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## AIRBORNE NOISE LEVELS ON US NAVY SHIPS

D. R. Lambert

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Prepared for  
Naval Sea Systems Command (05H)  
Washington D C. 20362

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| 20. ABSTRACT (Continue on reverse side if necessary and identify by block number)<br><br>This document reports A-weighted, C-weighted, and octave band sound pressure levels measured in (non-engineering) compartments aboard eight US Navy ships. The ships were the CV-61, CV-64, DD-972, DD-976, DDG-13, PF-1063, LST-1185, and LST-1191. |                                      |                                                                                                              |

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## FOREWORD

This document has been prepared for the Naval Sea Systems Command (NAVSEA 05H) for general guidance in development of noise standards for US Naval ships. It is one of several dealing with various aspects of noise as related to habitability and the safety of personnel aboard Navy ships.

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## INTRODUCTION

This paper presents airborne noise data obtained in Navy shipboard compartments in support of an evaluation of airborne noise criteria on Navy ships. Additional reports which interpret these data are being prepared. They will present statistics on the relationship between present noise levels and existing noise limits; they correlate sound levels with subjective ratings of the effects of the noise obtained concurrently by questionnaire; and they recommend noise limits for future use.

## PROCEDURE

A-weighted, C-weighted, and octave band sound pressure levels were measured on a not-to-interfere basis in compartments aboard 8 US Navy ships. These ships were the CV-61, CV-64, DD-972, DD-976, DDG-13, FF-1063, LST-1185, and LST-1191.

The measured compartments included the following types:

- Pilot houses/bridges
- Logrooms/chartrooms
- Wardrooms
- Command, control, and communication spaces
- Offices
- Workshops
- Lounges/recreation areas
- Staterooms (SR)
- Large berthing compartments
- Medical compartments
- Libraries

Engineering spaces were not included.

## RESULTS

Tables 1 through 8 report data for underway measurements for 8 ships; tables 9 through 13 report cold iron data for five of these ships.

The following kinds of data are reported for each compartment:

- (1) Compartment name and number.
- (2) Estimated room volume (calculated from measured or estimated room dimensions).
- (3) Estimated room absorption. The number reported is 0 for a room with reflecting surfaces, and 1 for a room with absorbent surfaces. To calculate this number, each of the six room surfaces was rated as 0 (acoustically hard or reflective), 1, or 0 (soft or absorbent), and the sum of these six ratings was divided by 12.
- (4) Sound pressure levels. A-weighted, C-weighted, and octave band sound pressure levels were measured using one or more of the following sound level meters: GR 1933, GR 1982, B&K 2204, B&K 2215, and, where so indicated, IVIE-10A. Calibration was acoustically checked before and after each day's measurements.
- (5) Microphone locations. Measurements were often made at more than one location within a compartment. The approximate location is described in terms of a grid which divides a compartment into nine areas defined by starboard (stbd), center (cntr), port; and forward (fwd), center (cntr), aft.
- (6) Comments. These provide additional information, such as specific equipment operating.

Table 1. Underway airborne noise data for USS RANGER (CV-61)

| Compart. Name & Number | Vol        | Abs (A) | (C) | 32 | 63 | 125 | 250 | 500 | 1k | 2k | 4k | 8k | MJC Location         | Comments                |
|------------------------|------------|---------|-----|----|----|-----|-----|-----|----|----|----|----|----------------------|-------------------------|
| Wardroom 1             | 03-39-0    | 3.5     | .50 | 60 | 78 | 79  | 64  | 58  | 55 | 49 | 46 | 40 | stbd end             |                         |
| ORD Workshop           | 03-74-6Q   |         | .33 | 82 | 89 | 82  | 83  | 79  | 76 | 75 | 72 | 63 | stbd aft             |                         |
| ORD Workshop           | 03-74-6Q   |         | .33 | 82 | 85 | 92  | 98  | 107 | 98 | 95 | 92 | 81 | -                    | flt ops cat 2           |
| Capt.'s Office         | 03-79-3Q   | 1.8     | .08 | 58 | 69 | 60  | 65  | 58  | 55 | 54 | 50 | 44 | port aft             |                         |
| Capt.'s Office         | 03-79-3Q   | 1.8     | .08 | 61 | 70 | 63  | 66  | 63  | 64 | 65 | 52 | 47 | port aft             |                         |
| Capt.'s Office         | 03-79-3Q   | 1.8     | .08 | 86 | 96 |     |     |     |    |    |    |    | port aft             | flt ops stbd cat        |
| Capt.'s Office         | 03-79-3Q   | 1.8     | .08 | 90 |    |     |     |     |    |    |    |    | port aft             | flt ops stbd cat        |
| Capt.'s Office         | 03-79-3Q   | 1.8     | .08 |    |    |     |     |     |    |    |    |    | port aft             | flt ops                 |
| Officer's Berth        | 03-84-4L   |         | .33 | 48 | 62 | 63  | 58  | 50  | 47 | 43 | 41 | 38 | near bunk            |                         |
| Air Dpt. Office        | 03-99-6Q   | 3.8     | .67 | 60 | 71 | 65  | 65  | 63  | 61 | 60 | 51 | 47 | port aft             |                         |
| CIC                    | 03-109-2C  | 4.3     | .67 | 76 | 79 | 81  | 81  | 84  | 78 | 72 | 72 | 59 | center               |                         |
| V1 Div. Office         | 03-124-5A  | 2.2     | 0   | 69 | 77 | 71  | 72  | 67  | 66 | 61 | 63 | 60 | port aft             |                         |
| Nav.'s Office          | 03-127-13Q | .96     | 0   | 66 | 75 | 70  | 70  | 67  | 58 | 58 | 53 | 58 | port fwd             |                         |
| Officer's SR           | 03-149-03L | 1.4     | .08 | 56 | 72 | 70  | 67  | 58  | 58 | 52 | 46 | 40 | center               |                         |
| CPO Berthing           | 03-162-0L  | 6.8     | 0   | 59 | 76 | 73  | 70  | 58  | 55 | 49 | 46 | 37 | ctr; end bunks 55-60 |                         |
| V3 Berthing            | 03-212-0L  | .42     | 0   | 65 | 76 | 73  | 70  | 61  | 64 | 65 | 49 | 46 | stbd end             |                         |
| Aft Crew Berth.        | 03-236-1L  | 6.8     | 0   |    |    | 62  | 90  | 62  | 59 | 50 | 47 | 50 | center               | low freq rumble         |
| Train. Off.            | 03-236-4Q  | 3.0     | 0   | 75 | 85 | 71  | 80  | 71  | 71 | 74 | 71 | 67 | center               | movie on                |
| SR                     | 03-32-1L   | .96     | .33 | 56 | 70 | 60  | 67  | 61  | 61 | 55 | 49 | 42 | center               |                         |
| Officer's SR           | 02-37-1L   | 1.4     | .08 | -  |    |     |     |     |    |    |    |    |                      |                         |
| Officer's SR           | 02-42-1L   | 1.0     | .17 | 55 | 69 | 57  | 63  | 54  | 54 | 48 | 39 | 39 | stbd aft             | personal radio          |
| 01 Berthing            | 01-21-0L   | 0       | 0   | 62 | 75 | 73  | 65  | 59  | 61 | 57 | 48 | 45 | near center          |                         |
| Crews Berth.           | 01-29-0L   | 31.5    | 0   | 61 | 71 | 66  | 69  | 60  | 57 | 54 | 47 | 42 | stbd aft             |                         |
| V3 Div. Off.           | 01-132-2Q  | 2.0     | .08 | 77 | 88 | 86  | 80  | 86  | 80 | 74 | 65 | 50 | stbd aft             |                         |
| Hang. Ok Con.          | 01-134-2Q  | 1.3     | .67 | 72 | 82 | 72  | 78  | 73  | 73 | 68 | 57 | 52 | center               | low freq blwr in adj rm |
| Sick Bay Hall          | 2-97-2Q    | .90     | 0   | 68 | 79 | 74  | 73  | 70  | 69 | 67 | 59 | 54 | end of bench         |                         |
| Sick Bay Off.          | 2-97-6L    | .90     | 0   | 61 | 73 | 67  | 67  | 63  | 61 | 54 | 52 | 45 | cntr fwd             |                         |
| Engr. Logroom          | 2-132-0Q   | 0       | 0   | 63 | 73 | 65  | 68  | 68  | 58 | 57 | 53 | 48 | cntr aft             |                         |
| 1st Lt's Off.          | 2-150-1L   | 2.6     | 0   | 62 | 76 | 76  | 70  | 67  | 61 | 57 | 49 | 43 | cntr fwd             |                         |
| Wardroom II            | 2-162-0L   | .17     | .67 | 67 | 79 | 76  | 74  | 72  | 65 | 64 | 56 | 53 | port aft             |                         |
| Library                | 2-207-1L   | .67     | .67 | 68 | 80 | 73  | 76  | 67  | 65 | 59 | 48 | 40 | port fwd             | movie on TV             |

Data transcribed from form NOSC 3960/15. Survey date: 19 July 78. Ship underway.  
 Surveyed by DRL, DRS, RSK, JAH. Instrumentation: GR 1933 or IVIE 30A.

Table 2. Underway airborne noise data for USS CONSTELLATION (CV-64)

