

***Ordnance Survey fundamental elements***

The projections of all Ordnance Survey maps of Great Britain, of regular series commenced after 1830 and on scales of 1:633,600 and larger, are calculated on the Airy spheroid (Airy's figure of the Earth) defined in terms of the foot of Bar O<sub>1</sub>. All such projections prior to the adoption of the National Projection had a scale factor of unity. Maps of Ireland on scales from 1:63,360 to 1:253,440 inclusive, and all scales on the Transverse Mercator Projection of Ireland until 1965, are also on the Airy spheroid, and all these have a scale factor of unity.

Horizontal Datum	OSGBI 1858
Spheroid	Airy
Unit	Foot of O <sub>1</sub>
Scale Factor	Unity
O <sub>1</sub> is the Ordnance Survey standard 10 foot bar	
1 foot of O <sub>1</sub> = 0.304 800 749 1 international metre	

**NATIONAL PROJECTIONS**

ENGLAND, WALES and ISLE of MAN

SCOTLAND (one-inch Popular Edition)

Projection	Cassini's
True Origin	Delamere, 53° 13' 17.274" N, 2° 41' 03.562" W

SCOTLAND (before one-inch Popular Edition)

Projection	Bonne's
True Origin	57° 30' N, 4° W (Nairnshire, near Croy)

GREAT BRITAIN

Projection	Transverse Mercator
True Origin	49° N, 2° W

IRELAND

Projection	Bonne's
True Origin	53° 30' N, 8° W (in Lough Ree)

IRELAND

Projection	Transverse Mercator
True Origin	53° 30' N, 8° W

**GRIDS**

War Office Cassini Grid (military title: English Grid)

Projection	Cassini's
Spheroid	Airy
Unit	Metre (1 foot of Bar O <sub>1</sub> = 0.304 799 73 metre)
True Origin	Dunnose, 50° 37' 03.748" N, 1° 11' 50.136" W
False Origin	500,000 metres W, 100,000 metres S

Scale Factor 1  
 Grid colour Purple  
 Co-ordinates on this grid are known as War Office False Origin (familiarily Woffo) co-ordinates.

#### War Office Irish Grid (military title: Irish Grid)

Projection Cassini's  
 Spheroid Airy  
 Unit Metre (1 foot of Bar O<sub>1</sub> = 0.304 799 73 metre)  
 \*\*\*\*\*the Benoit and Chaney relationship

True Origin 53° 30' N, 8° W  
 False Origin 199,990 metres W, 249,975 metres S  
 Scale Factor 1  
 Grid colour Red

The false co-ordinates of the origin were originally 200,000 metres E, 250,000 metres N, but were altered after a War Office adjustment of trigonometrical station co-ordinates.

#### Ireland military grid

True Origin 53° 30' N, 8° W  
 False Origin 189,000 metres W, 234,000 metres S

Used by the Irish Department of Defence during the 1930s on the 1:20,000 map, and the quarter-inch map for aviation purposes.

#### Ireland 5000 yard grid

True Origin 53° 30' N, 8° W  
 False Origin uncertain, but 199,093 $\frac{1}{3}$  yards W, 262,653 $\frac{1}{3}$  yards S

“if the true origin of the grid is at or near the south-west corner of the one-inch sheet line system.... We cannot guess whether they would have left them like that, or knocked off the thirds, or added two-thirds, or even rounded them up to the next ten...” (Brian Adams). Used by the Irish Department of Defence from 1940 on military editions of the half-inch map and full sheet one-inch maps.

#### National Yard Grid of Great Britain

True Origin 49° N, 2° W  
 False Origin 1,000,000 yards W, 1,000,000 yards S

#### National Grid of Great Britain

True Origin 49° N, 2° W  
 False Origin 400,000 metres W, 100,000 metres N

#### National Grid of Ireland

True Origin 53° 30' N, 8° W  
 False Origin 200,000 metres W, 250,000 metres S

#### Jersey 1000 yard grid

True Origin South Hill Battery  
 False Origin 60,000 yards W, 60,000 yards S

#### Guernsey 1000 yard grid

True Origin Fort George  
 False Origin 29,320 yards W, 49,710 yards S

## ONE-INCH and 1:50,000 STANDARD SHEET COVERAGE

## England and Wales – Cassini

Full sheet	36 by 24 miles (190,080 by 126,720 feet)
Large sheet	27 by 18 miles (142,560 by 95,040 feet)
Small or quarter sheet	18 by 12 miles (95,040 by 63,360 feet)

Scotland – Cassini	24 by 18 miles (126,720 by 95,040 feet)
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## Great Britain

