

**Falkland Islands Government**

**Department of Mineral Resources**

**Time taken to carry out Seismic Surveys in Falkland Islands  
Designated Area**

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## **Time taken to carry out Seismic Surveys in Falkland Islands Designated Area**

To date there have been 16 seismic survey carried out in and around Falklands waters. The Falkland Islands Government holds the daily operational information relating to 12 of these surveys.

These surveys are:-

- |  |                          |
|--|--------------------------|
| ○ Spectrum Speculative Survey 1993   | Northern Designated Area |
| ○ Spectrum Infill Survey 1995  | North Falklands Basin    |
| ○ IPC Proprietary Survey 1996  | North Falklands Basin    |
| ○ Amerada Hess 1997 Proprietary Survey   | North Falklands Basin    |
| ○ Lasmo Proprietary Survey 1997  | North Falklands Basin    |
| ○ Special Cooperation Area Survey 1997 collected by SMNG and processed by Spectrum | Southern Basins          |
| ○ Desire Petroleum Proprietary Survey 1998   | North Falklands Basin    |
| ○ Veritas Survey of Open Area 2000   | North Falklands Basin    |
| ○ Desire 2004 3D Survey  | North Falklands Basin    |
| ○ Falklands Oil and Gas 2005-2006  | Southern Basins          |
| ○ Borders and Southern 2005  | Southern Basins          |
| ○ Rockhopper Survey 2006   | North Falklands Basin    |

All the surveys excepting Desire's 2004 and part of Shell's 1997 Proprietary surveys collected 2D data sets.

The surveys that FIG does not hold are the operational data sets for GSI and Western Academic Surveys in 1977-1978, Geco-Prakla (now Western Geco) survey of 1992-1993, which are all 2D surveys, and Shells Proprietary Survey of 1997 which combined collection of 2D and 3D data.

Under the terms of Falkland Islands Government legislation geophysical exploration companies were originally required to provide weekly progress reports, these are now required daily. The majority of the surveys have produced daily reports which have been supplied to FIG, and Spectrum produced 3 seismic reports that contained their daily operational breakdown. It is these daily reports that have been used to produce the data analysed in this report.

The data provided by the companies varies in detail and terminology but every effort has been made to standardize the data sets. The data provided records of all the activities undertaken during the surveys.

