

UNIVERSITY OF MIAMI
ROSENSTIEL
SCHOOL of MARINE &
ATMOSPHERIC SCIENCE



Tritium Laboratory
4600 Rickenbacker Causeway
Miami, Florida 33149-1031

Ph: 305-421-4100
Fax: 305-421-4112
E-mail: Tritium@rsmas.miami.edu

12 December 2012

SWAB REPORT # 663

SWAB DATE: 03 and 04 December 2012

R/V Oceanus and West Coast Van Pool Vans

James D. Happell

Distribution:
SWAB Committee
Daryl Swensen

COMMENTS TO SWAB REPORTS

23 November 2010

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 dpm/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 dispose in radiation waste system.

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

REPORT FOR SWAB # 663

LOCATION: Newport, Oregon

DATE: 3 and 4 December 2012

VESSEL/LAB: R/V *Oceanus* and West Coast Van Pool Vans

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 C.O. # 1	0	± 0	31	± 38
<u>TEX U Van 2256095 (see Fig. 1)</u>					
3	Freezer	131	± 50	18	± 25
4	Refrigerator	485	± 75	26	± 18
5	Bench top above freezer	*512	± 73	36	± 21
6	Bench top above refrigerator	*513	± 54	*780	± 57
7	Sink area	*509	± 74	43	± 23
8	Bench top across from refrigerator	418	± 69	*56	± 27
9	Fume hood	*1166	± 31	**19319	± 236
10	Deck by escape hatch	*1369	± 106	*63	± 18
11	Center deck	*1414	± 107	*171	± 30
12	Deck by sink and LSC	*800	± 88	26	± 14
<u>UNOLS Shared Use Van 625403 (see Fig. 2)</u>					
13	Sink area	0	± 0	0	± 0
14	Refrigerator	0	± 0	4	± 97
15	Freezer	0	± 0	22	± 39
16	Bench top above refrigerator	0	± 0	4	± 64
17	Bench top above freezer	0	± 0	0	± 0
18	Fume hood	0	± 0	4	± 36
19	Bench top across from	0	± 0	7	± 59
20	Bench top across from fume hood	0	± 0	0	± 0
21	Deck by fume hood	0	± 0	6	± 41
22	Center deck	0	± 0	29	± 38
23	Deck by entrance near sink	10	± 778	0	± 0
<u>OSU Rad Van 625.1.01-2 (see Fig. 3)</u>					
24	Freezer	0	± 0	0	± 0
25	Refrigerator	104	± 41	*102	± 37
26	Bench top above refrigerator	91	± 54	10	± 23
27	Fume hood	33	± 55	2	± 20
28	Bench top across from refrigerator	*2262	± 133	40	± 10
29	Bench top across from freezer	316	± 67	17	± 18

Sample #	Sample Identification	^3H dpm/m ²		^{14}C dpm/m ²	
		activity	error	activity	error
30	Deck at entrance near fume hood	*721	± 86	42	± 20
31	Center deck	*808	± 90	1	± 1
32	Deck at entrance near sink	233	± 65	4	± 8
<u>Van 2408-05 (see Fig. 4)</u>					
33	Refrigerator	0	± 0	0	± 0
34	Freezer	0	± 0	1	± 0
35	Bench top above refrigerator	0	± 0	2	± 38
36	Fume hood	0	± 0	0	± 0
37	Bench top across from freezer	0	± 0	0	± 0
38	Deck near entrance by fume hood	0	± 0	0	± 0
39	Deck near entrance by sink	0	± 0	0	± 0
40	Center deck	2	± 0	0	± 0
<u>Radiation Van 625-1-04 (see Fig. 5)</u>					
41	Refrigerator	0	± 0	5	± 43
42	Freezer	58	± 48	22	± 31
43	Bench top above refrigerator	*983	± 95	5	± 3
44	Bench top above freezer	19	± 48	2	± 24
45	Sink area	201	± 63	0	± 0
46	Fume hood	65	± 49	20	± 30
47	Final bucket blank C. O. # 1	0	± 0	0	± 0
48	Initial bucket blank C.O. # 2	0	± 0	4	± 166
49	Bench top next to LSC	44	± 55	0	± 0
50	Deck at entrance near sink	*816	± 89	28	± 14
51	Center deck	*2878	± 148	*103	± 17
52	Deck last entrance near escape hatch	*3468	± 165	*93	± 15
<u>Polar Programs Radiation Van 2408.01 (see Fig. 6)</u>					
53	Sink area	14	± 37	12	± 33
54	Refrigerator	38	± 49	6	± 26
55	Freezer	0	± 0	0	± 0
56	Bench top above refrigerator	99	± 52	24	± 29
57	Bench top above freezer	32	± 53	0	± 0
58	Fume hood	19	± 54	0	± 0
59	Bench top next to LSC	0	± 0	0	± 0
60	Bench top across from sink	0	± 0	26	± 38
61	Deck at entrance next to fume hood	316	± 65	44	± 27
62	Center deck	180	± 60	7	± 15
63	Deck at entrance near sink	152	± 61	1	± 3

