Royal Mail Internal Information

How to Operate an iLSM

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Document Information

Details

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Change History

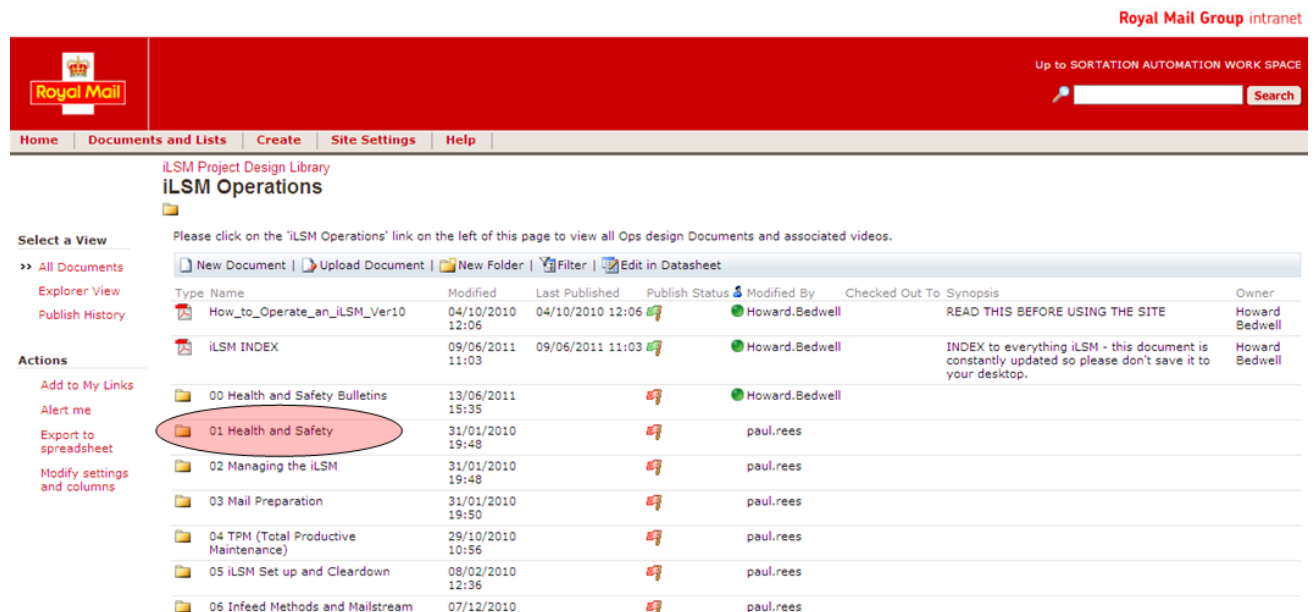| Version	Date	Details of Change
1	1st Feb 2010	Complete update following Methods Trials completion
2 – 4	8th Feb 2010	Various minor changes
5	15th Feb 2010	Added True traffic Link
6	1st March 2010	Various minor changes
7	9th April 2010	Addition of Porterage section, expansion of sequencing section, various minor alterations.
8	19th May 2010	Reference to IT added for sharepoint site, expansion of sortplan section, various minor alterations, addition of sequencing info, update of TPM section.
9	23rd July 2010	Configuration section – How to remove Config files reference to sharepoint added. SOM Audit Checklist added. Staffing section "Guidelines" added. Sortplan section updated to reflect changes in the Sharepoint site Changes made to reflect CWU review of HTO 7
10	16th Aug 2010	Work area Organisation section in progress, Sequencing contingency added, How to use sortplan templates added to Set up and cleardown section. Sorter Methods section updated with Stamp down cleardown technique for CSS batches and on the Second pass of sequencing.
11	1st Aug 2011	Update to hyperlinks and amendment from CWU to TPM section
12	17th Oct 2011	Sequencing section updated Further information on Mailstream cards

Structure / Overlap with iLSM Sharepoint site

This document is designed to be a guide to Managers for the efficient and effective operation of an iLSM. This guide assumes a basic Royal Mail machine operational knowledge.

Further detail to supplement this guide is available on a Sharepoint website. The Sharepoint website can be accessed through the Royal Mail intranet and holds more detailed information for operating the iLSM. An example of the type of information available is Planning Tools, Videos and Layout designs.

It can be found at the following link: iLSM.Project.Design.Library (Press CTRL and click on the link to open it). For any problems accessing the site, please contact IT who will be able to configure your computer to grant access.

This How to Operate an iLSM guide and the Sharepoint site have the same numbering convention. For example, in this document, the iLSM Safe Systems of Work (SSOW) is in section 01.02. On the Sharepoint site it is in section 01, and then in subsection 02. So the first number dictates the top level and second number (or third, or fourth) dictates each level downwards; as shown in figure 1 and Figure 2 below.

Figure 1 – Sharepoint: 01 Health and Safety
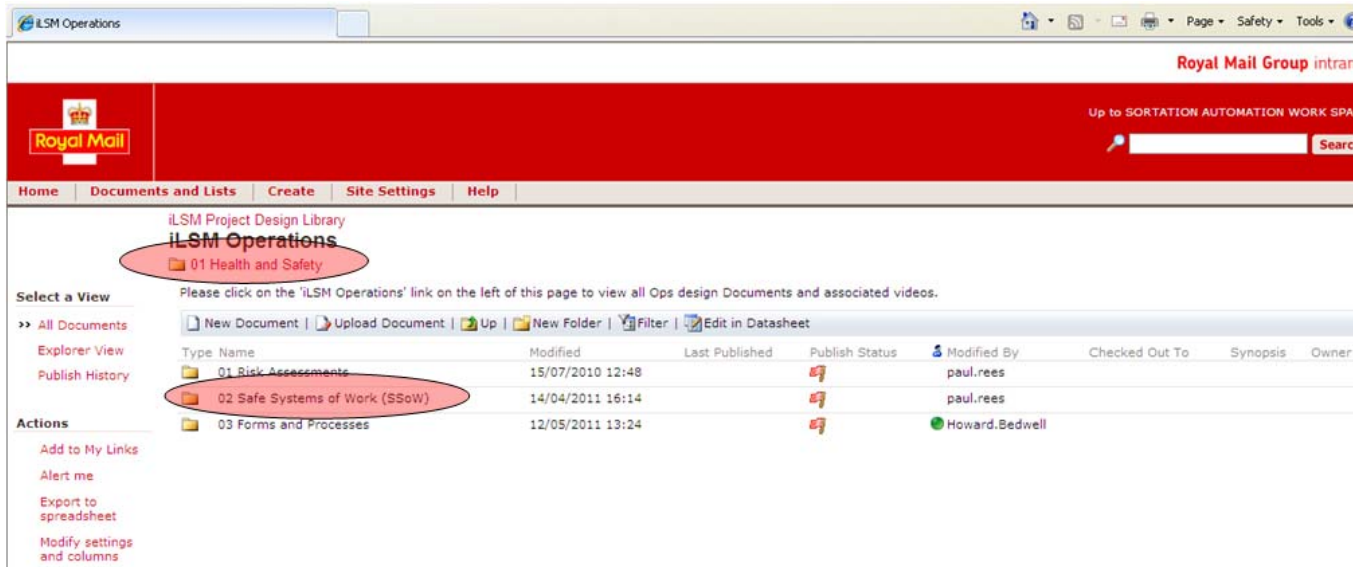
Figure 2 – Sharepoint: 01.02 Safe Systems of Work (SSoW)

Keeping up-to-date with changes

Each time we make a significant change to the Sharepoint site (new documents, significant changes to existing documents) we will update the front page Announcement entitled 'List of changes'.
If you want to keep up-to-date with those significant changes click on the announcement (on the front page) entitled "List of Changes".
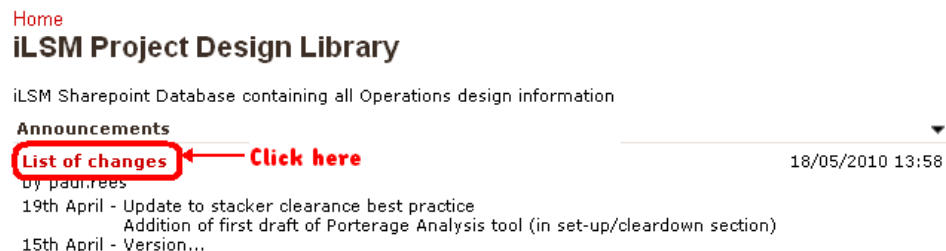
Then select the "Alert Me" option.
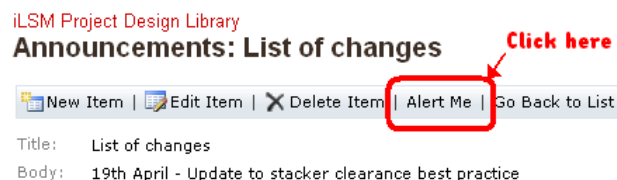
After Alert Me is selected the screen shown below will load; select "Changed items" and "Send e-mail immediately". This will now send you an e-mail each time we make an announcement of a significant change to the site.

iLSM Project Design Library
New Alert: Announcements: List of changes

Use this page to create an e-mail alert notifying you when there are changes to this item. More information on alerts.

Send Alerts To

All of your alerts will be sent to this e-mail address. Change my e-mail address.

My e-mail address is:
Your.Email@RoyalMail.COM

Change Type

Specify the type of changes that you want to be alerted to.

Alert me about:

Select ———— ⦿ Changed Items

Alert Frequency

Specify whether you want to be alerted immediately when there is a change, or if you would rather receive a daily or weekly summary message.

View my existing alerts on this site.

Alert me how often:

⦿ Send e-mail immediately.

Select ○ Send a daily summary.

○ Send a weekly summary.

