passenger compartment and the rear passenger lounge compartment remain visible and provide evidence for the original car layout, which included two restrooms at the front of the car and a passenger vestibule for exit and entry at mid-car (Figure 21).

Materials in Storage – At present, five shipping containers at the NHDOT Twin Mountain maintenance facility contain a wide range of mechanical equipment, fixtures and furnishings that have been removed from the Flying Yankee. An inventory of these materials was provided to the preparers of this form but in-person inspection of the containers was not part of the evaluation. The container inventory indicates that the Winton engine that was placed in Car A in 1947 was preserved. Also in storage is a new replica engine that was ordered from Winton with the intent of returning the Flying Yankee into service. Other major items in storage are the trucks; fuel and water reservoirs; restored car seats; and door knobs and other interior trim.[28]

Figure 22. Pioneer Zephyr on Display at the Chicago Museum of Industry and Science. 2021. Source: CMIS.

Comparative Evaluation – Comparative evaluations of the Flying Yankee begin with its sister zephyr trains, a total of ten that were built by the Edward G. Budd Manufacturing Company between 1934 and 1939. The Flying Yankee is the only one of the ten to have operated outside of the Chicago, Burlington & Quincy Railroad (CB&Q) system in the Midwest. As of 2023, the following three zephyrs are the intact surviving examples to compare with the Flying Yankee:

1. The Pioneer Zephyr (CB&Q #9000) was the first of the ten zephyrs and the prototype for the Flying Yankee (Figure 22). This three-car train, later expanded to four cars, entered service in November 1934 and retired in 1960 upon donation to the Chicago Museum of Industry and Science. The Pioneer Zephyr was displayed outdoors at the museum until 1994 after which it was cosmetically refurbished and moved indoors. The Chicago Museum of Industry and Science renovated the train and its exhibit to make it more interactive, reopening it in 2021 with restored interior finishes and fabrics (Figure 23). The Pioneer Zephyr was named a National Historic Mechanical Engineering Landmark by the American Society of Mechanical Engineers in 1980.[29]

Figure 23. Pioneer Zephyr, refurbished interior of the rear lounge compartment. 2021. Source: CMIS.

[28] Flying Yankee Association, Flying Yankee Restoration Project, Container Inventory Detail [Excel Spreadsheet], October 2005.
[29] The American Society of Mechanical Engineers, National Historic Mechanical Engineering Landmark, Pioneer Zephyr, 1934, Chicago, Burlington & Quincy Railroad, November 18, 1980, Museum of Science and Industry, Chicago, Illinois; Chicago Museum of Science and Industry, Museum of Science and Industry Reopens Pioneer Zephyr Train after Sweeping Renovations to Historic "Silver Streak [Press Release], (March 4, 2021).

2. The Mark Twain Zephyr (CB&Q #9903), a four-car unit, entered service in October 1935, about six months after the Flying Yankee (Figure 24). The four-car train was retired in 1958 and for the next 62 years had seven private owners, none of whom were able to fully realize their ambitions, which varied from refurbishing for service to turning into a roadside attraction. The Mark Twain Zephyr's existence was even more peripatetic than the Flying Yankee's as it moved from location to location (Mount Pleasant, Iowa; Kansas City, Kansas; Minooka, Illinois; Madison, Illinois) with high hopes and then dashed dreams as the job became too costly or floundered for technical and organizational reasons. By 2020, the train was described as fully stripped, vandalized and an "empty stainless steel shell." In 2020, the Wisconsin Great Northern Railroad acquired the train and moved it to Trego, Wisconsin, to begin a process described on the railroad's website as "a full restoration." Photographs recently posted on the Wisconsin Great Northern Railroad's website indicate extensive interior work has been completed (Figure 25).[30]

Figure 24. Mark Twain Zephyr. 2020. Source: Wisconsin Great Northern Railroad.

Figure 25. Mark Twain Zephyr, passenger lounge interior. 2023. Source: Wisconsin Great Northern Railroad.

3. The Twin Zephyr (CB&Q #9905), a seven-car unit, entered service in December 1936 and retired in 1968 when it was transferred to the Illinois Railway Museum. Today, it is commonly referred to as the Nebraska Zephyr per its last operating name on the CB&Q's Chicago-Lincoln, Nebraska route. This train's original front-end power car (Car A) was scrapped and the train has been pulled since 1968 by a streamlined diesel (CB&Q #9911a), which was built in 1940 by the Electro Motive Corporation (Figure 26). Five of the original seven cars of 1936 survive including a combination power car-coach (Car B), two coaches, a diner and observation-lounge car.[31]

Figure 26. Twin Zephyr (aka Nebraska Zephyr) composed of the original cars of 1936 with locomotive of 1940 that has pulled the cars since 1968. The original Car A was scrapped. Source: The Roundhouse Podcast 2016.

