

File Formats of Data Collected on HLY0701

In the sections below for each data type the directory name is listed, then an example file name, and then 3 lines from that file. This part is followed by a table that lists the data contained in the string.

./Datalog

The following data types are to be found in the DataLog directory of the DVD.

Underweigh Data

Meteorology Data

R. M. Young Sensors

R.M. Young Air Temperatures

Temperature, humidity, air pressure data in NMEA XDR format from the RM Young meteorological system.

./rmyoung_air

RMYoung-Air_20070414-182437.Raw

04/14/2007,18:24:40.693,\$WIXDR,C,-6.62,C,1,H,89,P,1,C,-8.06,C,1,P,994.24,B,2,D,-35,M,3hh

04/14/2007,18:24:46.677,\$WIXDR,C,-6.49,C,1,H,89,P,1,C,-7.93,C,1,P,994.32,B,2,D,-35,M,3hh

04/14/2007,18:24:49.678,\$WIXDR,C,-6.49,C,1,H,89,P,1,C,-7.93,C,1,P,994.24,B,2,D,-35,M,3hh

FIELD	DATA	Example	UNITS
1	SCS logged Date	04/14/2007	mm/dd/year
2	SCS logged Time GMT	18:24:49.678	hh:mm:ss.sss
3	NMEA header	,\$WIXDR	
3	Data type for field 5	C	Temperature
5	Air Temperature	-6.49	Celsius
8	Data Type for field 9	H	
9	Relative Humidity	89	Percent
12	Data type for field 13	C	
13	Dew Point Temperature	-7.93	Celcius
16	Data type for field 17	P	Pressure
17	Barometer	994.24	hPa
20	Data type for field 20	D	

21	Elevation	-35	Meters
----	-----------	-----	--------

R.M. Young Air Temperatures, Fahrenheit (Derived)

Temperature data from the RM Young wind sensor in Fahrenheit. Data is derived from data from files in the rmyoung_air directory.

./ air_temp_f

AirTemp-F_20070413-000000.Raw

04/13/2007,00:00:02.074,\$DERIV,28.83,-1.76,

04/13/2007,00:00:05.074,\$DERIV,28.62,-1.88,

04/13/2007,00:00:08.074,\$DERIV,28.62,-1.88,

FIELD	DATA	Example	UNITS
1	SCS logged Date	04/14/2007	mm/dd/year
2	SCS logged Time GMT	18:24:49.678	hh:mm:ss.sss
3	NMEA header	,\$DERIV	
4	Air Temperature	28.83	Fahrenheit
5	Air Temperature	-1.76	Celsius

R.M. Young Wind. Port

Wind speed and direction data in NMEA WMV format from the RM Young weather vane on the port side of the Healy.

./rmyportwind

RMYPortWind_20070414-182437.Raw

04/14/2007,18:24:38.490,\$WIMWV,033,R,028.1,N,A*36

04/14/2007,18:24:39.505,\$WIMWV,041,R,028.7,N,A*35

04/14/2007,18:24:40.521,\$WIMWV,034,R,029.4,N,A*35

FIELD	DATA	Example	UNITS
1	SCS logged Date	04/14/2007	mm/dd/year
2	SCS logged Time GMT	18:24:40.521	hh:mm:ss.sss
3	NMEA header	\$WIMWV	
4	Wind Direction	34	Degrees
5	R= Relative	R	
6	Wind Speed	29.4	Knots
7	N= Knots	N	
8	A= Valid Data	A	
9	Check sum	*35	

R.M. Young Wind, Starboard

Wind speed and direction data in NMEA WMV format from the RM Young weather vane on the starboard side of the Healy.

./rmstbwind

RMYSTbdWind_20070414-182437.Raw

04/14/2007,18:24:38.677,\$WIMWV,044,R,025.4,N,A*3E

04/14/2007,18:24:39.693,\$WIMWV,045,R,025.6,N,A*3D

04/14/2007,18:24:40.724,\$WIMWV,042,R,025.2,N,A*3E

FIELD	DATA	Example	UNITS
1	SCS logged Date	04/14/2007	mm/dd/year
2	SCS logged Time GMT	18:24:40.724	hh:mm:ss.sss
3	NMEA header	\$WIMWV	
4	Wind Direction	42	Degrees
5	R= Relative	R	
6	Wind Speed	25.2	Knots
7	N= Knots	N	
8	A= Valid Data	A	
9	Check sum	*3E	

R.M. Young Wind True, Port (Derived)

True wind speed data derived from gyro data and rmyportwind.

./true_wind_port

PortWnd-T_20070415-000000.Raw

04/15/2007,00:00:03.927,\$DERIV,18.59,4.57,30.6,12,12.5,343.7,344.2,

04/15/2007,00:00:05.927,\$DERIV,19.69,10.28,31.4,16,12.5,344.2,344.2,

04/15/2007,00:00:07.927,\$DERIV,19.85,3.73,31.8,12,12.4,344.1,344.2,

FIELD	DATA	Example	UNITS
1	SCS logged Date	04/15/2007	mm/dd/year
2	SCS logged Time GMT	00:00:07.927	hh:mm:ss.sss
3	NMEA header	\$DERIV	
5	Wind Speed derived	19.85	knots
8	Wind Directions derived	3.73	degrees
9	Wind Speed relative	31.8	knots
12	Wind Direction relative	12	direction
13	Speed over ground (pos mv)	12.4	knots
16	Course over ground (pos mv)	344.1	Degrees
17	Heading (pos mv)	344.2	Degrees

R.M. Young Wind True, Starboard (Derived)

True wind speed data derived from gyro data and rmystbdwind.