Click Here ———— [OK]   [Cancel]

*NOTE : As an alternative it is also possible to receive alerts about specific sections / folders, e.g. 11 Workplan Design. To do this click on the folder name, then using the "Alert Me" option as above, you will then get an e-mail when a section is updated. In this case you may want to set the option to 'send a daily summary' or 'send a weekly summary' as changes to sections can sometimes involve numerous changes at a time.

iLSM INDEX

This A to Z tool has been designed to help users navigate to specific material on the Sharepoint site.
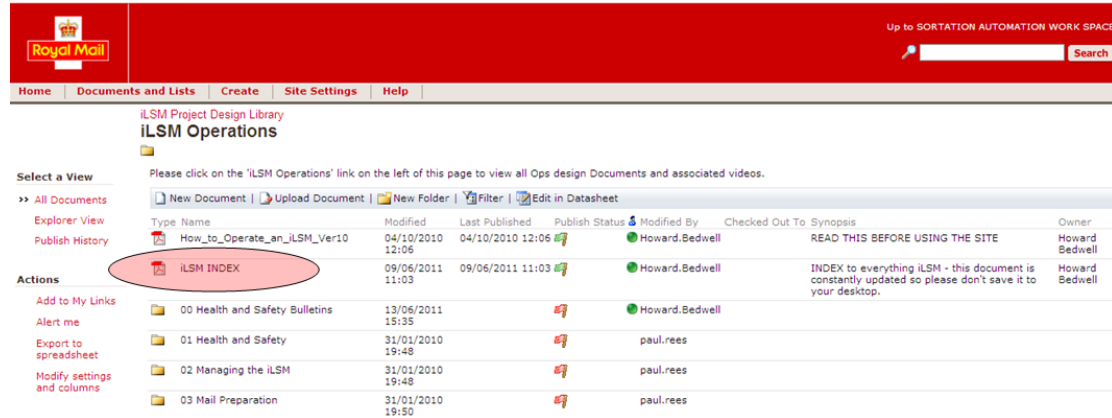

Figure 3 – Selecting the iLSM INDEX

Figure 4 – The iLSM INDEX

Contents

01 – Health and safety

01.01 – Risk Assessments

A generic risk assessment for the iLSM has been carried out by the iLSM Programme team and can be found on the iLSM Sharepoint Site.

Risk Assessments should be performed by the Work Area Manager whenever a new piece of equipment or machinery is installed or utilised within their work area or once a year. On the Sharepoint site there is a template to use.

*N.B iLSM sites may require additional risk assessments depending on the physical characteristics of the office and how they effect the iLSM area.

01.02 – Safe Systems of Work

There are SSoW's that apply to the iLSM; please ensure that you have the most up to date version displayed within the iLSM area and that all staff are updated on any new amendments.
These SSoW must be adhered to at all times by staff and Managers in the iLSM Work area.

The iLSM SSoW can be found on the iLSM Sharepoint Site at the following LINK

01.03 – Forms and Processes

The Health and Safety Processes currently used in the iLSM area to compliment the Risk Assessment process are SOFT's and SUSA's. This part of the Sharepoint site contains all the tools and processes to facilitate that Health and Safety Process.

02 – Managing the iLSM

02.01 – Work Area Organisation

Feedback from the Process Improvement Trials and Early adopters of iLSM sorting machines highlighted the importance of organising the iLSM Work Area efficiently. This section of the Sharepoint site has tips and advice on how to prepare, Layout and set up the iLSM work area; minimising confusion and clarifying the best ways of working from the outset.

The "Vertical Start up – Best Practice guide" has been brought together from all the sections within the HTO and Sharepoint site to give the Mail Centre as much chance as possible to hit the ground running as soon as the iLSM is built and ready for service.

02.02 – Performance Targets

It is important to understand that an iLSM runs at a faster rate than current letter sorting machines. Managers will plan and be able to operate the iLSM at the anticipated throughputs to ensure that the workplan can be achieved.
The <u>average</u> acceptable throughput for an iLSM is 36,500 items per hour; the high performance target is 40,000.

The table below lists the measures and targets for the iLSM Operation: Performance report

To understand how efficient and effective your throughput is on "Statviewer" and therefore compare with other offices the session should be started when the iLSM Operators arrive at the machine and end the session when Operators are sent for meal relief that is not covered due to workload or at the end of the shift.

	Acceptable performance	Excellent performance
Average throughput	36.5K	40K
Performance report Throughput (Hours Run)	34.5K	36.5K
Items per jam	4519	>6000
% sent to overflow	2%	1%

% sent for recirculation	1%	.5%
Utilisation Level (across 8 hour operation)	80%	85%

To understand how these targets were acquired go to section 09.02 Operator Screens and MIS / MIS (Management Information System).

A guide on how to improve the performance figures can be found on the iLSM Sharepoint Site.

02.03 – iLSM Manager role (Job Description)

The role for the Manager on an iLSM is similar to existing automation equipment however there are some key differences for the Manager to be aware. The iLSM operates at a rate of approx 40,000 items per hour which is 30% faster than any other piece of automation equipment; therefore there are some specific considerations:

- Each iLSM will be manned by three operators (one on the feeder and two on the sorters), and separate porters will need to be specified and available for the feeder and the sorters.
- It is suggested that the space available by the Image Lift section is used as a storage area which is replenished by Porters and used by the operators (discussed later in the document in section 05.01).
- Mail presentation is even more critical on an iLSM than existing automation equipment. At a throughput of 40k items per hour, any issues such as low tray fills, badly presented Loose Letter Rack mail will hinder the operator feeding the iLSM and therefore, the machine clear down. The WAM should try to optimise the mail arrivals in terms of their presentation quality. As an example, at times of low tray fills the WAM should consider providing LLR mail also to be mixed in, so maintaining the machines throughput
- The sortplan design and layout of yorks in front is critical to operating the iLSM effectively This is discussed later in this document in section 10.01.
- When a Mail Centre has iLSMs installed the overall automation capacity will drop, therefore effective running of the machine is more critical than it may have been in the past. Therefore the WAM should look at ways of maximising machine operational time by looking for where time is lost and then trying to come up with ways of reducing that.

A detailed Job Description for the iLSM Manager role will soon be available on the iLSM Project Sharepoint site.

02.04 – iLSM Operator role

The iLSM Operator role is similar to that for existing automation equipment. The main points to note are:

- All Operators will be trained and capable of carrying out each of the iLSM Operator tasks (Infeed, Sorter, and TPM).
- The Infeed operator is responsible for :
  - Feeding trayed mail using the ergonomic method of resting the tray on the infeed and tipping forward (MANDATORY), this is further described in the infeed section.
  - Monitoring the mailpiece image quality on the computer display.
  - Selecting mailstreams using the Touchscreen or Automatic Mailstream Cards
  - Monitoring and feedback of any mail preparation issues to the WAM.
  - Monitor the AI tag refeeds on the Operator screen
  - Inform the stacker Operator when changing the mailstream so that the stacker operator can segregate the MDEC refeed mail.
  - Tending to the culling stacker (putting the mail to an LLR or tray)
  - Refeed perceived machineable culled ejects and ensure that this is monitored to minimise triple handling.
  - Clearing jams up to and including the reject stacker.
  - Completing information sheets (traffic, jams e.t.c.) on the infeed
- Stacker operator is responsible for :
  - Clearing jams from the machine after the reject stacker.
  - Clearing the stacker when they are half full or full (not "pecking"). This is further described in Section 7 Sorter Methods.
  - Replenishing the label rolls as required (these should be checked at the start of each shift)
  - Calling an engineer when the reject or overflow levels change significantly
  - Laying out the equipment in the sorter area as effectively as per the guidelines in section 07.01)
  - Replenishing the equipment on the sorter from a storage area.
  - Ensuring that surcharge items identified by the machine are isolated from other mail.
  - Checking Hazard selections defined on the Sort plan.
  - Checking for missorts and inform the manager as and when appropriate.
  - To work flexibly with the Feeder Operator.

During the iLSM Process Improvement Trials ergonomic data was collected which showed that if operators rotated tasks then their fatigue / discomfort levels would be reduced, therefore it is **mandatory** that operators should rotate tasks during a shift.

This section on the Sharepoint site includes the iLSM Job description, Self selection questionnaire and the training schedule and content.

02.05 – Managing Performance

This section on the sharepoint site has been designed to assist Work Area Managers in understanding and identifying performance issues on the iLSM.

SOM Audits

The purpose of this document is to provide the means by which Mail Centres can check and monitor compliance with iLSM SOMs by the use of periodic checks against a fixed checklist audit product.

The SOM checklist has been written in conjunction with the SOMs Guidelines and these should be used as a reference document to clarify any issues with the SOM interpretation.

The SOMs have been designed to optimise the iLSM and work area efficiency and effectiveness. They include SOMs specific to the iLSM and generic common sense, best practise procedures and processes.

SOM Checklist example

No.	Description	Criteria	Reference Doc.	Pass/Fail	Comments	Remedial Action
1	An up to date machine workplan and utilisation chart is displayed and adhered to on all shifts	• Displayed in the machine work area • Workplan will achieve forecast traffic levels • Includes running time by mail type • Includes plan changes, despatch and Cleardown times & durations • Includes scheduled pre-flight checks and other TPM and maintenance activity times	• iLSM Sharepoint site: Section 11 "Workplan Design".	F	Night shift workplan out of date Late shift does not include mail type breakdown	Night shift Mgr to update by week 4 Late shift Mgr to introduce mail type breakdown based on MIS report by week 6

Explanation

No.   Reference number for the individual audit point – in this case regarding the iLSM workplan or utilisation plan

Description   of the relevant audit point – this is a statement of what should happen. This may not be specific; subjective view will be taken on how each point should

                    be applied to local office.

Criteria   guidance points on how each audit point should be measured – factors influencing a PASS comment on the individual point. Again some subjectivity

                    may be used.

Reference Doc   If more information is required on the specific audit point, this is the document(s) or Sharepoint site location(s) that will provide it. Press CTRL and the

                    left mouse button to go straight to the relevant Sharepoint page.

Pass or Fail   In the opinion of the auditor, whether or not the audit point statement measure using the criteria, has been satisfied

Comments   Input by the auditor, this should explain the pass or fail comment

Remedial Action This is the action required to correct any Fail comments to a Pass, It should include who is doing what and by when. These actions are carried through

                    to the Action Plan summary.

