

Defence Employment 1994-95

Research Paper 96/92

11 October 1996



This paper updates research paper 95/99 and brings together the latest available national and regional statistics on defence service and civilian manpower and defence industry employment. Though there are very few statistics on regional defence employment, sections 5 and 6 of this paper attempt to estimate regional defence employment and defence dependency

Readers will also wish to consult Library Research Paper 96/91 *Defence Statistics 1996* which sets out some statistics on defence expenditure and armed forces.

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House of Commons Library

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I Defence Manpower

The strength of the UK Regular Forces in April 1996 was around 227,300. However, some 47,100 of these service personnel were based outside the United Kingdom, and so only 182,200 regular servicemen are UK-based. The Ulster Defence Regiment (UDR - now known as the Royal Irish Regiment) are not included as regular forces in Ministry of Defence figures. However, at 30 April 1996 there were 2,845 full-time troops in the RIR. Table 1 looks at the deployment of UK-based Regular Forces and Ministry of Defence civilian manpower within the regions of the United Kingdom over the last decade.

In mid-1995, 34% of the UK-based service personnel were located in the South East, and 25% were located in the South West. These two regions account for the majority of UK-based servicemen with the next largest region in terms of service deployment being Scotland with around 9% of the UK-based service manpower.

In terms of civilian manpower, the South East is again the most prominent region with 40% of the UK-based civilians in 1994. The South West is second with 22% and Scotland is again third with 10% of the UK-based civilians.

The number of service personnel and civilian personnel deployed in the United Kingdom has declined consistently over the past decade, with further cuts in UK armed forces and Ministry of Defence civilians planned by the mid-1990s under *Options For Change*.

II Defence Employment

A. Methodology

Whilst Ministry of Defence figures are available for the deployment of UK regular forces by region, there are no comprehensive regional figures available for defence-related employment. This paper will review what regional figures exist, and attempt to estimate the level of defence-related employment in the regions.

An important issue among defence economists and other interested parties has been the effect of defence spending on regional and local economies. In 1986, Ministry of Defence statisticians decided to investigate the possibility of producing regional estimates of defence spending and defence employment.

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National Estimates

The existing method¹ devised to produce *national* estimates requires the combination of two elements. First, a breakdown of MoD expenditure with UK industry by industrial sector (using the Standard Industrial Classification (SIC)); and, second, a measure of sales per employee for each of the industries where defence is significantly large. Dividing the first by the second gives an estimate of those employed *directly on defence contracts*.

Of course work is also generated for subcontractors and others who supply the main contractors. This *indirect* employment is estimated using the industry-by-industry input-output table (produced by the Central Statistical Office) which shows the extent to which the output of each industry depends on inputs from supplying industries. The matrix is used to trace the production chain back to raw materials or imports, and the indirect employment over the whole chain is estimated by using figures of sales per employee at each stage.

Another sort of indirect employment, that generated by the additional consumer spending which arises from the defence jobs, is not included in the estimates. One can therefore draw a distinction between defence-related employment and employment dependent on defence expenditure (which includes the latter indirect employment).

The approach described above is used to produce three different employment estimates: one for equipment spending, one for non-equipment spending, and one for UK industry's exports of defence equipment. For equipment spending, the industrial breakdown of expenditure is principally derived from information held on the Ministry of Defence bill-paying computer at Liverpool, on which every contract paid is coded for industry (using a 3-digit SIC). Data on non-equipment spending (largely fuel, food and clothing) are extracted from the MoD accounting system.

Estimates of defence exports are derived from a combination of HM Customs and Excise tariff headings that can reasonably be allocated wholly to defence, and from estimates produced by the Society of British Aerospace Companies. Because exports of some equipment that has both a civil and a defence use cannot be identified, and some non-equipment projects such as military construction also cannot be identified, estimates of both defence exports and of associated employment *almost certainly fall short of the true total*.

¹ Statement on the Defence Estimates 1988 Volume II (Cm 344-II)

Regional Estimates

The method used by the MoD to provide a regional analysis of defence employment involves using the existing location codes on the MoD's bill-paying computer at Liverpool. This results in an analysis of MoD expenditure on equipment by region and industry, which can then be combined wherever possible with the most appropriate regional data on sales per employee to give estimates of direct employment. Because no regional information is available for non-equipment spending or for exports, no regional employment estimates are made for these two categories.