| Compartment Name & Number | Vol  | Abs | (A)   | (C) | 32                                | 63 | 125 | 250 | 500 | 1k | 2k | 4k | 8k | MIC Location | Comments               |
|---------------------------|------|-----|-------|-----|-----------------------------------|----|-----|-----|-----|----|----|----|----|--------------|------------------------|
| SR 03-84-0L               | 2.9  | .08 | 69    | 80  | 78                                | 80 | 72  | 69  | 69  | 65 | 58 | 53 | 48 | stbd fwd     | 2 vent ports open      |
| SR 03-84-0L               | 2.9  | .08 | 66    | 78  | 78                                | 74 | 73  | 63  | 65  | 63 | 52 | 45 | 37 | stbd fwd     | vent ports closed      |
| SR 03-84-0L               | 2.9  | .08 | 77-80 |     | aircraft fuel transfer pump on.   |    |     |     |     |    |    |    |    | stbd fwd     | vent ports closed      |
| SR 03-84-0L               | 2.9  | .08 | 73    | 81  | 72                                | 71 | 74  | 73  | 71  | 69 | 63 | 58 | 55 | cntr aft;    | under vent; vent open  |
| SR 03-84-0L               | 2.9  | .08 | 65    | 78  | 72                                | 68 | 65  | 64  | 62  | 61 | 53 | 45 | 38 | cntr aft;    | under vent; vent clsd  |
| SR 03-84-0L               | 2.9  | .08 | 82-94 |     |                                   |    |     |     |     |    |    |    |    | stbd fwd     | flt ops dk above       |
|                           |      |     | 85    | 98  |                                   |    |     |     |     |    |    |    |    |              |                        |
| OPS Office 03-100-0Q      | 3.9  | .33 | 64    | 71  | 63                                | 60 | 67  | 56  | 57  | 52 | 49 | 43 | 42 | stbd aft     | no flt ops             |
| OPS Office 03-100-0Q      | 3.9  | .33 | 60    | 72  | 76                                | 64 | 60  | 56  | 52  | 57 | 45 | 40 | 33 | port aft     | no flt ops             |
| OPS Office 03-100-0Q      | 3.9  | .33 | 64    | 70  | 65                                | 70 | 61  | 61  | 59  | 55 | 56 | 49 | 45 | port aft     | typwtr & radio         |
| OPS Office 03-100-0Q      | 3.9  | .33 | 74-85 |     |                                   |    |     |     |     |    |    |    |    | port aft     | flt ops dk above       |
| Train. Off. 03-123-4Q     | 1.4  | .17 | 71    | 76  | 69                                | 65 | 71  | 62  | 64  | 66 | 62 | 56 | 57 | cntr aft     | no flt ops             |
| Train. Off. 03-123-4Q     | 1.4  | .17 | 70    | 75  | 72                                | 64 | 68  | 66  | 58  | 66 | 64 | 59 | 55 | cntr fwd     | no flt ops             |
| Train. Off. 03-123-4Q     | 1.4  | .17 | 62    | 74  | 73                                | 65 | 60  | 55  | 55  | 58 | 52 | 46 | 45 | cntr fwd     | air cond off           |
| HRMO Chapl Off. 03-157-6Q | .78  | .83 | 68    | 77  | 72                                | 68 | 74  | 71  | 66  | 64 | 59 | 47 | 45 | at desk      |                        |
| HRMO Off. 03-157-6Q       | 1.7  | .17 | 65    | 74  | 72                                | 69 | 68  | 61  | 59  | 60 | 56 | 50 | 46 | center       |                        |
| Library 03-159-6L         | 4.9  | .17 | 66    | 81  | 78                                | 80 | 70  | 60  | 58  | 60 | 61 | 56 | 50 | cntr fwd     |                        |
| Library 03-159-6L         | 4.9  | .17 | 65    | 71  | 67                                | 67 | 63  | 57  | 61  | 62 | 58 | 51 | 42 | cntr fwd;    | later; rattling lines  |
| Library 03-159-6L         | 4.9  | .17 | 83    | 91  |                                   |    |     |     |     |    |    |    |    | cntr fwd;    | dragging line overhead |
| Library 03-159-6L         | 4.9  | .17 | 92    | 95  | max peak hold meas during landing |    |     |     |     |    |    |    |    | cntr fwd     |                        |
| Crews Berthing 02-21-0L   | 17.3 | 0   | 73    | 82  | 72                                | 76 | 76  | 76  | 72  | 68 | 60 | 50 | 52 | stbd fwd     | near door              |
| Crews Berthing 02-21-0L   | 17.3 | 0   | 66    | 77  | 75                                | 74 | 67  | 64  | 61  | 56 | 55 | 51 | 55 | port cntr    |                        |
| Crews Berthing 02-21-0L   | 17.3 | 0   | 89    | 94  | max meas during aircraft takeoff  |    |     |     |     |    |    |    |    | port cntr    |                        |
| CIC 02-39-0C              | 5.3  | .67 | 69    | 74  | 72                                | 77 | 64  | 67  | 67  | 62 | 62 | 56 | 47 | port fwd     |                        |
| CIC 02-39-0C              | 5.3  | .67 | 72    | 76  | 69                                | 64 | 65  | 66  | 70  | 64 | 60 | 59 | 53 | stbd aft     |                        |
| CIC 02-39-0C              | 5.3  | .67 | 76    | 80  | 75                                | 73 | 70  | 72  | 76  | 70 | 69 | 64 | 53 | center       |                        |
| V3 Berthing 01-29-0L      | 14.0 | 0   | 60    | 70  | 65                                | 60 | 57  | 60  | 61  | 65 | 50 | 42 | 38 | center at    | locker 32 betw mirrors |
| V3 Berthing 01-29-0L      | 14.0 | 0   | 60    | 70  | 65                                | 60 | 57  | 54  | 55  | 63 | 54 | 45 | 32 | stbd cntr    |                        |
| V3 Berthing 01-29-0L      | 14.0 | 0   | 71    | 78  | 70                                | 70 | 75  | 74  | 73  | 65 | 55 | 47 | 44 | port fwd     |                        |
| 1st Lt.'s Off. 01-84-4Q   | 1.1  | .08 | 65    | 78  | 70                                | 72 | 70  | 65  | 63  | 58 | 55 | 42 | 42 | stbd cntr    |                        |
| Mainten. Contr. 1-49-2Q   | 2.9  | 0   | 74    | 81  | 65                                | 79 | 75  | 75  | 74  | 70 | 65 | 59 | 48 | port cntr;   | near vent on high      |
| Mainten. Contr. 1-49-2Q   | 2.9  | 0   | 68    | 77  | 71                                | 72 | 68  | 69  | 67  | 67 | 58 | 53 | 46 | port cntr;   | near vent on low       |
| Mainten. Contr. 1-49-2Q   | 2.9  | 0   | 67    | 77  | 76                                | 72 | 69  | 66  | 64  | 62 | 58 | 53 | 46 | stbd aft;    | near desk              |

Table 2. Continued.

|                 |           |      |     |    |    |                                   |    |    |    |    |    |    |    |    |                           |                    |
|-----------------|-----------|------|-----|----|----|-----------------------------------|----|----|----|----|----|----|----|----|---------------------------|--------------------|
| Hangar Dk Contr | 1-119-2Q  | 1.0  | .42 | 77 | 84 | 72                                | 78 | 72 | 75 | 76 | 72 | 67 | 62 | 57 | cntr aft                  | door open (normal) |
| Hangar Dk Contr | 1-119-2Q  | 1.0  | .42 | 69 | 75 | 68                                | 65 | 64 | 70 | 69 | 70 | 58 | 55 | 52 | stbd aft                  | door closed        |
| Crews' Mess     | 2-49-0L   | 13.2 | .08 | 73 | 81 | 75                                | 75 | 77 | 77 | 72 | 67 | 62 | 62 | 60 | cntr fwd                  | near vend. machine |
| Crews' Mess     | 2-49-0L   | 13.2 | .08 | 78 | 85 | 76                                | 75 | 75 | 77 | 70 | 71 | 66 | 67 | 65 | port cntr                 |                    |
| Crews' Mess     | 2-49-0L   | 13.2 | .08 | 75 | 82 | 76                                | 76 | 74 | 73 | 70 | 72 | 63 | 59 | 56 | stbd cntr                 |                    |
| Wardroom 2      | 2-54-1Q   | 20.0 | .08 | 63 | 79 | 73                                | 70 | 67 | 64 | 58 | 55 | 50 | 52 | 49 | center                    |                    |
| Wardroom 2      | 2-54-1Q   | 20.0 | .08 | 60 | 77 | 70                                | 68 | 65 | 60 | 57 | 55 | 48 | 49 | 45 | cntr fwd                  |                    |
| Wardroom 2      | 2-54-1Q   | 20.0 | .08 | 62 | 81 | 81                                | 75 | 68 | 64 | 55 | 54 | 48 | 49 | 46 | stbd aft                  |                    |
| Medical Ward    | 2-106-0L  | 7.0  | .17 | 56 | 70 | 70                                | 71 | 68 | 60 | 62 | 51 | 48 | 45 | 37 | center                    |                    |
| Chaplains Qtrs. | 2-124-6L  | .94  | .17 | 68 | 79 | 80                                | 74 | 65 | 71 | 66 | 58 | 53 | 54 | 63 | center                    |                    |
| Wardroom        | 2-157-2L  | 5.1  | .17 | 62 | 75 | 70                                | 65 | 62 | 68 | 62 | 55 | 44 | 47 | 37 | port cntr                 |                    |
| Wardroom        | 2-157-2L  | 5.1  | .17 | 65 | 74 | 68                                | 70 | 64 | 64 | 63 | 55 | 52 | 50 | 41 | stbd aft                  |                    |
| Crew's Mess     | 2-186-0L  | .08  | .08 | 70 | 85 | 83                                | 75 | 79 | 71 | 71 | 65 | 55 | 53 | 52 | center                    |                    |
| Crew's Mess     | 2-186-0L  | .08  | .08 | 75 | 86 | 83                                | 78 | 78 | 71 | 74 | 71 | 63 | 60 | 57 | port aft                  |                    |
| Photo Lab       | 3-98-1Q   | 1.3  | .17 | 72 | 81 | 71                                | 83 | 79 | 73 | 72 | 66 | 58 | 53 | 48 | small rm: cntr fwd        |                    |
| Photo Lab       | 3-98-1Q   | 1.3  | .17 | 69 | 79 |                                   |    |    |    |    |    |    |    |    | small rm: port aft        |                    |
| Photo Lab       | 3-98-1Q   | 3.7  | 0   | 78 | 85 | 69                                | 78 | 80 | 80 | 75 | 75 | 68 | 63 | 57 | large rm: stbd fwd        |                    |
| Photo Lab       | 3-98-1Q   | 3.7  | 0   | 75 | 81 | 62                                | 66 | 73 | 74 | 70 | 68 | 61 | 57 | 50 | large rm: cntr aft; TV on |                    |
| Photo Lab       | 3-98-1Q   |      |     | 90 | 95 | 3 ft from recirc blower; blwr on  |    |    |    |    |    |    |    |    |                           |                    |
| Photo Lab       | 3-98-1Q   |      |     | 64 | 77 | 3 ft from recirc blower; blwr off |    |    |    |    |    |    |    |    |                           |                    |
| Photo Lab       | 3-98-1Q   | 0    |     | 68 | 79 | recirc blower off                 |    |    |    |    |    |    |    |    |                           |                    |
| CP0 Berthing    | 3-106-0L  | 19.1 | 0   | 71 | 83 | 77                                | 72 | 75 | 79 | 67 | 62 | 58 | 57 | 54 | large rm: stbd fwd        |                    |
| CP0 Berthing    | 3-106-0L  | 19.1 | 0   | 64 | 75 | 76                                | 65 | 60 | 65 | 60 | 51 | 51 | 52 | 48 | port cntr                 |                    |
| CP0 Berthing    | 3-106-0L  | 19.1 | 0   | 57 | 70 | 65                                | 58 | 60 | 56 | 54 | 50 | 48 | 52 | 41 | port fwd                  |                    |
| CP0 Berthing    | 3-167-0L  | 29.8 | 0   | 70 | 77 | 67                                | 74 | 65 | 71 | 68 | 65 | 55 | 56 | 50 | stbd cntr                 |                    |
| CP0 Berthing    | 3-167-0L  | 29.8 | 0   | 58 | 70 | 65                                | 62 | 55 | 53 | 53 | 52 | 43 | 47 | 37 | center                    |                    |
| CP0 Berthing    | 3-167-0L  | 29.8 | 0   | 57 | 69 | 69                                | 66 | 57 | 55 | 56 | 55 | 42 | 48 | 40 | port cntr                 |                    |
| CP0 Mess        | 3-177-0L  | 10.2 | .08 | 66 | 76 | 72                                | 68 | 70 | 68 | 65 | 60 | 55 | 49 | 44 | stbd aft                  |                    |
| CP0 Mess        | 3-177-0L  | 10.2 | .08 | 64 | 76 | 72                                | 70 | 69 | 69 | 66 | 61 | 54 | 53 | 48 | port aft                  |                    |
| CP0 Mess        | 3-177-0L  | 10.2 | .08 | 74 | 81 | 71                                | 72 | 76 | 72 | 71 | 67 | 67 | 51 | 52 | center                    |                    |
| P2/P3 Berthing  | 3-205-01L | 28.5 | 0   | 62 | 75 | 64                                | 70 | 67 | 65 | 63 | 55 | 48 | 45 | 45 | stbd aft                  |                    |
| P2/P3 Berthing  | 3-205-01L | 28.5 | 0   | 58 | 70 | 65                                | 67 | 60 | 56 | 55 | 52 | 45 | 40 | 35 | port cntr                 |                    |
| P2/P3 Berthing  | 3-205-01L | 28.5 | 0   | 66 | 78 | 75                                | 74 | 74 | 69 | 64 | 60 | 55 | 52 | 43 | center                    |                    |

Data transcribed from form NOSC 3960/15. Survey date: 15 June 78. Ship underway.

