X.1 | Paper Waste

What is Waste?

In producing a job that includes Paper, some steps of the process, such as printing (digital and offset) and finishing (folding and other), may need additional amounts of Paper, so that, in the end, the correct quantity of Paper is delivered to the customer. In Printer's Plan (as in the industry), this additional need for Paper is referred to as "Paper Waste", or "Waste" for short.

Waste is usually generated by production equipment while:

- The equipment is adjusted until the first good copy is produced (referred to as "Setup Waste" or "Make-Ready") or

- Jams or other production difficulties occur as the equipment runs (referred to as "Run Waste").

Waste is usually produced by two types of equipment:

1. Printing equipment, such as an Offset press or a Digital Printer/Copier) – we will refer to this type of equipment as "Printer",

2. Post-printing equipment, such as a Folder or a Cutter.

Since each piece of equipment is set up as a Service in Printer's Plan, we will refer to any piece of equipment as a "Service" in this section.
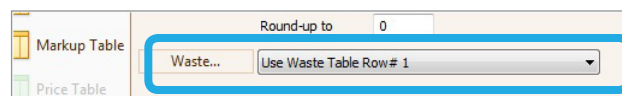
Components of Waste

Waste has two components:

1. Setup Waste (Make-Ready): assigned to a Service setup as the number of sheets,

2. Run Waste: defined in Printer's Plan as a percentage of impressions.

How Do I Assign Waste to a Service?

Waste is assigned to a Service in the **Waste…** field of the Service setup window from a pull-down menu.
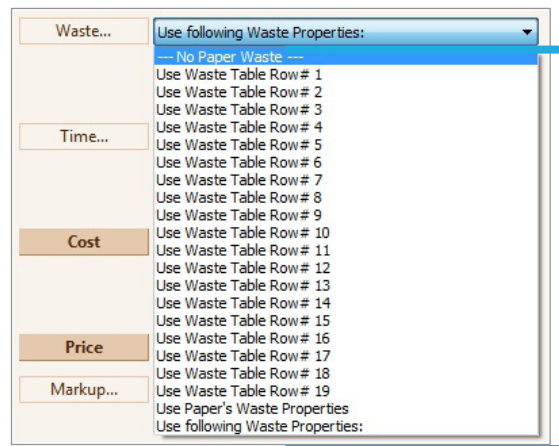

Services | Service Setup Window

"Waste…" Field Options

The options offered in the **Waste...** field of a Service vary according to the Category type of the Service. Following are these category types:

A. Printing (Offset and Digital)

B. Paper

C. Other

The options and an explanation of each are covered in the following pages.

A. Waste Options for Services in "Printing" Categories

*WASTE OPTIONS FOR SERVICES IN **OFFSET PRESS** AND **DIGITAL PRINTER/ COPIER** CATEGORIES*

| Option | --- **No Paper Waste** --- |

Assign this option if this Service does not contribute to the Waste in a job.

| Option | **Use Waste Table Row #1 through #19** |

This option is usually used with Offset Presses.

The Row numbers refer to the corresponding Rows in the Waste Table. *(The **Waste Table** button is on the left pane of the Service setup window.)*
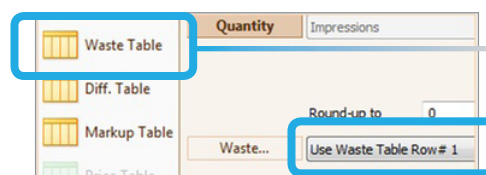
CLICK TO OPEN THE WASTE TABLE.

Paper Waste

If you assign one of the 19 Rows to a Service, Printer's Plan will read the Waste factors from the corresponding Row in the Waste Table.

For an explanation of the Waste Table, please see "Waste Table" in this section.

Option	Use following Waste Properties

This option is usually used with Digital Printers/Copiers.

EXAMPLE:

Printer A *has the following waste properties:*
- *Setup Waste: 5 Run Size Sheets*
- *Run Waste: 1% of Run Size Sheets*

*When **Printer A** is assigned to a job where:*
- *Finish Quantity is 1,000*
- *Job is run as 2-up*

*Waste contributed by **Printer A** is calculated as:*
#Run size sheets = #Finish Quantity/#Up = 1000/2 = 500
Run Waste = 500 x 1% = 5 sheets of Run Size
Setup Waste = 5 sheets of Run Size
*Total Waste = 5 + 5 = **10 Run Size sheets***

NOTE: *If this option is used with an Offset Press, the "Setup Sheets" are per Plate. The number in this field is multiplied by the number of plates in a job to arrive at the total quantity of setup sheets.*

| Option	Use Paper's Waste Properties

This option is usually used with Offset Presses.