OEE

Overall Equipment Effectiveness is a measurement for Mail Centres to quantify the utilisation of their equipment and identify losses. This section of the Sharepoint site contains example documents and definitions that are used to measure OEE on equipment in a Mail Centre.

Shift Analysis Tool

The timing tool has been created for managers or ELS / SME to use when they would like to identify what is happening during the shift; at the end it summarises the results. It is based on the WCM NVAA tool.

02.06 – Staffing

Taken from the Staffing section of the CWU agreed "Guidelines" document:-

3.2   iLSMs

Each machine will be manned by three operators (one on the feeder and two on the sorters), and separate porters will need to be specified and available for the feeder and sorters. There will be a minimum 5 people trained per iLSM. Duty patterns will be structured to ensure that individuals rotate around the roles during their shift; this will be mandatory. All duty structures will be subject to agreement locally.

3.3   Overall Staffing

The final staffing requirements for each Mail Centre will be agreed at Local Level because the minimum core levels above may need to be increased depending on the plans being run, the traffic being processed or additional porterage required.

3.4   Annual/Sick/Meal Relief Cover

Mail Centres must ensure sufficient trained staff are available to take account of Leave and Meal Relief cover.

Please note: iLSM Operators can take relief breaks from the iLSM without needing to stop the machine or having to go and find a substitute to cover for the couple of minutes they are away.

03 - Mail preparation

One of the keys to operating an iLSM is to recognise the fact that due to its increased throughput two of the main difficulties in maximising its effectiveness are:

- Getting mail to the machine at a rate of 40k an hour
- Feeding that mail into the machine with 1 operator

This section is aimed to help deal with both issues. If the trays are not sufficiently full then the feeder operator will struggle to keep up with the machine therefore it is recommended that in this instance LLR mail mixed with trays will ease the situation.

All mail prepared for infeed to the iLSM must adhere to the following specification:

- Mail must be faced

- Mail must be orientated 'stamp up' when fed to the machine (portrait mail should have the window away from the tag code area).

- Mail must be class segregated

- Mail must be Mailstream segregated.

- Bundles should be prepared prior to the iLSM to ease the feeding operation. Feeding with bundles only prevents the feeder operator loading the iLSM to the operational requirements.

- Where manual preparation takes place un-machineable items such as the following should be removed.

    o Plastic wrapped items

    o Over-sized

    o Under-sized

- The iLSM can be allowed to determine whether other items are machineable or not.

- Un-machineable mail should be passed for manual processing. To aid this, the infeed has a j-tool template fitted to it.

Figure 1 – J-Tool template

- It is recommended to run WTLL sessions with staff in the preparation area to inform them of what an iLSM can and cannot process. This will help minimise the amount of culling the infeed operator needs to carry out and so making their role easier. An example of details for a WTLL sessions is in the Mail Preparation section of the Sharepoint site.

Equipment

If mail is pre-processed (Collection, Meter, PPI) within the mail centre, and has not been trayed by customers, ideally it should be stored on Loose Letter Racks with the indicia at the top and facing right when presented to the iLSM.

Figure 2 – Image of Letters presented on LLR for iLSM.

If mail is trayed by customers it should be presented to the iLSM in trays on Yorks. Customer trayed mail should have the indicia at the bottom of the tray and facing the tray label holder ready to be tipped.

Figure 3 – Image of Letters presented in perstorp tray for iLSM.

Mail flow / Maximising machine usage

Before processing commences, the local storage area (usually in front of the infeed) should be filled with mail suitable for the planned run.

To maintain the machines throughputs the ideal situation is for Porters to monitor the mail at the iLSM infeed and to provide new mail as required. The porters will also remove unnecessary equipment to keep the work area clear.

Outward

If an iLSM is running on the single sortplan then it can be beneficial to have LLRs of DSA, Mailsort or Inward arrivals available to act as infill; if there is a shortage of Outward mail for brief periods of time. The aim should be to ensure there is mail available for the infeed at all times.

If infill mail is being used on a regular basis, consideration should be given to reducing the number of outward machines in use at that time in the Workplan.

04 – TPM (Total Productive Maintenance)

The TPM Tasks are as outlined in the Sortation Automation Guidelines, Annex E. The times required for the TPM activities are recommended by Solystic and have been confirmed by the iLSM project. The frequency of the activities is a recommended minimum and a site can increase the frequency of the activities if this suits their operation.

The examples below show the Solystic and iLSM Project recommended timings for the TPM activities and a TPM Rota

								variance	10%	
iLSM OPERATOR PREVENTIVE TASKS										
Task	**Reference**	**TASK**			**FREQUENCY**	**TIME**	**My times**	**Total time**	**Set up**	**Completed**
PM 01	LSM UK-4 219 GB-G01	Cleaning the Mail Transport path. (Includes PM 29 & PM 36)	daily clean	D	15	24.5	26.95	1		
PM 04	LSM UK-4 219 GB-G02	Cleaning the surfaces of the machine,signalling devices and pneumatic compartment.	Machine Surfaces	M	25	38	8.36	1		
PM 02	LSM UK-4 219 GB-G03	Searching for mailpieces in the conveyor and checking conveyor belts.	Mail Search	Shift	5	4	4.4			
PM 08	LSM UK-4 219 GB-G04	Cleaning the AMG device filter. (Includes PM 07, Cleaning AMG Mirror)	Clean AMG	D	5	1.5	1.65	1		
PM 21	LSM UK-4 219 GB-G06	Cleaning photocells FE-B7, FE-B8 and FE-B21.	Feeder Beams	D	2	0.5	0.55	1		
PM 23	LSM UK-4 219 GB-G07	Checking the stacker components and filling detectors.	Stacker	3M	65	2.33	2.563			
PM 05	LSM UK-4 219 GB-G09	Cleaning the 3 external filters of the vacuum pump and the compressor and check pressure	Feeder Filters	2D	5	3	3.3	1		
			TPM Equip.		3		3	0.00		

Figure 4 – TPM tasks and times

					Week 1						
Task	**Reference**	**TASK**	**Duration (mins)**	**FREQ.**	**Monday**	**Tuesday**	**Wednesday**	**Thursday**	**Friday**	**Saturday**	**Sunday**
PM 02	LSM UK-4 219 GB-G03	Searching for mailpieces in the conveyor and checking conveyor belts.	4.4	Shift							
PM 02	LSM UK-4 219 GB-G03	Searching for mailpieces in the conveyor and checking conveyor belts.	4.4	Shift							
PM 02	LSM UK-4 219 GB-G03	Searching for mailpieces in the conveyor and checking conveyor belts.	4.4	Shift							
PM 01	LSM UK-4 219 GB-G01	Cleaning the Mail Transport path.	27.0	D							
PM 08	LSM UK-4 219 GB-G04	Cleaning the AMG device filter.	1.7	D							
PM 21	LSM UK-4 219 GB-G06	Cleaning photocells FE-B7,FE-B8 and FE-B21.	0.6	D							
PM 05	LSM UK-4 219 GB-G09	Cleaning the 3 external filters of the vacuum pump and the compressor and check pressure	3.3	Alt D							
PM 04	LSM UK-4 219 GB-G02	Cleaning the surfaces of the machine,signalling devices and pneumatic compartment.	8.4	M	1	2	3	4	5		
PM 23	LSM UK-4 219 GB-G07	Checking the stacker components and filling detectors.	2.6	3M							

Figure 5 – TPM Rota

The example rota on the Sharepoint site has the longest duration of task at 34.5 minutes on the late shift, 4.5 of those minutes have to be carried out at the end of the shift (as a trapped mail search).

The remaining 30 minutes of tasks, could be completed by one person for 30 minutes or divided among the team; i.e. 2 people for 15 minutes or 3 people for 10 minutes. Please note that if 3 people are used then additional time will be required for sourcing the TPM equipment for each Operator (guidelines of 3 minutes).

If the Early shift has more time for TPM available then there is also the possibility of carrying out more of the TPM tasks on that shift, creating more machine availability during the remaining shifts. As an example of this the rota shows all of the checking tasks on the Early shift, therefore if problems are found there will be more time available to resolve them, in contrast to this the Late and Night shifts are weighted towards cleaning.

Further information on TPM tasks and the complete rota can be found on the Sharepoint site.

05 – iLSM Set-up and Cleardown

When setting up and clearing down the machine the assumption is that there are 3 X Operators throughout the shift; however more operators could be used during the Set up and Cleardown of the machine to minimise down time.

Operators should use the appropriate, methodology described in training, the (SOP) and the SSoW for preparing the Stacker section by placing Yorks of empty trays, empty Yorks, Alts and Loose Letter Racks around the machine and filling up the machine with trays. The Infeed operator should also set up the Infeed area.

05.01 - Set up

- There is a storage area available in front of the Image Lift module and this should be used as a preferred point for the machine operators to collect the equipment.
- Templates for the floor markings and instructions on how to use them are available on the sharepoint site.

Figure 6 – iLSM Storage area

Figure 7 – iLSM storage area with equipment

- The available storage area will reduce the time it takes to set-up the machine

- It is possible to tape mark the floor of the storage area and label as 'nested yorks', 'empty tray yorks' e.t.c. – so giving a visual guide to WAMs / Porters of what equipment is needed in the area.

- The equipment storage area is not infinite therefore analyse the sortplans that are due to run on that machine throughout a 24 hour period and determine what the optimum level of equipment of each type should be stored in that area.

- The time to load trays into the machine is quite significant; therefore consider loading these whilst the machine is starting up as the stackers are larger than LSM's, which means there is a 'buffer' time where no mail clearances to trays are required.

- Labels are timed and dated; so should be applied in the tray label holder when the tray is full and ready to be placed onto a York. The new empty tray in that selection should then be labelled to minimise operator workload. However all trays should be labelled prior to final despatch to minimise cleardown time.

- As best practice and with Health and Safety in mind operators should alternate between loading trays on the upper and lower levels. This will minimise any discomfort from task repetition.

