

Southern Hemisphere Ice and Meteorological Data in the Whaling Museum and Vestfold Archives - Sandefjord, Norway

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Introduction

Sandefjord was a major centre for companies engaged in whaling activities in the southern hemisphere and Antarctic waters from 1905 to the late 1950s. Both the Whaling Museum and the regional Vestfold Archive, in Sandefjord, hold material generated by companies operating from Sandefjord and Tønsberg. This material consists of *dagboks* or *dekksdagboks* (logbooks) and *fangst-dagboks*, or whale catch books.

The Whaling Museum is located at Museumsgaten 39, about ten minute's walk from Sandefjord rail station. Opening times and contact details can be found at <http://www.hvalfangstmuseet.no>. The webpage has an English translation.

The Vestfold Archive is located at Hinderveien 10, Sandefjord and a bus or taxi is needed to reach the archive from the rail station. Opening times and contact details can be found at <http://www.vestfoldarkivet.no>. Sandefjord is reached by rail in 2 hours and 17 minutes from Oslo Airport, route R10 (towards Skien) with a punctual, hourly service. Alternatively, Sandefjord-Torp Airport is a short distance away (by bus, 5 minutes to Torp rail station, then 5 minutes by rail to Sandefjord – route R10 towards Skien).

Overview

The archive of the Whaling Museum holds three relevant sets of documents. These are ships' logbooks (*dagbok*), engine room logs, (*maskingdagbok*) and catch books (*fangstdagbok*). In addition there are complete volumes of *International Whale Statistics*, issued by the International Whaling Commission, most of which have been digitized. The relevance of these volumes will be explained in a section below. The Museum holds 171 logbooks of which 108 are for vessels in Antarctic waters. Ninety-three of these logbooks have been examined and all contain data of exceptional quantity and quality. There are 74 engine room logs and at least 6 catch books. These are the most relevant and obvious documents held by the Museum and it is possible that an exhaustive search will find additional material. Experience indicates that sea-ice and meteorological observations can be found in unlikely documents.

The Vestfold Archive holds 83 logbooks of which about 6 have been examined and found to be of the same type and quality as the logbooks found at the Whaling Museum. Most of the logbooks are for vessels operating in Antarctic waters, but a significant number of logs cover whaling activities in the South Atlantic, off the coast of the former French Congo, and at least one vessel hunting on the Peruvian whaling grounds. An exhaustive search is required to determine what other relevant material may be found in this archive.

It should be noted that all the logbooks are written in Norwegian, and most in old Norwegian, and in some cases with words similar to Danish.

Whaling Museum Document Descriptions

Relevant documents can be divided into three categories

- Dagbok (logbook)
- Fangst dagbok (catch book)
- Maskingdagbok (engine room log)

Dagbok (pre 1920)

Of the early Antarctic logbooks archived at the Museum, those from the late 19th century such as the *Jason* (ref. 0186) have wind directions and descriptive wind forces and weather recorded every four hours, with no instrumental observations. The format of the logbook is typical for the 19th century with two days per page. The early 20th century logbooks such as the *Tulla*, illustrated below, (ref. 0166) are one day per page with observations every four hours. Barometric pressure observations are recorded in centimetres and tenths of a centimetre, however these were not recorded in every logbook and were often omitted when the vessel was hunting whales. Estimated and/or observed noon positions are regularly recorded, except when near a known landmark, or hunting near the ice pack edge.

S/Skib "Tulla" paa Reise fra P. Nealy til Landnæst Grønland												133								
Time	K.	F.	Vind.	St. Kurs.	Afd.	Dev.	Bel. Kurs.	Dist.	Lod-skud.	Baro-meter.	Vandhøide i Pumpen.	Til	Onsdag	Middag	den	1911				
1.																				
2.			SVVly	NV		1/4	NV 1/4 V 8'			73,7	2°	Rude								
3.																				
4.																				
5.																				
6.			Do	Nord		0	Nord 10'			74,2	2°									
7.																				
8.																				
9.																				
10.																				
11.			Do	NV 1/4 V	8	1/4	NV 1/4 V 10'			74,2	2°									
12.																				
1.																				
2.																				
3.			Do	Do	8	1/4	Do 3'			75,1	2°									
4.																				
5.																				
6.																				
7.																				
8.																				
9.			SVly																	
10.			Do																	
11.			Do	NV 1/4 V	1/4		NV 1/4 V 16'			75,7	2°									
12.			Vindly																	
												Fr. Lgd.	Pk. Lgd.	Obs. Lgd.	Misvan.					
												0°16'	28°18'	29°22'	8°04'					
Gen. Kurs.												Gen. Dist.	Fr. Br.	Afvign.	Pk. Br.	Obs. Br.				
NV 13° V												47'	0°46'	10,6	55°22'	55°44'				

Logbook page from *Tulla* (ref. 0166), 15 October 1911

this order and recorded every four hours. Wind directions are according to the cardinal points of the compass and the wind force is according to a seven-point scale. Note that this is not a Beaufort Scale. Column 4, '*Sjøgang, Barometer, Termometer*', are sea swell, barometric pressure and air temperature. Observations are recorded in this order although many of the logbooks do not record the air temperature. The observations of sea swell are according to a seven-point scale.