## National Yard Grid

Small sheet	52,000 by 32,000 yards
Large sheet	62,000 or 67,000 by 47,000 yards

## National Grid

One-inch	40 by 45 km
1:50,000	40 by 40 km

## Ireland – Bonne

Full sheet	36 by 24 miles (190,080 by 126,720 feet)
Small or quarter sheet	18 by 12 miles (95,040 by 63,360 feet)

## Ireland – National Grid

Northern Ireland one-inch	60 by 40 km
Ireland 1:50,000	40 by 30 km

When the retriangulation of Great Britain was carried out, from 1935 onwards, it was decided early on to avoid disturbance to existing material as far as possible, and steps were taken to carry the scale and orientation of the old Principal Triangulation through to the new Primary Triangulation and new mapping based thereon. But after completion of the retriangulation of Ireland in 1964, and its adjustment in the following year, it was decided between the Irish surveys to alter the scale of their triangulation and mapping to bring distances determined therefrom into line with electronically measured true distances. This was effected by altering the scale factor of the projection and grid from unity to 1.000,035 with an equal and opposite alteration in the dimensions of the fundamental spheroid, in order to avoid recalculation of the projection tables, co-ordinates etc. Reduced by 0.999,965,001,2 it was christened the Airy (Modified) spheroid.

Subsequently, it appears that Northern Ireland had second thoughts on the latter part of these alterations, and by 1983 the six counties had reverted to the use of the true Airy spheroid.<sup>1</sup> As the new scale factor could not be interfered with, the projection was concurrently re-christened the “Modified Transverse Mercator Projection”; this appears to me to be nonsense, there is no modification in the projection at all. I do not think either of the Irish surveys’ solutions was right, and they were surely unnecessary today when software is available which can instantaneously calculate distances on the Earth, on in terms of other

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<sup>1</sup> *The Irish Grid*, OSNI leaflet 1, July 1983.

national or international datums. I therefore leave the listing of the projection elements to “as first introduced” above.

## *Ordnance Survey County Series plans – sheet line data*

### *Great Britain and Isle of Man*

This compilation is tailored for use with individual county sheet indexes. Readers using Ordnance Survey book indexes or reprints thereof are warned that not all relevant sheet numbers are shown thereon, and certain opposite pages do not align.

#### *Defining elements of County Series systems:*

Projection	Cassini's
Spheroid	Airy
Horizontal Datum	OSGBI 1858
Unit	foot of $O_1$
True origin	q.v. county concerned
False co-ordinates	0, 0
Scale factor	1

$O_1$  is the Ordnance Survey standard ten-foot bar  
 1 foot of  $O_1$  = 0.304 800 749 1 international metre

#### Sheet dimensions – Great Britain and Isle of Man

Six-inch full sheet	31,680 by 21,120 feet
Six-inch quarter sheet	15,840 by 10,560 feet
1:2500 sheet	7,920 by 5,280 feet

#### Sheet dimensions – Ireland

Six-inch full sheet	32,000 by 21,000 feet
1:2500 sheet	8,000 by 5,250 feet

#### *Data sources:*

24% of items are from old Ordnance Survey listings.

19% are from the compiler's extensive research in the Public Record Office, Ordnance Survey Archives, Military Survey, and British Library Map Library. It is this invaluable and unique material which makes the data complete.

57% are compiler's computations.

#### *Notes:*

'-shire' is routinely omitted where separable.

Names of county origins date from the early days of the Survey and their spellings from that time remain unchanged in their roles as origins, notwithstanding any changes in their spellings as features.

Some names, especially in Scotland, are quite misleading as to their actual sites.

