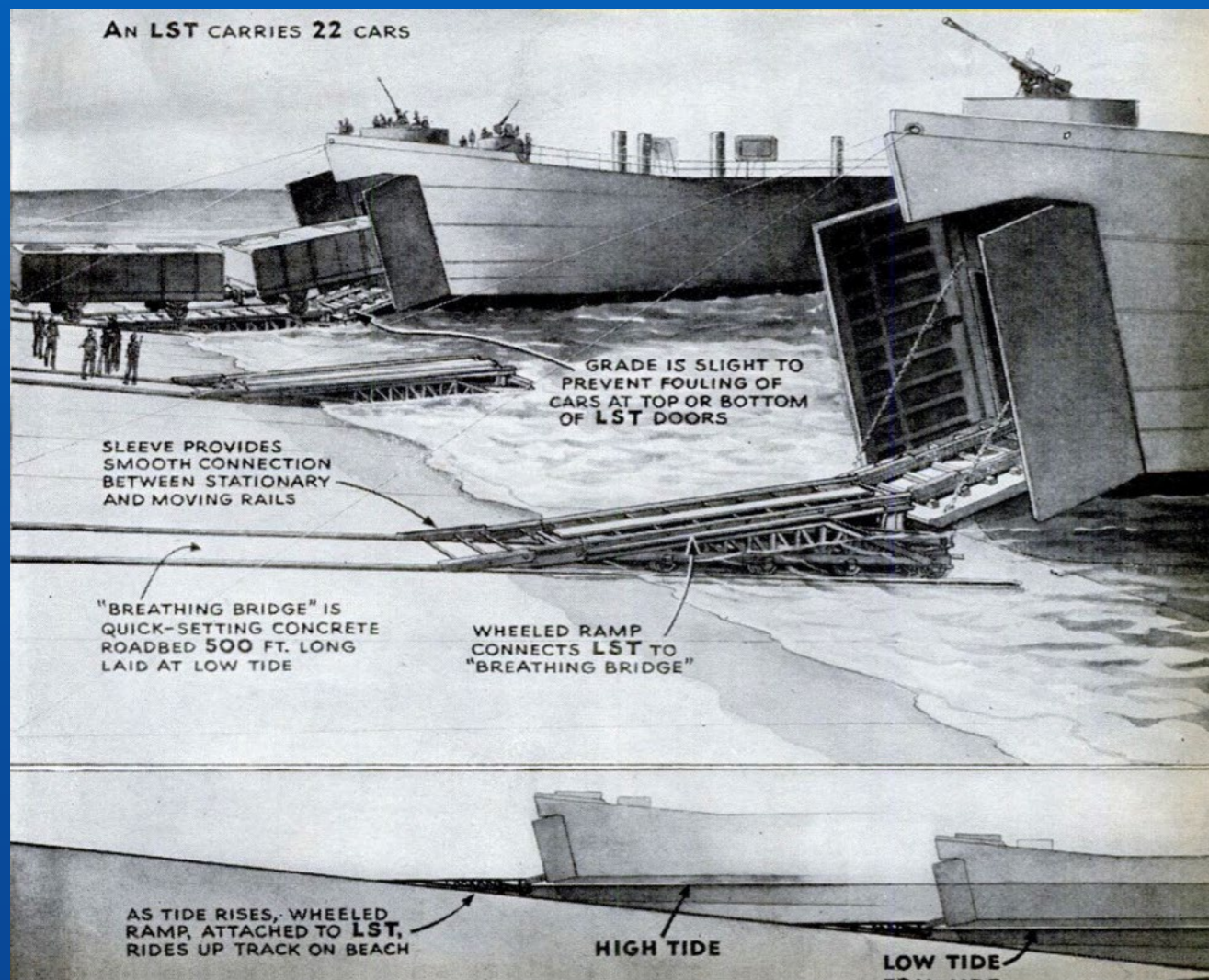
Twice daily
(Lunar)



LST



Col Sidney H. Bingham's innovation To bring loaded RR cars and locos right to the beach via LST Railroad tracks laid on fast setting cement



LST-21 UNLOADING US ARMY RAILROAD CARS ONTO A BEACH, FRANCE



Official U.S. Coast Guard Photo, Gift of Jeffrey and Mary Cole.

LST now a Landing Ship TRAIN

Enlisting help from The French Cheminots Many were reticent

Collateral
Damage



A Little Diplomacy

Appeal to Gallic pride

Nous sommes Frères



Military chocolate



Entente cordiale

Slow going at first

Locomotive and car repair

Indirect route the best

Communications

Lines easily cut

Used flashlights, cigarette lighters



Bridge out



Bailey Bridge



Donald Bailey in his office with one of his models



Vintage A.C. Gilbert Erector Set No. 7 1/2 Engineer Set Red Metal Case

For extra credit

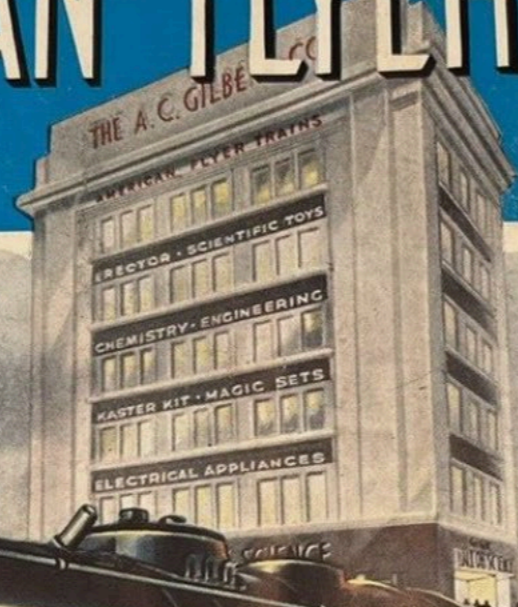
What else did A.C. Gilbert
make?

What did they make in WW2?

AMERICAN FLYER TRAINS

OFFICIAL TRAIN BOOK FROM

THE GILBERT HALL OF SCIENCE



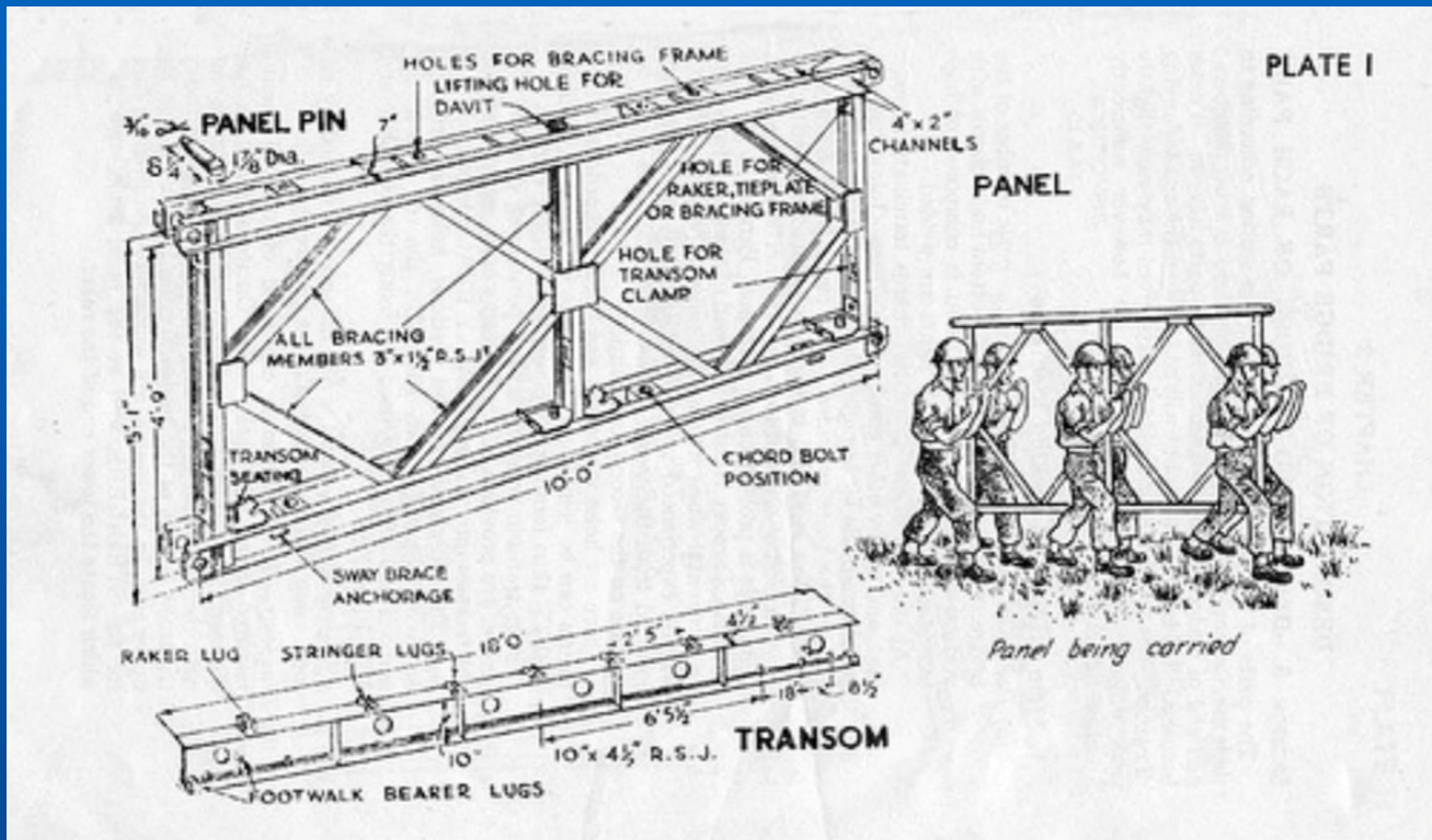
FIRST SCALE MODEL HOTSHOTS
THAT "CHOO-CHOO"

- HEAR EM!