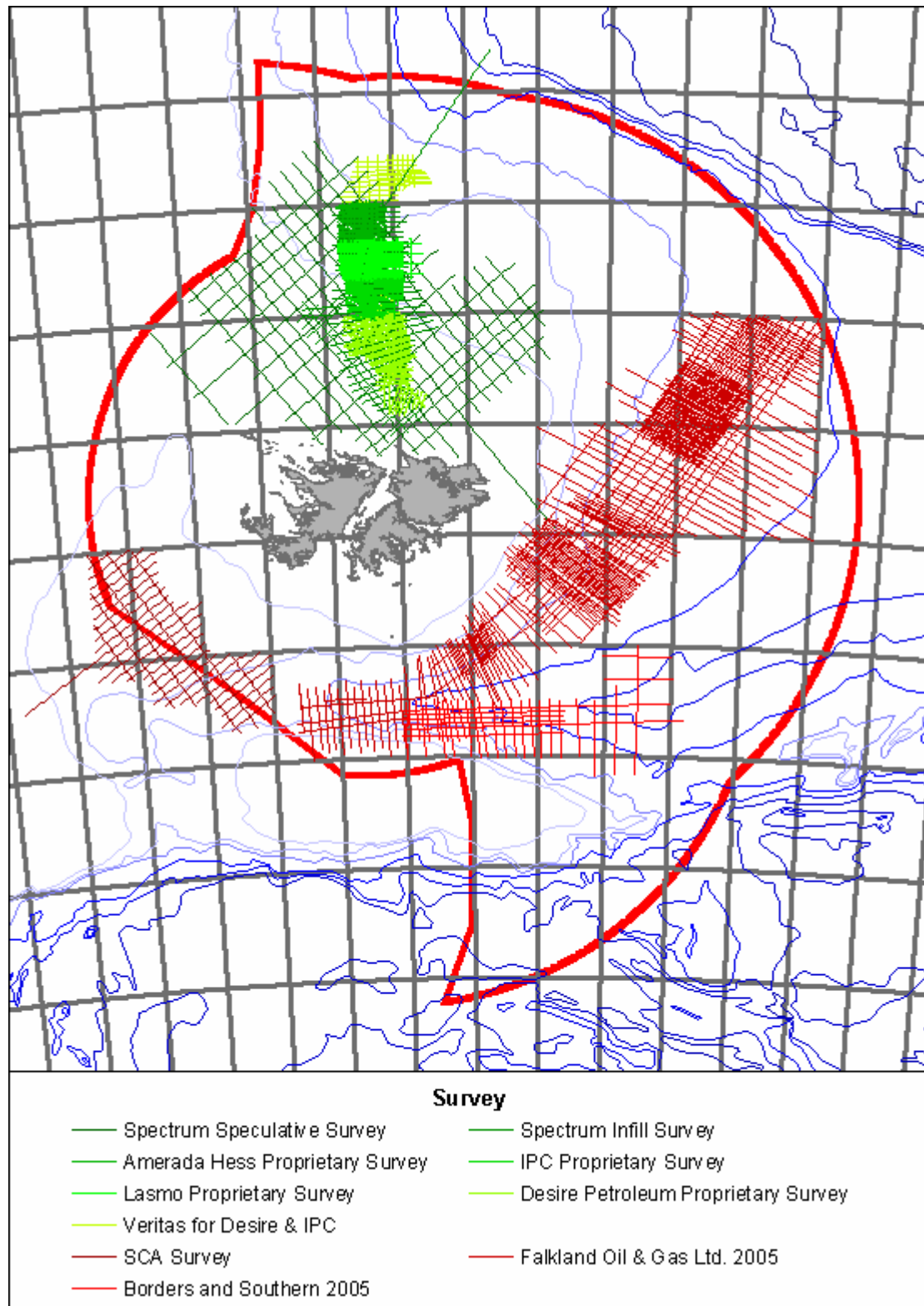
For this report the data collected has been split into 3 divisions:-

- 1) Production, which includes time taken working on lines and moving between seismic lines;
- 2) weather;
- 3) standby time which includes mobilisation time in Falklands waters, time taken to set and recover the surveying equipment, mechanical repairs to the ship and equipment and disruptions to the survey caused by other vessels and marine mammals.

The way companies have operated also affects the data sets collected. During some of the surveys