*List of county origins – Great Britain*

Code	Name of origin	Latest form	Geographical position		Identification on 1:50,000 map		
			latitude N	longitude	N G ref.	m.	Name at point
BA	Ben Auler	Ben Alder	56° 48' 50.431"	4° 27' 49.113" W	NN 496719	1148	
BCh	Ben Cleugh	Ben Cleuch	P 56 11 08.695	3 46 03.873 W	NN 903006	721	
BCg	Ben Clibrig	Ben Kilbreck	P 58 14 07.844	4 24 35.534 W	NC 585299	961	Meall nan Con
Bg	Bengray		54 54 51.940	4 08 11.178 W	NX 631598	366	
Bd	Blackdown	Black Down	P 50 41 10.287	2 32 52.432 W	SY 613876	237	Hardy Monument
Bl	Bleasdale <sup>a</sup>		53 54 55.388	2 37 20.809 W	SD 591468	510	Fair Snape Fell
BD	Brandon Down		P 54 45 17.630	1 40 36.632 W	NZ 208401	266	
Bf	Broadfield		55 47 59.798	4 32 20.609 W	NS 409592	236	
BrC	Brown Carrick	Brown Carrick Hill	55 24 26.531	4 42 41.070 W	NS 284160	287	
Cl	Caerloch	Kerloch	56 58 52.543	2 29 56.890 W	NO 697879	534	
CG	Cairn Glasher	Carn Glas-choire	57 20 22.829	3 50 30.775 W	NH 891292	659	
C	Cleisham	Clisham	P <sup>m</sup> 57 57 50.561	6 48 41.648 W	NB 155073	799	
			<sup>n</sup> 57 57 47.350	6 48 42.073 W			
Cm	Corkmulaw	Cort-ma Law	55 59 36.745	4 09 44.286 W	NS 651799	531	
Co	Craigowl		56 32 52.216	3 00 48.599 W	NO 377400	455	Craigowl Hill
CnS	Cruach-na-Sleagh	Cruach na Seilcheig	56 07 08.247	5 43 34.944 W	NR 684981	296	
CyB	Cyrn-y-Brain	Cyrn y Brain	P 53 02 16.870	3 10 22.300 W	SJ 214496	562	<sup>b</sup>
DCS	Danbury Church Spire		P 51 42 57.897	0 34 32.746 E	TL 779051		
Del	Delamere <sup>c</sup>		P 53 13 17.274	2 41 03.562 W	SJ 543696	176	Pale Heights
DGL	Derrington Great Law	Dirrington Great Law	55 47 12.070	2 28 51.930 W	NT 698549	398	
Di	Ditchling		P 50 54 04.039	0 06 21.838 W	TQ 332131	248	Ditchling Beacon
DC	Dumbarton Castle		55 56 12.478	4 33 46.136 W	NS 399745		
DH	Dunnet Head		P 58 40 09.962	3 22 13.056 W	ND 205765	127	
Dn	Dunnose		P 50 37 03.748	1 11 50.136 W	SZ 568802	235	Shanklin Down
Dr	Dunrich	Dun Rig	P 55 34 19.950	3 11 01.472 W	NT 254316	742	
EC	Edinburgh Castle		55 56 54.110	3 11 53.440 W	NT 252735		
FS	Findlay Seat	Findlay's Seat	57 34 42.276	3 14 26.599 W	NJ 258549	338	Brown Muir
FH	Forest Hill	The Forest	54 25 30.680	2 43 41.580 W	NY 528036		
F	Foula		P 60 08 26.609	2 05 38.668 W	HT 948395	418	The Sneug
HF	Hart Fell		P 55 24 28.961	3 24 00.212 W	NT 114136	808	
He	Hensbarrow	Hensbarrow Downs	P 50 22 58.810	4 49 05.137 W	SW 997575	312	
Hg	Highgate		51 39 37.750	4 56 17.995 W	SR 968999		

Code	Name of origin	Latest form	Geographical position				Identification on 1:50,000 map				
			latitude	N	longitude	N G ref.	m.	Name at point			
HP	High Pike		54	42	19.170	3	03	26.600 W	NY 319350	658	
Ho	Hollingbourne		51	16	10.380	0	39	55.564 E	TQ 859557	197	
KL	Knock of Luce		54	51	58.316	4	43	10.206 W	NX 255558	175	Knock Fell
LCS	Lanark Church Spire		55	40	24.170	3	46	18.370 W	NS 886436		<sup>c</sup>
LHT	Leith Hill Tower		51	10	32.887	0	22	11.049 W	TQ 139432	294	
LI	Llangeinor	Mynydd Llangeinwyr	51	38	26.680	3	34	17.000 W	SS 913948	568	Werfa
MA	Mount Airy		55	55	22.038	3	37	05.376 W	NS 989711	312	
NCT	Nantwich Church Tower		53	04	00.152	2	31	09.186 W	SJ 652523		
OCT	Otley Church Tower		52	08	53.789	1	13	17.963 E	TM 204549		
RT	Rippon Tor <sup>a</sup>		50	33	57.034	3	46	12.078 W	SX 747756	473	
RL	Rubers Law		55	25	55.971	2	39	48.069 W	NT 580156	424	
SP	St. Paul's Cathedral <sup>d</sup>		51	30	47.753	0	05	48.356 W	TQ 321811		
SH	Sandhope Heights	Sundhope Height	55	30	10.253	3	02	31.092 W	NT 342237	513	
Snl	Scournalapich	Sgurr na Lapaich	57	22	10.334	5	03	31.678 W	NH 161351	1150	
Si	Simonside <sup>a</sup>		55	16	50.750	1	57	26.410 W	NZ 027985	429	
SB	South Berule	South Barrule	54	08	57.597	4	40	05.328 W	SC 258759	483	
SC	Stafford Castle <sup>o</sup>		52	47	51.000	2	08	44.580 W	SJ 902223		
TB	The Buck		57	17	18.978	2	58	11.630 W	NJ 415224		Kebbuck Knowe
TL	Traprean Law	Traprain Law	55	57	48.110	2	40	13.380 W	NT 582747	221	
WL	West Lomond		56	14	43.980	3	17	43.583 W	NO 197066	522	
			56	14	44.430	3	17	44.146 W			
YM	York Minster		53	57	43.265	1	04	49.752 W	SE 603522		