`./true_wind_stbd`

StbdWnd-T_20070415-000000.Raw

04/15/2007,00:00:03.396,\$DERIV,17.33,3.47,29.4,11,12.5,343.7,344.2,

04/15/2007,00:00:05.396,\$DERIV,17.05,15.29,28.5,18,12.5,344.2,344.2,

04/15/2007,00:00:07.396,\$DERIV,19.99,13.31,31.4,18,12.4,344.1,344.2,

FIELD	DATA	Example	UNITS
1	SCS logged Date	04/15/2007	mm/dd/year
2	SCS logged Time GMT	00:00:07.396	hh:mm:ss.sss
3	NMEA header	\$DERIV	
5	Wind Speed derived	19.99	knots
8	Wind Directions derived	13.31	degrees
9	Wind Speed relative	31.4	knots
12	Wind Direction relative	18	direction
13	Speed over ground (pos mv)	12.4	knots
16	Course over ground (pos mv)	344.1	Degrees
17	Heading (pos mv)	344.2	degrees

Dew Point (Derived)

Dew Point derived from rmyoung_air.

`./dew_point_f`

DewPt-F_20070414-182437.Raw

04/14/2007,18:24:41.099,\$DERIV,17.49,-8.06,

04/14/2007,18:24:44.099,\$DERIV,17.73,-7.93,

04/14/2007,18:24:47.099,\$DERIV,17.73,-7.93,

FIELD	DATA	Example	UNITS
1	SCS logged Date	04/14/2007	mm/dd/year
2	SCS logged Time GMT	18:24:47.099	hh:mm:ss.sss
3	NMEA header	\$DERIV	
4	Air Temperature	17.73	Fahrenheit
7	Air Temperature	-7.93	Celsius

Photosynthetic Active Radiation (PAR) Sensor

PAR

Photosynthetic Active Radiation volts from the surface par sensor.

./par

PAR_20070415-000000.Raw

04/15/2007,00:00:03.068,+01126.24

04/15/2007,00:00:04.068,+01133.28

04/15/2007,00:00:05.068,+01140.96

FIELD	DATA	Example	UNITS
1	SCS logged Date	04/15/2007	mm/dd/year
2	SCS logged Time GMT	00:00:05.505	hh:mm:ss.sss
3	PAR	+01140.96	mVolts

PAR (Derived)

Photosynthetic Active Radiation, Microeinstens/m2 sec from surface par sensor.

Par_derived

PAR-derived_20070415-000000.Raw

04/15/2007,00:00:03.146,\$DERIV,1865353.0198,1126.24,

04/15/2007,00:00:09.146,\$DERIV,1909343.4448,1152.8,

04/15/2007,00:00:15.146,\$DERIV,1881518.176,1136,

FIELD	DATA	Example	UNITS
1	SCS logged Date	04/15/2007	mm/dd/year
2	SCS logged Time GMT	00:00:05.193	hh:mm:ss.sss
3	NMEA header	\$DERIV	
4	Derived surface PAR	1881518.176	Microeinstens/m2 sec
5	PAR volts	1136	mVolts

Oceanographic Data

Thermosalinograph / Fluorometer

AFT Theromosalinograph / Fluorometer

Thermosalinograph and Fluoromter data from the instruments in the Aft Fuel Hose room.

./tsg_aft

TSGAFT_20070414-182437.Raw

NO DATA

Forward Theromosalinograph Flowmeter

Flowmeter data from the instruments in the Bio/Chem Lab.

./tfg_flow.

TSGF-FlowMeter_20070415-000000.Raw

04/15/2007,00:00:02.974, 11.

04/15/2007,00:00:09.255, 11.

04/15/2007,00:00:15.537, 11.

FIELD	DATA	Example	UNITS
1	SCS logged Date	04/15/2007	mm/dd/year
2	SCS logged Time GMT	00:00:15.537	hh:mm:ss.sss
3	Flowmeter feeding TSG and FLUOR	11	Liters/minute

Forward Thermosalinograph / Fluorometer

Thermosalinograph and Fluorometer data from instruments in the Bio Chem Lab.

Before 4/13/07 05:26

./tsg_fwd

TSGFWD_20070413-000000.Raw

Prior to output changes made on 4-13-07 at 5:26:00 (see elog for details)

```
04/13/2007,05:22:22.767,    11    0.021    2.663    31.79    -0.397
    1443.001    9.921

04/13/2007,05:22:28.767,    12    0.019    2.663    31.80    -0.398
    1443.002    9.786

04/13/2007,05:22:34.767,    13    0.020    2.663    31.79    -0.397
    1443.004    9.695
```

FIELD	DATA	Example	UNITS
1	SCS logged Date	04/13/2007	mm/dd/year
2	SCS logged Time GMT	05:22:34.767	hh:mm:ss.sss
3	Scan number	13	
4	SBE 21 internal temperature	0.020	Celsius
5	Conductivity	2.663	Siemens/meter
6	Salinity	31.79	PSU
7	Remote Temperature (Sea Chest intake)	-0.397	Celsius
8	Sound Velocity	1443.004	Meters per Second (m/s)
9	Fluorometer (SCUFA)	9.695	Ug/l

After 4/13/07 05:26

./tsg_fwd

TSGFWD_20070415-000000.Raw

After output changes made on 4-13-07 at 5:26:00 (see elog for details)

04/15/2007,00:00:04.255,	25269	-0.838	2.577	31.56	-1.457
1437.661	3.321	0.664	4.617	4.617	
04/15/2007,00:00:10.287,	25270	-0.850	2.577	31.57	-1.458
1437.672	3.474	0.695	5.000	5.000	
04/15/2007,00:00:16.255,	25271	-0.848	2.577	31.56	-1.458
1437.664	3.339	0.668	4.927	4.927	

FIELD	DATA	Example	UNITS
1	SCS logged Date	04/15/2007	mm/dd/year
2	SCS logged Time GMT	00:00:16.255	hh:mm:ss.sss
3	Scan number	25271	
4	SBE 21 internal temperature	-0.848	Celsius
5	Conductivity	2.577	Siemens/meter
6	Salinity	31.56	PSU
7	RemoteTemperature (Sea Chest intake)	-1.458	Celsius
8	Sound Velocity	1437.664	Meters per Second (m/s)
9	Fluorometer (SCUFA)	3.339	Ug/l
10	Fluorometer (SCUFA)	0.668	Volts
11	Turbidity (SCUFA)	4.927	NTU
12	Turbidity (SCUFA)	4.927	Volts

Sonar Data

Seabeam 2112 Center Beam

Center depth data derived from the Seabeam 2112 data on the POSMVNAV computer.

