

# IMPROVING TRANSPORTATION SAFETY THROUGH INVESTIGATION

How NTSB's Hazardous Materials Investigations  
made a difference 1969-1982



# A little background...

1968 NTSB created with DoT

1970 Highway Investigation Specialist

'70-76 NTSB Intermodal Group

'76-82 HM Division Chief

Dangerous goods transportation philosophy





# Dunreith IN 1968

Ethylene Oxide





# Laurel MS 1969

Liquefied Petroleum Gas

6 f 53 inj town damaged

Thus one sent tank car parts rocketing all over town, new phenomenon, story no longer buried in local new papers

Glendora MS 17,000 evacuated on advice of local chemist





Brooklyn NY May 1970

Liquefied Oxygen



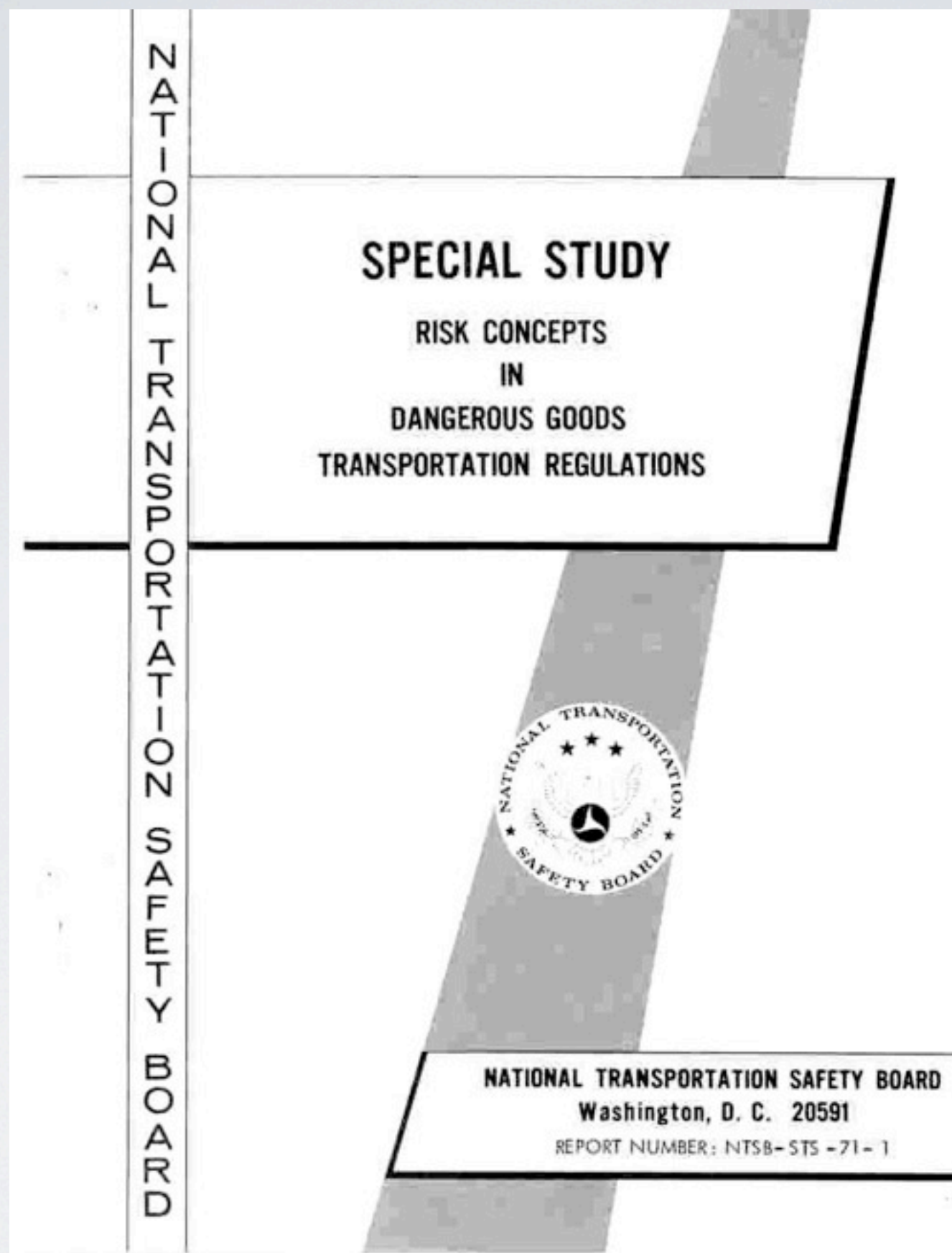


# Crescent City IL June 1970

## Liquefied Petroleum Gas

This was the biggie that started making these risk unacceptable  
personal experience flyover





