# The Listowel & Ballybunion Railway



# BEGINNINGS

Monorail designs Early 1800s Prototypes Cheshunt, UK - 1825 Sonoma, CA - 1876 ► Bradford, PA - 1878

# Irish Railroads: Early Years

- Potential Traffic: agriculture and passengers
- 1834 1844
  - Three railroads constructed: Dublin (2), Belfast (1)
  - Gauge standard: 5'3"
- ▶ 1840s 1850s
  - Potato Famine and economic downturns slowed expansion

#### Post-1850s

- Many regional railroads built: standard and 3' gauge
- Most major cities and secondary towns connected to Dublin



# Limerick and Tralee

Limerick City connected to the national network by the 1848

- Limerick Tralee Railway
  - Plan proposed: 1850
  - Construction begun: 1856
  - Phased progress over 20+ years
  - Listowel and Tralee reached by 1880



# Listowel to Ballybunion

- Ballybunion, 9.5 mi from Listowel
- Ballybunion Economy
  - Sand, tourism, agriculture, local passenger
- Rail proposals
  - ▶ 1883: Munster Steam Tramway Co.
    - ► 3' gauge
    - Lack of local support and financial backing
  - ► 1884: Limerick & Tralee Railway
    - ► 5′3″ gauge branchline
    - ▶ est £40,000 (~\$4mil)
    - Lack of local support and financial backing



# Listowel & Ballybunion Railway

#### Parlimentary approval in 1886

- Using monorail design by Charles Lartigue
- Capitol approval £33,000 (~\$3.3 mil)
- Financing
  - Traditional methods
  - ▶ £5,000 (~\$490K) in local shares
    - ▶ £10 (~\$1000) share
    - ▶ 10s (~\$50) downpayment
    - Remainder due on May 1888 if railroad was operating by then
    - Shareholder receives dividend during operation



# Charles Lartigue

- **Born**: Toulouse, France in 1834
- ► Career: inventor/ engineer
- Configuration : pannier style
  - Inspiration: observed loaded camels during a posting to Algeria in 1881?
  - Design: trains straddle a single rail mounted on top of a series of A-frame supports
  - Simple design and minimal right-of-way preparation promised lower construction costs
  - Patented in 1882
  - Only two railroads ever built
    - Listowel & Ballybunion Railway; 1888
    - Feurs & Panissieres; near Lyon, France; 1896 1902; 10.5 mi

# Lartigue System - Track Structure

#### ► A-Frame Supports

- ▶ height: 40" to 60"
- ▶ base : ~22" wide
- cross-brace: ~28" below top
- support spacing: 1.5' to 3.0'
- ▶ material: 1" 2" angle iron

#### Rail

- top rail: 28 lb/yd, double-headed
- guide rails: 11 lb/yd mounted at cross-braces
- ▶ US rail in late 1800s: 40-80 lb/yd





#### Lartigue System - Track Structure (cont)

#### Crossties (Sleepers)

- Stamped Metal: 40" 60" long
- ▶ Wood ties: ~6'

#### Sub Roadbed

- Ballast or concrete
- Longitudinally placed wood ties for marshy ground

#### Track Components

- Turntables
  - ~30' braced track section
    locking plates with bolt on ends



# Lartigue System - Track Structure (cont)

#### Switches

- Turntable design using a curved track section
- ▶ Radius: 33 yd (58°)





# Lartigue System - Track Structure (cont)

#### Grade Crossings

#### ► Turntable-style gates (8)

- ► For road crossings
- ► Paid operator

#### ► Flying Gates (17)

- Hand-operated drawbridge
- ► For farm access
- ► Farmer had key to unlock



# Lartigue System - LocomotivesAnatole Mallet designs

Prototype
 Tandem, vertical boilers

#### ► Production

- ► 0-3-0 arrangement
  - 24" drivers, double flanged
  - ► Lower guide wheels: 12"
- Double boilers, separately fired
- ► Tender with coal and water
  - Auxiliary drivers



# Lartigue System - Locomotives (cont)

#### Dimensions

- ▶ Length: 23' 8", width: ~8.5'
- ▶ Height: ~8.5' AGL, above rail: ~5.5'
- ► Ground clearance: ~10"
- Westinghouse air brakes
- ► Tractive force: ~2,500 lbs
- ► Total weight: ~10 tons
- Speed: ~20 mph max









# Lartigue System - Rolling Stock

Two centerline trucks, 2 wheels each

- Symmetrical compartments (3.5' wide)
- ▶ 17′ long, 8.5′ wide

#### Passenger Cars

- ▶ 1<sup>st</sup> Class (1)
  - Paneled interior, padded seats (in-line), landscape paintings, lanterns
- ► 3<sup>rd</sup> Class (7)
  - ► Basic interior, wooden slat seats (transverse)
- ▶ 1<sup>st</sup>/3<sup>rd</sup> Class combination (4)



# Lartigue System - Rolling Stock (cont)

- Guards Van (2)
   Additional seating
- Cross-over stairs





# Lartigue System - Rolling Stock (cont)Freight Cars

Goods Van (boxcar)
 Full-width arched roof
 Internal access to both compartments

#### Stock Car

- Two large animals or several smaller ones with added shelving
- Passengers during peak travel seasons

Hopper Car

▶ Sand

## L&B Rwy Construction

Oct 1887 - Jan 1888
 5 months

Approx 10 mi

Public operation begun March 1888

# L&B Rwy Physical Plant

#### Curvature:

- ► Mainline: 131 yd (15°)
- Switches: 33 yd (58°)
- Sidings: 27 yd (71°)
  - ► CTA: Lake & Wells junction: 30 yd (63°)
  - ► Low speed spurs today: ~12-13°

► Grades: few

One 0.4 mi 2% grade near Ballybunion

Three stations

# L & B Railway Timeline I

#### Chartered: 1886

Operations begun: 1888

Marginal success through early 1900s

#### Decline: 1910s

- Increased payroll expenses through union actions
- Competition from motor vehicles
- Limited governmental support
- Deferred maintenance

# L & B Railway Timeline II

Excluded from mergers, private and national, 1890s-1924

► Irish Free State: 1922

Irish Civil War: 1922 -1924

Line abandoned: Oct 1924

# Lartigue Concept

#### Pros

- Construction Cost
  - ► ~25-30% lower
    - Right-of-way
      - Less preparation
      - ► More flexible
      - Faster assembly
    - Structural materials
- Physical Plant
  - ► Low height
  - ► Ground clearance

#### Cons

- Non-standard equipment
- No direct interchange
- Load balancing required
- ► Grade crossings
  - ► Vehicle or rail
- Underpowered engines

#### ► Not an utter failure.

## Fun Facts

- Family connection
- Marconi station in Ballybunion
- Balancing a heavy load
- Schedules subject to change
- Pony races
- Uphill to Ballybunion



# Film Footage Listowel & Ballybunion Railway Film



## Sources

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