Owing to emergency conditions we reserve
the right to change compositions, materials
or finishes without notice.

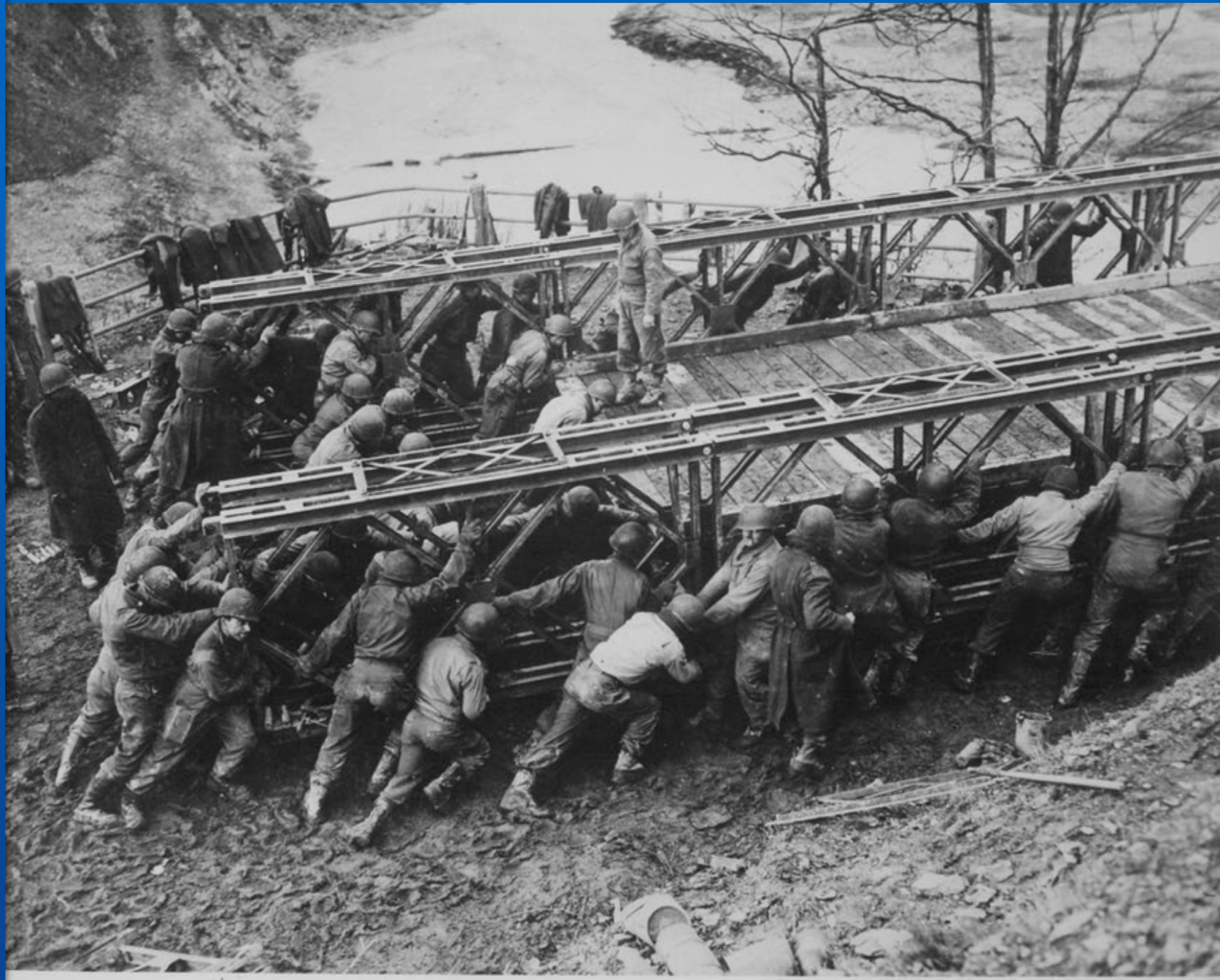


Back at the Bailey Bridge



Construction and transportation scheme of one of the sections of the Bailey Bridge

Bailey Bridge



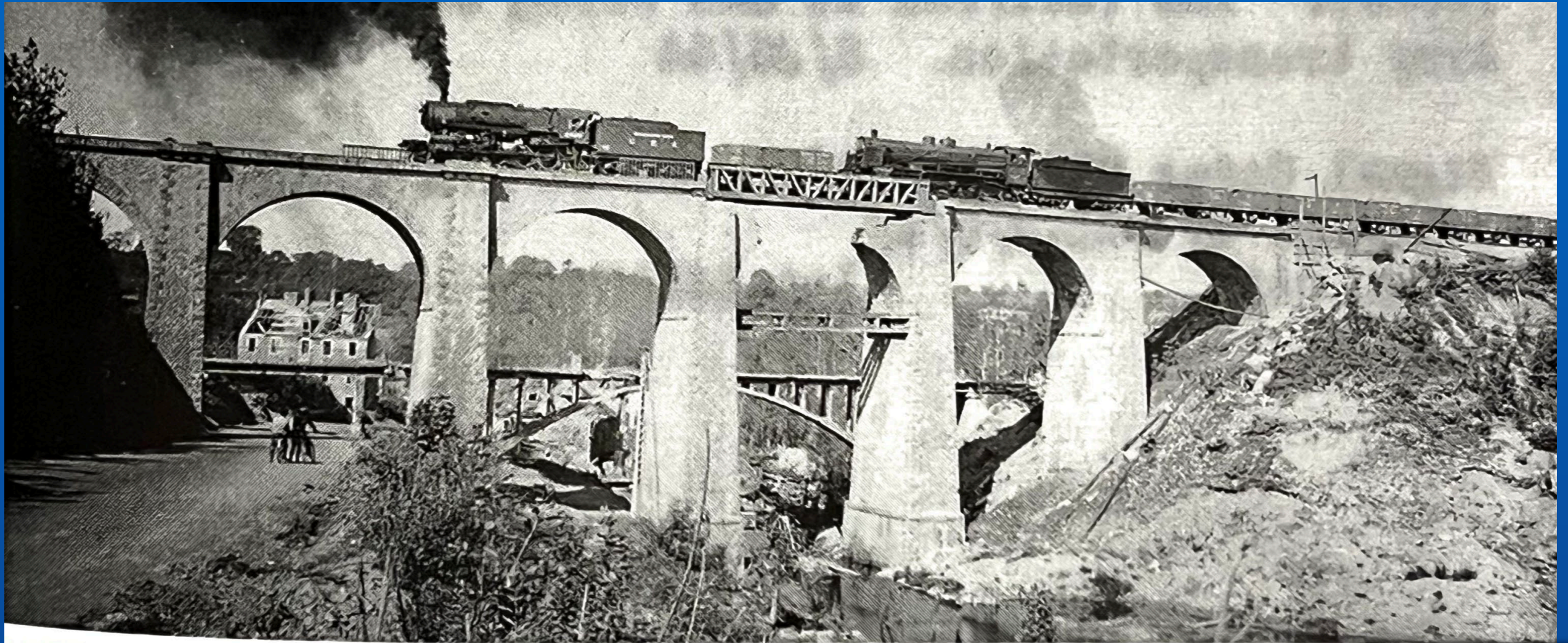
US troops launching a Bailey bridge across a gap by hand

Bailey Bridge



Bailey Bridge over the Saar River. The average length of the bridges was about 30 meters