./seabeam_center

Seabeam-Centerbeam_20070414-182437.Raw

04/14/2007,18:24:38.427,\$SBCTR,
2007,4,14,18:24:35.713,58.119110,-169.839278,70.70,60*00

04/14/2007,18:24:40.177,\$SBCTR,
2007,4,14,18:24:37.213,58.119152,-169.839367,70.49,61*00

04/14/2007,18:24:40.615,\$SBCTR,
2007,4,14,18:24:38.734,58.119193,-169.839452,70.92,60*00

FIELD	DATA	Example	UNITS
1	SCS logged Date	04/14/2007	mm/dd/year
2	SCS logged Time GMT	18:24:40.615	hh:mm:ss.sss
3	NMEA header	,\$SBCTR	
4-6	Seabeam Date	2007414	Year,month,day
7	Seabeam Time	18:24:38.734	hh:mm:ss.sss
8	Latitude	58.119193	Degrees
9	Longitude	-169.839452	Degrees
10	Depth	70.92	meters
11	Number of Beams	60	
12	Check sum	*00	

Knudsen

3.5 kHz

Depth data in a proprietary PKEL format received from Knudsen 320 B/R serial output.

./knudsen

Knudsen_20070414-182437.Raw

04/14/2007,18:24:38.099,\$PKEL99,-----,14042007,182524.248,00192,HF,
00.00,0,+008.50,LF,73.24,1,+008.50,1500,-----,----,58 07.123897N,169
50.315830W,1060*12

04/14/2007,18:24:38.349,\$PKEL99,-----,14042007,182525.759,00191,HF,
00.00,0,+008.50,LF,73.22,1,+008.50,1500,-----,----,58 07.127267N,169
50.322883W,0565*1F

04/14/2007,18:24:39.865,\$PKEL99,-----,14042007,182527.269,00191,HF,
00.00,0,+008.50,LF,73.22,1,+008.50,1500,-----,----,58 07.128948N,169
50.326409W,1078*10

FIELD	DATA	Example	UNITS
1	SCS logged Date	04/14/2007	mm/dd/year
2	SCS logged Time GMT	18:24:39.865	hh:mm:ss.sss
3	NMEA header	\$PKEL99	KEL Proprietary Data String
4	Record Number???	-----	
5	Knudsen Date	14042007	DDMMYYYY
6	Knudsen Time	182527.269	HHMMSS.sss
7		191	
8	HF Header (12 kHz)	HF	
9	HF Depth to Surface	0.00	Meters *
10	HF Draft	,+008.50	Meters
11	LF Header	LF	
12	LF Depth to Surface	73.22	Meters *
13	LF Depth Valid Flag	1	
14	LF Draft	+008.50	Meters
15	Sound Speed	1500	Meters Per Second**
18	Latitude	58 07.128948N	DD MM.MMMMMM***
19	Longitude	169 50.326409W	DDD MM.MMMMMM***
20	Position Latency	1078	
21	Checksum	*10	

* Knudsen depth is currently set for Meters

** Knudsen default sound speed

*** Current GPS source is the POS/

MV

Winch data

Starboard A-Frame Winch Data

1 second data from the Starboard A Frame winch data output.

`./sbd_a_frame`

Stbd-A-Frame_20070418-000000.Raw

04/18/2007,06:13:18.281,01, 890,, 36,, -27,,0000

04/18/2007,06:13:19.250,01, 890,, 35,, -28,,0000

04/18/2007,06:13:20.235,01, 900,, 35,, -28,,0000

FIELD	DATA	Example	UNITS
1	SCS logged Date	04/18/2007	mm/dd/year
2	SCS logged Time GMT	06:13:20.235	hh:mm:ss.sss
3	Winch number	1	
4	Wire tension	900	Pounds
5	Wire out	35	Meters
7	Wire speed	-28	Meters/minute

Port A-Frame Winch Data

1 second data from the Port A Frame winch data output.

`./aft_a_frame`

Aft-A-Frame_20070418-000000.Raw

04/18/2007,08:46:45.844,02, -160,, 31,, 58,,0000

04/18/2007,08:46:46.844,02, -160,, 32,, 60,,0000

04/18/2007,08:46:47.812,02, -160,, 33,, 60,,0000

FIELD	DATA	Example	UNITS
1	SCS logged Date	04/18/2007	mm/dd/year
2	SCS logged Time GMT	08:46:47.812	hh:mm:ss.sss
3	Winch number	2	
4	Wire tension	-160	Pounds
5	Wire out	33	Meters
7	Wire speed	60	Meters/minute

Navigational Data

POSMV

POSMV GGA

Position data in NMEA GGA format from the POS/MV.