If the equipment storage area is located further from the machine then there will be an impact on the time it takes to set up.

The "**Set up and Cleardown Timing's analysis**" tool has been created to help plan the Set up and Cleardown times for the sortplans. An example of the screen is shown below.
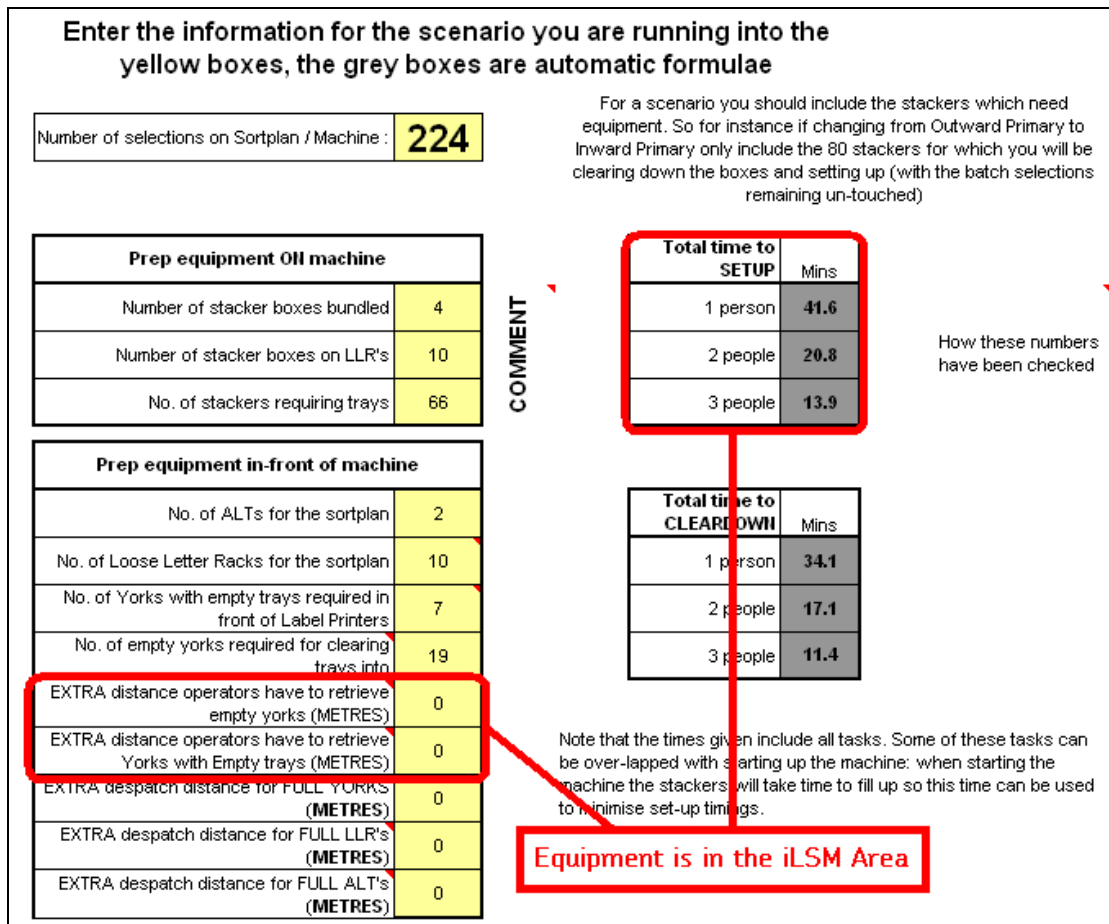
Figure 8 – Illustrating time taken when equipment is in storage area.

Further information on Set up and the "**Set up and Cleardown Timing's analysis**" Tool can be found on the Sharepoint site.

05.02 – Cleardown

When clearing down the machine it is important to make sure that it is safe to do so. Check that there is no risk of contact with moving parts and use the ergonomically correct and most efficient method to minimise the risk of discomfort.

- The more Yorks that are set-up on the plan then the longer the cleardown (and set-up) will take, so a balance should always be struck between minimising consolidation and increasing the workload for the machine operators.

If the Operators have to assist to convey Yorks away from the machine then this will impact on the iLSM processing operation. Therefore the porterage support for the iLSM needs to be enough to sustain the iLSM operation.

Below is an example using the "**Set up and Cleardown Timing's analysis**" Tool that illustrates this point.
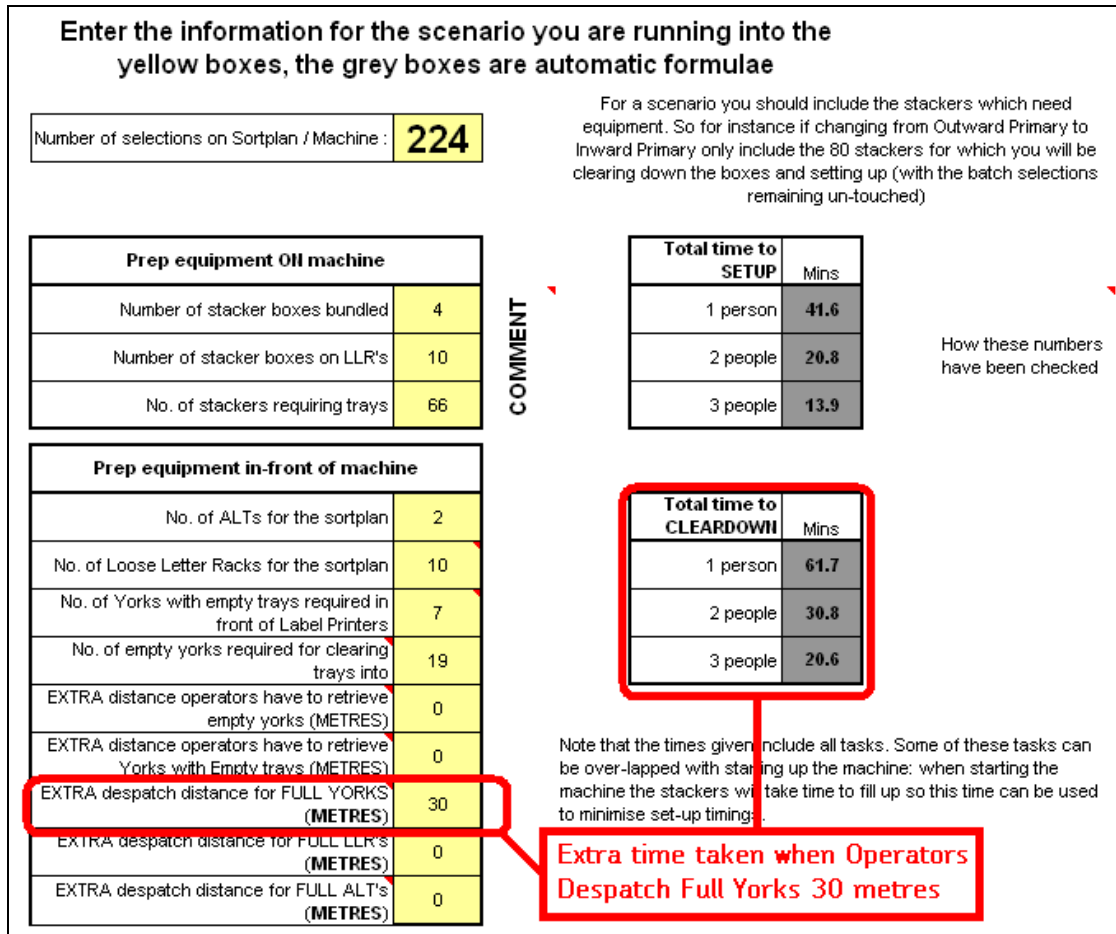
Figure 9 – Illustrating the time taken when Operators have to despatch equipment 30 metres

It is advised that Yorks should only be pushed to the end of the machine or out of the Operational space by the iLSM Operators. Porters will be required to move Yorks to the despatch area to maintain machine utilisation.
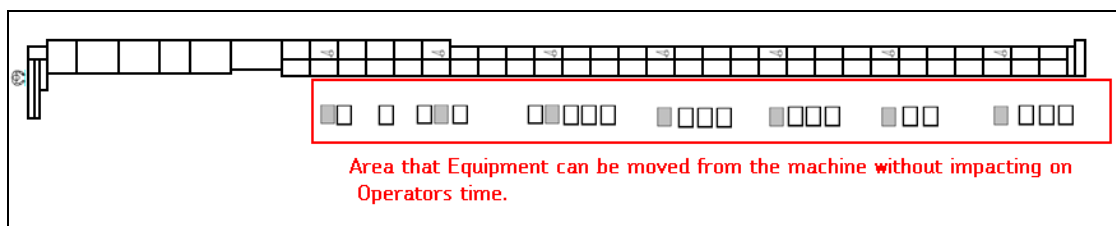
Figure 10 – Illustration of the distance Operators can move equipment from the machine

Further information on Cleardown can be found on the iLSM Sharepoint site.

05.03 – Porterage

It is a key part of the operation to keep the iLSM provided with both equipment and mail to keep it running.

On the iLSM Sharepoint page we have provided a tool which will allow a manager to work out an approximate figure for:

- Workload involved in bringing equipment to the machine area for clearing to despatch
- Workload involved in bringing mail for processing to the machine area
- Workload involved in moving mail off to despatch

Notes:

- The tool will deduct equipment brought to the work area containing mail for processing from the equipment required for despatching. For example, if 5 yorks are required for despatch the tool will assume that if 5 yorks were brought into the area with mail, that those 5 yorks are also utilised for despatch.
- The tool is fairly straightforward, and models a single scenario. This single scenario can be an entire day, shift, single despatch, single machine, and multiple machine e.t.c. For example a single model can be produced for 5 iLSMs by averaging distances and volumes, or produce a model for each of the 5 machines with accurate distances and then simply add the output workload together.

06 - Infeed methods

Before starting to run the machine the WAM must ensure that:

- All risk assessments have been carried out and records kept.

