



## Passage Plan

The following documents are to be attached to this form:

- Under Keel Clearance Calculation Form
- Waypoint Form
- Restricted Waters Summary Form

### General Information

Vessel name:	IMO #:	Voyage Number:	Date this plan initially prepared:
Axel Spirit	9282041	69b	26/10/2007

Port From:	Port To:
Cayo Arcas, Mexico	Perth Amboy, US

Vessel's load condition		Loaded	Cargo of:	Maya Crude	Quantity	431 112 bbls
Berth:		FSO TA-KUNTAH		Berth: Chevron		
Draft Restriction:				Draft Restriction:		
ETD Berth	ETD Pilot Stn	Zone Time:		ETA Pilots: (Date/Time)	Zone Time:	
27/10/2007	27/10/2007	GMT-5		02/11/2007 12:00	GMT-4	

Distance Berth to Berth (NM):			1967.0 nm
Berth To Pilot (NM):	Pilot To Pilot (NM):	Pilot To Berth (NM):	
1.0 Nm	1,942.0 Nm	24.0 Nm	

Steaming Times (Pilot To Pilot)					
@	12.0	Knots	6.74	Days	ETA (LT): 3/11/2007 8:00
@	13.0	Knots	6.22	Days	ETA (LT): 2/11/2007 21:00
@	14.0	Knots	5.78	Days	ETA (LT): 2/11/2007 12:00

Bunkers		Fuel Oil		Diesel Oil	
Bunkers Required For Voyage:		350	MT	MT	
Bunkers Rob On Departure:		1236.8	MT	90.8	MT

DEPARTURE PORT				ARRIVAL PORT			
Draft:				Draft:			
Fwd	10.20	Mtrs		Fwd	10.40	Mtrs	
Aft	10.20	Mtrs		Aft	10.40	Mtrs	
Mid	10.20	Mtrs		Mid	10.40	Mtrs	
Airdraft	38.4	Mtrs		Airdraft	38.2	Mtrs	
Max draft		10.20	Mtrs	Max draft		10.40	Mtrs
Est Squat		0.3	Mtrs	Est Squat		0.30	Mtrs
Density		1.025		Density		1.012	
Min UKC		74.5	Mtrs	Min UKC		0.86	Mtrs
Min Fairway Depth		86	Mtrs	Min Fairway Depth		10.36	Mtrs
Actual Air Draft		38.4	Mtrs	Actual Air Draft		38.20	Mtrs
Tides				Tides			
	Time (LT)	Height		Time (LT)	Height		
H	see attached			see attached			
L							
H							
L							
Load Line Zone: summer				Load Line Zone: summer			
Sunrise Time		07:08		Sunrise Time		06:25	
Sunset Time		18:38		Sunset Time		16:51	



## Passage Plan

<b>Pilot Disembarkation Position:</b> Pilot boards in pos 20-07,8N 091-59.7W 2.5 Nm SW of the platform	<b>Pilot Embarkation Position:</b> Pilot boards in the triangular shaped area, west of Ambrose Lt.	
<b>Initial Course from Pilot station:</b>	<b>Final Course to Pilot station:</b>	
<b>Pilot Station / boat:</b> VHF 16/09	<b>Pilot Station / boat:</b> VHF 13/16/73	
<b>Terminal:</b> VHF 67	<b>Terminal:</b> VHF	
<b>VTS:</b> VHF	<b>VTS:</b> VHF 12/14	
<b>Local coastguard:</b> VHF	<b>Local coastguard:</b> VHF 16	
<b>Other:</b>	<b>Other:</b>	
<b>Reporting points:</b>	<b>1st Pilot Notification:</b>	ETA through agent, 24h advance notice with 3h update is requested.
see ALRS 6(5) page 200	<b>Reporting points:</b>	see ALRS 6(5) page 326
	<b>VTS Info:</b> Area 1 Vhf CH 14, Area 2 Vhf CH 12	
<b>Security level and notes:</b>	<b>Security level and notes:</b>	
Level 1	Level 1	
<b>Approach notes: (attach separately if necessary)</b> Refer ASD 69A page 134	<b>Approach notes: (attach separately if necessary)</b> Refer ASD 68 page 193, US Coast Guard Pilots 2 page 397, CFR 33.	
<b>Bridge Manning/ ER Status:</b>	<b>Bridge Manning/ ER Status:</b>	
<b>Anchorage area:</b> As marked on chart	<b>Anchorage area:</b> As marked on chart	
<b>Emergency anchorage area:</b> As marked on chart	<b>Emergency anchorage area:</b> As marked on chart	
<b>Remarks and Restrictions (eg. Limiting Air Draft):</b> *Attach additional pages if required		
No air draft restrictions. Carry out reporting when passing reporting points.	Outerbridge Crossing Bridge - fixed span with vertical clearance 143 ft (43.6m). Carry out reporting when passing reporting points.	
<b>Other information (berth to berth)</b>		



# Passage Plan

**Charts in use:**

DEPARTURE	SEA PASSAGE	ARRIVAL
2626	2626, 1225, 4401, 2576, 2710, 12300	12328, 12401, 12331

**Publications in use:**

DEPARTURE	SEA PASSAGE	ARRIVAL
ADLL AREA 9, DIGITRACE, ASD 69A, TOTAL TIDE, ALRS 6(5), GUIDE TO PORT ENTRY, Mariners Handbook	ADLL AREA 9 DIGITRACE, ASD 69A, TOTAL TIDE, ALRS 6(5), Mariners Handbook	ADLL AREA 9, DIGITRACE, ASD 68, TOTAL TIDE, ALRS 6(5), GUIDE TO PORT ENTRY, Mariners Handbook

**All voyage charts and publications have been corrected up to NTM Week No:**

BA: 43/07	US: 43/07
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**Additional general comments and notes for the voyage:** (refer to attached Waypoint and Restricted Waters Summary): Form FM0015

**Weather/Tides/Currents/Routing:**  
 For Weather /Current reports please refer to the messages received from the INMARSAT-C, NAVTEX, Orion, Routing Charts, The Mariners Handbook, Tidal Stream Tables, Tide Tables, Total Tides Programs,  
**NAVAREA 4**




**Passage Plan**

**Hazards/Emergency Procedures/Contingency Plan:**

Dangers and hazards, "No Go Areas", are well marked on the charts. As per company's Emergency Procedures and Emergency Plan. Parallel index are drawn in the chart where applicable.

**Reporting areas (AMVER, AUSREP, USCG Notification, ECAREG, etc.):**

Pls. see marks on the charts. Refer to ALRS 6 (5) for procedures

**Master's Instructions (When to Call/Caution/Special Instructions): Also see any prepared Restricted Water Summary**

Master's bridge standing /night orders to be strictly adhered to a sharp lookout to be maintained at all times. Carry out reportings as required. Watch conditions are subject to change when deemed necessary.