In addition to the Flying Yankee, Pioneer Zephyr, Mark Twain Zephyr and Twin Zephyr [Nebraska Zephyr] a handful of other zephyr cars survive but not as complete units. The General Pershing Zephyr (CB&Q #9908) power car (Car A) is in the St. Louis Museum of Transportation. The General Pershing Zephyr's parlor-observation car was exported to a collection in Australia. The power car (Car A) of the second Twin Zephyr (CB&Q #9904) was scrapped but its other cars are likely in a private collection in Saudi Arabia.[32]

While the Flying Yankee and its sister CB&Q zephyrs are usually regarded as the earliest of America's railroad streamliners, many other builders fabricated locomotives (steam, diesel-electric and electric),passenger coaches, parlor cars and observation car that qualify as streamliners. A review of the National Register of Historic Places database identified two listed railroad locomotives and one railroad car with some but not all of the Flying Yankee's attributes.[33]

[30] Wisconsin Great Northern Railroad, *Mark Twain Zephyr* [online, spoonertrainride.com/mark-twain-zephyr/], accessed August 2023.
[31] Illinois Railway Museum, Nebraska Zephyr [online, www.irm.org/nebraska-zephyr], accessed August 2023.
[32] Rick Nowell, Zephyrs [Excel Spreadsheet], February 2022.
[33] As of 2009, the National Register staff noted a total of 65 locomotives individually listed, the vast majority of which are steam powered (Wyatt 2009). Steam locomotive streamliners are not used in this evaluation for comparatives.

1. Pennsylvania Railroad GG1 Streamlined Electric Locomotive #4859 is a static display located in the Harrisburg, Pennsylvania Amtrak railroad station train shed (Figure 27). It was listed in the National Register in 2004 as a structure under Criterion A for transportation and Criterion C for engineering with a period of significance of 1937 (year built and placed in service) to 1954 (50-year cutoff). Significance is at the national level. The locomotive has been cosmetically restored to its original paint scheme and pinstriping of 1937. The locomotive's historically significant associations are with the Pennsylvania Railroad's electrification under wire of passenger operations between Philadelphia and Harrisburg and as an example of a fleet of over 100 similar locomotives that served the Northeast Corridor and set efficiency standards and high-speed records "by which all subsequent American electrified locomotives have been gauged." The streamlining, which was designed by Raymond Loewy, created the GG1's distinctive visual character; however, this is not emphasized as an area of significance in the nomination.[34]

Figure 27. Pennsylvania Railroad GG! Streamlined Electric Locomotive #4859, Harrisburg, Pennsylvania. Source: Wikimedia 2008.

2. Kansas City Southern Railway Locomotive #73D is a static outdoor display in Decatur, Arkansas (Figure 28). It was listed in the National Register in 2006 as a structure under Criterion A for transportation and Criterion C for Engineering with a period of significance of 1950 (year built in placed in service) to 1956 (50-year cut-off). The locomotive's significant historic associations are with the history of railroad transportation in Arkansas and as the only example of an Electro-Motive Division of General Motors F7A-class locomotive remaining in the state. Significance is at the state level. The nomination notes that more than 2,000 of this class of locomotive were built but only 50 remain nationally. The emphasis in the nomination is on this class of locomotive as a "workhorse" in freight service. The car body with its blunt, curved nose and horizontal lines has streamlined qualities but this is not emphasized in the nomination except to note that the distinctive look is referred to as a "covered wagon" body by some railroad enthusiasts. The locomotive was cosmetically refurbished in 1991-93. The diesel engine and most of the mechanical systems were removed prior to 1991 and the refurbishment involved repairs to the frame, replacement of the exterior panels, replacement windshields and repainting. These repairs are described as "normal practice" and not adversely impacting historical integrity of design, materials or workmanship.[35]

Figure 28. Kansas City Southern Railway Locomotive #73D, Decatur, Arkansas. Source: Flickr, Earl Leatherby photo, 2016.

3. Seaboard Air Line Lounge Car #6603 is a static outdoor display at the Florida East Coast Railway depot in Boca Raton, Florida (Figure 29). It was listed in the National Register in 2001 as a structure under Criterion A for transportation and Criterion C for architecture and engineering with a state level of significance and period of significance of 1947 (year built and placed in service). The streamlined lounge car was built by the Edward G. Budd Manufacturing Company for use in high-speed

Figure 29. Seaboard Air Line Lounge Car #6603, Boca Raton, Florida. Source: Wikimedia, 2010.

[34] R. Daniel Cupper, Pennsylvania Railroad GG1 Streamlined Electric Locomotive #4859, National Register of Historic Places Registration Form, 2002.
[35] Ralph S. Wilcox, Kansas City Southern Railway Locomotive #73D and Caboose #385, National Register of Historic Places Registration Form, 2005.

passenger travel between New York City and Florida. The round-ended observation lounge clearly takes its design inspiration from the zephyrs of the mid- to late-1930s and was designed to replace cars purchased by the Seaboard Air Line from Budd in 1938; however, this car was not part of an articulated, self-powered train set but a singular car that incorporated many of the same exterior and interior design features. It is described as the only car of its type in Florida and likely within the southeast region. Car #6603 was retired in 1977 and donated to the Boca Raton Historical Society in 1987. At the time of the nomination in 2001, its interior was described "as in need of repair" but having had no significant alterations since 1977. Based on photographs posted online in 2009, the interior has been refurbished.[36]

