



NAGATO Class
BB JAPAN

1943 to 1945

2710-2
Displacement 39,130 ts
Complement 1368

SHIP LOG SHEET

Version AOTF1922A



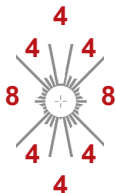
Length 725 ft
Beam 108 ft
Draft 31 ft
Forwardmost 5.5" casemate p/s mounts removed



8 x 41cm/45 3rd Year

DIRECTORS
2

ARCS OF FIRE



Range
42,500 yds 85.0"
FC Radar +0
None

GUNNERY (FCS)

| TARGET SPEED | SHORT | | MEDIUM | | LONG | |
|--------------|-------|-----|--------|-----|------|-----|
| | BRD | NAR | BRD | NAR | BRD | NAR |
| 0-9 | 23 | 16 | 18 | 13 | 15 | 11 |
| 10-18 | 18 | 12 | 14 | 10 | 12 | 8 |
| 19-26 | 15 | 11 | 12 | 8 | 10 | 7 |
| 27-32 | 13 | 9 | 10 | 7 | 9 | 6 |

83% PENETRATION TABLE

| APCBC YDS | SHORT | MEDIUM | LONG | |
|-----------|--------|--------|--------|----|
| 4,500 | 10,000 | 21,000 | 42,500 | |
| ROF | 6 | 6 | 4 | 2 |
| HORZ | 1 | 2 | 4 | 10 |
| VERT | 28 | 23 | 16 | 11 |

| Targ Sz | Crew | Sea |
|---------|------|-----|
| 3 | | |

Searchlights Port Stbd

PROTECTION ARMOR VALUE

| HORIZONTAL | VERTICAL |
|------------|----------|
| 5 | 9 |

HIT LOCATION

| RANGE | HORZ | VERT |
|--------|-------|-------|
| SHORT | 01-05 | 06-00 |
| MEDIUM | 01-19 | 20-00 |
| LONG | 01-39 | 40-00 |

25 13 DAMAGE CONTROL (DCR)

| | | | | | | | | | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
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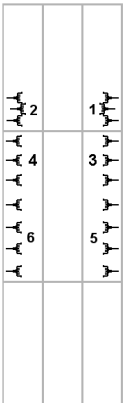
FLAG COMMAND RATING (FCR)

| | | | | | | | | | | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
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|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|

W2-2A

DAMAGE DETERMINATION

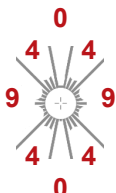
| ROLL | CLASS 1 | CLASS 2 | CLASS 3 |
|-------|---------|---------|---------|
| 01-02 | 100 | 202 | 304 |
| 03-04 | 128 | 201 | 302 |
| 05-06 | 102 | 203 | 303 |
| 07-08 | 103 | 205 | 301 |
| 09-10 | 109 | 210 | 305 |
| 11-13 | 104 | 200 | 306 |
| 14-16 | 106 | 204 | - |
| 17-19 | 107 | 206 | - |
| 20-22 | 105 | 207 | 310 |
| 23-25 | 114 | 211 | - |
| 26-28 | 111 | 213 | 312 |
| 29-31 | 121 | 214 | 313 |
| 32-34 | 144 | 215 | 314 |
| 35-37 | 171 | 217 | 315 |
| 38-40 | 150 | 218 | - |
| 41-43 | 135 | 219 | 317 |
| 44-46 | 132 | 220 | - |
| 47-49 | 145 | 221 | - |
| 50-52 | 123 | 222 | - |
| 53-55 | 124 | 223 | - |
| 56-58 | 125 | 224 | - |
| 59-61 | 127 | 226 | - |
| 62-64 | 146 | 227 | - |
| 65-67 | 133 | 229 | 318 |
| 68-70 | 126 | 230 | - |
| 71-73 | 118 | 231 | 305 |
| 74-76 | 116 | 237 | - |
| 77-79 | 115 | 238 | - |
| 80-83 | 108 | 208 | 319 |
| 84-87 | 113 | 212 | - |
| 88-91 | 129 | 248 | 307 |
| 92-95 | 151 | 244 | 308 |
| 96-98 | 152 | 242 | 310 |
| 99-00 | 101 | 241 | 316 |



18 x 14cm/50 Type 3

DIRECTORS
2

ARCS OF FIRE



Range
22,500 yds 45.0"
FC Radar +0
None

GUNNERY (FCS)

| TARGET SPEED | SHORT | | MEDIUM | | LONG | |
|--------------|-------|-----|--------|-----|------|-----|
| | BRD | NAR | BRD | NAR | BRD | NAR |
| 0-9 | 15 | 9 | 11 | 7 | 8 | 5 |
| 10-18 | 10 | 7 | 7 | 5 | 6 | 4 |
| 19-26 | 9 | 5 | 6 | 4 | 5 | 3 |
| 27-32 | 7 | 5 | 5 | 3 | 4 | 3 |

21% PENETRATION TABLE

| CPC YDS | SHORT | MEDIUM | LONG | |
|---------|-------|--------|--------|---|
| 2,000 | 6,000 | 12,000 | 22,500 | |
| ROF | 10 | 8 | 5 | 3 |
| HORZ | 0 | 0 | 1 | 2 |
| VERT | 6 | 4 | 2 | 2 |