Position Fixing Schedule		
Vessel's location	Position fixing method to use	Frequency of fix
Coastal and inland waterways	Radar and visual positions as available supplemented by GPS	As required to prevent vessel running into danger, not exceeding 30 minute intervals
Restricted passages		
Open sea	Celestial as available + GPS	Min once every watch



## Passage Plan

Restricted Water Transits (Details are available separately)				
Nos	Location	ETA (LT)	Waypoints From - To	Remarks
1	Pilot Station	02/11/2007	see UKC Form	Pilot Station Ch 13/16/73
2	Channel	02/11/2007	see UKC Form	VTS Ch 12/14
3	Chevron Jetty	02/11/2007	see UKC Form	Jetty
4				
5				
6				
7				
8				
9				
10				

Marine Environmental Protection Measures (impacting MARPOL Annex I, IV, V or VI, PSSA, Ballast water, etc)
Vessel in Special Area as per Marpol Annex V

Note: Closely monitor execution of the passage plan and amend it if any way points are changed (e.g. vessel proceeding to anchorage instead of picking up pilot) and make appropriate deck log book entries. Vessel's position must be verified regularly.

	Rank	Name	Signature
Navigating Officer:	2/O	[Redacted]	[Redacted]
Bridge Watch Officer:	3/O	[Redacted]	[Redacted]
Bridge Watch Officer:	3/O	[Redacted]	[Redacted]
Bridge Watch Officer:		[Redacted]	[Redacted]
Chief Officer:		[Redacted]	[Redacted]
Master:		[Redacted]	[Redacted]

Refer to the following documents for further information:

- Passage Planning (SP0237)
- Bridge Resource Management Statement - (BRM) (SP0412)
- Passage Plan Monitoring (SP0120)
- Responsibility for Safe Navigation (SP0121)

File this Form in Navigation Officer Binder #3 and retain for 3 years

Passage Plan Form - ver2.0 - Nov06



# Waypoint Check List

Courses and distances are indicative. Refer to chart for more information.

Vessel: Axel Spirit

Date: 26/10/2007

Voyage No: 89b

Port from: Cayo Arcas, Mexico

Prepare this form berth-to-berth. Attach to Passage Plan Form

Port to: Perth Anboy, US

Note: Closely monitor execution of the passage plan and amend it if any way points are changed (e.g. vessel proceeding to anchorage instead of picking up pilot) and make appropriate deck k position must be verified regularly.

WP	Lat	Long	Location Reference	Charts	Voyage Status	Min. UKC (mtrs)	Primary Posn Fix by	Secondary Posn Fix by	Position Fix Interval (mins)	TK Watch Condition	In Parallel Index on Chart? (Y/N/A)	Course	Distance	Distance to go
0	N 18° 41.4'	W 092° 04.8'	1	2626	Departure	>50	Vis/Radar	GPS	5-15	WC-P	N/A			1961.8 nm
1	N 20° 46.5'	W 092° 40.0'	4	1225	At Sea	>50	Vis/Radar	GPS	5-60	WC-1	Yes	333.1°	73.0 nm	1888.8 nm
2	N 22° 04.3'	W 092° 40.0'	5	1225	At Sea	>50	Vis/Radar	GPS	60	WC-1	N/A	360.0°	77.8 nm	1811.0 nm
3	N 23° 03.3'	W 091° 15.7'	6	1225	At Sea	>50	Vis/Radar	GPS	60	WC-1	N/A	052.8°	97.7 nm	1713.3 nm
4	N 24° 15.0'	W 089° 02.8'	7	4401	At Sea	>50	Vis/Radar	GPS	60-120	WC-1	N/A	059.5°	141.4 nm	1571.9 nm
5	N 24° 18.6'	W 087° 25.0'	8	4401	At Sea	>50	Vis/Radar	GPS	60-120	WC-1	N/A	087.7°	89.0 nm	1482.8 nm
6	N 23° 47.0'	W 085° 00.0'	9	2579, 4401	At Sea	>50	Vis/Radar	GPS	60	WC-1	N/A	103.4°	136.1 nm	1346.7 nm
7	N 23° 47.0'	W 081° 21.7'	11	2579	At Sea	>50	Vis/Radar	GPS	60	WC-1	N/A	090.0°	189.8 nm	1146.9 nm
8	N 24° 31.9'	W 078° 48.8'	12	2578	At Sea	>50	Vis/Radar	GPS	60	WC-1	N/A	062.1°	95.9 nm	1051.0 nm
9	N 25° 10.3'	W 078° 30.5'	13	2710	At Sea	>50	Vis/Radar	GPS	60	WC-1	N/A	023.4°	41.8 nm	1009.2 nm
10	N 27° 08.8'	W 078° 28.8'	14	2710	At Sea	>50	Vis/Radar	GPS	60	WC-1	N/A	002.0°	118.7 nm	890.5 nm
11	N 29° 21.8'	W 078° 02.8'	15	2710	At Sea	>50	Vis/Radar	GPS	60	WC-1	N/A	028.9°	151.5 nm	738.0 nm
12	N 35° 59.5'	W 074° 03.9'	16	2710	At Sea	>50	Vis/Radar	GPS	30-60	WC-1	N/A	028.8°	446.0 nm	293.0 nm
13	N 39° 17.0'	W 073° 37.0'	17	12300	At Sea	23.0	Vis/Radar	GPS	30-60	WC-1	N/A	006.1°	198.6 nm	94.4 nm
14	N 40° 21.8'	W 073° 55.1'	18	12326	At Sea	11.0	Vis/Radar	GPS	30	WC-3	N/A	353.6°	65.0 nm	28.4 nm
15	N 40° 26.8'	W 073° 50.1'	19	12326	Arrival	17.0	Vis/Radar	GPS	5-15	WC-3	N/A	332.7°	6.0 nm	23.4 nm
16	N 40° 28.8'	W 073° 55.1'	20	12326	Restricted Transit	11.7	Vis/Radar	GPS	5	WC-P	Yes	265.5°	3.8 nm	19.6 nm
17	N 40° 27.8'	W 073° 57.2'	2	12326	Restricted Transit	0.86	Vis/Radar	GPS	5	WC-P	Yes	306.9°	2.0 nm	17.6 nm
18	N 40° 28.8'	W 073° 58.8'	3	12326	Restricted Transit	0.86	Vis/Radar	GPS	5	WC-P	Yes	309.4°	1.6 nm	16.0 nm
19	N 40° 29.0'	W 073° 59.5'	4	12401	Restricted Transit	0.86	Vis/Radar	GPS	5	WC-P	Yes	292.0°	0.5 nm	15.5 nm
20	N 40° 29.0'	W 074° 00.0'	5	12401	Restricted Transit	0.86	Vis/Radar	GPS	5	WC-P	Yes	270.0°	0.4 nm	15.1 nm
21	N 40° 28.8'	W 074° 00.7'	6	12401	Restricted Transit	0.86	Vis/Radar	GPS	5	WC-P	Yes	261.5°	0.5 nm	14.5 nm
22	N 40° 28.5'	W 074° 02.2'	7	12401	Restricted Transit	0.86	Vis/Radar	GPS	5	WC-P	N/A	247.8°	1.2 nm	13.3 nm
23	N 40° 30.5'	W 074° 11.4'	8	12401	Restricted Transit	0.86	Vis/Radar	GPS	5	WC-P	Yes	286.3°	7.3 nm	6.0 nm
24	N 40° 30.5'	W 074° 12.4'	9	12401	Restricted Transit	0.86	Vis/Radar	GPS	5	WC-P	Yes	270.0°	0.7 nm	5.3 nm
25	N 40° 29.5'	W 074° 13.6'	10	12401	Restricted Transit	0.86	Vis/Radar	GPS	5	WC-P	N/A	225.0°	1.5 nm	3.8 nm
26	N 40° 29.3'	W 074° 14.2'	11	12401	Restricted Transit	0.86	Vis/Radar	GPS	5	WC-P	N/A	246.3°	0.4 nm	3.4 nm
27	N 40° 29.3'	W 074° 14.6'	12	12331	Restricted Transit	0.86	Vis/Radar	GPS	5	WC-P	N/A	275.6°	0.3 nm	3.1 nm
28	N 40° 29.5'	W 074° 15.0'	13	12331	Restricted Transit	0.86	Vis/Radar	GPS	5	WC-P	Yes	288.0°	0.4 nm	2.7 nm
29	N 40° 30.1'	W 074° 15.4'	14	12331	Restricted Transit	0.86	Vis/Radar	GPS	5	WC-P	Yes	332.3°	0.6 nm	2.1 nm
30	N 40° 30.5'	W 074° 15.5'	15	12331	Restricted Transit	0.86	Vis/Radar	GPS	5	WC-P	Yes	347.0°	0.4 nm	1.7 nm