Summary of Comparative Evaluation: The Flying Yankee is the only streamlined zephyr in New England and one of only four of the ten Budd-built zephyrs to survive fully or mostly intact. Most of these trains dropped out of regular service in the 1950s and 1960s and were either scrapped, sold into private hands or donated to museums or historical societies. Those that were lucky enough to be saved have generally undergone some degree of dismantling, rehabilitation or restoration work. The Pioneer Zephyr at the Chicago Museum of Industry and Science as the first and most famous of the zephyrs is both an artifact and attraction. It has undergone two major restorations in the early 1990s and early 2020s. This significant restoration work was under the supervision of professional curators and exhibit designers but with no intent to return to service. The Nebraska Zephyr [Twin Zephyr] has been under nearly continuous operations as a tourist train with continued upgrades, repairs and maintenance to keep it safe and in service. Its operators ensure a measured degree of historical authenticity but anything that is deemed worn out or unsafe has been replaced in-kind to the fullest degree possible. The Mark Twain Zephyr appears to have been so damaged that only its frame and body survived. It is currently being returned to a state of operation with a full refurbishment by a private tourist railroad. Comparative to the other zephyrs, the Flying Yankee appears based on preliminary evidence and no detailed part-by-part analysis to retain at least an equal level of original historic fabric to the Pioneer Zephyr and Nebraska Zephyr, perhaps surpassing them in some areas, and is more intact than the Mark Twain Zephyr.

None of the surviving zephyrs have to date been listed on the National Register; however, there are a few listings that offer useful comparisons and evidence that areas of significance in transportation, engineering and architecture have been successfully applied at state or national levels for property types with similar characteristics. Perhaps the best parallel is the nomination for Seaboard Air Line Lounge Car #6603, one of Budd's later post-WWII products that drew on the success of the pre-WWII zephyrs and clearly takes most of its exterior and interior design cues from the zephyrs. The Pennsylvania Railroad Streamlined Electric Locomotive GG1 #4859 and the Kansas City Southern Railway Locomotive #73D rely for significance on associations with transportation contexts, particularly upgrades to service on specific routes or rail systems during the mid-20th century, as well as their operating characteristics. That these trains have remained in the states where they historically operated is considered important. Since Kansas City Southern Railway Locomotive #73D was listed with its diesel engines removed provides a favorable point of comparison with the Flying Yankee, which had its original engine removed in 1947, while the engine it operated with from 1947 to 1958 is currently in storage. Furthermore, the nominations for the GG1 and #73D listed the locomotives under Criterion C based on comparisons with locomotives of similar builder, model and age, and take into account a variety of specific operational and design details that defined a very specific type of locomotive. In other words, it was not necessary to compare them with all electric or diesel-electric locomotives. This adds validity to an approach of comparing the Flying Yankee's significance and integrity with the other surviving zephyrs of the 1933-39 period, and not with all streamlined locomotives or all diesel-electric locomotives of similar age.

National or State Register Criteria Statement of Significance:

Criterion A: Event – The Flying Yankee is recommended eligible under Criterion A at the state level for its historic associations with events and patterns of events in the area of transportation in New Hampshire and northern New England states during its operating period of 1935 to 1957. The Boston and Maine Railroad's decision to purchase only the second zephyr to roll off out of the Edward G. Budd Manufacturing Company's factory in 1934 was bold. It sent waves of interest and excitement across northern New England among railroad users and enthusiasts, as well as the general public. The Boston and Maine Railroad, which could trace its corporate origins to the earliest New England railroads of the 1830s, was a century later facing uncertainty as the dominant rail system in control of northern New England. Its passenger business had been declining since the early 1920s, hurt by the automobile, and its freight business, the backbone of its finances, shrank with the Great Depression and cutbacks in New England manufacturing. This context of a struggling railroad adapting to new conditions was a major factor in the acquisition of the Flying Yankee, which, in the

[36] Janet G. Murphy and Barbara E. Mattick, Seaboard Air Line Lounge Car (#6603), National Register of Historic Places Registration Form, 2001; Waymarking, 1947 Seaboard Air Line Streamlined Railcars – Boca Raton, Florida [online, www.waymarking.com], November 16, 2009.

words of the railroad company's president, sought "to maintain for northern New England a passenger service line with the best, fastest and safest forms of modern transportation."[37] The Flying Yankee's "grand tour" of northern New England in February to April 1935 was an event that drew thousands of people to local train stations and depots to see the remarkable train, which was unlike anything seen on northern New England's railroads then or since; it rarely failed to amaze. After entering service, the Flying Yankee continued to impress for many years, unique among the trains operating in New England. Although other diesel-electric locomotives and streamlined passenger cars would enter the Boston and Maine Railroad's service after 1945, none were ever so beloved as the Flying Yankee. In 1985, railroad enthusiast Albert White recalled his first "meeting" at age four with the Flying Yankee at the Keene station in 1947. He had learned from his parents that the "silver train" was different from the steam trains, and recalled that "It's whistle was very deep, booming compared to the steam whistles."[38] While any one individual's memories of a train may not be by itself significant, the Flying Yankee is associated with thousands of such memories which combine to elevate the Flying Yankee's significance to that of an iconic symbol of mid-20th-century railroading in northern New England. Boston and Maine Railroad corporate records document that the Flying Yankee did have a measurable impact on the region's railroad operations. Passengers in the thousands were drawn to the experience of traveling on the fast-running, sleek, gleaming streamlined train. Eventually, the Boston and Maine Railroad invested in more diesel-electric locomotives and stainless-steel passenger cars, the types that were ubiquitous nationally in the 1940s and the 1950s, but never again in a train as stylish as the Flying Yankee. The Flying Yankee did not change the downward economic decline of regional rail service in northern New England, but it was a shining moment when the possibilities of a turnaround seemed attainable.