KTS 25

| | | | | | | | | | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| | | | | | | | | | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|

TORPEDOES

| | | | |
|----|---|----|---|
| TT | 0 | RL | 0 |
|----|---|----|---|

None
Damage Class
Settings

PROPULSION / MANEUVER

| Engine Rm | 4 | 25 | 22 | 14 | 5 | 0 | 0 | Std Turn |
|------------|---|----|----|----|---|---|---|----------|
| Prop/Shaft | 4 | 25 | 22 | 13 | 3 | 0 | 0 | 45 |
| Boiler Rm | 4 | 25 | 23 | 15 | 6 | 0 | 0 | Emg Turn |
| | | | 0 | 0 | 0 | 0 | 0 | 90 |

Speed Increase

| 00-19 kt | 20+ kt | | | | | |
|----------|--------|--|--|--|--|--|
| 3.0 | 1.0 | | | | | |

LOSS OF SPEED DURING TURNS

| KTS | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 30 | 32 | 34 | 36 | 38 | 40 |
|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| STD | 3 | 5 | 6 | 8 | 9 | 10 | 12 | 13 | 15 | 16 | 18 | 19 | 21 | 22 | 24 | 26 | 27 | 28 | 30 |
| EMG | NA | NA | NA | NA | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |

GUNNERY RECORD

| T# | RANGE | TARGET | RNDS | TBL | H | T# | RANGE | TARGET | RNDS | TBL | H |
|----|-------|--------|------|-----|---|----|-------|--------|------|-----|---|
| | | | | | | | | | | | |
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| T# | RANGE | TARGET | SETNG | TORPS | ANG | TGT MOVE | ARRIVE |
|----|-------|--------|-------|-------|-----|----------|--------|
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Ships In Class
NAGATO, MUTSU



YAMATO Class
BB JAPAN

1010-2
Displacement 62,315 ts
Complement 2500

SHIP LOG SHEET

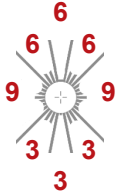
Version AOTF1922A



9 x 46cm/45 Type 94

DIRECTORS
2

ARCS OF FIRE



Range
46,000 yds 92.0"
FC Radar **+0**
None

| TARGET SPEED | GUNNERY (FCS) | | |
|--------------|---------------|----------------|--------------|
| | SHORT BRD NAR | MEDIUM BRD NAR | LONG BRD NAR |
| 0-9 | 23 16 | 18 13 | 15 11 |
| 10-18 | 18 12 | 14 10 | 12 8 |
| 19-26 | 15 11 | 12 8 | 10 7 |
| 27-32 | 13 9 | 10 7 | 9 6 |

| APCBC YDS | 95% PENETRATION TABLE | | | |
|-----------|-----------------------|--------|------|----|
| | SHORT | MEDIUM | LONG | |
| ROF | 5 | 5 | 4 | 2 |
| HORZ | 1 | 3 | 5 | 9 |
| VERT | 31 | 27 | 18 | 14 |

| | | |
|---------|------|-----|
| Targ Sz | Crew | Sea |
| 4 | | |

| | | |
|--------------|------|------|
| Searchlights | Port | Stbd |
| | | |

| PROTECTION ARMOR VALUE | |
|------------------------|----|
| HORIZONTAL | 8 |
| VERTICAL | 15 |

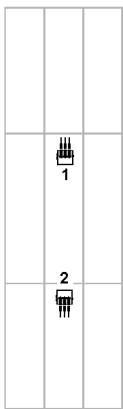
| HIT LOCATION | RANGE | HORZ | VERT |
|--------------|-------|-------|-------|
| | SHORT | 01-05 | 06-00 |
| MEDIUM | 01-19 | 20-00 | |
| LONG | 01-39 | 40-00 | |

| | | | | | | | | | | | |
|----|----|-----------------------------|--|--|--|--|--|--|--|--|--|
| 32 | 16 | DAMAGE CONTROL (DCR) | | | | | | | | | |
| | | | | | | | | | | | |

| | | | | | | | | | | | |
|----------------------------------|--|--|--|--|--|--|--|--|--|--|--|
| FLAG COMMAND RATING (FCR) | | | | | | | | | | | |
| | | | | | | | | | | | |

W2-2AR

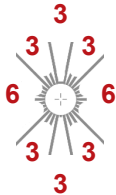
| DAMAGE DETERMINATION | | | |
|----------------------|---------|---------|---------|
| ROLL | CLASS 1 | CLASS 2 | CLASS 3 |
| 01-02 | 100 | 202 | 304 |
| 03-04 | 128 | 201 | 302 |
| 05-06 | 102 | 203 | 303 |
| 07-08 | 103 | 205 | 301 |
| 09-10 | 109 | 210 | 305 |
| 11-13 | 104 | 200 | 306 |
| 14-16 | 106 | 246 | - |
| 17-19 | 107 | 206 | - |
| 20-22 | 105 | 207 | 310 |
| 23-25 | 114 | 211 | - |
| 26-28 | 111 | 213 | 312 |
| 29-31 | 121 | 214 | 313 |
| 32-34 | 144 | 215 | 314 |
| 35-37 | 171 | 217 | 315 |
| 38-40 | 165 | 218 | - |
| 41-43 | 135 | 219 | 317 |
| 44-46 | 132 | 220 | - |
| 47-49 | 145 | 221 | - |
| 50-52 | 123 | 222 | - |
| 53-55 | 124 | 223 | - |
| 56-58 | 125 | 224 | - |
| 59-61 | 127 | 226 | - |
| 62-64 | 146 | 227 | - |
| 65-67 | 133 | 229 | 318 |
| 68-70 | 126 | 230 | - |
| 71-73 | 118 | 231 | 305 |
| 74-76 | 116 | 237 | - |
| 77-79 | 115 | 238 | - |
| 80-83 | 108 | 208 | 319 |
| 84-87 | 113 | 212 | 320 |
| 88-91 | 129 | 248 | 307 |
| 92-95 | 151 | 244 | 308 |
| 96-98 | 163 | 242 | 310 |
| 99-00 | 101 | 241 | 316 |



