

British Rail APT-E

(Advanced Passenger Train Experimental)

READ THIS FIRST

DO NOT PASS "GO"

DO NOT COLLECT £200



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APT-E PRODUCT GUIDELINES

IMPORTANT: PLEASE READ THE "READ THIS BIT FIRST" BIT BELOW BEFORE YOU TAKE THE MODEL OUT OF THE BOX.

If it's too late and you already took it out of the box, then we're so, so sorry.

Thank you for purchasing this exclusive APT-E model produced by Rapido Trains Inc. for Locomotionmodels.com's *National Collection in Miniature* series.

This may be Rapido's first British outline model but it is by no means our first model. Rapido has been producing museum-quality model trains for the North American market since 2005.

You, our fine customer, are likely located in the United Kingdom. We, the producers of this fine model, are located in a suburb of Toronto, Canada. We're currently buried under 13 feet of snow. It finally melts by August 20th when the next season's snowfall starts.

Should you have any problems with your APT-E, our unique geographical arrangement means that you can't just pop by our office to bring it in for repair. Well, you can – but you would need to be parachuted in with a pair of snow shoes strapped to your back.

Please refer to pages 7 (missing or damaged parts) and 14 (sending in your APT-E for repair). Please don't just send the model back to Locomotion. Get in touch first and we'll see how we can solve your issue. We actually have a handy-dandy authorized repair guy in Yorkshire, ee by gum!

If it is the year 2075 and you've finally decided to open your APT-E, then I'm afraid that most of us at Rapido are probably pushing up the daisies. Should you have an issue with your train, you can try contacting our grandkids but they will either laugh at you or call the police. Actually, Rapido Dan's probably still alive. You can reach him at Shady Maples Nursing Home in Moose Jaw, Saskatchewan. He's the 90-something guy dozing by the entrance, drooling into a bib with the Toronto Transit Commission logo on it.

If the previous few paragraphs have upset you in any way or caused you to shake your head and mutter to yourself about people not taking things seriously any more, then you are really not going to like the rest of this manual. Please find a friend with a good sense of humour and ask him or her to read it and fill you in with the relevant bits about how not to break your train.

READ THIS BIT FIRST

Before operating your APT-E, please be aware of the following important pieces of information.

1. The articulated bogies and plugs connecting the carriages are extremely fiddly for the un-initiated. If you don't read the instructions first, you can easily break the connecting plugs while assembling your train.

The section of the instructions that explains how to inspect and put your APT-E together for the first time begins on page 4. We actually suggest that you try your darnedest to leave your APT-E coupled together at all times. If you have to move your APT-E by hand, picking up your complete four-car train **WILL RESULT IN DISASTER**. Please at least separate it into two halves before using manual labour to move it.

If you want to be really clever you can build a cassette so you can roll your train on and off the layout without uncoupling it or trying to pick it up. Your cassette should be four feet long to fit the entire APT-E. (Canada went metric back in the 1970s but Canadians ignore that when convenient. You Brits should too. You're not fooling anyone, you know. We all know that when you say your baseboard is 600mm x 1200mm you really mean it's two by four feet.)

We have included a handful of spare components in case you break some of the articulation parts. But with due care and attention, you won't need to use them.

2. The nose overhang of the APT-E is **ENORMOUS**. The real APT-E was limited as to what tracks it could travel on due to its gargantuan schnoz. We have not compromised on prototype fidelity in order for the APT-E to go around train set curves. Making the nose "bendy" or casting it in cheese were not realistic options. Please take great care the first time you run your APT-E as it may contact tunnel portals, platform edges, lineside details, or oncoming trains. Make sure that your chosen routes for the APT-E during operating sessions and exhibitions have enough clearance for its stupendous snout.

Your APT-E warranty does not cover contact with foreign objects such as platform edges. None of the APT-E models has been delivered from the factory with long gouges or scrapes along the sides at platform height. So please don't tell us "it came that way."

IF YOU ARE ALREADY UPSET WITH US...

Despite our warning on the previous page we are sure some of you decided to give this page a try and are now regretting your decision. Please bear in mind that all the silly parts in this manual were written by the naughty Canadians at Rapido. It's us wot dunnit, guv. Honest. Please direct all complaints to: Canada House, Trafalgar Square, London, SW1. Please do not send any complaints to the NRM, Locomotionmodels.com or the Foreign & Commonwealth Office.