./posmv_gga

POSMV-GGA_20070415-000000.Raw

04/15/2007,00:00:03.052,\$INGGA,000002.737,5830.47054,N,17012.64182,W,
2,08,1.0,1.80,M,,4,0297*07

04/15/2007,00:00:04.052,\$INGGA,000003.737,5830.47385,N,17012.64365,W,
2,08,1.0,1.76,M,,5,0297*0A

04/15/2007,00:00:05.052,\$INGGA,000004.737,5830.47716,N,17012.64550,W,
2,08,1.0,1.71,M,,6,0297*07

FIELD	DATA	Example	UNITS
1	SCS logged Date	04/15/2007	mm/dd/year
2	SCS logged Time GMT	00:00:05.052	hh:mm:ss.sss
3	NMEA header	\$INGGA	
4	GPS time at position GMT	4.737	hhmmss.sss
5	Latitude	5830.47716	ddmm.mmmmm
6	North (N) or South(S)	N	
7	Longitude	17012.64550	dddmm.mmmmm
8	East (E) or West (W)	W	
9	GPS Quality: 1 = GPS2=DGPS	2	
10	Number of GPS Satellites Used	8	
11	HDOP (horizontal dilution of precision)	1.0	
12	Antenna height	1.71	meters
13	M for Meters	M	
14	Geoidal Height		meters
15	M for Meters		
16	Differential reference station ID	297	
17	Checksum	*07	

POSMV Psuedo Noise

Psuedorange error statistics in NMEA GST format from the POS/MV.

./posmv_gst

POSMV-Pseudo-Noise_20070415-000000.Raw

04/15/2007,00:00:02.990,\$INGST,000002.737,,0.6,0.4,22.3,0.4,0.6,0.8*63

04/15/2007,00:00:03.990,\$INGST,000003.737,,0.6,0.4,22.3,0.4,0.6,0.8*62

04/15/2007,00:00:04.990,\$INGST,000004.737,,0.6,0.4,22.3,0.4,0.6,0.8*65

FIELD	DATA	Example	UNITS
1	SCS logged Date	04/15/2007	mm/dd/year
2	SCS logged Time GMT	00:00:05.052	hh:mm:ss.sss
3	NMEA header	\$INGST	
4	GPS time at position GMT	4.737	hhmmss.sss
5			
6	Smjr.smjr	0.6	
7	Smnr.smnr	0.4	
8	0.0	22.3	
9	l.l	0.4	
10	y.y	0.6	
11	Standard deviation of altitude (a.a)	0.8	meters
12	Checksum	*65	

POSMV HDT

Heading data in NMEA HDT format from the POS/MV.

./posmv_hdt

POSMV-HDT_20070415-000000.Raw

04/15/2007,00:00:03.083,\$INHDT,344.2,T*24

04/15/2007,00:00:04.083,\$INHDT,344.2,T*24

04/15/2007,00:00:05.083,\$INHDT,344.2,T*24

FIELD	DATA	Example	UNITS
1	SCS logged Date	04/15/2007	mm/dd/year
2	SCS logged Time GMT	00:00:05.083	hh:mm:ss.sss
3	NMEA header	\$INHDT	
4	Heading	344.2	Degrees
5	True(T) or Magnetic(M)	T	
6	Checksum	*24	

POSMV PASHR

Pitch and Roll data in NMEA PASHR format from the POS/MV.

./posmv_pashr

POSMV-PASHR_20070415-000000.Raw

04/15/2007,00:00:02.912,\$PASHR,
000002.737,344.17,T,-0.21,0.10,-0.02,0.017,0.017,0.011,2,1*17

04/15/2007,00:00:03.912,\$PASHR,
000003.737,344.19,T,-0.22,0.10,-0.02,0.017,0.017,0.011,2,1*1B

04/15/2007,00:00:04.912,\$PASHR,
000004.737,344.20,T,-0.24,0.10,-0.02,0.017,0.017,0.011,2,1*10

FIELD	DATA	Example	UNITS
1	SCS logged Date	04/15/2007	mm/dd/year
2	SCS logged Time GMT	00:00:05.052	hh:mm:ss.sss
3	NMEA header	\$PASHR	
4	Time GMT	4.737	hhmmss.sss
5	Heading	344.20	heading
6	True	T	
7	Roll	-0.24	Degrees
8	Pitch	0.10	Degrees
9	Heave	-0.02	Degrees
10	Accuracy roll	0.017	Degrees
11	Accuracy pitch	0.017	Degrees
12	Accuracy heading	0.011	Degrees
	Accuracy of heading 0=no aiding, 1-GPS	2	
13	2= GPS & GAMS		
14	IMU 0= out 1= satisfactory	1	
15	Check Sum	*10	

POSMV VTG

Course and speed over ground in NMEA VTG format from the POS/MV.

./posmv_vtg

POSMV-VTG_20070415-000000.Raw

04/15/2007,00:00:03.130,\$INVTG,343.7,T,,M,12.5,N,23.1,K*75

04/15/2007,00:00:04.130,\$INVTG,344.0,T,,M,12.5,N,23.1,K*75

04/15/2007,00:00:05.115,\$INVTG,344.2,T,,M,12.5,N,23.1,K*77

FIELD	DATA	Example	UNITS
1	SCS logged Date	04/15/2007	mm/dd/year
2	SCS logged Time GMT	00:00:05.115	hh:mm:ss.sss
2	NMEA header	\$INVTG	
3	Heading	344.2	Degrees
4	Degrees true (T)	T	
5	Heading		Degrees
6	Degrees magnetic	M	
7	Ship Speed	12.5	knots
8	N=Knots	N	
9	Ship Speed	23.1	km/hr
10	K=KM per hour	K	
11	Check sum	*77	

POSMV ZDA

Time and date data in NMEA ZDA format from the POS/MV.

./posm_zda

POSMV-ZDA_20070415-000000.Raw

04/15/2007,00:00:03.162,\$INZDA,000003.0016,15,04,2007,,*77

04/15/2007,00:00:04.162,\$INZDA,000004.0016,15,04,2007,,*70

04/15/2007,00:00:05.162,\$INZDA,000005.0016,15,04,2007,,*71

FIELD	DATA	Example	UNITS
1	SCS logged Date	04/15/2007	mm/dd/year
2	SCS logged Time GMT	00:00:05.162	hh:mm:ss.sss
2	NMEA header	\$INZDA	
3	Time UTC	5.0016	HHMMSS.ssss
4	Day	15	DD
5	Month	4	MM
6	Year	2007	Year
7	??		??
8	??	0	??
9	Checksum	*71	

Ashtech GPS

Ashtech Attitude

Attitude in NMEA format from the Ashtech ADU5 GPS receiver.

