

Test of ‘rotating’ package

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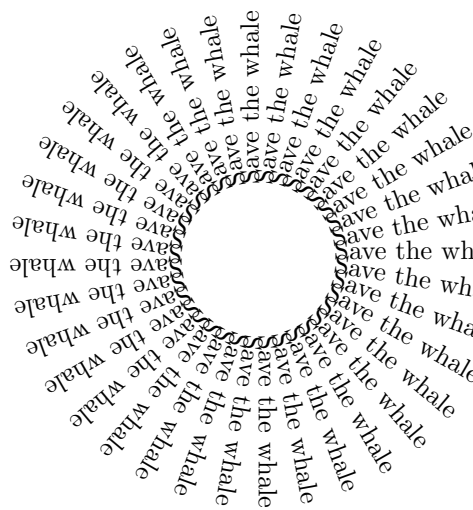
¹Now maintained as part of the L^AT_EX graphics bundle.

²Updated 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
	<code>\begin{rotate}{-56}</code>
	Save whales
	<code>\end{rotate}</code>
Start here	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_EX can handle PostScript muckings-about properly...

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

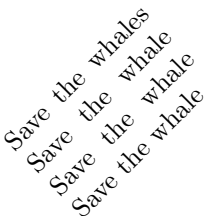
If the user desires L^AT_EX to leave space for the rotated box, then ‘turn’ is used:

	Start here	Save the whale		Start here	<code>\begin{turn}{56}%</code>
				Save the whale	<code>\end{turn}</code>
Start here		end here		<code>\end{turn}</code>	end here

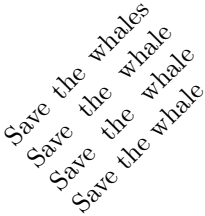
The environment ‘Sideways’ is a special case, setting the rotation to -90 , and leaving the correct space for the rotated box.

	Start here
	<code>\begin{sideways}%</code>
	Save the whale
	<code>\end{sideways}</code>
Start here	End here

If you deal with whole paragraphs of text, you realize that \TeX 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 \TeX box, you have to adjust the box in the normal \LaTeX 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	33
	34
Word	hello goodbye

```
\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}
```