Bailey Bridge



The repair of the Coutances viaduct in Normandy over the Soulle River

3,000 Bailey Bridges constructed in all

Meanwhile Back at the War

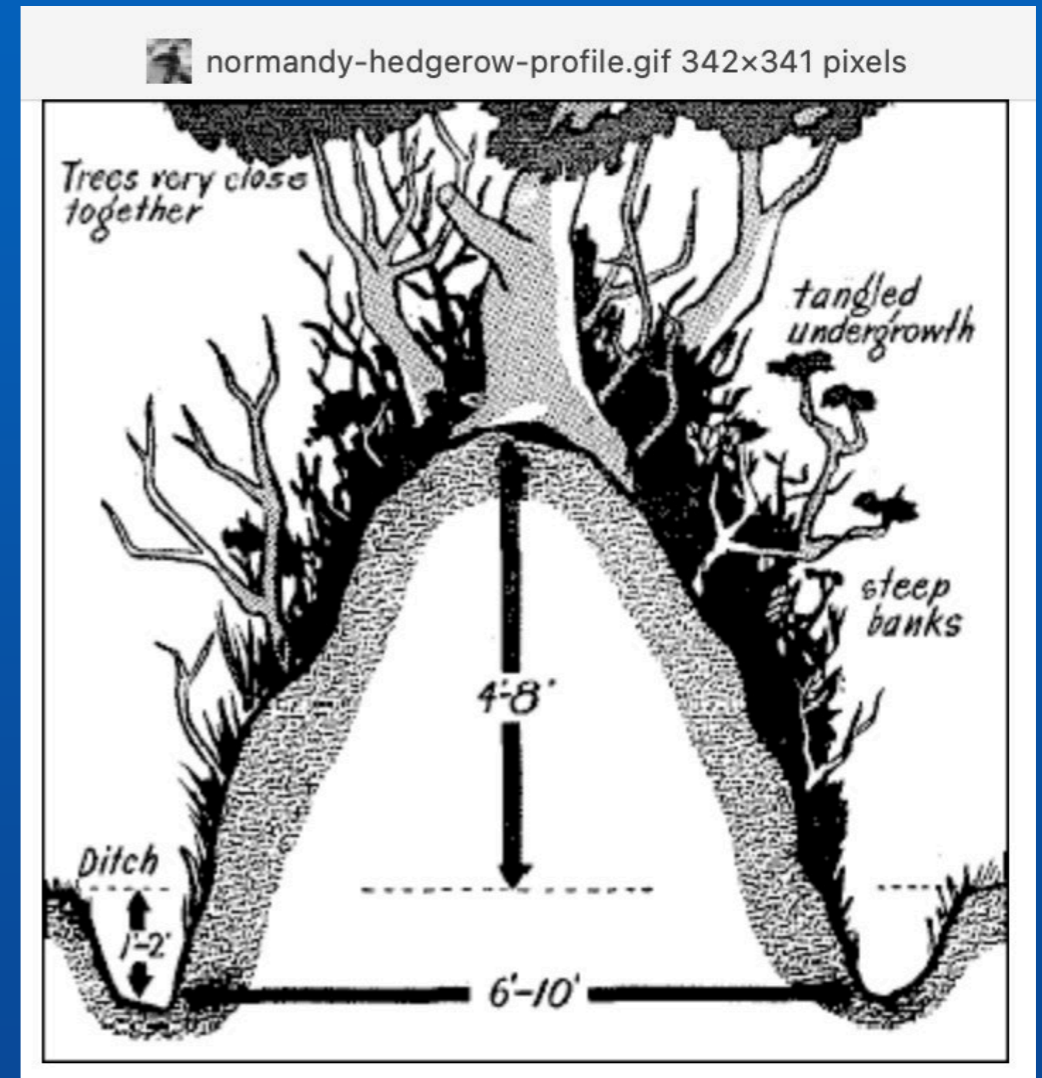
Break out of the Bocage

Falaise Pocket

Liberation of Paris

Patton goes hell bent for leather

Meanwhile Back at the War



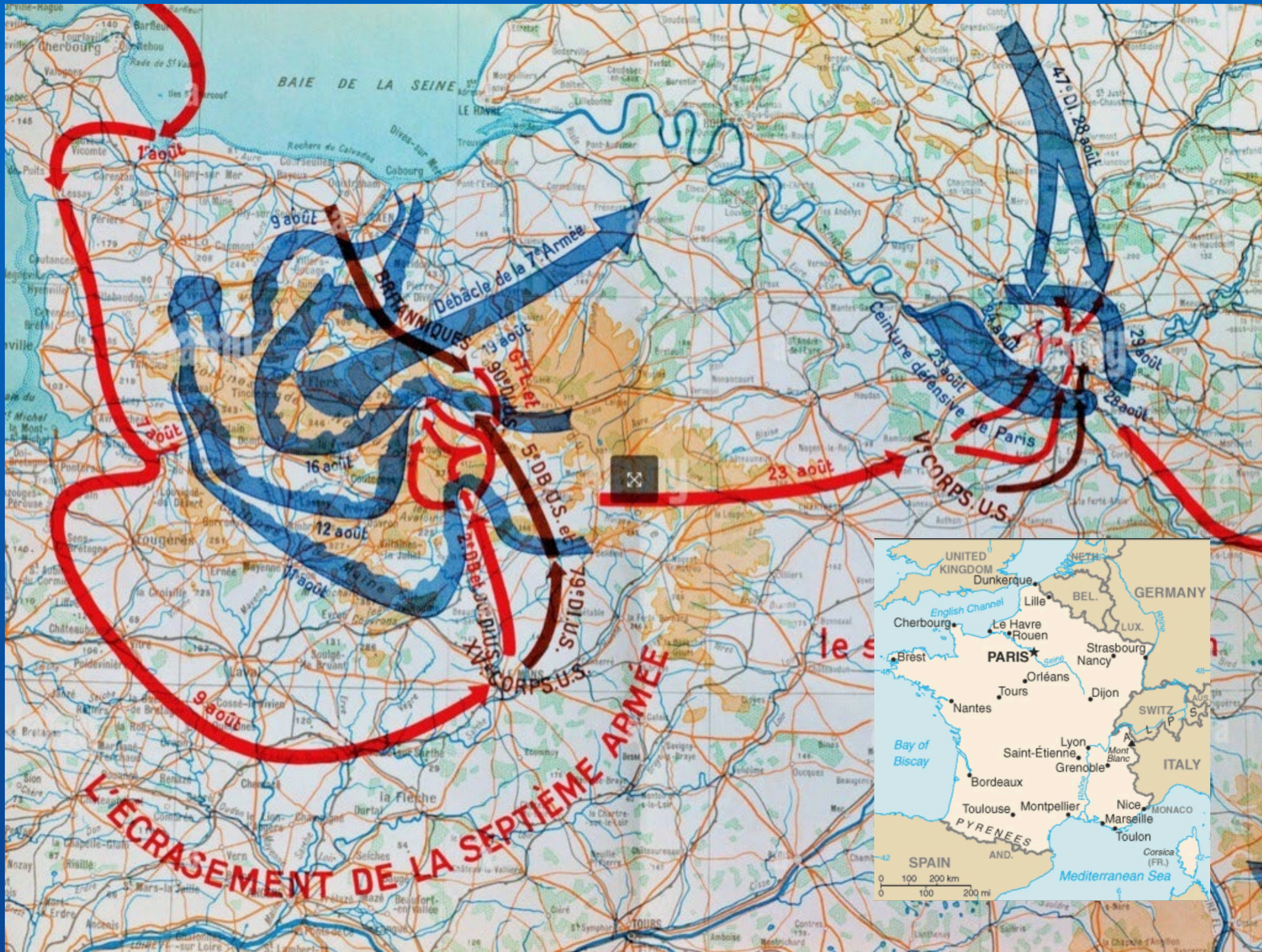
Hedgerows

American ingenuity at its best



Sgt. Curtis Culin





Liberation of Paris



25 Aug 1944

But, on the same date....

Railroad couldn't keep up

Advent of the "Red Ball Express"



Wait, wait!!
That was trucks

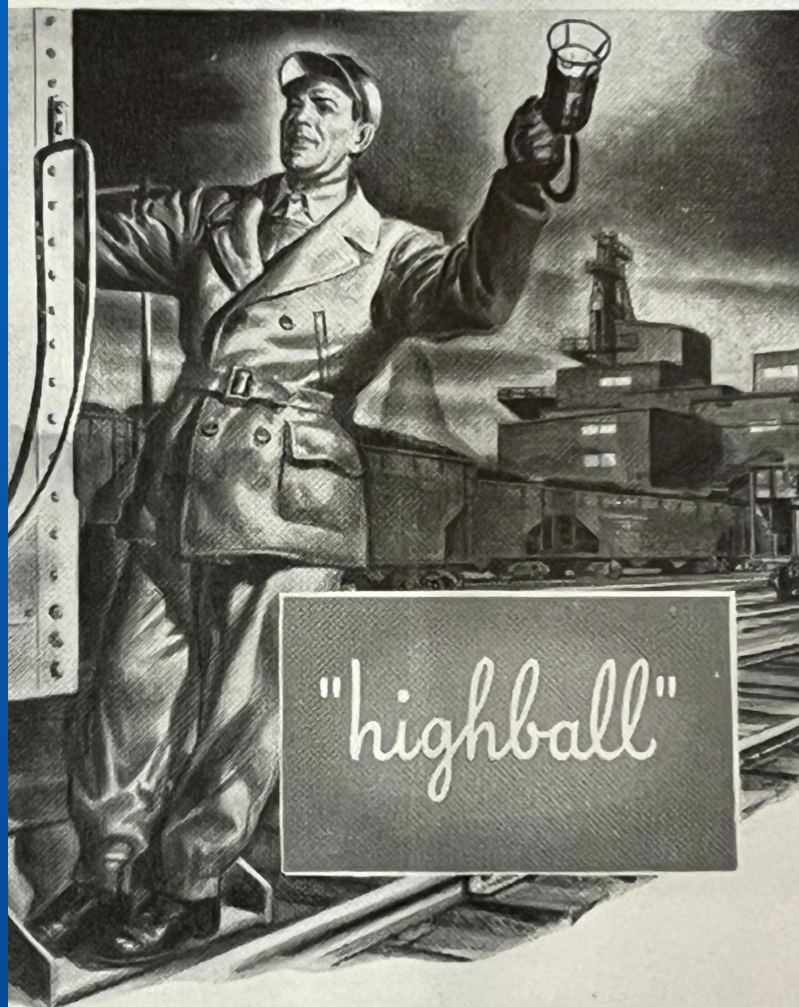
Red Ball Express



One way roads
to and from
24/7



Red Ball Express



AUGUST 25, 1905.

THE RAILROAD GAZETTE.

ing Co. on the Northern Pacific Railroad in extremely cold weather, stroke cut-off. The fuel used by catching the drips from the cars, it was found that 62 pounds of protected by stout hand-rails

184

THE RAILROAD GAZETTE.