The various scales used for making observations are printed on a page at the beginning of the logbook marked '*Tegnforklaringer*' or legend. The three main scales are given below. It should be noted that some of the terms used are not modern Norwegian, but are similar to Danish. Where a Danish word has been substituted in the translation below it is designated by a 'D'.

Vindstyrke (Wind Speed)		
Tegn (sign)	Betydning (significance)	English Translation
0	Stille	Quiet or still
1	Svak	Gentle
2	Lett	Easy
3	Frisk	Fresh
4	Sterk	Strong
5	Storm	Storm
6	Orkan	Hurricane

Vært (Weather)		
Tegn (sign)	Betydning (significance)	English Translation
a	Kart	Clear
b	Lett-skyet	Light rain
c	Halvklart	Half clear
d	Skyet	Cloudy (D)
e	Overskyet	Overcast
f	Meget mørkt og truende	Very cloudy and threatening
g	Byget	Showers?
h	Disig	Hazy
i	tåket	Foggy
k	Regn	Rain
l	Sne	Snow
m	torden	Thunder

Sjøgang (Swell)		
Tegn (sign)	Betydning (significance)	English Translation
0	Stille	Quiet or still
1	Svak	Weak or gentle
2	Lett	Easy
3	Frisk	Fresh
4	Sterk	Strong
5	Svær	Severe (D)
6	Vældig	Not translated

In addition to the above scales, the logbooks contain a table headed '*Havbunnens Beskaffenhet*' or Condition of the Seabed. The remainder of the left-hand page, columns 5-13, concern courses steered, compass deviation and corrected courses.

The right-hand page contains astronomical observations and remarks. This is where most ice

observations will be found. The example page above for the *Rusken*, contains, in the first four-hourly section, references to 'iskanten', or the edge of the ice. At the bottom of the right-hand page is the vessel's position. The box marked *Br. Ifølge bestikk* is the estimated latitude and the box marked *Lgd. Ifølge bestikk* is the estimated longitude. These positions are estimated from the vessel's course speed and drift over the preceding 24 hour period. In the adjacent boxes, the word *bestikk* is substituted by *obs.*, and these are the corresponding observed positions. Longitudes marked 'V' are west and those marked 'O' are east. These boxes are only completed on those days where a solar or celestial observation is possible. At the very bottom of the page is another date. This date should not be associated with any observations on the page, as it is the date that the vessel's commander examined and signed off the log page.

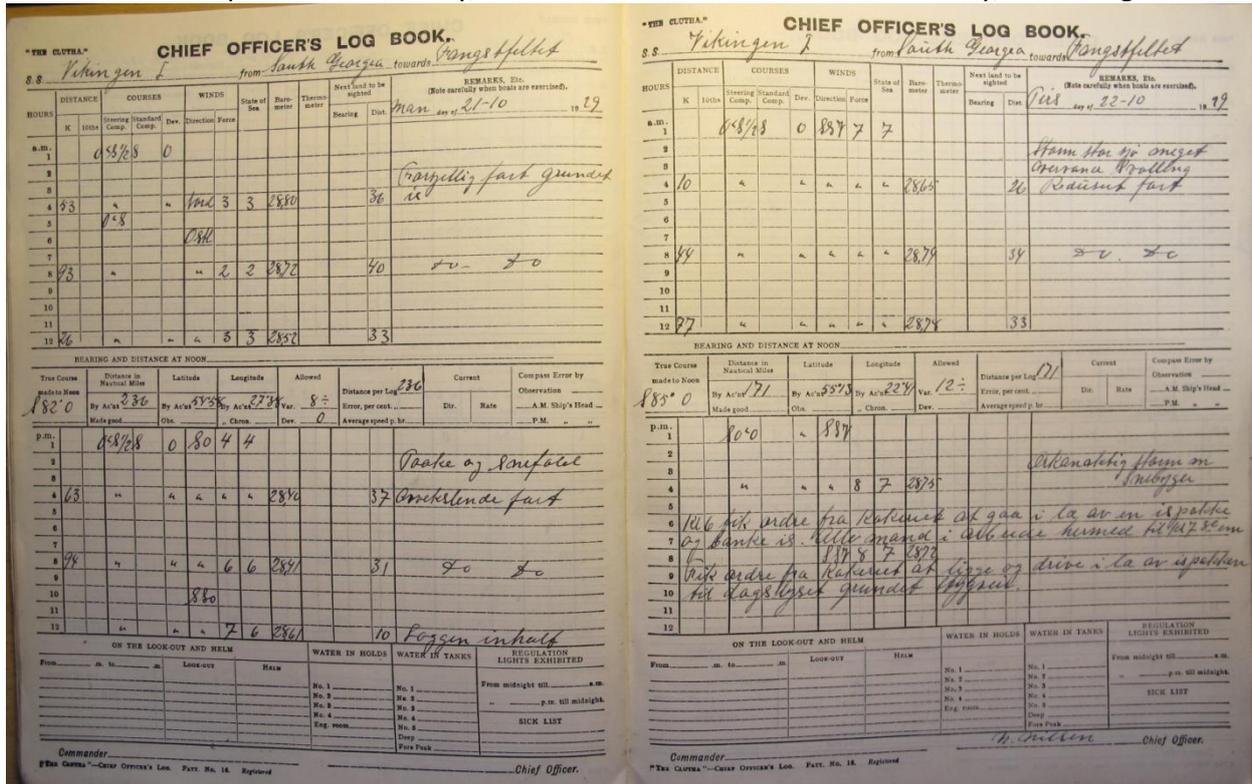
As already mentioned, later logbook formats are a variation on that of the *Rusken*. The first of these is the logbook of the *Norvegia*, a research vessel. The differences are mainly the addition of columns concerned with navigation and astronomical observations. There are also more entries at the bottom of the right-hand page concerning the information used to determine the vessel's noon position. The meteorological observations are recoded exactly as the example of the *Rusken*, but in this logbook, illustrated below, the four-hourly air temperatures have been recorded. Note also the references to the position of the factory ship *Pythia* and '10.40 stop i mask megit pakkis' or at '10.40am, stopped engines, much pack ice'. References to other vessels are a useful cross-check of positions.