Sample #	Sample Identification	³ H dpm/m ²		¹⁴ C dpm/m ²	
		activity	error	activity	error
<u>UNOLS Shared Use Cold Van 625204 (see Fig. 7)</u>					
64	Sink area	0	± 0	12	± 47
65	Fume hood	0	± 0	0	± 0
66	Bench top across from fume hood	0	± 0	2	± 67
67	Bench top across from sink	0	± 0	0	± 0
68	Center deck	0	± 0	2	± 48
69	Deck in vestibule	0	± 0	9	± 57
<u>Oceanus Main Lab (see Fig. 8)</u>					
70	Deck in front of winch controls	0	± 0	0	± 0
71	Intermediate bucket blank C. O. # 2	0	± 0	0	± 0
72	Deck between computer benches	0	± 0	7	± 44
73	Deck near aft entrance	0	± 0	0	± 0
74	Stbd bench top	0	± 0	0	± 0
75	Deck between benches	0	± 0	0	± 0
76	Deck between benches	0	± 0	0	± 0
77	Deck between benches	0	± 0	23	± 37
78	Refrigerator	0	± 0	2	± 0
79	Sink area	0	± 0	0	± 0
<u>Oceanus Wet Lab (see Fig. 8)</u>					
80	Fume hood	19	± 59	0	± 0
81	Bench top	0	± 0	5	± 58
82	Deck near aft door	0	± 0	4	± 76
83	Deck near port door	0	± 0	0	± 0
<u>Oceanus Upper Lab (see Fig. 8)</u>					
84	Stbd deck	0	± 0	11	± 42
85	Deck near port aft door	0	± 0	0	± 0
<u>Oceanus Mess Deck (see Fig. 8)</u>					
86	Deck	0	± 0	24	± 37
87	Final bucket blank C.O.# 2	0	± 0	8	± 41

Comments

Please note that the error reported for each isotope is the two-standard deviation counting error. The TEX U Van had minor ^3H and minor to moderate ^{14}C contamination. The fume hood needs to be cleaned before any further use and we recommend cleaning the deck areas. The OSU Rad Van 625.1.01-2 had minor ^3H and ^{14}C contamination. No action is needed but we recommend cleaning the deck areas. The radiation van 625-1-04 had minor ^3H and ^{14}C contamination. No action is needed but we recommend cleaning the deck areas. The UNOLS Shared Use Van 625403, Van 2408-05, Polar Programs Radiation Van 2408.01, UNOLS Shared Use Cold Van 625204, and all areas on the Oceanus were free from contamination that requires cleaning.