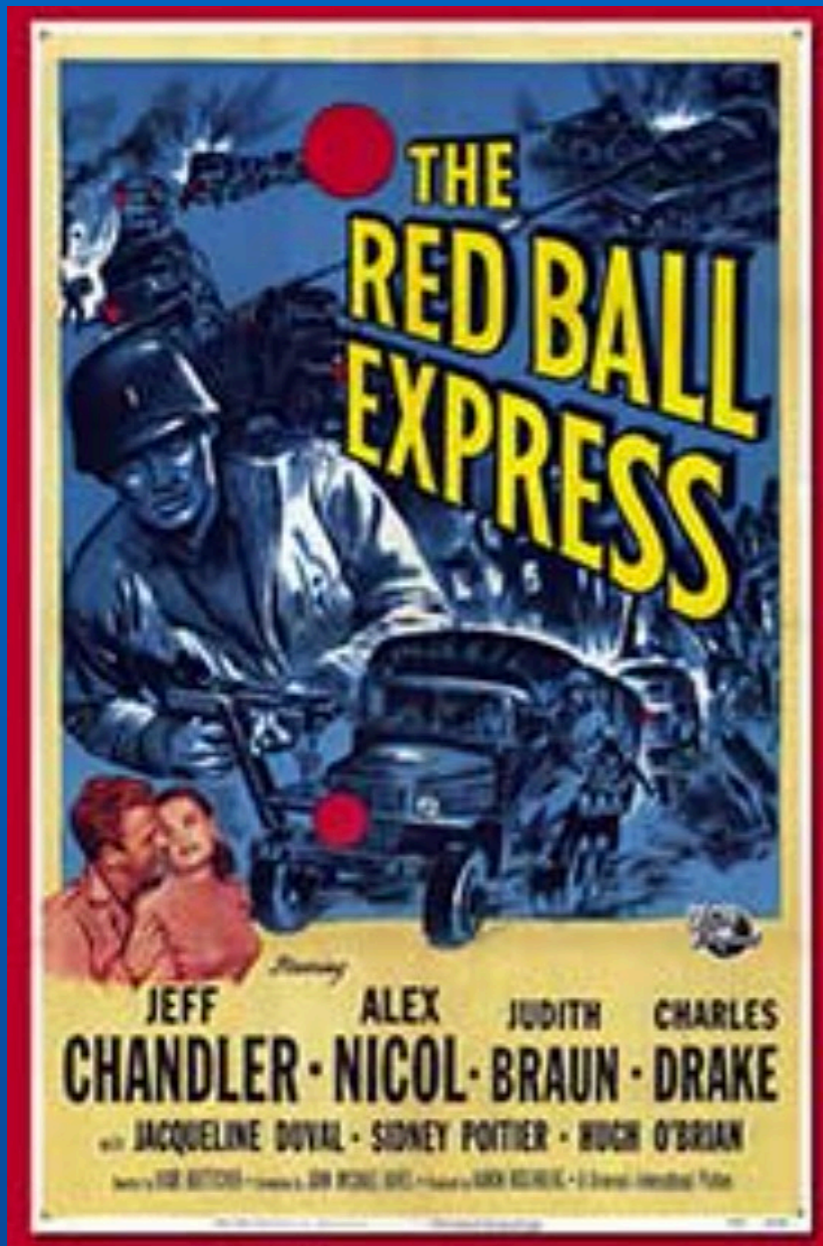
Handling Fast Freight on the Santa Fe.*

About three years ago the Atchison, Topeka & Santa Fe put into general use on its main line trains between Chicago, Galveston, Denver, El Paso, San Francisco and San Diego a system of handling all high-class and special freight, known as the Red Ball system, which had been in use on some parts of that road since 1892. The movement and tracing of freight has been greatly facilitated by the change and the auditor's office relieved of a mass of correspondence relating to car movements and delays. The list of commodities handled under this system includes nearly every class of general merchandise and perishable goods; but unless by special instructions, or in order to fill up trains to the tonnage rating of the locomotive, no dead freight, such as lumber, coal, cotton, wheat or similar classifications, is handled in Red Ball trains.

of the red envelope according to one that the car has been set out again except between terminals the car is set out at a terminal yard with the envelope attached with the telegraph operator out and he immediately thereon to the Superintendent transferred to another car the red envelope accompanying made in the original shipment to its destination.

A form known as "De agents and yardmasters t

The Movie



80% of Red Ball Express drivers were Black

Red Ball Express

Ultimately, not even the trucks could adequately supply

Forward progress slowed by October

Liege

Liege



Liege
8 Sep

Important railway hub

We really need Antwerp

625 cranes
900 warehouses
495 storage tanks



Biggest deep water port in Europe

But !!

Monty distracted
By "Market Garden"



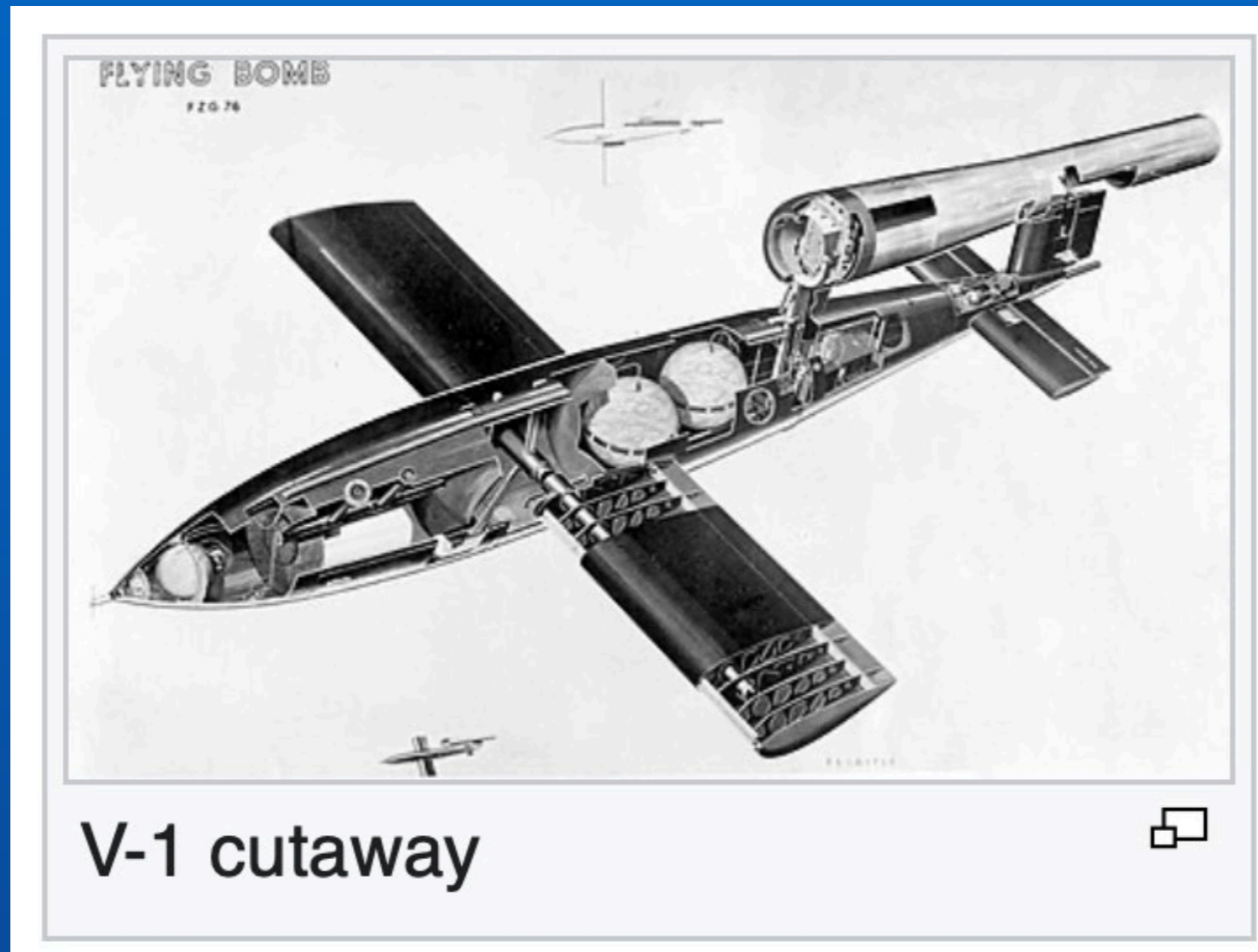
A "Bridge to Far"

Germans fortify/mine the Scheldt

Battle of the Scheldt Estuary 2 Oct to 6 Nov, 1944



V-1 "Buzz Bomb"



