NASA space shuttles are some of the most high-tech and complex vehicles ever built but they couldn't fly without the help of a much older technology the railroad this is no ordinary train it's the NASA railroad at Kennedy Space Center in Florida it carries extremely dangerous free one of national importance it's not something to just kind of sneeze about you know we're hauling in we're hauling four to five million pounds of explosives one shuttle solid rocket booster contains four motors packed with
a hard rubbery volatile solid propellant

every space shuttle launches with two boosters which give the vehicle the extra thrust it needs during the first two minutes of the climb to orbit the large heavy motor segments have to take a week-long cross-country train ride from the ATK manufacturing plant in Utah to NASA's Kennedy Space Center in Florida in shuttle of course with the segment's it is absolutely essential because you're looking at an average of approximately hundred fifty tons per segment and with eight of them per
launch there really isn't any other

better way to get them here from Utah

it's just an essential lifeline is what

it boils down to

today this important but hazardous job

is handled by urs corporation engineers

and mechanic in the railroad shop the

11-member team takes care of all the

rolling stock and the track system

including electrical work mechanics

painting welding and even fabrication

that expertise is essential when it

comes to handling two solid rocket

booster segments which travel to Kennedy
on cradles inside custom-built rail cars

44 00:01:41,090 --> 00:01:45,930
during the trip to Florida the segment's

45 00:01:44,009 --> 00:01:48,989
are handed off the rail company to rail

46 00:01:45,930 --> 00:01:51,390
company with the final handoff at NASA's

47 00:01:48,989 --> 00:01:54,719
JJ railroad yard north of Titusville

48 00:01:51,390 --> 00:01:57,930
Florida the Florida East Coast Railway

49 00:01:54,719 --> 00:02:00,118
or FEC delivers the segment's to JJ and

50 00:01:57,930 --> 00:02:03,079
that's when Kennedy's railroad team

51 00:02:00,118 --> 00:02:06,149
takes charge after a thorough inspection

52 00:02:03,078 --> 00:02:08,098
empty spacer cars are added to prepare

53 00:02:06,149 --> 00:02:09,149
the train for the trip across the Indian

54 00:02:08,098 --> 00:02:11,739
River to

55 00:02:09,149 --> 00:02:13,300
the main purpose for us to distribute

56 00:02:11,740 --> 00:02:15,670
the weight on our bridge coming across

57 00:02:13,300 --> 00:02:18,130
the Indian River if you have all the
heavy cars tied together it puts a strain on the ribs so try and separate the weight the Kennedy rails can handle speeds of up to 60 miles an hour just like Effie C's male ID track but because of the heavy and volatile cargo the top speed here is only 25 miles an hour and the trains typically move slower than that all the work is done by a 1500 horsepower locomotive known as the E and D SW 1500s NASA has three of these workhorses they were built by General Motors between 1968 and 1970 and put to work for the
space agency when shuttle loads demanded

a lot more horsepower they do have a lot

of backbone and again when we bring in

the segments and the spacer cars you

know we got probably close to four and a

half to five million pounds that we pull

with one motor once the train arrives

north of the Space Center the spacer

cars are removed and taken back to the

rail yard the booster cars are kept as

suspect citing an isolated staging area

near the shuttle runway until they go to

the rotation processing and surge

facility to start final launch
preparations when the boosters are recovered after launch the same team loads up the spent segments and sends them back to Utah got a great track record and it's a it's basically a pretty simple process you know from all the way from Utah all the way to here to getting it getting it on the launch pad and the system has worked great Kennedy's rail system was activated in 1963 to bring in construction materials for the growing Space Center as new facilities were built for the Apollo
program but throughout the years the

Florida climate took its toll and

hauling shuttle segments presented

unique challenges of their own well

fast-forward 20 years and the space

shuttle program was starting we were

looking at freight cars that were

somewhat longer and a lot heavier and

had a high center of gravity as well

FEC was paid to upgrade the aging system

with heavier rail welded joints and

concrete cross ties along with rolling

stock standards like hopper cars and

gondola cars Kennedy also has some cars

that were modified or even designed here
in fact Hoffman himself designed the booster structures car is a custom-built car as a concept I came up with to improve on the delivery of the movement of the solid rocket booster a skirts the forward skirts and the frustums many other commodities have traveled these rails such as nitrogen tetroxide rocket propellant air force Titan Rockets Navy Trident missiles and the shuttle derived booster segments for the Ares 1x test flight it's not just just moving segments we've done so much more we've rebuilt Air Force locomotives we've
built rail cars

painting this locomotive here you can see how much better it looks and the other two and everything so we're a pretty diverse group and we stay busy the result is a vital and successful rail line that has stood the test of time in May 2010 the last load of shuttle solid rocket booster segments came to Kennedy for the most part it's you know it's kinda like any other railroad so to speak we don't run the speeds but the the things that we do and have to do when we're loading and
unloading you know demands your attention demands respect the NASA railroad at Kennedy Space Center has played a quiet but critical role in the space shuttle program and the hard-working team hopes to put its talents to use on future spaceflight endeavors you