TABLE OF CONTENTS

Read This Bit First	2
Checking and Assembling Your APT-E	4
Running In.....	7
Missing or Damaged Parts	7
Opening Up Your APT-E	8
Operation – DC (Silent)	8
Installing a Silent DCC Decoder	9
Operation – DC (Sound)	9
Operation – DCC (Sound).....	10
Train Address	10
Turbine Startup Delay	10
DCC Functions	11
Prototypical Operation	11
Sound Volume Settings.....	13
• Factory Reset	14
• Awesome Slow Speed Thingy	14
Limited Lifetime Warranty	14
Acknowledgements	15

APT-E DCC FUNCTION QUICK REFERENCE

F0	HEADLIGHT (ON/OFF)
F1	GAS TURBINE UNIT (TURN ON THE SOUND)
F2	TWO-TONE HORN
F3	LOW-PITCHED HORN
F4	HIGH-PITCHED HORN
F5	HYDRO-KINETIC (HK) BRAKING
F6	DOOR SLAMS
F7	DALE DIESEL
F8	RANDOM AIR PURGE
F9	CAB INTERIOR LIGHT
F10	ADDITIONAL GAS TURBINE START
F11	ADDITIONAL GAS TURBINE START
F12	OPEN CAB STEPS
F14	TILT PUMP
F15	SPEED-DEPENDENT DETONATORS

APT-E ORDER

PC-1 – the front of the train (for modelling purposes)

TC-1 – seats towards rear of train

TC-2 – computer bank towards rear of train

PC-2 – the rear of the train (for modelling purposes)

THE FABULOUS BOOK IN THE BOX

We hope you enjoy the complimentary book about the APT-E written by Gareth Bayer, Kit Spackman and Paul Leadley. It truly is a work of art. Do you love the gorgeous APT-E/APT-P painting in the centre spread as much as we do? We commissioned it from well-known British railway artist John Wigston. We're considering releasing it as a limited edition print. Please get in touch to let us know if you are interested. trains@rapidotrains.com

If you've bought your model on eBay for silly money and there is no fancy-schmancy APT-E book inside, you might want to give that seller "negative feedback." He's nicked your book. You can buy it at the shops for a mere 20 quid.

CHECKING AND ASSEMBLING YOUR APT-E

This is the trickiest part about owning an APT-E. If you can get this right, your APT-E will provide you with decades of pleasure and joy. Screw it up, and you will throw your APT-E against the wall in frustration by the end of the afternoon. Our warranty does not cover overarm throws.

Please note that if you wish to replace the wheelsets with EM or P4 wheelsets, we advise that you test your APT-E thoroughly and run it in on OO gauge track first.

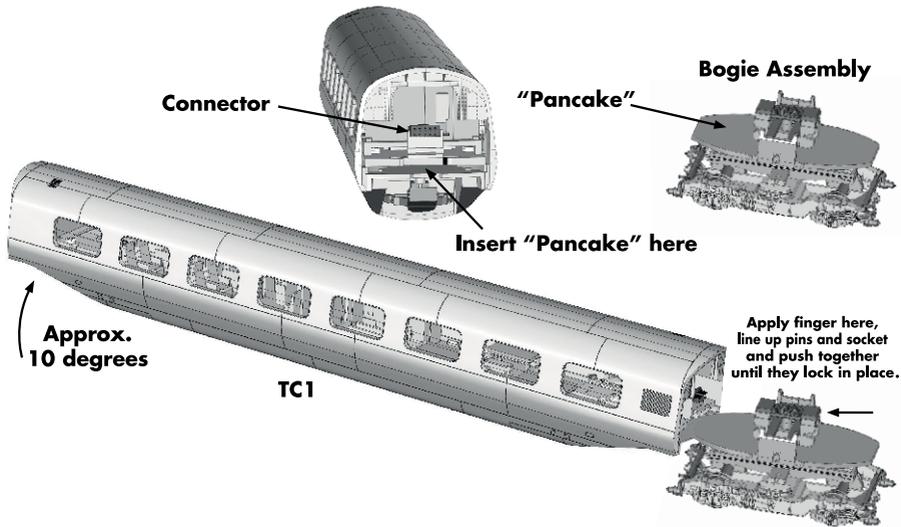
Checking your APT-E:

- Remove both Power Cars and both Trailer Cars from the packaging. Check for any loose bits, especially the HK brake hoses on the bogies. Some of these may have come loose in transit. If little brake pipe-shaped thingies are floating around the packaging, then they have come loose. They can be press fitted into the bogies. Look at one that is still attached to discover where they go. If no HK brake hose is attached, or if one or both of the APT-E noses has popped loose, then congratulations. Your courier company has probably used your APT-E for its weekly "Distribution Centre Aussie Rules Football Competition." We hope your model will actually work. Bruce from the Chorley receiving department got a free kick and managed to lodge it into the ceiling rafters. They had to fish it down with a bargepole and it fell 24 feet to the concrete floor. Good luck!
- Check to see that all wheelsets are correctly in gauge using a OO wheel gauge. "What is that?" you ask. Well, it's a tool for measuring the back-to-back wheel spacing on your models. The actual spacing should be 14.4mm. DCC Concepts makes one (part number DCG-BB145). It's set to 14.5mm but that is close enough for most layouts.
- If you want to be a real OO gauge professional, do a Google search for "NMRA RP-2 Standards Gauge." This handy tool will check if your wheels are the correct distance apart and it will also check all the bits on your points to make sure they are the correct gauge. Having wheelsets the correct gauge ensures reliable operation and will avoid short circuits on tight or wide points.
- If a wheelset is out of gauge, remove the affected wheelset from the bogie by removing the bottom lid of the bogie with a small Phillips screwdriver. The wheelset can be regauged by grabbing each wheel and giving it a bit of a twist. Keep going until you have managed to make the wheelset fit the gauge. Reverse the steps to replace the wheelset, and ensure the bogie cover is properly fitted in position before placing the train on the track.

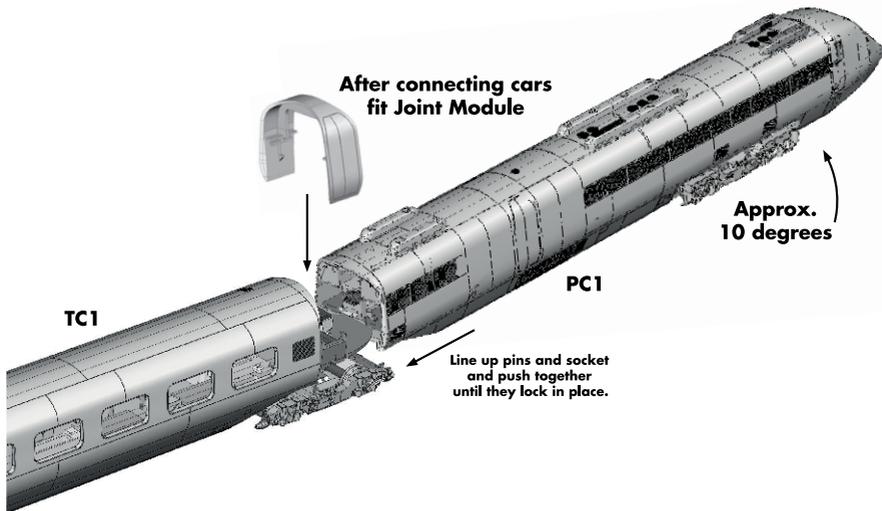
Assembling your APT-E:

- It is strongly advised that you do this in a well-lit area. Use a work lamp if your layout room does not have bright lighting. This will make things much easier.
- Put PC-1 on the track. Next rest TC-1 on the track, with the seating compartment end oriented towards the rear of the train (assuming PC-1 is the front). If the joint module (the gangway connection) is installed on the bogie, remove it by spreading the bottom apart and popping it off. When your APT-E is first unpacked the joint module can be found in a polybag with each car.
- Look at the bogie-less end of TC-1. You will see a 10-pin plug, a straight beige-coloured floor, and a grey curved floor below that. (We've provided some nifty diagrams on the next page.) Now look at the bogie on PC-1. There is a 10-pin socket, and below that is what we call the pancake – an oval-shaped piece of plastic that allows the train to negotiate model railway curves. When the APT-E is joined up, the pancake slides between the two floors, and the plug and socket connect.
- Here's the tricky part. With PC-1 on the track, slide TC-1 over the pancake but don't join up the plug and socket. Now tilt TC-1 up at the rear a bit (about 10 degrees) and gently push it towards PC-1. The plug pins should slide into the socket without any resistance. If there is the slightest bit of resistance – STOP! You will risk bending the pins out of shape. Once the pins are in the socket, you can keep pushing and the plastic connectors will snap in place.

- Assembling your APT-E is truly a knack. Once you've got the knack, you can do it in seconds. But the first couple of times are very, very tricky. Doubtless people are going to complain on RMWeb about how inconvenient it is to assemble this train. It took us two years to develop this method, which allows for tilting, spreading apart on #2 radius curves, and running ten wires between each carriage. If the complainers have a better method that can achieve all of this, be affordable to mass produce, and is more fool proof than what we have designed, they can start in our design office next week.



