

# Test of ‘rotating’ package

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<sup>1</sup>Now maintained as part of the L<sup>A</sup>T<sub>E</sub>X graphics bundle.

<sup>2</sup>Updated for graphics bundle 2016/05/22

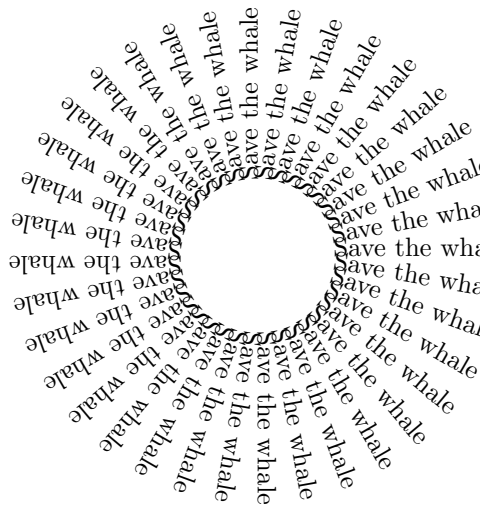
‘Rotating’ provides a generalised rotation environment, where the text will be rotated (anti-clockwise) by the number of degrees specified as a parameter to the environment, but no special arrangement is made to find space for the result.

```

Start here
\begin{rotate}{-56}
Save whales
\end{rotate}
End here

```

A complete example of rotating text without leaving space would be the ‘Save the whale’ text written at 10 degree intervals round the compass. We use ‘rlap’ to ensure that all the texts are printed at the same point. Just to show that T<sub>E</sub>X can handle PostScript muckings-about properly...



```

\newcount\wang
\newsavebox{\wangtext}
\newdimen\wangspace
\def\wheel#1{\savebox{\wangtext}{#1}%
\wangspace\wd\wangtext
\advance\wangspace by 1cm%
\centerline{%
\rule{0pt}{\wangspace}%
\rule[-\wangspace]{0pt}{\wangspace}%
\wang=-180\loop\ifnum\wang<180
\rlap{\begin{rotate}{\the\wang}%
\rule{1cm}{0pt}#1\end{rotate}}%
\advance\wang by 10\repeat}}
\wheel{Save the whale}

```

If the user desires L<sup>A</sup>T<sub>E</sub>X to leave space for the rotated box, then ‘turn’ is used:

```

Start here
\begin{turn}{56}%
Save the whale
\end{turn}
end here

```

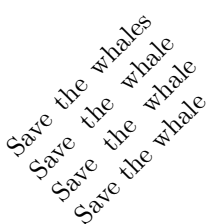
The environment ‘Sideways’ is a special case, setting the rotation to -90, and leaving the correct space for the rotated box.

```

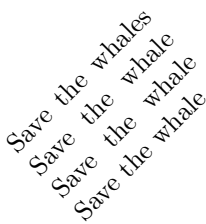
Start here
\begin{sideways}%
Save the whale
\end{sideways}
End here

```

If you deal with whole paragraphs of text, you realize that T<sub>E</sub>X boxes are not as simple as they sometimes look: they have a height *and* a depth. So when you rotate, you rotate about the point on the left-hand edge of the box that meets the baseline. The results can be unexpected, as shown in the full set of paragraph rotations in Figures 1 and 2. If you really want to turn a paragraph so that it appears to rotate about the *real* bottom of the T<sub>E</sub>X box, you have to adjust the box in the normal L<sup>A</sup>T<sub>E</sub>X way:

Start  End

```
\newsavebox{\foo}
\savebox{\foo}{\parbox{1in}{Save
the whales Save the whale
Save the whale
Save the whale}}%
Start
\begin{turn}{45}\usebox{\foo}\end{turn}
End
```

Start  End

```
\savebox{\foo}{\parbox[b]{1in}{Save
the whales Save the whale
Save the whale
Save the whale}}%
Start
\begin{turn}{45}\usebox{\foo}\end{turn}
End
```

We can set tabular material in this way; at the same time, we demonstrate that the rotation can be nested:

Occurrences	Word	hello	33
		goodbye	34

```
\begin{sideways}
\rule{1in}{0pt}
\begin{tabular}{|lr|}
\em Word & \begin{rotate}{90}%
Occurrences\end{rotate}
\\
\hline
hello & 33\\
goodbye & 34\\
\hline
\end{tabular}
\end{sideways}
```