6 x 15.5cm/60 Type 3

DIRECTORS
2

ARCS OF FIRE



Range
30,000 yds 60.0"
FC Radar **+0**
None

| TARGET SPEED | GUNNERY (FCS) | | |
|--------------|---------------|----------------|--------------|
| | SHORT BRD NAR | MEDIUM BRD NAR | LONG BRD NAR |
| 0-9 | 18 13 | 14 10 | 12 8 |
| 10-18 | 14 10 | 11 7 | 9 6 |
| 19-26 | 12 8 | 9 6 | 8 5 |
| 27-32 | 10 7 | 8 6 | 7 5 |

| SAPBC YDS | 25% PENETRATION TABLE | | | |
|-----------|-----------------------|--------|------|---|
| | SHORT | MEDIUM | LONG | |
| ROF | 10 | 7 | 5 | 2 |
| HORZ | 0 | 0 | 1 | 3 |
| VERT | 12 | 8 | 4 | 1 |

| | | | | | | | | | |
|-----|----|--|--|--|--|--|--|--|--|
| KTS | 27 | | | | | | | | |
|-----|----|--|--|--|--|--|--|--|--|

| TORPEDOES | | | |
|-----------|---|----|---|
| TT | 0 | RL | 0 |

| | |
|--------------|--|
| None | |
| Damage Class | |
| Settings | |

| PROPULSION / MANEUVER | | | | | | | | | | |
|-----------------------|----|----|----|----|----|----|----|----------|--|--|
| Engine Rm | 4 | 27 | 24 | 16 | 5 | 0 | 0 | Std Turn | | |
| Prop/Shaft | 4 | 27 | 23 | 14 | 4 | 0 | 0 | 45 | | |
| Boiler Rm | 10 | 27 | 27 | 25 | 23 | 20 | 17 | Emg Turn | | |
| | | | | | | | | 90 | | |

| | | | | | | | |
|----------------|----------|--------|--|--|--|--|--|
| Speed Increase | 00-21 kt | 22+ kt | | | | | |
| | 4.0 | 1.0 | | | | | |

| LOSS OF SPEED DURING TURNS | | | | | | | | | | | | | | | | | | | |
|----------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| KTS | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 30 | 32 | 34 | 36 | 38 | 40 |
| STD | 3 | 5 | 6 | 8 | 9 | 10 | 12 | 13 | 15 | 16 | 18 | 19 | 21 | 22 | 24 | 26 | 27 | 28 | 30 |
| EMG | NA | NA | NA | NA | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |

| GUNNERY RECORD | | | | | | | | | | | |
|----------------|-------|--------|------|-----|---|----|-------|--------|------|-----|---|
| T# | RANGE | TARGET | RNDS | TBL | H | T# | RANGE | TARGET | RNDS | TBL | H |
| | | | | | | | | | | | |
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| T# | RANGE | TARGET | SETNG | TORPS | ANG | TGT MOVE | ARRIVE |
|----|-------|--------|-------|-------|-----|----------|--------|
| | | | | | | | |
| | | | | | | | |
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Ships In Class
YAMATO, MUSASHI



MYOKO Class
CA JAPAN

1944 to 1945

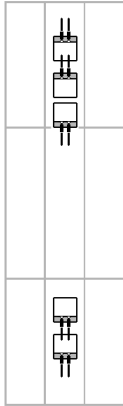
1636-4
Displacement 13,000 ts
Complement 920

SHIP LOG SHEET

Version AOTF1922A



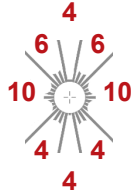
Length 662 ft After mid-1944 refit.
Beam 68 ft
Draft 20.8 ft