the streamer has been left in the water during poor weather, in other surveys the streamer has been recovered aboard the vessel and occasionally the

surveying vessel has steamed to shelter. During the production of this report these actions have been taken in to account. Where possible to make a clear distinction the actions of recovering equipment and sheltering due to weather have been recorded as weather delays.

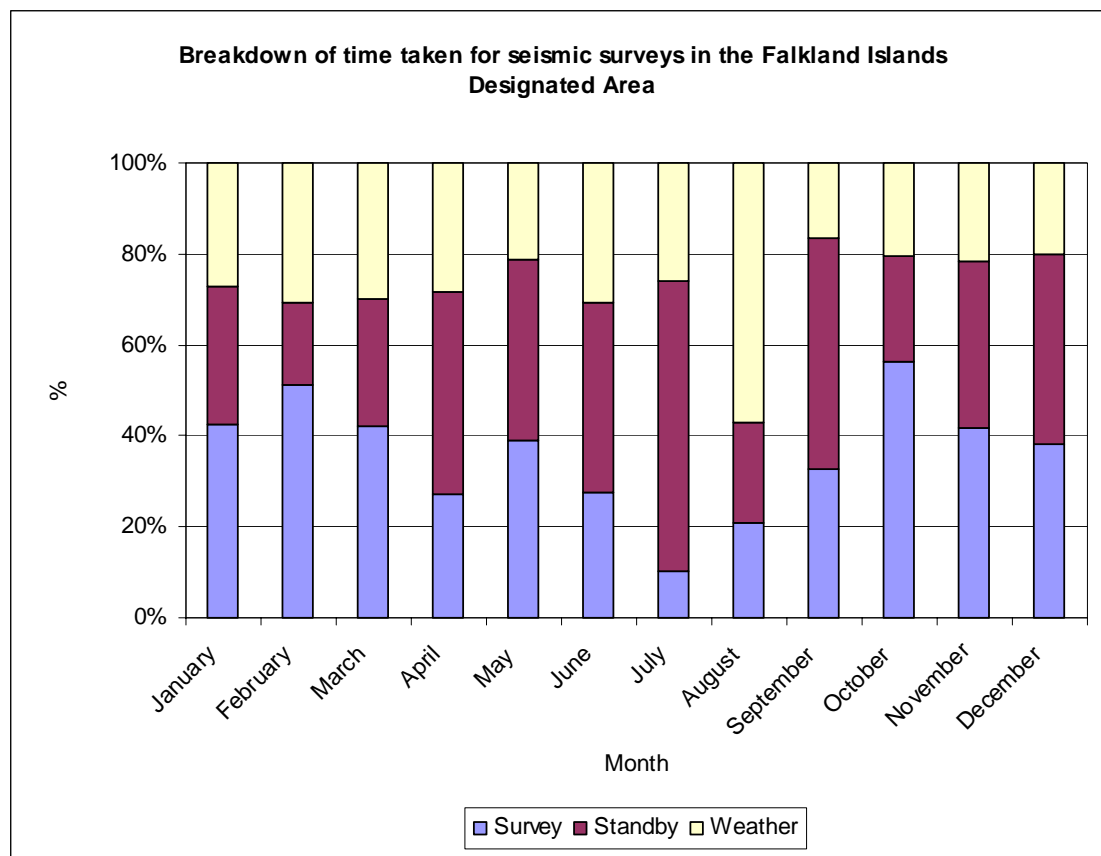
The maps below shows the location of the surveys that have produced the data used in this report.