<sup>a</sup> properly Bleasdale new, Rippon Tor new, Simonside new (names of trig. points)

<sup>b</sup> adjacent to Sir Watkin's Tower

<sup>c</sup> not on map; position of church is just within circle of railway station symbol

<sup>d</sup> conventionally St. Paul's

<sup>e</sup> Delamere is not a county, but a national origin

<sup>m</sup> accepted value

<sup>n</sup> value used originally for sheet graduations

<sup>o</sup> properly Stafford Castle (centre)

P principal triangulation station

No key is provided to the initials of counties; readers unfamiliar with the British counties prior to 1965 are referred to an appropriate map.

### *Co-ordinates of neat lines of significant sheets*

All data, with the sole exception of Lundy, are for full six-inch sheets. Data either relate to 'h containing or embordering in-county origins, or are for relevant sides of sheets at cardinal ex counties from which other sheet line co-ordinates can be obtained by addition. Sheet data are county names current at the time of early editions.

<i>for</i> Angus	<i>see</i> Forfar
Brecon	Brecknock
Bute	Argyll
Caernarvon	Carnarvon
Clackmannan	Perth
Cromarty	Ross
Dunbarton	Dumbarton
East Lothian	Haddington
Kinross	Fife
Midlothian	Edinburgh
Moray	Elgin
Salop	Shropshire
Shetland	Orkney
Southampton	Hampshire
West Lothian	Linlithgow
Zetland	Orkney

#### *Categories:*

- A Superseded by combined county origins
- B Superseded in Replotted Counties operation
- C Superseded by mystery transfer
- D Superseded in Close's programme
- E Included in final 38
- I In-county origin
- O Out-county origin (or out-area)
- U Unified counties origin



<i>map</i>	<i>county</i>	<i>origin</i>	<i>cat.</i>	<i>sheet</i>	<i>west n/l</i>	<i>east n/l</i>	<i>north n/l</i>	<i>south n/l</i>
<b>ENGLAND (including Monmouth)</b>								
40	Bedford <sup>a</sup>	St Paul's	EO	19 34	-14,256	+17,424		+98,208
43	Berkshire	Dunnose	EO	43 44 50	0	0		+244,240
39	Buckingham	Dunnose	EO	31 58	0			+286,480
29	Cambridge	Danbury Ch. Sp.	EO	50 62	-18,000			+96,080
12	Cheshire <sup>b</sup>	Nantwich Ch. Tr	EI	56	-5,100	+26,580	+17,580	-3,540
48	Cornwall Isles of Scilly	Hensbarrow	EI	41 83	-20,880	+10,800 -306,000	+14,420 -133,420	-6,700
2	Cumberland	High Pike	EI	47	-28,710	+2,970	+10,230	-10,890
17	Derby	Dunnose	EO	19 20 62	0	0		+751,120
49	Devon Lundy	Rippon Tor	EI	108 4A NW	-18,180	+13,500 -201,320	+2,820	-18,300 +224,580
52	Dorset	Blackdown	EI	46	-26,180	+5,500	+7,520	-13,600
4	Durham	Brandon Down	EI	26	-14,520	+17,160	+10,560	-10,560
42	Essex – <i>Old Series</i> – <i>New Series</i>	Danbury Ch. Sp. St Paul's	DI EO	53 77 86	-18,000 -14,256	+13,680 +17,424	+11,600 +13,728	-9,520 -7,392
37	Gloucester	Dunnose	EO	22A 78		-63,360		+286,480
53	Hampshire	Dunnose	EI	98 99	0	0	+11,920 +11,920	-9,200 -9,200
24	Hereford	Llangeinor	EO	23 53	+71,240			+64,560
41	Hertford	St Paul's	EO	46 47	-14,256	+17,424		+13,728
28	Huntingdon <sup>a</sup>	Danbury Ch. Sp.	EO	19 27		-113,040		+159,440
47	Kent	Hollingbourne	EI	43	-20,280	+11,400	+6,820	-14,300
6	Lancashire <sup>b</sup>	Bleasdale	EI	40 45	-26,400 -26,400	+5,280 +5,280	0	0
20	Leicester	Dunnose	EO	52 53	0	0		+645,520 +645,520
19	Lincoln	Dunnose	EO	24 151	+31,680			+730,000

