InterCity
BR Class 370
'Advanced Passenger Train - Prototype'
## 1 BACKGROUND

1.1 InterCity BR Class 370 'Advanced Passenger Train - Prototype' .......................................................... 4  
1.2 Class 370 APT-P Design & Specification ......................................................................................... 4  

## 2 ROLLING STOCK

2.1 InterCity BR Class 370 APT-P ........................................................................................................ 5  
2.2 Passenger View .............................................................................................................................. 5  

## 3 DRIVING THE CLASS 370 APT-P

3.1 Cab Controls & Keyboard Controls .................................................................................................. 6  
3.2 Start-up Procedure (From Cold)(Expert Controls) ............................................................................ 7  
3.3 Start-up Procedure (From Warm)(Expert Controls) ......................................................................... 8  
3.4 Start-up Procedure (HUD Version)(Always From Warm) ................................................................. 8  
3.5 C-APT System ................................................................................................................................ 9  
3.6 Resetting an Emergency Brake or AWS Brake Demand ..................................................................... 9  

## 4 SCENARIOS

4.1 [APT-P] C-APT Training .................................................................................................................. 10  
4.2 [APT-P] Northbound Fun ................................................................................................................. 10  
4.3 [APT-P] Southbound Run .................................................................................................................. 10  
4.4 [APT-P] Speed Limit Template ......................................................................................................... 10  

## 5 ACKNOWLEDGEMENTS

Whilst we do our utmost to reproduce sounds that are accurate and true-to-life, sometimes these sounds may not completely tally with the user’s expectation. Due to the nature of the simulation, it is often not possible to reproduce a completely accurate soundscape for a variety of reasons such as limitations with our current technology and occasional inability to gain meaningful access to the locomotives being created. You should therefore regard the audio reproduction for our locomotives as authentic interpretations rather than perfect recreations.
1 Background

1.1 InterCity BR Class 370 'Advanced Passenger Train - Prototype'

British Rail's Class 370 tilting trains, also referred to as APT-P (meaning Advanced Passenger Train Prototype), were the pre-production Advanced Passenger Train units. Unlike the earlier experimental gas-turbine APT-E unit, these units were powered by 25 kV AC overhead electrification and were used on the West Coast Main Line between London Euston and Glasgow Central. The APT-P is the most powerful domestic train to have operated in Britain, the eight traction motors fitted to the two central Motor Cars giving a total output of 8,000 horsepower (6,000 kW). This enabled the train to set the UK rail speed record of 162.2 miles per hour (261.0 km/h) in December 1979, a record that stood for 23 years until an InterCity 225 set reached 162.6 miles per hour (261.7 km/h) on a test run on Stoke Bank.

The APT-P was unveiled to the public on 7th June 1978 and continued to be used for testing into 1986. Due to ongoing technical problems with these pre-production units and a lack of cash or political will to take the project forward, the planned APT-S (Advanced Passenger Train Squadron Service) production-series units were never built, but did influence the design of the later InterCity 225 sets designed for the East Coast Main Line electrification. The influence is strongest with the Class 91 locos which took many features from the APT powercars. The technology was later sold to Fiat and used for improving their second generation Pendolino trains which have been used worldwide, including the West Coast Main Line.

All six units were withdrawn during 1985-1986 and most cars were quickly scrapped, with only a few vehicles surviving.

1.2 Class 370 APT-P Design & Specification

<table>
<thead>
<tr>
<th>Builder</th>
<th>BREL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit Weight</td>
<td>427 long tons</td>
</tr>
<tr>
<td>Unit Length</td>
<td>482ft ½in (146.93m)</td>
</tr>
<tr>
<td>Electrical Systems</td>
<td>25 kV 50 Hz AC</td>
</tr>
<tr>
<td>Top Speed</td>
<td>Design: 155 Mph (249km/h) Service: 125 Mph (201km/h)</td>
</tr>
<tr>
<td>Brake Types</td>
<td>Air/Hydrokinetic Electronic Control</td>
</tr>
<tr>
<td>Number Built</td>
<td>3 trainsets, 1 DTS and 1 TBF car spare</td>
</tr>
</tbody>
</table>
2 Rolling Stock

2.1 InterCity BR Class 370 APT-P

Included vehicles:
DTS  Driving Trailer Standard
NDM  Non-Driving Motor
TBF  Trailer Brake First
TF   Trailer First
TRBS Trailer Restaurant Buffet Second
TS   Trailer Second
TU   Trailer Unclassified

2.2 Passenger View

The TRBS vehicle has a passenger view. Any consists that don't include this vehicle will not have a passenger view.
3 Driving the Class 370 APT-P

3.1 Cab Controls & Keyboard Controls
3.2 Start-up Procedure (From Cold) (Expert Controls)

1. Use Shift+B to turn the batteries on - A message will display with the state of the batteries.

2. Use Shift+M to insert the master key - the keyhole on the reverser can also be clicked. This will unlock the reverser and turn the desk on.