- When you've managed to couple up PC-1 and TC-1, repeat the process for TC-2 and PC-2. The computer banks on TC-2 should be towards the rear of the train.
- Snap on the joint modules by just pressing them into place from above. There is no front or rear. The joint module can be installed either way. If you don't hear two snaps, one side is probably not seated correctly.



- If you are having a panic attack, please visit our YouTube channel. We plan to upload a video showing how to assemble and disassemble your train. If it's not there, please let us know. www.youtube.com/rapidotrains
- If the APT-E power cars try to move in opposite directions, it means one or more of your inter-carriage plugs is misaligned. Take the train apart and start again, then write a scathing review on RMWeb followed by nastygrams to Rapido, Locomotion, the NRM, the Science Museum Group, Charlie Petty, your local MP, the Parliamentary Under Secretary of State for Transport, and anyone else who will listen.

Picking up your complete APT-E:

- Don't.
- Seriously, don't.
- If you discover that the flashing computer lights are on the "wrong side" and you want to turn the train around so you can see the lights flash, separate the APT-E into two separate halves before picking up each half and turning it around.
- When you send it in for repair, we can tell if your APT-E got damaged from you picking up the whole train in one go. See the note about overarm throws above.

Uncoupling your APT-E:

- To uncouple your APT-E, first remove the joint modules from any couplings you intend to disassemble. Using a fingernail or a wooden stir stick, gently pry out the bottom of one side of the joint module and lever it up.
- The rest is basically performing the assembly steps in reverse. If the carriages are not coming apart, pull a bit harder. Remember you have to "unsnap" the plastic connection that you previously snapped together. It may help if you wiggle it a little.

RUNNING IN

Every locomotive needs what we North Americans call a "break-in" period. This has caused all kinds of confusion in the past. Some of our more dedicated customers took us literally and "broke" in to their friends' homes to steal Rapido locomotives.

Your APT-E has two locomotives, which have been tested at the factory by Rapido Dan (Garcia, our operations manager) and our Chinese QC inspectors. Unfortunately they only tested the train for about 30 seconds. That is not enough time to get the gears to mesh nicely or to even out any jerky operation in a new motor. We suggest that, after reading this manual, you put your APT-E on a test loop and just let it run in each direction for an hour or two at a couple of different speeds. If your layout is purely imaginary, you can probably skip this step.

There already should be enough grease in the gearbox so you don't need to add any more. Just let the thing run.

MISSING OR DAMAGED PARTS

If you open your APT-E box and discover that there are lots of loose bits floating around, then it is clear that your model received some very rough handling in transit. All APT-Es arrived at Locomotion in Shildon fully assembled. As much as we try to prevent damage in transit, some courier companies are really quite brutal in the way they treat packages. We weren't joking when we said that packages have been known to fall a distance of 24 feet at a sorting centre.

If the loose item is a nose or HK brake pipe, then it can easily be glued on with a dab of PVA. We always recommend PVA as it will not ruin your model should you make a mistake. It is also reversible by dabbing with warm water. If a power bogie cover has come loose, that can just be snapped into place along with the wheelsets that are doubtless floating around with it.

In case any windscreen wipers have been knocked off we have included some spares in the box. Remember that PC-2 should only have one windscreen wiper. If we accidentally installed two on your model, pull one off!

If there is serious shipping damage or some mistake got through Dan's QC, please contact us. Full contact info is on page 15. We will arrange to send you any replacement parts you require to fix the model yourself (at no charge, of course) or we will provide a UK shipping address where you can send your model to be repaired. More information about our limited lifetime warranty can be found towards the end of this manual.

OPENING UP YOUR APT-E

We don't recommend you open your APT-E very often as it is difficult to get the shells to seat properly onto the chassis. However, if you need to open up your APT-E (to install a decoder or a 4mm scale Kit Spackman) it is not that difficult to do. Just be sure to remember these important points:

- Our starship currently in orbit has a transporter lock on the molecular pattern of your APT-E. If something pops off while you are removing the shell, our starship's transporters will automatically lock on to the little part and beam it directly into the heart of the sun. Don't bother looking for it. It's gone. You might hear the transporter effect as the part is beamed away. We know it would have been more useful for us to beam the part back onto your workbench but someone's been fiddling with our transporters and we haven't been able to fix them because our transporter repair guy was assigned to a space station in the Denorios Belt. Sorry.
- To that end, please make every effort to ensure nothing flies away. Work on a clean, white surface. In fact, paint all the walls, the floor and the ceiling white, wear white coveralls, and remove everything else from within a three-mile radius of your workbench, especially (but not limited to) vegetation, people and air.
- Remove the car you want to open from the train. At one of the coupled ends, spread one side of the shell away from the interior. Now spread along the rest of the shell until the remaining tabs fully disengage from the slots. Carefully. Remember the transporter lock. The shell will eventually pop off.
- That's it, really.
- No, really.