Table 1

Deployment Of UK Manpower Within The United Kingdom (a)

Region	Service Manpower: 1 July - thousands						Civilian Manpower: 1 July - thousands					
	1980	1985	1990	1994	1995	%	1980	1985	1990	1994	1995	%
North	1.2	2.3	1.8	2.0	1.5	0.8%	6.3	3.6	3.1	2.6	2.4	2.2%
Yorkshire & Humberside	14.6	14.8	15.5	12.8	12.3	6.8%	9.3	6.3	6.0	4.5	4.1	3.8%
East Midlands	13.9	12.9	11.9	9.3	9.4	5.2%	9.1	4.7	3.5	3.7	3.5	3.2%
East Anglia	13.8	16.3	14.1	12.5	11.3	6.2%	2.8	2.6	2.5	2.7	3.1	2.9%
South East	94.8	87.3	79.7	68.6	62.4	34.2%	94.6	66.6	57.5	45.8	43.1	39.9%
South West	50.0	48.1	47.2	48.6	45.2	24.8%	50.9	44.0	30.1	24.8	23.2	21.5%
West Midlands	9.7	9.4	8.0	5.8	5.1	2.8%	11.0	9.5	8.8	8.2	7.8	7.2%
North West	2.0	2.2	1.5	2.3	2.1	1.2%	12.7	3.1	3.0	2.6	2.4	2.2%
England	200.0	193.3	179.6	162.1	149.4	82.0%	196.6	140.4	114.6	95.0	89.6	83.0%
Scotland	18.1	20.1	19.3	18.0	16.9	9.3%	21.9	18.1	12.3	11.2	10.6	9.8%
Wales	6.9	6.3	5.3	5.5	5.2	2.9%	9.5	6.5	5.5	4.9	4.8	4.4%
N Ireland (b)	11.9	9.7	11.5	11.6	9.9	5.4%	3.2	2.7	2.7	2.9	3.0	2.8%
United Kingdom (c)	238.1	229.6	215.9	199.5	182.2	100.0%	231.2	167.7	135.2	114.0	108.0	100.0%

Notes: (a) This table identifies the deployment of UK Regular Forces and MOD civilians. It includes Royal Navy and Royal Marines personnel on board ships in home waters. It also includes staff in Royal Ordnance Factories up to 1984 and in the Royal Dockyards up to 1986.

(b) The figures for Northern Ireland include all personnel from other parts of the United Kingdom and from the British Army of the Rhine who are serving on emergency tours of duty, but exclude the Ulster Defence Regiment.

(c) The source from which the national totals are compiled for the Services is different from that used to obtain the United Kingdom element of global deployments. Consequently, the sum of the national figures can differ from the United Kingdom figures.

Sources: Statement on the Defence Estimates 1991 Vol II Table 4.13
Defence Statistics 1996 (HMSO) table 2.4

Table 2

UK Employment Dependent On Defence Expenditure

	thousands								
	1979-80	1980-81	1985-86	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95 (a)
Equipment Expenditure									
direct	220	230	200	150	140	140	115	105	90
indirect	180	190	160	140	130	130	110	105	85
Non-equipment Expenditure									
direct	100	100	85	75	80	75	65	65	55
indirect	80	80	70	60	60	50	45	45	40
Total MoD Expenditure									
direct	320	330	285	225	220	215	180	170	145
indirect	260	270	230	200	185	180	150	145	125
Exports									
direct	65	75	60	75	75	60	50	40	45
indirect	55	65	50	75	75	55	45	40	45
Total Defence Expenditure									
direct	385	405	345	300	295	275	225	210	190
indirect	315	335	280	275	260	235	190	185	170
all	700	740	625	575	555	510	415	395	360