./ashtech_attitude

Ashtech-Attitude_20070415-000000.Raw

04/15/2007,00:00:03.490,\$GPPAT,000003.00,5830.44196,N,17012.62728,W,
00030.21,344.3730,000.25,-000.01,0.0015,0.0074,0*42

04/15/2007,00:00:04.490,\$GPPAT,000004.00,5830.44527,N,17012.62914,W,
00030.23,344.3537,000.20,-000.06,0.0015,0.0071,0*4A

04/15/2007,00:00:05.490,\$GPPAT,000005.00,5830.44859,N,17012.63099,W,
00030.23,344.3431,000.22,-000.07,0.0014,0.0077,0*41

FIELD	DATA	Example	UNITS
1	SCS logged Date	04/15/2007	mm/dd/year
2	SCS logged Time GMT	00:00:05.490	hh:mm:ss.sss
3	NMEA header	\$GPPAT	
4	GPS time at position GMT	5.00	hhmmss.ss
5	Latitude	5830.44859	ddmm.mmmmm
6	North (N) or South(S)	N	
7	Longitude	17012.63099	dddmm.mmmmm
8	East (E) or West (W)	W	
9	Altitude	30.23	Meters
10	Heading	344.3431	Degrees
11	Pitch	0.22	Degrees
12	Roll	-0.07	degrees
13	Attitude phase measurement rms error, MRMS	0.0014	meters
14	Attitude baseline length rms error, BRMS	0.0077	meters
15	Attitude reset flag (0:good attitude, 1:rough estimate or bad attitude)	0	
16	Check sum	*41	

Ashtech GGA

Position data in NMEA GGA format from the Ashtech ADU5 GPS receiver.

./ashtech_gga

Ashtech-GGA_20070415-000000.Raw

04/15/2007,00:00:02.333,\$GPGGA,000002.00,5830.43864,N,17012.62542,W,
1,13,0.7,20.74,M,9.47,M,,*73

04/15/2007,00:00:03.333,\$GPGGA,000003.00,5830.44196,N,17012.62728,W,
1,13,0.7,20.75,M,9.47,M,,*7E

04/15/2007,00:00:04.333,\$GPGGA,000004.00,5830.44527,N,17012.62914,W,
1,13,0.7,20.76,M,9.47,M,,*75

FIELD	DATA	Example	UNITS
1	SCS logged Date	04/15/2007	mm/dd/year
2	SCS logged Time GMT	00:00:04.333	hh:mm:ss.sss
3	NMEA header	\$GPGGA	
4	GPS time at position GMT	4.00	hhmmss.ss
5	Latitude	5830.44527	ddmm.mmmmm
6	North (N) or South(S)	N	
7	Longitude	17012.62914	dddmm.mmmmm
8	East (E) or West (W)	W	
9	GPS Quality: 1 = GPS2=DGPS	1	
10	Number of GPS Satellites Used	13	
11	HDOP (horizontal dilution of precision)	0.7	
12	Antenna height	20.76	meters
13	M for Meters	M	
14	Geoidal Height	9.47	meters
15	M for Meters	M	
16	Differential reference station ID (no data in sample string)		
17	Checksum	*75	

Ashtech GGL

Position data in NMEA GLL format from the Ashtech ADU5 GPS receiver.

./ashtech_ggl

Ashtech-GLL_20070415-000000.Raw

04/15/2007,00:00:03.271,\$GPGLL,5830.44196,N,17012.62728,W,000003.00,A,A*74

04/15/2007,00:00:04.255,\$GPGLL,5830.44527,N,17012.62914,W,000004.00,A,A*7C

04/15/2007,00:00:05.255,\$GPGLL,5830.44859,N,17012.63099,W,000005.00,A,A*74

FIELD	DATA	Example	UNITS
1	SCS logged Date	04/15/2007	mm/dd/year
2	SCS logged Time GMT	00:00:05.255	hh:mm:ss.sss
3	NMEA header	\$GPGLL	
4	Latitude	5830.44859	ddmm.mmmmm
5	North or South	N	
6	Longitude	17012.63099	dddmm.mmmmm
7	East or West	W	
8	GMT of Position	5.00	hhmmss.ss
9	Status of data (A=valid)	A	
10	???	A	
11	Checksum	*74	

Ashtech HDT

Heading data in NMEA HDT format from the Ashtech ADU5 GPS receiver.

./ashtexh_hdt

Ashtech-HDT_20070415-000000.Raw

04/15/2007,00:00:03.505,\$GPHDT,344.373,T*31

04/15/2007,00:00:04.505,\$GPHDT,344.354,T*34

04/15/2007,00:00:05.505,\$GPHDT,344.343,T*32

FIELD	DATA	Example	UNITS
1	SCS logged Date	04/15/2007	mm/dd/year
2	SCS logged Time GMT	00:00:05.505	hh:mm:ss.sss
3	NMEA header	\$GPHDT	
4	Heading	344.343	Degrees
5	True(T) or Magnetic(M)	T	
6	Checksum	*32	

PCode

PCode AFT

PCode Aft GGA

Position data in NMEA GGA format from the Trimble Centurion receiver located in the Computer lab.