10 x 20cm/50 Type 3 No.2

DIRECTORS
2

ARCS OF FIRE



| Range | |
|------------|-------|
| 31,500 yds | 63.0° |
| FC Radar | |
| +0 | None |

| GUNNERY (FCS) | | | | | | |
|---------------|-------|-----|--------|-----|------|-----|
| TARGET | SHORT | | MEDIUM | | LONG | |
| SPEED | BRD | NAR | BRD | NAR | BRD | NAR |
| 0-9 | 23 | 16 | 18 | 13 | 15 | 11 |
| 10-18 | 18 | 12 | 14 | 10 | 12 | 8 |
| 19-26 | 15 | 11 | 12 | 8 | 10 | 7 |
| 27-32 | 13 | 9 | 10 | 7 | 9 | 6 |

| 35% PENETRATION TABLE | | | | |
|-----------------------|-------|-------|--------|--------|
| SAPBC | SHORT | | MEDIUM | LONG |
| YDS | 4,000 | 8,000 | 15,000 | 31,500 |
| ROF | 9 | 7 | 5 | 2 |
| HORZ | 0 | 1 | 1 | 3 |
| VERT | 14 | 11 | 8 | 3 |

| Targ Sz | Crew | Sea |
|--------------|------|-----|
| 2 | | |
| Searchlights | | |
| Port | Stbd | |

| PROTECTION | |
|-------------|---|
| ARMOR VALUE | |
| HORIZONTAL | 1 |
| VERTICAL | 2 |

| HIT LOCATION | | |
|--------------|-------|-------|
| RANGE | HORZ | VERT |
| SHORT | 01-05 | 06-00 |
| MEDIUM | 01-19 | 20-00 |
| LONG | 01-39 | 40-00 |

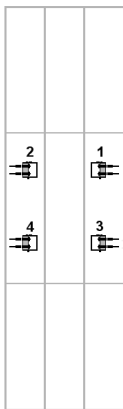
| 14 7 DAMAGE CONTROL (DCR) | | | | | | | | | |
|---------------------------|--|--|--|--|--|--|--|--|--|
| | | | | | | | | | |

| FLAG COMMAND RATING (FCR) | | | | | | | | | |
|---------------------------|--|--|--|--|--|--|--|--|--|
| | | | | | | | | | |

W2-2A

DAMAGE DETERMINATION

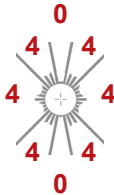
| ROLL | CLASS 1 | CLASS 2 | CLASS 3 |
|-------|---------|---------|---------|
| 01-02 | 100 | 202 | 304 |
| 03-04 | 128 | 201 | 302 |
| 05-06 | 102 | 203 | 303 |
| 07-08 | 103 | 205 | 301 |
| 09-10 | 109 | 210 | 305 |
| 11-13 | 104 | 200 | 306 |
| 14-16 | 106 | 204 | - |
| 17-19 | 107 | 206 | - |
| 20-22 | 105 | 207 | 310 |
| 23-25 | 114 | 211 | - |
| 26-28 | 111 | 213 | 312 |
| 29-31 | 121 | 214 | 313 |
| 32-34 | 144 | 215 | 314 |
| 35-37 | 171 | 217 | 315 |
| 38-40 | 150 | 218 | - |
| 41-43 | 135 | 219 | 317 |
| 44-46 | 132 | 220 | - |
| 47-49 | 145 | 221 | - |
| 50-52 | 123 | 222 | - |
| 53-55 | 124 | 223 | - |
| 56-58 | 125 | 224 | - |
| 59-61 | 127 | 226 | - |
| 62-64 | 146 | 227 | - |
| 65-67 | 133 | 229 | 318 |
| 68-70 | 126 | 230 | - |
| 71-73 | 118 | 231 | 305 |
| 74-76 | 116 | 237 | - |
| 77-79 | 115 | 238 | - |
| 80-83 | 108 | 208 | 319 |
| 84-87 | 113 | 212 | - |
| 88-91 | 129 | 248 | 307 |
| 92-95 | 151 | 244 | 308 |
| 96-98 | 152 | 242 | 310 |
| 99-00 | 101 | 241 | 316 |



8 x 12.7cm/40 Type 89

DIRECTORS
2

ARCS OF FIRE



| Range | |
|------------|-------|
| 16,000 yds | 32.0° |
| FC Radar | |
| +0 | None |

| GUNNERY (FCS) | | | | | | |
|---------------|-------|-----|--------|-----|------|-----|
| TARGET | SHORT | | MEDIUM | | LONG | |
| SPEED | BRD | NAR | BRD | NAR | BRD | NAR |
| 0-9 | 16 | 11 | 13 | 9 | 11 | 7 |
| 10-18 | 12 | 8 | 10 | 6 | 8 | 5 |
| 19-26 | 11 | 7 | 8 | 6 | 7 | 5 |
| 27-32 | 9 | 6 | 7 | 5 | 6 | 4 |

| 18% PENETRATION TABLE | | | | |
|-----------------------|-------|-------|--------|--------|
| HE | SHORT | | MEDIUM | LONG |
| YDS | 2,000 | 4,000 | 8,000 | 16,000 |
| ROF | 10 | 8 | 6 | 3 |
| HORZ | 0 | 0 | 0 | 1 |
| VERT | 4 | 3 | 2 | 1 |

KTS 33

PROPULSION / MANEUVER

| Engine Rm | 4 | 33 | 29 | 19 | 6 | 0 | 0 | Std Turn |
|------------|---|----|----|----|----|----|----|----------|
| Prop/Shaft | 4 | 33 | 29 | 17 | 4 | 0 | 0 | 45 |
| Boiler Rm | 9 | 33 | 32 | 31 | 27 | 23 | 18 | Emg Turn |
| | | | 12 | 6 | 2 | 0 | 0 | 90 |

| Speed | 00-06 kt | 07-18 kt | 19-22 kt | 23-26 kt | 27-28 kt | 29+ kt |
|----------|----------|----------|----------|----------|----------|--------|
| Increase | 7.0 | 6.0 | 4.0 | 3.0 | 2.0 | 1.0 |

| TORPEDOES | |
|-----------|----|
| TT | 8 |
| RL | 16 |

| 61cm Type 93 M1-2 | |
|-------------------|---|
| Damage Class | A |
| Settings | |
| 22,000/48 | |
| 35,000/40 | |
| 43,700/36 | |