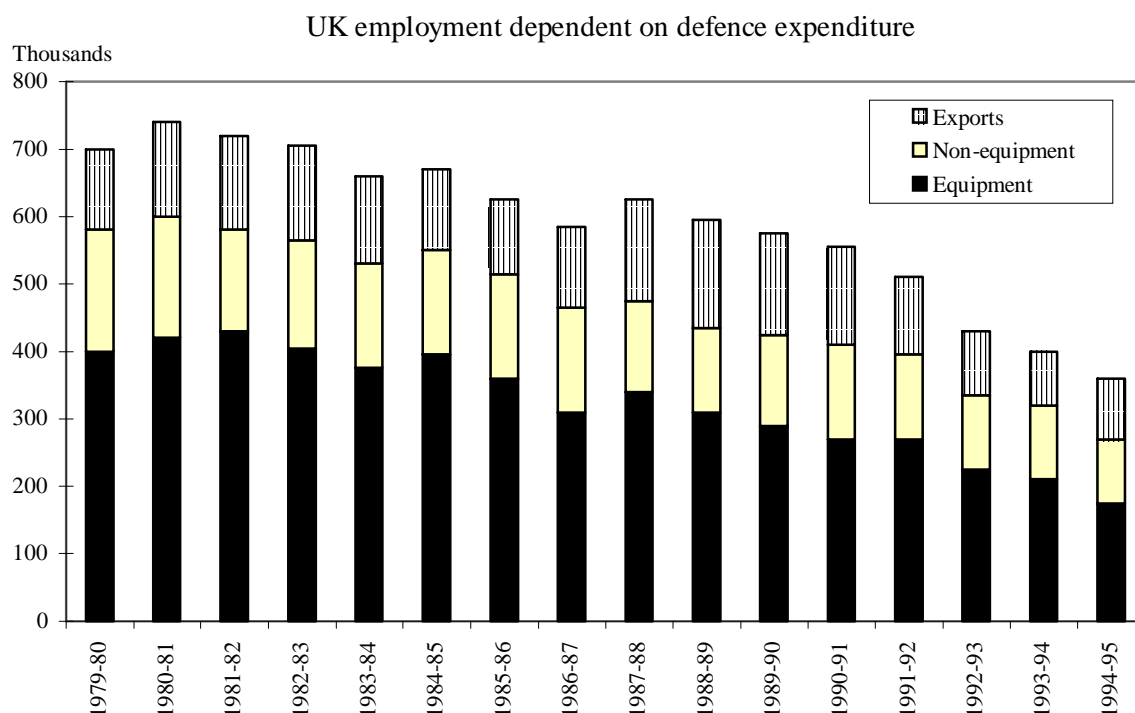
Notes: (a) provisional

Sources: Statement on the Defence Estimates 1991 Vol II Table 6.8
Defence Statistics 1996 (HMSO) table 1.10

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B. MoD National Estimates

The latest Ministry of Defence figures available for UK employment dependent on defence expenditure refer to 1994-95. Using the method described in Section II(A), the Ministry of Defence has estimated national figures for employment dependent on MoD equipment expenditure, MoD non-equipment expenditure and exports. Figures for 1979-80 to 1994-95 are given in Table 2 and illustrated in the graph below.



It can be seen that apart from a rise in total defence employment from 1979-80 to 1980-81 and 1986-87 to 1987-88, there has been a downward trend in defence-related employment over the past decade.

Direct employment dependent on equipment expenditure, ie employment at MoD contractors, has fallen by around 60% over the period 1979-80 to 1994-95. One reason given for the general decline in equipment employment may be the increasing productivity within manufacturing industry as a whole, thereby increasing sales per head and hence lowering the estimate of employment according to the MoD methodology (see Section II(A)). This falling number of jobs dependent on MoD equipment expenditure has also meant a decrease in the number of indirect jobs dependent on MoD equipment expenditure - ie jobs at defence equipment subcontractors.

Employment dependent on MoD non-equipment expenditure has also shown a general decline over the decade, but not to the extent of the fall in equipment-related employment. Hence overall employment supported by MoD expenditure, both direct and indirect, has shown a marked decline over the period 1979-80 to 1994-95.

In contrast, the level of direct and indirect employment supported by defence exports from the UK showed, if anything, a slight upward trend during the 1980s, although this appears to have been somewhat reversed in the 1990s. As mentioned earlier, because the defence component of exports of some equipment that has both a civil and a defence use cannot be identified, and some non-equipment projects such as military construction also cannot be identified, estimates of both defence exports and of associated employment almost certainly fall short of the true total.