The surveys from the northern part of the Designated Area are shades of green, the ones over the southern basin are shades of red. The northern surveys are mostly focused on the licensed portion of the North Falklands Basin, whilst the southern ones are spread cross the South Falklands Basin and the Falklands Plateau.

### Falklands Designated Area

The table and chart below shows the hours taken to undertake surveys and the percentage of total time for all surveys in the Falkland Islands waters.



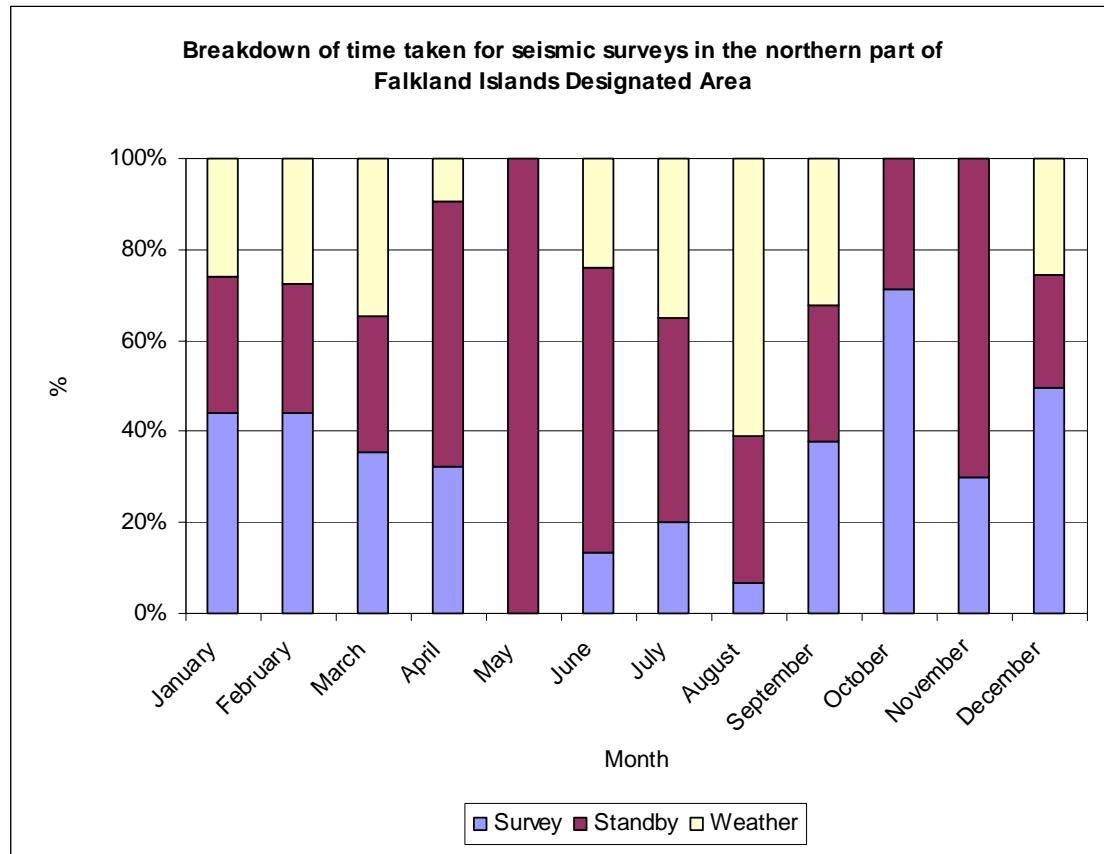
Month	Days Surveying	Hours			Percent		
		Survey	Standby	Weather	Survey	Standby	Weather
January	146	1489.3	1058.1	950.7	43	30	27
February	56	685.4	247.5	411.1	51	18	31
March	85	857.4	573.6	613.0	42	28	30
April	100	659.7	1072.8	679.3	27	44	28
May	59	550.6	560.7	299.2	39	40	21
June	57	376.2	571.1	418.7	28	42	31
July	62	150.7	953.0	384.4	10	64	26
August	64	324.5	342.6	880.9	21	22	57
September	60	469.2	734.7	236.1	33	51	16
October	35	474.1	193.9	172.0	56	23	20
November	44	442.1	383.8	230.1	42	36	22
December	107	976.6	1073.7	517.7	38	42	20
Overall	876	7455.7	7765.3	5793.1	35	37	28