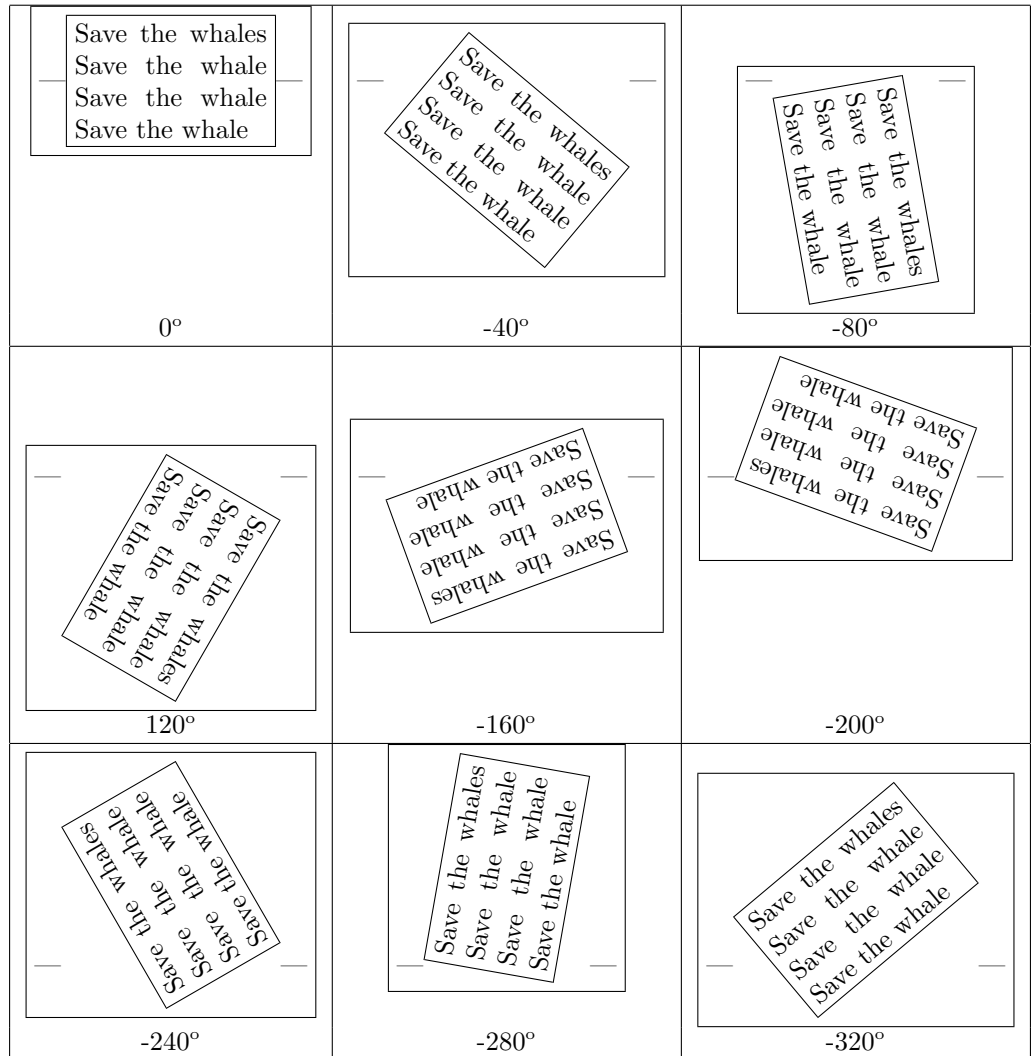


Figure 1: Rotation of paragraphs between 0 and -320 degrees

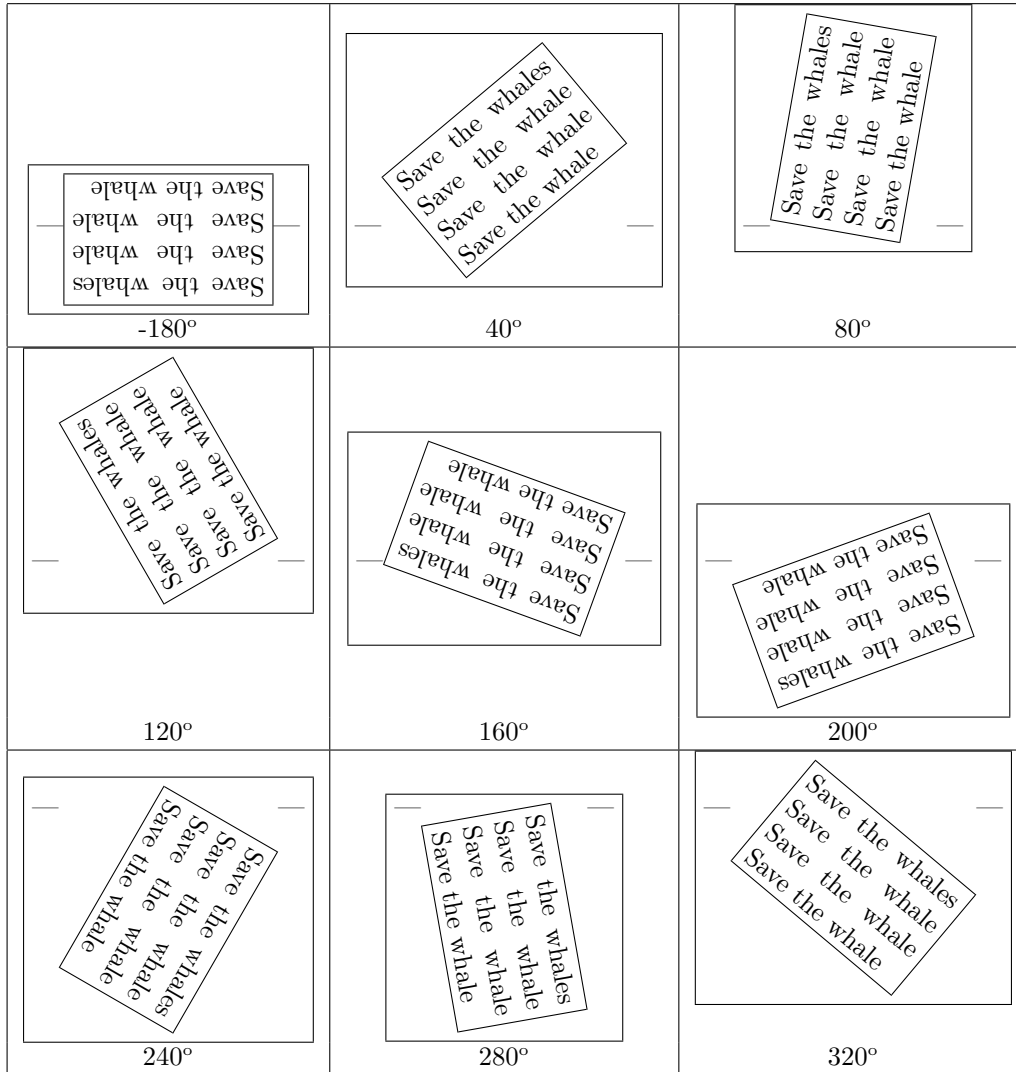


Figure 2: Rotation of paragraphs between 0 and 320 degrees

	<i>Column 1</i>	<i>Column 2</i>	<i>Column 3</i>
1	2	3	
4	5	6	
7	8	9	

```

\begin{quote}
\rule{0pt}{1.5in}\begin{tabular}{rrr}
\begin{rotate}{45}Column 1\end{rotate}&
\begin{rotate}{45}Column 2\end{rotate}&
\begin{rotate}{45}Column 3\end{rotate}\\\
\hline
1& 2& 3\\
4& 5& 6\\
7& 8& 9\\
\hline
\end{tabular}
\end{quote}

```

	<i>Column 1</i>	<i>Column 2</i>	<i>Column 3</i>
	1	2	
	4	5	
	7	8	

```

\begin{quote}
\begin{tabular}{rrr}
\begin{turn}{45}Column 1\end{turn}&
\begin{turn}{45}Column 2\end{turn}&
\begin{turn}{45}Column 3\end{turn}\\\
\hline
1& 2& 3\\
4& 5& 6\\
7& 8& 9\\
\hline
\end{tabular}
\end{quote}

```

	<i>Column 1</i>	<i>Column 2</i>	<i>Column 3</i>
1	2	3	
4	5	6	
7	8	9	

```

\begin{quote}
\rule{0pt}{1.5in}\begin{tabular}{rrr}
\begin{rotate}{45}Column 1\end{rotate}&
\begin{rotate}{45}Column 2\end{rotate}&
\begin{rotate}{45}Column 3\end{rotate}\\\
\hline
1& 2& 3\\
4& 5& 6\\
7& 8& 9\\
\hline
\end{tabular}
\end{quote}