- That the Operators have been fully trained on the iLSM.

- Records / Skills register and verification records should be signed verified and kept on site for all trained staff on the iLSM.

- The Operators must adhere to the Safe Systems of Work and ensure that no one is working on the machine before starting the Conveyor and Infeed.

- The Operator must not hand feed the letters on the feeder, always use the plate.

- The Operator must not refit or replace any belts unless they have been TPM trained to do so.

- The 'Rules' is much like an IMP Opmode. It is a set of computer programming code that is written by Royal Mail Engineering and tells the iLSM how to handle the mail. For example it may say: *IF <mailpiece> has a bad tag but good route THEN sort on the route.* Alternatively it could say *IF <mailpiece> has a bad tag and good route THEN sort to the reject stacker*

- All mail must be fed on the correct Mailstream to ensure correct traffic recording and also to ensure that the mail is handled correctly by the 'Rules'. This is important because the 'Rules' may handle PPI mail differently to stamped for Hazard box mail.

- Bespoke Mailstreams can also be created for customers where a need to identify a particular customer mailing is required. This will allow the iLSM MIS System to look at this mail stream independently from all the other mail if required.

- The iLSM can be set-up to identify hazard code mail for different Mailstreams. For instance, it could be set-up in the office so that with the 1c Meter Mailstream if it sees the postcode for a local estate agent which is always the return address in the meter mark being read then it should sort to a reject box. If the Meter mail is instead fed on the PPI or stamped streams then this function would not work.

06.01 – Best Practice Principles – Layouts and SOP's

- A critical factor to the effectiveness / speed of the infeed operation is the layout of equipment around the infeed. With LLR mail this is less of an issue, but with trayed mail it is very important. Approximately 50% of the time taken when tipping trays is getting the full tray from a york up to the infeed and then putting the empty tray away. The time to carry out these tasks is greatly influenced by the distance the operator has to move to get to the yorks. For example, if the yorks are each 2 steps further away than they need to be this will use up approximately an extra 6 minutes out of every hour. At 40k/items an hour that is a lost potential throughput of 4k an hour. The ideal layout is shown below with a lot more information available on the iLSM Sharepoint site. The yellow lines indicate the 'Golden triangle', which is the layout that minimises walking distance for the infeed operator:
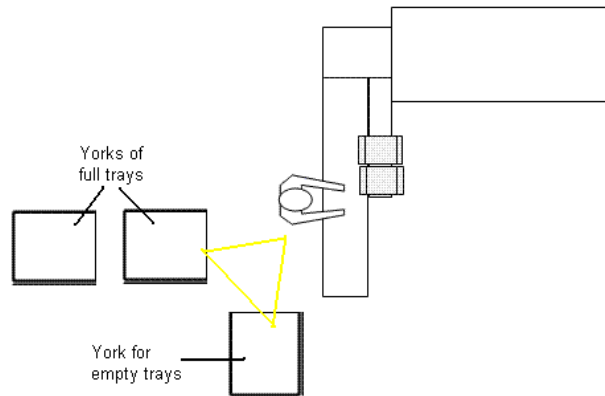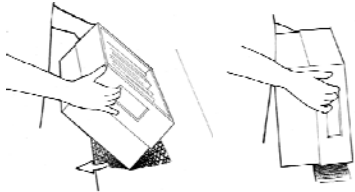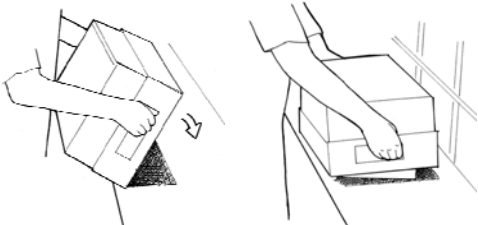

Figure 11 – Golden Triangle set up at Infeed

Based on Ergonomic advice the Operator must adhere (AKA mandatory) to the recommended tip forward method, with the weight of the tray resting on the work surface when the tray is tipped as described below.

Loose Letter Rack feeding	Tray feeding
• Remove mail from rack in comfortable amounts • Place on infeed and place paddle behind mail stack. • Remove only obvious non-machineable mail to the manual reject stacker • Do not over "dress" mail • Work at opposite end to destacker and keep infeed full at all times.	• Remove a single tray from the York and place the edge of the tray against the infeed with the label pointing to the right. • Tip tray over so that the mail falls onto the infeed and place paddle behind mail stack. • Aside empty tray to York • Remove only obvious non-machineable mail to the manual reject stacker • Do not over "dress" mail • Work at opposite end to destacker and keep infeed full at all times.

- Operators should always be vigilant of any moving parts on the infeed and take care with any loose clothing, long hair e.t.c.
- Operators should not start the conveyor or infeed unless they are sure that it is safe to do so.
- Operators should not reset an emergency stop unless they are sure it is safe to do so.
- If the pick off is poor then try the Cycle VE function.
- Operators should use the Cycle VE function when a vacuum fault occurs on the Infeed as shown in the example below. (which could be wrong).
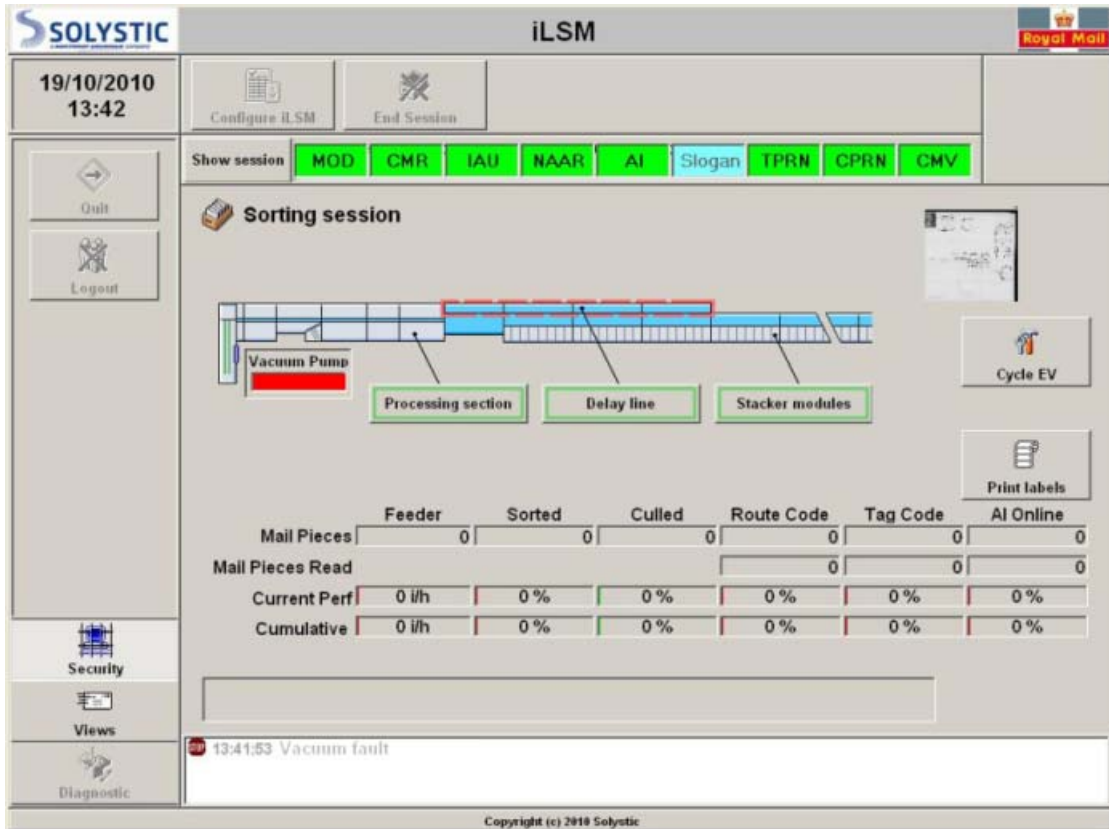
Videos showing the optimum tipping method for trays are available on the iLSM Sharepoint site.

The Standard Operating Procedures (SOP)'s relating to the Infeed can be found in this section of the Sharepoint site HERE.

06.02 - Configuration

Instructions on how to load Sortplans, Mailstreams, and Configuration file sets e.t.c. are on the iLSM Sharepoint site.

06.02.01 – Removing Configuration files

If you want to remove configuration files then please note the detailed instructions on how to do this are contained on the iLSM Sharepoint site in Section 06.02.01

06.02.02 - Sequencing Configuration

The iLSM uses a number of configuration files to deliver functionality required operationally. Files such as sort plan, iLSM mail stream file, AI mail stream file, etc. can be used to deliver different functional requirements.

Please look at the Release Notes: iLSM Rules iLSM Sequencing Version 01A in Section 06.02.02 of the iLSM Sharepoint site.

Please note these are for sequencing only as they behave differently from the standard rules:
e.g.
- All items are treated as 1st class;
- No MDEC support, Online only;
- Revenue protection, wrong class and Foreign not supported;
- Route codes printed on CBC mail items;
- Increased number of thresholds to reflect sub system configuration/state.

06.02.03 – Mailstream Cards

Mailstream cards can be used to change mailstreams without having to stop the Feeder they are orange in colour. Mailstream cards should be delivered with the machines but if you require more they can be ordered through RM engineering using SDMM and the part number located on the cards. Mail Centre specific barcodes need to be created by the Cramp Manager. Further information can be found in section 06.02 AI Mailstream updates.

Figure 12 – Mailstream batch Separator card.

Instructions on how to use Mailstreams cards are on the iLSM Sharepoint site.

Separator cards will be deployed in September 2010.

CMA Mode

A key point to note is that when running CleanMail Advanced Letters the operator will have to select a CMA CFS and check the 'AI Mailstream Id' – this will switch on the automatic billing. This should switch the AI Mailstream to '11'.

Once processing is complete the operator should switch back to Mailstream '10' (Normal Processing).

AI ' on-line only'

This mode would only be used at Christmas and means that MDEC cannot key the items after they have been through the delay line. Mailstream '99' should be loaded.