Criterion B: Person – The Flying Yankee is not known to be directly associated with any significant individuals in local, state or national history that meet the definitions of Criterion B.

Criterion C: Design/Construction – The Flying Yankee is recommended eligible under Criterion C as embodying a period, type and method of construction described herein as the "zephyr" property type. This property type is defined by the following characteristics: early diesel-electric power plant, articulated cars, stainless-steel frame body and skin, streamlined exterior design and Art Moderne-style influenced interior design. While none of these characteristics are of themselves unique to the zephyrs, significance is derived from their combination into an integrated design. The zephyr property type is historically associated with the Edward G. Budd Manufacturing Company as the car builder and designer, and specifically noteworthy for its development of the lightweight, stainless-steel, car body and the "shot welding" technology used to assemble it, which are clearly evident in the Flying Yankee. The Flying Yankee is historically significant as the second zephyr assembled by Budd and the only zephyr to have operated outside of the Midwest. Although assembled by Budd in Philadelphia, credit for the Flying Yankee's design, materials and workmanship is shared among over 100 American manufacturing firms that supplied its component parts. The Flying Yankee is a quintessentially mid-20th-century creation that relied on the technological expertise of engineers and suppliers located in America's industrial heartland from Philadelphia to Chicago (see attachment at end of form).

Key participants in the design of the Flying Yankee included the Winton Engine and Electro-Motive divisions of General Motors in Cleveland that supplied the components of the power plant, which itself was one of the first successful applications of diesel-electric power to a revenue-producing passenger train. The power plant is evident in the Flying Yankee's Car A engine compartment and includes the engine bed, main generator, auxiliary generator and exhaust/air intake systems in place. The diesel engine and crankshaft are in storage, as is the front power truck. The Flying Yankee persuaded the Boston and Maine Railroad's management of the future of diesel. Other railroads were following suit and the scaling up of diesel-electric locomotives for mainline passenger and freight railroads had begun in earnest by the late 1930s with General Motors and the American Locomotive Company (ALCO) competing to show their diesel-powered muscle with power plants that by 1940 had easily grown fivefold over that of the zephyrs. The Boston and Maine Railroad lined up after World War II for delivery of diesel-electric passenger locomotives, ordering 21 from General Motors in 1945.[39]

From the perspective of industrial design, the Flying Yankee and the other nine zephyrs built from 1933 to 1939 were among the most significant and influential streamlined vehicles of their time (Figure 30). The idea of streamlining derived from scientific observations of movement and owed much to the new field of aeronautics. Airplanes required aerodynamically contoured body and wings to fly successfully at high speeds and this led to consideration that certain shapes, particularly those with rounded edges and sleek tubular sides, encountered minimum resistance when in motion. That this was foremost in the mind of the zephyrs' engineers is proven by their decision to have the zephyr's prototype

[37] Edward G. Budd Manufacturing Company, "Forward" to *The New Flying Yankee* (1935).
[38] White (1985).
[39] Carl R. Byron, "B&M Steam Power Died Hard – the Development of Rudolph Diesel's Invention," *Boston and Maine Railroad Historical Society Bulletin* (Winter 1983): 32-35.

shape tested in a wind tunnel. Streamlining naturally transferred to the torpedo-shaped dirigible and ocean liners, which provided a significant example of the design concept. The zephyrs were the first trains of significance to move away from boxy assemblages of parts to more cohesive integral streamlined forms. Since the railroad industry had the reputation of being resistant to change, the Flying Yankee and its sister zephyrs were a new tactic, an appeal to romance and glamour, to bring back passengers.[40] The Flying Yankee's streamlined skin, fully intact, is its most outwardly striking feature. The decision to articulate the zephyr's cars is also significant since it reduced the number of trucks under the cars, joined the cars into sets, and facilitated faster, smoother rides through weight reduction and supporting adjoining cars on shared trucks. The articulation is physically evident in the Flying Yankee's system of castings and pins used to join the cars and would be more evident if the trucks were in place.

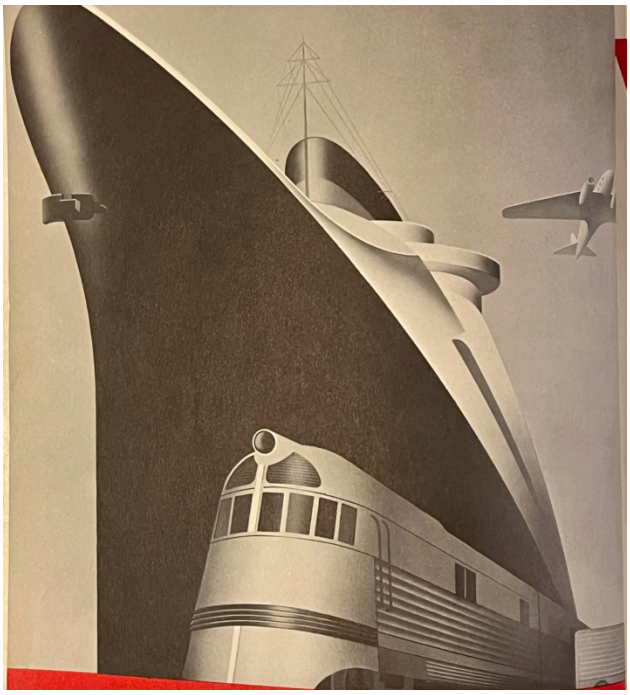

Figure 30. Streamlining captured the imagination of industrial designers and the public during the 1930s. The zephyr is front and center but the inspiration derived from aerodynamic airplanes and ocean liners is evident. At bottom right is the tail of a streamlined tractor trailer. Source; Edward G. Budd Manufacturing Company, 1935.