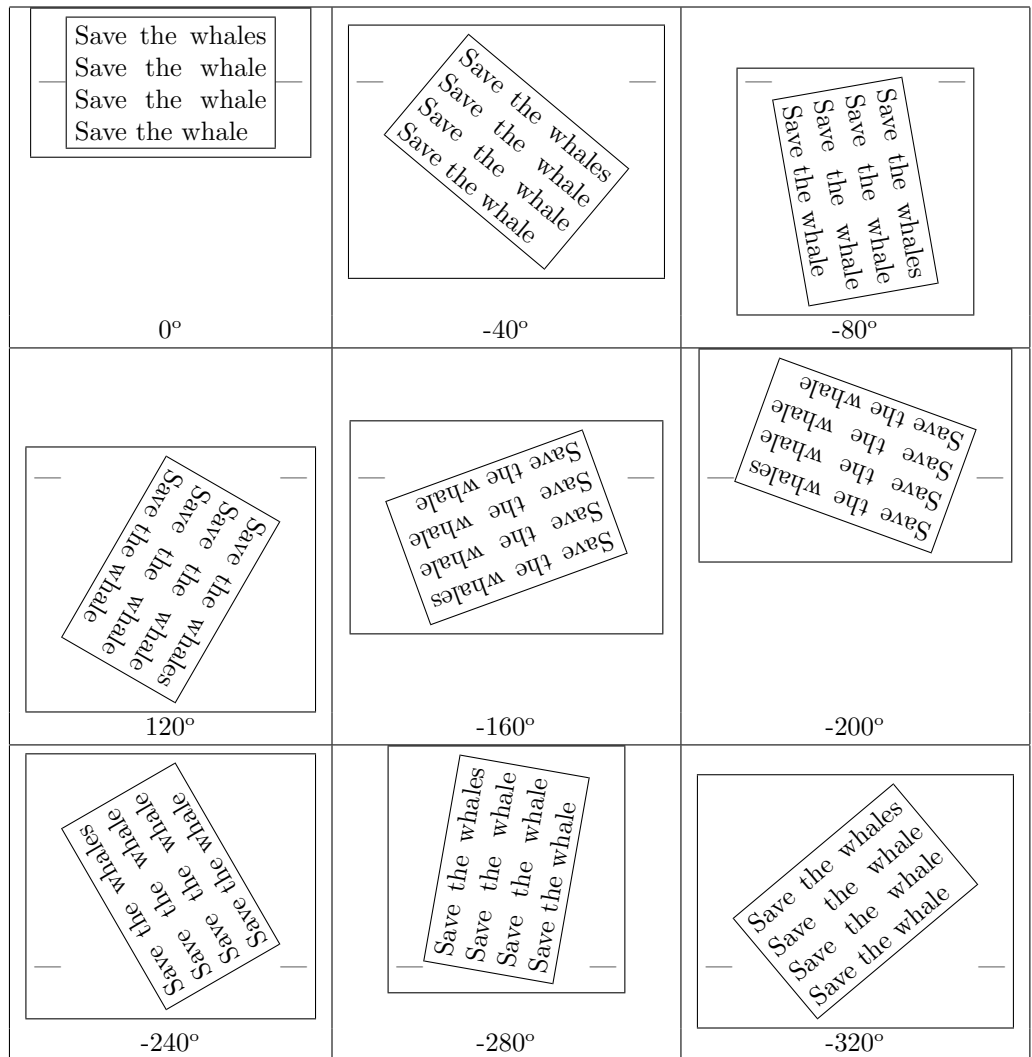


Figure 1: Rotation of paragraphs between 0 and -320 degrees

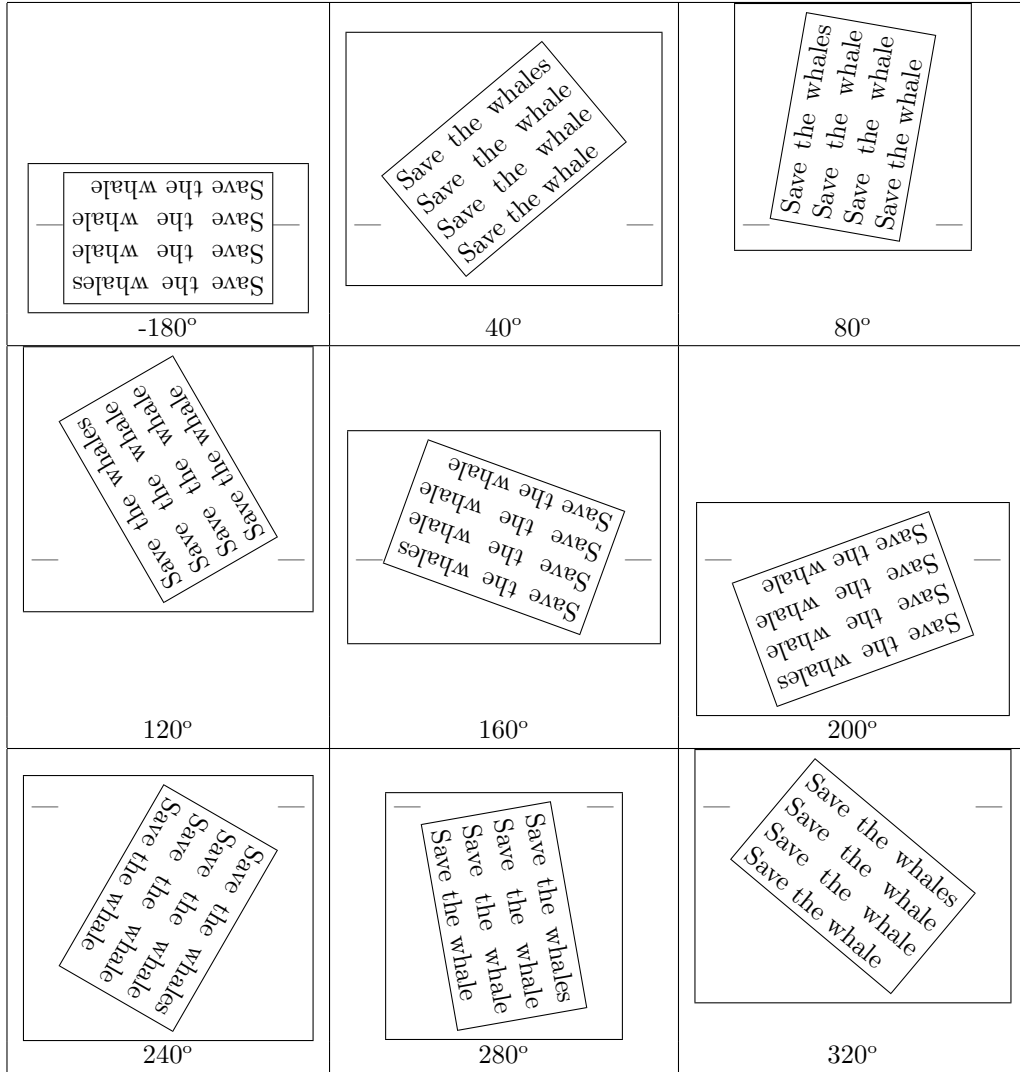


Figure 2: Rotation of paragraphs between 0 and 320 degrees

Column 1	Column 2	Column 3
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}

```

Column 1	Column 2	Column 3
1	2	3
4	5	6
7	8	9

```

\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}

```

Column 1	Column 2	Column 3
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	
	TOT	IN BOUNDARY ZONE		TO		
		OBS	EXPECTED			
			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|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 ‘sidewaysstable’ 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^AT_EX 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:



```
---\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
Grooved Ware										
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	—
Beaker										
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 otter
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