Although the type of Paper does not directly affect the quantity of waste, assigning a set of waste factors to each type of paper allows for the definition of different waste quantities for each paper type. Smaller presses, which may run more waste with some papers, such as Coated Cover paper, than with others, such as Bond paper, can benefit from this ability to define waste factors based on paper type.

If, in a job, you use a press to which the **User Paper's Waste Properties** option is assigned, Printer's Plan will look at the **Waste…** field of the paper to calculate the waste.
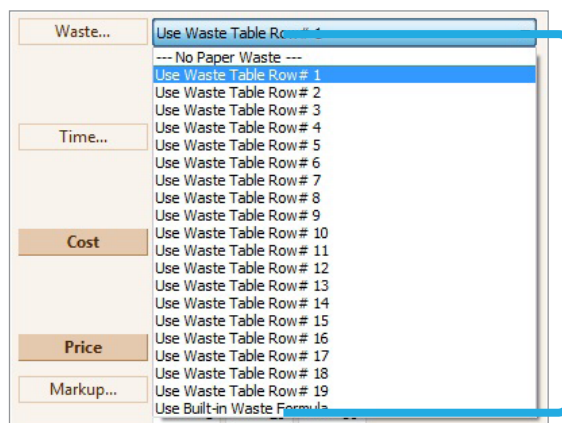
EXAMPLE:

- **Printer A** *is set to the **Use Paper's Waste Properties** option:*

Paper Waste

- ***Paper X*** *is set to the Use Waste Table Row# 2 option:*
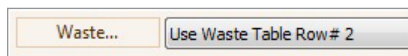
*When **Printer A** is used with **Paper X** in a job, the waste contribution of **Printer A** will be calculated from Row #2 of the Waste Table.*

B. Waste Options for Services in the "Paper" Category

*WASTE OPTIONS FOR SERVICES IN **PAPER** CATEGORY*

Option   --- No Paper Waste ---

Assign this option if your Printers do not produce waste when they run this paper or they are assigned their own waste properties.

Option   Use Waste Table Row #1 through #19

This option is explained in "Assigning Waste to Printers" earlier in this section.

Option   Use Built-in Waste Formula

The "Use Built-in Waste Formula" option is provided for backward compatibility (that is, compatibility of the current version of Printer's Plan with earlier versions.)   We do <u>not</u> recommend you choose this option unless you have already been using Printer's Plan with this option and you do not want to change it.

The **Built-in Waste Formula** roughly imitates the following setup sheets and waste percentages:

	Break 1	Break 2	Break 3	Break 4	Break 5	Break 6
	100	500	1000	5000	10000	100000
Setup (sheets)	%	%	%	%	%	%
10	9.00	6.80	5.70	5.10	3.90	3.90

C. Waste Options for Services in the "Other" Category

Some Services, such as Folding and Scoring, also contribute to the paper Waste in a job. Following are the Waste options available for these Services:

*WASTE OPTIONS FOR SERVICES IN TYPE **OTHER** CATEGORY*

Option   --- **No Paper Waste** ---

Select this option if this Service does not contribute to paper Waste.

Option   **Additional Paper Waste**

Select this option to set the waste properties of the Service.

EXAMPLE:

A ***Folding*** *service has the following waste properties:*

*If this **Folding** service is assigned to a job where the Finish Quantity is 1,000:*
- *Setup Waste = 10 sheets of Finish Size*
- *Run Waste = 1000 x 3% = 30 sheets of Finish Size*
- *Total Additional Paper Waste contributed by Folding = 10 + 30 = 40 Finish Size sheets*

If the job is run as 2-up:
- *The number of Run Size Waste sheets = 40/2 = 20*

If this Folding is used in the same job as Printer A in the previous example:
- *Total Run Size waste sheets in the job = 10 + 20 = 30 Run Size sheets*

Paper Waste

Waste for Services of "Other" Category in Digital Jobs

Printer's Plan will add waste for services in type "Other" category, such as finishing services, in a digital printing job <u>only</u> if either one of the **Use following Waste Properties** or the **Use Waste Table Row #** options is assigned to the Digital Printer/Copier used in the same job.

EXAMPLE:

If the Digital Printer/Copier is set up as:
a)

Waste...	Use following Waste Properties:
	Setup (#Sheets)	0
	+ % of Run Qty	0

> NUMBERS IN EITHER OR BOTH FIELDS MAY BE 0 (ZERO) OR ABOVE.

or b)

| Waste... | Use Waste Table Row # 2 |

and

A Folding service (category type "Other") is set up as:

Waste...	Additional Paper Waste
	Setup (#Sheets)	10
	+ % of Fin.Qty	5

then, Waste for Folding <u>will</u> be added to the job.