Within its interior, the Flying Yankee is significant for combining efficient use of limited space with a Moderne-style aesthetic of the 1930s to early 1950s. The Boston and Maine Railroad, which advised Budd on its requirements, clearly wanted to maximize the number of passengers the three-car train could carry, without sacrificing the zephyr panache. Architects Paul Philippe Cret and John Harbeson consulted on the interior design. Cret was a professor of architecture at the University of Pennsylvania and well known for a prolific career designing buildings and bridges mostly in the Philadelphia area from *circa* 1900 to 1940. He was a leading practitioner of the Beaux-Arts style (he was born in France and trained at the Ecole des Beaux Arts), although his later work evolved to reflect Modernist ideas with perhaps his two best-known later works, the Folger Shakespeare Library (1932) and the Federal Reserve Board Building (1937), both in Washington, D.C. John Harbeson was a fellow professor of architecture at the University of Pennsylvania and frequently collaborated with Cret, creating a consultancy partnership in 1923 that lasted until Cret's death in 1945. Cret and Harbeson receive the lion's share of the design credit for the Flying Yankee's coved lighting fixtures, window shades, curtains, interior paint color scheme, chair and tray design, seating upholstery and carpets. Most of these features are currently evident in the interior of Car B. [41]

Criterion D: Information Potential – The Flying Yankee is not likely to yield additional data to answer significant scholarly research questions under Criterion D. The train's physical contributions to the evolution and development of train technology and materials are well documented by materials in archival repositories of primary data. The two key collections in this regard are the Boston and Maine Railroad Historical Society Library in Lowell, Massachusetts (operational and maintenance records through 1957, including original plans and numerous photographs) and the Hagley Museum and Library in Wilmington, Delaware (Edward G. Budd Manufacturing Company corporate records related to the zephyrs).

Period of Significance:

The Flying Yankee is judged to have a period of significance of 1934 to 1957. This encompasses the specific dates of its manufacture at the Budd factory from June 1934 to January 1935 and its operating period for the Boston and Maine Railroad and Maine Central Railroad from February 1935 to May 1957. During this period, it received routine maintenance and regular refurbishment, which is documented in detail in corporate records archived with the Boston and Maine

[40] Richard Guy Wilson, *The Machine Age in America* (New York: Harry N. Abrams, 1986): 55-56; Robert Carroll Reed, *The Streamline Era* (San Marino, California: Golden West Books, 2000); Harriet Gill, *Streamline Moderne: The History of Streamline Moderne and Its Relationship to Industrial Design* (2022) [online book at books.apple.com], accessed August 2023.
[41] The Cultural Landscape Foundation, *Paul Cret, 1876-1945* (online, www.tclf.org/pioneer/paul-philippe-cret), accessed August 2023; The Athenaeum of Philadelphia, "Harbeson, John Frederick (1888-1986)," *Philadelphia Architects and Buildings* (online, www.philadelphiabuildings.org), accessed August 2023.

Historical Society Library in Lowell, Massachusetts. It should be noted that the Boston and Maine Railroad made very few major alterations to the Flying Yankee; however, many materials wore out through heavy use since the train was in nearly continuous operation and traveled over 2.7 million miles. This included replacing almost all of the finishes, including carpeting, upholstery, etc., as well as many of the mechanical systems. A detailed analysis of the repairs was not made as part of this evaluation; however, sufficient review of the records was undertaken to have high confidence that the Boston and Maine Railroad replaced most materials in kind and that no alterations of significance were made prior to transferring the train to Edaville's heritage railroad and amusement park in 1957.[42]

Statement of Integrity:

The following analysis of the seven aspects of integrity is based on the current state of the Flying Yankee as observed at the Hobo Railyard in July 2023. The Flying Yankee is acknowledged as being the subject of an active preservation project that began in 1997, has been on hold since *circa* 2017 and with a high potential of resuming in the future. The Flying Yankee Association kindly made available a great deal of background on the activities that were involved in stripping the Flying Yankee's cars. A review of this data indicates that efforts were made to preserve component parts when possible or replacing them with in-kind materials when worn out. The inventory of the storage containers at Twin Mountain suggests that representative pre-1958 parts and materials were kept for future reference as patterns. The process of reassembly which began in the early 2000s but was not completed only hints at what the preservation group planned before halting their activities. The data provided seems to bear out that, in general, the groups and volunteers involved in preservation of the Flying Yankee have aimed for strict authenticity to the extent possible within the goal of rehabilitating the Flying Yankee for eventual safe and publicly accessible operations. The approach appears to have been generally consistent with the *Secretary of the Interior's Standards for Treatment of Historic Properties – Rehabilitation*; however, there has not been consistent oversight or record keeping by a professional who meets the Secretary of the Interior's Professional Qualification Standards in history, architectural history or preservation architecture.

In 2009, the National Park Service issued a National Register Policy Clarification on the integrity requirements for settings and locations of locomotives and other rolling stock.[43] That policy is applied here.