Surveyed by DRL, JAH, RPK, LM. Instrumentation: GR 1933 or GR 1982.

Comments:

5 point 740-1 measurements on tow truck GPC-2 on hangar deck: A level: 99 93 94 91 92 (above)  
150 ft away from tow truck: A level 76; C level 86. C level: 107 102 103 106 106 (above)

Table 3. Underway airborne noise data for USS OLDENDORF (DD-972)

| Compart. Name & Number | Vol        | Abs | (A) | (C) | 32 | 63 | 125 | 250 | 500 | 1k | 2k | 4k | 8k | MIC Location | Comments          |
|------------------------|------------|-----|-----|-----|----|----|-----|-----|-----|----|----|----|----|--------------|-------------------|
| Radar 1                | 03-154-02Q | 4.8 | .17 | 76  | 78 | 82 | 70  | 74  | 76  | 78 | 74 | 68 | 62 | stbd aft     | *IVIE-10A         |
| Radar 1                | 03-154-02Q | 4.8 | .17 | 74  | 80 |    |     |     |     |    |    |    |    | cntr aft     | *IVIE-10A         |
| Radar 1                | 03-154-02Q | 4.8 | .17 | 72  | 76 |    |     |     |     |    |    |    |    | port ctr     | *IVIE-10A         |
| CIC                    | 02-139-0C  | 8.9 | .75 | 68  | 75 | 72 | 68  | 68  | 70  | 64 | 63 | 60 | 55 | center       |                   |
| CIC                    | 02-139-0C  | 8.9 | .75 | 69  | 78 | 72 | 72  | 72  | 74  | 65 | 61 | 57 | 52 | cntr aft     |                   |
| CIC                    | 02-139-0C  | 8.9 | .75 | 65  | 73 | 67 | 68  | 65  | 64  | 62 | 60 | 55 | 51 | port fwd     |                   |
| Sonar Control          | 02-139-2C  | 2.4 | .83 | 57  | 72 | 74 | 65  | 63  | 55  | 48 | 42 | 52 | 47 | cntr aft     |                   |
| Sonar Control          | 02-139-2C  | 2.4 | .83 | 61  | 73 | 72 | 64  | 62  | 53  | 52 | 57 | 54 | 48 | port aft     |                   |
| Sonar Control          | 02-139-2C  | 2.4 | .83 | 62  | 71 | 72 | 60  | 65  | 52  | 50 | 55 | 52 | 45 | stbd aft     |                   |
| Trans. Room            | 02-234-1   | 5.2 | .08 | 84  | 86 | 72 | 74  | 74  | 74  | 77 | 78 | 77 | 67 | cntr aft     |                   |
| Trans. Room            | 02-234-1   | 5.2 | .08 | 86  | 86 | 72 | 74  | 73  | 75  | 77 | 79 | 81 | 76 | cntr aft     | ANSRC31BX rcvr on |
| Trans. Room            | 02-234-1   | 5.2 | .08 | 81  | 83 | 77 | 71  | 72  | 74  | 75 | 76 | 73 | 65 | stbd fwd     |                   |
| Trans. Room            | 02-234-1   | 5.2 | .08 | 80  | 82 | 77 | 74  | 73  | 72  | 74 | 74 | 73 | 63 | port fwd     |                   |
| Trans. Room            | 02-234-1   | 5.2 | .08 | 84  | 85 | 75 | 75  | 75  | 76  | 77 | 76 | 78 | 76 | port ctr     | ANSRC31BX rcvr on |
| Data Proc. Cen.        | 01-138-0C  | 7.8 | .83 | 74  | 82 | 82 | 72  | 72  | 72  | 71 | 70 | 67 | 59 | stbd ctr     |                   |
| Data Proc. Cen.        | 01-138-0C  | 7.8 | .83 | 75  | 83 | 83 | 71  | 72  | 71  | 69 | 70 | 69 | 58 | port ctr     |                   |
| Data Proc. Cen.        | 01-138-0C  | 7.8 | .83 | 71  | 85 | 88 | 70  | 71  | 65  | 66 | 66 | 64 | 56 | cntr aft     |                   |
| Data Proc. Cen.        | 01-138-0C  | 7.8 | .83 | 72  | 84 | 63 | 73  | 75  | 75  | 65 | 68 | 62 | 57 | port fwd     |                   |
| Wardroom               | 01-274-2   | 6.3 | .58 | 66  | 75 | 70 | 65  | 65  | 71  | 65 | 58 | 53 | 42 | center       |                   |
| Wardroom               | 01-274-2   | 6.3 | .58 | 71  | 81 | 71 | 69  | 67  | 79  | 65 | 58 | 56 | 44 | cntr fwd     |                   |
| Wardroom               | 01-274-2   | 6.3 | .58 | 65  | 73 | 68 | 65  | 63  | 71  | 64 | 56 | 50 | 42 | cntr fwd     |                   |
| Stateroom 3            | 01-346-1L  | 1.3 | .50 | 72  | 72 | 60 | 63  | 62  | 57  | 59 | 66 | 67 | 62 | center       | near TV           |
| Crew's Rec. Rm.        | 1-205-1    | 2.4 | .17 | 72  | 81 | 67 | 77  | 75  | 74  | 72 | 68 | 62 | 56 | center       |                   |
| Crew's Rec. Rm.        | 1-205-1    | 2.4 | .17 | 70  | 80 | 72 | 76  | 76  | 73  | 66 | 60 | 60 | 55 | port fwd     |                   |
| Crew's Rec. Rm.        | 1-205-1    | 2.4 | .17 | 72  | 80 | 72 | 76  | 76  | 73  | 66 | 69 | 67 | 55 | stbd fwd     | *IVIE-10A         |
| Weapons Berth          | 2-149-0L   | 7.7 | .17 | 54  | 72 | 71 | 67  | 60  | 57  | 52 | 52 | 54 | 50 | stbd fwd     | *IVIE-10A         |
| Weapons Berth          | 2-149-0L   | 7.7 | .17 | 60  | 70 | 68 | 66  | 60  | 54  | 54 | 56 | 54 | 42 | port fwd     | *IVIE-10A         |
| Weapons Berth          | 2-149-0L   | 7.7 | .17 | 57  | 72 | 74 | 66  | 63  | 54  | 46 | 50 | 52 | 40 | stbd aft     | *IVIE-10A         |
| 1st Div. Berth         | 3-146-0    | 7.6 | .42 | 58  | 72 | 74 | 67  | 63  | 62  | 52 | 52 | 56 | 42 | center       | *IVIE-10A         |
| 1st Div. Berth         | 3-146-0    | 7.6 | .42 | 58  | 72 | 72 | 64  | 62  | 56  | 50 | 50 | 46 | 40 | port ctr     | *IVIE-10A         |
| 1st Div. Berth         | 3-146-0    | 7.6 | .42 | 58  | 72 | 72 | 68  | 64  | 58  | 52 | 52 | 48 | 46 | stbd ctr     | *IVIE-10A         |

Table 3. Continued.

|                 |           |      |     |    |    |    |    |    |    |    |    |    |    |    |           |
|-----------------|-----------|------|-----|----|----|----|----|----|----|----|----|----|----|----|-----------|
| OPS Berthing    | 3-346-01L | 11.1 | .33 | 57 | 69 | 68 | 61 | 62 | 61 | 53 | 58 | 50 | 46 | 40 | center    |
| OPS Berthing    | 3-346-01L | 11.1 | .33 | 53 | 66 | 66 | 62 | 60 | 56 | 50 | 46 | 46 | 42 | 38 | port cntr |
| OPS Berthing    | 3-346-01L | 11.1 | .33 | 60 | 70 | 68 | 62 | 62 | 60 | 58 | 50 | 54 | 54 | 42 | stbd cntr |
| Mid ship qtrdk. |           |      |     |    |    |    |    |    |    |    |    |    |    |    |           |
| Crew's Mess     |           |      | .50 | 70 | 76 | 77 | 70 | 70 | 66 | 64 | 57 | 61 | 56 | 50 | center    |
| Crew's Mess     |           |      | .50 | 71 | 79 | 76 | 71 | 76 | 66 | 66 | 66 | 65 | 58 | 51 | stbd cntr |
| Crew's Mess     |           |      | .50 | 68 | 79 | 74 | 70 | 75 | 74 | 72 | 57 | 54 | 55 | 47 | port fwd  |

Data transcribed from form NOSC 3960/15. Survey date: 19 April 78. Ship underway.  
 Surveyed by ES, RPX. Instrumentation: GR 1982; or, where indicated by an \*, IVIE-10A.

Table 4. Underway airborne noise data for USS MERRILL (DD-976)