Data has been collected in the Designated Area during every month of the year. Only during October and November is data limited. October is represented by completion of 1 survey in the North Falklands Basin and the collection of a second in the south. November is represented by the first 2 weeks of a survey in the North Falklands Basin and the collection in the south.

A total of 850 days have been spent surveying in the Designated Area. The table and chart show weather downtime rates of between 16 % and 57 %. The average weather down time for all surveys undertaken in all Falklands waters is 28 %. For 8 months of the year weather downtime is less than 30 %. Only during August does weather down time exceed 32 %.

### Northern part of Falklands Designated Area

The data collected from the northern survey comes from Spectrum's 2 speculative surveys, the proprietary surveys of IPC, Amerada Hess, Lasmo, and Desire Petroleum, and the Veritas Survey of Open Area 2000 carried out by IPC.



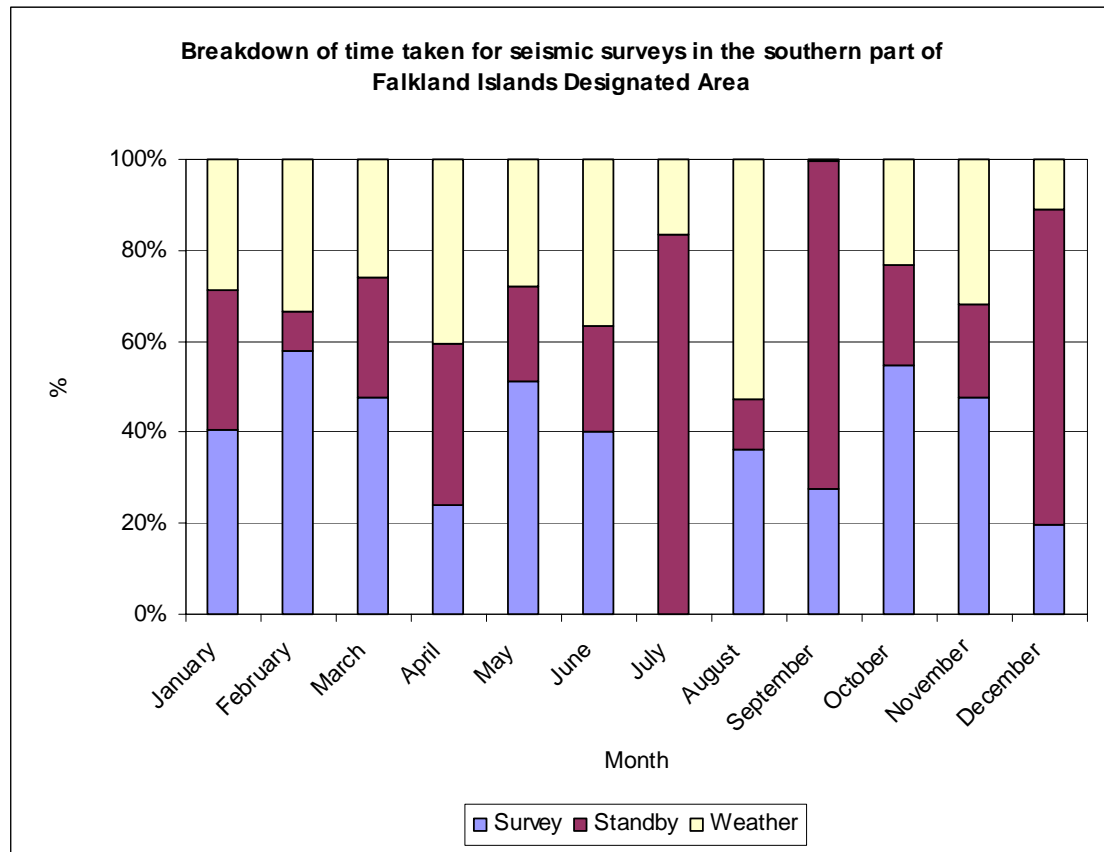
Month	Days Surveying	Hours			Percent		
		Survey	Standby	Weather	Survey	Standby	Weather
January	89	937.2	637.5	555.3	44	30	26
February	28	295.8	191.1	185.2	44	28	28
March	39	330.1	280.8	325.1	35	30	35
April	40	312.3	566.3	93.2	32	58	10
May	14	0.0	336.0	0.0	0	100	0
June	27	85.7	405.1	155.2	13	63	24
July	31	150.7	331.5	261.9	20	45	35
August	33	54.2	260.3	489.5	7	32	61
September	30	272.0	215.3	232.7	38	30	32
October	4	68.4	27.6	0.0	71	29	0
November	14	100.3	235.7	0.0	30	70	0
December	66	784.1	392.1	407.8	50	25	26
Overall	416	3390.6	3879.2	2705.8	34	39	27

The table and chart show weather downtime rates of between 10 and 61 %. The average weather down time for all surveys undertaken in all northern part of Falklands waters is 27 %.

The months of May, October and November should be discounted because of the small data set, with 14 surveying days, 4 surveying days and 14 survey days respectively. Of the remaining months 5 months have weather downtime of less than 30 % , 3 months have weather down time of between 30 % and 35 %. During August weather downtime was 61 %.

### Southern part of Falklands Designated Area

The table and chart below shows the hours taken to undertake surveys and the percentage of total time for all surveys in the southern part of the designated area and includes data from the Special Area Survey and GSI's surveys for FOGL and Borders and Southern Petroleum.



Month	Days Surveying	Hours			Percent		
		Survey	Standby	Weather	Survey	Standby	Weather
January	57	552.1	420.6	395.4	40	31	29
February	28	389.6	56.4	226.0	58	8	34
March	46	527.4	292.8	287.8	48	26	26
April	60	347.4	506.5	586.1	24	35	41
May	45	550.6	224.7	299.2	51	21	28
June	30	290.5	166.0	263.5	40	23	37
July	31	0.0	621.5	122.5	0	84	16
August	31	270.4	82.2	391.4	36	11	53
September	30	197.2	519.4	3.5	27	72	0
October	31	405.7	166.3	172.0	55	22	23
November	30	341.8	148.1	230.1	47	21	32
December	41	192.5	681.6	109.9	20	69	11
Overall	460	4065.1	3886.1	3087.3	37	35	28

The data above shows the weather downtime for the 3 surveys undertaken in the southern basins. There is at least a whole months data available for every single

month of the year. However the months of July, September and December are affected by the surveying vessel being sent in to dry dock and as such provide no useful operational information. The weather downtime over the year varies between 11 % and 53 % , with August being the worst. There is a month with 41 % downtime, 4 months with downtime between 30 % and 40 % and 4 months with weather downtime of less than 30 %. The average weather downtime in the southern basins in 28 % over the entire year is 28 %. The average weather down time is 28 %.