Liege - 331

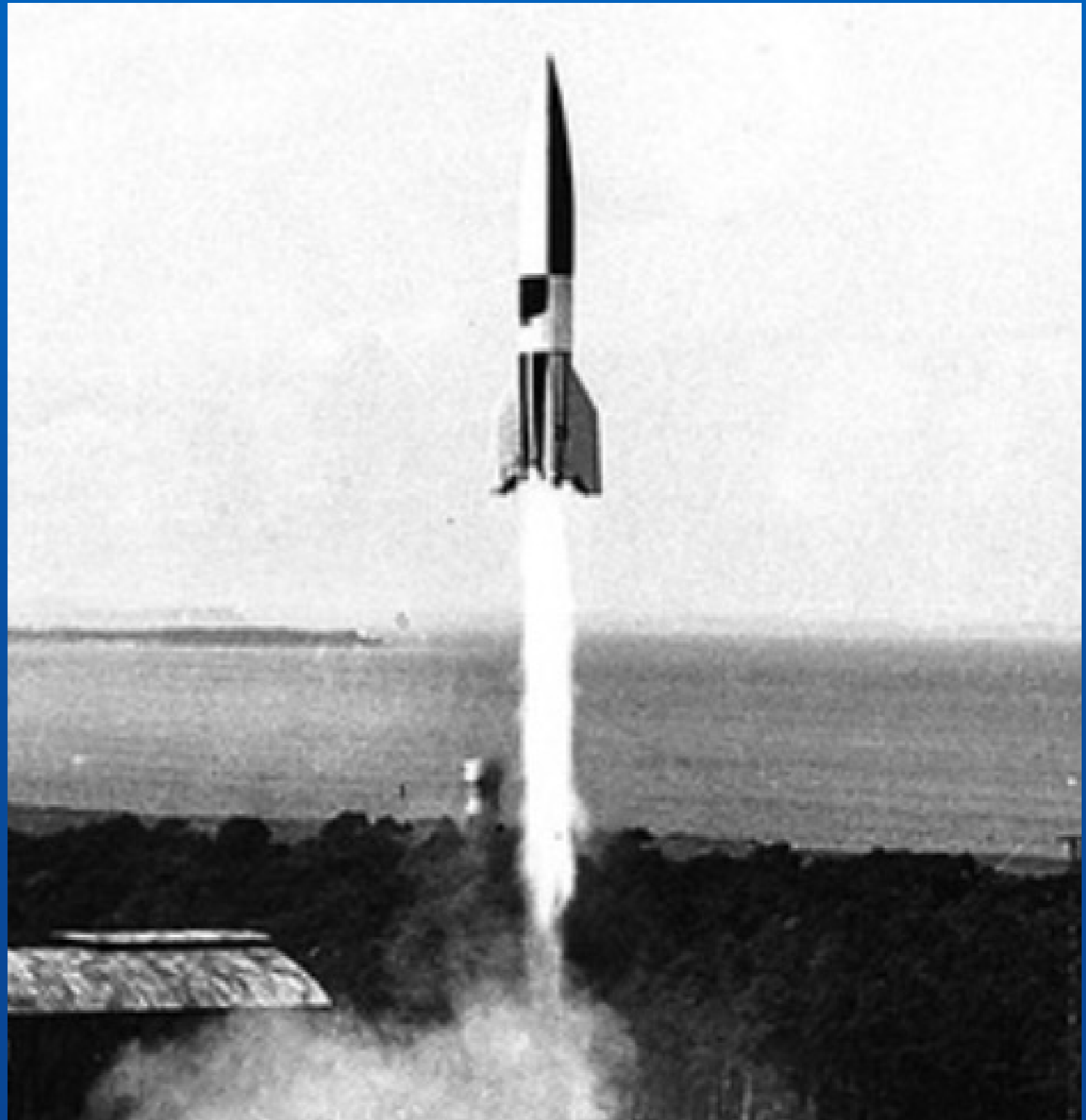
Antwerp - 8,700

V-2

It's a rocket

It's big

It's silent



V-2 stats

1610 launched against Antwerp

One V-2 every 40 minutes

Didn't stop til launch pads overrun

31 March 45

Battle of the Bulge

Germans positioned 400,000 men, 1400 tanks

Moved at night

Radio silence

Burned charcoal to heat food

Assisted by bad weather



Battle of the Bulge

Liege

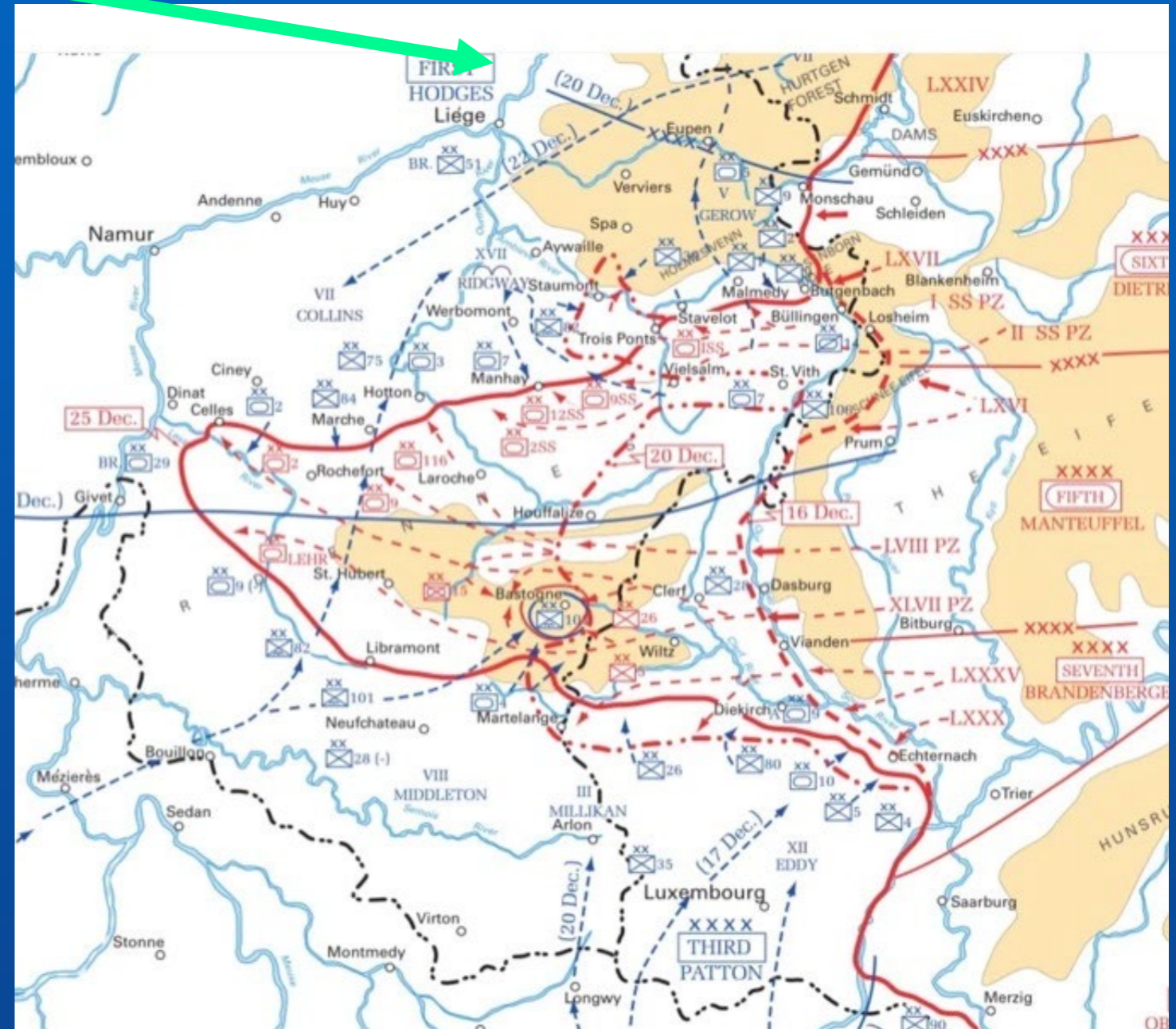


Railroad retreats

A total of 225 miles
recaptured by Germans

Bridges re-destroyed

A train gets lost !



Railroad used to move allied troops !

Crossing the Rhine

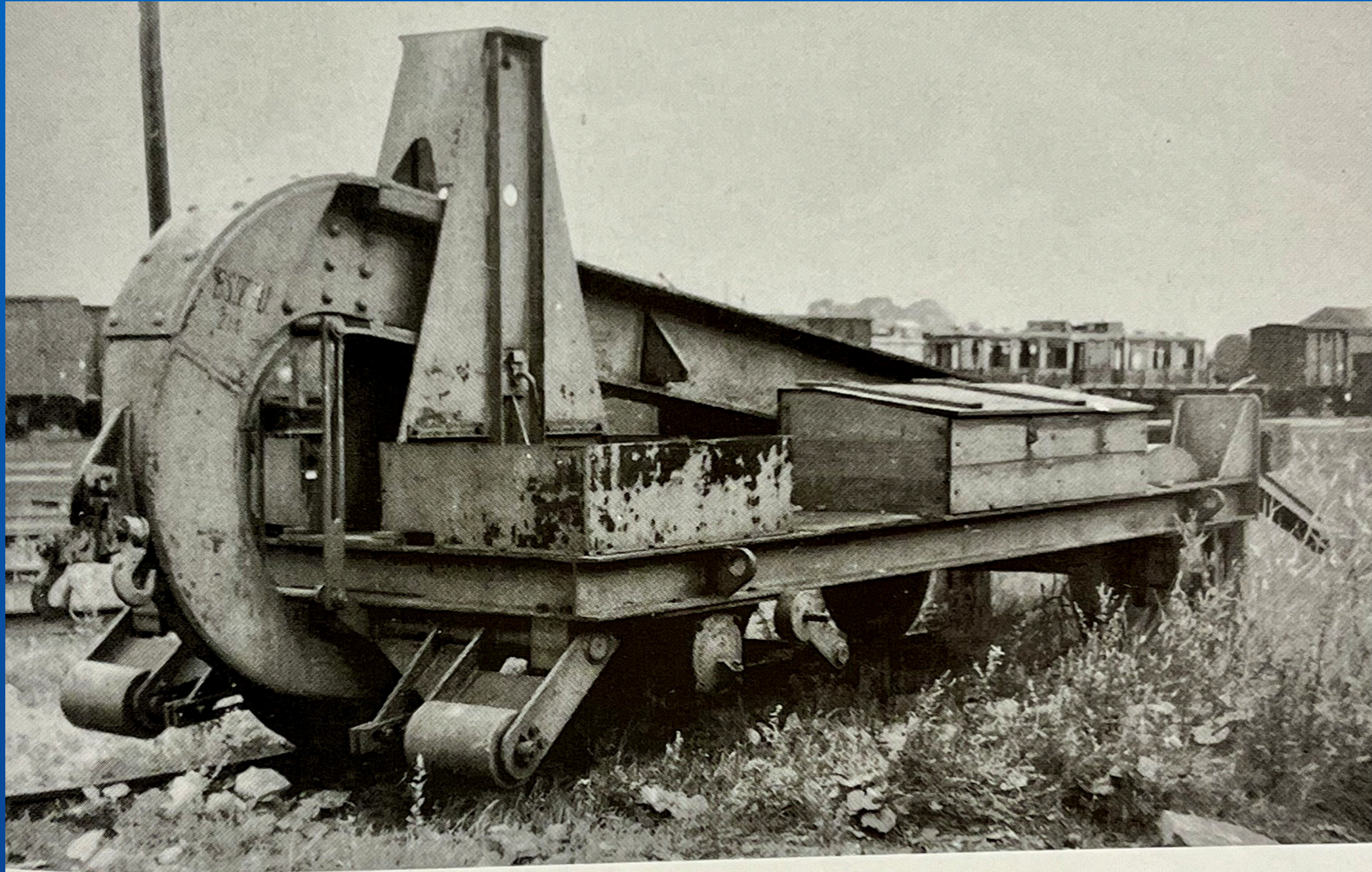
Wash, rinse and repeat



Rebuild, repair railroad and bridges

Utilize German railway and equipment

Revenge of The Schienenwolf



The Germans towed this fearsome machine, the *Schienenwolf*, or track ripper, at the back of a train to destroy the track and rip up the railroad ties.