The image shows two pages from a logbook. The left page is from the vessel 'Lyst Skuteren' on 19/20 November 1920. It features a table with columns for time (1-12), wind direction (Styret kurs), wind force (Milesende kurs), drift (Drift), and position (Br. and Lgd. marked with V or O). The right page is from 'Gyftstücken S. S.' on 11 days 1 span. It has a similar table structure but includes additional columns for astronomical observations (Klokkeslett og tidspunkt for sol og stjerneobservasjoner) and other data. Handwritten notes in Norwegian are present on both pages, including 'Hvorn maatte da igjen forsendes 50 over' and 'Lett igang 3¹⁰ fm'.

Logbook page from *Novegia* (ref. 0072/1) - 19/20 November 1928

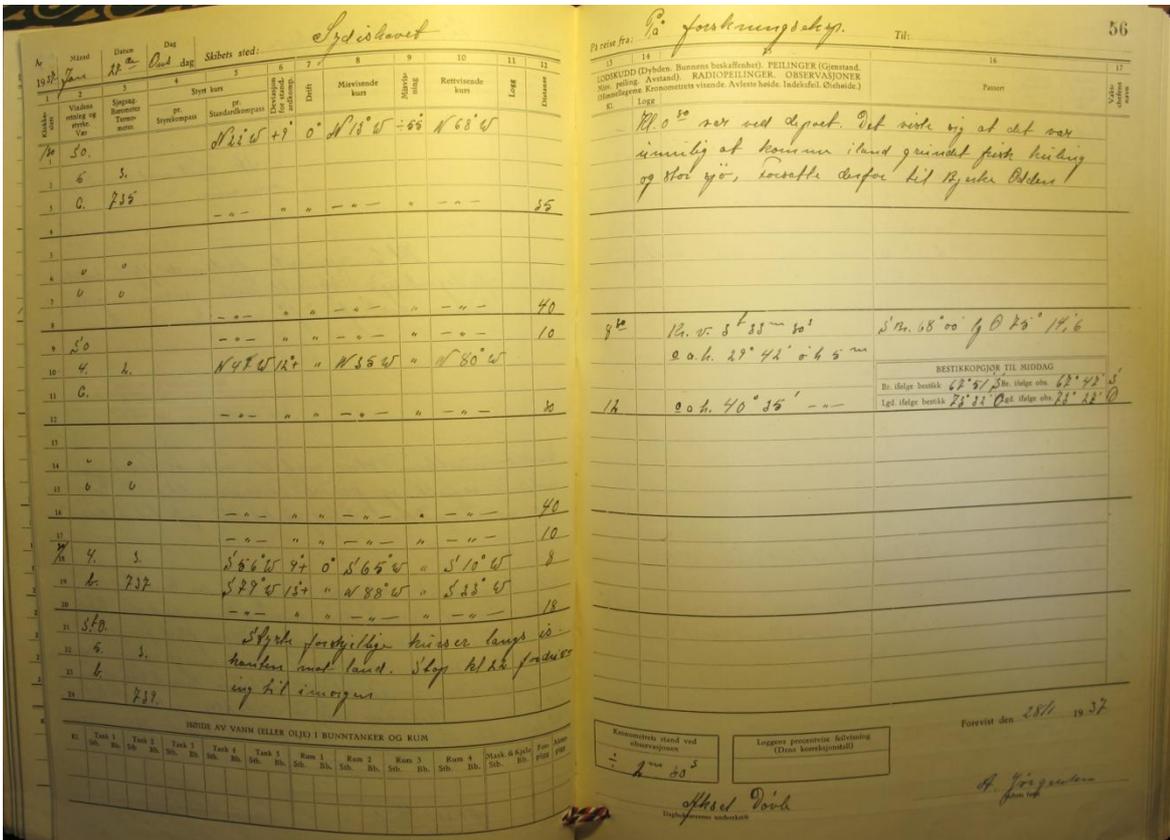
There is one logbook from the 1920s in the collection, the *Vikingen I* (ref. 0175), that does not conform to the format of any of the other logbooks archived at the Whaling Museum. This is an English pattern chief officers' logbook, 1 day per page, printed in English and completed in Norwegian. An example page, illustrated below, has four-hourly wind direction, wind force, sea state, barometric pressure, weather remarks, and what appears to be air temperature