LOSS OF SPEED DURING TURNS

| KTS | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 30 | 32 | 34 | 36 | 38 | 40 |
|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| STD | 3 | 5 | 6 | 8 | 9 | 10 | 12 | 13 | 15 | 16 | 18 | 19 | 21 | 22 | 24 | 26 | 27 | 28 | 30 |
| EMG | NA | NA | NA | NA | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |

GUNNERY RECORD

| T# | RANGE | TARGET | RNDS | TBL | H |
|----|-------|--------|------|-----|---|
| | | | | | |
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| T# | RANGE | TARGET | RNDS | TBL | H |
|----|-------|--------|------|-----|---|
| | | | | | |
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| T# | RANGE | TARGET | SETNG | TORPS | ANG | TGT MOVE | ARRIVE |
|----|-------|--------|-------|-------|-----|----------|--------|
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| | | | | | | | |

Ships In Class
ASHIGARA, HAGURO, MYOKO, NACHI



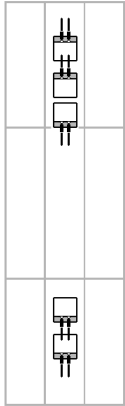
TAKAO Class
CA JAPAN

1943 to 1944

1642-2
Displacement 11,350 ts
Complement 920

SHIP LOG SHEET

Version AOTF1922A

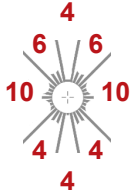


10 x 20cm/50 Type 3 No.2

DIRECTORS

2

ARCS OF FIRE



Range

31,500 yds 63.0"

FC Radar +0

None

GUNNERY (FCS)

| TARGET | SHORT | | MEDIUM | | LONG | |
|--------|-------|-----|--------|-----|------|-----|
| SPEED | BRD | NAR | BRD | NAR | BRD | NAR |
| 0-9 | 21 | 14 | 16 | 11 | 14 | 9 |
| 10-18 | 16 | 11 | 12 | 8 | 11 | 7 |
| 19-26 | 14 | 9 | 11 | 7 | 9 | 6 |
| 27-32 | 12 | 8 | 9 | 6 | 8 | 5 |

35% PENETRATION TABLE

| SAPBC | SHORT | | MEDIUM | LONG |
|-------|-------|-------|--------|--------|
| YDS | 4,000 | 8,000 | 15,000 | 31,500 |
| ROF | 9 | 7 | 5 | 2 |
| HORZ | 0 | 1 | 1 | 3 |
| VERT | 14 | 11 | 8 | 3 |

| | | |
|---------|------|-----|
| Targ Sz | Crew | Sea |
| 2 | | |

| | | |
|--------------|------|------|
| Searchlights | Port | Stbd |
| | | |

PROTECTION

ARMOR VALUE

HORIZONTAL 1

VERTICAL 2

HIT LOCATION

RANGE HORZ VERT

SHORT 01-05 06-00

MEDIUM 01-19 20-00

LONG 01-39 40-00

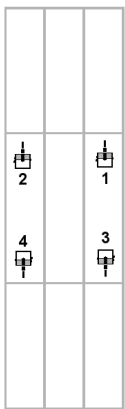
14 7 DAMAGE CONTROL (DCR)

FLAG COMMAND RATING (FCR)

W2-2A

DAMAGE DETERMINATION

| ROLL | CLASS 1 | CLASS 2 | CLASS 3 |
|-------|---------|---------|---------|
| 01-02 | 100 | 202 | 304 |
| 03-04 | 128 | 201 | 302 |
| 05-06 | 102 | 203 | 303 |
| 07-08 | 103 | 205 | 301 |
| 09-10 | 109 | 210 | 305 |
| 11-13 | 104 | 200 | 306 |
| 14-16 | 106 | 204 | - |
| 17-19 | 107 | 206 | - |
| 20-22 | 105 | 207 | 310 |
| 23-25 | 114 | 211 | - |
| 26-28 | 111 | 213 | 312 |
| 29-31 | 121 | 214 | 313 |
| 32-34 | 144 | 215 | 314 |
| 35-37 | 171 | 217 | 315 |
| 38-40 | 150 | 218 | - |
| 41-43 | 135 | 219 | 317 |
| 44-46 | 132 | 220 | - |
| 47-49 | 145 | 221 | - |
| 50-52 | 123 | 222 | - |
| 53-55 | 124 | 223 | - |
| 56-58 | 125 | 224 | - |
| 59-61 | 127 | 226 | - |
| 62-64 | 146 | 227 | - |
| 65-67 | 133 | 229 | 318 |
| 68-70 | 126 | 230 | - |
| 71-73 | 118 | 231 | 305 |
| 74-76 | 116 | 237 | - |
| 77-79 | 115 | 238 | - |
| 80-83 | 108 | 208 | 319 |
| 84-87 | 113 | 212 | - |
| 88-91 | 129 | 248 | 307 |
| 92-95 | 151 | 244 | 308 |
| 96-98 | 152 | 242 | 310 |
| 99-00 | 101 | 241 | 316 |