```

STUDY AREA	NUMBER OF SITES				ACCEPT or REJECT NULL HYPOTH
	IN BOUNDARY ZONE		EXPECTED		
	TOT	OBS	FROM	TO	
FULL SAMPLE	41	31	10.3	27.0	REJECT
SAMPLE AREA 1	23	16	4.3	16.7	ACCEPT
SAMPLE AREA 2	18	15	2.8	13.7	REJECT
RUSHEN	13	9	1.2	10.4	ACCEPT
ARBORY	10	7	0.6	8.8	ACCEPT
MAROWN	10	8	0.4	8.6	ACCEPT
SANTON	8	7	0.0	7.3	ACCEPT
PRIMARY UNITS					

```

\begin{sideways}
\begin{tabular}{|l|c|c|c|c|c|p{1in}|}
\hline
&&\multicolumn{4}{c}{NUMBER OF SITES}\vline &ACCEPT or\
\cline{3-6} &STUDY AREA&&\multicolumn{3}{c}{%
IN BOUNDARY ZONE}\vline&REJECT\
\cline{4-6}&&&\multicolumn{2}{c}{EXPECTED}
\vline&NULL\
\cline{5-6}&&TOT&OBS&FROM&TO&HYPOTH\
\cline{2-7}
&FULL SAMPLE&41&31&10.3&27.0&REJECT\
&SAMPLE AREA 1&23&16&4.3&16.7&ACCEPT\
&SAMPLE AREA 2&18&15&2.8&13.7&REJECT\
&RUSHEN&13&9&1.2&10.4&ACCEPT\
&ARBORY&10&7&0.6&8.8&ACCEPT\
&MAROWN&10&8&0.4&8.6&ACCEPT\
\rule{0.5cm}{0pt}
\begin{rotate}{90}PRIMARY UNITS%
\end{rotate}\rule{0.5cm}{0pt}
&SANTON&8&7&0.0&7.3&ACCEPT\
\hline
\end{tabular}
\end{sideways}

```

If you are interested in setting rotated material in tables or figures, this presents no problem. Figure 3 shows how PostScript files which are being incorporated using can be rotated at will, while Figure 4 shows, in contrast, how ‘includegraphics’ itself handles rotation. It is also possible to rotate the whole of the figure environment, including caption, by using the ‘sidewaysfigure’ and ‘sidewaystable’ environments in place of ‘figure’ and ‘table’.

Sideways figures and tables always take up the whole page. They can be rotated so that the bottom of the figures is on the left or the right; the default is to always turn to the right. If the ‘twoside’ option has been given to the main document class, this package then starts rotating sideways figures according to the page number (this requires two passes through L<sup>A</sup>T<sub>E</sub>X at least). If you want the ‘twoside’ option, but want the figures always in one direction, use the ‘figuresright’ or ‘figuresleft’ options to ‘rotating’.

The code used to produce figures 1–9 is as follows:

**Figure 1** \begin{sidewaystable}  
\centering  
\caption{This is a narrow table, which should be centred vertically  
on the final page.\label{rotfloat1}}  
\begin{tabular}{|l|l|}  
\hline  
a & b \\
c & d \\
e & f \\
g & h \\
i & j \\
\hline  
\end{tabular}  
\end{sidewaystable}

**Figure 2** \begin{sidewaystable}  
\centering  
\begin{tabular}{|l|l|l|l|l|l|l|l|l|l|l|}  
\hline  
Context & Length & Breadth/ & Depth & Profile & Pottery & Flint & Animal & Stone & Other & C14 Dates  
& Diameter & & & & & & & & & \\
Bones&&&&&&&&&&&& \\
\hline  
\multicolumn{10}{|l|}{\bf Grooved Ware}&& \\
784 & & & 0.9m & 0.18m & Sloping U & P1 & & & & \\
785 & & & 1.00m & 0.12 & Sloping U & P2--4 & & & & \\
962 & & & 1.37m & 0.20m & Sloping U & P5--6 & & & & \\
983 & 0.83m & & 0.73m & 0.25m & Stepped U & & & & & \\
\hline  
\multicolumn{10}{|l|}{\bf Beaker}&& \\
552 & & & 0.68m & 0.12m & Saucer & P7--14 & & & & \\
790 & & & 0.60m & 0.25m & U & P15 & & & & \\
794 & 2.89m & & 0.75m & 0.25m & Irreg. & P16 & & & & \\
\hline  
\end{tabular}  
\caption[Grooved Ware and Beaker Features, their Finds and  
Radiocarbon Dates]{Grooved Ware and Beaker Features, their  
Finds and Radiocarbon Dates; For a breakdown of the Pottery  
Assemblages see Tables I and III; for  
the Flints see Tables II and IV; for the  
Animal Bones see Table V.}\label{rotfloat2}  
\end{sidewaystable}