<i>map</i>	<i>county</i>	<i>origin</i>	<i>cat.</i>	<i>sheet</i>	<i>west n/l</i>	<i>east n/l</i>	<i>north n/l</i>	<i>south n/l</i>
45	London	St Paul's	EI	c	-14,256	+17,424	+13,728	-7,392
44	Middlesex <sup>d</sup>	St Paul's	EO	12 16	-14,256	+17,424	+13,728	-7,392
36	Monmouth	Llangeinor	EO	10 27	+39,560		+1,200	-19,920
30	Norfolk	Danbury Ch. Sp.	EO	92 110	-18,000	+13,680		+222,800
27	Northampton	Dunnose	EO	66 67		0		+476,560 +476,560
1	Northumberland							
	– <i>Old Series</i>	Simonside	DI	44 53	-12,680 -12,680	+19,000 +19,000	0	0
	– <i>New Series</i>	Brandon Down	EO	94 114	-14,520	+17,160	+10,560	-10,560
18	Nottingham	Dunnose	EO	52 53		0		+772,240 +772,240
38	Oxford	Dunnose	EO	45 46 58		0		+286,480
21	Rutland	Dunnose	EO	12 15	+63,360			+687,760
15	Shropshire	Llangeinor	EO	68 82	+71,240			+233,520
50	Somerset	Blackdown	EO	94 95	-26,180	+5,500		+28,640
16	Stafford, <i>partial</i>	Stafford Castle	AI	16 35		0		+60,560 -2,800
	– <i>full series</i>	Dunnose	EO	54 75		-63,360	+18,320	+645,520
31	Suffolk, <i>partial</i>	Otley Church Tr	AI	75 80	0		-36,640	
	– <i>full series</i>	Danbury Ch. Sp.	EO	71 86	-18,000	+13,680		+74,960
46	Surrey	Leith Hill Tower	EI	33	-12,000	+19,680	+21,103	-17
54	Sussex	Ditchling	EI	53	-14,000	+17,680	+7,200	-13,920
26	Warwick	Dunnose	EO	28 29 59		0		+476,560
3	Westmorland	Forest Hill	EI	27	-30,880	+800	+13,120	-8,000
51	Wiltshire	Dunnose	EO	78		-63,360		+117,520
25	Worcester	Dunnose	EO	44		-95,040		
7	York	York Minster	EI	174	-14,200	+17,480	+8,600	-12,520

<i>map</i>	<i>county</i>	<i>origin</i>	<i>cat.</i>	<i>sheet</i>	<i>west n/l</i>	<i>east n/l</i>	<i>north n/l</i>	<i>south n/l</i>
<b>WALES</b>								
8	Anglesey	Llangeinor	EO	15 25		-87,160		+529,200
34	Brecknock	Llangeinor	EO	49	-23,800	+7,880		+22,320
22	Cardigan	Llangeinor	EO	13 46	-23,800			+127,920
33	Carmarthen	Llangeinor	EO	19 58	-23,800			+1,200
9	Carnarvon	Llangeinor	EO	30 48		-23,800		+402,480
10	Denbigh	Cyrn-y-Brain	EI	27	-18,080	+13,600	+14,720	-6,400
11	Flint <sup>e</sup>	Cyrn-y-Brain	EO	18	-18,080	+13,600	+14,720	-6,400
35	Glamorgan	Llangeinor	EI	26	-23,800	+7,880	+1,200	-19,920
13	Merioneth	Llangeinor	EO	39 48	-23,800	+7,880		+318,000
14	Montgomery	Llangeinor	EO	51	-23,800	+7,880		+254,640
32	Pembroke	Highgate	EI	39 40		0	+17,820	-3,300
	The Smalls			31C	0	-158,400	+17,820	-3,300
23	Radnor	Llangeinor	EO	21 38	-23,800	+7,880		+17,820
								+127,920
5	<b>ISLE OF MAN</b>	South Berule	EI	12	-17,380	+14,300	+10,920	-10,200
<b>SCOTLAND</b>								
66	Aberdeen	The Buck	EI	51	-5,280	+26,400	+5,280	-15,840
68	Argyll & Bute	Cruach-na-Sleagh	EU	148	-2,600	+29,080	+10,600	-10,520
79	Ayr	Brown Carrick	EI	38	-25,080	+6,600	+7,020	-14,100
65	Banff	The Buck	EI	42A	-5,280	+26,400	+5,280	-15,840
85	Berwick	Derrington Great Law	EI	15	-21,680	+10,000	+6,120	-15,000
57	Caithness	Dunnet Head	EI	1	-15,880	+15,800	+7,900	-13,220
71	Dumbarton, <sup>f</sup>							
	– <i>Old Series</i>	Dumbarton Cas.	DI	22	-9,900	+21,780	+10,560	-10,560
	– <i>New Series</i>	Lanark Ch. Sp.	EO	24 25		-83,040		+60,360
82	Dumfries	Hart Fell	EI	9	-29,680	+2,000	+3,120	-18,000
77	Edinburgh							
	– <i>Old Series</i>	Edinburgh Castle	BI	2	-16,980	+14,700	+17,620	-3,500
	– <i>New Series</i>	The Buck	EO	1			-459,360	