# Waypoint Check List

Courses and distances are indicative. Refer to chart for more information.

WP	Lat	Long	Location Reference	Charts	Voyage Status	Min. UKC (mtrs)	Primary Posn Fix by	Secondary Posn Fix by	Position Fix Interval (min)	TK Watch Condition	Is Parallel Index on Chart? (Y/N/A)	Course	Distance	Distance to go
31	N 40° 30.6'	W 074° 15.4' 18		12331	Required Transit	0.86	Vis/Radar	GPS	5	SWC-P	Yes	023.0°	0.3 nm	1.4 nm
32	N 40° 31.3'	W 074° 14.9' 17		12331	Required Transit	0.86	Vis/Radar	GPS	5	SWC-P	Yes	037.0°	0.7 nm	0.7 nm
33	N 40° 32.0'	W 074° 15.0' 18	Star 4	12331	Arrival	0.86	Vis/Radar	GPS	5	SWC-P	Yes	352.0°	0.7 nm	0.0 nm
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Courses and distances are indicative. Refer to chart for more information.

AMENDMENT  
TO PASSAGE PLAN

Vessel: Axel Spirit Date: 3-Nov-07  
 Voyage No: 69b Port from: Ambrose Anchorage  
 Port to: Pilot Station

Prepare this form berth-to-berth. Attach to Passage Plan Form

Note: Closely monitor execution of the passage plan and amend it if any way points are changed (e.g. vessel proceeding to anchorage instead of picking up pilot) and make appropriate deck k position must be verified regularly.

WP	Lat	Long	Location Reference	Charts	Voyage Status	Min. UKC (metre)	Primary Posn Fix by	Secondary Posn Fix by	Position Fix Interval (Min)	TK Watch Condition	In Parallel Index on Chart? (Y/N/A)	Course	Distance	Distance to go
0	N 40° 28.5' W 073° 43.9' 1			12326	Departure	10.0	VisRadar	GPS	5-15	WC-3	N/A			6.2 nm
1	N 40° 28.3' W 073° 48.0' 2			12326	At Sea	10.0	VisRadar	GPS	5-15	WC-3	N/A	223.9°	4.4 nm	1.7 nm
2	N 40° 26.8' W 073° 50.1' 19			12326	Arrival	10.0	VisRadar	GPS	5-15	WC-3	N/A	290.1°	1.7 nm	0.0 nm
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# Underkeel Clearance Calculation Form

Refer to Underkeel Clearance (UKC) (SP0413) and Squat Effect on Draft (SP0118) for further information.

\* File a copy of this form in binder: Navigation Officer #3 for a minimum period of 3 years

**NOTE:** Page 1 of this form shall be completed for each section of the passage where the anticipated static underkeel clearance has been judged to be less than 3.5 metres. It should also be completed if deemed necessary by the master.

Page 2 (Table 5.) of this form shall be prepared in anticipation of various drafts and speeds and shall be available on the bridge at all times. This need not be re-calculated for every voyage.

Calculation of Deepest Draft & Under Keel Clearance		
<b>Vessel:</b>	Axel Spirit	<b>Eta Date/Time LT</b>
<b>Port:</b>	Cayo Arcas	27/10/2007 12:00

1. Anticipated Controlling / Minimum Depth		Metres	Remark
Depth of channel	Location: FSO TA-KUNTAH	86.000	Least depth at channel
Correction	Tide		
	Weather		
	Other		
<b>Anticipated controlling depth: (after corrections)</b>		<b>86.000</b>	

2. Calculated Maximum Draft		Metres	3. Transit Speed Calculation	
Vessel's maximum draft (static)		10.200	Planned Speed over ground	6.0 Kts
Correction	List / Roll / Trim / Swell	0.300	Effect of tide (+/-)	Kts
	Water density:		Effect of current (+/-)	Kts
	Estimated Squat effect (Table 5)	1.000	<b>Effective Speed through water</b>	<b>6.00 Kts</b>
<b>Calculated Maximum Draft: (after corrections)</b>		<b>11.500</b>	This speed is to be taken into account to derive squat	

4. Dynamic Underkeel Clearance Calculation		Metres	Remarks
<b>Anticipated controlling / minimum depth: (after corrections)</b>		<b>86.000</b>	
<b>Calculated Maximum Draft (after corrections)</b>		<b>11.500</b>	
<b>Dynamic Underkeel Clearance</b>		<b>74.500</b>	

Date: 27.10.07

Officer: 2/O [Redacted]