OPERATION – DC (SILENT)

Put the APT-E on the track. Make it go. That's it. PC-1 is the front.

The directional headlights and the interior lights (including the flashing computer lights in TC-2) all work in DC.

If you are new to the hobby (or just like to occasionally "play trains") and you have a DC-powered train set, please contact us before operating your APT-E as it may not be safe (for your engine and/or your wallet) for you to use your controller.

Some train set throttles put out a very high maximum voltage that is not suitable for scale model trains. The maximum recommended voltage is 15 volts DC. Similarly, controllers designed for large scale trains put out a much higher voltage than your APT-E can handle.

If you use a train set throttle or a throttle designed for large scale trains, your locomotive's circuitry may end up looking like some really nasty spag bol. In such situations, we'll try our best to fix it for you. But we may have to charge you for the replacement parts and/or the labour involved. That's because you didn't read this bit of the manual.

Don't you wish you had read this before you shoved 24 volts through your very expensive model?

INSTALLING A SILENT DCC DECODER

The APT-E contains an ESU-designed motherboard in PC-1. This is connected to the track, motor and lighting outputs. A blind plug is attached to the motherboard using a 21-pin connector. To install a decoder, remove the blind plug and install a 21-pin decoder (recommended) or a 21-pin adapter to attach an 8-pin or a 9-pin decoder. Your chosen decoder should have four function outputs.

At the time of writing, we recommend the following 21-pin decoder:

- ESU #54615 - LokPilot V4.0 DCC with 21MTC

We feel the 21-pin connectors are superior because there are enough pins to ensure that all your lighting and sound functions are connected. The necessary resistors are included on our motherboard so you don't have to futz around with resistors. ("Futz around" is a North American Yiddish term. There is no English translation. But you probably understand what we mean. Buy more Rapido products and you'll eventually learn the entire Yiddish slang dictionary.) Just remove the blind plug, plug in the recommended decoder in the same orientation and you have DCC.

ESU has made an APT-E function mapping which can be downloaded into their non-sound decoder (54615) so that the function buttons and motor control are exactly the same as our factory-released sound versions. This is available for download on the APT-E page in the Support section of our web site. You will need an ESU LokProgrammer to write the function mapping to the 54615 decoder. If you don't have a LokProgrammer, you can adjust CVs in the usual way.

OPERATION – DC (SOUND)

To operate your sound-equipped APT-E locomotive on a DC layout, just give the throttle some juice. The turbines will start up once sufficient voltage has been reached (around seven volts). See the note above (in **Operation – DC (Silent)**) about using train set or large scale throttles. With DC layouts, you have very little control over the sounds of your model.

The APT-E will go through its startup sound sequence before it moves. Sit back and enjoy.

In DC operation, the cab lights do not work. However, the rest of the lights do, including directional headlights, taillights and interior lights (including the flashing lights in TC-2!).

Please note that the sound-equipped APT-E comes with a feature called "Back EMF." Essentially, the decoder reads the output of the motor and adjusts the operation of the train accordingly. This results in extra-smooth running in DCC, but it can result in jerky operation in DC. If you wish to turn Back EMF off, you will need to take your APT-E to a layout equipped with DCC to do so.

In DC, you cannot turn on any of the user-controlled sounds in your model. If you like operating models with advanced sound and lighting features, you might want to think about upgrading to DCC.

In our North American product manuals it is at this point that we usually make some condescending comments about DC control being to model railroading what the Robin Reliant is to the modern automotive industry, but we've decided to leave those out lest we offend anyone.

If you want a taste of the sound features you are missing, please read on...

OPERATION – DCC (SOUND)

It is through sound that the APT-E really shines. We've worked closely with Kit Spackman, Paul Leadley, and everyone at the APT-E Conservation and Support Group to ensure that your APT-E model is as accurate as possible, and that includes the sounds.

TRAIN ADDRESS

Your Rapido APT-E has a DCC decoder installed in PC-1, which comes from the factory with a default address of 3. PC-1 is also the forward end for model railway purposes. We suggest if you are using DCC control that you first test that the train responds on address 3.

