



5 August 2014

SWAB REPORT # 732

SWAB DATE: 25 July 2014

R/V Melville and SIO Van #12

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Distribution:
SWAB Committee
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COMMENTS TO SWAB REPORTS

12 May 2014

Typical LSC instrument background values for ^3H and ^{14}C are 2 and 5 cpm, respectively. The LSC is a Tricarb 2910 TR with the low level counting option.

All samples are counted for 60 minutes, the instrument background is subtracted, and activities are reported in dpm/m^2 . Bucket blank activities are not subtracted. Counting errors (2 standard deviations) are also reported in dpm/m^2 . An error larger than the activity indicates that the activity is not significantly different from zero.

Criteria for SWAB Results

Category	^3H (dpm/m^2)	^{14}C (dpm/m^2)	Recommendations
A	<500	<50	No action
B*	500-10,000	50-10,000	Needs cleaning before any natural tracer work. Decks in radiation vans with activities above $1000 \text{ dpm}/\text{m}^2$ should be cleaned.
C**	10,000-100,000	10,000-50,000	Must be cleaned before any use.
D***	>100,000	>50,000	May be a health hazard. Notify local radiation safety official.

Note: ^{14}C and ^{35}S have peak energies of 156 and 167 KeV, respectively; thus ^{35}S will be registered as ^{14}C by our counting techniques. Categories A, B and C are not a health hazard.

Recommended Cleaning Procedure

Wearing ordinary household rubber gloves:

^3H : Wash and scrub with radioactive cleanup detergent such as COUNT-OFF (50 ml COUNT-OFF to 4 liters of water), using sponges to distribute solution and reabsorb it.

^{14}C : Wash with 1% sulfuric or 2% hydrochloric (muriatic) acid with good ventilation (will dissolve carbonates, releasing $^{14}\text{CO}_2$). Follow up with wash as if for ^3H .

Disposal of Cleaning Materials (gloves, sponges, etc)

Categories A & B dispose as ordinary garbage, C & D contact your institution's radiation safety office.

Note: If category C or D is encountered, we try to notify the institution promptly by phone or email.

REPORT FOR SWAB # 732

LOCATION: San Diego, CA
VESSEL/LAB: *R/V Melville*

DATE: 28 July 2014
TECHNICIAN: Jim Happell

Sample #	Sample Identification	³ H dpm/m ²		¹⁴ C dpm/m ²	
		activity	error	activity	error
1	1st Vial Bkgnd	0	± 0	0	± 0
2	Initial bucket blank	0	± 0	3	± 38
	<u>Main Lab (Figure 1)</u>				
3	Deck in front of aft freezer	0	± 0	0	± 0
4	Aft center benchtop	14	± 128	0	± 0
5	Deck in front of aft stairs	31	± 95	0	± 0
6	Benchtop aft of port sink	8	± 663	0	± 0
7	Aft port sink area	13	± 187	0	± 0
8	Benchtop across from sft port sink	27	± 100	0	± 0
9	Center benchtop	0	± 0	16	± 37
10	Deck in front of port bench	20	± 130	0	± 0
11	Deck in front of -80 freezer	47	± 69	0	± 0
12	Starboard benchtop	32	± 68	0	± 0
13	Deck next to flammable materials locker	0	± 0	0	± 0
14	Deck at companionway	59	± 78	0	± 0
	<u>Analytical Lab (figure 1)</u>				
15	Inside fume hood	19	± 57	0	± 0
16	Becchtop between fumehood and sink	2	± 0	0	± 0
17	Sink area	29	± 94	0	± 0
18	Port benchtop forward of sink	26	± 100	0	± 0
19	Forward benchtop	38	± 114	0	± 0
20	Starboard benchtop	0	± 0	0	± 0
21	Deck at aft entrance	6	± 0	0	± 0
22	Deck inside forward starboard entrance	26	± 0	0	± 0
23	Deck in front of port sft sink	14	± 166	0	± 0
	<u>Dark Room (Figure 1)</u>				
24	Sink area	32	± 67	0	± 0
25	Deck below sink	0	± 0	0	± 0
26	Deck outside lab entrance	2	± 0	0	± 0
27	Port benchtop	11	± 0	0	± 0
28	Aft benchtop	4	± 0	0	± 0

Sample #	Sample Identification	³ H dpm/m ²		¹⁴ C dpm/m ²	
		activity	error	activity	error
<u>Main Deck (Figure 1)</u>					
29	Benchtop in aft hanger	25	± 89	0	± 0
30	Deck at aft entrance to main lab	17	± 99	0	± 0
31	Deck where rad van door located	14	± 0	0	± 0
32	Aft deck near starboard A-frame	38	± 76	0	± 0
33	Fantail deck between aft A-frame	22	± 100	0	± 0
34	Port aft deck	29	± 78	0	± 0
<u>Upper Lab/01 Deck (Figure 1)</u>					
35	Deck near aft entrance	1	± 94	0	± 0
36	Deck near forward entrance	0	± 0	0	± 0
37	Companionway near lab entrance	0	± 0	0	± 0
<u>Main Deck Miscellaneous (Figure 1)</u>					
38	Companionway outside lounge	0	± 0	0	± 0
39	Deck outside forward entrance to mess	25	± 125	0	± 0
<u>SIO Van #12 (Figure 2)</u>					
40	Fume hood	197	± 58	38	± 30
41	Benchtop	163	± 69	0	± 1
42	Benchtop	49	± 72	0	± 0
43	Sink area	10	± 137	0	± 0
44	Benchtop	191	± 63	0	± 0
45	Benchtop	31	± 57	0	± 0
46	Inside freezer	382	± 54	*403	± 48
47	Inside refrigerator	56	± 58	0	± 0
48	Deck at entrance	115	± 46	*64	± 35
49	Deck at entrance	93	± 39	*89	± 37
50	Final bucket blank	1	± 0	0	± 0

