# Rail Diesel Cars (RDCs)

Brief History- Rick Hills

The Swampscott Massachusetts RDC Disaster of 1956

A Model Train Collector’s Point of View- Gene Thayer

# RDC Overview and History

E. G. Budd

- The Budd Rail Diesel Car (RDC), also known as the Budd car or Budliner, is a self-propelled **d**iesel **m**ultiple **u**nit (DMU) railcar, manufactured between 1949 and 1962 by Budd Manufacturing.
    - Budd invented “the Shotwell technique”, the ability to join stainless steel without damaging anti-corrosion properties
    - Company Founder was Edward G. Budd
    - Company Focus: Automotive, Railroad, Aviation Markets
- 398 RDCs were built by the Budd Company in Philadelphia, Penn.
- The Budd Rail Diesel Car was seen as a way to help reduce operating costs (50%)
- The Budd Company became part of Bombardier Transportation in 1974

# RDCs in New England

B&M


B&M at Boston North Station

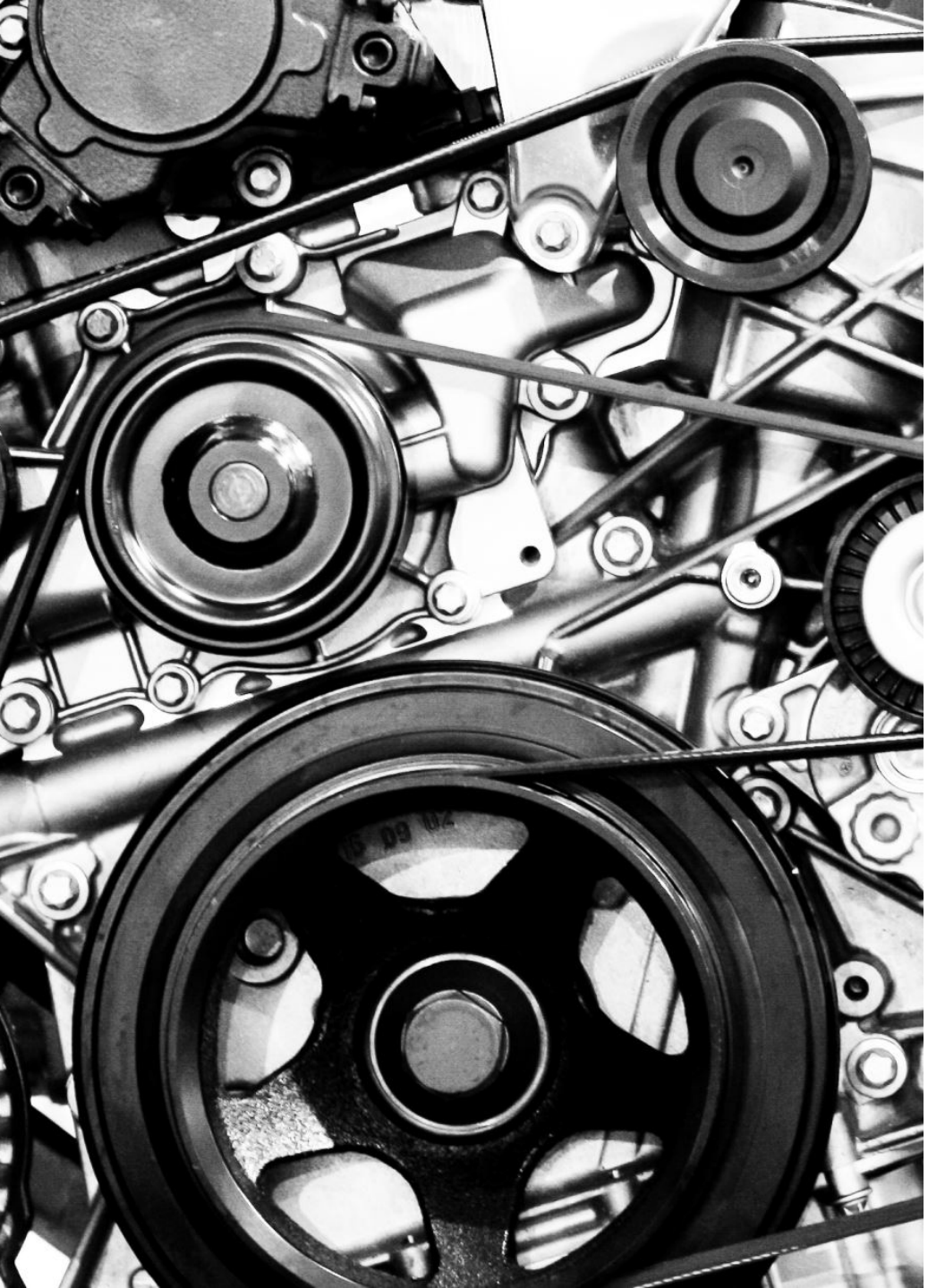
MBTA in Alston

New Haven

New York Central

New Haven Roger Williams

New York Central Jet RDC "Blackbeetle"