Master: [Redacted]

Time: 0600

Signature: [Redacted]

Signature: [Redacted]

10/27/2007			10/28/2007			10/29/2007		
	Time	Height		Time	Height		Time	Height
High	3:41 AM	0.7 m	High	4:06 AM	0.7 m	High	4:31 AM	0.7 m
	6:34 PM	0.7 m		7:29 PM	0.7 m		8:31 PM	0.7 m
Low	11:10 AM	-0.5 m	Low	11:48 AM	-0.5 m	Low	12:04 AM	0.5 m
	11:24 PM	0.4 m					12:28 PM	-0.5 m
10/30/2007			10/31/2007			11/1/2007		
	Time	Height		Time	Height		Time	Height
High	4:55 AM	0.7 m	High	5:16 AM	0.7 m	High		
				11:25 PM	0.7 m			
Low	12:46 AM	0.5 m	Low	1:38 AM	0.6 m	Low	3:11 AM	0.6 m
	1:09 PM	-0.5 m		1:54 PM	-0.4 m		2:47 PM	-0.3 m
11/2/2007								
	Time	Height						
High	12:42 AM	0.7 m						
Low	3:50 PM	-0.2 m						



# Underkeel Clearance Calculation Form

Refer to Underkeel Clearance (UKC) (SP0413) and Squat Effect on Draft (SP0118) for further information.

\* File a copy of this form in binder: Navigation Officer #3 for a minimum period of 3 years

**NOTE:** Page 1 of this form shall be completed for each section of the passage where the anticipated **static underkeel clearance has been judged to be less than 3.5 metres**. It should also be completed if deemed necessary by the master.

Page 2 (Table 5.) of this form shall be prepared in anticipation of various drafts and speeds and shall be available on the bridge at all times. This need not be re-calculated for every voyage.

Calculation of Deepest Draft & Under Keel Clearance		
<b>Vessel:</b>	Axel Spirit	<b>Eta Date/Time LT</b>
<b>Port:</b>	Perth Amboy	02/11/2007 16:30:00

1. Anticipated Controlling / Minimum Depth		Metres	Remark
Depth of channel	Location: Pilot St	21.300	Least depth at channel
Correction	Tide	1.400	High water 14:44
	Weather		
	Other		
<b>Anticipated controlling depth: (after corrections)</b>		<b>22.700</b>	

2. Calculated Maximum Draft		Metres	3. Transit Speed Calculation	
Vessel's maximum draft (static)		10.400	Planned Speed over ground	6.0 Kts
Correction	List / Roll / Trim / Swell	0.300	Effect of tide (+/-)	Kts
	Water density:		Effect of current (+/-)	Kts
Estimated Squat effect (Table 5)		0.300	<b>Effective Speed through water</b>	<b>6.00 Kts</b>
<b>Calculated Maximum Draft: (after corrections)</b>		<b>11.000</b>	This speed is to be taken into account to derive squat	

4. Dynamic Underkeel Clearance Calculation		Metres	Remarks
Anticipated controlling / minimum depth: (after corrections)		22.700	
Calculated Maximum Draft (after corrections)		11.000	
<b>Dynamic Underkeel Clearance</b>		<b>11.700</b>	

Date: 27.10.07

Officer: 2/0 [Redacted]

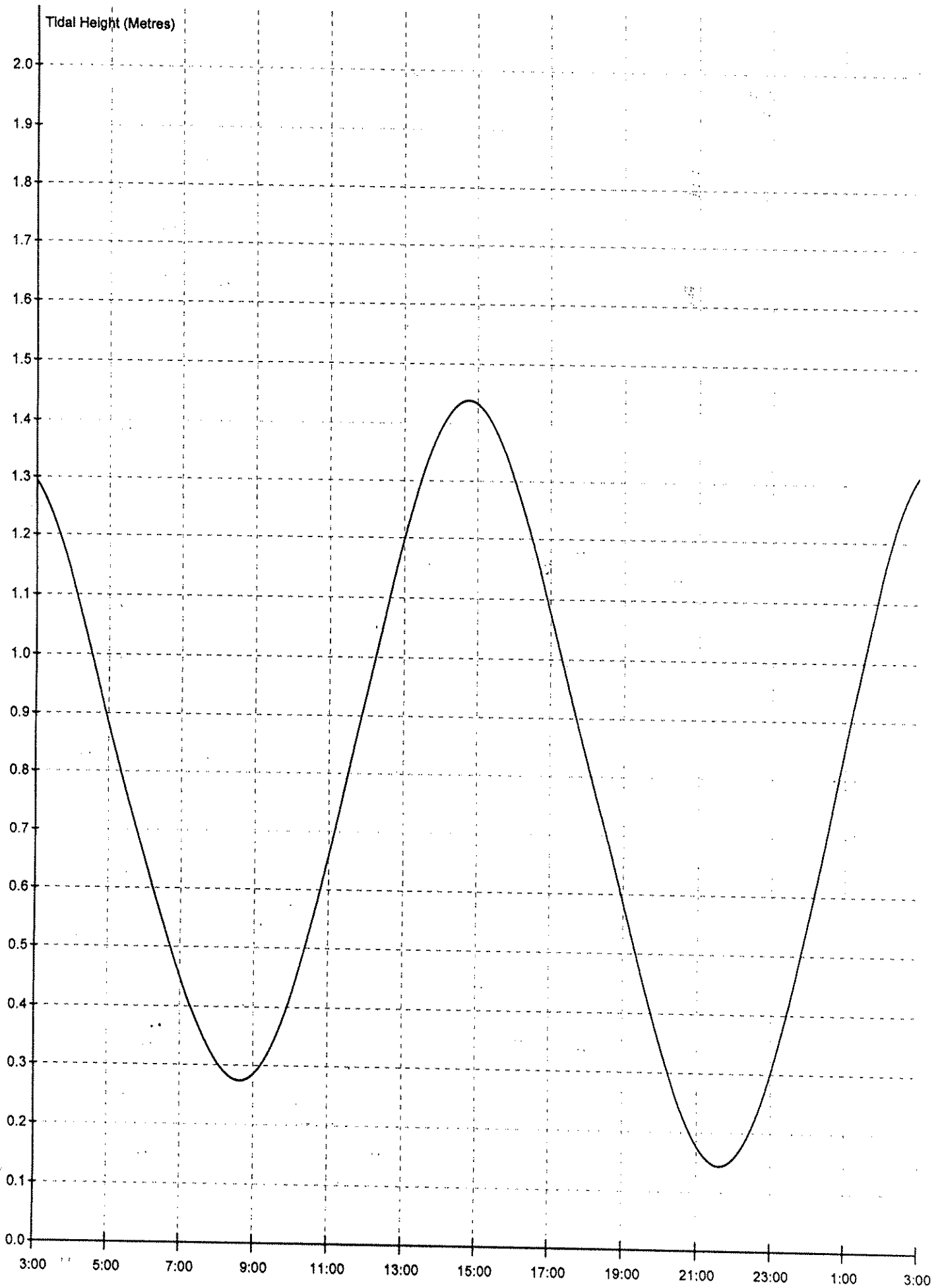
Master: [Redacted]