| Compartment Name & Number | Vol        | Abs | (A) | (C) | 32 | 53 | 125 | 250 | 500 | 1k | 2k | 4k | 8k | MIC Location | Comments                           |
|---------------------------|------------|-----|-----|-----|----|----|-----|-----|-----|----|----|----|----|--------------|------------------------------------|
| Radar Room                | 03-154-02Q | 4.8 | 0.0 | 82  | 85 | 80 | 67  | 74  | 69  | 74 | 75 | 77 | 76 | 76           | stbd aft nr SPQ9A; all equip opr   |
| Radar Room                | 03-154-02Q | 4.8 | 0.0 | 81  | 83 | 81 | 71  | 71  | 74  | 73 | 76 | 74 | 74 | 69           | port aft at desk; all equip opr    |
| Radar Room                | 03-154-02Q | 4.8 | 0.0 | 82  | 86 | 80 | 73  | 73  | 76  | 77 | 78 | 74 | 75 | 69           | port fwd                           |
| Sonar Control             | 02-139-2C  | 2.4 |     | 63  | 76 | 76 | 71  | 62  | 51  | 51 | 56 | 56 | 58 | 51           | center tracking sub                |
| Sonar Control             | 02-139-2C  | 2.4 |     | 64  | 81 | 75 | 73  | 56  | 52  | 51 | 62 | 55 | 49 | 40           | center tracking sub                |
| Sonar Control             | 02-139-2C  | 2.4 |     | 66  | 72 | 67 | 65  | 62  | 54  | 52 | 58 | 62 | 52 | 43           | stbd aft tracking sub              |
| Data Proc. Cen.           | 01-138-0C  | 7.8 | .83 | 74  | 78 | 73 | 70  | 72  | 68  | 68 | 71 | 68 | 64 | 57           | center at desk                     |
| Data Proc. Cen.           | 01-138-0C  | 7.8 | .83 | 75  | 79 | 74 | 71  | 73  | 70  | 70 | 71 | 69 | 64 | 58           | stbd aft nr MX8450R1               |
| Data Proc. Cen.           | 01-138-0C  | 7.8 | .83 | 72  | 78 | 74 | 65  | 70  | 67  | 66 | 68 | 64 | 61 | 56           | port fwd                           |
| Data Proc. Cen.           | 01-138-0C  | 7.8 | .83 | 73  | 77 | 76 | 68  | 70  | 66  | 66 | 71 | 65 | 61 | 55           | center aft nr control stn          |
| Wardroom                  | 01-291-2L  | 6.3 | .58 | 56  | 77 | 76 | 73  | 65  | 57  | 51 | 50 | 44 | 49 | 41           | stbd cntr                          |
| Wardroom                  | 01-291-2L  | 6.3 | .58 | 57  | 81 | 81 | 76  | 64  | 60  | 52 | 50 | 47 | 50 | 41           | port aft                           |
| Wardroom                  | 01-291-2L  | 6.3 | .58 | 56  | 76 | 76 | 73  | 65  | 57  | 50 | 48 | 45 | 44 | 42           | port fwd at table                  |
| Stateroom #6              | 01-358-1L  | 1.2 | .17 | 65  | 78 | 71 | 68  | 77  | 54  | 48 | 51 | 59 | 59 | 50           | cntr fwd nr bunks                  |
| Stateroom #6              | 01-358-1L  | 1.2 | .17 | 66  | 79 | 70 | 65  | 78  | 55  | 50 | 51 | 59 | 59 | 50           | port fwd                           |
| Stateroom #6              | 01-358-1L  | 1.2 | .17 | 63  | 70 | 66 | 60  | 63  | 49  | 49 | 51 | 59 | 59 | 48           | cntr aft nr desk                   |
| CPO Berthing              | 1-224-0L   | 5.5 |     | 71  | 84 | 84 | 73  | 81  | 78  | 66 | 57 | 52 | 52 | 48           | port fwd                           |
| CPO Berthing              | 1-224-0L   | 5.5 |     | 61  | 76 | 75 | 70  | 72  | 62  | 57 | 52 | 49 | 49 | 46           | port aft                           |
| CPO Lounge                | 1-248-1L   | 1.8 | .50 | 64  | 79 | 78 | 75  | 74  | 67  | 60 | 53 | 53 | 57 | 51           | port cntr                          |
| CPO Lounge                | 1-248-1L   | 1.8 | .50 | 66  | 82 | 79 | 74  | 79  | 66  | 59 | 51 | 51 | 54 | 48           | above Eng Rm                       |
| CPO Mess                  | 1-260-1L   | 4.0 | .50 | 60  | 74 | 74 | 68  | 67  | 60  | 55 | 51 | 51 | 50 | 46           | above Eng Rm                       |
| Nav.'s Statrm.            | 1-365-2L   | 1.3 | .17 | 61  | 76 | 60 | 61  | 76  | 51  | 44 | 45 | 52 | 50 | 41           | center                             |
| Nav.'s Statrm.            | 1-365-2L   | 1.3 | .17 | 54  | 61 | 60 | 57  | 52  | 45  | 44 | 47 | 50 | 45 | 40           | cntr fwd nr bunk; whine; vent on   |
| Nav.'s Statrm.            | 1-365-2L   | 1.3 | .17 | 57  | 71 | 66 | 60  | 69  | 48  | 44 | 46 | 51 | 50 | 40           | cntr fwd nr bunk; whine; vent off  |
| Nav.'s Statrm.            | 1-365-2L   | 1.3 | .17 | 63  | 79 | 70 | 64  | 79  | 54  | 46 | 47 | 53 | 52 | 43           | cntr aft nr desk; turbine whine    |
| Sick Bay                  | 1-382-0L   | 1.6 | .05 | 61  | 75 | 74 | 64  | 68  | 63  | 56 | 55 | 50 | 45 | 38           | stbd fwd nr desk; turbine whine    |
| Sick Bay                  | 1-382-0L   | 1.6 | .05 | 61  | 74 | 73 | 64  | 67  | 61  | 58 | 56 | 50 | 44 | 38           | center, at exam table              |
| Sick Bay                  | 1-382-0L   | 1.6 | .05 | 57  | 82 | 85 | 65  | 64  | 60  | 53 | 51 | 46 | 42 | 33           | port cntr, at desk                 |
| Barber Shop               | 1-414-1    | 1.0 | .17 | 64  | 83 | 85 | 68  | 73  | 65  | 58 | 59 | 54 | 52 | 45           | port aft, nr bunks                 |
| Barber Shop               | 1-414-1    | 1.0 | .17 | 65  | 81 | 83 | 72  | 74  | 66  | 60 | 61 | 55 | 53 | 48           | port cntr, nr barber chair         |
| Bos'n #3                  | 1-434-0A   | 2.8 | 0.0 | 60  | 78 | 78 | 72  | 62  | 54  | 53 | 50 | 52 | 45 | 45           | stbd aft, nr chairs                |
|                           |            |     |     |     |    |    |     |     |     |    |    |    |    |              | -; Boiler rm 3 not op; 15 rls rope |

Table 4. Continued.

|                          |     |     |    |    |    |    |    |    |    |    |    |    |    |           |
|--------------------------|-----|-----|----|----|----|----|----|----|----|----|----|----|----|-----------|
| Cent Cntrl Stn. 2-272-0C | 8.3 | .67 | 62 | 84 | 85 | 76 | 75 | 61 | 57 | 52 | 50 | 50 | 46 | port aft  |
| Cent Cntrl Stn. 2-272-0C | 8.3 | .67 | 62 | 82 | 83 | 76 | 74 | 60 | 55 | 52 | 52 | 50 | 45 | stbd cntr |
| Cent Cntrl Stn. 2-272-0C | 8.3 | .67 | 60 | 80 | 78 | 73 | 65 | 60 | 56 | 56 | 52 | 50 | 45 | port cntr |

Data transcribed from form NOSC 3960/15. Survey date: 3 May 78. Ship underway.  
 Surveyed by ES, OCC. Instrumentation: B&K 2209.

Table 5. Underway airborne noise data for USS HOEL (DDG-13)

| Compartment Name & Number | Vol       | Abs  | (A) | (C) | 32                  | 63 | 125 | 250 | 500 | 1k | 2k | 4k | 8k | 16k | MIC Location                                       | Comments                                             |
|---------------------------|-----------|------|-----|-----|---------------------|----|-----|-----|-----|----|----|----|----|-----|----------------------------------------------------|------------------------------------------------------|
| Pilot house               | 02-       |      | 72  |     |                     |    |     |     |     |    |    |    |    |     |                                                    |                                                      |
| Chartroom                 | 02-59-2C  | 0.4  | .50 | 78  | 67                  | 68 | 73  | 60  | 60  | 64 | 56 | 48 | 49 |     | center                                             |                                                      |
| CO Sea Cabin              | 02-60-1   | .40  | .50 | 68  | 64                  | 61 | 53  | 45  | 40  | 41 | 36 | 33 | 30 | 27  | stbd fwd in bunk                                   |                                                      |
| CIC                       | 02-       |      | 52  |     |                     |    |     |     |     |    |    |    |    |     |                                                    |                                                      |
| Missile Fire Control:     |           |      |     |     |                     |    |     |     |     |    |    |    |    |     |                                                    |                                                      |
| (Lg. Rm. 1)               | 02-123-0C | 1.3  |     | 86  | 81                  | 77 | 75  | 71  | 70  | 71 | 69 | 61 | 54 | 45  | center                                             |                                                      |
| (Sm. Rm. 2)               | 02-123-0C | .5   |     | 85  | 83                  | 82 | 72  | 68  | 63  | 65 | 59 | 54 | 47 | 38  | center                                             |                                                      |
| Offcr. WC/Shwr.           | 01-67-1L  |      | 70  |     |                     |    |     |     |     |    |    |    |    |     |                                                    |                                                      |
| Radio Central             | 01-       | .17  |     | 83  | 77                  | 76 | 73  | 71  | 63  | 70 | 72 | 67 | 65 | 64  | -                                                  |                                                      |
| Sec Voice Area            | 01-       | .17  |     | 83  | 72                  | 71 | 73  | 65  | 65  | 66 | 62 | 59 | 54 | 48  | -                                                  |                                                      |
| Trans. Rm.                | 01-       | .17  |     | 84  | 74                  | 75 | 77  | 75  | 71  | 74 | 72 | 67 | 58 | 49  | -                                                  |                                                      |
| Shredder Rm.              | 01-73-1Q  | 0.1  |     | 86  |                     |    |     |     |     |    |    |    |    |     | -                                                  | shredding 1 piece of paper                           |
| ASROC OK Outside          |           | inf  |     | 70  |                     |    |     |     |     |    |    |    |    |     | est. ship speed 20 Kt; est. rel. wind speed 3-5 Kt |                                                      |
| Grd Shp/Com Sto           | 01-111-0Q | .02  | 0   | 83  | 75                  | 76 | 73  | 72  | 70  | 65 | 59 | 51 | 42 |     | stbd fwd near door                                 |                                                      |
| Wardroom                  | 1-51-0L   | 4.8  | .25 | 74  | 66                  | 69 | 71  | 60  | 53  | 53 | 50 | 44 | 35 |     | -                                                  |                                                      |
| Wardroom Galley           | 1-51-1Q   |      | 77  |     |                     |    |     |     |     |    |    |    |    |     |                                                    |                                                      |
| Offcr. WC/Shwr.           | 1-55-2L   |      | 58  |     |                     |    |     |     |     |    |    |    |    |     |                                                    |                                                      |
| Radar Room #1             | 1-121-0Q  |      | 68  | 91  | 84                  | 84 | 76  | 74  | 70  | 68 | 65 | 62 | 55 | 47  | cntr fwd                                           | all equip on                                         |
| Radar Room #1             | 1-121-0Q  |      | 74  | 87  | stbd aft; 3 ft from |    |     |     |     |    |    |    |    |     | center                                             | all equip on                                         |
| Radar Room #1             | 1-121-0Q  |      | 76  | 85  | stbd aft; 3 ft from |    |     |     |     |    |    |    |    |     | HD-366/SP electr tube liq cooler w/ doors closed   |                                                      |
| Radar Room #1             | 1-121-0Q  |      | 84  | 86  | stbd aft; 3 ft from |    |     |     |     |    |    |    |    |     | HD-366/SP electr tube liq cooler w/ doors open     |                                                      |
| Radar Room #2             | 1-75-2Q   |      | 75  | 84  | 79                  | 72 | 76  | 74  | 71  | 69 | 65 | 68 | 57 | 49  | center                                             |                                                      |
| Radar Room #2             | 1-115-2L  | 1.2  | .50 | 81  | 77                  | 73 | 73  | 72  | 66  | 66 | 65 | 64 | 59 |     | -                                                  |                                                      |
| Jr. Officers. SR          | 1-116-1L  | 1.0  | .75 | 83  | 73                  | 77 | 78  | 66  | 71  | 71 | 68 | 61 | 56 | 44  | cntr aft                                           | Air Cond. ON                                         |
| Sickbay                   |           | 1.0  | .75 | 77  | 76                  | 68 | 70  | 67  | 52  | 58 | 55 | 48 | 50 | 43  | cntr aft                                           | Air Cond. OFF                                        |
| Sickbay                   | 1-116-1L  | 1.0  | .75 | 69  | 80                  |    |     |     |     |    |    |    |    |     | port cntr                                          | Air Cond. ON                                         |
| Sickbay                   |           | 1.0  | .75 | 66  | 77                  |    |     |     |     |    |    |    |    |     | port cntr                                          | Air Cond. OFF                                        |
| Engr. Off. SR             | 1-122-2L  | 0.7  | .42 | 72  | 79                  | 74 | 76  | 71  | 72  | 65 | 62 | 67 | 66 | 56  | -                                                  |                                                      |
| Supply Off. SR            | 1-131-2L  | .71  | .58 | 76  | 66                  | 72 | 72  | 63  | 62  | 58 | 58 | 55 | 51 |     | -                                                  |                                                      |
| Berthing 2-15 to 23-0L    |           | 11.5 |     | 52  | 70                  | 65 | 63  | 58  | 53  | 43 | 47 | 44 | 42 | 45  | 39                                                 | port fwd                                             |
| Officer SR                | 2-43-2L   | 1.5  | .33 | 57  | 73                  | 67 | 71  | 66  | 61  | 55 | 52 | 46 | 42 | 33  | -                                                  |                                                      |
| Berthing 2-163 to 183-2L  |           | 3.2  | .33 | 68  | 90                  | 89 | 89  | 72  | 62  | 67 | 59 | 53 | 48 | 38  | 35                                                 | port aft; STRONG LOW FREQ RUMBLE AND VIBR FROM SHAFT |