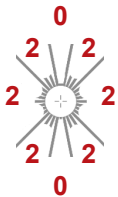


4 x 12cm/45 Type 10

DIRECTORS

2

ARCS OF FIRE



Range

17,500 yds 35.0"

FC Radar +0

None

GUNNERY (FCS)

| TARGET | SHORT | | MEDIUM | | LONG | |
|--------|-------|-----|--------|-----|------|-----|
| SPEED | BRD | NAR | BRD | NAR | BRD | NAR |
| 0-9 | 16 | 11 | 13 | 9 | 11 | 7 |
| 10-18 | 12 | 8 | 10 | 6 | 8 | 5 |
| 19-26 | 11 | 7 | 8 | 6 | 7 | 5 |
| 27-32 | 9 | 6 | 7 | 5 | 6 | 4 |

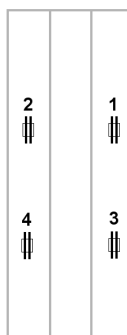
17% PENETRATION TABLE

| HE | SHORT | | MEDIUM | LONG |
|------|-------|-------|--------|--------|
| YDS | 2,500 | 6,000 | 10,000 | 17,500 |
| ROF | 10 | 7 | 5 | 3 |
| HORZ | 0 | 0 | 0 | 2 |
| VERT | 4 | 2 | 1 | 1 |

KTS 35

PROPULSION / MANEUVER

| | | | | | | | | |
|------------|---|----|----|----|----|----|----|----------|
| Engine Rm | 4 | 35 | 31 | 20 | 7 | 0 | 0 | Std Turn |
| Prop/Shaft | 4 | 35 | 30 | 18 | 5 | 0 | 0 | 45 |
| Boiler Rm | 9 | 35 | 34 | 32 | 29 | 24 | 19 | Emg Turn |
| | | | 13 | 7 | 2 | 0 | 0 | 90 |



| | | | |
|-------------------|---|----|----|
| TORPEDOES | | | |
| TT | 8 | RL | 16 |
| 61cm Type 93 M1-2 | | | |
| Damage Class | A | | |
| Settings | | | |
| 22,000/48 | | | |
| 35,000/40 | | | |
| 43,700/36 | | | |

| | | | | | | |
|----------|----------|----------|----------|----------|----------|--------|
| Speed | 00-06 kt | 07-18 kt | 19-22 kt | 23-26 kt | 27-28 kt | 29+ kt |
| Increase | 7.0 | 6.0 | 4.0 | 3.0 | 2.0 | 1.0 |

LOSS OF SPEED DURING TURNS

| | | | | | | | | | | | | | | | | | | | |
|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| KTS | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 30 | 32 | 34 | 36 | 38 | 40 |
| STD | 3 | 5 | 6 | 8 | 9 | 10 | 12 | 13 | 15 | 16 | 18 | 19 | 21 | 22 | 24 | 26 | 27 | 28 | 30 |
| EMG | NA | NA | NA | NA | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |

GUNNERY RECORD

| T# | RANGE | TARGET | RNDS | TBL | H |
|----|-------|--------|------|-----|---|
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| T# | RANGE | TARGET | RNDS | TBL | H |
|----|-------|--------|------|-----|---|
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| T# | RANGE | TARGET | SETNG | TORPS | ANG | TGT MOVE | ARRIVE |
|----|-------|--------|-------|-------|-----|----------|--------|
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Ships In Class
ATAGO, CHOKAI, MAYA, TAKAO



TONE Class
CA JAPAN

1944 to 1944

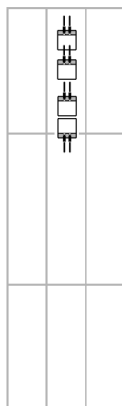
0980-1
Displacement 11,215 ts
Complement 850

SHIP LOG SHEET

Version AOTF1922A



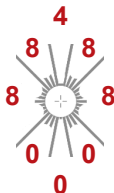
Length 650 ft
Beam 61 ft
Draft 21.3 ft



8 x 20cm/50 Type 3 No.2

DIRECTORS
1

ARCS OF FIRE



| Range | 32,500 yds | 65.0" |
|----------|------------|-------|
| FC Radar | +0 | None |

GUNNERY (FCS)

| TARGET SPEED | SHORT | | MEDIUM | | LONG | |
|--------------|-------|-----|--------|-----|------|-----|
| | BRD | NAR | BRD | NAR | BRD | NAR |
| 0-9 | 23 | 16 | 18 | 13 | 15 | 11 |
| 10-18 | 18 | 12 | 14 | 10 | 12 | 8 |
| 19-26 | 15 | 11 | 12 | 8 | 10 | 7 |
| 27-32 | 13 | 9 | 10 | 7 | 9 | 6 |

| 35% PENETRATION TABLE | | | | |
|-----------------------|-------|-------|--------|--------|
| SAPBC | SHORT | | MEDIUM | LONG |
| YDS | 3,000 | 8,000 | 15,000 | 32,500 |
| ROF | 9 | 7 | 5 | 2 |
| HORZ | 0 | 1 | 1 | 5 |
| VERT | 14 | 10 | 6 | 2 |

| Targ Sz | Crew | Sea |
|---------|------|-----|
| 2 | | |

| PROTECTION | |
|-------------|---|
| ARMOR VALUE | |
| HORIZONTAL | 2 |
| VERTICAL | 2 |

| HIT LOCATION | | |
|--------------|-------|-------|
| RANGE | HORZ | VERT |
| SHORT | 01-05 | 06-00 |
| MEDIUM | 01-19 | 20-00 |
| LONG | 01-39 | 40-00 |