The Schienenwolf



Schienenwolf destroying rail tracks during German retreat, 1944.

Captured German RR equip used

Review HO

A Doodlebug on Deployment

Brawa U.S. Army VT 60.5



Review by John Menges
Model Photos by Pamela Varney

Brawa HO-scale
Diesel Railcar VT 60.5 U.S. Army
DCC-sound
44730

Brawa
brawa.de

Above: Is there a German word for Doodlebug? The Deutsche Bundesbahn/U.S. Army VT 60.5 had headlights that looked like eyes and marker light brackets that looked like short antennas. USATC rail models have been popular in Germany for decades. U.S. Army movements by rail were a common occurrence during the Cold War. The Army still moves heavy equipment by rail in Europe, though troops generally move by air.

The Prototype

The story of U.S. Army diesel railcars began in the 1930s when Deutsche Reichsbahn developed several high-

new ownership, the trainsets now served the Americans as command cars, hospital trains, and saloon cars for high-ranking U.S. generals. In the turbulent years following the war

Every year or so a European manufacturer announces an HO-

Hospital trains



Initially improvised

French box car: 40 hommes, 8 chevaux

Note ambulances

Hospital trains



Later, dedicated car from Britain arrive. Note ambulances

Why the ambulance comments ?

Ambulance transfers to/from
hospitals in chain of care were
tough on the wounded

The Hospital Train Policy



DRESSING ROOM IN HOSPITAL
WARD DRESSING CAR, 1942

No ambulance transfer greater than 25 miles

Hospital trains come as close to front lines
as close as tracks would allow



Active care on hospital trains
In the face of active shelling
and track hazards
47 hospital trains in Europe

In conclusion, some stats

3,000 Bailey bridges

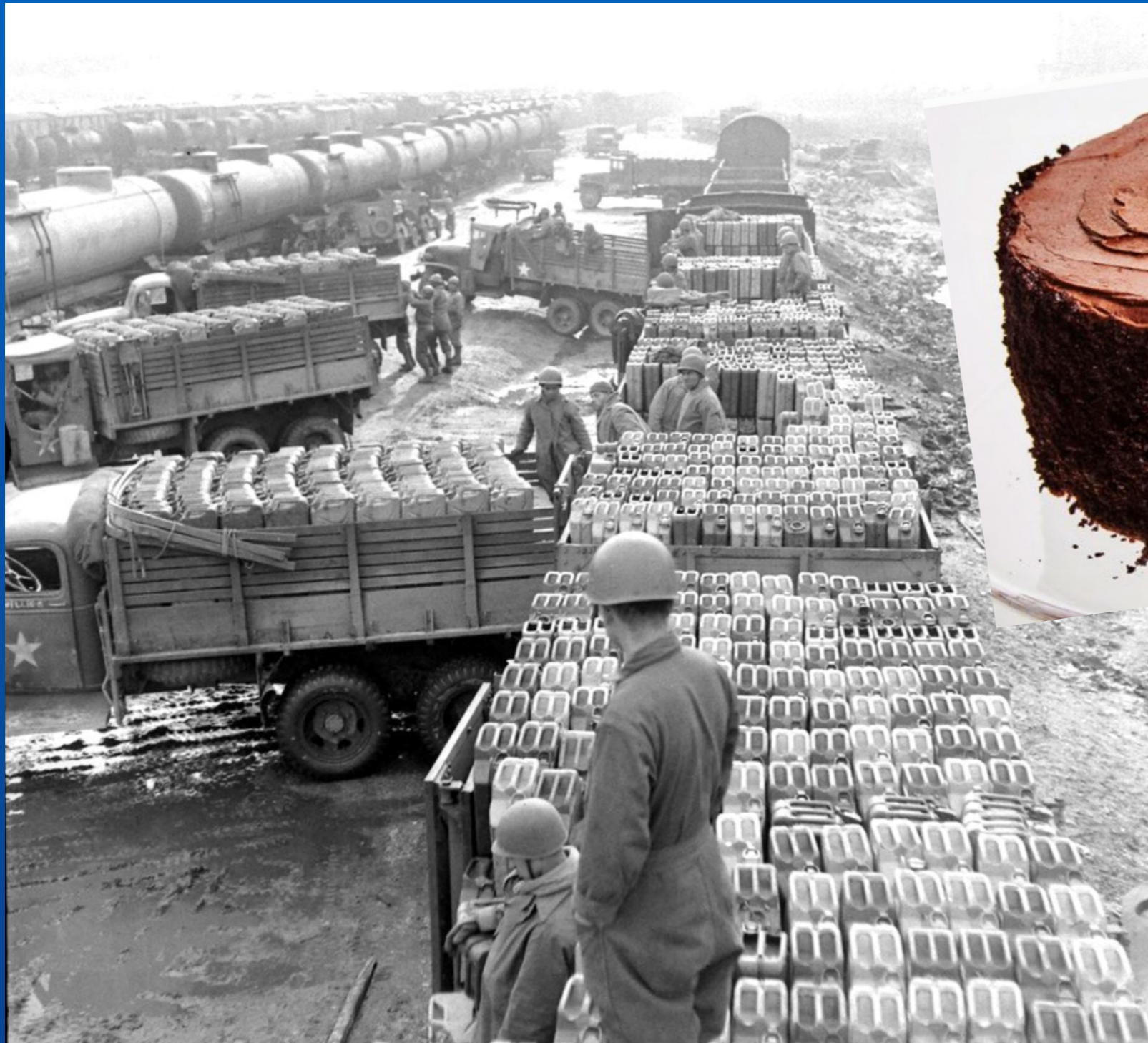
2, 052,099men

3,098,259 TONS of supplies

Grandpa, how did we
Win the war?

Superior logistics, largely due
to rapid and determined
restoration of railroads
in France, Belgium, and
Germany

Supplies were brought close to the front lines



**“Infantry wins battles,
Logistics win wars”**



Gen. John J. Pershing

C'est Le Fini

et

Merci beaucoup

First military objective

- Secure a deep water port
- Mulberry lost in Storm on 14 June

A Little Diplomacy

- Mon Frère
- Repair/use French locos
- C Rations and American chocolate

Trivia question:
What else did A.C.Gilbert
Manufacture?

Pix of Bailey bridges

There is a story that German troops captured an American truck heading towards the front with fresh supplies. Inside, the Germans found this:



That's right, a cake.

After examining it, they realized the cake was less than a week old. How in god's name could the Americans bake a cake, package it and send it to the front within a week while German troops had to wait days or weeks for critical supplies such as water, ammunition, medicine and food?

Chocolate cake story

D-Day 6 June 1944

Enlisting help from French Cheminots



- Many were reticent
- Collateral damage memories

Bailey Bridge

Erector Set as a child?

Truss section carried by 6 men

Bolt together, shove into place

Why this topic?