Table 5. Continued.

|                         |     |     |    |    |    |    |    |    |    |    |    |    |    |    |        |             |
|-------------------------|-----|-----|----|----|----|----|----|----|----|----|----|----|----|----|--------|-------------|
| Sonar Control 3-39-1C   | .25 | 0.5 | 70 | 78 | 65 | 67 | 65 | 70 | 69 | 69 | 58 | 53 | 47 | 41 | -      | computer rm |
| ASH Control Rm. 3-39-C  |     |     | 68 | 80 |    |    |    |    |    |    |    |    |    |    |        | unmanned    |
| Sonar Eq. Rm #2 3-39-2Q | 1.4 | .50 | 74 |    | 64 | 70 | 73 | 68 | 67 | 70 | 68 | 61 | 54 | 48 | center |             |

Data transcribed from form NO5C 3960/15. Survey date: 10 May 79. Ship underway.  
 Surveyed by DRL, JAH. Instrumentation: B&K 2215.

Table 6. Underway airborne noise data for USS REASONER (FF-1063)

| Compart. Name & Number | Vol       | Abs | (A) | (C)                                | 32                                  | 63 | 125 | 250 | 500 | 1k | 2k | 4k | 8k | MIC Location | Comments                            |
|------------------------|-----------|-----|-----|------------------------------------|-------------------------------------|----|-----|-----|-----|----|----|----|----|--------------|-------------------------------------|
| Pilot House            | 02-46-0C  | --  | --  | 71                                 | 75                                  | 68 | 70  | 61  | 66  | 66 | 69 | 68 | 63 | 51           | cntr fwd; speech; gun directr on    |
| Pilot House            | 02-46-0C  | --  | --  | 64-71                              | is range of A-levels in pilot house |    |     |     |     |    |    |    |    |              |                                     |
| Sonar Control          | 01-70-01C | 2.4 | .83 | 57                                 | 67                                  | 61 | 63  | 59  | 63  | 52 | 51 | 44 | 42 | 45           | center                              |
| Sonar Control          | 01-70-01C | 2.4 | .83 | 60/57                              |                                     |    |     |     |     |    |    |    |    |              | stbd/port cntr                      |
| ET Shop                | 1-70-0Q   | 1.4 | 0.0 | 62                                 | 75                                  | 74 | 64  | 68  | 65  | 55 | 55 | 50 | 42 | 42           | center                              |
| Radar                  | 1-70-1Q   | 1.4 | .08 | 77                                 | 78                                  | 74 | 63  | 68  | 65  | 69 | 71 | 71 | 67 | 63           | cntr fwd                            |
| OPS Officer SR         | 1-79-1L   | 0.8 | .25 | 68                                 | 76                                  | 75 | 70  | 69  | 66  | 66 | 63 | 61 | 64 | 53           | - Forced draft blwr dominant        |
| OPS Officer SR         | 1-79-1L   | 0.8 | .25 | 69                                 | 77                                  | 76 | 71  | 71  | 66  | 65 | 62 | 62 | 58 | 53           | - FDB less dominant                 |
| Weapon. Offcr. SR      | 1-101-2L  | 1.1 | .25 | A-levels: 68                       | cntr fwd at desk; 66 stbd fwd       |    |     |     |     |    |    |    |    |              | at bunk; 70 stbd aft.               |
| XO SR                  | 1-103-1L  | 1.0 | .25 | 63                                 | 74                                  | 68 | 70  | 66  | 65  | 59 | 58 | 54 | 48 | 40           | cntr fwd                            |
| Wardroom               | 1-109-0L  | 3.0 | .42 | 64                                 | 72                                  | 63 | 63  | 65  | 65  | 61 | 60 | 54 | 45 | 38           | - air recirc sys for rms above      |
| Sick Bay               | 1-118-0L  | 1.1 | 0   | 58                                 | 74                                  | 70 | 69  | 66  | 62  | 59 | 53 | 48 | 40 | 34           | port cntr                           |
| Sick Bay               | 1-118-0L  | 1.1 | 0   | A-levels: 55 - 59                  |                                     |    |     |     |     |    |    |    |    |              |                                     |
| Crew Berthing          | 2-29-0L   | 9.1 | .50 | 62                                 | 74                                  | 74 | 64  | 66  | 63  | 58 | 55 | 52 | 50 | 37           | port cntr at desk                   |
| Crew Berthing          | 2-29-0L   | 9.1 | .50 | 61                                 | 71                                  | 64 | 62  | 64  | 60  | 58 | 55 | 51 | 48 | 37           | center near patient table           |
| Crew Berthing          | 2-29-0L   | 9.1 | .50 | A-levels: 60 - 64                  |                                     |    |     |     |     |    |    |    |    |              |                                     |
| DC Central             | 2-54-0Q   | 1.9 | 0   | 55                                 | 67                                  | 62 | 64  | 59  | 57  | 52 | 47 | 45 | 39 | 36           | cntr aft                            |
| Supply Office          | 2-54-01L  | 1.4 | 0   | 55                                 |                                     |    |     |     |     |    |    |    |    |              | center                              |
| Ships Office           | 2-61-2Q   | 0   | 0   | A-level of alarm: 65 dB            |                                     |    |     |     |     |    |    |    |    |              |                                     |
| Ships Office           | 2-61-2Q   | 0   | 0   | 59                                 | 69                                  | 68 | 61  | 62  | 59  | 59 | 53 | 48 | 46 | 39           | center                              |
| Ships Office           | 2-61-2Q   | 0   | 0   | 63                                 | 71                                  | 61 | 66  | 63  | 63  | 61 | 58 | 55 | 51 | 43           | -                                   |
| Ships Office           | 2-61-2Q   | 0   | 0   | 73                                 | 76                                  | 64 | 70  | 68  | 69  | 69 | 63 | 60 | 52 | 44           | center                              |
| Ships Office           | 2-61-2Q   | 0   | 0   | A-levels: 71 - 75                  |                                     |    |     |     |     |    |    |    |    |              |                                     |
| Ships Office           | 2-61-2Q   | 0   | 0   | 58                                 | 71                                  | 66 | 65  | 64  | 57  | 57 | 50 | 49 | 42 | 34           | -                                   |
| Ships Office           | 2-61-2Q   | 0   | 0   | A-levels: uniform                  |                                     |    |     |     |     |    |    |    |    |              |                                     |
| Ships Office           | 2-61-2Q   | 0   | 0   | 69                                 | 77                                  | 74 | 74  | 72  | 67  | 68 | 66 | 62 | 53 | 47           | center                              |
| Ships Office           | 2-61-2Q   | 0   | 0   | A-levels: 70 cntr fwd; 65 cntr aft |                                     |    |     |     |     |    |    |    |    |              |                                     |
| Ships Office           | 2-61-2Q   | 0   | 0   | 59                                 | 71                                  | 67 | 64  | 64  | 60  | 57 | 53 | 47 | 45 | 42           | stbd fwd                            |
| Ships Office           | 2-61-2Q   | 0   | 0   | A-levels: uniform                  |                                     |    |     |     |     |    |    |    |    |              |                                     |
| Ships Office           | 2-61-2Q   | 0   | 0   | 63                                 | 72                                  | 62 | 69  | 65  | 58  | 59 | 56 | 52 | 51 | 48           | port aft                            |
| Ships Office           | 2-61-2Q   | 0   | 0   | 60                                 | 71                                  | 69 | 64  | 64  | 51  | 57 | 57 | 51 | 43 | 37           | center                              |
| Ships Office           | 2-61-2Q   | 0   | 0   | .83                                |                                     |    |     |     |     |    |    |    |    |              | music system on used as crew lounge |

Table 6. Continued.

|                 |          |     |     |                   |    |    |    |    |    |    |    |    |    |    |                              |
|-----------------|----------|-----|-----|-------------------|----|----|----|----|----|----|----|----|----|----|------------------------------|
| Gun Plot        | 3-41-OC  | 3.2 | .33 | 72                | 76 | 64 | 67 | 66 | 69 | 71 | 69 | 64 | 58 | 52 |                              |
| Weap Berthing   | 3-45-OL  | 8.1 | .33 | 51                | 62 | 55 | 55 | 56 | 49 | 47 | 45 | 41 | 37 | 30 | stbd fwd                     |
| Electr Central  | 3-59-OC  |     | .83 | 74                | 78 | 66 | 66 | 63 | 72 | 74 | 68 | 63 | 66 | 49 | cntr fwd near vent; vent on  |
|                 |          |     |     | A-levels: 63 - 74 |    |    |    |    |    |    |    |    |    |    |                              |
| Electr Central  | 3-59-OC  |     | .83 | 64                |    |    |    |    |    |    |    |    |    |    | cntr fwd near vent; vent off |
| Crew Berthing   | 3-59-2L  | 2.5 | .17 | 62                | 70 | 67 | 61 | 64 | 60 | 61 | 57 | 51 | 49 | 38 | stbd cntr                    |
|                 |          |     |     | A-levels: 60 - 63 |    |    |    |    |    |    |    |    |    |    |                              |
| Sub Supply      | 3-116-2Q | 1.7 | .17 | 64                | 76 | 75 | 71 | 70 | 65 | 61 | 59 | 55 | 49 | 42 | center                       |
| Supply Sup Cen. | 4-107-1A | .80 | 0   | 66                | 75 | 68 | 70 | 71 | 64 | 61 | 61 | 61 | 51 | 44 | center                       |

Data transcribed from form WOSC 3960/15. Survey date: 5 April 79. Ship underway.  
 Surveyed by DRL, DRS. Instrumentation: B&K 2215.