./pcode_aft_gga

PCode-AFT-GGA_20070415-000000.Raw

04/15/2007,00:00:03.443,\$GPGGA,000002.522,5830.4417,N,17012.6249,W,
1,04,1.5,019.8,M,-008.9,M,,*51

04/15/2007,00:00:04.427,\$GPGGA,000003.522,5830.4450,N,17012.6267,W,
1,04,1.5,019.8,M,-008.9,M,,*5F

04/15/2007,00:00:05.427,\$GPGGA,000004.522,5830.4483,N,17012.6286,W,
1,04,1.5,019.8,M,-008.9,M,,*59

FIELD	DATA	Examples	UNITS
1	SCS logged Date	04/15/2007	mm/dd/year
2	SCS logged Time GMT	00:00:05.427	h:mm:ss.sss
3	NMEA header	\$GPGGA	
4	GPS time at position GMT	4.522	hhmmss.ss
5	Latitude	5830.4483	ddmm.mmmm
6	North (N) or South(S)	N	
7	Longitude	17012.6286	dddmm.mmmm
8	East (E) or West (W)	W	
9	GPS Quality: 1 = GPS2=DGPS	1	
10	Number of GPS Satellites Used	4	
11	HDOP (horizontal dilution of precision)	1.5	
12	Antenna height	19.8	meters
13	M for Meters	M	
14	Geoidal Height	-8.9	meters
15	M for Meters	M	
16	Differential reference station ID (no data in sample string)		
17	Checksum	*59	

PCode Aft GLL

Position data in NMEA GLL format from the Trimble Centurion receiver located in the Computer lab.

./pcode_aft_gll

Pcode-AFT-GLL_20070415-000000.Raw

04/15/2007,00:00:03.474,\$GPGLL,5830.4417,N,17012.6249,W,000002.522,A*25

04/15/2007,00:00:04.474,\$GPGLL,5830.4450,N,17012.6267,W,000003.522,A*2

04/15/2007,00:00:05.490,\$GPGLL,5830.4483,N,17012.6286,W,000004.522,A*2D

FIELD	DATA	Example	UNITS
1	SCS logged Date	04/15/2007	mm/dd/year
2	SCS logged Time GMT	00:00:05.490	hh:mm:ss.sss
3	NMEA header	\$GPGLL	
4	Latitude	5830.4483	ddmm.mmmm
5	North or South	N	
6	Longitude	17012.6286	dddmm.mmmm
7	East or West	W	
8	GMT of Position	4.522	hhmmss.sss
9	Status of data (A=valid)	A	
10	Checksum	*2D	

PCode AFT VTG

Course and speed over ground in NMEA VTG format from the Trimble Centurion receiver located in the Computer lab.

./pcode_aft_vtg

Pcode-AFT-VTG_20070415-000000.Raw

04/15/2007,00:00:03.537,\$GPVTG,343.7,T,331.4,M,012.4,N,023.0,K*4E

04/15/2007,00:00:04.537,\$GPVTG,343.6,T,331.3,M,012.5,N,023.1,K*48

04/15/2007,00:00:05.537,\$GPVTG,343.6,T,331.3,M,012.4,N,023.0,K*48

FIELD	DATA	Example	UNITS
1	SCS logged Date	04/15/2007	mm/dd/year
2	SCS logged Time GMT	00:00:05.537	hh:mm:ss.sss
2	NMEA header	\$GPVTG	
3	Heading	343.6	Degrees
4	Degrees true (T)	T	
5	Heading	331.3	Degrees
6	Degrees magnetic	M	
7	Ship Speed	12.4	knots
8	N=Knots	N	
9	Ship Speed	23.0	km/hr
10	K=KM per hour	K	
11	Check sum	*48	

PCode AFT ZDA

Time and date data in the NMEA ZDA format. Data retrieved from the Trimble Centurion receiver located in the Computer lab.

./pcode_aft_zda

Pcode-AFT-ZDA_20070415-000000.Raw

04/15/2007,00:00:03.224,\$GPZDA,000003.00,15,04,2007,00,00,*4C

04/15/2007,00:00:04.224,\$GPZDA,000004.00,15,04,2007,00,00,*4B

04/15/2007,00:00:05.224,\$GPZDA,000005.00,15,04,2007,00,00,*4A

FIELD	DATA	Example	UNITS
1	SCS logged Date	04/15/2007	mm/dd/year
2	SCS logged Time GMT	00:00:05.537	hh:mm:ss.sss
2	NMEA header	\$GPZDA	
3	Time UTC	5.00	hhmmss.sss
4	Day	15	DD
5	Month	4	MM
6	Year	2007	Year
7	??	0	??
8	??	0	??
9	Checksum	*4A	

PCode Bridge

PCode Bridge GGA

Position data in NMEA GGA format from the Trimble GPS receiver located on the bridge.

./pcode_bridge_gga

PCode-Bridge-GGA_20070415-000000.Raw

04/15/2007,00:00:03.037,\$GPGGA,000002.00,5830.469,N,17012.644,W,
1,04,2.666,32.15,M,8.930,M,,*4D

04/15/2007,00:00:05.037,\$GPGGA,000004.00,5830.476,N,17012.648,W,
1,04,2.667,31.82,M,8.930,M,,*45

04/15/2007,00:00:07.052,\$GPGGA,000006.00,5830.482,N,17012.651,W,
1,04,2.668,31.55,M,8.930,M,,*41

FIELD	DATA	Example	UNITS
1	SCS logged Date	04/15/2007	mm/dd/year
2	SCS logged Time GMT	00:00:07.052	hh:mm:ss.sss
3	NMEA header	\$GPGGA	
4	GPS time at position GMT	6.00	hhmmss.ss
5	Latitude	5830.482	ddmm.mmm
6	North (N) or South(S)	N	
7	Longitude	17012.651	dddmm.mmm
8	East (E) or West (W)	W	
9	GPS Quality: 1 = GPS2=DGPS	1	
10	Number of GPS Satellites Used	4	
11	HDOP (horizontal dilution of precision)	2.668	
12	Antenna height	31.55	meters
13	M for Meters	M	
14	Geoidal Height	8.930	meters
15	M for Meters	M	
16	Differential reference station ID (no data in sample string)		
17	Checksum	*41	

PCode Bridge GLL

Position data in NMEA GLL format from the Trimble GPS receiver located on the bridge.