# Some Technical Specs

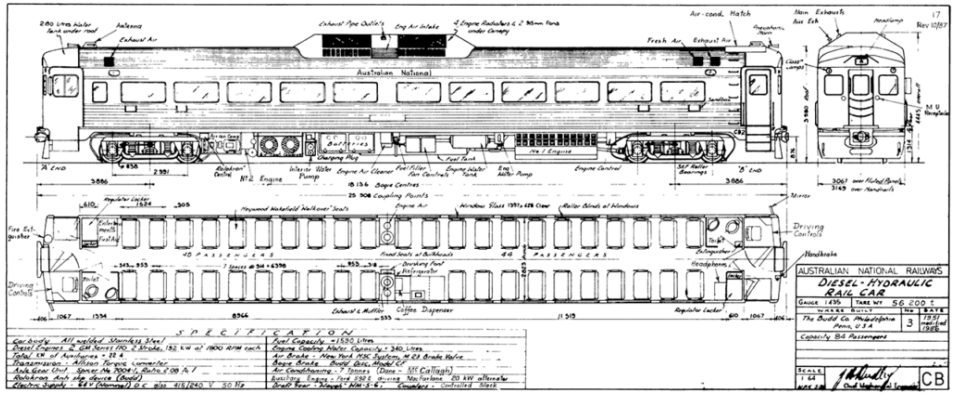
- **Physical Dimensions**
  - The RDC body is an eighty-five foot long (73ft on the RDC-4) sleek corrugated stainless-steel shell
  - Fully loaded, a single RDC-1 weighed 131,900 lbs. vs. 230,000 lbs. for an EMD F3
  - Length: 85ft (for most models)

- **Power and Engines**
  - Two 250-280hp Detroit Diesel engines mounted underneath the floor Budd Rail Diesel Car (RDC)
  - Engines: 2 Detroit 6/110 Diesels

- **One distinct advantage** of the Budd RDC, is that these two diesel engines are completely independent
  - RDCs 1 to 4 are equipped with two engines, which means that if necessary, they can still reach their destination with one working engine

- **Cost in 1952: $150,000 avg. per car.** In 2025, $1,810,000

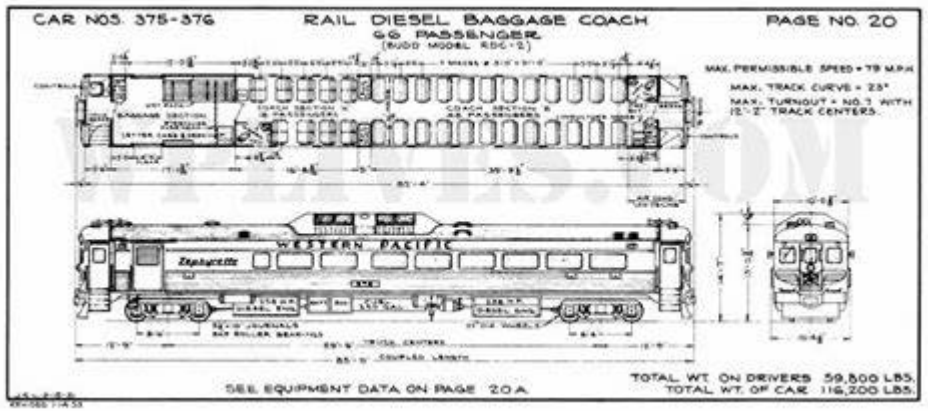
# RDC Models




RDC 1

- RDC-1 – Passenger configuration
- RDC-2 – Mostly passenger with a small baggage compartment at one end
- RDC-3 – Half-passenger, half Baggage/Rolling Post Office
- RDC-4 – No passenger, half baggage/half RPO
- RDC-9 – Powered Centre Car – no control vestibules, only usable as middle car with other RDCs

RDC 1 Interior




RDC 2

# Construction and Appearance

- Stainless steel self-propelled
- Distinctive corrugated exterior with heralds on either end
- At each end, an engineer station on the right-hand side of the vestibule, with the control stands set up on a shelf to reduce interference.
- Controls were removable for reversing direction.
- Restrooms were positioned at opposite ends just before the vestibules
- Air Conditioning was a common feature

# Budd RDC Advertising at the time


## Single Car "Limited"

Here is the new railroad car which is a train in itself—the self-propelled, diesel-powered, all-stainless steel RDC-1. The Budd Company created it to perform a service both to railroads and their patrons, by carrying more passengers on short or long hauls at lower operating cost.

