

**VOYAGE PLAN**  
**RV SOUTHERN SURVEYOR**  
**SS Transit 03/2006**

***Title***

Sydney to Hobart Transit – swathe mapping, Topas SBP software upgrades and staff training.

***Itinerary***

Depart Sydney, 1800hrs Thursday 26 October, 2006 (or after 1400hrs if ready).  
Arrive Hobart, 1200hrs Sunday 29 October, 2006.

***Principal Investigator***

Cameron Buchanan (Chief Scientist)  
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***Scientific Objectives***

To gain detailed water bottom information off the eastern coast of Australia from Sydney to Hobart. To upgrade the software on the Topas Sub-bottom profiler (SBP) and EM300 swath mapping system to allow the Topas to accept slope information for beam steering and to create automatic time gates for SBP data collection.

A secondary objective will be to train inexperienced scientific staff in the fundamentals of swath and Topas data collection in preparation for the Southern Surveyor voyage SS03/2007 in the Great Australia Bight.

***Voyage Objectives***

To determine if much better quality Topas SBP data can be obtained by linking the Topas and EM300 systems together in deep and rapidly changing water depths.

### *Voyage Track*

proposed route					
33.86250	151.39167	34.10591	151.42210	27.2	
34.10591	151.42210	34.26250	151.44167	17.6	
34.26250	151.44167	34.44167	151.32500	22.6	
34.44167	151.32500	34.49167	151.29583	6.2	
34.49167	151.29583	34.82083	151.16250	38.6	
34.82083	151.16250	34.90417	151.29167	15.0	
34.90417	151.29167	35.05000	151.23333	17.4	
35.05000	151.23333	35.20833	151.10417	21.2	
35.20833	151.10417	35.46250	150.90833	33.4	
35.46250	150.90833	35.62500	150.75833	22.6	
35.62500	150.75833	35.80417	150.65000	22.2	
35.80417	150.65000	35.95000	150.57917	30.9	
35.95000	150.57917	36.28333	150.42667	37.7	
36.28333	150.42667	36.58333	150.40167	33.5	
36.58333	150.40167	37.06667	150.39167	53.7	
37.06667	150.39167	37.24583	150.39583	19.9	
37.24583	150.39583	37.37917	150.35417	15.5	
37.37917	150.35417	37.62917	150.31667	28.1	
37.62917	150.31667	37.97667	150.13750	43.4	
37.97667	150.13750	38.14167	149.89167	32.9	
38.14167	149.89167	39.64167	148.79167	191.4	
39.61667	148.79167	39.68750	148.80000	7.9	
39.68750	148.80000	39.77917	148.82917	10.7	
39.77917	148.82917	39.90000	148.85000	13.6	
39.90000	148.85000	40.40000	148.88333	55.7	
40.40000	148.88333	40.42500	148.90833	3.9	
40.42500	148.90833	40.51250	148.88333	10.1	
40.51250	148.88333	40.76250	148.84167	28.2	
40.76250	148.84167	40.80417	148.81250	5.7	
40.80417	148.81250	40.97083	148.77083	19.1	
40.97083	148.77083	41.08750	148.71250	14.5	
41.08750	148.71250	41.15000	148.64583	10.2	
41.15000	148.64583	41.40417	148.64167	28.2	
41.40417	148.64167	41.59167	148.65833	20.9	
41.59167	148.65833	41.60417	148.58750	8.0	
41.60417	148.58750	41.77500	148.57917	19.0	
41.77500	148.57917	41.92917	148.60583	17.2	
41.92917	148.60583	42.10000	148.61417	19.0	
42.10000	148.61417	42.16250	148.56667	8.0	
42.16250	148.56667	42.19583	148.57500	3.8	
42.19583	148.57500	42.22917	148.57500	3.7	
42.22917	148.57500	42.33333	148.54750	12.0	
42.33333	148.54750	42.45833	148.50583	14.6	
42.45833	148.50583	42.72500	148.38833	32.4	
42.72500	148.38833	42.82500	148.34917	12.4	

42.82500	148.34917	42.93333	148.30583	12.6	
42.93333	148.30583	42.98750	148.25583	8.2	
42.98750	148.25583	43.25000	148.16667	22.2	
				<b>1152.8</b>	<b>kms</b>

***Time Estimates***

As an additional 5 hours of time are available on the transit due to the early departure from Sydney it is proposed that 4 hours be used to collect additional swath and 1 hour be used for vibration testing that may require deviation from normal transit speeds. Cameron Buchanan will determine the optimal areas to swath in this extra time allocated.

***Southern Surveyor Equipment***

**Swathe mapper EM 300.** Swathe mapping is one of the major activities during the voyage. During mapping surveys the swathe mapper will be running 24 hours/days.

**Sub-bottom profiler**

During mapping surveys the **SBP** will be running 24 hours/days.

***Personnel List***

Cameron Buchanan	Geoscience Australia	Chief Scientist
Fred Kroh	Geoscience Australia	SBP Specialist
Cameron Mitchell	Geoscience Australia	Supervisor for trainees
Chris Boreham	Geoscience Australia	Swathe/SBP trainee
Andrew Krassay	Geoscience Australia	Swathe/SBP trainee
Chris Nicholson	Geoscience Australia	Swathe/SBP trainee
Tony Hill	PIRSA	Swathe/SBP trainee
Greg Taylor	P&O Contractor	Maintenance assessor
Bill Butler	P&O Contractor	Vibration testing
Stephen Thomas	CSIRO – MNF	Voyage Manager/Electronics
Lindsay MacDonald	CSIRO – MNF	Electronics

Cameron Buchanan  
Chief Scientist