./pcode_bridge_gll

Pcode-Bridge-GLL_20070415-000000.Raw

04/15/2007,00:00:03.099,\$GPGLL,5830.469,N,17012.644,W,000002.00,A*12

04/15/2007,00:00:05.099,\$GPGLL,5830.476,N,17012.648,W,000004.00,A*16

04/15/2007,00:00:07.099,\$GPGLL,5830.482,N,17012.651,W,000006.00,A*17

FIELD	DATA	Example	UNITS
1	SCS logged Date	04/15/2007	mm/dd/year
2	SCS logged Time GMT	00:00:07.099	hh:mm:ss.sss
3	NMEA header	\$GPGLL	
4	Latitude	5830.482	ddmm.mmm
5	North or South	N	
6	Longitude	17012.651	dddmm.mmm
7	East or West	W	
8	GMT of Position	6.00	hhmmss.ss
9	Status of data (A=valid)	A	
10	Checksum	*17	

PCode Bridge VTG

Course and speed over ground data in NMEA VTG format from the Trimble GPS receiver located on the bridge.

./pcode_bridge_vtg

Pcode-Bridge-VTG_20070415-000000.Raw

04/15/2007,00:00:03.162,\$GPVTG,343.9,T,333.8,M,12.46,N,23.08,K*40

04/15/2007,00:00:05.162,\$GPVTG,343.8,T,333.8,M,12.49,N,23.12,K*45

04/15/2007,00:00:07.146,\$GPVTG,343.9,T,333.8,M,12.48,N,23.11,K*46

FIELD	DATA	Example	UNITS
1	SCS logged Date	04/15/2007	mm/dd/year
2	SCS logged Time GMT	00:00:07.146	hh:mm:ss.sss
2	NMEA header	\$GPVTG	
3	Heading	343.9	Degrees
4	Degrees true (T)	T	
5	Heading	333.8	Degrees
6	Degrees magnetic	M	
7	Ship Speed	12.48	knots
8	N=Knots	N	
9	Ship Speed	23.11	km/hr
10	K=KM per hour	K	
11	Check sum	*46	

Glonass

Glonass GGA

Position data in NMEA GGA format from the GLONASS GPS receiver.

./glonass_gga

Glonass-GGA_20070415-000000.Raw

04/15/2007,00:00:02.412,\$GPGGA,000002.00,5830.472078,N,17012.636881,W,
1,09,0.9,22.999,M,9.46,M,,*49

04/15/2007,00:00:03.396,\$GPGGA,000003.00,5830.475412,N,17012.638716,W,
1,09,0.9,23.000,M,9.46,M,,*40

04/15/2007,00:00:04.412,\$GPGGA,000004.00,5830.478732,N,17012.640527,W,
1,09,0.9,22.932,M,9.46,M,,*4D

FIELD	DATA	Example	UNITS
1	SCS logged Date	04/15/2007	mm/dd/year
2	SCS logged Time GMT	00:00:04.412	hh:mm:ss.sss
3	NMEA header	\$GPGGA	
4	GPS time at position GMT	4.00	hhmmss.ss
5	Latitude	5830.478732	ddmm.mmmmmm
6	North (N) or South(S)	N	
7	Longitude	17012.640527	dddmm.mmmmmm
8	East (E) or West (W)	W	
9	GPS Quality: 1 = GPS2=DGPS	1	
10	Number of GPS Satellites Used	9	
11	HDOP (horizontal dilution of precision)	0.9	
12	Antenna height	22.932	meters
13	M for Meters	M	
14	Geoidal Height	9.46	meters
15	M for Meters	M	
16	Differential reference station ID (no data in sample string)		
17	Checksum	*4D	

Glassnos GLL

Position data in NMEA GLL format from the GLONASS GPS receiver.

./glassnos_gll

Glomass-GLL_20070415-000000.Raw

04/15/2007,00:00:03.240,\$GPGLL,5830.475412,N,17012.638716,W,000003.00,A*12

04/15/2007,00:00:04.255,\$GPGLL,5830.478732,N,17012.640527,W,000004.00,A*16

04/15/2007,00:00:05.255,\$GPGLL,5830.482216,N,17012.642424,W,000005.00,A*11

FIELD	DATA	Example	UNITS
1	SCS logged Date	04/15/2007	mm/dd/year
2	SCS logged Time GMT	00:00:05.255	hh:mm:ss.sss
3	NMEA header	\$GPGLL	
4	Latitude	5830.482216	ddmm.mmmmmm
5	North or South	N	
6	Longitude	17012.642424	dddmm.mmmmmm
7	East or West	W	
8	GMT of Position	5.00	hhmmss.ss
9	Status of data (A=valid)	A	
10	Checksum	*74	

Gyro

Gyro Heading

Heading data in NMEA HDT format from the Sperry gyrocompass.

./gyro

Gyro_20070415-000000.Raw

04/15/2007,00:00:01.912,\$HEHDT,346.647,T*2B

04/15/2007,00:00:03.912,\$HEHDT,346.713,T*2B

04/15/2007,00:00:05.927,\$HEHDT,346.735,T*2F

FIELD	DATA	Example	UNITS
1	SCS logged Date	04/15/2007	mm/dd/year
2	SCS logged Time GMT	00:00:05.927	hh:mm:ss.sss
3	NMEA header	\$HEHDT	
4	Heading	346.735	degrees
5	True (T) or Magnetic (M)	T	
6	Check sum	*2F	

Waypoints

IBS Waypoints

Waypoints from the Healy's Integrated Bridge System (IBS).