Figure 1
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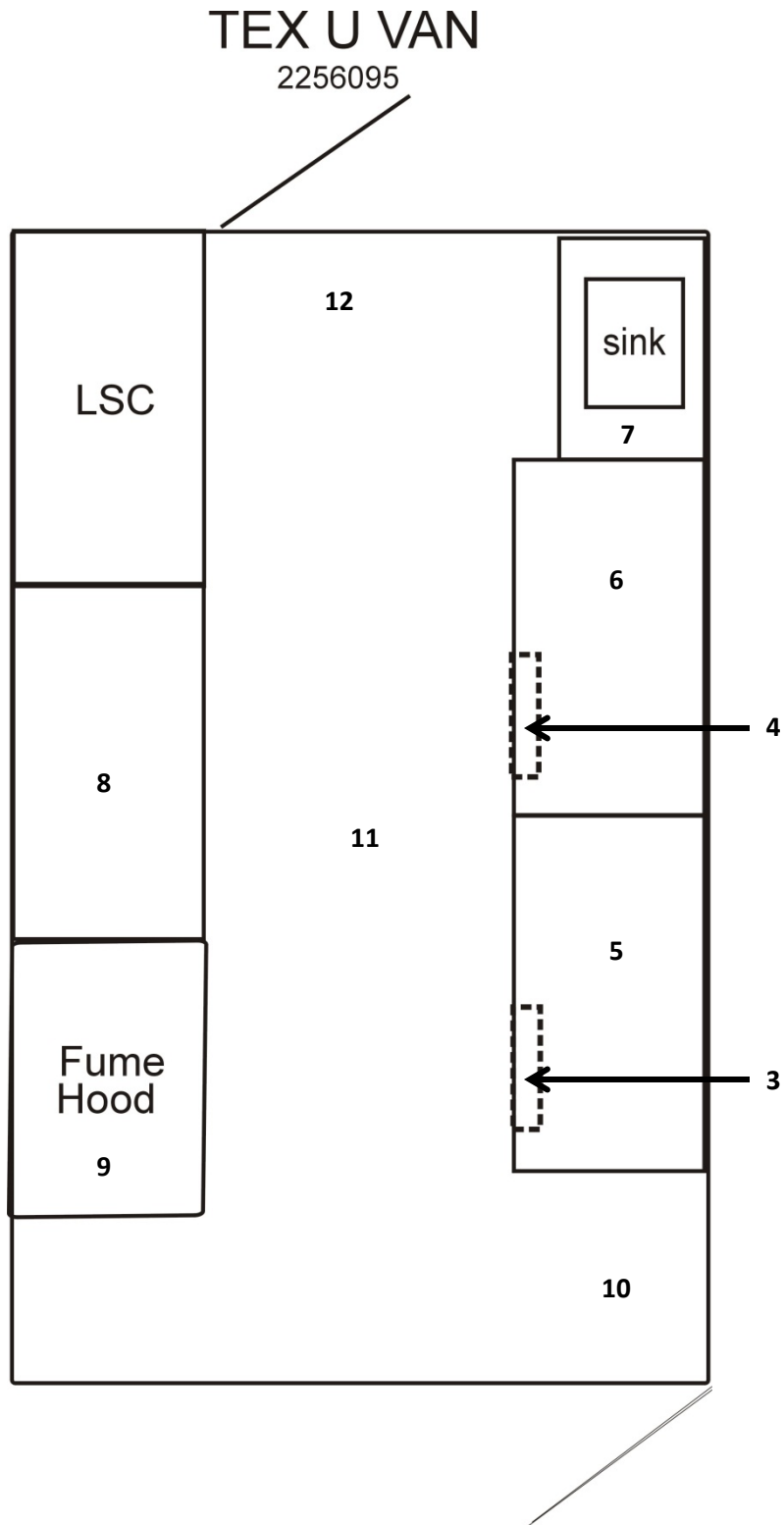


Figure 2
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UNOLS Shared-Use Lab Van