The RDC-1 seats ninety in air-conditioned comfort. With power transmitted hydraulically, from an effortless start it picks up speed like a whippet and stops in a fantastically short space . . . with the easy softness of pushing your hand against a pillow.

Railroad men foresee a wide usefulness for this car. It may be operated as a single unit, or a number of cars can be coupled into a train, operated by one engineman.

Improvement in any field of endeavor begins with imagination. The RDC-1 is another example of Budd practice which is first to envision clearly the need and then bring to bear all the resources of inventive engineering. It follows the modern stainless steel streamliner, the all-steel automobile body, the tapered steel disc wheel and so many other products in which Budd has translated imagination into practical accomplishment. The Budd Company, Philadelphia, Detroit.

Budd

"New, self propelled, for short or long hauls, runs like a whipper, single or multi unit....."

"Imaginative and inventive"

"Limitless Capabilities"

"Quality Locally Sourced Materials"

"International"

*RDC—Car with a Future for Canada's Future*

The Canadian Pacific—world's greatest travel system—has just bought four Budd stainless steel RDCs. (The letters RDC stand for Rail Diesel Car.)

The cars were bought because of their proved ability to reduce costs, improve service and attract traffic. But also with an eye to Canada's growth, which presages an increase in the need for transportation as Canada's vast mineral, oil and natural resources are developed.

Operating experience with RDC usually reveals potentialities not originally envisioned. Nobody has yet found their limit, though RDC is now operating in a searching range of services in Australia, Cuba and Saudi Arabia, as well as on our own country's leading railroads. The Budd Company, Philadelphia, Detroit, Gary.

*Automobile and Truck Bodies and Wheels, Railway Passenger Cars and Plows* Budd

PIONEERS IN BETTER TRANSPORTATION

## THE BUDD CO. EXPLORES GEORGIA—PACIFIC'S "new dimension"

**Result:** Budd's new RDC-1 car uses GPX, Georgia-Pacific's amazing plastic-faced Plywood, for superior performance and beauty.

Much of the interior beauty of Budd's new self-propelled railway passenger car, the RDC-1, is due to the use of Georgia-Pacific's plastic-faced plywood, GPX.

Used throughout for the ceiling air-conditioning panel, GPX provides the ideal material to withstand the tough service condition caused by two sides of the panel being subjected to the differences in temperature and atmospheric conditions. The superior insulating qualities of GPX greatly reduce or eliminate condensation which occurs when metal sheets are used.

Finished in satin gray enamel to match the rest of the car's interior, GPX contributes as much to the car's beauty as it does to its efficiency.

GPX is an extremely high-grade exterior Douglas Fir Plywood with a superior plastic overlay applied under heat and pressure at the time the plywood is being bonded. RESULT: the plastic flows, condenses and sets—forming a hard surface that becomes *a part of the plywood itself.*

Write today and learn how GPX can offer you ways of doing many jobs better at lower cost!

*Send for your copy of the 20-page booklet, "A New Dimension," and the Problem Analysis Data Form that will help you re-examine your plywood and lumber needs. Write Georgia-Pacific Plywood & Lumber Co., 1202 Southern Finance Building, Augusta, Georgia.*

*Georgia-Pacific representatives—trained men with wood engineering "know-how"—are available at any of the offices or warehouses listed below. It will pay you to talk with them.*

AUGUSTA—Southern Finance Building, Tel. 2-8383
CHICAGO—332 S. Michigan Avenue, Tel. HArrison 7-5466
OLYMPIA—North Capitol Way, Tel. 8407
PORTLAND—Wilcox Building, Tel. BRoadway 3408
NEWARK—Maritime and So. Dock Streets, Port Newark, N. J. Tel. Mitchell 3-1917