observations, but entered in the wrong column (headed Dist.). The column headed 'Thermometer' has no observations. This is the same pattern logbook completed by vessels of the Falkland Islands Dependencies Survey, and archived at British Antarctic Survey, Cambridge



Logbook page from Vikingen (ref. 0175) – 21-22 October 1929.

Dagbook (1930s-1940s) – Format and Observations



Logbook page from Faren (ref. 0033) – 28 January 1937

The type and format of logbooks of the 1920s continued into the 1930s. About the middle of the decade, a revised format was introduced with significant differences in the way data was recorded. It is essential to note this change because different scales were used to record wind speed and sea swell. A logbook page from the *Firen* in 1937 is illustrated above. The first point of note is that the logbook conforms to the civil day with the first entry at the top of the page at 1am and the final entry at midnight. This different format is simple to identify as the boxes for the noon position are printed half way down the right-hand page corresponding to the noon observations on the left-hand page. The meteorological observations are recorded as before but now in columns 2 and three. The year month and day are now recorded at the top left of the page. The important difference is that a new set of scales are used to record data. The wind force is now a thirteen point scale, there are additional weather types recorded, and the sea swell or sea state is on a ten-point scale. The scales are reproduced below.

Vindstyrke (Wind Speed)			
Tegn (sign)	Betydning (significance)	English Translation	Beaufort Scale
0	Stille	Quiet, calm	Calm
1	Flau vind	Light air	Light air
2	Svak vind	Gentle wind (D)	Light breeze
3	Lett bris	Light breeze	Gentle breeze
4	Laber bris	Gentle breeze	Moderate Breeze
5	Frisk bris	Fresh breeze	Fresh Breeze
6	Liten kuling	Small gale (D)	Strong breeze
7	Stiv kuling	Stiff gale (D)	Moderate gale
8	Sterk kuling	Strong gale	Fresh gale
9	Liten storm	Small storm	Strong gale
10	Full storm	Storm	Whole gale
11	Sterk storm	Strong storm	Violent storm
12	orkan	Hurricane	Hurricane

Vært (Weather)		
Tegn (sign)	Betydning (significance)	English Translation
a	Klart	Clear
b	Lett-skyet	Light rain
c	halvklart	Half clear
d	Skyet	Cloudy (D)
e	Overskyet	Overcast
f	Meget mørk og truende	Very cloudy and threatening
g	Byget	Showers?
h	Disig	Hazy
i	Tåket	Foggy
j	Yr (duskregn)	Drizzle
k	Regn	Rain
l	Sne	Snow
m	torden	Thunder

Sjøgang (Swell)			
Tegn (sign)	Betydning (significance)	English Translation	Douglas Swell Scale
0	Havblikk	Calm sea	No swell
1	Smul sjø	Smooth sea	Very Low (short and low wave)
2	Svak sjø	Slight sea	Low (long and low wave)
3	Nogen sjø	Some sea	Light (short and moderate wave)
4	Megen sjø	Much sea (D)	Moderate (average and moderate wave)
5	Høi sjø	Loud sea	Moderate rough (long and moderate wave)
6	Hul sjø	Hollow sea	Rough (short and heavy wave)
7	Svært hav	Rough sea	High (average and heavy wave)
8	Veldig oprørt hav	Very agitated sea	Very high (long and heavy wave)
9	Uregelmessig sjø (svær skvalpesjø)	Irregular sea	Confused (wavelength and height indefinable)

Fangstdagbok

The Whaling Museum holds a collection of *fangstdagbok* or whale catch books. Seven catch books were examined, covering the years 1932-1937 for the factory ships *Ole Wegger*, *Solglimt* and *Thorshammer*, operating in the Weddell Sea and Indian Ocean sectors of the Southern Ocean. The vessels were operated by the Thor Dahl Shipping Company and the catch books are archived under the Company records. It is likely therefore that other company records held at the Whaling Museum will contain catch books and other documents with relevant data. An exhaustive search is still required. Example pages from the catch books are illustrated below.