SN 625403

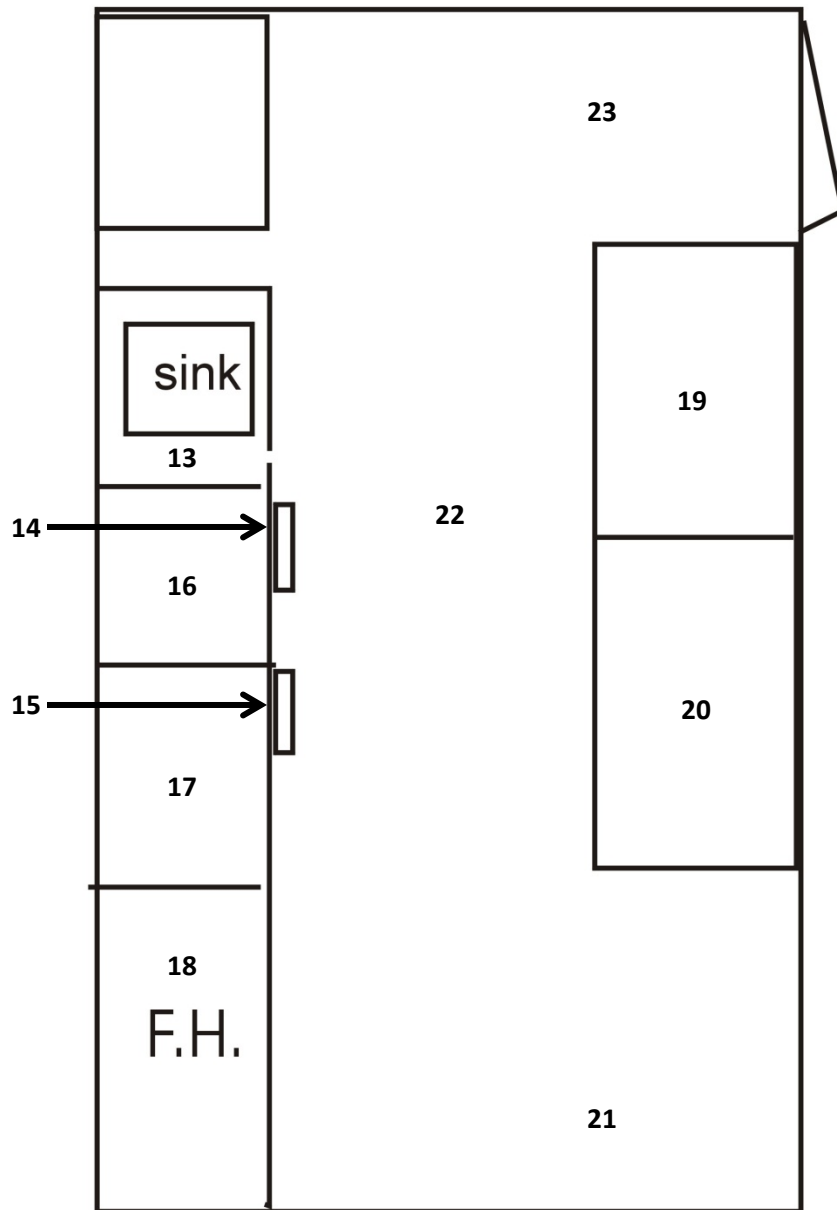
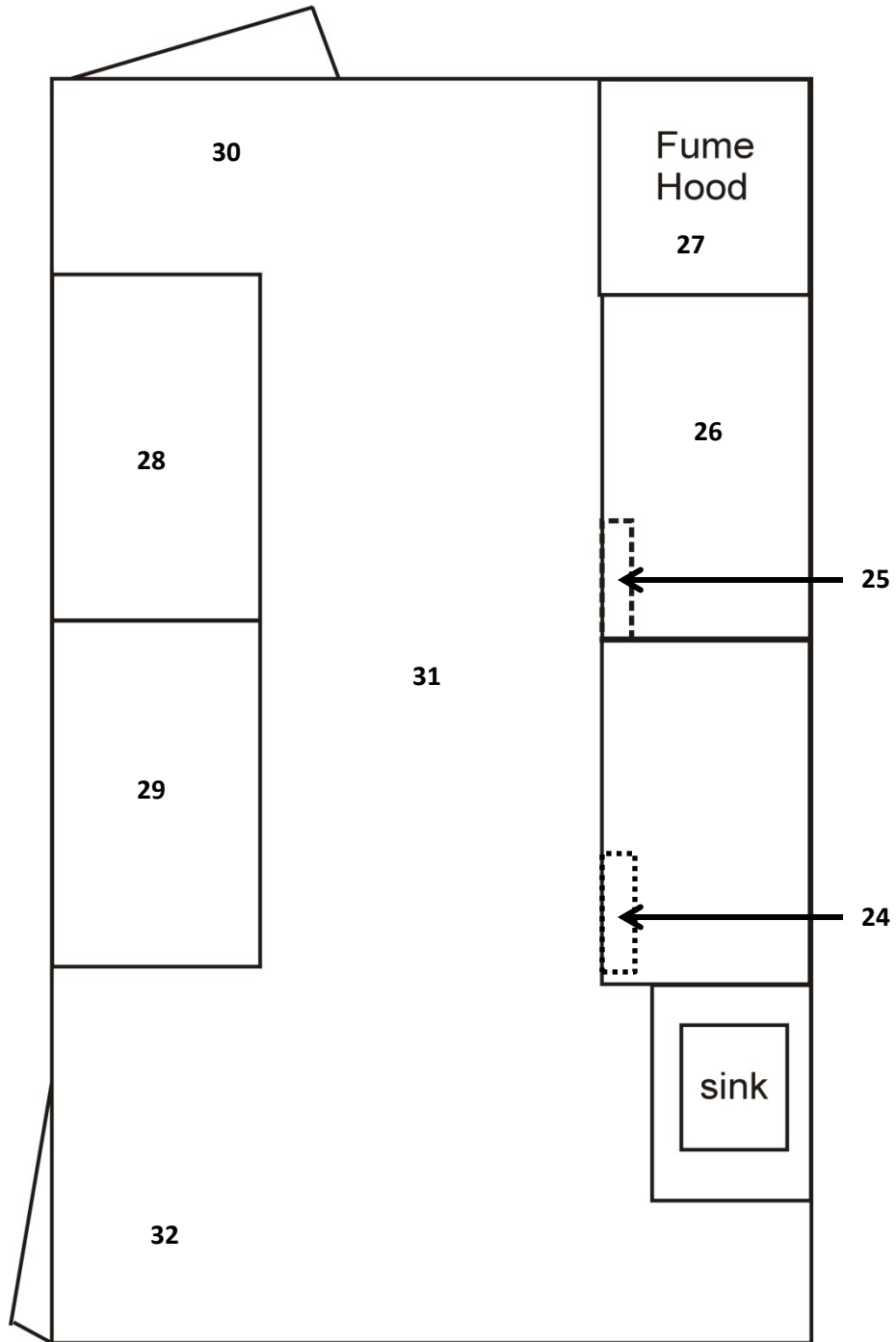