1. Doit de Seigneur

2. Research on previous topic

Serendipitous Discovery

- 1. Manpower S-1
- 2. Intelligence S-2
- 3. Leadership S-3
- 4. Logistics S-4

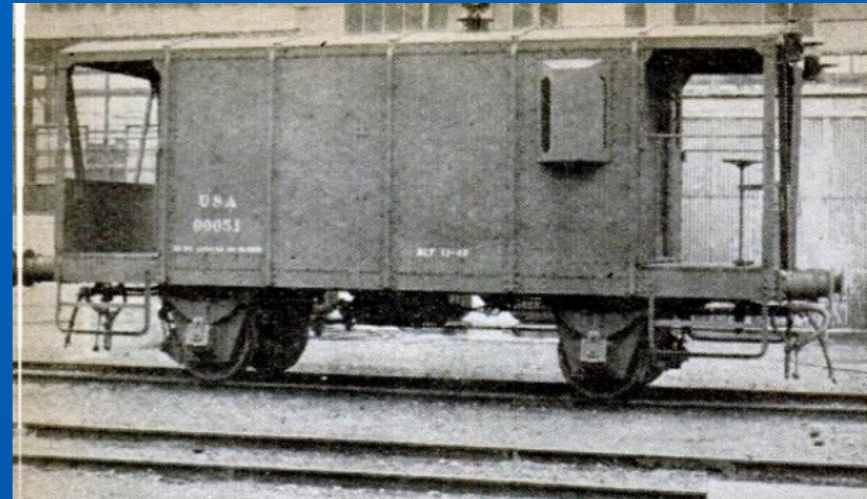
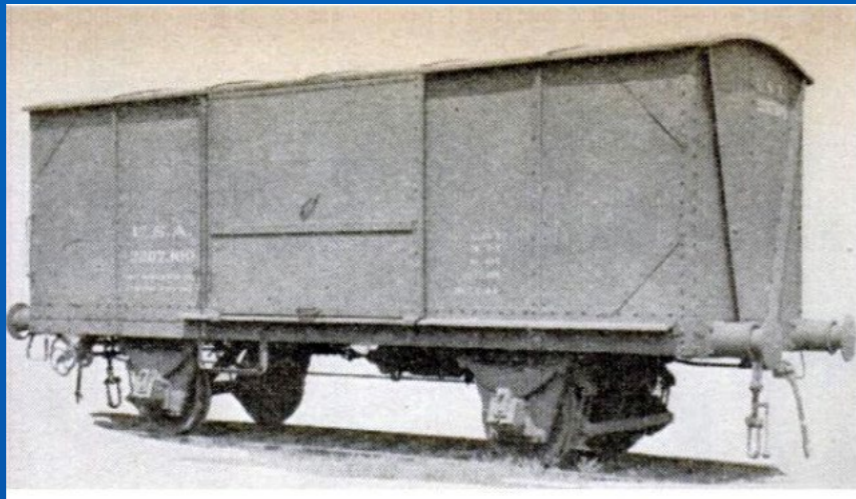
Crime and Punishment RR

50 miles of track

Graduation present

Blow up the bridges

Anticipate Needs



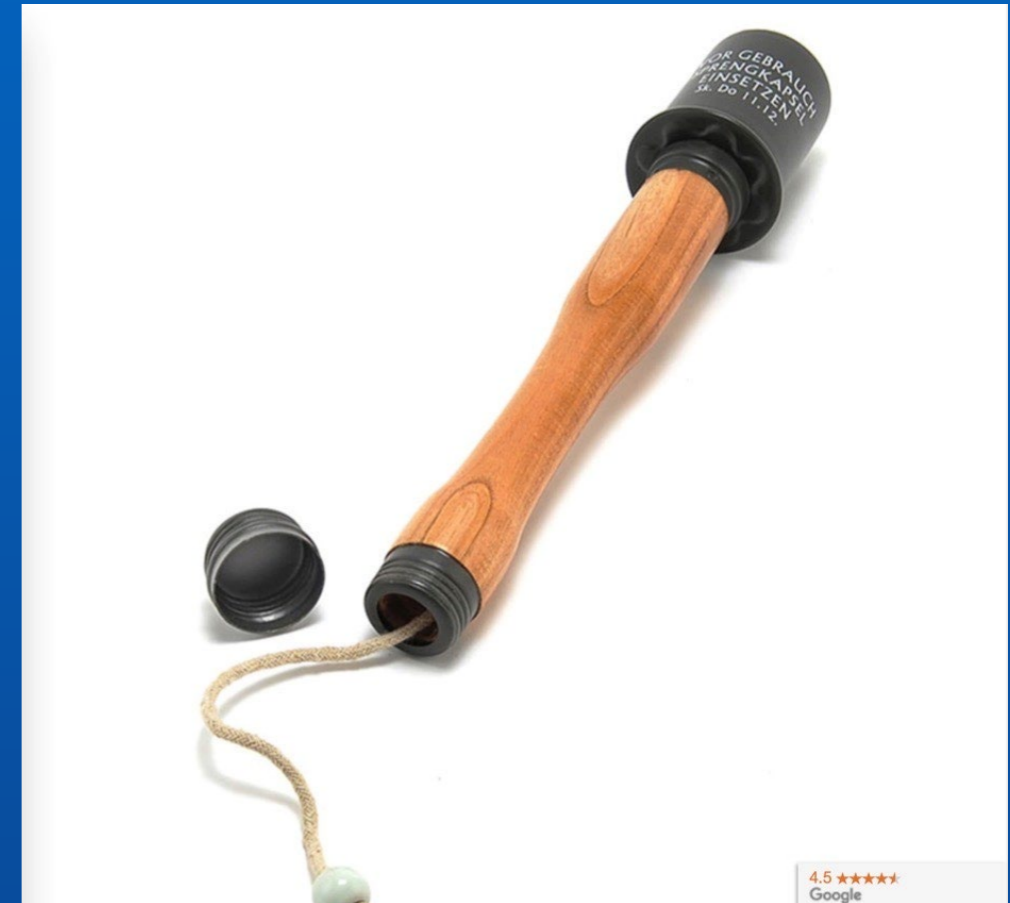
- Rolling stock
- Prefab in USA
- Assemble in Great Britain

Continue training in Britain

- Assemble rolling stock
- Practice running British/Scotch trains

Dangers to Railroaders

- German artillery
- Booby traps
- Unexploded ordinance
- Snipers



Cherbourg D+ 21



The devastated state of Cherbourg when Allied troops first arrived to start repairing the port and railway facilities in early July 1944.

- Railroad largely intact
- Germans thoroughly sabotaged port
- Can't let supplies pile up on the beaches

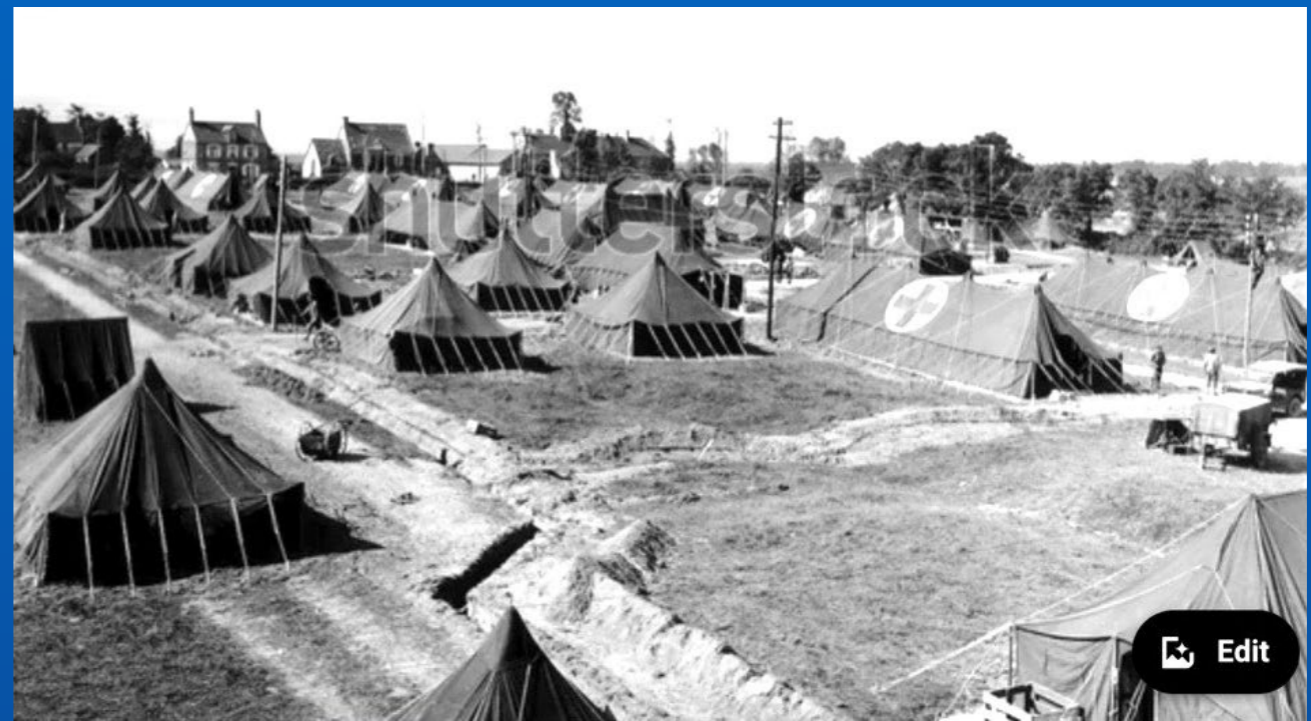


Monty distracted by "Market Garden"