Once you have verified that the APT-E is responding and operating properly, you should assign it a unique address. This can be done either on your programming track (recommended) or on the mainline if your system supports programming on the main. It also can be done with the entire train on the track or just PC-1 and one intermediate bogie.

Be aware however that if you do program the APT-E on the main and you have any other locomotives on your layout assigned to address 3 (the normal default address for new locomotives) that **ALL** of them will likely also be changed to your new address! Also be aware that if you give your locomotive a four-digit address it will not work at all if you try to run it on a friend's DC layout.

Please keep in mind that some DCC systems do not have sufficient power to program sound-equipped locomotives on the mainline. If you have a really, really old DCC system (check for vacuum tubes!), you may find that this locomotive won't work at all – nor will many other new models. Go update your DCC system to a newer version. Your computer is updated regularly. Your DCC system should be updated as well.

TURBINE STARTUP DELAY

Your APT-E has a turbine startup delay. That means it won't start moving until the entire turbine startup sequence plays out. This sounds awesome, but it takes a considerable amount of time. That is no problem when playing trains at home or at the club, but sometimes at an exhibition you need to get a train started and moving **QUICKLY** to ensure that all the people standing at your layout don't wander off to go look at the trams on the layout next door.

You can do this by one of two ways. You can start the train moving and then turn on the sound (see below). Or you can deactivate the turbine startup delay so people hear the turbines starting up, even though the train is (unprototypically) moving at the time.

If you wish to turn off the turbine startup delay so that your APT-E can always start moving immediately when you advance the throttle, give CV 124 a value of 17.

If you change your mind and want to turn the turbine startup delay back on, give CV 124 a value of 21.

If you completely mess up and the train starts to do weird stuff, see **Factory Reset** below.

DCC FUNCTIONS

- F0** Directional head and tail lights
- F1** Gas turbine unit
- F2** Two-tone horn (low-high)
- F3** Playable low horn tone
- F4** Playable high horn tone
- F5** Hydro-kinetic (HK) braking fan
- F6** Driver's door slam
- F7** Dale auxiliary diesel generator
- F8** Air purge
- F9** Directional cab lights
- F10** Additional gas turbine start
- F11** Additional gas turbine start
- F12** Crew access steps
- F13** DC lighting
- F14** Tilt pump
- F15** Speed-dependent detonators

PROTOTYPICAL OPERATION

We've enlisted the aid of Ian Bishop, otherwise known as **Legomanbiffo**, to record and master the sounds. Legomanbiffo is widely regarded as the most accomplished and most accurate sound engineer in the British model railway community. It has been a pleasure to work with him on this project, and we hope that you will consider Legomanbiffo for all of your diesel and electric sound needs in future. The following text was written by Legomanbiffo.

The DCC sound project for the APT-E was developed with the assistance of Kit Spackman, otherwise known as "Mr Tilt," a member of the original APT-E project team. Some sounds are from original recordings of the prototype, some are from common components used in other trains, some are generic and some had to be completely synthesised where no alternatives were available.

Auxiliary power for various systems on the train came from a Dale diesel generator, and this had to be running before the gas turbines could be started. Pressing F7 on the model before starting the turbines allows this to be recreated. Alternatively, F7 can be left off to allow enjoyment of the turbine sounds alone whilst driving, albeit not technically accurate.

As there was no recording of the generator available, Kit listened to a number of similar recordings and settled on the one that sounded closest to his memory of the original. It would spoil the illusion to say what the recording is actually of!

(Jason adds: "The pickers of nits will note that in the very early years of operation the turbines were started by battery power or via a 440V AC land line connection. But for the rest of us, the Dale diesel sound is a must.")

The **tilt pumps** were normally started next. These are on F14. Again, these can be left off when driving, if preferred. The same type of tilt pump was used on the APT-P (Production) train.

There were 10 **gas turbines** in total. Originally, four in each driving car were used for traction power and a fifth for auxiliary power (making ten in total in the train). The fifth turbine in each driving car was converted to provide additional traction power and the aforementioned Dale diesel was added in its place to provide auxiliary power.

There was no fixed sequence for starting the turbines. Each was started manually by the train support crew on the driver's signal. The end result was a pseudo-random sequence depending upon a number of factors. The sound project allows this to be accurately recreated, but also allows a simple "start-up and drive off" method using F1 as with other DCC sound projects.

To start prototypically, press F1 to start the first turbine, then press F10 and F11 to simulate the starting of two more turbines, either in sequence, or overlapping one another. Once the short F10 and/or F11 sequences have played out, each key may be turned off and on again to simulate two further start-ups.