- *Location* – The Flying Yankee does not have integrity of location in its current placement. The National Register policy states that locomotives and rolling stock do not generally have to be in their original location because they were intended to be moved from place to place; however, location can be significant if a train is in a place where it was historically built, maintained or housed for a significant part of its productive life. This is not the case for the Flying Yankee. The policy also states that trains do not have to have integrity of location to maintain significance under Criterion A or C.[44]

- *Setting* – For the Flying Yankee to have integrity of setting per the National Register policy, it must be in the yard or vicinity of a rail-related facility. The Flying Yankee's current location at the Hobo Railyard meets this test. The railyard is active, as was observed during the field work, and the Flying Yankee is set in the yard parallel to the storage track system, although not currently resting on actual railroad track. The National Register policy states that placing on actual track is significant to integrity and this evaluation notes that at present this condition is not met but would presumably be met when the train is reset on its trucks.

- *Design* – The Flying Yankee has integrity of design per the following character-defining features:

    - The original three-car trainset with articulated joints, retaining original massing, form and dimensions
    - Welded stainless-steel car-body frames

[42] Consideration was given as to whether the preservation of the Flying Yankee was a significant event that might extend the period of significance to a later date. Generally, the history of railroad locomotive and car preservation dates to the 1880s and the 1890s when railroad companies such as the Pennsylvania Railroad and Baltimore & Ohio Railroad began to celebrate and preserve their own history. Perhaps the most famous instance of this is the historic locomotive John Bull, which began service on New Jersey's Camden and Amboy Railroad (C&ARR) in 1831 and was restored by the Pennsylvania Railroad (successor to the C&ARR) and donated to the Smithsonian Institute in 1884, where it remains on display to this day. Private collecting and display of railroad memorabilia and the formation of heritage railroads, however, largely dates from the 1950s and later. There are many examples throughout the United States. Within this context, the Flying Yankee does not appear to be a prime example of railroad preservation, especially given that it languished at Edaville from 1958 until 1993.

[43] Barbara Wyatt, National Register Policy Clarification, Integrity Requirements for Settings and Locations of Locomotives and Other Rolling Stock, April 9, 2009.

[44] The preparer of this inventory form thinks it of importance that the Flying Yankee has remained in northern New England and is along a rail line that was historically part of the Boston and Maine/Maine Central Railroad system. Although this consideration is not strictly per the National Register policy, removing the train to another part of the United States would be detrimental in the opinion of the preparer.

- Streamlined, stainless-steel skin with appropriately placed corrugated and smooth panels per comparison with historic photographs
- Original placement and shape of all door and window openings with appropriate finishes and glazing
- Arrangement of interior spaces with the exception of Car C, which is currently stripped although framing shows where bulkheads were placed
- Refurbished interior furnishings of Car B incorporate original aluminum-frame seats in their original arrangement and design of 1935-57 per comparison with historic plans and photographs
- The train's power plant in Car A is partially in place and includes the diesel motor bed, main generator, auxiliary generator, fans and exhaust hood. Components not present are in storage including the engine block and crankshaft that were installed in 1947. Since the overhaul of the powerplant was anticipated to be an activity that took place during a locomotive's working life and this did occur with the Flying Yankee several times while in service for the Boston and Maine Railroad, the removal and refurbishing of the diesel and electrical components is not considered a major diminishment in integrity of design. Those components that have been returned to Car A are in their appropriate and original design locations.
- Throughout the Flying Yankee numerous minor design details remain intact including placement of exterior and interior lights

- *Materials* – The Flying Yankee has integrity of materials as no materials were observed that were not consistent with the original materiality of the train with the exception of electrical wiring and some electronic components tucked into the service closets. Exterior and structural integrity is good because of the presence of the stainless-steel exterior and frame. Some panels and frame pieces have been replaced or repaired. Interior material integrity is not present in parts of Car A where the interior remains stripped down, particularly in the Car A buffet and passenger compartment, and not present at all in the stripped down interior of Car C. The Flying Yankee Restoration Group has likely replaced all materials that were judged to be too deteriorated, worn or broken to be retained for use in an operating train; however, no inappropriate, non-in-kind replacement was noted.

- *Workmanship* – Integrity of workmanship is maintained similar materiality. As an example of industrial production techniques of the mid-20th century, the Flying Yankee has many details of note, most significantly the "shot welding" technique used to assemble the stainless-steel car frames. This is clearly evident in the numerous welded connections seen throughout the train where the framing was exposed. Traditional handcrafts are not present in the Flying Yankee, nor are there any significant situations where workmanship is glaringly of another period of time, as in 21st-century replacement parts that do not quite fit properly or that appear jury-rigged. There are locations where work is clearly left "in-progress" as part of preservation activities that have been put on hold. These are not judged to detract from integrity of workmanship.

- *Association* – The Flying Yankee retains integrity of association because the linkages to railroad transportation history are clearly evident. Due to its design and materiality, there is no mistaking it as a train with a mid-20th-century historic character. For viewers not familiar with the train's history, there are some visual cues such as the name of the Boston and Maine and Maine Central Railroads stenciled on Car A and the "Flying Yankee" nameplates on Car C.

- *Feeling* – The Flying Yankee has strong integrity of feeling. It is expressed in the streamlined aesthetic and the combination of its design, materials, workmanship and setting, even as it rests on temporary blocks without its wheeled trucks. Minimal interpretation is required when in the presence of the Flying Yankee to feel as though one has stepped back into the 1930s.