Toot Sweet Express

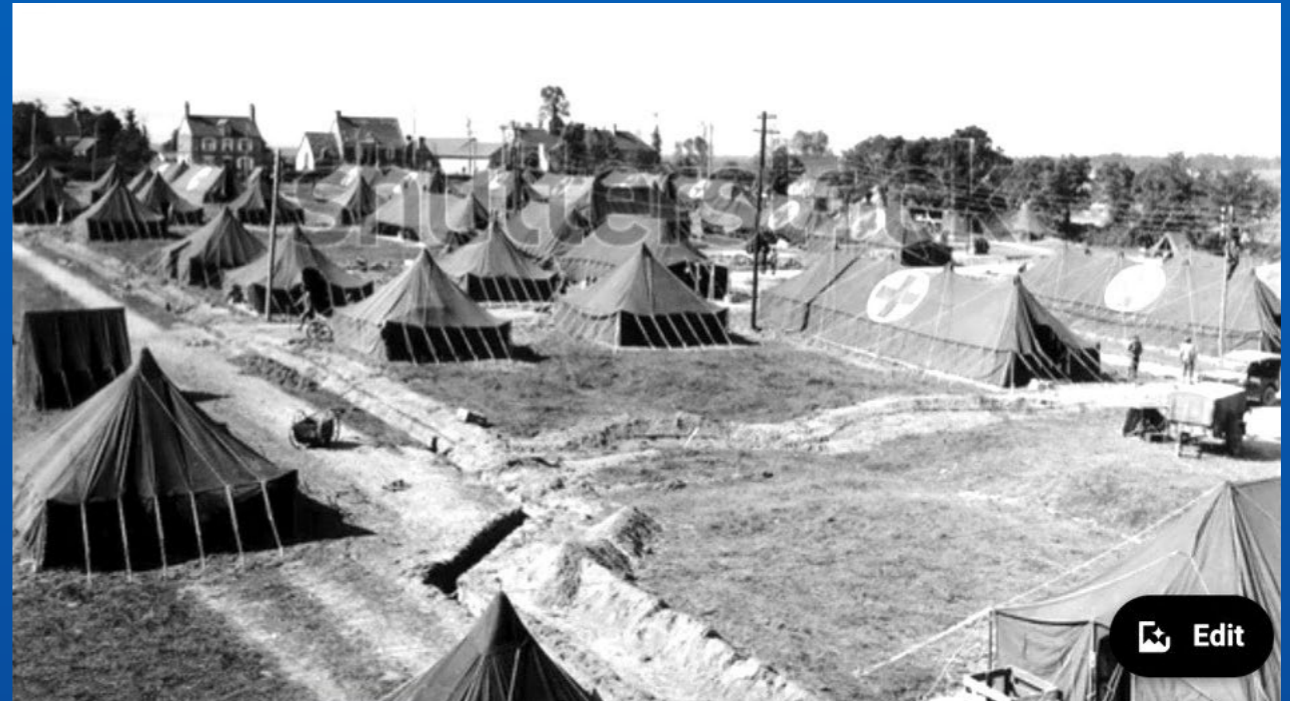


The Evacuation Chain



- Aid station to division hospital
- To evacuation or forward hospital
- To Britain or USA via hospital ship

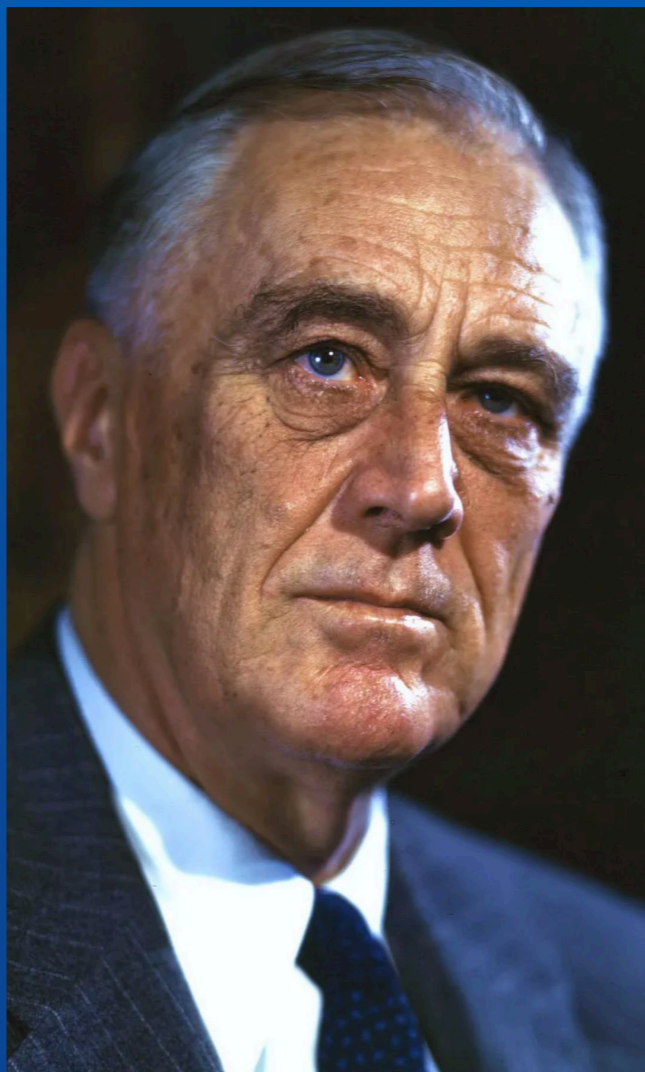
The Evacuation Chain required ongoing care



Aid station to division hospital

Indeed We Did!!

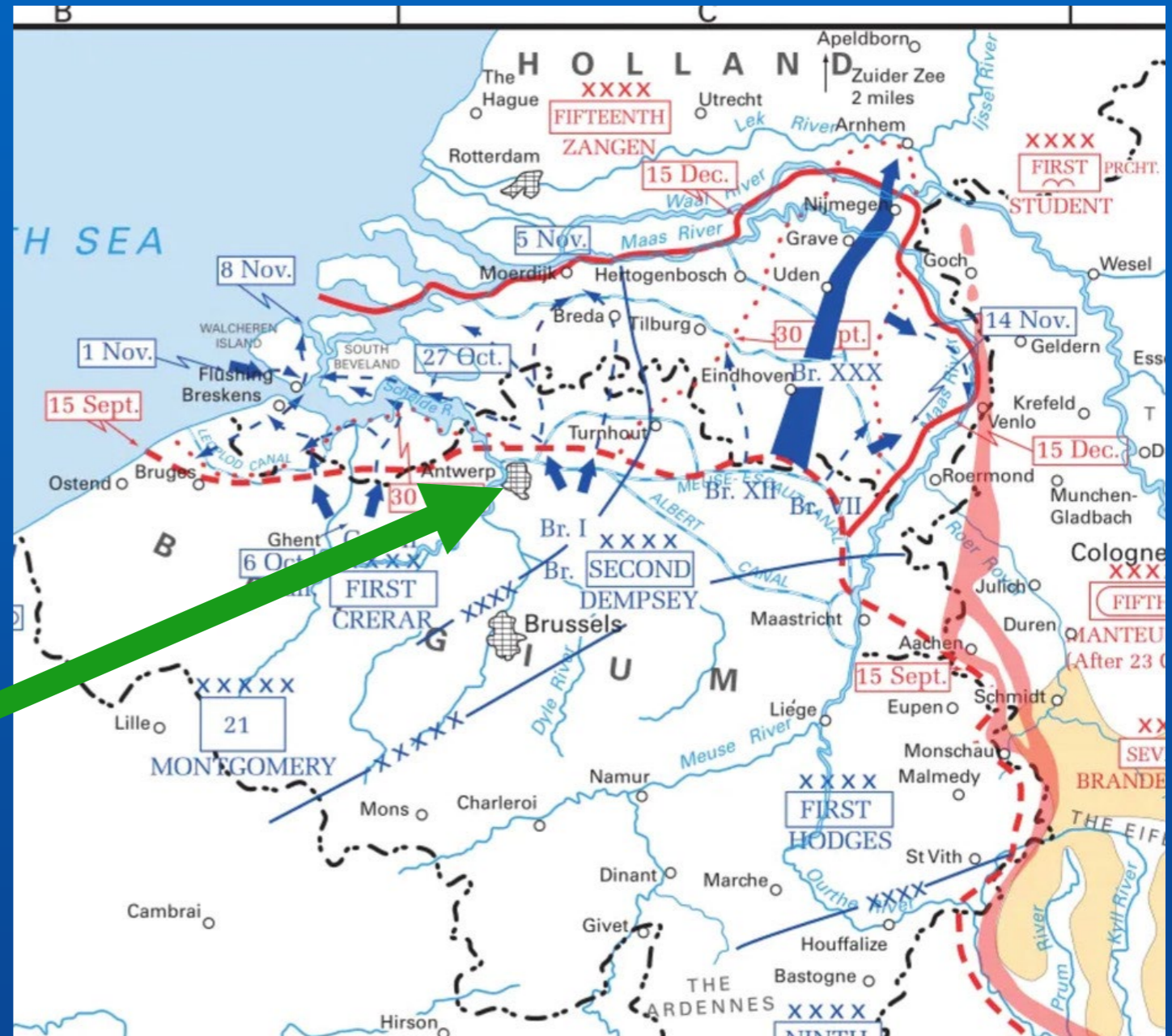
- Preclude the Germans from resupply, troop
- Collateral damage



We really need Antwerp

625 cranes
900 warehouses
495 tanks

Antwerp
6 Sep



Monty distracted by "Market Garden"

Hospital Trains



What's this got to do
With railroading?

Serendipitous discovery

Operation "Choo choo"

21 May 1944

61 locos destroyed

91 damaged



Railway Grand Divisions

Unit	Sponsor	Date of Activation
701st	New York Central Railroad	January 11, 1943
702nd	Union Pacific Railroad	October 15, 1942
703rd	Atlantic Coast Line Railroad	August 1, 1943
704th	Great Northern Railway	November 30, 1942
705th	Southern Pacific Lines	May 19, 1943
706th	Pennsylvania Railroad	October 6, 1943
707th	Southern Railway	June 10, 1943
708th	Baltimore & Ohio Railroad	April 6, 1943
709th	Association of American Railroads	March 15, 1944
710th	Atchison, Topeka & Santa Fe Railway	December 14, 1943
774th	(No Sponsorship: Organized in Italy)	1944

Railway Operating Battalions

Unit	Sponsor	Date of Activation
711th	Training Battalion (Not Sponsored)	May 1, 1941
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727th	Southern Railway	March 15, 1942
728th	Louisville & Nashville Railroad	January 11, 1943
729th	New York, New Haven & Hartford	January 11, 1943
730th	Pennsylvania	May 15, 1942
731st	Union Pacific Railroad	Never Activated

YOUR NATION'S NEEDS AND YOUR PART IN IT

RAILWAY MEN

Your job during the war is to carry things where the country needs them.

What good is a gun, unless you have it where it is needed? What good is a gun without shells - without food for the men who fire it?

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