C. MoD Regional Estimates

As explained in Section II(C), the only regional estimates that the Ministry of Defence provide refer to direct employment dependent on MoD defence equipment expenditure. Table 3 gives a regional breakdown of defence equipment expenditure (net of VAT) and associated direct employment for 1994-95 (the latest year available) and 1990-91 (for comparison).

As can be seen from the table, there are wide differences in regional defence spending. The most important region in terms of defence equipment expenditure and associated direct employment in 1994-95 is the South East. There may be a statistical bias towards the South East arising from cases where bills are paid to head offices in London for work actually done outside the region. However, the MoD do not believe that this "head office effect" is a large one². Wales had the lowest proportion of defence equipment expenditure.

In terms of defence equipment expenditure per head, the MoD spent £230 per head in the North and South West regions. Wales ranked last under this measure with just £20 per head spent on defence equipment in 1994-95.

The comparison of direct employment dependent on MoD equipment expenditure in 1994-95 and 1990-91 shows clearly that in all regions except Yorkshire and Humberside, direct equipment-related employment has fallen. The most significant falls were in the North, where there was a fall of 10,000 or 50% in the number of employees directly dependent on MoD equipment expenditure, and in the South East where the fall was 16,000 or 32%.

² Statement on the Defence Estimates 1988 Vol II p62

Table 3

Defence Expenditure On Equipment & Associated Direct Employment (a) 1994-95 and 1990-91

Region	Expenditure On Equipment 1994-95 (b)			Estimated Employment 1994-95 (c)		Estimated Employment 1990-91 (c)	
	£ million	%	£ per head	thousands	%	thousands	%
North	700	10.0	230	10	11.0	20	14.5
Yorkshire & Humberside	300	1.5	60	4	4.5	3	2.0
East Midlands	200	2.5	50	3	3.5	5	3.5
East Anglia	100	1.5	50	2	2.0	3	2.5
South East	2,500	36.5	140	34	38.0	50	36.0
South West	1,100	18.5	230	14	15.5	18	13.0
West Midlands	400	7.5	80	5	5.5	8	5.5
North West	750	12.0	120	9	10.0	15	10.5
England	6,050	90.0	120	81	90.0	122	87.5
Scotland	550	7.5	110	7	8.0	14	10.0
Wales	50	1.0	20	1	1.0	1	1.0
N Ireland	50	1.5	30	1	1.0	2	1.5
United Kingdom	6,700	100.0	110	90	100.0	140	100.0

Notes: (a) All figures are rounded.

(b) Expenditure on equipment is shown net of VAT.

(c) The employment estimates are of direct employment only, i.e. of those working for contractors supplying equipment to the MOD. Employment with suppliers to these contractors is not included.

Sources: Defence Statistics 1996 (HMSO) table 1.9
OPCS Population Trends 84 Summer 1996

The regional employment figures shown in table 3 refer only to direct employment dependent on MoD defence equipment expenditure. Nationally, however, this direct equipment-related employment accounted for just over one quarter of total defence-related employment in the UK in 1994-95. It is therefore unsatisfactory to use the existing regional figures on direct equipment-related employment when discussing the wider issue of the regional economic impact of defence expenditure. The following section attempts to estimate, albeit crudely, the total level of defence-related employment in the regions.

III An Estimate Of Regional Defence Employment

The starting point for this estimation is the national estimates in Table 2. The regional breakdown of the first set of figures (direct employment dependent on equipment expenditure) have already been given in Table 3.

For *indirect* employment dependent on equipment expenditure, it is assumed that the regional distribution of the 85,000 employees in 1994-95 is exactly the same as for the direct employment supported by equipment expenditure - ie the ratio of direct to indirect employment dependent on equipment expenditure is assumed to be the same for all regions. Table 3 sets out the regional proportions which are used.

Non-equipment expenditure (largely food, fuel and clothing) is assumed to be regionally distributed according to the relative size of the UK regular forces deployed in each region, the idea being that the more service personnel in any one region, the more food, clothing and fuel expenditure is likely to be needed. However, there may in reality be a slight bias to London (which would not be taken account of in this regional assumption) because of the construction/works/fuel/energy costs associated particularly with London-based civilian staff. The latest regional distribution of the UK regular forces for July 1995 is given in Table 1, although the July 1994 figures are used in the employment estimates for 1994-95. This regional distribution is applied to the national figures for both direct and indirect non-equipment employment combined.