The Flying Yankee is judged in its current state to have the integrity necessary to convey its areas of significance.

Surveyor's Evaluation:

NR listed:	individual	_____	NR eligible:		NR Criteria:	A	__X__
	within district	_____	individual	__X__		B	_____
			within district	____		C	__X__
Integrity:	yes	__X__	not eligible	_____		D	_____
	no	____	more info needed	_____		E	_____

Boundary Description and Justification:

The recommended boundary of the eligible property is confined to the dimensions of the Flying Yankee's Cars A, B and C. Per National Register property type definitions, the Flying Yankee is a structure that is not in its original location.

Bibliography and/or References:

Additional Research – No additional research on the history of the Flying Yankee is considered necessary to establish its significance; however, future preservation activities, especially if they are to be carried out to the Secretary of the Interior's Standards for the Treatment of Historic Properties, will benefit from a clear articulation of a consistent treatment philosophy per the standards. It is noted that the FYRG established "restoration goals" but these are mostly operational such as ensuring that all mechanical and electrical systems and controls met current safety standards. Based on the evidence provided by the Flying Yankee Association, there do not appear to be documents that address preservation guidelines or standards. It appears the FYRG worked on the assumption that non-operational character-defining features of the train would be preserved or replaced in-kind. Desirable in this regard would be research to inventory the industrially produced parts of the train, document their original character, document known alterations/replacements even if in-kind, and provide a justification for future treatments. As time progresses, it will become increasingly difficult to determine the exact age and provenience of thousands of parts that comprise the Flying Yankee. It is the sum of these parts that define it as an amazing machine of the industrial age.

The American Society of Mechanical Engineers. National Historic Mechanical Engineering Landmark, Pioneer Zephyr, 1934, Chicago, Burlington & Quincy Railroad. Museum of Science and Industry, Chicago, Illinois. November 18, 1980.

The Athenaeum of Philadelphia. "Harbeson, John Frederick (1888-1986)." *Philadelphia Architects and Buildings* [online, www.philadelphiabuildings.org]. Accessed August 2023.

Barucco, Suzanna. Budd, Edward G. Manufacturing Company. National Register of Historic Places Nomination Form. 2006.

Boston and Maine Railroad. The Flying Yankee Comes to New England [brochure]. 1935. On file, Boston and Maine Historical Society Library, Lowell, Massachusetts.

Boston and Maine Railroad. Streamline Motor Car #6000, Maintenance Reports. 1935-1957. On file, Boston and Maine Railroad Historical Society, Lowell, Massachusetts.

Boston and Maine Railroad. Subject: Streamline 6000 – Derailment [memorandum]. January 31, 1945. On file, Boston and Maine Railroad Historical Society, Lowell, Massachusetts;

Boston and Maine Railroad and Maine Central Railroad. The New Flying Yankee. Brochure. 1935. On file, Boston and Maine Railroad Historical Society, Lowell, Massachusetts.

Budd, Edward G. *Reprint of a Lecture by Edward G. Budd, President, Edward G Budd Manufacturing Co., Philadelphia, Pa.* Boston, Massachusetts: Harvard Graduate School of Business Administration. March 6, 1934

Byron, Carl. "The Streamlined Flying Yankee." *Trains Classic Magazine.* 1999: 59-63, 94.

Byron, Carl R. "B&M Steam Power Died Hard – the Development of Rudolph Diesel's Invention." *Boston and Maine Railroad Historical Society Bulletin.* Winter 1983: 32-35.

Chicago Museum of Science and Industry. Museum of Science and Industry Reopens Pioneer Zephyr Train after Sweeping Renovations to Historic "Silver Streak [Press Release]. March 4, 2021.

Crouse, Chuck. "The Zephyr's Eastern Sister, B&M 6000: A New Era in New England Railroading." *Boston and Maine Railroad Historical Society Bulletin.* June 1985: 9-13.

The Cultural Landscape Foundation. *Paul Cret, 1876-1945* [online, www.tclf.org/pioneer/paul-philippe-cret]. Accessed August 2023.

Cupper, R. Daniel. Pennsylvania Railroad GG1 Streamlined Electric Locomotive #4859. National Register of Historic Places Registration Form. 2002.

Edw. G. Budd Mfg. Co., Development Research Dept. 477. Description of High Speed Three Car Train, Boston and Maine & Main Central R.R.'s, Drawing No. SK-10568, January 21, 1935. On file at the Boston and Maine Railroad Historical Society Library, Lowell, Massachusetts.

Edward G. Budd Manufacturing Company, Railway Division. *Boston and Maine-Maine Central, The New Flying Yankee.* Philadelphia, Pennsylvania: 1935. [Reprinted from *Railway Age,* February 9, 1935].

Edward G. Budd Manufacturing Company. *The Budd System of Light-Weight Construction.* Philadelphia, Pennsylvania: 1936.

Eskergian, R. "The Design of Light-Weight Trains." *Proceedings of the American Society of Mechanical Engineers.* 1934: 1-31.

Feld, Kate. "Of Train Half Finished." *Arctic Valley News*. November 17, 2001.

Flying Yankee Association. Flying Yankee Restoration Project, Container Inventory Detail [Excel Spreadsheet]. October 2005.

"Flying Yankee Headed to N.H." *Foster's Daily Democrat.* October 16, 1993.