Figure 3
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RADIOISOTOPE VAN # 625.1.01-2 OREGON STATE UNIVERSITY



UNOLS Van 2408-05

Figure 4
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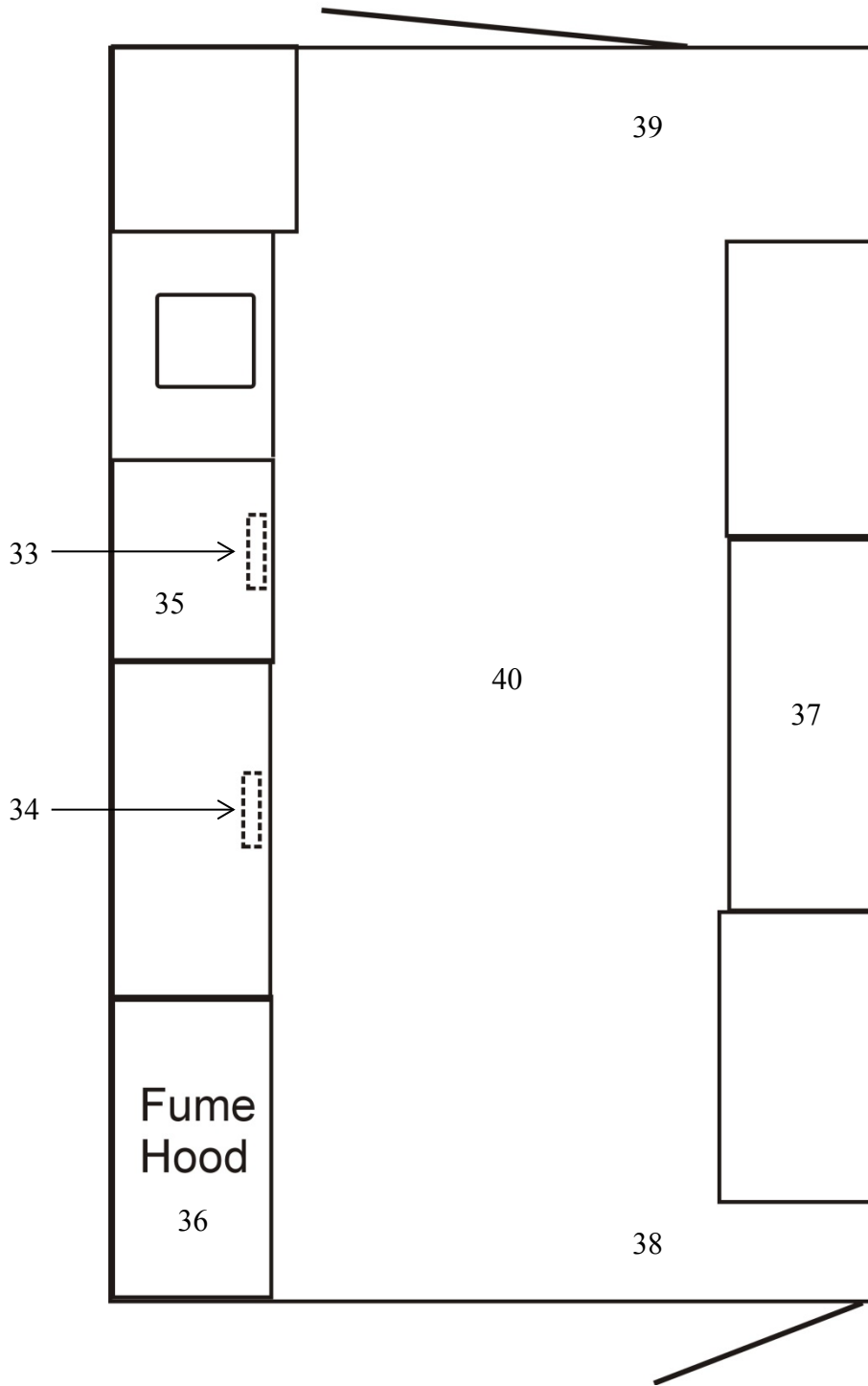