07 - Sorter methods

07.01 – Best Practice Principles / Layouts

Due to the speed of the iLSM and the size of its stackers the Standard Operating procedures are slightly different to those on IMPs or LSMs. The following bullets describe those differences. Further information is available on the iLSM Sharepoint site.

- To minimise walking and the number of visits to a stacker, operators should not clear a stacker until it is half full. This will avoid having to visit a stacker to clear more than twice per tray. On current machines operators tend to 'peck' at mail on the sorter to keep on top of it. This is not necessary on an iLSM due to the stacker being twice the size of current machines, and due to the fact that the tray is under the stacker.
- Trays should be in place with the label facing outwards
- When clearing mail to a tray the operator should stand to the right of the tray once it is pulled out to be in the most ergonomic position
- Letters should be cleared into the trays with the Stamp facing downwards and towards the front of the tray.
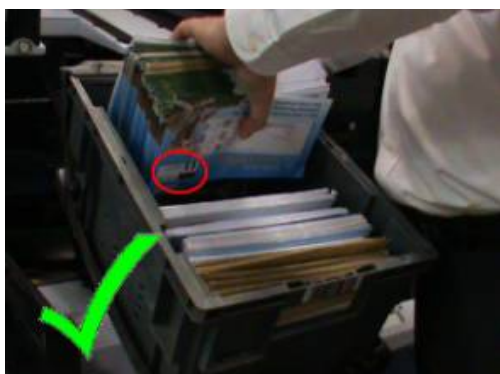
Exceptions

- Mail for CSS sequencing batches can be cleared stamp up. (The CSS machine operation can still maintain effective sequencing throughputs with mail presented in this way).
- Mail should be cleared "Stamp up" on the second pass of sequencing. (As above the delivery office will not lose throughput due to mail being presented to them in this way).
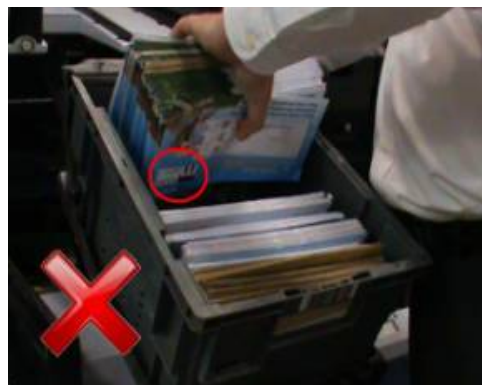
- When the mail is being cleared to a LLR then the operator should stand in the most comfortable position for them relative to the stacker.
- Empty tray yorks should be positioned opposite the label printers. This will minimise walking as the operator has to walk to the label printer.
- To again minimise walking a york that is being cleared to should be in the direction of the label printer relative to the stacker i.e. the tray is being cleared in the direction the operator will walk to get the replacement tray.
- The diagram below shows a layout that follows these principles and one that does not, to show the walking distance difference :
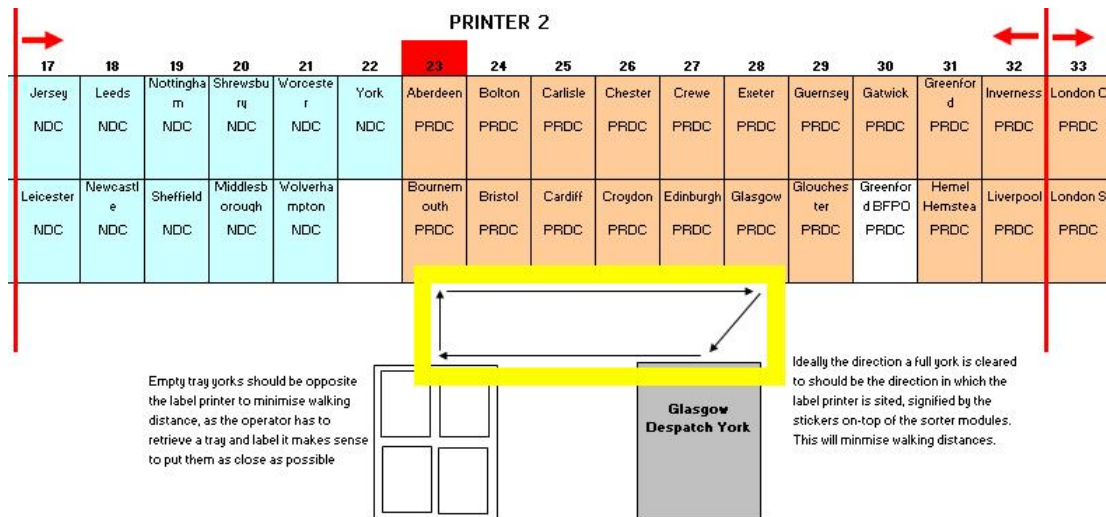

Figure 14 – Sorter / Stacker Golden box Set up principle
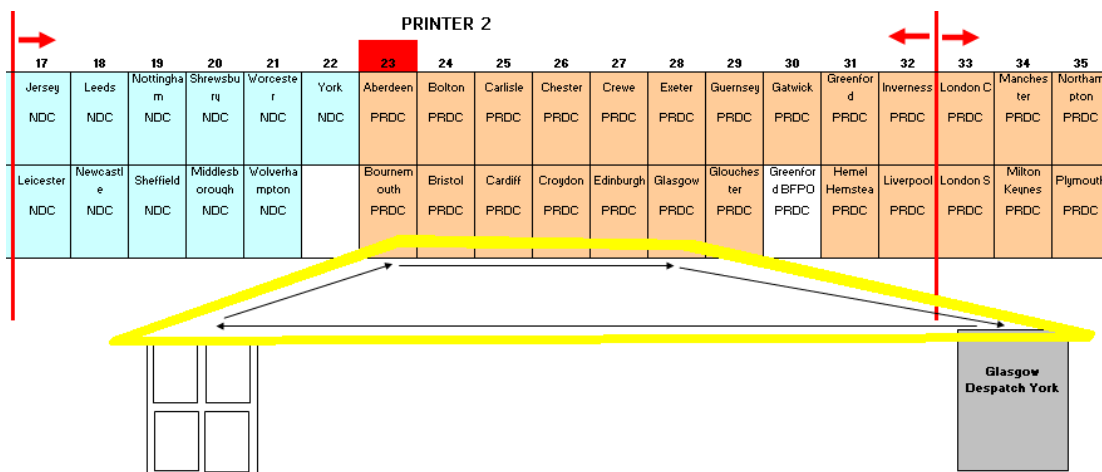
Figure 15 – Example of Sub-optimal Layout

The following Set Up Actions have to be undertaken

- Load an empty tray in each iLSM tray selection. (This includes rejects to manual)
- Remove any tray labels already in the tray
- Position a Drop Bag Fitting, ALT or sleeved mini-York for any Bundle selections.

- Ensure there are enough bags, bag ties and relevant bag labels available
- Position a Loose Letter Rack for each Interplan.
- Position a Kanban for overflows
- Position a York of empty trays opposite each label printer if space allows.
- Ensure the relevant York labels are available for despatch.
- Position Yorks to receive sorted trays.
- Label the Yorks with the relevant York label.
- Position empty York's in the back up position.
- When a tray becomes full then a label should be printed by pressing the print label button at the stacker location and placed in the tray label holder.

07.02 – Label Design

The iLSM prints its own labels, there are various types:

- Type 0 – Mode 2 Delivery Point Sequenced mail output selection;
- Type 3 – Standard output selection type;
- Type 4 – Mode 1 Delivery Point Sequenced mail output selection;
- Type 5 – Mode 1 Pass 1 sequence mail output selection;
- Type 6 – CSS Batch sorted mail output selection;
- Type 7 – LMS Batch sorted mail output selection;
- Type 99 – Mode 2 Pass 1 sequence mail output selection;

Below is an example:
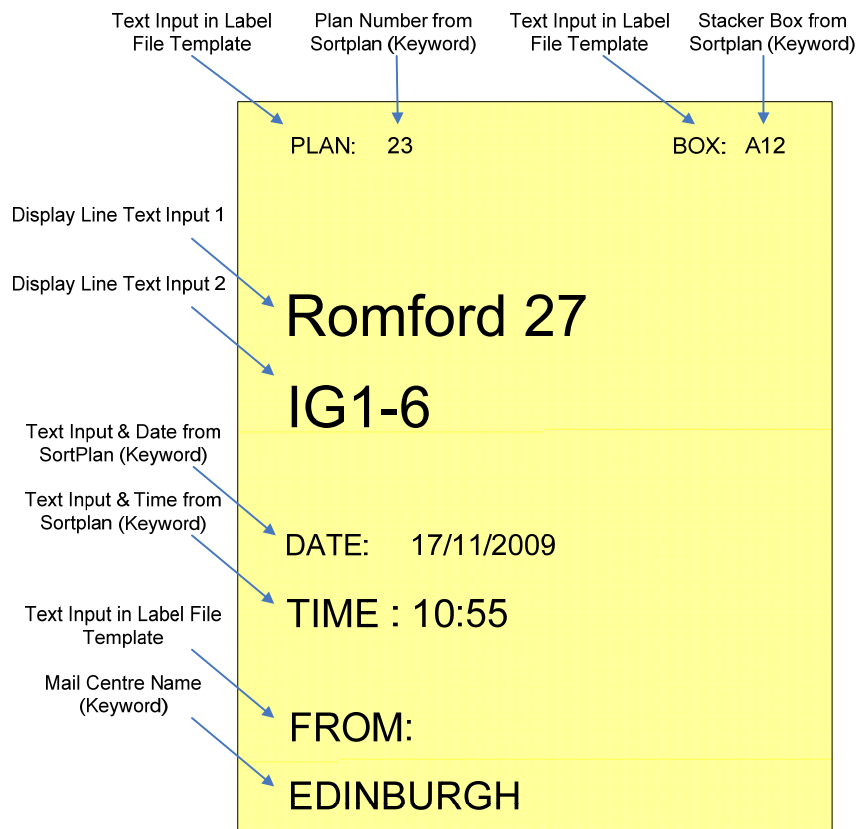
Figure 16 – Basic Label design and contents

For more information visit the Sharepoint site

08 - Sequencing.