If the Digital Printer/Copier is set up as:

| Waste... | --- No Paper Waste --- |

and

A Folding service (category type "Other") is set up as:

Waste...	Additional Paper Waste
	Setup (#Sheets)	10
	+ % of Fin.Qty	5

then, Waste for Folding <u>will not</u> be added to the job.

*NOTE: If a Printer does not generate any waste but other services used with the Printer do, assign to the Printer the **Use following Waste Properties:** option and enter 0 (zero) in the **Setup** and **+%ofRunQty** fields. (See the first screen above.)*

Waste Table

Rather than assigning a single, constant Waste percentage to a Paper or a Printer, you may choose to decrease the Waste percentage as the number of Impressions increases. You can set up this configuration by using the Waste Table. This setup allows you to become competitive at higher quantities.
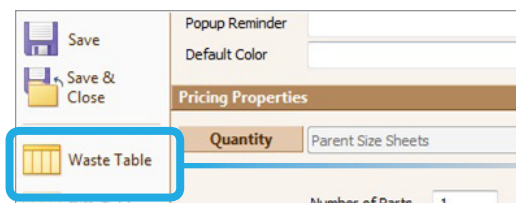
X.1 | Paper Waste

TO OPEN THE WASTE TABLE, CLICK THE WASTE TABLE BUTTON ON THE LEFT PANE OF THE SETUP WINDOW OF A PAPER, OFFSET PRESS, OR DIGITAL PRINTER/COPIER.

Waste Table

Setup sheets are per paper for digital printers and per plate for offset presses.
NOTE: Use Row# 20 to limit waste for bindery and other services. See Difficulty Table for additional waste.

		Setup (sheets)	Break 1	Break 2	Break 3	Break 4	Break 5	Break 6	Break 7
0	#Impressions/Run Size Sheet ->		100	500	1000	5000	10000	100000	
Row #	Waste Description	Setup (sheets)	%	%	%	%	%	%	%
1		10	9.00	6.80	5.70	5.10	3.90	3.90	
2		20	12.00	10.00	8.00	6.00	5.00	4.00	
3		25	15.00	12.00	10.00	8.00	6.00	5.00	
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20	Waste Limit (see NOTE above)	40	18.00						

PRINTER'S PLAN USES ONLY ONE WASTE TABLE. THE WASTE TABLE ROW NUMBER ASSIGNED TO ANY PAPER OR PRINTER ALWAYS REFERS TO THIS TABLE.

[OK] [Cancel]   [Note...]

Fields of the Waste Table

Fields	Description
#Impressions/ Run Size Sheet -->	The amounts in this row represent the **number of Impressions per Run Size Sheet** in a Job Item.
Row #	Printer's Plan provides 19 independent rows so that you can create up to 19 different waste configurations. If you assign a Waste Table Row to a Paper or a Printer, Printer's Plan looks at that row in the Waste Table to calculate the waste contribution of that Service.

Waste Description	You may leave this field blank or enter a description as a reference for yourself. This description is not used anywhere else and does not affect the waste quantity.
Setup (sheets)	**Offset press jobs:** Number of Setup (Make-Ready) <u>Run size sheets per plate</u>. This number is multiplied by the number of plates in the Item. **Digital jobs:** Number of Setup <u>Run size sheets per Paper</u>.
%	You enter waste **percentages** at impression quantity breaks. • Printer's Plan uses waste percentage to calculate **Run Waste**. • The waste percentage between breaks is linearly interpolated. That is, between two quantity breaks, the percentage changes in proportion to the change in the number of impressions. • If number of impressions is less than the first break, the percentage of the first break is used. Similarly, if number of impressions is higher than the last break, the percentage of the last break is used. ***EXAMPLE (ROW #1 IN THE TABLE ON THE PREVIOUS PAGE):***
Waste Limit -->	• The numbers you enter in this row set limits only to <u>the waste caused by services of category "Other"</u>, not to the waste caused by the printer. • These limits do not apply to adjustments for printing difficulties. (*See "Adjustments to Waste for Paper Difficulty" and "Adjustments to Waste for Job Difficulties" in the following pages.*)
Note…	You can enter date-stamped notes to record your modifications to the Waste Table or to record any other information. The notes will be preserved until you clear them by clicking the **Clear** button. You may enter an unlimited number of notes.
Print icon	You can print the Waste Table by clicking this icon.