There is a problem when attempting to analyse export-related defence employment by region because there is no method of determining in which region the employment is based. Though one might assume that the regional pattern of export-related employment might reflect the pattern of equipment-related employment, this is not in fact the case. By far the largest category of defence exports is military aerospace products, the production of which is concentrated in only a few locations: Bristol, Preston (British Aerospace); Yeovil (Westland); Gloucestershire (Dowty Aerospace) etc.

Table 4

An Estimate Of Regional Defence Employment 1994-95 (a)

Region	<u>Direct Equipment Employment</u>		<u>Indirect Equipment Employment (b)</u>		<u>Total Non-equipment Employment (c) (d)</u>		<u>Export-Related Employment (e)</u>		<u>Total Defence Industrial Employment</u>	
	per cent	thousands	per cent	thousands	per cent	thousands	per cent	thousands	per cent	thousands
North	11.0%	10	11.0%	9	0.8%	1	0.3%	0	5.6%	20
Yorkshire & Humberside	4.5%	4	4.5%	4	6.8%	6	0.3%	0	3.9%	14
East Midlands	3.5%	3	3.5%	3	5.2%	5	0.5%	0	3.1%	11
East Anglia	2.0%	2	2.0%	2	6.2%	6	2.4%	2	3.3%	12
South East	38.0%	34	38.0%	32	34.2%	33	42.6%	38	38.1%	137
South West	15.5%	14	15.5%	13	24.8%	24	22.9%	21	20.0%	72
West Midlands	5.5%	5	5.5%	5	2.8%	3	6.7%	6	5.3%	19
North West	10.0%	9	10.0%	9	1.2%	1	17.8%	16	9.7%	35
England	90.0%	81	90.0%	77	82.0%	78	93.4%	84	88.9%	320
Scotland	8.0%	7	8.0%	7	9.3%	9	4.0%	4	7.5%	27
Wales	1.0%	1	1.0%	1	2.9%	3	0.5%	0	1.4%	5
N Ireland	1.0%	1	1.0%	1	5.4%	5	2.1%	2	2.5%	9
United Kingdom	100.0%	90	100.0%	85	100.0%	95	100.0%	90	100.0%	360

"Notes: (a) See section 5 for methodology.

(b) Assumes indirect equipment employment has the same regional pattern as direct equipment employment.

(c) Includes both direct and indirect non-equipment employment.

(d) Regional pattern assumed to be the same as the regional distribution of UK-based regular forces as at 1 July 1994.

(e) Regional pattern assumed to be the same as MoD regional equipment expenditure in the aerospace sector in 1994-95.

Sources: Defence Statistics 1996 (HMSO) Tables 1.9, 1.10, 2.4; MoD

To make some attempt at a regional analysis of defence export-related employment, it is assumed that export employment will follow the pattern of MoD regional equipment expenditure in the aerospace industry. The basis of this assumption is that in recent years around two-thirds of *identified* defence exports from the UK in 1993 comprised military aircraft and parts, guided weapons, missiles and parts and optical equipment and training simulators³.

By allocating employment according to MoD expenditure in the aerospace sector, the regions with the most significant aerospace sectors should be identified. However, this assumption is far from perfect: it is not necessarily the case that the export pattern will follow the pattern of MoD expenditure, and not *all* defence exports are in the aerospace sector. It also assumes again that indirect employment follows the same regional pattern as direct employment. These assumptions appear to suggest that the South East accounts for 38% of export-related employment whilst the South West and the North West, where much of Britain's aerospace industry is located, account for just 23% and 18% of export employment respectively. However, as mentioned before, there may be a South East bias because of the "head office" effect (see Section II(C)).

Table 4 thus shows the regional analysis of defence employment dependent on MoD expenditure and exports.