## Special Study 1971

changed basis for regulation...  
contributed to 1973 US Statute action 93-633





Waco GA June 1971

dynamite





Houston TX Oct 1971

VINYL CHLORIDE



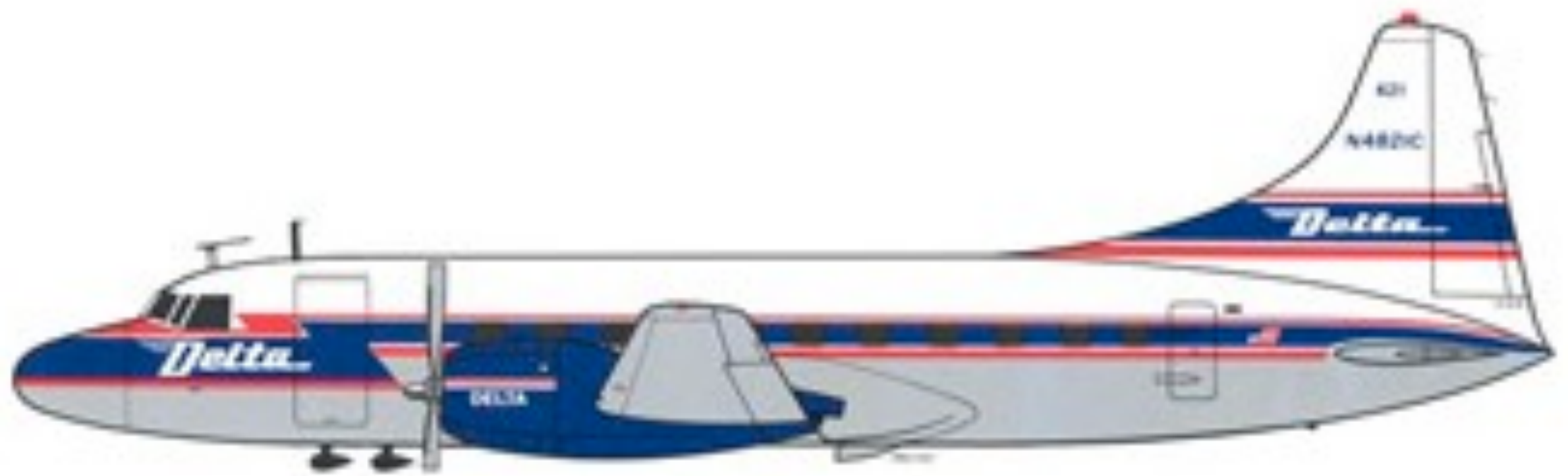


Houston TX Oct 1971

VINLY CHLORIDE

you can see what a mess they were making





# Delta Air Lines 1971-2

500+ passengers exposed to residue from Molybdenum 99 spill on an airplane,  
RAM incident

on a 40 passenger a/c as I recall  
contributed to new legislation with Pan Am Boston case in 73  
before TMI in 79





# East St. Louis, IL January 1972

## PROPYLENE

First big one of several in RR yard. Media were starting to get into the act big time,  
my Newspaper lesson





# Roseville CA Jan 1973

12 c/l bombs

A yard explosion  
Didn't take case a/c train wasn't moving, war on, etc. Political decision





Boston MA March 1973

nitric acid





Boston MA March 1973

nitric acid

invest challenges  
contributed to legislation  
1st case involving jail time.





Benson AZ May 1973  
bombs





Benson AZ May 1973

18 c/l of bombs

found evidence 5 miles back up the track





# Nagadoches TX 1974

Synthetic Rubber

First box car explosion –CL or synthetic rubber –  
challenge to classification system for hazmat