Figure 5
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UNOLS Radiation Van 625-1-04

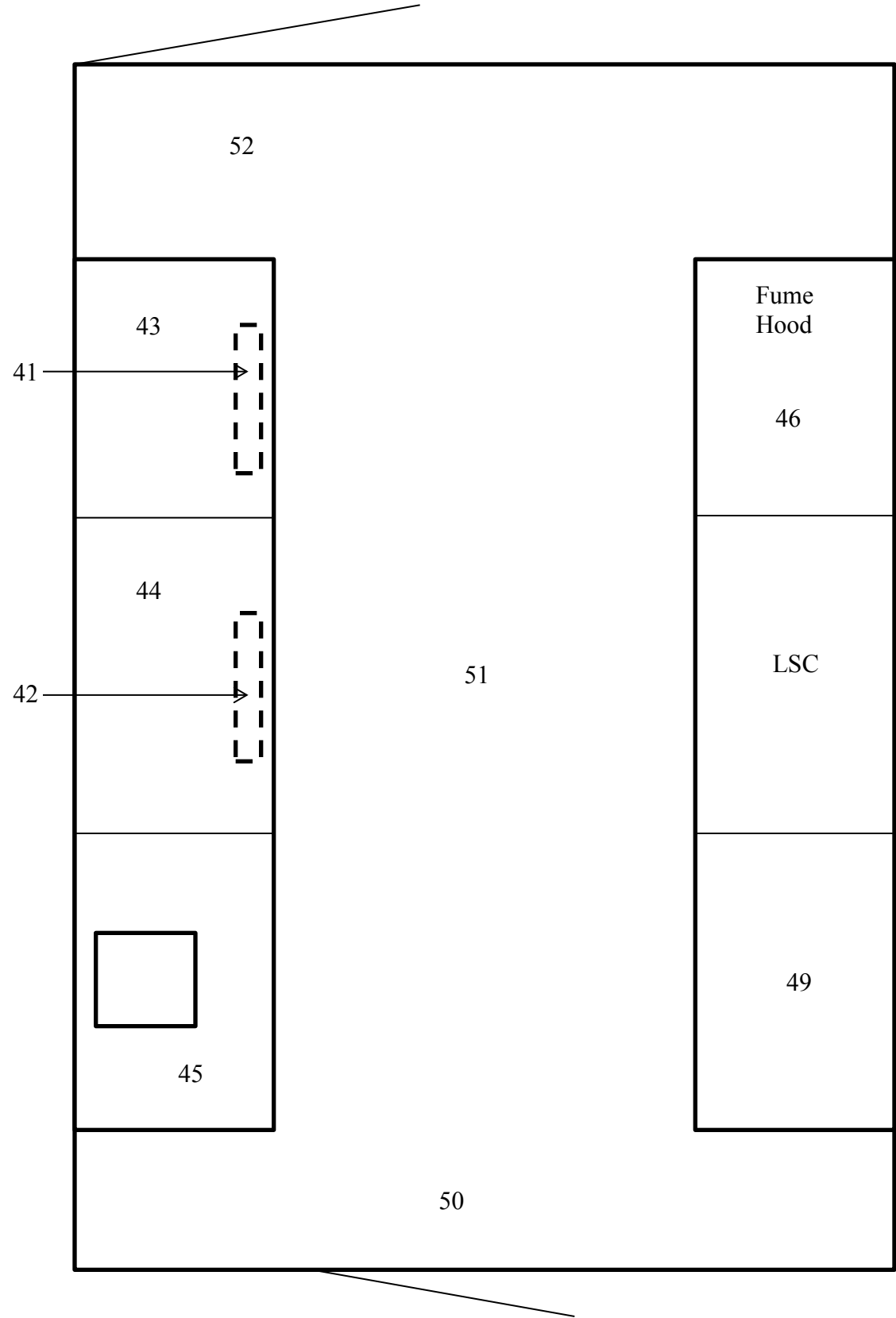


Figure 6
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POLAR PROGRAMS VAN 2408.01