Comments

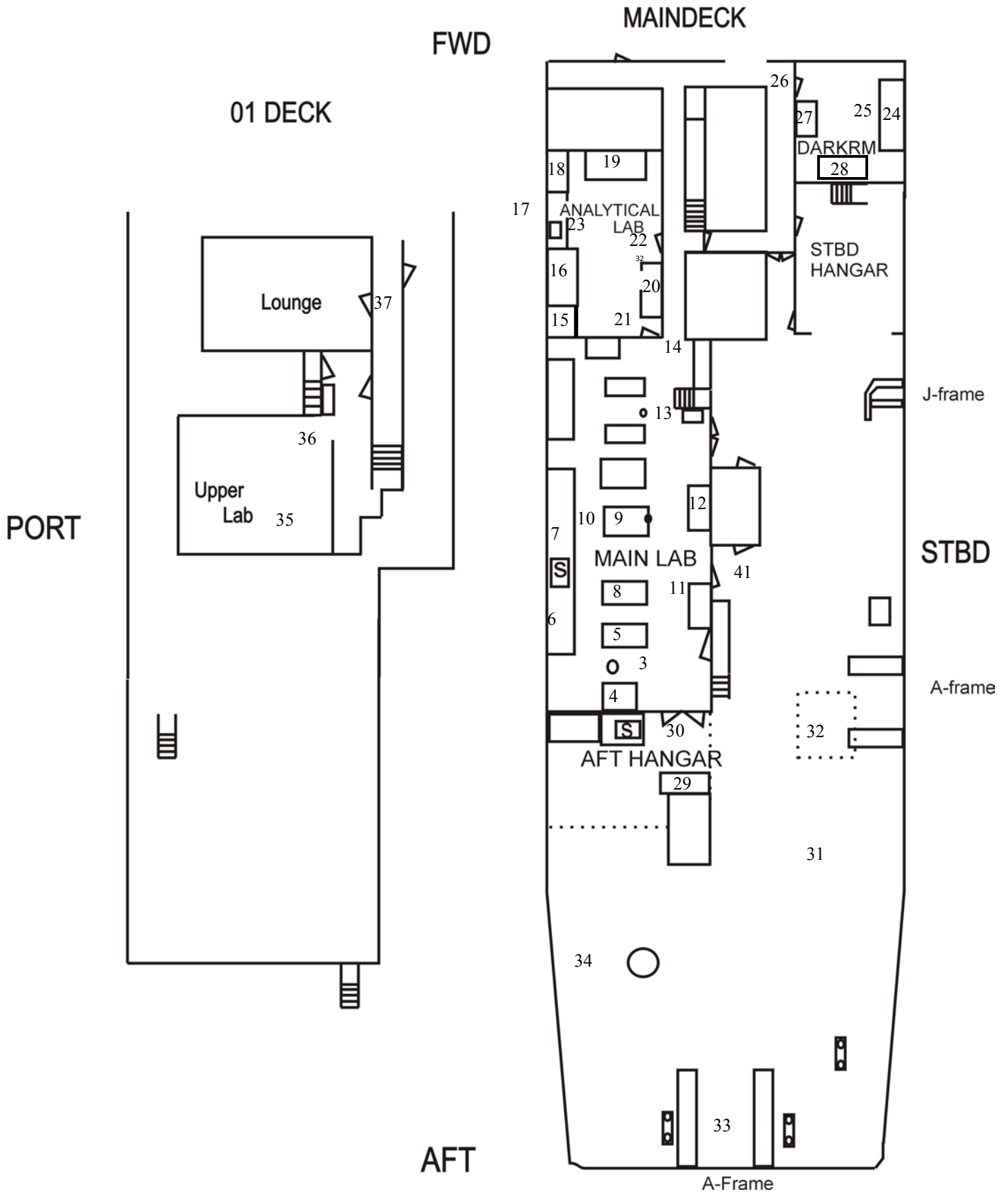
Please note that the error reported for each isotope is the two-standard deviation counting error.

All areas tested on the Melville were free from radioisotope activity that requires cleaning.

Minor ¹⁴C contamination was found in Van #12. No action is necessary

R/V MELVILLE

Figure 1
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SIO RADIOISOTOPE VAN #12

Figure 2
SWAB #732
28 July 2014