Time 0600

Signature: [Redacted]

Signature: [Redacted]

11/2/2007			11/3/2007			11/4/2007		
	Time	Height		Time	Height		Time	Height
High	2:29 AM	1.3 m	High	3:28 AM	1.3 m	High	4:25 AM	1.4 m
	2:44 PM	1.4 m		3:41 PM	1.4 m		4:37 PM	1.4 m
Low	8:38 AM	0.3 m	Low	9:47 AM	0.3 m	Low	10:45 AM	0.2 m
	9:36 PM	0.1 m		10:30 PM	0.1 m		11:15 PM	0.1 m
11/5/2007			11/6/2007			11/7/2007		
	Time	Height		Time	Height		Time	Height
High	5:18 AM	1.4 m	High	6:05 AM	1.5 m	High	6:47 AM	1.6 m
	5:29 PM	1.4 m		6:17 PM	1.4 m		7:00 PM	1.4 m
Low	11:34 AM	0.2 m	Low	12:20 PM	0.1 m	Low	12:33 AM	0.0 m
	11:55 PM	0.1 m					1:03 PM	0.1 m
11/8/2007								
	Time	Height						
High	7:26 AM	1.6 m						
	7:40 PM	1.4 m						
Low	1:09 AM	0.0 m						
	1:45 PM	0.0 m						



Predicted heights are in metres above chart datum  
Printed by Admiralty TotalTide

11/3/2007



11/2/2007		
4:00 AM	0.5 kn	100°
5:00 AM	1.2 kn	100°
6:00 AM	1.2 kn	100°
7:00 AM	0.8 kn	100°
8:00 AM	0.4 kn	100°
9:00 AM	0.1 kn	290°
10:00 AM	0.7 kn	290°
11:00 AM	1.1 kn	290°
12:00 PM	1.2 kn	290°
1:00 PM	1.2 kn	290°
2:00 PM	0.9 kn	290°
3:00 PM	0.4 kn	290°
4:00 PM	0.2 kn	100°
5:00 PM	1.0 kn	100°
6:00 PM	1.3 kn	100°
7:00 PM	0.9 kn	100°
8:00 PM	0.5 kn	100°
9:00 PM	0.2 kn	100°
10:00 PM	0.3 kn	290°
11:00 PM	0.8 kn	290°

5:00 AM	0.2 kn	290°
6:00 AM	0.5 kn	100°
7:00 AM	1.1 kn	100°
8:00 AM	1.1 kn	100°
9:00 AM	0.7 kn	100°
10:00 AM	0.4 kn	100°
11:00 AM	0.2 kn	290°
12:00 PM	0.7 kn	290°
1:00 PM	1.0 kn	290°
2:00 PM	1.2 kn	290°
3:00 PM	1.1 kn	290°
4:00 PM	0.8 kn	290°
5:00 PM	0.3 kn	290°
6:00 PM	0.3 kn	100°
7:00 PM	1.0 kn	100°
8:00 PM	1.2 kn	100°
9:00 PM	0.8 kn	100°
10:00 PM	0.4 kn	100°
11:00 PM	0.1 kn	100°

7:00 AM	0.0 kn	
8:00 AM	0.8 kn	100°
9:00 AM	1.4 kn	100°
10:00 AM	1.0 kn	100°
11:00 AM	0.6 kn	100°
12:00 PM	0.3 kn	100°
1:00 PM	0.4 kn	290°
2:00 PM	0.9 kn	290°
3:00 PM	1.1 kn	290°
4:00 PM	1.2 kn	290°
5:00 PM	1.0 kn	290°
6:00 PM	0.7 kn	290°
7:00 PM	0.1 kn	290°
8:00 PM	0.6 kn	100°
9:00 PM	1.3 kn	100°
10:00 PM	1.1 kn	100°
11:00 PM	0.7 kn	100°

11/3/2007		
12:00 AM	1.1 kn	290°
1:00 AM	1.2 kn	290°
2:00 AM	1.1 kn	290°
3:00 AM	0.7 kn	290°
4:00 AM	0.2 kn	290°
5:00 AM	0.5 kn	100°
6:00 AM	1.1 kn	100°
7:00 AM	1.2 kn	100°
8:00 AM	0.7 kn	100°
9:00 AM	0.4 kn	100°
10:00 AM	0.2 kn	290°
11:00 AM	0.7 kn	290°
12:00 PM	1.0 kn	290°
1:00 PM	1.2 kn	290°
2:00 PM	1.1 kn	290°
3:00 PM	0.8 kn	290°
4:00 PM	0.4 kn	290°
5:00 PM	0.3 kn	100°
6:00 PM	1.0 kn	100°
7:00 PM	1.2 kn	100°
8:00 PM	0.8 kn	100°
9:00 PM	0.5 kn	100°
10:00 PM	0.2 kn	100°
11:00 PM	0.3 kn	290°

11/5/2007		
12:00 AM	0.4 kn	290°
1:00 AM	0.8 kn	290°
2:00 AM	1.1 kn	290°
3:00 AM	1.2 kn	290°
4:00 AM	1.0 kn	290°
5:00 AM	0.7 kn	290°
6:00 AM	0.2 kn	290°
7:00 AM	0.6 kn	100°
8:00 AM	1.2 kn	100°
9:00 AM	1.1 kn	100°
10:00 AM	0.7 kn	100°
11:00 AM	0.4 kn	100°
12:00 PM	0.3 kn	290°
1:00 PM	0.8 kn	290°
2:00 PM	1.1 kn	290°
3:00 PM	1.2 kn	290°
4:00 PM	1.1 kn	290°
5:00 PM	0.7 kn	290°
6:00 PM	0.3 kn	290°
7:00 PM	0.4 kn	100°
8:00 PM	1.1 kn	100°
9:00 PM	1.2 kn	100°
10:00 PM	0.8 kn	100°
11:00 PM	0.4 kn	100°