Table within the **%** row:

If Impressions/Original is	Run Waste	Interpolated
100 or less	9%	(not interpolated)
300	7.90%	= 9% + (6.8% - 9%) x (300 - 100) / (500-100)
7,500	4.50%	= 5.10% + (3.90% - 5.10%) x (7500- 5000) / (10000 – 5000)
100,000 or more	3.10%	(not interpolated)

Adjustments to Waste for Paper Difficulty

Some presses may generate more waste when they run certain papers, such as Coated Cover, than they do when they run others, such as Bond paper. In addition, using the same Paper, one press may produce more waste than another press. The Paper Difficulty Table of the press allows you to make Waste amount adjustments for such conditions. The setup for this type of situation is explained in the example below.

Press A

*IN THE OFFSET PRESS SETUP WINDOW, CLICK TO OPEN THE **DIFFICULTY TABLE** OF THIS PRESS. **PAPER DIFFICULTY TABLE** IS ON THE LEFT.*

Difficulty Table of Press A

For a more comprehensive explanation of the Difficulty Table, please see "Difficulty Table" in this chapter.

WASTE TABLE ROWS ASSIGNED TO PAPERS.

WASTE ADJUSTMENTS.
NOTE: *NUMBERS IN THE "ADD WASTE (SHEETS)" COLUMN ARE <u>PER PLATE</u>.*

Adjustments are linked to the Paper by the Waste Table Row assigned to the Paper.

EXAMPLE:

*WASTE TABLE ROW #2 IS ASSIGNED TO **PAPER Z**.*
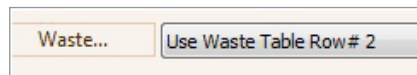
*According to the Paper Difficulty Table above, waste adjustments to **Paper Z**:*

Setup Waste (reading from Row 2, "Add Waste (sheets" column):
   *Add **4** more Run size sheets/plate.*

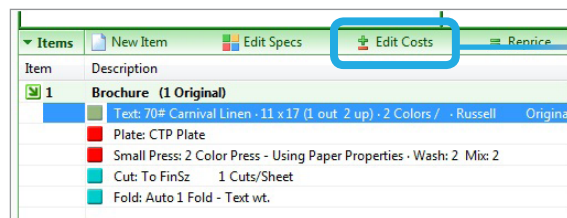*Run Waste (reading from Row 2, Add RunWaste (%)" column):*
   *Increase the Run Waste % by **1***

Adjustments to Waste for Job Difficulties

Some job difficulties may also generate waste in addition to the general waste we have discussed earlier. The job difficulties, for which Printer's Plan allows waste adjustments, are:

- Run size
- Coverage
- Registration
- Bleed
- Printing the second side

You can enter the waste adjustment factors for these difficulties in the Press Difficulty Table.
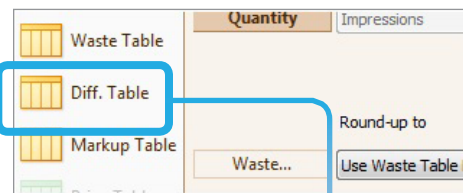
*IN THE OFFSET PRESS SETUP WINDOW, CLICK TO OPEN THE **DIFFICULTY TABLE** OF THIS PRESS. **JOB DIFFICULTY TABLE** IS IN THE MIDDLE.*

NOTE: *NUMBERS IN "ADD WASTE (SHEETS)" COLUMN ARE PER PLATE.*

Job Difficulty Table

Difficulty Group	Difficulty Level	Run Size Area (sq.inch)	Add Time/Plate (minutes)	Reduce Speed (%)	Add Waste (sheets)	Add RunWaste (%)
Run Size	Smallest	15	4.00	10	10	2
	Smaller than	46	4.00	10	10	2
	Larger than	187	8.00	25	20	4
	Largest	216	8.00	25	20	4
Coverage	Normal +		3.00	5	10	1
	Medium		6.00	10	20	2
	Medium +		9.00	15	30	3
	Difficult		12.00	20	40	4
Registration	Normal +		2.50	5	10	1
	Medium		5.00	10	20	2
	Medium +		7.50	15	30	3
	Difficult		10.00	20	40	4
Bleed	Any Side		5.00	2	10	2
Print	Both Sides		1.00	5	10	2
(reserved)						
Job Difficulty	Limits -->		15.00	5	50	10

For a more comprehensive explanation of the Difficulty Table, please see "Difficulty Table" in this chapter.

Where Do I See the Final Calculated Waste Quantity for an Item?

To see, in an Item of a Job, the calculated waste quantity broken down into its components, do the following:

Jobs | Job window

*CLICK TO OPEN THE **COSTS WINDOW** OF THE ITEM.*

CLICK ON PAPER TO HIGHLIGHT THAT ROW.

*CLICK **QUANTITY DETAIL** TO SEE **HOW SERVICE QUANTITY IS CALCULATED** FOR THIS PAPER.*

THE CALCULATED WASTE BROKEN DOWN INTO COMPONENTS IS DISPLAYED HERE.