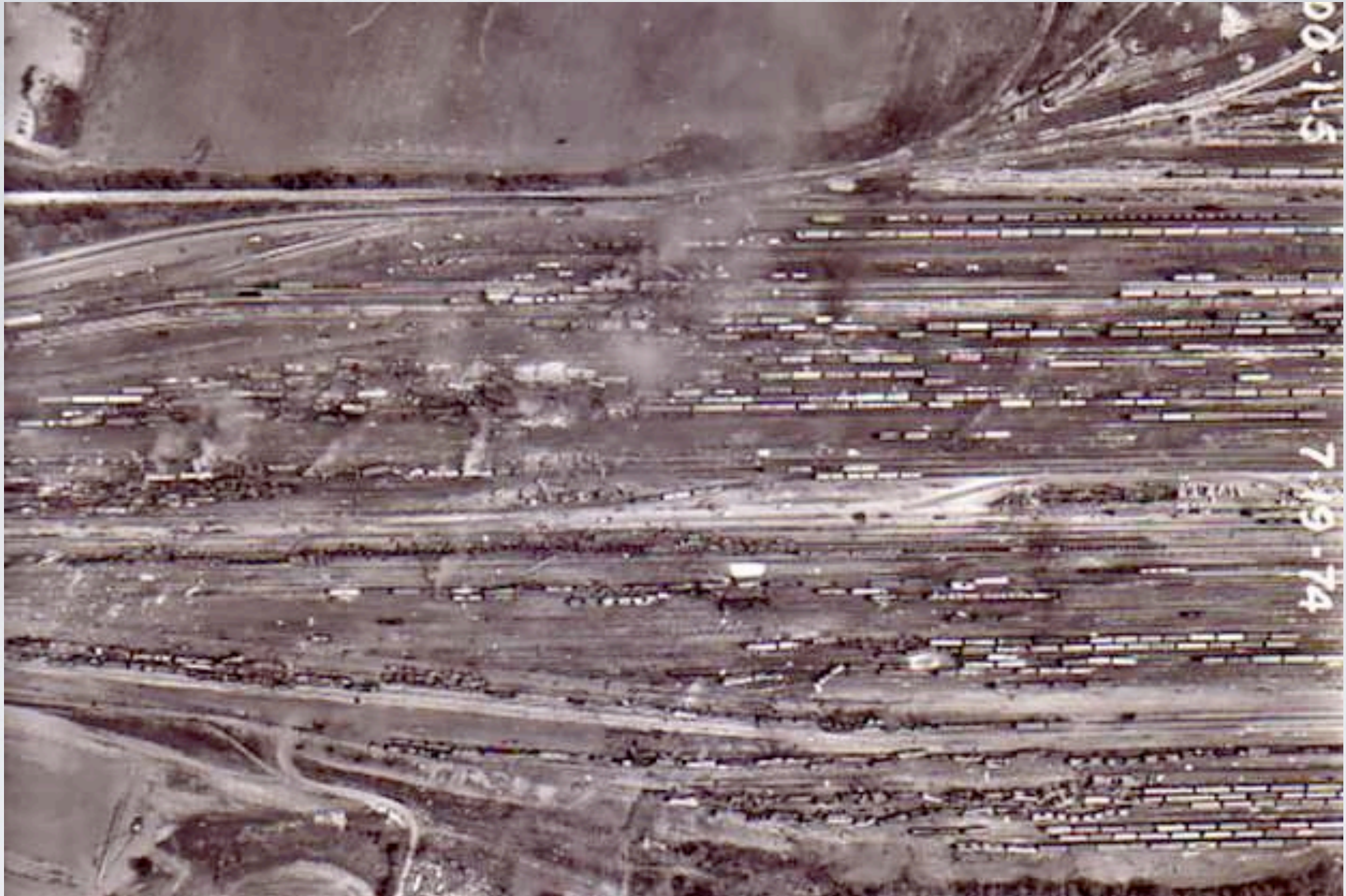




Oneonta NY Feb 1974

LPG





# Decatur IL July 1974

LPG





Wenatchee WA Aug 1974

monomethylamminenitrate



KEY  
EVIDENCE....  
(LUCKY)