5 Driftsoversikt for "Solglimt"

1. Dag	2. Datum	3. Middagsposisjon Bredde Lengde	4. Værforhold	5. Sjøgang	6. Sjøgang
Søndag	22/12	59° 32' 22" S 157° 22' 22" E	... f - h - 5 - 723	0' ± 0.3°	0' ± 0.3°
Mandag	23/12	59° 22' 22" S 157° 22' 22" E	... f - h - 5 - 723	0' ± 0.3°	0' ± 0.3°
Tirsdag	24/12	60° 12' 30" S 157° 22' 22" E	... f - h - 5 - 723	0' ± 0.3°	0' ± 0.3°
Onsdag	25/12	60° 12' 30" S 157° 22' 22" E	... f - h - 5 - 723	0' ± 0.3°	0' ± 0.3°
Torsdag	26/12	60° 12' 30" S 157° 22' 22" E	... f - h - 5 - 723	0' ± 0.3°	0' ± 0.3°
Fredag	27/12	60° 12' 30" S 157° 22' 22" E	... f - h - 5 - 723	0' ± 0.3°	0' ± 0.3°
Lørdag	28/12	60° 12' 30" S 157° 22' 22" E	... f - h - 5 - 723	0' ± 0.3°	0' ± 0.3°

Ukeproduksjon 4.985

Dag	1. Sert	2. Sert	3. Sert	4. Sert	5. Sert	6. Sert	7. Sert	8. Sert	9. Sert	10. Sert	Ukeproduksjon
Søndag	22/12	100	100	100	100	100	100	100	100	100	1000
Mandag	23/12	100	100	100	100	100	100	100	100	100	1000
Tirsdag	24/12	100	100	100	100	100	100	100	100	100	1000
Onsdag	25/12	100	100	100	100	100	100	100	100	100	1000
Torsdag	26/12	100	100	100	100	100	100	100	100	100	1000
Fredag	27/12	100	100	100	100	100	100	100	100	100	1000
Lørdag	28/12	100	100	100	100	100	100	100	100	100	1000

Anmerkninger:

22/12 Enkelte isfjell -
23/12 Enkelte isfjell -
24/12 Enkelte isfjell -
25/12 Enkelte isfjell -
26/12 Enkelte isfjell -
27/12 Enkelte isfjell -
28/12 Enkelte isfjell -

7 timers kjøp av 100 kg kjøtt opparbeidet

Behov for Fylling av Fiskeboller

Speske	Grøtt	Prese	Speske	Kjøtt	Ben
1000	1000	1000	1000	1000	1000

for uken: fra om 22/12 til om 28/12 1935

Dag	Antall hval innbragt				Føt oje produsert av				Apparat og Kjøtt			Syrgehalt %	
	Blå	Fin	Kval	Andre	Speske	Grøtt	Prese	Speske	Kjøtt	Ben	Speske		Kjøtt og ben
22	2	2	-	6	Speske						1250	1250	700
23	-	-	-	3							350	350	250
24	-	-	-	5							300	300	250
25	1	-	-	3							175	175	250
26	7	-	-	17							645	645	750
27	9	-	-	20							1200	1200	950
28	1	-	-	2							850	850	550
Sum	20	2	1	46	Speske	650					4920	4920	

Hval opparbeidet:

Dag	Sert	Antall	Lengde i engelske fot - kjøtt - dross eller melkefett
Søndag	Blå	2	120 110 100 90 80 70 60 50 40 30 20 10
Mandag	Blå	3	120 110 100 90 80 70 60 50 40 30 20 10
Tirsdag	Blå	2	120 110 100 90 80 70 60 50 40 30 20 10
Onsdag	Blå	1	120 110 100 90 80 70 60 50 40 30 20 10
Torsdag	Blå	4	120 110 100 90 80 70 60 50 40 30 20 10
Fredag	Blå	10	120 110 100 90 80 70 60 50 40 30 20 10
Lørdag	Blå	3	120 110 100 90 80 70 60 50 40 30 20 10
Sum	Blå	35	

Me. Andersen
Bemyntet

Whale catch book, factory ship *Solglimt* - 22-28 December 1935

14 Driftsoversikt for F_K "Thorshammer"

1. Dag	2. Datum	3. Middagsposisjon		4. Værforhold	
		Bredde	Lengde		
Søndag	23/2	68°27'S	17°15'W	4-6	SW 5. D. 1. Småer med isbiter
Mandag	24/2	68°26'S	17°42'W	1-8	29.05 NW 1. B. 1. ---
Tirsdag	25/2	67°51'S	16°01'W	1-4	29.50 SW 3. D 3/4. 1. Småer med isfjell
Onsdag	26/2	68°11'S	14°15'W	-2	29.27 SW 3. E. 1. med RH snø
Torsdag	27/2	67°37'S	12°25'W	-3	29.14 NW 1. E.H. 1. Småer med isfjell
Fredag	28/2	67°35'S	11°02'W	-0.2	29.22 NW 2. 2. D. D.
Lørdag	29/2	67°57'S	9°13'W	-0.6	29.08 NW 10. 4. Småer med grønne flek