**Figure 3** \begin{table}  
\centering  
\rotcaption{Minimum number of individuals; effect of rotating table  
and caption separately}\label{rotfloat3}%  
\begin{sideways}  
\begin{tabular}[b]{cccccccc}{1cm}  
\hline  
Phase&Total&Cattle&Sheep&Pig&Red Deer&Horse&Dog&Goat&Other \\
\hline  
&1121&54&12&32&1&1&1&1&1 polecat \\
&3&825&5&58&6&35&1&1&1&1 roe deer, 1 hare, 1 cat, 1 otter \\
&4&543&4&5&6&45&4&1&1&1 \\
\hline  
\end{tabular}  
\end{sideways}  
\end{table}

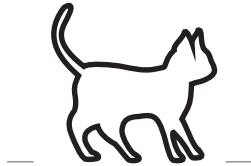




```
---\begin{turn}{156}
\includegraphics[width=1in]{cat}
\end{turn}---
```



```
---\begin{sideways}
\includegraphics[width=1in]{cat}
\end{sideways}---
```



```
---\includegraphics[width=1in]{cat}---
```

Figure 3: A normal, and sideways, pictures within a figure

```
&9919&157&24&112&6&3&3&2&5\\
\hline
\end{tabular}
\end{sideways}
\end{table}
```

```
Figure 9 \begin{sidewaysfigure}
\centering
\includegraphics[width=.8\textheight,height=.4\textwidth]{cat}
\caption{A pathetically squashed rotated pussycat}\label{rotfloat4}
\end{sidewaysfigure}
```

Table 1: This is a narrow table, which should be centred vertically on the final page.

a	b
c	d
e	f
g	h
i	j

Context	Length	Breadth/ Diameter	Depth	Profile	Pottery	Flint	Animal Bones	Stone	Other	C14 Dates
<b>Grooved Ware</b>										
784	—	0.9m	0.18m	Sloping U	P1	×46	×8	—	×2 bone	2150± 100 BC
785	—	1.00m	0.12	Sloping U	P2-4	×23	×21	Hammerstone	—	—
962	—	1.37m	0.20m	Sloping U	P5-6	×48	×57*	—	—	1990 ± 80 BC (Layer 4) 1870 ±90 BC (Layer 1)
983	0.83m	0.73m	0.25m	Stepped U	—	×18	×8	—	Fired clay	—
<b>Beaker</b>										
552	—	0.68m	0.12m	Saucer	P7-14	—	—	—	—	—
790	—	0.60m	0.25m	U	P15	×12	—	Quartzite-lump	—	—
794	2.89m	0.75m	0.25m	Irreg.	P16	×3	—	—	—	—

Table 2: Grooved Ware and Beaker Features, their Finds and Radiocarbon Dates; For a breakdown of the Pottery Assemblages see Tables I and III; for the Flints see Tables II and IV; for the Animal Bones see Table V.

Table 3: Minimum number of individuals; effect of rotating table and caption separately

Phase	Total	Cattle	Sheep	Pig	Red Deer	Horse	Dog	Goat	Other
	1121	54	12	32	1	1	1	1	1
3	8255	58	6	35	1	1	1	1	pole-cat 1 roe deer, 1 hare, 1 cat, 1 ot-ter
4	543	45	6	45	4	1	1	—	—
	9919	157	24	112	6	3	3	2	5



```
\includegraphics[width=1in,%  
angle=-56]{cat}
```

Figure 4: Figures rotated with ‘includegraphics’



Figure 5: A pathetically squashed rotated pussycat (1)



Figure 6: A pathetically squashed rotated pussycat (2)



Figure 7: A pathetically squashed rotated pussycat (3)





Figure 8: A pathetically squashed rotated pussycat (4)



Figure 9: A pathetically squashed rotated pussycat