WHOLESALE DISTRIBUTION WAREHOUSES: BOSTON • CHICAGO • COLUMBUS • NEWARK • PHILADELPHIA • RALEIGH • RICHMOND • SAVANNAH

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36

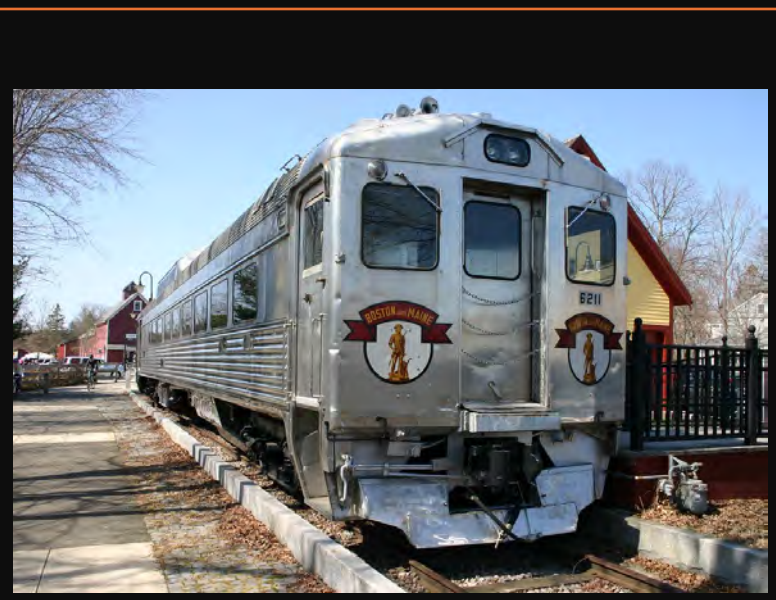
# Continued Service and Legacy

- Systems like Amtrak, BC Rail, VIA Rail, the Massachusetts Bay Transportation Authority (MBTA), and others all continued to use RDCs through the 1970s and 1980s
- A few of the first generation DMUs are still in service today across North America, while others are used on tourist lines or displayed in museums
- The RDC represented an innovative solution for maintaining passenger service on low-density routes while reducing operational costs compared to traditional locomotive-hauled
- The most incredible RDC experiment in 1966, jet propulsion!


The M-497 (nicknamed Black Beetle) was an experimental jet-powered railcar test bed of the New York Central, developed and tested in **1966**. Two second-hand General Electric J47-19 jet engines, originally used as boosters for the Convair B-36 Peacemaker intercontinental bomber, were mounted atop an existing RDC-3 equipped with a streamlined front cowling. It was sent on test runs between Butler, Indiana, and Stryker, Ohio. On July 23, 1966, M-497 reached a speed of 183.68 mph (295.6 km/h), an U.S. rail speed record that still stands today.

# Maine Railroad Usage- B&M

- **Largest RDC Fleet**
  - The Boston and Maine Railroad fleet grew to 108 by 1958
  - The Boston & Maine Railroad had the largest fleet of cars for commuter service
  - The Boston & Maine's massive RDC fleet represents one of the most successful implementations of this technology, demonstrating how effectively these cars could replace conventional passenger trains in the New England operating environment that both B&M and Maine Central served.
- **Extensive Operations**
  - The B&M's RDCs operated 90% of the company's passenger routes, including its extensive commuter operations around Boston, Massachusetts
  - In the Northeast corridor, RDCs also ran on the MEC, New Haven, New York Central, Jersey Central, Reading, Baltimore & Ohio, and other railroads
- **Service Scope**
  - B&M used RDCs for both intercity and commuter services
  - The railroad's large fleet allowed it to replace traditional locomotive-hauled trains on most passenger routes
  - RDCs were particularly valuable for B&M's Boston-area commuter operations



# Swampscott Railway Disaster of 1956

- In Swampscott, Massachusetts on February 28, 1956, a Danvers-Boston RDC commuter train crashed into the rear of a stopped Portsmouth-Boston commuter train with steel coaches during a snowstorm.
- The snow **obscured two key signals** and **made it difficult for the operator of the three car RDC consist to see a crewman waving a red flag**, meaning stop asap!
- The collision was blamed on the RDC Engineer operating at unsafe speeds (50/60mph) for the conditions, 13 people were killed including the 2 RDC crew, 283 injured.
- There is a fascinating 30- minute video on YouTube you need to see and a monument with RDC car memorializing the event to visit in Swampscott. See Appendix.

# Swampscott Memorial, Bedford Park, Massachusetts

# Collectors Point of View


- Lionel, MTH, Ready Made Toys, Williams, Marx, and Golden Gate Depot have created many RDC models in O Scale over the past 60 years. Gene loves to collect post war Lionel models and you may have seen a couple at Mark David's Layout tour as well.
- Gene's Overview of his favorite models……..




- Rick's favorite RDC is the latest Lionel RDC 1 and RDC 2 (2335090 set)

in NH livery. Uses LionChief 2.0 technology,

has full sounds, operating couplers and smoke.

# Appendix and References

- Great references on RDCs for further reading:
  - RDC: The Budd Rail Diesel Car by Donald Duke and Edmund Keilty Amazon- the most comprehensive and authoritative book
  - RDC-the Dudd Rail Diesel Car by Duke and Kelly
  - Budd RDCs: Volume 1 and 2 Trains.com
  - May 1955 Trains Magazine Article

- **Swampscott Disaster Video** Watch this for intro to RDCs and an excellent train wreck story recap!!!

https://youtu.be/9-hQvegSun8?si=s9vi3wwEJsqIGWGd

- Talk to Sam Carr who has a real passion in this area and of course trolleys