08.01 – How to Walk Sequence on an iLSM

Please note that this is just an overview to sequencing on an iLSM; a complete guide is on the Sharepoint site HERE.

Sequencing has differences to the standard infeed and cleardown methods:
- The machine can be started and mail input without the sorter section having been set-up at all
- All Mail has to be refed after pass 1
- That mail has to be refed in order using the Walk Sequencing Racks.

Figure 5 – Walk Sequencing rack

- The processing of two separate batches can be over-lapped by the use of green separator cards

Figure 6 – Separator Cards Icon and view of Infeed

- **Mail should be placed into the tray for the Delivery Office "Stamp up" on the second pass of sequencing.**

Figure 7 – Orientation of Mail Pass 2

- The clearing down method into the york after Pass 2 has to be done in a certain order
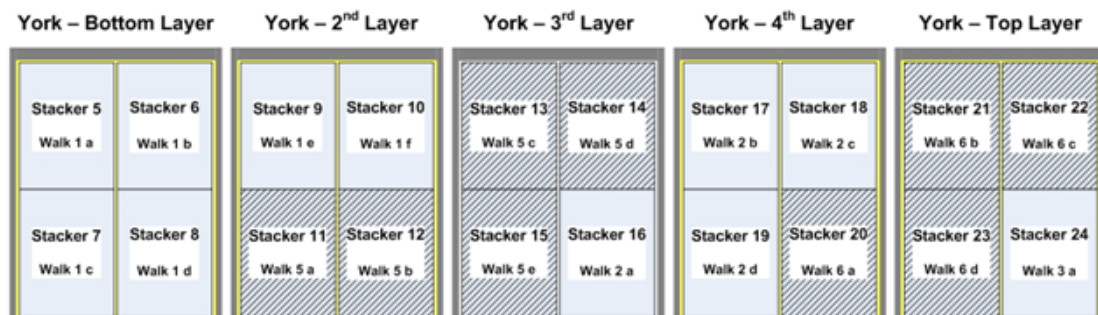
Figure 8 – Tray ordering layout for D.O's

Sorter Set up for Pass 2
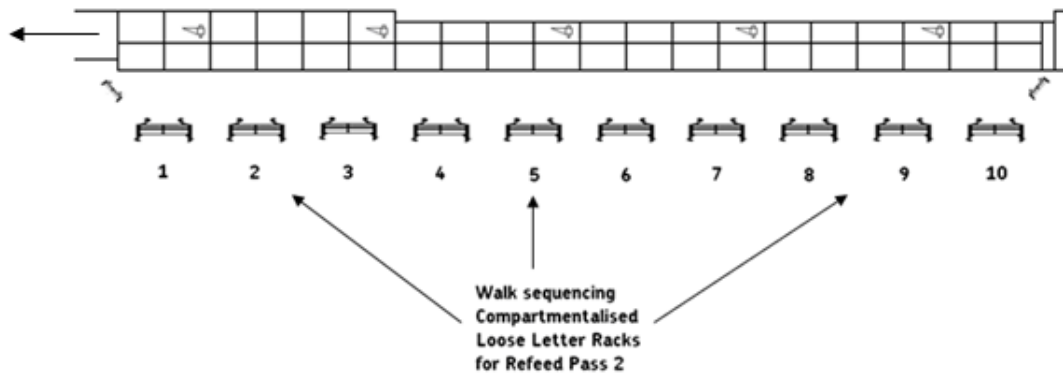
Figure 9 – Pass 1 Layout (160 box iLSM)

Sorter Set up for Pass 2

Yorks for despatch to Delivery
Offices and or firms
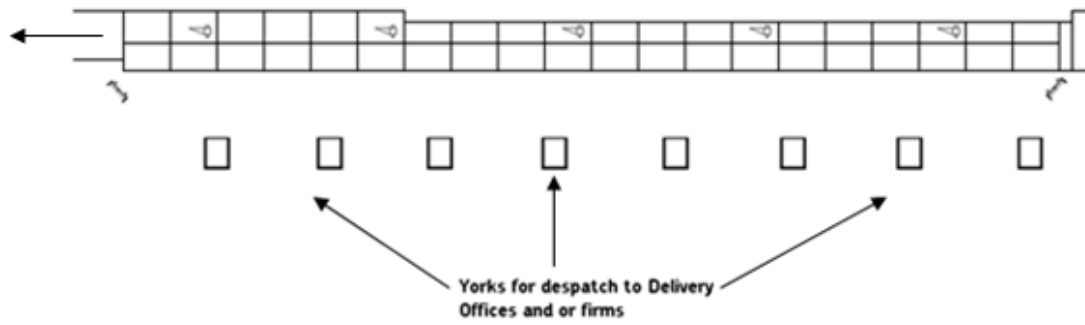
Figure 10 – Pass 2 York Set up (160 box iLSM)

The detailed sequencing operation is described on the iLSM Sharepoint site.

The following timeline is based on the optimum batch size of 32,000 approximately 18,000 delivery points.

LOAD FIRST PASS PLAN
SET-UP (TRAYS, LABELS & RACKS)
RUN FIRST PASS
LOAD SECOND PASS PLAN AND RUN GREEN CARDS
CLEAR MAIL TO RACKS
RUN SECOND PASS
CLEAR MAIL AND DESPATCH
LOAD FIRST PASS FOR NEXT BATCH
RUN FIRST PASS

INFEED
SORTER

Figure 11 – Operator Task Sequencing Timeline

SOP's

N.B: Infeed and Sorter SOP's are identical to standard SOP's

09 – Operator screens and MIS

Most of the information displayed on the Operator Screens is very detailed therefore, the majority of the guidance is provided on the iLSM Sharepoint site.

09.01 – Operator console / Touchscreen / Configuration

There is a detailed Solystic document describing the use of the Operator console and configuration on the iLSM Sharepoint site.

Engineers must be called in the event of:

- an incident occurring too frequently,
- any anomalies observed,
- where an Operator is unable to put the iLSM back into operation.
- If there is a message that is not on the regular list

09.02 – MIS (Management Information System)

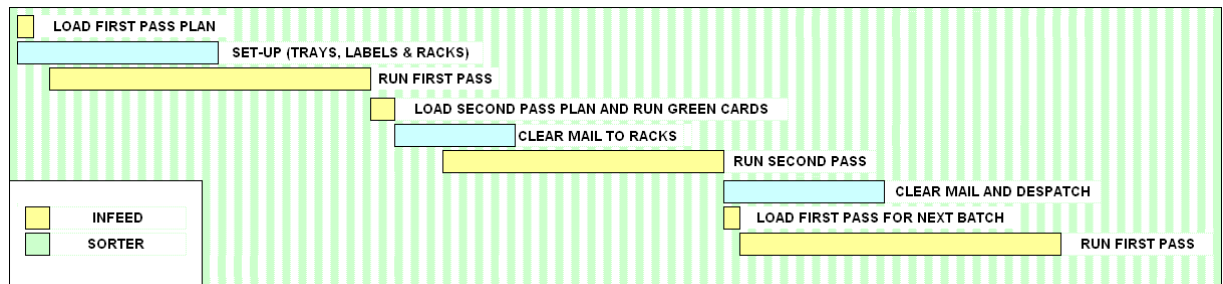There is a detailed Solystic document and a simplified RM MIS User Manual describing the use of the iLSM MIS System on the iLSM Sharepoint site.
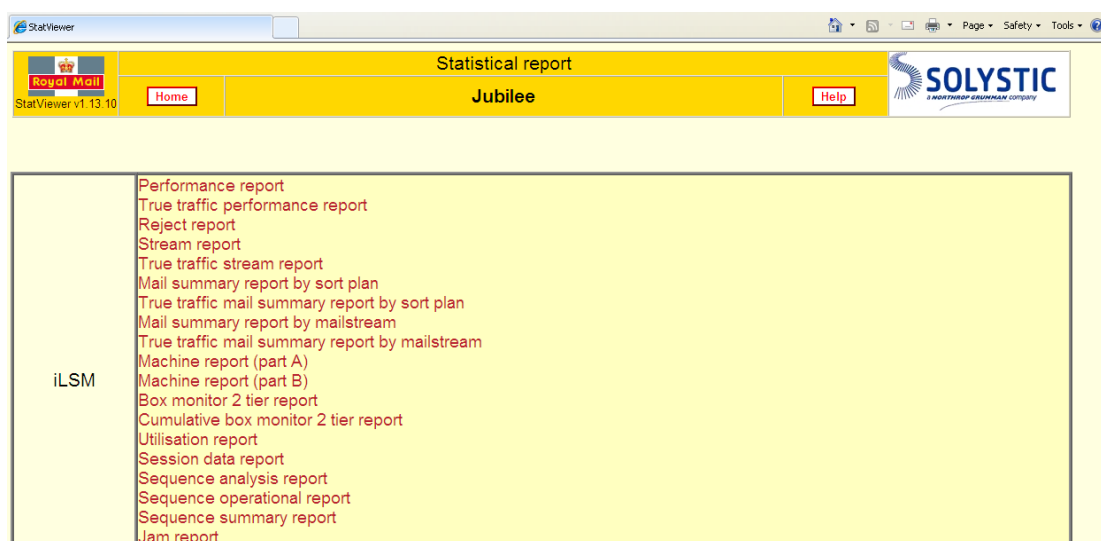

Figure 18 – MIS Front Menu screen

For any queries regarding Traffic then select the link below to find more information.

http://iplatform.intranet.point/rmg/rm/operations/Across+the+Pipeline/Misc/MC+Machine+Counted+Traffic.htm

09.03 – Display boards

There is a detailed document describing a suggested layout and content for the iLSM display boards on the iLSM Sharepoint site. The general principles are:

- The boards must have an owner for each shift
- The boards must be kept up to date
- Information displayed must be relevant to the operators and other WAMs / Engineers. If it is not then it is serving no real purpose
- The data displayed should highlight issues which WAMs, Operators or Engineers can respond to.
- A Health and Safety section containing
    - Safety Report Sheet
    - SSoW
    - SOP's
    - Unsafe Act / Condition Log
    - Safety – Near miss log sheet.
    - Machine Issues
- A Skills Register
- Yesterdays Performance, Machine performance for last week
- A TPM Schedule
- Asset Care Schedule
- The iLSM Workplan

09.04 – HVDs / Error messages / Beacons

There is a detailed document describing the messages and indications displayed by the iLSM HVDs, Error messages and Beacons on the iLSM Sharepoint site.