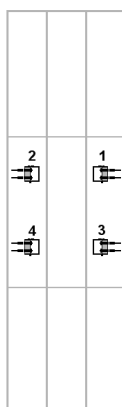
| Searchlights | Port | Stbd |
|--------------|------|------|
| 13 | 7 | |

| FLAG COMMAND RATING (FCR) | | | | | | | | | |
|---------------------------|--|--|--|--|--|--|--|--|--|
| | | | | | | | | | |

W2-2A

DAMAGE DETERMINATION

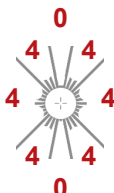
| ROLL | CLASS 1 | CLASS 2 | CLASS 3 |
|-------|---------|---------|---------|
| 01-02 | 100 | 202 | 304 |
| 03-04 | 128 | 201 | 302 |
| 05-06 | 102 | 203 | 303 |
| 07-08 | 103 | 205 | 301 |
| 09-10 | 109 | 210 | 305 |
| 11-13 | 104 | 200 | 306 |
| 14-16 | 106 | 204 | - |
| 17-19 | 107 | 206 | - |
| 20-22 | 105 | 207 | 310 |
| 23-25 | 114 | 211 | - |
| 26-28 | 111 | 213 | 312 |
| 29-31 | 121 | 214 | 313 |
| 32-34 | 144 | 215 | 314 |
| 35-37 | 171 | 217 | 315 |
| 38-40 | 150 | 218 | - |
| 41-43 | 135 | 219 | 317 |
| 44-46 | 132 | 220 | - |
| 47-49 | 145 | 221 | - |
| 50-52 | 123 | 222 | - |
| 53-55 | 124 | 223 | - |
| 56-58 | 125 | 224 | - |
| 59-61 | 127 | 226 | - |
| 62-64 | 146 | 227 | - |
| 65-67 | 133 | 229 | 318 |
| 68-70 | 126 | 230 | - |
| 71-73 | 118 | 231 | 305 |
| 74-76 | 116 | 237 | - |
| 77-79 | 115 | 238 | - |
| 80-83 | 108 | 208 | 319 |
| 84-87 | 113 | 212 | - |
| 88-91 | 129 | 248 | 307 |
| 92-95 | 151 | 244 | 308 |
| 96-98 | 152 | 242 | 310 |
| 99-00 | 101 | 241 | 316 |



8 x 12.7cm/40 Type 89

DIRECTORS
2

ARCS OF FIRE



| Range | 16,000 yds | 32.0" |
|----------|------------|-------|
| FC Radar | +0 | None |

GUNNERY (FCS)

| TARGET SPEED | SHORT | | MEDIUM | | LONG | |
|--------------|-------|-----|--------|-----|------|-----|
| | BRD | NAR | BRD | NAR | BRD | NAR |
| 0-9 | 16 | 11 | 13 | 9 | 11 | 7 |
| 10-18 | 12 | 8 | 10 | 6 | 8 | 5 |
| 19-26 | 11 | 7 | 8 | 6 | 7 | 5 |
| 27-32 | 9 | 6 | 7 | 5 | 6 | 4 |

| 18% PENETRATION TABLE | | | | |
|-----------------------|-------|-------|--------|--------|
| HE | SHORT | | MEDIUM | LONG |
| YDS | 2,000 | 4,000 | 8,000 | 16,000 |
| ROF | 10 | 8 | 6 | 3 |
| HORZ | 0 | 0 | 0 | 1 |
| VERT | 4 | 3 | 2 | 1 |

| KTS | 35 | | | | | | | | |
|-----|----|--|--|--|--|--|--|--|--|
|-----|----|--|--|--|--|--|--|--|--|

PROPULSION / MANEUVER

| Engine Rm | 4 | 35 | 31 | 20 | 7 | 0 | 0 | Std Turn |
|------------|---|----|----|----|----|----|----|----------|
| Prop/Shaft | 4 | 35 | 30 | 18 | 5 | 0 | 0 | 45 |
| Boiler Rm | 8 | 35 | 34 | 32 | 27 | 22 | 15 | Emg Turn |
| | | | 8 | 3 | 0 | 0 | 0 | |

| Speed Increase | 00-06 kt | 07-18 kt | 19-22 kt | 23-26 kt | 27-28 kt | 29+ kt |
|----------------|----------|----------|----------|----------|----------|--------|
| | 7.0 | 6.0 | 4.0 | 3.0 | 2.0 | 1.0 |

| TORPEDOES | |
|-------------------|----|
| TT | 12 |
| RL | 24 |
| 61cm Type 93 M1-2 | |
| Damage Class | A |
| Settings | |
| 22,000/48 | |
| 35,000/40 | |
| 43,700/36 | |