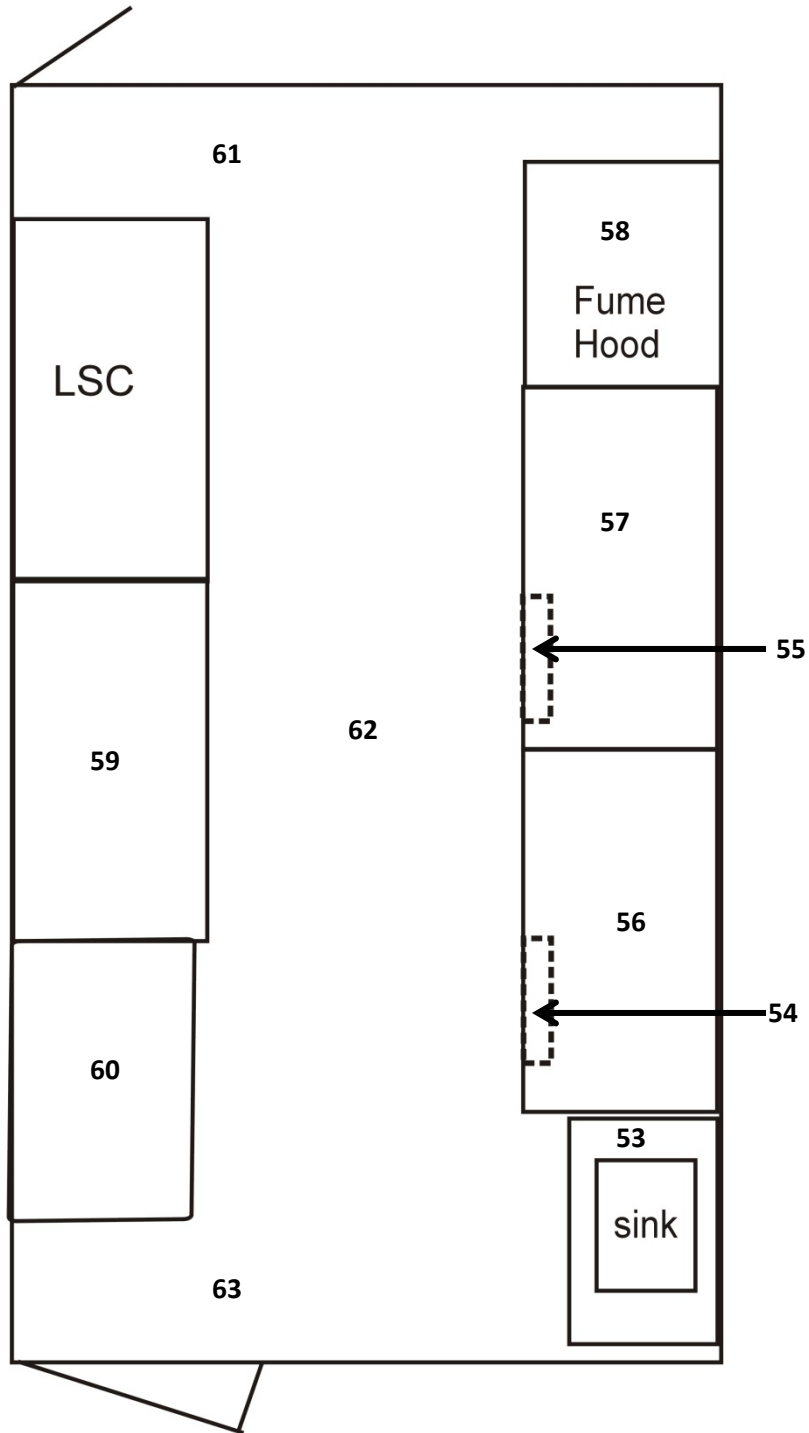
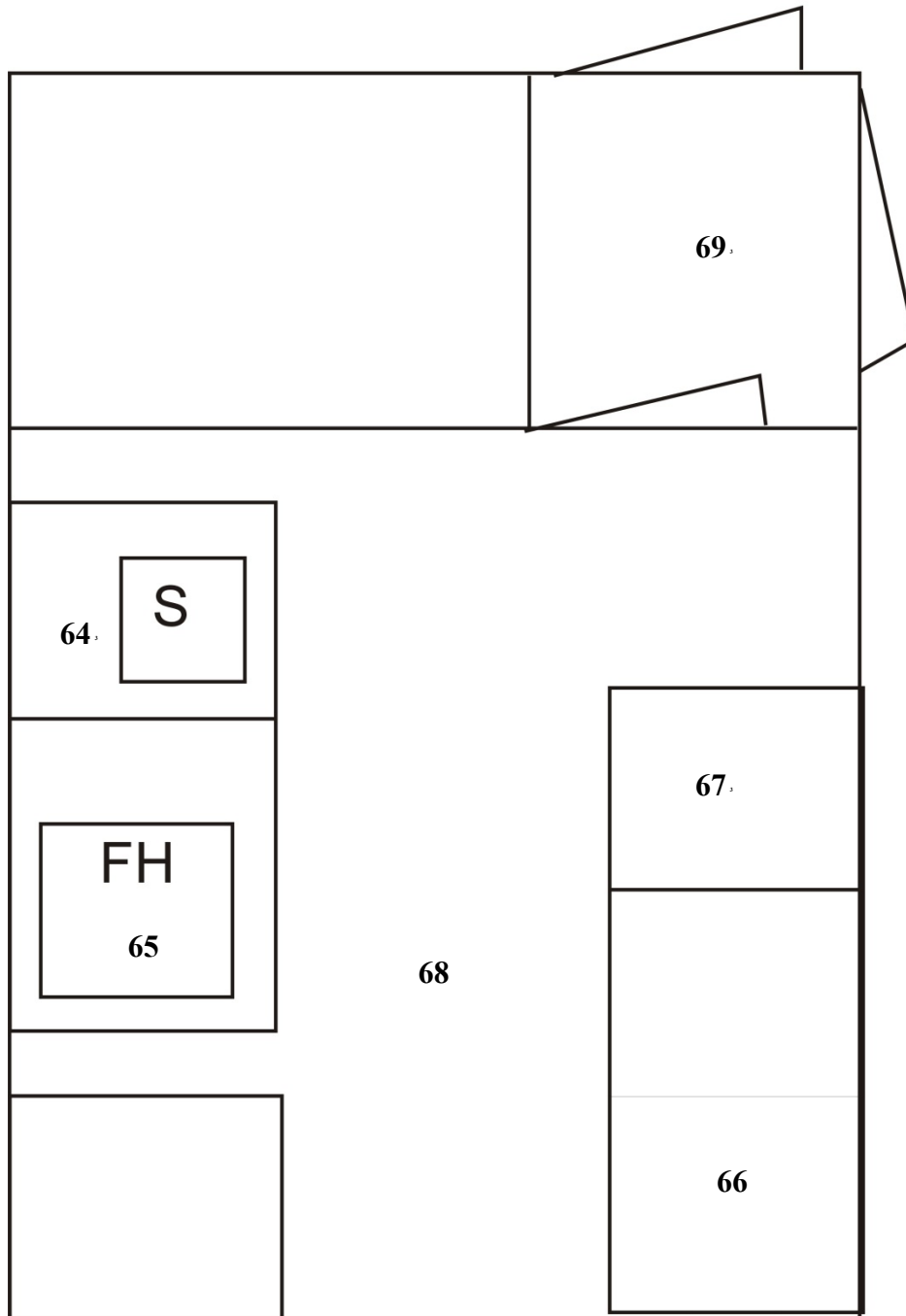


Figure 7
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UNOLS SHARED-USE COLD LAB VAN 625204



R/V Oceanus

Figure 8
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