General Electric. *Parade of Modern High-Speed Diesel-Electric Locomotives.* Schenectady, New York. *Circa* 1936.

Gill, Harriet. *Streamline Moderne: The History of Streamline Moderne and Its Relationship to Industrial Design.* 2022. [online book at books.apple.com]. Accessed August 2023.

Illinois Railway Museum. Nebraska Zephyr [online, www.irm.org/nebraska-zephyr]. Accessed August 2023.

"Making History in New England." *Fortune Magazine*. 1936.

"More Contributions Received for Flying Yankee Restoration." *Conway Daily Sun.* September 1, 2004.

Murphy, Janet G. and Barbara E. Mattick. Seaboard Air Line Lounge Car (#6603), National Register of Historic Places Registration Form. 2001.

Nowell, Rick. Flying Yankee Timeline [Excel Spreadsheet]. January 2023.

Nowell, Rick. Zephyrs [Excel Spreadsheet]. February 2022.

"Passengers Watch Speed Dial in Rear of Streamline Train." *Popular Mechanics.* 1936: 539.

Paul Phillippe Cret Collection, Three-Car Stainless Steel Trains (Item # 278), University of Pennsylvania Architectural Archives, Philadelphia, Pennsylvania.

"The People Turn Out." *The Concord Monitor and New Hampshire Patriot*. February 14, 1935.

Reading, John. "Mass Bay RRE Inspects the Flying Yankee." November 18, 2001.

Reed, Robert Carroll. *The Streamline Era.* San Marino, California: Golden West Books, 2000.

Seitz, Stephen. "All Aboard, Classic Flying Yankee Restoration Is Well Under Way at Claremont." *Manchester Union Leader.* November 18, 2001: B8.

Wallace, R. Stuart and Lisa B. Mausolf. New Hampshire Railroads: Historic Context Statement. April 2002

Waymarking. 1947 Seaboard Air Line Streamlined Railcars – Boca Raton, Florida [online, www.waymarking.com]. November 16, 2009.

White, David. The Flying Yankee and the Cheshire and Fitchburg Lines. Manuscript. No Date.

Wilcox, Ralph S. Kansas City Southern Railway Locomotive #73D and Caboose #385. National Register of Historic Places Registration Form. 2005.

Wilson, Richard Guy. *The Machine Age in America.* New York: Harry N. Abrams, 1986.

Wisconsin Great Northern Railroad. *Mark Twain Zephyr* [online, spoonertrainride.com/mark-twain-zephyr/]. Accessed August 2023.

Wyatt, Barbara. National Register Policy Clarification, Integrity Requirements for Settings and Locations of Locomotives and Other Rolling Stock. April 9, 2009.

Photo 2 View from rear of train with Car C closest to view, looking northwest (Carly Adler, photographer 7/20/23; HRI Neg. #23056 D2:103).

Photo 3. View from front of train with Car A closest to view, looking southeast (Carly Adler, photographer 7/20/23; HRI Neg. #23056 D2:71).

Photo 4 Front third of Car A showing operators compartment at head of train, looking northeast (Carly Adler, photographer 7/20/23; HRI Neg. #23056 D2:72).

Photo 5. Car B, oblique view looking northwest toward the head of train with Car A in distance (Carly Adler, photographer 7/20/23; HRI Neg. #23056 D2:101).

Photo 6 Car C, view looking southwest (Patrick Harshbarger, photographer 7/20/23; HRI Neg. #23056 D1:098).

Photo 7. Rear of Car C, looking northwest (Patrick Harshbarger, photographer 7/20/23; HRI Neg. #23056 D1:103).

Photo 8. Car A, detail of front headlight, air intake vents and operators compartment front windows. View looking southeast (Patrick Harshbarger, photographer 7/20/23; HRI Neg. #23056 D1:061).

Photo 9. Car A, detail of “cow catcher” and apron at front of train (Patrick Harshbarger, photographer 7/20/23; HRI Neg. #23056 D1:060).

Photo 10. Typical door detail, midsection of Car B, looking southwest (Patrick Harshbarger, photographer 7/20/23; HRI Neg. #23056 D1:100).

Photo 11. Car B, detail of fluted, stainless-steel, body panels and door handles. View looking south (Patrick Harshbarger, photographer 7/20/23; HRI Neg. #23056 D1:107).

Photo 12 Car C, detail of rear light and dome, view looking northwest (Patrick Harshbarger, photographer 7/20/23; HRI Neg. #23056 D1:04).

Photo 13. Ground-level view looking under Car B showing the curved skirt and body frame, looking northeast (Carly Adler, photographer 7/20/23; HRI Neg. #23056 D2:96).

Photo 14 Car A, operator's compartment showing throttle and brake controls, looking northwest toward head of train (Carly Adler, photographer 7/20/23; HRI Neg. #23056 D2:3).

Photo 15. Car A, engine compartment, view looking northwest with cast-steel bed for the diesel engine in foreground (Carly Adler, photographer 7/20/23; HRI Neg. #23056 D2:29).

Photo 16 Car A, detail of diesel engine bed, view looking north (Carly Adler, photographer 7/20/23; HRI Neg. #23056 D2:32).

Photo 17. Car A, detail of the main generator at front end of the engine compartment, view looking northwest toward head of train (Patrick Harshbarger, photographer 7/20/23; HRI Neg. #23056 D1:009).