11/7/2007		
12:00 AM	0.4 kn	100°
1:00 AM	0.1 kn	290°
2:00 AM	0.6 kn	290°
3:00 AM	1.0 kn	290°
4:00 AM	1.2 kn	290°
5:00 AM	1.2 kn	290°
6:00 AM	0.9 kn	290°
7:00 AM	0.4 kn	290°
8:00 AM	0.2 kn	100°
9:00 AM	1.0 kn	100°
10:00 AM	1.3 kn	100°
11:00 AM	0.9 kn	100°
12:00 PM	0.5 kn	100°
1:00 PM	0.0 kn	
2:00 PM	0.5 kn	290°
3:00 PM	1.0 kn	290°
4:00 PM	1.2 kn	290°
5:00 PM	1.2 kn	290°
6:00 PM	1.0 kn	290°
7:00 PM	0.5 kn	290°
8:00 PM	0.0 kn	
9:00 PM	0.8 kn	100°
10:00 PM	1.4 kn	100°
11:00 PM	1.0 kn	100°

11/4/2007		
12:00 AM	0.8 kn	290°
1:00 AM	1.1 kn	290°
2:00 AM	1.2 kn	290°
3:00 AM	1.0 kn	290°
4:00 AM	0.7 kn	290°

11/6/2007		
12:00 AM	0.0 kn	
1:00 AM	0.5 kn	290°
2:00 AM	0.9 kn	290°
3:00 AM	1.2 kn	290°
4:00 AM	1.2 kn	290°
5:00 AM	1.0 kn	290°
6:00 AM	0.6 kn	290°

11/8/2007		
12:00 AM	0.6 kn	100°
1:00 AM	0.3 kn	100°
2:00 AM	0.3 kn	290°
3:00 AM	0.8 kn	290°
4:00 AM	1.1 kn	290°
5:00 AM	1.2 kn	290°
6:00 AM	1.1 kn	290°
7:00 AM	0.7 kn	290°
8:00 AM	0.2 kn	290°

9:00 AM	0.5 kn	100°
10:00 AM	1.2 kn	100°
11:00 AM	1.2 kn	100°
12:00 PM	0.7 kn	100°
1:00 PM	0.4 kn	100°
2:00 PM	0.2 kn	290°
3:00 PM	0.7 kn	290°
4:00 PM	1.1 kn	290°
5:00 PM	1.2 kn	290°
6:00 PM	1.1 kn	290°
7:00 PM	0.8 kn	290°
8:00 PM	0.3 kn	290°
9:00 PM	0.3 kn	100°
10:00 PM	1.0 kn	100°
11:00 PM	1.3 kn	100°

11/9/2007		
12:00 AM	0.8 kn	100°
1:00 AM	0.5 kn	100°
2:00 AM	0.0 kn	
3:00 AM	0.5 kn	290°



**Transit 2**

Complete this Form for each Transit through restricted waters/channels/straits/canals or other areas of special concern and include in Passage Plan. Prepare separate UKC calculation form if deemed necessary by Master.

Location (Description of area)		Channel		Waypoints From/To		see UKC Form	
ETA: 02/11/2007		Zone Time: -4		Bridge Watch Standard:		WC-P	
Sunset: 16:51		Sunrise: 06:25		Engine Room Status		MANNED	
Tides		Height		Security Level:		1	
H see attached		see attached		VTS / Communication \$		Pilot Station Ch 16/13/73	
L				Min planned UKC for passage		0.863 mtrs	
H				Max draft		10.40 mtrs	
L				Est Squat		0.3 mtrs	
				Density		1.012	
				Min UKC during this transit		0.863 mtrs	
				Min Fairway Depth		10.363 mtrs	
				Actual Air Draft		38.20 mtrs	
Optimum Time for transit							

Contingency plans (Abort Point, Emergency Anchorage, etc):

Abort Positions, No Go Areas, Emergency Anchorages are marked in the charts. As per Company Emergency Procedures and Contingency Plans

Plan for the passage: Commentary on conditions, restrictions and preparation (Parallel Index information, Speed, UKC, etc).

Parallel index are drawn in the chart when applicable.

Master's instructions: (when to call / risks / caution / special instructions)

As per master standing orders, marks on chart. Watch conditions may be raised depending on weather conditions, traffic or visibility.

Master: 

Signature: 

Master: 

Signature: 



# Underkeel Clearance Calculation Form

Refer to Underkeel Clearance (UKC) (SP0413) and Squat Effect on Draft (SP0118) for further information.

\* File a copy of this form in binder: Navigating Officer #3 for a minimum period of 3 years

**NOTE:** Page 1 of this form shall be completed for each section of the passage where the anticipated static underkeel clearance has been judged to be less than 3.5 metres. It should also be completed if deemed necessary by the master.

Page 2 (Table 5.) of this form shall be prepared in anticipation of various drafts and speeds and shall be available on the bridge at all times. This need not be re-calculated for every voyage.

Calculation of Deepest Draft & Under Keel Clearance		
Vessel:	Axel Spirit	Eta Date/Time LT
Port:	Perth Amboy	02/11/2007 17:00

1. Anticipated Controlling / Minimum Depth		Metres	Remark
Depth of channel	Location: Channel	10.363	Least depth at channel
Correction	Tide	1.500	high water 14:45
	Weather		
	Other		
<b>Anticipated controlling depth: (after corrections)</b>		<b>11.863</b>	

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2. Calculated Maximum Draft		Metres	3. Transit Speed Calculation	
Vessel's maximum draft (static)		10.400	Planned Speed over ground	6.0 Kts
Correction	List / Roll / Trim / Swell	0.300	Effect of tide (+/-)	Kts
	Water density:		Effect of current (+/-)	Kts
	Estimated Squat effect (Table 5)	0.300	<b>Effective Speed through water</b>	<b>6.00 Kts</b>
<b>Calculated Maximum Draft: (after corrections)</b>		<b>11.000</b>	This speed is to be taken into account to derive squat	

4. Dynamic Underkeel Clearance Calculation	Metres	Remarks
Anticipated controlling / minimum depth: (after corrections)	11.863	
Calculated Maximum Draft (after corrections)	11.000	
<b>Dynamic Underkeel Clearance</b>	<b>0.863</b>	

Date: 21.10.07

Officer: Z/O [Redacted]

Master: [Redacted]

Time 0600

Signature: [Redacted]

Signature: [Redacted]

2741 South Amboy  
 40°29'N 74°17'W United States Friday, November 02, 2007 +0400  
 Data Area 9. North America (east coast) and Caribbean Version 7