Table 7. Underway airborne noise data for USS SCHENECTADY (LST-1185)

| Compartment Name & Number | Vol      | Abs | (A) | (C)   | 32  | 63     | 125    | 250            | 500     | 1k    | 2k | 4k | 8k | MIC Location | Comments          |                                    |
|---------------------------|----------|-----|-----|-------|-----|--------|--------|----------------|---------|-------|----|----|----|--------------|-------------------|------------------------------------|
| Pilot House               | 03-73-0C | 4.0 | .25 | 68    | 80  | 75     | 75     | 62             | 58      | 63    | 59 | 57 | 53 | 43           | cntr fwd          | near radar                         |
| Pilot House               | 03-73-0C | 4.0 | .25 | 62-78 | 80  | 73     | 62     | 56             | 65      | 58    | 58 | 49 | 42 | port cntr    |                   | capt's chair                       |
| Pilot House               | 03-73-0C | 4.0 | .25 | 75    | 80  | 86     | 72     | 66             | 61      | 63    | 65 | 69 | 68 | 52           | stbd cntr         |                                    |
| CIC                       | 03-79-2C |     | .33 | 74    | 80  | 73     | 74     | 59             | 63      | 62    | 65 | 65 | 63 | 50           | stbd aft          | speech                             |
| CIC                       | 03-79-2C |     | .33 | 73    | 79  | 70     | 70     | 65             | 66      | 73    | 76 | 76 | 77 | 55           | center            | speech                             |
| CIC                       | 03-79-2C |     | .33 | 83    | 82  | active | 1dspkr | port side      | aft     | blkhd |    |    |    | center       | center            | speech                             |
| CIC                       | 03-79-2C |     | .33 | 70    | 81  | 73     | 79     | 65             | 60      | 62    | 68 | 65 | 61 | 48           | stbd cntr         | speech                             |
| Chart Room                | 03-79-3C | .74 | .58 | 55    | 69  | 67     | 64     | 60             | 54      | 52    | 49 | 48 | 46 | 33           | -                 | sonar w/o graph                    |
| OPS Officer SR            | 02-73-2L | .68 | .67 | 57    | 68  | 67     | 62     | 56             | 54      | 53    | 54 | 47 | 41 | 34           | at desk           |                                    |
| OPS Officer SR            | 02-73-2L | .68 | .67 | 58    | 65  | 64     | 58     | 55             | 53      | 52    | 53 | 46 | 41 | 34           | in berth          |                                    |
| Troop CO SR               | 02-73-4L | .86 | .83 | 50    | 68  | 64     | 67     | 57             | 49      | 45    | 44 | 39 | 36 | 33           | stbd fwd at desk  |                                    |
| Troop CO SR               | 02-73-4L | .86 | .83 | 51    | 69  | 57-63  | 69     | 64             | 50      | 45    | 43 | 37 | 34 | 30-          | port aft in berth |                                    |
| Radio Central             | 01-82-2C | 1.9 | .33 | 78    | 78  | 68     | 67     | 70             | 68      | 71    | 73 | 71 | 72 | 59           | center            |                                    |
| Secure TTY Rm             |          | 1.6 | .33 | 78    | 78  | 68     | 72     | 68             | 64      | 68    | 71 | 71 | 71 | 71           | center            |                                    |
| Ship's Office             | 1-81-2Q  | 2.2 | .50 | 67    | 73  | 66     | 69     | 66             | 69      | 71    | 60 | 57 | 50 | 45           | center            | speech                             |
| Log Room                  | 1-89-4Q  | 1.8 | .17 | 65    | 76  | 59     | 67     | 74             | 65      | 64    | 55 | 51 | 45 | 42           | center            | speech                             |
| Log Room                  | 1-89-4Q  | 1.8 | .17 | 58    | 74  | 74     | 60     | 66             | 62      | 59    | 52 | 52 | 43 | 38           | port aft          |                                    |
| Sick bay                  | 2-133-2L |     |     | -     |     |        |        |                |         |       |    |    |    |              |                   |                                    |
| Engr Main Cntrl           | 4-129-0E | 2.9 | .33 | 73    | 89  | 90     | 76     | 75             | 76      | 71    | 68 | 61 | 52 | 47           | stbd cntr         |                                    |
| Engine room               |          |     |     | 106   | 108 | btwn   | diesel | eng #1 and #2; |         |       |    |    |    |              |                   | #2 & #3 secured.                   |
| Engine room               |          |     |     | 101   | 103 | at far | end of | diesel         | eng #1; |       |    |    |    |              |                   | diesel eng #1 op; #2 & #3 secured. |
| Crew Lounge               | 4-132-2L | 5.1 | .75 | 73    | 88  | 89     | 82     | 80             | 75      | 72    | 67 | 63 | 53 | 45           | center            |                                    |

Data transcribed from form NOISC 3960/15. Survey date: 7 Jun 78. Ship underway at anchor.  
 Surveyed by DRL, ES. Instrumentation: GR 1982.

Table 8. Underway airborne noise data for USS RACINE (LST-1191)

| Compartment Name & Number | Vol       | Abs | (A) | (C) | 32 | 63 | 125 | 250 | 500 | 1k | 2k | 4k | 8k | MIC Location | Comments            |
|---------------------------|-----------|-----|-----|-----|----|----|-----|-----|-----|----|----|----|----|--------------|---------------------|
| CIC                       | 03-79-2C  | 2.9 | .17 | 72  | 80 | 75 | 70  | 60  | 61  | 65 | 66 | 61 | 50 | center       | loudspkr.; speech   |
| CIC                       | 03-79-2C  | 2.9 | .17 | 69  | 83 | 82 | 62  | 60  | 62  | 61 | 64 | 62 | 50 | stbd aft     | intercom; speech    |
| OPS Officer SR            | 02-70-0L  | .82 | .17 | 50  | 73 | 72 | 62  | 56  | 52  | 46 | 36 | 33 | 30 | stbd aft     |                     |
| OPS Office                | 02-115-2Q | 1.1 | .17 | 55  | 78 | 74 | 76  | 65  | 55  | 49 | 45 | 37 | 36 | center       | high speed          |
| OPS Office                | 02-115-2Q | 1.1 | .17 | 60  | 81 | 73 | 80  | 68  | 57  | 48 | 46 | 39 | 38 | center       |                     |
| Radio Room                | 01-89-2C  | 1.8 | .25 | 76  | 81 | 73 | 68  | 67  | 73  | 72 | 74 | 68 | 63 | cntr fwd     |                     |
| Radio Room                | 01-89-2C  | 1.8 | .25 | 81  | 83 | 77 | 69  | 67  | 73  | 72 | 78 | 76 | 65 | port fwd     |                     |
| CPO Mess                  | 01-89-5L  | 3.6 | .25 | 62  | 80 | 80 | 71  | 60  | 68  | 59 | 47 | 37 | 30 | port cntr    |                     |
| Crew's Mess               | 1-73-1L   | 10. | .17 | 80  | 85 | 80 | 80  | 80  | 80  | 73 | 70 | 76 | 70 | port cntr    |                     |
| Crew's Mess               | 1-73-1L   | 10. | .17 | 72  | 83 | 79 | 78  | 79  | 77  | 70 | 62 | 64 | 57 | stbd fwd     |                     |
| Ship's Office             | 1-81-2Q   | 2.2 | .21 | 62  | 75 | 75 | 70  | 67  | 64  | 62 | 58 | 55 | 50 | cntr aft     | transients?         |
| Ship's Office             | 1-81-2Q   | 2.2 | .21 | 64  | 79 | 79 | 72  | 62  | 59  | 63 | 59 | 55 | 49 | cntr aft     | transients?         |
| Log Room                  | 1-89-2L   | 2.3 | .08 | 59  | 75 | 74 | 74  | 68  | 62  | 57 | 51 | 49 | 45 | center       | speech              |
| Log Room                  | 1-89-2L   | 2.3 | .08 | 62  | 81 | 81 | 67  | 72  | 64  | 54 | 53 | 46 | 42 | stbd fwd     | speech              |
| Sickbay                   | 2-133-2L  | 2.6 | .17 | 65  | 78 | 82 | 76  | 72  | 72  | 61 | 55 | 48 | 44 | center       |                     |
| Sickbay                   | 2-133-2L  | 2.6 | .17 | 69  | 83 | 83 | 78  | 75  | 76  | 64 | 57 | 50 | 44 | cntr aft     | air cond on         |
| Sickbay                   | 2-133-2L  | 2.6 | .17 | 70  | 83 | 81 | 79  | 75  | 75  | 64 | 61 | 53 | 51 | cntr aft     | eng & gen below dk  |
| OPS Berthing              | 3-169-1L  | 5.2 | .08 | 69  | 88 | 90 | 84  | 74  | 72  | 65 | 64 | 58 | 53 | stbd cntr    | eng & gen below dk  |
| OPS Berthing              | 3-169-1L  | 5.2 | .08 | 69  | 92 | 92 | 80  | 80  | 71  | 64 | 64 | 55 | 50 | stbd aft     | eng & gen below dk  |
| 2nd Div. Berth            | 3-169-2L  | 4.4 | .17 | 68  | 85 | 79 | 82  | 74  | 69  | 65 | 63 | 56 | 50 | port aft     | eng & gen below dk  |
| 2nd Div. Berth            | 3-169-2L  | 4.4 | .17 | 78  | 87 | 87 | 78  | 78  | 77  | 64 | 62 | 57 | 55 | cntr fwd     | eng & gen below dk  |
| 2nd Div. Berth            | 3-169-2L  | 4.4 | .17 | 75  | 89 | 86 | 81  | 82  | 82  | 70 | 64 | 57 | 54 | stbd cntr    | eng & gen below dk  |
| Crew Lounge               | 4-129-4L  | 7.2 | .29 | 73  | 89 | 87 | 85  | 83  | 74  | 68 | 66 | 64 | 57 | center       | eng below dk; TV on |
| Crew Lounge               | 4-129-4L  | 7.2 | .29 | 70  | 91 | 91 | 85  | 78  | 70  | 65 | 62 | 58 | 50 | cntr aft     | eng below dk; TV on |
| Crew Lounge               | 4-129-4L  | 7.2 | .29 | 73  | 88 | 79 | 83  | 85  | 73  | 68 | 66 | 60 | 59 | cntr fwd     | eng below dk; TV on |

Data transcribed from form WOSC 3960/15. Survey date: 5 Jun 78. Ship underway.

Surveyed by RPK, LM. Instrumentation: GR 1982.