<i>map</i>	<i>county</i>	<i>origin</i>	<i>cat.</i>	<i>sheet</i>	<i>west n/l</i>	<i>east n/l</i>	<i>north n/l</i>	<i>south n/l</i>
				9	-5,280	+26,400		
64	Elgin	Findlay Seat	EI	13	-7,920	+23,760		0
				18	-7,920	+23,760	0	
73	Fife & Kinross							
	– <i>Old Series</i>	West Lomond	BU	16	-11,080	+20,600	+16,020	-5,100
	– <i>New Series</i>	The Buck	EO	1	-5,280	+26,400	-290,400	
70	Forfar	Craigowl	EI	43	-29,040	+2,640		0
				49	-29,040	+2,640	0	
78	Haddington							
	– <i>Old Series</i>	Traprean Law	BI	10	-28,680	+3,000	+6,600	-14,520
	– <i>New Series</i>	The Buck	EO	1	-5,280	+26,400	-438,240	
62	Inverness (mainld)	Ben Auler	EI	154	-23,760	+7,920	+11,880	-9,240
59	Hebrides <sup>gh</sup>	Cleisham	EI	10		0	+5,280	-15,840
				11	0		+5,280	-15,840
60	Skye <sup>h</sup>	Ben Auler	EO	48		-213,840		
				74			+11,880	-9,240
67	Kincardine							
	– <i>Old Series</i>	Caerloch	CI	10	-29,040	+2,640	+17,160	-3,960
	– <i>New Series</i>	The Buck	EO	3			-36,960	
				12	+26,400			
81	Kirkcudbright							
	– <i>Old Series</i>	Bengray	BI	44	-3,700	+27,980	+1,400	-19,720
	– <i>New Series</i>	Brown Carrick	EO	1			-14,100	
				15	+6,600			
75	Lanark	Lanark Ch. Sp.	EI	25	-19,680	+12,000	+18,120	-3,000
76	Linlithgow							
	– <i>Old Series</i>	Mount Airy	DI	5	-17,160	+14,520		0
				9	-17,160	+14,520	0	
	– <i>New Series</i>	Lanark Ch. Sp.	EO	13	-19,680	+12,000		+39,240
63	Nairn	Cairn Glasher	EI	12		0		0
				13	0			0
	Orkney & Shetland <sup>i</sup>							
55b	Orkney	Foula	EO	73A		-23,680	-250,740	
55a	Shetland	Foula	EO	34	+39,680			
				55			+2,700	-18,420
	Fair Isle	Foula	EO	69	+71,360		-211,300	
	Foula	Foula	EI	54	-12,680	+19,000	+8,400	-12,720
83	Peebles	Dunrich	EI	17	-13,200	+18,480	+15,840	-5,280
69	Perth & Clackmannan	Ben Cleugh	EU	133	-31,580	+100	+100	-21,020
74	Renfrew	Broadfield	EI	11	-21,120	+10,560	+19,800	-1,320
	Ross & Cromarty <sup>j</sup>							
61	(mainland)	Scournalapich	EU	113	-23,760	+7,920		0
				120	-23,760	+7,920	0	
58	Lewis <sup>h</sup>	Cleisham	EI	44	0		+5,280	-15,840
	Flannan Is <sup>k</sup>			k				
	Rona <sup>l</sup>			l				

<i>map</i>	<i>county</i>	<i>origin</i>	<i>cat.</i>	<i>sheet</i>	<i>west n/l</i>	<i>east n/l</i>	<i>north n/l</i>	<i>south n/l</i>
	Sula Sgeir <sup>l</sup>							
86	Roxburgh							
	– <i>Old Series</i>	Rubers Law	DI	26	-14,850	+16,830	+2,640	-18,480
	– <i>New Series</i>	Lanark Ch. Sp.	EO	1			+18,120	-3,000
				28A	+107,040			
84	Selkirk	Sandhope Heights	EI	14	-24,420	+7,260	+2,640	-18,480
72	Stirling, <sup>f</sup>							
	– <i>Old Series</i>	Corkmulaw	DI	28	-7,920	+23,760	+5,940	-15,180
	– <i>New Series</i>	Lanark Ch. Sp.	EO	37	-19,680	+12,000		+60,360
56	Sutherland	Ben Clibrig	EI	63	-29,920	+1,760	+3,520	-17,600
80	Wigtown							
	– <i>Old Series</i>	Knock of Luce	BI	18	-8,400	+23,280	+19,420	-1,700
	– <i>New Series</i>	Brown Carrick	EO	2	-25,080	+6,600	-119,700	