7. Påfyllinger						10. Ukeproduksjon	
Kjøtt		Ben		Hartmannapp.		x 1000	
Spøkk	Gras	Spøkk	Gras	Kjøtt	Ben	Tidligere	Total
23/2	14	350	2	29	72	45	5
24/2	14	350	6	25	88	51	5
25/2	6	150	5	19	9	2	
26/2	10	250	14	15	65	20	
27/2	13	325	2	21	76	30	
28/2	9	225	28	34	103	128	
29/2	3	75	2	7	30	46	
			56	22	124		

8. Hvaloparbeidet. Lengde i engle for - kjøtt - drøking eller melkelyt.

Dag	Sort	Antall
Søndag	Bil	4
	Fin	5
	Kjøtt	
	Andre	
Mandag	Bil	7
	Fin	8
	Kjøtt	
	Andre	
Tirsdag	Bil	2
	Fin	
	Kjøtt	
	Andre	
Onsdag	Bil	3
	Fin	7
	Kjøtt	
	Andre	
Torsdag	Bil	2
	Fin	4
	Kjøtt	
	Andre	
Fredag	Bil	6
	Fin	
	Kjøtt	
	Andre	
Lørdag	Bil	2
	Fin	
	Kjøtt	
	Andre	
Sum	Bil	37
	Fin	37
	Kjøtt	
	Andre	10

9. Anmerkninger.

24/2 En melleffekt lotalval innbragt av Bil 6

Produksjonsforholdet etter peiling av fanteerne 600 fat spekkvægt og 400 fat kjøtt og benvekt. Totalt 1000 fat

25/2 Produksjon Spermeolje 280 fat
435 fat
26/2 715 fat
1995 fat
Totalt 2710 fat

Whale catch book, factory ship Thorshammer – 23-29 February 1936

The catch books are chiefly concerned with the capture and processing of whales, but also contain meteorological, oceanographic and ice observations. The format is exactly the same for all of the catch books in this cohort, but the data recorded varies considerably from book to book. The format is a double facing page with one week to a view. The meteorological data is in the top half of the left-hand page and consists of day, date, noon position and værforhold or weather conditions. Typically the wind force and wind direction (vind) and barometric pressure are always recorded. Other data will include weather, (vær) sea swell (sjø), air (temp. luft) and sea temperature (temp. sjø) and ice observations but this will vary from book to book. Ice observations can sometimes be found in the section Anmerkninger, or remarks, at the bottom of the left-hand page if there is insufficient space at the top of the page to record the observation. This can be seen in the example above from the Solglimt where isfjell or icebergs are observed and recorded. A detail of the meteorological observations on this page are illustrated below.