Table 9. Cold iron airborne noise data for USS RANGER (CV-61)

| Compartment Name & Number | Vol        | Abs  | (A) | (C) | 32 | 63  | 125 | 250 | 500 | 1k  | 2k | 4k | 8k  | MIC Location         | Comments                |
|---------------------------|------------|------|-----|-----|----|-----|-----|-----|-----|-----|----|----|-----|----------------------|-------------------------|
| Wardroom 1                | 03-39-0    | 3.5  | .50 | 44  | 65 | 60  | 57  | 45  | 44  | 40  | 46 | 35 | 33  | stbd end             |                         |
| ORD Workshop              | 03-74-6Q   |      | .33 | 82  | 89 | 82  | 83  | 79  | 76  | 76  | 77 | 75 | 72  | 63                   |                         |
| ORD Workshop              | 03-74-6Q   |      | .33 | 82  | 86 | 92  | 98  | 107 | 98  | 98  | 95 | 92 | 81  |                      |                         |
| Capt.'s Office            | 03-79-3Q   | 1.8  | .08 | 54  | 63 | 68  | 54  | 57  | 49  | 30- | 41 | 37 | 32  | port aft qtr         |                         |
| Off.'s Berth              | 03-84-4L   |      | .33 | -   |    |     |     |     |     |     |    |    |     |                      |                         |
| Air Dept. Off.            | 03-99-6Q   | 3.8  | .67 | 53  | 75 | 78  | 60  | 56  | 57  | 51  | 46 | 40 | 43  | port aft qtr         |                         |
| CIC                       | 03-109-2C  | 4.3  | .67 | 65  | 72 | 68  | 64  | 66  | 61  | 61  | 59 | 51 | 56  | center               |                         |
| V1 Div. Office            | 03-124-5A  | 2.2  | 0   | 62  | 71 | 62  | 63  | 59  | 59  | 60  | 53 | 47 | 46  | port aft qtr         |                         |
| Nav. Office               | 03-127-13Q | .96  | 0   | 67  | 80 | 68  | 79  | 68  | 67  | 64  | 61 | 55 | 54  | port fwd             |                         |
| Officers' SR              | 03-149-03L | 1.4  | .08 | -   |    |     |     |     |     |     |    |    |     |                      |                         |
| CPO Berthing              | 03-162-0L  | 6.8  | 0   | 52  | 74 | 60- | 53  | 55  | 48  | 44  | 36 | 38 | 32  | ctr; end bunks 55-60 | movie on                |
| V3 Berthing               | 03-212-0L  |      | .42 | 60  | 71 | 63  | 74  | 58  | 62  | 59  | 60 | 45 | 46  | stbd end             |                         |
| Aft Crew Berth.           | 03-236-1L  | 6.8  | 0   | 58  | 77 | 63  | 79  | 60  | 62  | 54  | 51 | 39 | 42  | center               | low freq rumble         |
| Train. Off.               | 03-236-4Q  | 3.0  | 0   | 69  | 84 | 81  | 81  | 70  | 66  | 70  | 64 | 54 | 57  | center               |                         |
| SR                        | 03-32-1L   | .96  | .33 | 54  | 65 | 58  | 59  | 57  | 59  | 52  | 48 | 44 | 44- | center               | grinding on dk          |
| Officer's SR              | 02-37-1L   | 1.4  | .08 | 55  | 63 | 60  | 65  | 55  | 55  | 54  | 53 | 46 | 47  | port aft             |                         |
| Officer's SR              | 02-42-1L   | 1.0  | .17 | -   |    |     |     |     |     |     |    |    |     |                      |                         |
| O1 Berthing               | 01-21-0L   |      | 0   | 59  | 75 | 72  | 64  | 60  | 62  | 56  | 52 | 49 | 46  | near center          |                         |
| Crews Berth.              | 01-29-0L   | 31.5 | 0   | 61  | 69 | 65  | 65  | 60  | 56  | 56  | 57 | 52 | 53  | stbd aft             |                         |
| V3 Div. Off.              | 01-132-2Q  | 2.0  | .08 | 78  | 89 | 90  | 78  | 86  | 81  | 77  | 70 | 55 | 53  | stbd aft             |                         |
| Hang. Dk Con.             | 01-134-2Q  | 1.3  | .67 | 72  | 81 | 69  | 76  | 72  | 74  | 73  | 66 | 59 | 46  | center               | low freq blwr in adj rm |
| Sick Bay Hall             | 2-97-2Q    | .90  | 0   | 61  | 80 | 77  | 75  | 66  | 65  | 64  | 58 | 56 | 50  | end of bench         |                         |
| Sick Bay Off.             | 2-97-6L    | .90  | 0   | 57  | 71 | 67  | 65  | 62  | 61  | 58  | 50 | 47 | 44- | cntr fwd             |                         |
| Engr Logroom              | 2-132-0Q   |      | 0   | 67  | 74 | 66  | 70  | 67  | 67  | 66  | 57 | 55 | 55  | cntr aft             |                         |
| 1st Lt's Off.             | 2-150-1L   | 2.6  | 0   | 60  | 74 | 71  | 65  | 66  | 61  | 55  | 50 | 41 | 49  | cntr fwd             |                         |
| Wardroom II               | 2-162-0L   |      | .17 | 59  | 75 | 67  | 69  | 69  | 64  | 57  | 50 | 48 | 47  | port aft             |                         |
| Library                   | 2-207-1L   |      | .67 | 60  | 76 | 67  | 73  | 65  | 64  | 59  | 54 | 49 | 45  | port fwd             |                         |

Data transcribed from form NOSC 3960/15. Survey date: 13 June 78. Ship cold iron.  
 Surveyed by DRL, DKS, RGK, JAH. Instrumentation: B&K 1558 or GR 1933.

Table 10. Cold iron airborne noise data for USS CONSTELLATION (CV-64)

| Compartment Name & Number | Vol       | Abs  | (A) | (C) | 32 | 63 | 125 | 250 | 500 | 1k | 2k | 4k | 8k | MIC Location | Comments                         |
|---------------------------|-----------|------|-----|-----|----|----|-----|-----|-----|----|----|----|----|--------------|----------------------------------|
| SR                        | 03-84-0L  | 2.9  | .08 | -   | -  | -  | -   | -   | -   | -  | -  | -  | -  | -            | -                                |
| OPS Office                | 03-100-0Q | 3.9  | .33 | 55  | 65 | 61 | 57  | 54  | 54  | 52 | 45 | 40 | 38 | 42           | port aft                         |
| Train. Off.               | 03-123-4Q | 1.4  | .17 | 59  | 71 | 71 | 65  | 61  | 54  | 51 | 55 | 49 | 50 | 41           | cntr fwd                         |
| HRMO Chapl Off            | 03-157-4Q | .78  | .83 | -   | -  | -  | -   | -   | -   | -  | -  | -  | -  | -            | -                                |
| HRMO Off                  | 03-157-6Q | 1.7  | .17 | -   | -  | -  | -   | -   | -   | -  | -  | -  | -  | -            | -                                |
| Library                   | 03-159-6L | 4.9  | .17 | 60  | 72 | 70 | 65  | 61  | 57  | 60 | 56 | 54 | 50 | 43           | cntr fwd                         |
| Crews Berthing            | 02-21-0L  | 17.3 | 0   | 61  | 75 | 73 | 73  | 61  | 66  | 59 | 55 | 51 | 44 | 41           | port cntr                        |
| CIC                       | 02-39-0C  | 5.3  | .67 | -   | -  | -  | -   | -   | -   | -  | -  | -  | -  | -            | -                                |
| V3 Berthing               | 01-29-0L  | 14.0 | 0   | 61  | 69 | 66 | 61  | 61  | 60  | 58 | 56 | 46 | 44 | 38           | cntr at locker 32 betwn. mirrors |
| V3 Berthing               | 01-29-0L  | 14.0 | 0   | 63  | 71 | 67 | 62  | 62  | 57  | 63 | 59 | 46 | 45 | 40           | stbd fwd                         |
| 1st Lt. Office            | 01-84-4Q  | 1.1  | .08 | 65  | 73 | 62 | 61  | 65  | 67  | 65 | 59 | 54 | 45 | 40           | stbd cntr                        |
| Mainten. Contr            | 1-49-2Q   | 2.9  | 0   | 72  | 78 | 65 | 72  | 72  | 70  | 70 | 68 | 61 | 52 | 46           | port cntr; near vent on high     |
| Hangar Dk Contr           | 1-119-2Q  | 1.0  | .42 | 71  | 75 | 57 | 65  | 64  | 71  | 68 | 69 | 62 | 51 | 48           | stbd aft                         |
| Crews' Mess               | 2-49-0L   | 13.2 | .08 | 69  | 78 | 72 | 74  | 69  | 69  | 66 | 62 | 56 | 48 | 43           | cntr fwd                         |
| Wardroom 2                | 2-54-1Q   | 20.0 | .08 | 56  | 69 | 66 | 65  | 61  | 56  | 55 | 53 | 50 | 45 | 37           | center                           |
| Medical Ward              | 2-106-0L  | 7.0  | .17 | 50  | 67 | 65 | 64  | 54  | 54  | 49 | 43 | 37 | 33 | 30           | center                           |
| Chaplains Qtrs            | 2-124-6L  | .94  | .17 | 72  | 84 | 82 | 80  | 75  | 79  | 70 | 60 | 49 | 46 | 41           | center                           |
| Wardroom                  | 2-157-2L  | 5.1  | .17 | 57  | 68 | 66 | 59  | 59  | 58  | 57 | 50 | 46 | 40 | 35           | port cntr                        |
| Crew's Mess               | 2-186-0L  | .08  | 0   | 70  | 84 | 80 | 79  | 77  | 69  | 66 | 60 | 58 | 54 | 54           | center                           |
| Photo Lab                 | 3-98-1Q   | 0    | 0   | -   | -  | -  | -   | -   | -   | -  | -  | -  | -  | -            | -                                |
| CPO Berthing              | 3-106-0L  | 19.1 | 0   | 67  | 77 | 74 | 68  | 75  | 67  | 61 | 58 | 58 | 55 | 48           | stbd fwd                         |
| CPO Berthing              | 3-167-0L  | 29.8 | 0   | 71  | 74 | 59 | 68  | 64  | 64  | 69 | 65 | 59 | 52 | 45           | stbd cntr                        |
| CPO Mess                  | 3-177-0L  | 10.2 | .08 | 68  | 76 | 67 | 71  | 74  | 67  | 65 | 62 | 60 | 51 | 50           | stbd aft                         |
| P2/P3 Berthing            | 3-205-01L | 28.5 | 0   | 61  | 69 | 64 | 66  | 57  | 56  | 59 | 52 | 50 | 44 | 35           | stbd aft                         |

Data transcribed from form NO5C 3960/15. Survey date: 30 May 78. Ship cold iron.  
 Surveyed by DRS, JAH, RPK, LM. Instrumentation: GR 1933 or GR 1982.

Table 11. Cold Iron Airborne Noise Data for USS OLDENDORF (DD-972)

| Compart. Name & Number | Vol        | Abs  | (A) | (C) | 32 | 63 | 125 | 250 | 500 | 1k | 2k | 4k | 8k | MIC Location                    | Comments           |
|------------------------|------------|------|-----|-----|----|----|-----|-----|-----|----|----|----|----|---------------------------------|--------------------|
| Radar 1                | 03-154-02Q | 4.8  | .17 | 75  | 78 | 66 | 62  | 72  | 69  | 70 | 71 | 67 | 66 | 58                              | stbd aft           |
| CIC                    | 02-139-0C  | 8.9  | .75 | 68  | 74 | 71 | 68  | 65  | 68  | 65 | 61 | 57 | 51 | 45                              | center             |
| Sonar Control          | 02-139-2C  | 2.4  | .83 | 56  | 70 | 65 | 61  | 60  | 56  | 50 | 51 | 48 | 47 | 45                              | cntr aft           |
| Trans. Room            | 02-234-1   | 5.2  | .08 | 84  | 85 | 68 | 70  | 70  | 72  | 75 | 78 | 76 | 76 | 71                              | cntr aft           |
| Data Proc. Cen.        | 01-138-0C  | 7.8  | .83 | 70  | 80 | 80 | 69  | 71  | 69  | 67 | 65 | 61 | 56 | 51                              | stbd ctr           |
| Wardroom               | 01-274-2   | 6.3  | .58 | 74  | 64 | 68 | 68  | 68  | 60  | 54 | 46 | 40 | 34 | center                          |                    |
| Stateroom 3            | 01-346-1L  | 1.3  | .50 | -   | -  | -  | -   | -   | -   | -  | -  | -  | -  | -                               |                    |
| Crew's Rec Rm          | 1-205-1    | 2.4  | .17 | 65  | 75 | 61 | 70  | 72  | 66  | 59 | 58 | 58 | 54 | 51                              | center             |
| Weapons Berth          | 2-149-0L   | 7.7  | .17 | 58  | 74 | 72 | 69  | 62  | 56  | 54 | 53 | 49 | 44 | 38                              | stbd fwd           |
| 1st Div. Berth         | 3-146-0    | 7.6  | .42 | 63  | 79 | 76 | 69  | 66  | 61  | 58 | 57 | 55 | 53 | 52                              | center             |
| OPS Berthing           | 3-346-01L  | 11.1 | .33 | 59  | 71 | 69 | 60  | 63  | 63  | 52 | 48 | 49 | 47 | 40                              | center             |
| Mid ship qtrdk.        |            |      |     | 81  | 88 | 85 | 77  | 79  | 77  | 76 | 70 | 67 | 58 | stbd aft at desk; exhaust noise |                    |
| Mid ship qtrdk.        |            |      |     | 90  | 94 | 85 | 87  | 89  | 85  | 88 | 86 | 80 | 74 | 67                              | ditto; 5 min later |
| Crew's Mess            |            |      | .50 | 60  | 74 | 73 | 66  | 69  | 60  | 57 | 60 | 50 | 48 | 45                              | center             |

Data transcribed from form NOSC 3960/15. Survey date: 17 April 78. Ship cold iron.  
 Surveyed by ES, RPK. Instrumentation: GR 1982.