# Wenatchee WA Aug 1974

monomethylamine nitrate



Houston TX Sep 1974

butadiene

MUSTANG OK Sep 1974

ISO BUTADIENE

DES MOINES IA Sep 1975

LPG

BELT MT Nov 1976

LPG

WAVERLY TN Feb 1978

LPG





# Houston TX May 1976

Anhydrous Ammonia





# Glen Ellyn IL May 1976

anhydrous ammonia

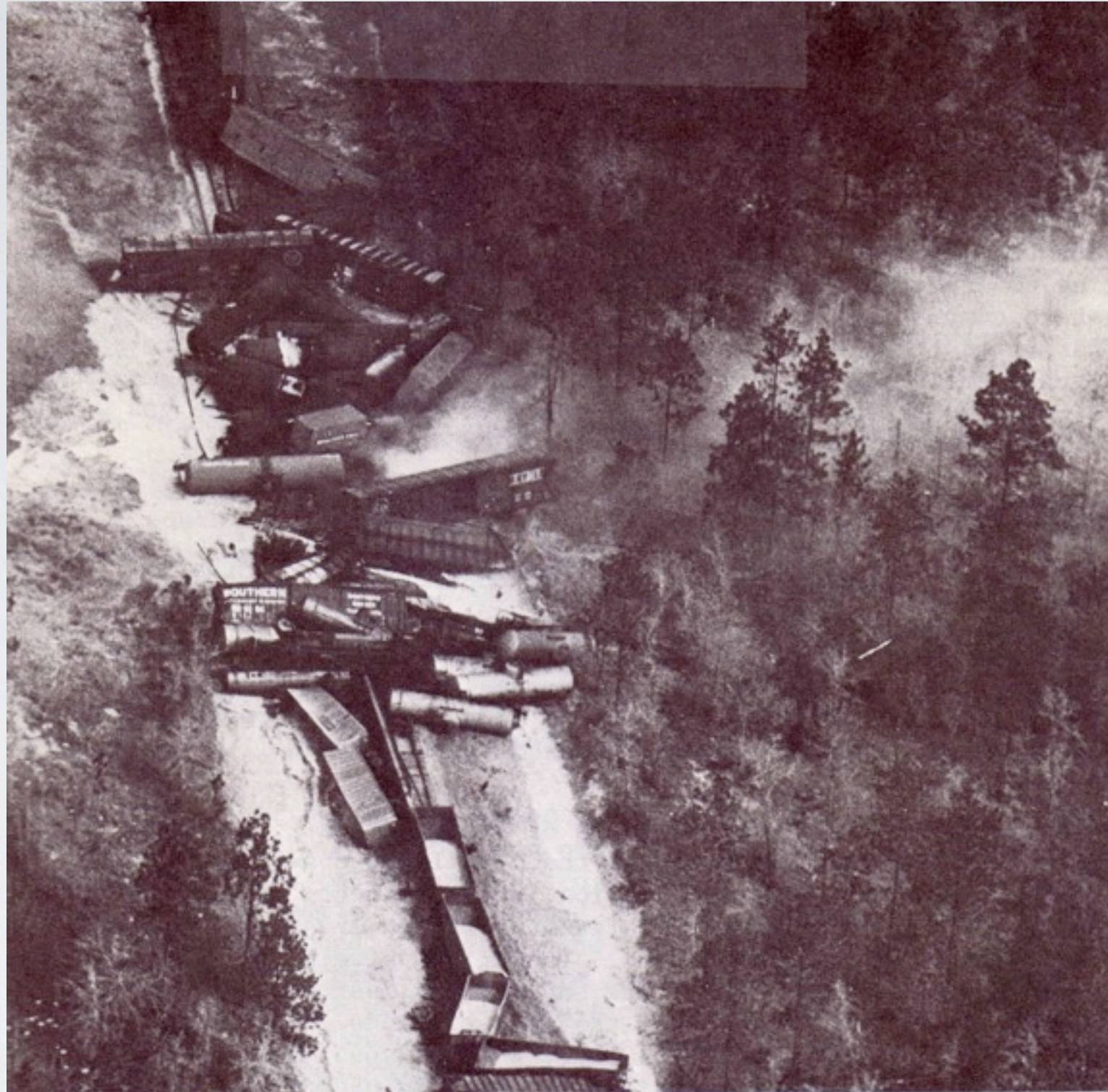




# Rockingham NC Mar 1977

Boxed RAM





# Youngstown FL Feb 1978

liquefied chlorine

8 f, evac 2500 in 5 mi area

Chlorine – mapped lethal zone...

spill maps followed – predicting hm threatened areas





# Crestview FL Apr 1979

anhydrous ammonia





# Los Alfaques Spain July 1978

liquefied propylene (217 fatalities)





# Los Alfaques Spain July 1978

liquified propylene (217 fatalities)



# Summary

- Almost eliminated fatalities in HM transport
- Brought risk creators and risk bearers together in same arena
- New approach to regulation, new “rules of game”
- Changed ERP management and behaviors
- Prediction of threatened areas for risk assessments
- Emergency response centers