5 Driftsoversikt for F_K "Solglimt"

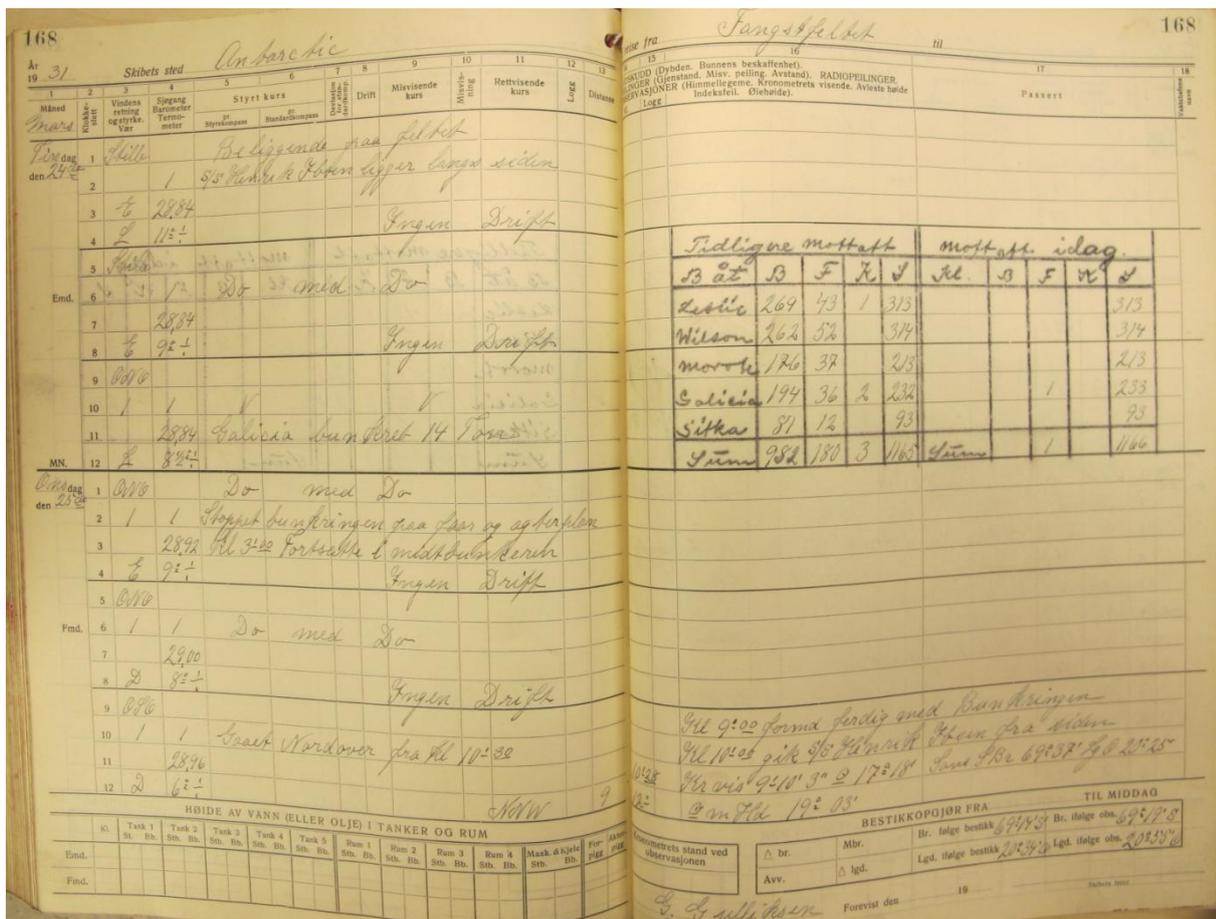
1. Dag	2. Datum	3. Middagsposisjon		4. Værforhold		Temp. Luft	Temp. Sjø
		Bredde	Lengde				
Søndag	22/12	59°37'	27°08'	Vind: NW 4, Vær i Sjø 4, Bar: 729	0°	± 0.6°	
Mandag	23/12	59°38'	27°29'	--- 4 " h. 5 " 723	0°	± 0.3°	
Tirsdag	24/12	61°13'	30°02'	WS 3 " C " 4 " 722	± 0.5°	± 0.7°	
Onsdag	25/12	60°42'	29°37'	WS 4 " lg 4 " 726	+ 0.5°	± 0.1°	
Torsdag	26/12	59°37'	28°57'	--- 3 - d 4 - 733	± 1°	± 0.5°	
Fredag	27/12	59°29'	29°11'	NW 5 " d 4 " 744	± 0.5°	± 0.1°	
Lørdag	28/12	59°23'	27°52'	--- 5 - h 5 - 740	0°	± 0.3°	
				Sum			

Detail from catch book of Factory ship Solglimt – 22-28 December 1935.

Although the date is recorded in the engine room log, the ship's daily and sub-daily positions are not recorded and this information needs to be obtained from either the corresponding *dagbok*, or a corresponding *fangstdagbok* or some other document (for example the International Whaling Commission [IWC] records).

Vestfold Archive

The Vestfold Archive holds logbooks of the same format and content as the Whaling Museum. An exhaustive search needs to be made of this archive for relevant material other than logbooks. An examination and detailed inventory of the 83 logbooks, found so far, also needs to be undertaken. Like the Whaling Museum these logbooks are from factory ships and whale catchers operating in the Southern Ocean. The example below is from the factory ship *Antarctic*.



Logbook page from the factory ship *Antarctic* (Vestfold Archivet, ref. Fa L0002) 24-25 March 1931.

Remarks and Observations

Unlike some other holdings of logbooks for whaling vessels in the Southern Ocean, such as St. Andrews University and Edinburgh University, the Norwegian archives have logbooks and related documents associated vessels other than factory ships. The Whaling Museum at Sandfjord has logbooks from factory ships, research vessels, the whale catchers and the oil tankers/supply vessels servicing the whaling fleet. The logbooks cover entire voyages both out towards Antarctica and back towards Europe, unlike the Salvesen Archive in Edinburgh where the 'Chief Officers Whaling Logbook' records data only on the southern whaling grounds.

Although the data recorded in the Norwegian logbooks is of great quantity and quality there are,

at times, missing data essential for processing the scientific information. This missing information is the vessel's position and this frequently occurs while the vessel is hunting whales, often near the edge of the ice. Tabulated pressure and other data can also be absent at these times but this is not always so, and data can often be found within the text that is frequently written on the logbook pages instead of the tabulated entries. The problem of missing positions can be overcome in a number of different ways. In the case of factory ships the problem of missing positions can be resolved by reference to the International Whaling Statistics (IWS), issued by the International Whaling Commission, and starting in the 1920s.