.ibs_waypoints

IBS-WayPoints_20070415-000000.Raw

04/15/2007,00:00:03.193,\$NVWPL,6152.68,N,17402.58,W,62*51

04/15/2007,00:00:04.193,\$NVWPL,6156.58,N,17422.68,W,63*56

04/15/2007,00:00:05.193,\$NVWPL,6202.16,N,17439.96,W,64*52

FIELD	DATA	Example	UNITS
1	SCS logged Date	04/15/2007	mm/dd/year
2	SCS logged Time GMT	00:00:05.193	hh:mm:ss.sss
3	NMEA header	\$NVWPL	
4	Latitude	6202.16	ddmm.mm
5	North or South	N	
6	Longitude	17439.96	dddmm.mm
7	East or West	W	
8	Waypoint number	64	
9	Checksum	*52	

Speed Log

Sperry Sped Log

Ground/water speed data from the Sperry Speed Log.

./sperry_speedlog

Sperry-Speedlog_20070415-000000.Raw

04/15/2007,00:00:02.755,\$VDVBW,12.32,0.85,A,12.43,0.66,A*5A

04/15/2007,00:00:03.271,\$VDVBW,12.33,0.80,A,12.44,0.66,A*59

04/15/2007,00:00:03.771,\$VDVBW,12.34,0.78,A,12.45,0.68,A*56

FIELD	DATA	Example	UNITS
1	SCS logged Date	04/15/2007	mm/dd/year
2	SCS logged Time GMT	00:00:03.771	hh:mm:ss.sss
2	NMEA header	\$VDVBW	
3	Fore-aft Water Speed - = astern	12.34	knots
4	Port-Stbd Water Speed - = port	0.78	knots
5	A= Data Valid V=Invalid	A	
6	Fore-aft Bottom Speed - = astern	12.45	knots
7	Port-Stbd Bottom Speed - = port	0.68	knots
8	A= Data Valid V=Invalid	A	
9	Checksum	*56	

Sound Velocimeter

SV2000

Sound Velocity data from the SV2000 sound velocimeter.

./sv2000

Sound-Velocimeter_20070415-000000.Raw

NO DATA

KNUDSEN 320B/R

The Knudsen 320B/R depth sounder can record depth in both 3.5 and 12 kHz mode. The Healy records the 3.5 kHz data (Sub Bottom Profile) underwater. This data is saved in all of the formats that the Knudsen can record data in. These files are in both ASCII and BINARY format (see the table below). This data is also saved as depth in Datalog/Knudsen.

./knudsenraw

FILENAME	FORMAT	DEFINITION
<i>2007_102_0005_004.keb</i>	Binary	Knudsen Playback File
<i>2007_102_0005_008.kea</i>	Ascii	Log of depth, settings and environmental data
<i>2007_102_0005_HF_001.sgy</i>	Binary	SEG-Y extended Seismic format

POSMV

The files saved in the directory pos_mv are all ones that the posmvnav computer logged from various navigation devices and devices related to the Seabeam system. The files use the naming convention of the name of the cruise, the device and an extent that has the year and julian day. An example for the ADU5 GPS receiver on day 105 in 2007 would be: HLY0701-adu5.y2007d105. The files are ASCII

./pos_mv

HLY0701-adu5.y2007d105

HLY0701-aggps.y2007d105

HLY0701-ftsgauss.y2007d105

HLY0701-ftsgaussraw.y2007d105

HLY0701-par.y2007d105

HLY0701-posatt.y2007d105

HLY0701-posnav.y2007d105

HLY0701-posreform2sb.y2007d105

HLY0701-sbsv.y2007d105

POSMV Events

The events directory in the pos_mv directory has event files from various system showing start and stop times and various events in the recording and setup history of the device.

/pos_mv/events

Seabeam

The raw Seabeam 2112 binary files are in this directory. The naming convention uses the year, month, Julian day, and the start hour and minute in it. For year 2007 on day 110 starting at 11:12 the name would be sb20071101112.mb41. mb41 is the multibeam format number for the Seabeam 2112 that the Healy uses. This can best be accessed and used by using the MB-System software.

./Seabeam

sb20071091600.mb41

Thermosalinograph

Thermosalinograph AFT

Not used for HLY0701

./tsg_aft

Thermosalinograph Forward

The Forward Thermosalinograph data is written here in the binary format that SeaBird puts out. There 2 files for each time period. The files use the name of the cruise and a sequence number in the recording for the cruise. See the SeaBird software Seacat for further processing.

./tsg_fwd

HLY07TSGFwd0701-2.CON

HLY07TSGFwd0701-2.hex

CTD

Data for the each CTD cast are contained here. Each cast is in a separately numbered subdirectory.

./ctd

FILENAME	FORMAT	DEFINITION
<i>021.BL</i>	ASCII	Bottle firing information
<i>021.CON</i>	ASCII	The configuration file for the cast
<i>021.HDR</i>	ASCII	Header information for the cast
<i>021.btl</i>	ASCII	Averaged Bottle firing information
<i>021.cnv</i>	ASCII	The data
<i>021.dat</i>	Binary	The data
<i>021.jpg</i>	Binary	Plotted JPEG image of the cast
<i>021.ros</i>	ASCII	Data from when bottlesfire
<i>021avg.cnv</i>	ASCII	Meaned 1 meter down cast of the data

Expandable Bathythermograph (XBT)

No XBTs were taken on HLY0701. The file names use the probe type and the sequence number of the XBT in the series used for the cruise.

./xbt

FILENAME	EXTENSION	DEFINITION	PROGRAM REQUIRED to read the file
T5_00014.rdf	.RDF	Raw Data Format	Sippican Software
T5_00014.edf	.EDF	Exportable Data Format	Any text/spreadsheet