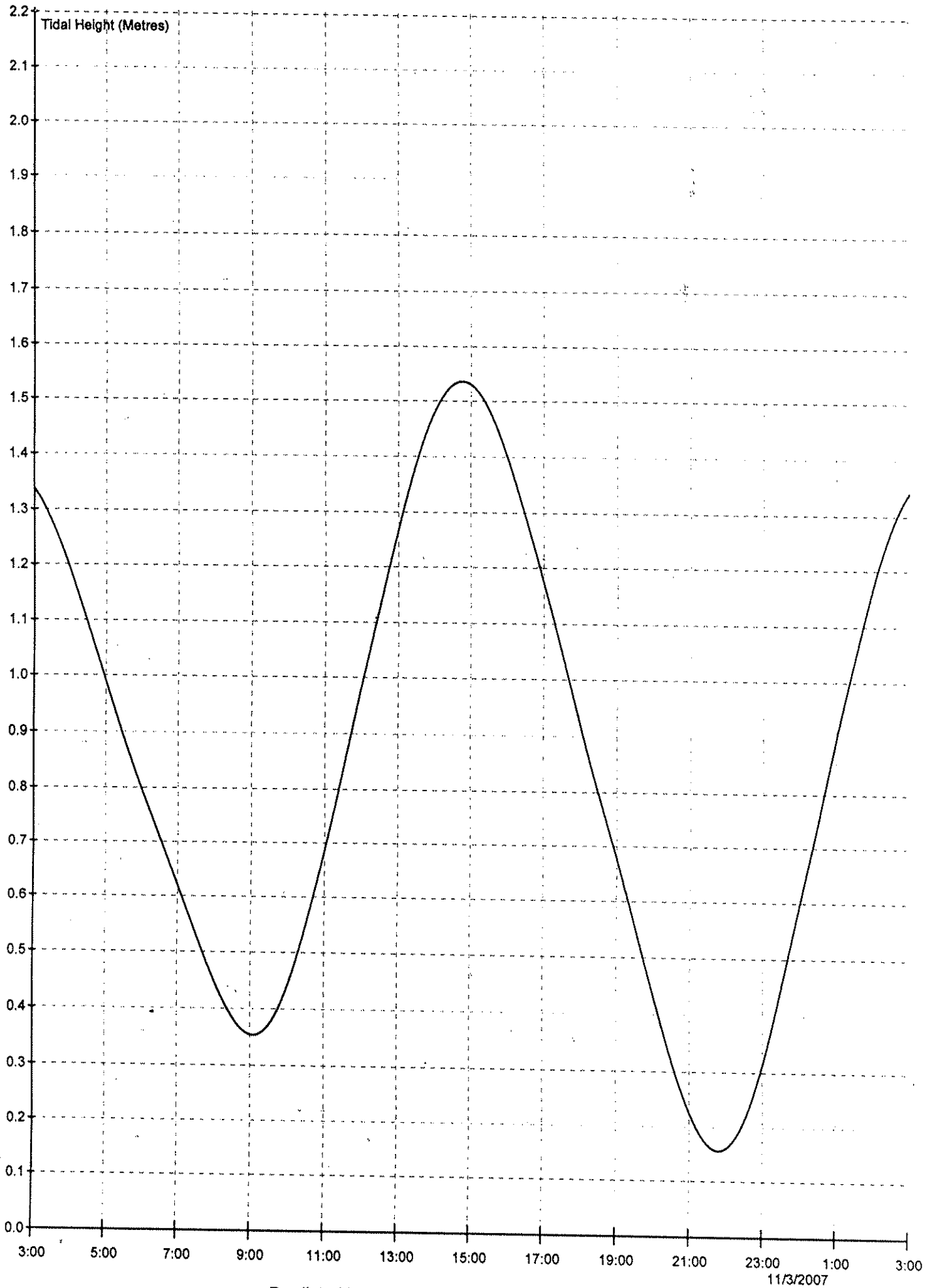
11/2/2007			11/3/2007			11/4/2007		
	Time	Height		Time	Height		Time	Height
High	2:29 AM	1.4 m	High	3:32 AM	1.4 m	High	4:35 AM	1.4 m
	2:45 PM	1.5 m		3:44 PM	1.5 m		4:42 PM	1.4 m
Low	9:05 AM	0.4 m	Low	10:11 AM	0.4 m	Low	11:04 AM	0.3 m
	9:48 PM	0.2 m		10:40 PM	0.1 m		11:24 PM	0.1 m
11/5/2007			11/6/2007			11/7/2007		
	Time	Height		Time	Height		Time	Height
High	5:27 AM	1.5 m	High	6:11 AM	1.6 m	High	6:52 AM	1.6 m
	5:32 PM	1.4 m		6:17 PM	1.4 m		7:00 PM	1.4 m
Low	11:51 AM	0.3 m	Low	12:05 AM	0.1 m	Low	12:45 AM	0.1 m
				12:36 PM	0.3 m		1:23 PM	0.2 m
11/8/2007								
	Time	Height						
High	7:32 AM	1.7 m						
	7:42 PM	1.4 m						
Low	1:27 AM	0.1 m						
	2:10 PM	0.2 m						

**Transit 3**

Complete this Form for each Transit through restricted waters/channels/straits/canals or other areas of special concern and include in Passage Plan. Prepare separate UKC calculation form if deemed necessary by Master.

Location (Description of area)		Chevron Jetty		Waypoints From/To		see UKC Form	
ETA:		02/11/2007	Zone Time:	-4	Bridge Watch Standard:		WC-P
Sunset:		16:51	Sunrise:	06:25	Engine Room Status		MANNED
Tides		Time	Height	Security Level:		1	
H				VTS / Communications		Chevron Terminal	
L				Min planned UKC for passage		0.863	mtrs
H				Max draft		10.40	mtrs
L				Est Squat		0.3	mtrs
Optimum Time for transit				Density		1.012	
Contingency plans (Abort Point, Emergency Anchorage, etc):		Abort Positions, No Go Areas, Emergency Anchorages are marked in the charts. As per Company Emergency Procedures and Contingency Plans					
Plan for the passage: Commentary on conditions, restrictions and preparation (Parallel Index information, Speed, UKC, etc).		Parallel Index are drawn in the chart when applicable.					
Master's instructions: (when to call / risks / caution / special instructions)		As per master standing orders, marks on chart. Watch conditions may be raised depending on weather conditions, traffic or visibility.					