<sup>a</sup> Huntingdon (det.) is included with Bedford

<sup>b</sup> parts of Cheshire at 1:2500 are included with Lancashire

<sup>c</sup> St Paul's home sheet was variously, according to series, Middlesex 17, or London 7, K, or 5

<sup>d</sup> administrative county area; for complete ancient county see note (c) and London

<sup>e</sup> including detached parts

<sup>f</sup> Dumbarton (det.): first edition was included with main county, but for subsequent editions it was unified with Stirling (Old and New Series)

<sup>g</sup> here signifies the Outer Hebridean chain from Harris to Berneray

<sup>h</sup> numbered in separate series

<sup>i</sup> divided in 1889 into the separate counties of Orkney and Zetland; thereafter technically unified counties

<sup>j</sup> before 1889 were unified counties, thereafter a single county

<sup>k</sup> inset on Lewis sheet 48, with geographical sheet lines

<sup>l</sup> inset on Lewis sheet 1, with geographical sheet lines

## *Ordnance Survey County Series plans – origins and sheet line data*

### *Ireland*

Ordnance Survey six-inch scale mapping started in Ireland, before the completion of and well before the adjustment of the Principal Triangulation. Consequently the geographical positions of the county origins, as well as the directions of sheet line north therefrom, were provisional and not consistent. Later, the preparation of the one-inch map required the county plans to be brought into line as far as possible, and an adjustment was carried out at Southampton of which only the results have survived. These are a set of ‘county twists’ each of which has to be applied to the relevant county series en bloc and has to be utilised in all computations concerning sheet lines.

On completion of the adjustment of the Principal Triangulation geographical positions became available for some of the county origins, in total less than half, leaving the remaining county series rather floating. However, sufficient data is available to enable the present compiler to perform an adjustment correct to about ten feet for the remaining county origins, and the results are included in the listing below, it should be noted that the names in use are those which were current in the mid-nineteenth century.

The defining elements of the Irish county series plans are the same as those for the plans subsequently drawn for Great Britain, although the sheet sizes are different but not obviously different, and some sheets are displaced from the general sheet line blocks.

#### *County twist:*

When positive, sheet line is *east* of true north at the county origin; when negative is *west*.

#### Sheet dimensions

Six-inch full sheet                    32,000 by 21,000 feet

1:2500 sheet                            8,000 by 5,250 feet

<i>map</i>	<i>county</i>	<i>origin</i>	<i>latitude N</i>		<i>longitude W</i>		<i>county twist</i>	<i>home sheet with its neat line co-ordinates</i>				
			<i>provisional</i>	<i>adj *</i>	<i>provisional</i>	<i>adj *</i>		<i>west</i>	<i>east</i>	<i>north</i>	<i>south</i>	
2	Antrim	Knocklayd	55° 09' 42"69	43"575	6° 15' 00"71	00"168	-11"90	8	-31,400	+600	+15,840	-5,160
								¶ 1	-11,082	+20,918	+55,540	+34,540
4	Armagh	Armagh Observatory Transit	54 21 10.53	10.507	6 38 55.82	55.825	-18.76	12	-17,000	+15,000	+11,000	-10,000
24	Carlow	Mount Leinster	52 37 03.47	04.3	6 46 46.96	46.1	+16.41	23	-14,600	+17,400	+200	-20,800
8	Cavan	Cavan Church Spire	53 59 37.21	37.2	7 21 35.31	35.3	-13.27	20	-24,400	+7,600	+17,700	-3,300
27	Clare	Ennis Church Tower	52 50 44.07	44.7	8 58 51.44	50.8	-10.19	33	-27,200	+4,800	+11,800	-9,200
31	Cork	Mount Hillary	52 06 34.72	35.350	8 50 20.50	19.844	-4.69	31	-28,000	+4,000	+17,700	-3,300