10 - Sortplan design

10.01 - Best practice principles

Workplan/Sort plan Optimisation

The efficiency of an iLSMs operation is heavily dependant on the effectiveness of the sort plan it is running. During the iLSM Methods trials the design of several sortplans were reviewed. It was clear that the design of the sortplan has a very large influence on the workload for the sorter operators. For example the standard staffing on the sorter is 2 people, and during a test we ran a sortplan with a relatively even distribution with 1 person who could work effectively, but when running a crash plan which had not been optimised it was difficult for 2 operators clear the iLSM.

There is a more detailed description and tools to support this on the iLSM Sharepoint site but the following summarises the key points to designing sortplans on an iLSM:

- Put the heavy selections near the label printer
- There is limited space in-front of the sorter, so design the sortplan to include looking at what equipment the stacker will be cleared to and where that equipment will be located (see "**07.01 – Best Practice Principles / Layouts**" section 'Golden Box')
- In consultation with the operators consider mixing the heavy selections across the 2-tiers. Feedback from operators has shown that there is a preference to a mix due to not always being bent down to clear the lower stacker or reaching up to clear the top stackers: others preferred more on the upper tier.
- Try and construct the sortplan so that the 2 operators are working in the same areas. This will help even the workload between the 2 people.
- Clear any mail to be re-fed on-site to a LLR.
- The label printers are not in the centre of the area they cover: they are off-set to the left. Therefore consider this when deciding where the heavy selections go.
- Don't forget to update the RSA automatic billing configuration when building the sortplans. There is a link on the iLSM Sharepoint site which links to the RSA Sharepoint site with instructions on what needs to be done.

Outward Primary sortplans

- Group the outward selections together, then when running outward the 2 operators will be working in the same area
- Set-up the stackers to match the equipment that you will be clearing to
- Consider the walking distances involved when deciding on how many yorks to have in place
- Using the tools provided (on the Sharepoint site) consider how many trays each york will receive, and how many yorks there will be to clear down to at

despatch time. Using Flow principles it is sometimes better to have less yorks around the machine which means they are cleared away often, therefore storing less mail near the machine and instead getting it away closer to despatch.

- Consider where consolidation will take place.
- A best practice principle is for the inward Primary sortplan to have the batches in the same position as they are on the Outward primary (to save them being cleared down when switching).
- In a large site is it worth having the same small Outward selections duplicated across all machines or consider for them to be inter-planned to a single machine and free up selections across the others for different use (more batches, large inward manual selections e.t.c.)

Inward Primary Sortplans

- Try to maximise the volume of mail sorted to the CSS batches or direct selections on the Inward Primary, so minimising the secondary sortplan volumes.
- Consider putting manual selections near their corresponding batches or other selections for the same area.

10.02 - Secondary sortplans

- There is a tool on the iLSM Sharepoint site to help design the secondary sortplans
- Rather than constructing sortplans of similar sizes consider having a large sortplan and one or more smaller. Then the large sortplan can be run for a long period to free up the other machines to do other work, as with the smaller sortplans they will require less time.
- If the iLSMs have greater than 160 boxes consider moving some directs to the sequencing batch plans, to sit at the end of the machine on Pass 1.

10.03 - Reference Information

This contains all the information and tools required to help build a successful sortplan.

10.03.01 – RSA Billing

- There is a Link to the appropriate section on the Sharepoint site.

10.03.02 – Numbering Convention

- There is an excel spreadsheet on the Sharepoint site illustrating the numbering conventions for sortplan creation.

10.03.03 – Example Mail Centre Selection List

- There is an excel spreadsheet on the Sharepoint site. Showing an example of a Mail Centre Selection List

10.03.04 – iLSM Sortplan Template

- There is an excel spreadsheet demonstrating printer area responsibilities for; as well as selections on the sorter module.

10.03.05 – Circulation Change Request Form

- This form is on the Sharepoint site

10.03.06 – Engineering boxes on an iLSM

- This is a word document describing the 6 engineering boxes and their contents contained on an iLSM.

11 – Workplan Design

The work plan tool (an Excel spreadsheet) has been developed to allow Mail Centres to plan their End-state Operation (when operating in a Walk Sequencing environment) i.e. sequencing, iLSMs and IMP extensions deployed.

The aim of the tool is to give Areas a 'heads-up' on what the operation will look like in the future. Whilst this is a long term view, a lot of the changes are driven by Sequencing and are therefore will happen in the shorter term. Developing the workplan locally should increase local understanding of what will be a very different operation within the site, and give the local operation time to plan for those changes.

Note that the model is only a model, so only gives an approximation of what the operation could look like.

The latest version of the model and the instructions to go with it sit on the iLSM Sharepoint site.
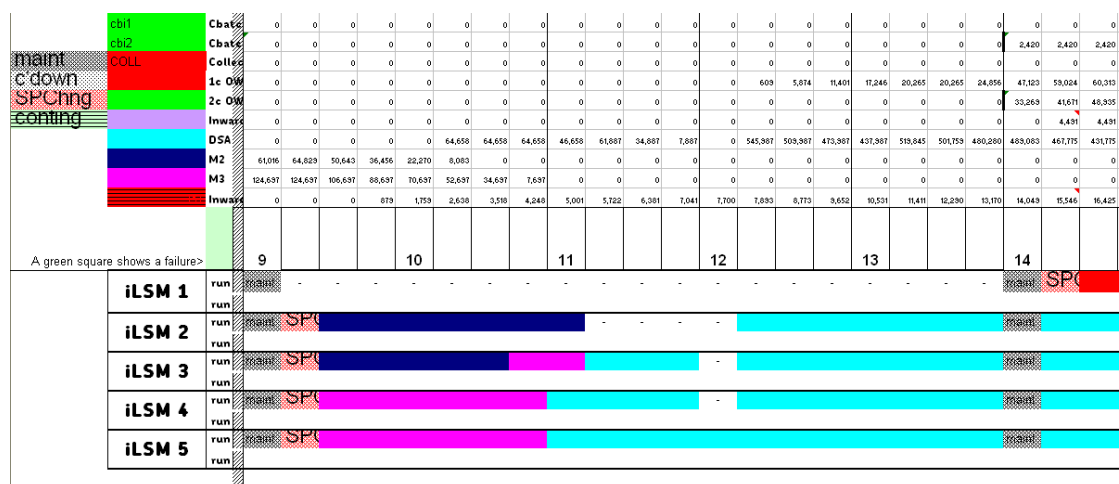

Figure 19 – Example workplan

12 – General info.

12.01 – Abbreviation List

A full explanation of the abbreviations used in relation to the iLSM documentation is available on the iLSM Sharepoint site.

12.02 – Machine Description

The iLSM machine is designed for sorting letters and will process mail in a similar manner as current MTT/V3 operations Mail will be input in "normal" orientation (orientation 3 – Address in the horizontal, Indicia in top right)

Mail will be output from the iLSM in the same orientation as it was input.

On the iLSM the Opmodes are called 'Rules'. An Operator can select a set of 'Rules' which configure the machine in different ways. For instance there could be an Outward set of rules which use AI, and an Inward set of rules which use only codemarks etc.

It is expected that a single 'Rules' set will be used for all processing with the exception of during Sequencing.

The iLSM machine and the associated equipment (MOD, CMR, COPERNIC, DOMINO printers, CMV) perform the following functions:

- feeding and destacking of letters,
- rejection of out-of-size or non machineable letters,
- fluorescent tag code or post code reading,
- image acquisition of letters,
- sending of image to the AI System and to the specific bar codes reader,
- Reading of Meter and PPI Indicia
- Reading of Customer Barcodes (CBC) (will tag mail if collection but not Mailsort or PPI; unless the CBC is incorrect i.e. does not match the address.)
- Dynamic storage of mail by a delay line of approximately 15.5 sec. to enable online MDEC keying by AI,
- Fluorescent tag code or route code printing,
- Conveying and sorting of letters depending

    on:

o   the results sent by AI,

o   the sort plan in progress,

12.03 – Jams

A jam causes the machine conveyors to stop, except if it occurs in one of the Stacker modules, in which case the jam only causes the corresponding stacker level to stop. **Unless the "Level Independence" has been turned off; in which case both machine levels will stop at the same time.**

- If the machine jams, press the nearest stop button to the jam location before clearing the jam. This is to stop anyone inadvertently starting the machine whilst the jam is being cleared.
- The aim is to prevent jams at all times. When clearing jams the immediate area must be inspected to identify and remove any other possible jam causes (e.g. scraps of paper, paper clips, and other letters).
- An engineer must be advised if jams keep occurring in the same location.
- Stopping per level / Level Independence.
    - o This function aims at improving the machine availability by only stopping the stacker level where the incident occurred without stopping all the machine conveyors.
    - o The machine carries on with sorting mail while all the mail intended for the stopped stacker level is sent to the last stacker (technical reject stacker) level in operation.

The Infeed Operator must perform a visual inspection down the length of the machine to ensure that all Operators are clear of the machine before resetting the emergency stop and starting the conveyor.

12.04 – iLSM Operating 'Rules' including Revenue protection

The iLSM 'Rules' control how the machine handles mailpieces.
To do this it uses approximately a thousand attributes about the mailpiece to make a decision, attributes including, height, length, route code, indicia, class, address result e.t.c.
A document which describes how those rules are currently configured is available on the iLSM Sharepoint site