3. Place reverser into Auxiliaries (neutral). Cancel the AWS self-test warning (Q or the blue button on the centre console).

4. Press P or the PanUp button to raise the pantograph - the line light will illuminate after a short delay.

5. Start the Motor Alternator with Z key or the button on the left wall (both MA buttons depress together) - this will start the compressor to charge the brakes and the auxiliaries light will extinguish. Also the C-APT self test will need acknowledging with the E key or the yellow button on the centre console.

After the C-APT self test has been acknowledged the C-APT operational lights on the left wall will illuminate, and the speed restriction light will come on for 4 seconds.
(Alternate 5.)
You could have started the Diesel Alternator with the buttons on the left wall instead of the Motor Alternator. This will supply reduced power once the generator spins up to 600 rpm. Note: The C-APT will not operate and the tilt function will be isolated.

6. Set up your tail/marker/headlights as required using H/J/K or the lighting panel on the left hand side of the cab. The rear unit is already set as tails on.

7. When the brake reservoir pressure reaches approx. 8 Bar you can move the brake handle into Initial (notch 1).

8. Make sure the parking brake is released. Press shift+/- or the parking brake off button to release.

9. Move the reverser into Forward.

10. Apply power and release brake as desired.

11. Traction power light should illuminate when taking power.

3.3 Start-up Procedure (From Warm) (Expert Controls)

1. Use Shift+M to insert Master Key - the keyhole on the reverser can also be clicked. This will unlock the reverser and turn the desk on.

2. Place reverser into Auxiliaries (neutral).

3. Cancel the AWS warning (Q or the blue button on the centre console). The C-APT self test will need acknowledging with the E key or the yellow button on the centre console. After the C-APT self test has been acknowledged the C-APT operational lights on the left wall will illuminate, and the speed restrict light will come on for 4 seconds.

4. Move the brake handle to Initial (notch 1).

5. Move reverser into Forward.

6. Apply power and release brake as desired.

7. Traction power light should illuminate when taking power.

3.4 Start-up Procedure (HUD Version) (Always From Warm)

Note: Some procedures have been slightly amended to to the more simple nature of using the HUD/controller over an entire keyboard.

1. Select either Forward or Reverse on the reverser.

2. Cancel the AWS self-test and the C-APT test using the HUD/Q/A button.

3. Setup Headlights with the H key or HUD button.
4. Release the brakes and apply the throttle as required.

3.5 C-APT System

C-APT, which is an abbreviation of Control – Advanced Passenger Train, is a cab display system which indicates the maximum permitted speed for the APT using transponders on the track. If for any reason the display is extinguished, then the permitted speed remains the same as for other trains.

The speed displayed relates only to permanent way conditions and is not associated with the signalling system. Drivers must therefore observe and obey signal aspects in the normal way, irrespective of the speed displayed.

A cancellable audible warning sounds whenever the permissible speed changes to a lower value, or if the display is extinguished, except for a train equipment failure.

The “Start of speed restriction” indicator lamp will illuminate briefly at the commencement of a permanent speed restriction.

<table>
<thead>
<tr>
<th>J</th>
<th>135</th>
</tr>
</thead>
<tbody>
<tr>
<td>This indicates an approach to a diverging junction.</td>
<td>Number = Speed indication</td>
</tr>
</tbody>
</table>

3.6 Resetting an Emergency Brake or AWS Brake Demand

1. Allow the train to come to a stand.
2. If the Emergency Brake plunger is down, pull it back up to the normal position.
3. Put the Train Brake handle into emergency and set Throttle to the Off position.
4. Set the Reverser to the Auxiliaries position.
5. The brakes can now be released.
4 Scenarios

4.1 [APT-P] C-APT Training
In this scenario, the C-APT system will be introduced and you will also be shown how to get the APT-P started and moving. This scenario will involve a quick run between Preston and Lancaster.

Duration: 15 Minutes
Difficulty: Easy

4.2 [APT-P] Northbound Fun
On a bleak winter evening take the APT-P Northbound from Preston to Carlisle. The poor visibility has been causing some delays so expect to be held up at some point.

Duration: 75 Minutes
Difficulty: Hard

4.3 [APT-P] Southbound Run
On this pleasant autumn morning take the APT-P Southbound from Carlisle to Preston. We are not expecting any hold ups today.

Duration: 60
Difficulty: Medium

A template scenario is also included if you wish to create your own APT-P scenarios that feature the C-APT system on WCML over Shap.

Duration: 75 Minutes
Difficulty: Hard

4.4 [APT-P] Speed Limit Template
A template scenario is also included if you wish to create your own APT-P scenarios that feature the C-APT system on WCML over Shap.
5 Acknowledgements

Dovetail Games would like to thank the following people for their contribution to the development of the InterCity BR Class 370 'Advanced Passenger Train Prototype':

Edward Fisk
Skyhook Games
Waggonz
Beta Testing Team
Rob Latham of www.apt-p.com
Crewe Heritage Centre