Charting

Trains are plotted by Section Controllers on Control charts which are graphs consisting of Stations with their km and inter distance on vertical axis and time on horizontal axis. Each one hour is divided into 6 units of 10 minutes each which is further sub-divided into 5 smaller units of 2 minutes each.

These charts are made one per shift and a Section Controller records all the timings of the trains in the section and represents the train by drawing a line connecting the timings received from the station. The details of the trains are entered in the chart and linked to the respective lines so that the movement of the train can be traced throughout. The up trains are plotted from the bottom of the chart upwards and from the left diagonally towards the right; and all down trains are plotted from the top of the chart downwards and also diagonally from the left towards the right. Other details like stabled loads, traffic blocks permitted, failure details etc. are also mentioned in the charts.

Based on the train running trend, the controller assesses and projects the train movements further and plans crossings or precedence judiciously.

Manual Charting

Before, the advent of computerized charting, the control charts were manually drawn with various color pencils / pens by Section Controllers. On shift completion, these charts were then used for checking, analyzing and then preserved to the mandated period of time. Manual charts have to be kept ready and in sufficient quantity in case of any emergency where computerized charting becomes unavailable for longer period of time due to technical / network problems.

Control Office Application

CoA – Control office Application is the computerized charting software. Most of the basic facets of manual charting have been computerized and the timings are now marked in the computer terminal by the Section Controller.

With computerization, the first-hand information of train running which was only available with Section Controller is now available to all others involved in train operations like adjacent board controller, Chief Controllers, Other department controllers and officers. With the linking of CoA to ICMS and FOIS, this information is now available on a real time basis to the traveling public and freight customers, thereby enabling greater transparency and satisfaction.

Some of the screens available in CoA for the Section Controller to input data for control charting are furnished below…

Train ordering

Train timings entry

Train Movement

(a) Facilitates the user to report arrival/departure/through status of a train at each station

(b) Reporting detention details for every block section and station

(c) Stabling and regulation of trains

(d) Reporting abnormal working (obstruction, engine failure, train parting, work on line, accidents)

(e) Single line working on a double line section

Traffic Blocks


Caution orders

Traffic Blocks

(a) Imposition, Extension and cancellation of maintenance blocks

(b) Provision to modify various timestamps.

Caution Order

(a) Imposition of speed restrictions (Temporary and Permanent) in a block section and station.

(b) Cancellation of speed restrictions

(c) Modifying speed for any speed restriction

Unusual Occurrence – General

(a) Reporting unusual occurrences (10 Types) both Train specific and Duration specific.

(b) Facility to report occurrences at a station or in a block section

(c) Enables user to define expected detention to trains (Up/Down) for advance plotting.
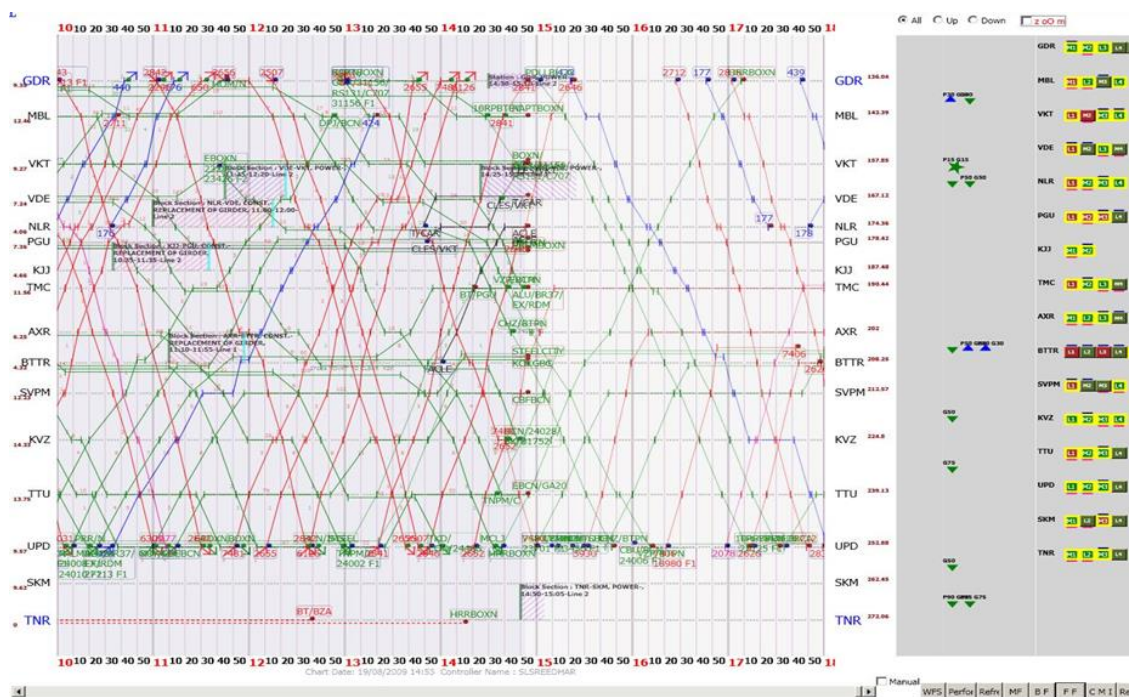
Advance Plotting