Alternatively, to keep things simple, just press F1, wait for the turbine to start up and then drive off as normal.

To bypass the start sequence altogether, start the train moving first and *then* turn on F1. F1 can also be turned *off* when moving to cut the sound immediately.

As per the prototype, the **hydro-kinetic (HK) braking fan** sounds have been set up to run automatically whenever the train brakes. To enable this feature, turn on F5. Nothing will be heard initially, but once the train is moving and the throttle is subsequently reduced, the fan will start up and continue to run until a short time after the speed stabilises. F5 can be left on all the time, or turned only when required, so that the throttle can be coasted without braking sounds. The same type of hydro-kinetic braking fan was used on the APT-P train.

Playable **high and low horn tones** are on F3 and F4 respectively (press-on, press-off in each case). There is also a two-tone horn on F2. Press F2 and hold it down for as long as you want the low tone. When you let go you will hear the high tone. These are the sounds of the original horns, recorded at an industrial unit with the aid of a compressed air line!

Driver's door slam sounds are on F6. To add variety there are three different slam sounds, one of which is played at random each time F6 is pressed. The doors on the APT-E had standard Mk1 coach mechanisms, and sounded very similar to a coach door.

The sounds of the **manually-operated metal steps** for crew access can be lowered and retracted using F12. Press F12 to lower, and F12 again to retract them. These are from recordings of the preserved train at Shildon. Again there are three different sounds to add variety.

The **air purge sound** is on F8 and can be manually operated as required. Kit seems to remember that this operated periodically in normal service.

Detonator sounds are on F15. The three bangs signify an emergency stop. On the model, the faster the train goes, the closer together the bangs occur.

This is what Kit said about **flange squeal**:

"Because the wheelsets were designed from the outset to self steer, and they did that with commendable accuracy, the flanges hardly ever squealed. Maybe only over badly laid or maintained track in a yard we'd get the odd squeal, but normally that part of the train ran very smoothly."

As such, and at Kit's insistence, there is no flange squeal in the sound project!

SOUND VOLUME SETTINGS

The sound volumes on your decoder have been pre-set at the factory to levels suitable for exhibition use. You will probably find the train **WAY TOO LOUD** for use at home or in your shed, unless your home or shed is next to an active quarry or atomic test site. Fortunately all sound levels can be easily adjusted to best suit your own requirements and we recommend that you experiment with different settings if you don't care for the default levels. The easiest way to turn the volume down is simply to reduce the value of CV 63, which is currently set at its highest volume of 192. If you want your APT-E to be even louder, we suggest strapping a 12" diameter speaker to the roof...

To set the volume levels go into the program mode on your DCC system (refer to your system's manual for instructions on how to do this as each system is slightly different); enter the desired CV number; then enter the desired levels. Note that this can be done either on a programming track or on the main (ops mode) if your DCC system supports programming on the main.

We strongly recommend that you keep notes on which settings you have changed and which values were used. If you ever need to do a reset on the decoder (see "Factory Reset" below) then having good notes will allow you to easily re-enter any changes that you might want to keep.

VERY IMPORTANT: Before you change any of the volume control CVs (with the exception of CV 63), please make sure that CV 32 is set to 1. CV 32 is used as an index selection register and if you don't set it first then we are not responsible for your resulting rage and the fact that you will probably throw the locomotive against the wall in frustration.

APT-E SOUND VOLUME SETTINGS				
FUNCTION	CV	DEFAULT	RANGE	YOUR VALUE
MASTER VOLUME	63	192	0-192	
GAS TURBINE DRIVE	259	128	0-128	
TWO-TONE HORN LOW-HIGH	427	128	0-128	
LOW HORN	443	128	0-128	
HIGH HORN	435	128	0-128	
HYDRO-KINETIC BRAKING FAN	291	120	0-128	
DOOR SOUND	299	128	0-128	
DALE DIESEL	307	128	0-128	
AIR SOUND	315	120	0-128	
ADDITIONAL GAS TURBINE START	331	128	0-128	
ADDITIONAL GAS TURBINE START	339	128	0-128	
CAB STEPS DOWN AND UP	363	120	0-128	
TILT PUMP	355	40	0-128	
SPEED-DEPENDANT DETONATORS	395	128	0-128	
EASTER EGG	347	128	0-128	

FACTORY RESET

On your APT-E, you perform a factory reset by entering a value of "8" into CV 8. Note that this will cause all of your new address, volume and motor settings to be lost, so you will need to reprogram any settings that you want to keep. You did keep notes like we suggested earlier, didn't you?