7	Donegal	Letterkenny Church Sp.	54	57	02.84	03.590	7	44	18.53	17.937	-14.48	53	-13,000	+19,000	+15,400	-5,600
5	Down	Slieve Donard	54	10	48.28	48.3	5	55	12.05	12.1	-18.10	49	-18,200	+13,800	+16,700	-4,300
19	Dublin	Dublin (Dunsink) Observatory Transit	53	23	13.00	13.0	6	20	17.51	17.5	-28.80	14	-4,300	+27,700	+17,400	-3,600
												¶ 9	+59,700	+91,700	+48,900	+27,900
												¶ 16	+59,700	+91,700	+9,600	-11,400
6	Fermanagh	Devenish Round Tower	54	22	12.97	13.7	7	39	19.45	18.9	-17.99	22	-4,200	+27,800	+5,820	-15,180
14	Galway	Galway Church Spire	53	16	20.49	21.070	9	03	11.60	10.981	+3.02	94	-11,500	+20,500	+3,400	-17,600
30	Kerry	Tralee Church Spire	52	16	13.61	14.200	9	42	11.99	11.296	-3.11	29	-13,200	+18,800	+15,200	-5,800
20	Kildare	Kildare Round Tower	53	09	27.68	28.493	6	54	41.86	40.871	-17.73	22	-23,600	+8,400	+15,600	-5,400
25	Kilkenny	St Mary's Church Spire, Kilkenny	52	39	04.41	05.1	7	15	07.00	06.4	-17.59	19	-20,400	+11,600	+9,500	-11,500
21	King's Co. †	Tullamore Church	53	16	17.64	18.298	7	28	50.91	50.339	-24.49	17	-9,000	+23,000	+11,500	-9,500
12	Leitrim	Carrick-on-Shannon Church Spire	53	56	48.43	48.4	8	05	37.74	37.7	-26.82	31	-11,000	+21,000	+5,000	-16,000
28	Limerick	Rice's Monument (Limerick)	52	39	27.61	28.2	8	37	40.72	40.1	-4.34	5	-15,500	+16,500	+16,400	-4,600
1	Londonderry	Benevenagh	55	06	49.03	49.862	6	54	56.53	56.054	-15.62	6	-1,700	+30,300	+12,300	-8,700
15	Longford	Longford Church Spire	53	43	51.35	52.0	7	47	57.85	57.3	-14.03	13	-28,000	+4,000	+6,200	-14,800
												¶ 1	+20,000	+52,000	+90,200	+69,200
18	Louth	Dundalk Church Spire	54	00	29.73	29.7	6	24	03.43	03.4	-24.00	7	-12,100	+19,900	+9,100	-11,900
10	Mayo	Castlebar Church Tower	53	51	15.07	15.120	9	17	58.72	58.698	-48.34	78	-22,900	+9,100	+6,200	-14,800
17	Meath	Wellington Testimonial (Trim)	53	33	06.13	06.9	6	47	35.17	34.3	+32.82	36	-22,100	+9,900	+7,900	-13,100
9	Monaghan	Monaghan Church Twr	54	14	53.06	53.1	6	58	07.38	07.4	-26.81	9	-22,000	+10,000	+14,000	-7,000
22	Queen's Co. ‡	Maryborough (Port- laoise) New Church	53	02	01.31	02.0	7	18	10.24	09.5	-4.69	13	-8,000	+24,000	+14,000	-7,000
13	Roscommon	Roscommon Church	53	37	43.73	43.7	8	11	24.87	24.9	-30.27	39	-26,800	+5,200	+12,000	-9,000
11	Sligo	Cooper's (Markree) Observatory Transit	54	10	30.17	30.131	8	27	24.93	24.581	-30.48	26	-29,000	+3,000	+3,800	-17,200
29	Tipperary	Cashel Church Spire	52	30	53.48	54.144	7	53	06.71	06.045	-9.47	61	-3,000	+29,000	+10,500	-10,500
3	Tyrone	Mullaghcarn	54	40	26.38	27.2	7	12	31.47	31.0	-19.63	26	-23,900	+8,100	+6,600	-14,400
32	Waterford	Knockanaffrin	52	17	18.46	19.135	7	34	53.71	52.941	-15.85	6	-17,100	+14,900	+5,200	-15,800
16	Westmeath	Mullingar Church	53	31	27.91	28.6	7	20	20.88	20.1	-7.22	19	-11,000	+21,000	+14,700	-6,300
26	Wexford	Forth Mountain	52	18	56.00	56.829	6	33	42.37	41.461	-5.19	42	-6,200	+25,800	+3,200	-17,800

23 Wicklow Lugnaquilla 52 57 59.94 00.710<sup>+</sup> 6 27 50.23 49.370 -16.40 28 -23,400 +8,600 +50 -20,950

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<sup>†</sup> now Offaly

<sup>‡</sup> now Laois

<sup>+</sup> i.e. 52° 58' 00.710"

<sup>¶</sup> sheet displaced from the regular sheet pattern for the county

\* adjusted: if position of origin is given to three places, adjusted by OS; if to one place, adjusted by Brian Adams, 2004