Table 12. Cold iron airborne noise data for USS SCHENECTADY (LST-1185)

| Compart. Name & Number | Vol      | Abs | (A) | (C) | 32 | 63 | 125 | 250 | 500 | 1k | 2k | 4k | 8k | MIC Location      | Comments         |
|------------------------|----------|-----|-----|-----|----|----|-----|-----|-----|----|----|----|----|-------------------|------------------|
| Pilot House            | 03-73-0C | 4.0 | .25 | 62  | 71 | 62 | 60  | 53  | 56  | 59 | 54 | 48 | 48 | cntr fwd          | near radar       |
| Pilot House            | 03-73-0C | 4.0 | .25 | 54  | 68 | 72 | 59  | 50  | 44  | 47 | 49 | 42 | 40 | port cntr         | capt's chair     |
| CIC                    | 03-79-2C |     | .33 | 58  | 75 | 72 | 74  | 59  | 51  | 54 | 53 | 52 | 45 | stbd aft          |                  |
| CIC                    | 03-79-2C |     | .33 | 62  | 70 | 69 | 72  | 53  | 59  | 58 | 56 | 47 | 41 | center            |                  |
| Chart Room             | 03-79-3C | .74 | .58 | 56  | 66 | 59 | 63  | 59  | 52  | 51 | 50 | 49 | 48 | -                 | sonar w/o graph  |
| Chart Room             | 03-79-3C | .74 | .58 | 68  | 70 | 57 | 62  | 59  | 54  | 65 | 60 | 57 | 51 | -                 | sonar with graph |
| OPS Officer SR         | 02-73-2L | .68 | .67 | 53  | 62 | 58 | 57  | 54  | 52  | 51 | 46 | 42 | 37 | at desk           | diesel gen. op.  |
| OPS Officer SR         | 02-73-2L | .68 | .67 | 53  | 64 | 62 | 58  | 55  | 51  | 53 | 50 | 44 | 40 | in berth          | diesel gen. op.  |
| Troop CO SR            | 02-73-4L | .86 | .83 | 47  | 66 | 60 | 64  | 54  | 46  | 42 | 41 | 40 | 36 | stbd fwd at desk  |                  |
| Troop CO SR            | 02-73-4L | .86 | .83 | 45  | 66 | 60 | 64  | 53  | 45  | 39 | 38 | 33 | 32 | port aft in berth |                  |
| Radio Central          | 01-82-2C | 1.9 | .33 | 70  | 75 | 60 | 63  | 63  | 62  | 64 | 67 | 61 | 56 | center            |                  |
| Secure TTY Rm          |          | 1.6 | .33 | 62  | 67 | 64 | 61  | 53  | 57  | 54 | 53 | 50 | 43 | center            |                  |
| Ship's Office          | 1-81-2Q  | 2.2 | .50 | 72  | 77 | 62 | 69  | 64  | 74  | 73 | 60 | 55 | 54 | center            | speech           |
| Log Room               | 1-89-4Q  |     | .17 | 58  | 65 | 53 | 56  | 62  | 60  | 56 | 48 | 45 | 38 | center            | speech           |
| Sick bay               | 2-133-2L |     |     | 62  | 73 | 71 | 67  | 61  | 67  | 55 | 54 | 52 | 49 | port cntr         |                  |
| Engr Main Cntrl        | 4-129-0E | 2.9 | .33 | 65  | 75 | 74 | 67  | 61  | 62  | 61 | 60 | 62 | 58 | 41                | stbd cntr        |
| Crew Lounge            | 4-132-2L | 5.1 | .75 | 61  | 77 | 80 | 67  | 62  | 59  | 58 | 55 | 48 | 40 | center            |                  |

Data transcribed from form NOSC 3960/15. Survey date: 5 Jun 78. Ship underway at anchor.  
 Surveyed by DRL, ES. Instrumentation: B&K 2209.

Table 13. Cold iron airborne noise data for USS RACINE (LST-1191)

| Compartment Name & Number | Vol       | Abs | (A) | (C) | 32 | 63 | 125 | 250 | 500 | 1k | 2k | 4k | 8k | MIC Location | Comments  |
|---------------------------|-----------|-----|-----|-----|----|----|-----|-----|-----|----|----|----|----|--------------|-----------|
| CIC                       | 03-79-2C  | 2.9 | .17 | 58  | 71 | 71 | 63  | 56  | 54  | 52 | 49 | 48 | 48 | 39           | center    |
| OPS Officer SR            | 02-70-0L  | .82 | .17 | 47  | 76 | 72 | 59  | 52  | 51  | 44 | 42 | 42 | 32 | 31           | stbd aft  |
| OPS Office                | 02-115-2Q | 1.1 | .17 | 55  | 68 | 62 | 64  | 63  | 45  | 47 | 50 | 49 | 39 | 37           | center    |
| Radio Room                | 01-89-2C  | 1.8 | .25 | 74  | 76 | 61 | 69  | 70  | 67  | 66 | 67 | 68 | 63 | 54           | cntr fwd  |
| CPO Mess                  | 01-89-5L  | 3.6 | .25 | 60  | 69 | 64 | 64  | 60  | 63  | 58 | 47 | 43 | 40 | 34           | port cntr |
| Crew's Mess               | 1-73-1L   | 10. | .17 | 60  | 75 | 70 | 68  | 71  | 63  | 58 | 53 | 46 | 42 | 35           | port cntr |
| Ship's Office             | 1-81-2Q   | 2.2 | .21 | 76  | 65 | 69 | 65  | 66  | 62  | 65 | 56 | 54 | 48 | 45           | cntr aft  |
| Log Room                  | 1-89-2L   | 2.3 | .08 | 60  | 71 | 58 | 60  | 71  | 61  | 51 | 49 | 47 | 44 | 39           | center    |
| Sickbay                   | 2-133-2L  | 2.6 | .17 | 62  | 74 | 74 | 68  | 64  | 65  | 58 | 56 | 53 | 50 | 46           | center    |
| OPS Berthing              | 3-169-1L  | 5.2 | .08 | 69  | 74 | 73 | 82  | 75  | 70  | 65 | 63 | 58 | 52 | 45           | stbd cntr |
| 2nd Div. Berth            | 3-169-2L  | 4.4 | .17 | 59  | 82 | 85 | 72  | 70  | 64  | 68 | 50 | 45 | 38 | 30-          | port aft  |
| Crew Lounge               | 4-129-4L  | 7.2 | .29 | 70  | 74 | 72 | 69  | 68  | 64  | 62 | 63 | 67 | 53 | 47           | center    |

Data transcribed from form WOSC 3960/15. Survey date: 5 Jun 78. Ship cold iron.  
 Surveyed by RPK, LM. Instrumentation: GR 1982.

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Behavioral and Physiological Effects of Noise on People--Supplementary Bibliography, an unpublished paper by DR Lambert and FS Hafner, NOSC Code 5121, January 1979.

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TD 243, Airborne Noise Levels on Merchant Ships, by DR Lambert, 30 April 1979.

TD 296, A simple Method for Predicting Subjective Response to Noise on Navy Ships, by DR Lambert, 15 November 1979.

TR 559, Requirements for Sleep, Solving Problems, and Speech Communication in Shipboard Compartments, by DR Lambert, May 1980.

TR-\_\_\_, Airborne Noise Limits for Navy Ships, by DR Lambert (in preparation).

APPENDIX A: NOSC FORM 3960/15

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# NOISE DATA FORM #3

COMPARTMENT NAME \_\_\_\_\_ NUMBER \_\_\_\_\_ VOLUME \_\_\_\_\_ cu ft SHIP \_\_\_\_\_

## SOUND PRESSURE LEVELS (dB):

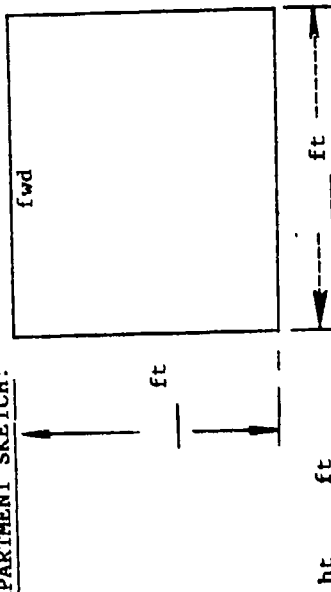
| Date | Ship | Surv/Instr | Mic | Loc | Noise Sources | Notes (S#, etc.) | WEIGHTED (A) (C) | 32  | 63  | 125 | 250 | 500 | 1k  | 2k  | 4k  | 8k  |
|------|------|------------|-----|-----|---------------|------------------|------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| ---  | ---  | ---        | --- | --- | ---           | ---              | ---              | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ---  | ---  | ---        | --- | --- | ---           | ---              | ---              | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ---  | ---  | ---        | --- | --- | ---           | ---              | ---              | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ---  | ---  | ---        | --- | --- | ---           | ---              | ---              | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ---  | ---  | ---        | --- | --- | ---           | ---              | ---              | --- | --- | --- | --- | --- | --- | --- | --- | --- |

## ABSORPTION:

Bulkheads (fwd) 0 1 2  
 (stb) 0 1 2  
 (aft) 0 1 2  
 (prt) 0 1 2  
 Overhead 0 1 2  
 Deck 0 1 2

TOTAL \_\_\_\_\_  
 No of: people \_\_\_\_\_  
 bunks/sofas \_\_\_\_\_  
 padded chairs \_\_\_\_\_

## COMPARTMENT SKETCH:



## SHIP STATUS:

UC underway cruising  
 UM underway maneuvering  
 SMU steaming not underway (dockside)  
 CI cold iron

## NOISE SOURCES:

V Ventilation  
 L Loudspeaker  
 P Propulsion  
 E Equipment  
 O Other

## COMPARTMENT SKETCH:

M Measurement location  
 P Photo  
 /--/ Entrance  
 Estimate dimensions to nearest foot.  
 May write A-levels on sketch.

## ABSORPTION:

0 Hard/reflecting (metal/concrete/plaster/paint/thin mats)  
 1 Medium (wood panel/thermal insulation/lagged pipes/light drapes/thin carpet)  
 2 Soft/absorptive (acoustical tile/thick carpet/carpet & pad)

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