Navigating Officer: \_\_\_\_\_ Master: \_\_\_\_\_  
 Signature: \_\_\_\_\_ Signature: \_\_\_\_\_  
 Passage Plan Form - ver2.0 - Nov/06



Predicted heights are in metres above chart datum  
Printed by Admiralty TotalTide

11/3/2007

11/2/2007		
4:00 AM	0.2 kn	240°
5:00 AM	0.7 kn	240°
6:00 AM	1.1 kn	240°
7:00 AM	1.2 kn	240°
8:00 AM	0.8 kn	240°
9:00 AM	0.2 kn	240°
10:00 AM	0.1 kn	020°
11:00 AM	0.5 kn	020°
12:00 PM	1.0 kn	020°
1:00 PM	1.1 kn	020°
2:00 PM	0.8 kn	020°
3:00 PM	0.2 kn	020°
4:00 PM	0.1 kn	240°
5:00 PM	0.5 kn	240°
6:00 PM	1.0 kn	240°
7:00 PM	1.2 kn	240°
8:00 PM	0.9 kn	240°
9:00 PM	0.5 kn	240°
10:00 PM	0.2 kn	240°
11:00 PM	0.2 kn	020°

5:00 AM	0.1 kn	020°
6:00 AM	0.2 kn	240°
7:00 AM	0.7 kn	240°
8:00 AM	1.1 kn	240°
9:00 AM	1.1 kn	240°
10:00 AM	0.7 kn	240°
11:00 AM	0.2 kn	240°
12:00 PM	0.1 kn	020°
1:00 PM	0.6 kn	020°
2:00 PM	1.0 kn	020°
3:00 PM	1.1 kn	020°
4:00 PM	0.7 kn	020°
5:00 PM	0.2 kn	020°
6:00 PM	0.1 kn	240°
7:00 PM	0.6 kn	240°
8:00 PM	1.0 kn	240°
9:00 PM	1.1 kn	240°
10:00 PM	0.9 kn	240°
11:00 PM	0.4 kn	240°

7:00 AM	0.0 kn	
8:00 AM	0.3 kn	240°
9:00 AM	0.9 kn	240°
10:00 AM	1.2 kn	240°
11:00 AM	1.1 kn	240°
12:00 PM	0.6 kn	240°
1:00 PM	0.1 kn	240°
2:00 PM	0.2 kn	020°
3:00 PM	0.8 kn	020°
4:00 PM	1.1 kn	020°
5:00 PM	1.0 kn	020°
6:00 PM	0.5 kn	020°
7:00 PM	0.1 kn	020°
8:00 PM	0.2 kn	240°
9:00 PM	0.8 kn	240°
10:00 PM	1.1 kn	240°
11:00 PM	1.1 kn	240°

11/3/2007		
12:00 AM	0.7 kn	020°
1:00 AM	1.1 kn	020°
2:00 AM	1.1 kn	020°
3:00 AM	0.6 kn	020°
4:00 AM	0.2 kn	020°
5:00 AM	0.2 kn	240°
6:00 AM	0.7 kn	240°
7:00 AM	1.1 kn	240°
8:00 AM	1.1 kn	240°
9:00 AM	0.8 kn	240°
10:00 AM	0.2 kn	240°
11:00 AM	0.1 kn	020°
12:00 PM	0.5 kn	020°
1:00 PM	1.0 kn	020°
2:00 PM	1.1 kn	020°
3:00 PM	0.8 kn	020°
4:00 PM	0.2 kn	020°
5:00 PM	0.1 kn	240°
6:00 PM	0.5 kn	240°
7:00 PM	1.0 kn	240°
8:00 PM	1.1 kn	240°
9:00 PM	0.9 kn	240°
10:00 PM	0.4 kn	240°
11:00 PM	0.1 kn	240°

11/5/2007		
12:00 AM	0.1 kn	240°
1:00 AM	0.2 kn	020°
2:00 AM	0.8 kn	020°
3:00 AM	1.1 kn	020°
4:00 AM	1.0 kn	020°
5:00 AM	0.5 kn	020°
6:00 AM	0.1 kn	020°
7:00 AM	0.2 kn	240°
8:00 AM	0.8 kn	240°
9:00 AM	1.1 kn	240°
10:00 AM	1.1 kn	240°
11:00 AM	0.7 kn	240°
12:00 PM	0.2 kn	240°
1:00 PM	0.2 kn	020°
2:00 PM	0.7 kn	020°
3:00 PM	1.1 kn	020°
4:00 PM	1.1 kn	020°
5:00 PM	0.6 kn	020°
6:00 PM	0.2 kn	020°
7:00 PM	0.2 kn	240°
8:00 PM	0.7 kn	240°
9:00 PM	1.1 kn	240°
10:00 PM	1.1 kn	240°
11:00 PM	0.8 kn	240°

11/7/2007		
12:00 AM	0.7 kn	240°
1:00 AM	0.3 kn	240°
2:00 AM	0.1 kn	020°
3:00 AM	0.5 kn	020°
4:00 AM	1.0 kn	020°
5:00 AM	1.1 kn	020°
6:00 AM	0.8 kn	020°
7:00 AM	0.3 kn	020°
8:00 AM	0.1 kn	240°
9:00 AM	0.5 kn	240°
10:00 AM	1.0 kn	240°
11:00 AM	1.2 kn	240°
12:00 PM	1.0 kn	240°
1:00 PM	0.3 kn	240°
2:00 PM	0.0 kn	
3:00 PM	0.3 kn	020°
4:00 PM	1.0 kn	020°
5:00 PM	1.2 kn	020°
6:00 PM	1.0 kn	020°
7:00 PM	0.3 kn	020°
8:00 PM	0.0 kn	
9:00 PM	0.3 kn	240°
10:00 PM	1.0 kn	240°
11:00 PM	1.2 kn	240°

11/4/2007		
12:00 AM	0.2 kn	020°
1:00 AM	0.7 kn	020°
2:00 AM	1.1 kn	020°
3:00 AM	1.0 kn	020°
4:00 AM	0.6 kn	020°

11/6/2007		
12:00 AM	0.4 kn	240°
1:00 AM	0.0 kn	
2:00 AM	0.3 kn	020°
3:00 AM	0.9 kn	020°
4:00 AM	1.2 kn	020°
5:00 AM	1.0 kn	020°
6:00 AM	0.4 kn	020°

11/8/2007		
12:00 AM	1.1 kn	240°
1:00 AM	0.5 kn	240°
2:00 AM	0.1 kn	240°
3:00 AM	0.2 kn	020°
4:00 AM	0.7 kn	020°
5:00 AM	1.1 kn	020°
6:00 AM	1.1 kn	020°
7:00 AM	0.6 kn	020°
8:00 AM	0.1 kn	020°

9:00 AM	0.2 kn	240°
10:00 AM	0.7 kn	240°
11:00 AM	1.1 kn	240°
12:00 PM	1.1 kn	240°
1:00 PM	0.8 kn	240°
2:00 PM	0.2 kn	240°
3:00 PM	0.1 kn	020°
4:00 PM	0.5 kn	020°
5:00 PM	1.0 kn	020°
6:00 PM	1.1 kn	020°
7:00 PM	0.8 kn	020°
8:00 PM	0.2 kn	020°
9:00 PM	0.1 kn	240°
10:00 PM	0.5 kn	240°
11:00 PM	1.1 kn	240°

11/9/2007		
12:00 AM	1.2 kn	240°
1:00 AM	0.9 kn	240°
2:00 AM	0.3 kn	240°
3:00 AM	0.0 kn	