(a) Projection of the estimated arrival, departure and run through of a train over the defined section.

(b) Indicate ideal precedence/crossing points based on the actual running of the train(s) under dynamic situation with the core objective of ensuring punctuality.

(c) Facilitates manual intervention by the controller to change points of crossing or precedence.

(d) Focus on right time arrival of all scheduled passenger/express trains at the section/divisional interchange point or destination if within the division.

(e) Detention is kept to bare minimum in conflict situations

Advance Features of COA

The following are some features of CoA enabled by the computerization…

Chart
   (a) View of chart is configurable (number of hours).
   (b) Collapsing/Expanding of sections/stations in master chart;
   (c) Horizontal scrolling to view any portion of chart.
   (d) Zoom facility to view a particular area of chart;
   (e) Line occupancy depiction;
   (f) Cautions/Unusual depicted through visual icons and
   (g) Abnormal working – Depiction showing all movements.

MIS Reports
   (a) Reports Related To Punctuality of Trains;
   (b) Reports Related To Freight Operations – Hours On Run (Train Wise/ Section Wise), Interchange;
   (c) Reports Related to Asset Maintenance- Speed Restrictions, Utilization of Maintenance blocks, Programmed maintenance blocks;
   (d) Reports Related to Unusual Occurrences including Equipment failures and
   (e) Additional customized reports based on user requirements.

SMS
   (a) Facility to send SMS alerts to pre-defined users for specific events like equipment failures and
   (b) In case of unusual occurrences/accidents etc. it will be possible to flash immediate information to all concerned.

COA Integration with other applications
   (a) COA-FOIS integration has been done;
   (b) COA-ICMS integration has been done;
   (c) COA-NTES integration has been done;
   (d) COA timings will flow from division to Integration Server at NDLS and
   (e) Other applications will consume data from Integration Server at NDLS.

Integration allows focus on single point data entry and facilitates real time transfer of data from one division to the adjoining division. And also real time updating of other systems. Back reporting time in COA is limited to 30 minutes. (In FOIS it is 60 minutes).

Master Charts

For every section Master Charts indicating trains run in 24 hours are prepared which show the running of each Mail, Express or passenger trains over the sections according to its scheduled running. In between the running of trains carrying passengers, paths for goods trains are worked out and plotted. They are helpful in revision of time tables and planning the running of any extra train, maintenance blocks and for guidance of section controllers. It should be displayed on boards for easy reference.

Checking of Control Charts

Control Charts have to be checked regularly to scrutinize all cases of detentions. The reasons have to be studied in detail to bring out any irregularities or constraints in working in order to identify appropriate corrective measures.

- All cases of poor controlling have to be brought out and the concerned Section controller has to be counseled or taken up appropriately.
- All cases of failures have to be reported as unsatisfactory feature and logged against the concerned department. All unsatisfactory features have to be investigated in detail by the respective departments and failure of staff, poor maintenance and any other issues have to be taken up to minimize and eliminate such failures.
- Control charts have to be checked daily by the CHC in charge and he/she must bring out the critical deficiencies and put up the checked charts to AOM on a daily basis.
- DOM / SrDOM shall do test checks and call for checked charts while analyzing bad cases.

Operational Discipline

Control orders

All orders given to the Station Masters or Running staff and lobby by Controller should be entered in the control order register by the staff. Each entry must be initialed with date &time. At the end of each turn of duty the relieved as well as the relieving Station Master or Loco Foreman must sign their name in full below the last entry in the register. When a station Master or Loco Foreman has received an order from the control has to enter it in his control register at his station.

Control orders are sacrosanct and all Station staff, Shed staff, Crew and Guards etc. must obey them, duly following the General and Subsidiary Rules. Any inconsistency felt should be immediately brought up to the CHC in charge who shall resolve the understanding or issue modified orders.