From this approximate analysis, it is suggested that the South East has the largest share of defence employment, with around 137,000 employees out of 360,000 in defence industrial jobs supported by MoD defence expenditure and exports. The South West, with around 72,000 employees, ranks second. Though the South East experiences the largest economic impact in absolute terms of regional defence expenditure, this is not so in relative terms when taking into account the importance of the defence sector in each regional economy. This is addressed in Section IV.

IV Summary: regional employment

Of course when assessing the size of the defence sector in terms of employment in each regional economy, one must not forget to include the service and civilian manpower employed and based in each region. Though they may not contribute directly to the gross domestic product of a region, their spending power will serve to create employment and output in the region indirectly.

To summarise the estimates of regional defence employment presented in this paper, table 6 presents the estimates of defence-related industrial employment, MoD civilian employment and UK Regular Forces for each region for 1994-95, together with the proportion of regional employment that the defence sector is estimated to account for. Once again, it must be stressed that these estimates are no more than crude calculations which are highly dependent on the assumptions made in Section III.

In terms of the relative importance of the defence sector to the regional economy, one indicator is the proportion of defence employees (defence industry jobs plus MoD civilians) as a proportion of

³ Defence Statistics 1994 Table 1.11

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the total number of employees in the region. The South West with defence employees accounting for 5.6% of the total number of employees in 1994-95 is argued to be the most defence-dependent region on this basis. The South East, which had the largest defence-related employment and the largest share of MoD equipment expenditure, ranks second highest with 2.6% of employees in the defence sector.

The picture is changed slightly if one examines total defence-related employment - ie employees (including MoD civilians) *plus* UK-based regular service personnel - as a proportion of the workforce in employment, which is a broader measure of employment. The South West is again the most important region, with 6.7% of the workforce employed in the defence sector, well over twice the UK average. Northern Ireland, even excluding the RIR, has the second highest rate of defence employment with 3.1%. Including the 3,000 full-time Royal Irish Regiment personnel at 1 April 1994, defence-related employment in Northern Ireland would rise from 24,000 to 27,000 implying a slightly higher rate as a proportion of the workforce of 3.5%. The UK average in 1994-95 was 2.7%.

In previous years this paper has presented estimates of defence employment by county. These were based upon work by the European Commission which gave figures for 1991/92. It has been decided that, given the changes in the defence industry in recent years, these figures no longer provide a reliable base to calculate county estimates from. It is likely that defence industry is still concentrated in a small number of counties and regions, with the most dependent areas including: Cumbria, Fife, Essex, Lancashire and Wiltshire. However, to continue to publish figures for these areas on the basis of out-of-date data would lend unwarranted credibility to estimates which were crude in the first place.

Table 5

Estimated Employment in the Defence Sector 1994-95

thousands

Region	Industrial Employment	MoD Civilians	Total Defence Employees (b)	As % Of Total Employees (c)	UK-based Regular Forces	Defence-Related Employment (d)	% Of Workforce Employment (e)
North	20	2.6	23	2.1%	2.0	25	2.0%
Yorkshire & Humberside	14	4.5	18	1.0%	12.8	31	1.5%
East Midlands	11	3.6	15	1.0%	9.3	24	1.4%
East Anglia	12	2.7	15	1.8%	12.5	27	2.8%
South East	137	46.0	183	2.6%	68.6	252	3.0%
South West	72	24.6	97	5.6%	48.6	145	6.7%
West Midlands	19	8.3	27	1.4%	5.8	33	1.5%
North West	35	2.6	38	1.6%	2.3	40	1.5%
England	320	95.0	415	2.3%	162.1	577	2.7%
Scotland	27	11.2	38	1.9%	18.0	56	2.5%
Wales	5	4.9	10	1.0%	5.5	15	1.3%
N Ireland	9	2.9	12	2.1%	11.6	24	3.1%
United Kingdom	360	114.0	474	2.2%	199.5	674	2.7%

Notes: (a) Direct and indirect employment supported by MoD expenditure and exports.

(b) Industrial employment plus MoD civilians.

(c) Total defence employees as a proportion of all employees in employment in March 1994.

(d) Defence employees plus UK-based regular forces.

(e) Total defence-related employment as a proportion of regional workforce in employment (employees plus self-employed plus estim

Sources: Defence Statistics 1996 (HMSO); Employment Gazette (DFEE) October 1996; DFEE data on disk

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