INTERNATIONAL WHALE STATISTICS 533

Report on whales caught from *fl. f. Svend Foyn*
by *Star Whaling Co. Ltd.* whaling firm in the season 1937-1938

Date	Species of whales	Length (1) (ft)	Contents of Stomach	Sex	Females ¹⁾			Position (Longitude & latitude)
					Pregnant	Foetus Length	Sex	
26/11-37	sperm	57	krill, octop.	M				56°39'S 24°35'W.
"	"	53	"	"				
"	"	55	"	"				
1/12-37	"	56	"	"				57°50' W 16°19'
"	"	46	"	"				
"	"	55	"	"				
2/12	"	54	"	"				57°35' W 15°34'
"	"	57	"	"				
"	"	55	"	"				
"	"	49	"	"				
"	"	52	"	"				
"	"	55	"	"				
"	"	51	"	"				
"	"	50	"	"				
"	"	52	"	"				
"	"	54	"	"				
"	"	56	"	"				
3/12	"	58	"	"				57°41' W 14°39'
"	"	54	"	"				
"	"	57	"	"				
6/12	"	57	"	"				57°26' W 11°28'
"	"	54	"	"				
"	"	55	"	"				
"	"	54	"	"				
"	"	51	"	"				

1) The length shall be the length of a straight line from the tip of the snout to the notch between the flukes of the tail.
2) These entries must be filled in as exactly as possible.
3) It is of great importance that all whales caught are recorded on this schedule even if impossible to get them measured.
Kindly also see that the sex of all foetuses is stated.

Positions of the factory ship Svend Foyn – Nov-Dec 1937, from the International Whaling Statistics

It can be seen in the example above that most daily positions are given for the factory ships as well as the number and type of whale killed. The Whaling Museum has a complete set of IWS volumes and these have also been digitized by the International Whaling Commission in Cambridge.

The second method by which positions can be determined, when this information is absent in the log, is by reference to the logbooks of other vessels. Vessels met, or in company are frequently mentioned. For example the tanker *Peder Bogen* (ref. 0083/5 – Whaling Museum) made a rendezvous with the *Vikingen* on 13 December 1930 at 56.22°S, 4.32°E. On the logbook page of the *Norvegia*, illustrated earlier there are references to the position of the factory ship *Pythia*. Several logbooks of whale catchers record the position and bearing of the factory ship that they are associated with. The point here is that logbooks should be digitized even when positional data is absent or incomplete as the information needed may be found in another document. It is

therefore important during digitization, to be able to cross reference material in order to create a more complete set of records.

The third method to make use of data, without a position, is to carefully note the ship's position when hunting commences and when it ceases. Frequently there is only an acceptably small difference in the two positions. The *Scott* (ref. 098/2 – Whaling Museum) commenced hunting on 19 January 1929 in 60.39°S, 23.00°W, after which no positions were recorded. The recording of position commenced once again on the 27 January in 60.08°S, 25.26°W. The difference in latitude is 31, miles and the difference in longitude is 71 miles, and the distance between the two positions is roughly 77 miles. Depending on the scale of resolution required for the observations, the vessel could be assumed to be in the same general area for the intervening eight days. Although this is not a precise position, the observations are then of some use. Some form of interpolation between the start and end points might be employed to produce an estimated position, bearing in mind that estimated positions are common anyway when no celestial observation is possible.

The two archives in this report are but a small part of a wider archive network in Norway. Logbooks and related material containing marine meteorological data, oceanographic data and ice observations can be found in other museums, research institutes, universities and archives. The Riksarkivet or state archives can be found in Oslo, Bergen, Trondheim and Tromsø. A search using the just term '*dekkdagbok*' (deck logbook) will produce over 1,000 items. Not all of these will be associated with vessels in the Southern Ocean but it does indicate that there is a wealth of data to be found archived in Norway.

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Glossary of Selected Norwegian terms and phrases

Norwegian	English
anmerkninger	remarks
av	off
beliggende i isen	located in the ice
breddegrad	latitude
dagbok	logbook
dampskip	steamship
dekkdagbok	deck log
drift langs	running along ice
iskanten	edge
fangsfelt	fishing ground
fangstdagbok	whale catch book
flytende kokeri	factory ship
forskning	research
forsyningskip	supply ship
fraktskip	freighter
hvalbåt	whale catcher
hvalfanger	whale catcher
Ifølge bestikk	estimated position
ingen is	no ice
inn	in
isfjeld	iceberg
isfjell	iceberg
iskanten	ice edge
isklare	ice opening
kysten	coast
lengde	longitude
luft	air
maskingdagbok	engine room log
megit is runt den	much ice round here
megit pakkis	much pack ice
misvisende kurs	uncorrected course
nord	north
observasjonen	observation
og	and
øst	east
på	on
pakisen	pack ice
pakkis	pack ice
pakkis bestad	pack ice in abundance
posisjon	position
rettviseende kurs	true course
ser iskanten	see the ice edge
sjø	sea

sjøvann	seawater
sør	south
Stillehavet	Pacific Ocean
styrt kurs	heading (course)
syd	south
Sydhavet	Southern Ocean
tankskip	tanker
vær	weather
værforhold	weather conditions
ved iskanten	at the ice edge
vekk fra pakkisen	off from pack ice
vest	west
vind	wind