

# THE S-STOCK FLEET

by John Hawkins

Further details have been revealed about the coming standard stock, or S-stock, for the SSL lines, which should replace the Amersham, Circle and District stocks (A-, C-, and D-stocks) within the next eight years.

It should be mentioned that these will be the first electric trains of S-stock. The series commenced by the District Line with its first electric trains of A-stock was almost exhausted when LT added the Metropolitan Line stocks, but the S-stock designation was used for remaining steam stock coaches.

With 190 trains, this is believed to be the largest ever single order for Metro-style trains, including over a third more 8-car trains than are currently used on the Metropolitan Line (discounting the East London Line units). As previously mentioned, these are intended to extend the Uxbridge service to Barking, in place of the Hammersmith & City Line service, and also to enhance service frequencies. Where will they all be stabled?

In contrast there is a small reduction in trains to replace the C- and D-stock fleets, taking into account the shortening of the H&C service and also the increased performance of the new stock. Even so, new 7-car stabling will be needed for the C-stock replacement fleet.

The proposed numbering scheme is as follows:

<b>Train</b>	<b>DM</b> North/ West	<b>M1</b>	<b>M2*</b> * or M2(D)	<b>MS</b>	<b>MS</b>	<b>M2<sup>†</sup></b> <sup>†</sup> not in 7-cars	<b>M1</b>	<b>DM</b> South/ East
1	21002	22002	23002	24002	24001	23001	22001	21001
2	21004	22004	23004	24004	24003	23003	22003	21003
And so on until								
26	21052	22052	23052	24052	24051	23051	22051	21051
27 (D)	21054	22054	25054	24054	24053	23053	22053	21053
And so on until								
72 (D)	21144	22144	25144	24144	24143	23143	22143	21143
73	21202	22202	23202	24202	24201		22201	21201
74	21204	22204	23204	24204	24203		22203	21203
And so on until								
141	21338	22338	23338	24338	24337		22337	21337
142 (D)	21340	22340	25340	24340	24339		22339	21339
And so on until								
190 (D)	21436	22436	25436	24436	24435		22435	21435

A new fleet of trains for the 21st century numbered from 21xxx! The numbering system follows that of the 2009 Tube Stock, in that the second digit indicates the car type. However, it does not always indicate the position from the train end, since 7-car trains omit one of the 23xxx cars, and de-icing cars are clearly identified in a 25xxx sequence. The odd numbered cars are nominally at the south/east 'D' end of trains, with the even numbered cars at the north/west 'A' end, although trains will

become turned in service. This gives the impression that trains consist of two units but they are, in fact, block trains.

Eight-car trains can be identified by their middle 0 or 1 digit, whilst the 7-car trains use a middle digit of 2, 3 or 4. It should be noted that the numbering schemes for S-stock, 2009 Tube Stock, and the recent 1996 Tube Stock deliveries are based upon proposals by our editor, the author for many years of the renowned *London Underground Rolling Stock* book.

This numbering makes clear that the Metropolitan Line fleet will be kept separate, and could therefore have different seating (NF 40/06), line decor, route maps, etc. This is not the originally promised 'fully inter-operable fleet'. If Neasden depot handles both types, it will need to take care not to send the wrong type out on a working – the first Jubilee line 7-car train ran a week early (!) from Neasden, so an 8-car Circle Line train is a possibility!

The S-stock trains are formed of all motor cars. The M1 type car is like a conventional non-driving motor car but no train services are dependent upon the M2 car, which is therefore not essential in a train. It was originally intended to replace C-stock with trains having no M2 cars at all, but current plans are that all trains will have at least one M2 car, with 8-car trains including two.

The middle cars are Motor Shunting (MS) cars, which are different to UNDM cars, since these block trains have no auto-couplers for ease of uncoupling. In fact, they will probably be the first new trains since the 1938 tube and surface stocks not to incorporate auto-couplers. Provision has been made for trains to be split between the MS cars within depots for lifting and also for passage through an underfloor wheel lathe, since such roads can rarely accommodate a full train.

The middle MS cars are therefore joined by a couple of pipe ends bolted together with four bolts, known as a 'muff' coupler (perhaps as a muffed or botched job?), a semi-permanent coupling. Electrical and air connections are made through jumpers and hoses, which can be separated in a shed pit road. It must be remembered that this stock features a wide open passage between cars, so that MS cars will reveal their 1,700mm gangway opening when trains are split, requiring weather protection.

Another feature of S-stock is a lower floor level, providing step-free access from platforms, achieved through sharing the 700mm wheel diameter of the 2009 Tube Stock. A consequence of this is that DM couplers will be lower than current sub-surface trains. During the six-year changeover period from late-2009, they may therefore require an emergency coupling adapter to push out a defective train. There is therefore no need to provide conventional Wedgelock type couplers, and it is likely that a simpler mechanical design will be adopted.

It is noticeable that the new stock will provide a higher proportion of de-icing cars, with almost two-thirds of the 8-car units being equipped, compared with little more than a third of the A-stock. The 7-car provision is much lower, with only 40% so equipped (2 in 5), but still an improvement on the current one-third of D-stock and only a quarter of C-stock.

The de-icing equipment is on M2 cars, which were not originally part of the C-stock replacement plans – one wonders how it was intended to de-ice the Hammersmith branch when the terminus cannot reverse 7-car trains. Under current plans the Hammersmith line will still have a problem during the changeover if S-stock is delivered in number order, since all C-stock will be replaced some ten months before the first 7-car de-icing trains arrive. It may be necessary to retain a couple of C-

stock trains for de-icing duties during the winter of 2012-13. However, having commenced production of M2(D) cars for the end of the 8-car order, it may suit production to continue with the M2(D) cars for the 7-car order before reverting to M2 cars for the balance of the order.

Following upon the success of the 2009 Tube Stock mock-up, a glimpse of the S-stock will be available this summer when a mock-up is moved around the SSL network