You can **NOT** lose all of the pre-recorded sounds on your APT-E decoder by doing a factory reset. If you manage to lose all of the sounds on your APT-E then you have probably set fire to your decoder – you really shouldn't have used the controller from that Dublo tinplate set you got for Christmas in 1951. Open up your APT-E and pour out the ashes.

AWESOME SLOW SPEED THINGY

There is an awesome trick that you can use to get even better slow speed running and smoother operation. It's called the Automatic Motor Tuning Feature. This feature will automatically adjust the Back-EMF in most cases and give you phenomenal slow-speed performance.

In order to use this automatic adjustment you need to use Ops mode programming, i.e. programming on the mainline. Make sure your APT-E is in "forward" and that you have lots of room in front of it on your mainline. And we mean **LOTS** of room. (Note that PC-1 is forward. You don't want to get that wrong...) Set CV 54 to a value of 0. Then get out of programming mode and press F1. We'll say this again: Make sure you have plenty of room in **FRONT** of your APT-E and it is not headed for the shed floor!!!

Your APT-E will quickly take off at full speed and suddenly stop while the decoder reads the motor responses. You'll have fabulous motor control after you do this. If you ever have to reset your locomotive, you can do the automatic adjustment again – it just takes a few seconds.

(If you didn't check and your APT-E is now in 119 pieces, have fun putting it back together. We'll be right behind you, cheering you on. 5000 miles behind you.)

MORE INFORMATION

While addressing the features that most modellers will need for normal operation, these instructions have covered just a small number of the many customizable features of your ESU LokSound decoder. For advanced users who want to more fully explore the capabilities of the decoder we suggest downloading the ESU Loksound Select decoder manual. This is available on the APT-E page in the Support section of our web site. We don't understand the half of it.

LIMITED LIFETIME WARRANTY

We will do our best to solve any problems or issues that you may have with your APT-E. If your train has any defects that originate from the factory, we will repair your train using new components or replace it outright should a repair not be possible. However, we can only fix your APT-E while we have additional ones in stock. We normally keep spares for up to six months after a model is released. If you purchased this train secondhand or first opened it after six months, it is possible that we no longer have any replacements and that a repair is the only option. Please give us a call or write us an email, and we will see what we can do to help you out.

Repairs on the APT-E are being performed for us in the UK by Charlie Petty at DC Kits. Please send an email to Rapido (using the address trains@rapidotrains.com) describing the problem and we will first try to see if it is something we can solve over email. If not, we will arrange to send you a return authorisation, and you will send your model directly to Charlie for repair. If you do

not have email, you can ring Charlie on 0113 256 3415. If you live outside of Europe, we will fix your model in our Canadian office.

If the problem with your model was a factory defect rather than shipping damage or user error we will offer you a complimentary "I'd rather be on British Rail" T-shirt to make up for the hassle and cost of sending your APT-E in for repair. Unfortunately we can't offer this in the case of shipping damage or if the problem was due to the guy holding the controller as that is out of our control.

Please do not send APT-E models to Charlie for repair before you receive a return authorisation from us. You would be amazed at how many people send us models with absolutely no documentation and they sit on our shelf for months until the owner rings up and asks for an update. "Well you didn't tell us what was wrong with it nor did you provide a return address so how were we supposed to know what to do?"

There are a number of things that this warranty cannot cover. If your APT-E arrives with a couple of loose bogie bits or a loose nose, there is a very good chance that you can effect a repair in less time and effort than it would take to contact us. Don't be afraid to do some railway modelling! PVA works wonders for securing all sorts of parts and will not mar or damage your paint. However, if parts are missing or smashed that is another story – ring us or send us an email and we'll send you some replacements. There are already some extra bogie parts and windscreen wipers included in the box.

Of course, damage caused by trips to the exhibition floor, running your APT-E at 152 MPH around a #2 radius curve, wearing your APT-E power cars as a cosy pair of slippers, baking the APT-E at 325 degrees Fahrenheit until golden brown, attempting to power your APT-E with real diesel fuel, or any other damage caused by you that we haven't been able to cover here is not covered by the warranty. However, if catastrophe does strike and your APT-E gets damaged, please give us a shout and we'll do our best to help you out. **Yes, even if it was your fault we will try our best to fix your locomotive for you. Don't be shy!**

ACKNOWLEDGEMENTS

A lot of people have been instrumental in ensuring the Rapido APT-E is the most awesome APT-E model ever produced. Er... That's in addition to being the **ONLY** APT-E ever produced. Our thanks go to:

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RAPIDO MAKES OTHER STUFF TOO, YOU KNOW.



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