2

4

1

3

| LOSS OF SPEED DURING TURNS | | | | | | | | | | | | | | | | | | | |
|----------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| KTS | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 30 | 32 | 34 | 36 | 38 | 40 |
| STD | 3 | 5 | 6 | 8 | 9 | 10 | 12 | 13 | 15 | 16 | 18 | 19 | 21 | 22 | 24 | 26 | 27 | 28 | 30 |
| EMG | NA | NA | NA | NA | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |

GUNNERY RECORD

| T# | RANGE | TARGET | RNDS | TBL | H |
|----|-------|--------|------|-----|---|
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| T# | RANGE | TARGET | SETNG | TORPS | ANG | TGT MOVE | ARRIVE |
|----|-------|--------|-------|-------|-----|----------|--------|
| | | | | | | | |
| | | | | | | | |
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Ships In Class
CHIKUMA, TONE



KONGO Class
CB JAPAN

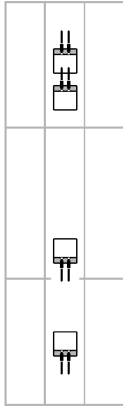
1629-4
Displacement 32,156 ts
Complement 1437

SHIP LOG SHEET

Version AOTF-20220315



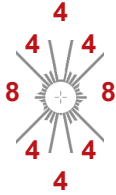
Length 720 ft
Beam 101 ft
Draft 32 ft
Radar fitted c.1944.



8 x 36cm/45 Types 43,41

DIRECTORS
2

ARCS OF FIRE



Range
38,500 yds 77.0"
FC Radar **+0**
None

| TARGET SPEED | GUNNERY (FCS) | | |
|--------------|---------------|----------------|--------------|
| | SHORT BRD NAR | MEDIUM BRD NAR | LONG BRD NAR |
| 0-9 | 23 16 | 18 13 | 15 11 |
| 10-18 | 18 12 | 14 10 | 12 8 |
| 19-26 | 15 11 | 12 8 | 10 7 |
| 27-32 | 13 9 | 10 7 | 9 6 |

| APCBC YDS | PENETRATION TABLE | | | |
|-----------|-------------------|----------|----------|----------|
| | SHORT | MEDIUM | LONG | |
| ROF | 6 | 6 | 4 | 2 |
| HORZ | 1 | 2 | 3 | 11 |
| VERT | 23 | 19 | 12 | 7 |

| Targ Sz | Crew | Sea |
|---------|------|-----|
| 2 | | |

| PROTECTION | |
|-------------|----------|
| ARMOR VALUE | |
| HORIZONTAL | 5 |
| VERTICAL | 7 |

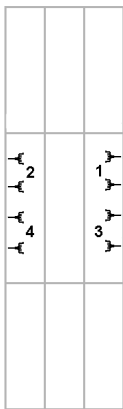
| HIT LOCATION | | |
|--------------|-------|-------|
| RANGE | HORZ | VERT |
| SHORT | 01-05 | 06-00 |
| MEDIUM | 01-19 | 20-00 |
| LONG | 01-39 | 40-00 |

| 23 | 12 | DAMAGE CONTROL (DCR) | | | | | |
|----|----|----------------------|--|--|--|--|--|
| | | | | | | | |

| FLAG COMMAND RATING (FCR) | | | | | | | |
|---------------------------|--|--|--|--|--|--|--|
| | | | | | | | |

W2-2A

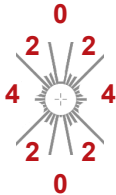
| DAMAGE DETERMINATION | | | |
|----------------------|---------|---------|---------|
| ROLL | CLASS 1 | CLASS 2 | CLASS 3 |
| 01-02 | 100 | 202 | 304 |
| 03-04 | 128 | 201 | 302 |
| 05-06 | 102 | 203 | 303 |
| 07-08 | 103 | 205 | 301 |
| 09-10 | 109 | 210 | 305 |
| 11-13 | 104 | 200 | 306 |
| 14-16 | 106 | 204 | - |
| 17-19 | 107 | 206 | - |
| 20-22 | 105 | 207 | 310 |
| 23-25 | 114 | 211 | - |
| 26-28 | 111 | 213 | 312 |
| 29-31 | 121 | 214 | 313 |
| 32-34 | 144 | 215 | 314 |
| 35-37 | 171 | 217 | 315 |
| 38-40 | 150 | 218 | - |
| 41-43 | 135 | 219 | 317 |
| 44-46 | 132 | 220 | - |
| 47-49 | 145 | 221 | - |
| 50-52 | 123 | 222 | - |
| 53-55 | 124 | 223 | - |
| 56-58 | 125 | 224 | - |
| 59-61 | 127 | 226 | - |
| 62-64 | 146 | 227 | - |
| 65-67 | 133 | 229 | 318 |
| 68-70 | 126 | 230 | - |
| 71-73 | 118 | 231 | 305 |
| 74-76 | 116 | 237 | - |
| 77-79 | 115 | 238 | - |
| 80-83 | 108 | 208 | 319 |
| 84-87 | 113 | 212 | - |
| 88-91 | 129 | 248 | 307 |
| 92-95 | 151 | 244 | 308 |
| 96-98 | 152 | 242 | 310 |
| 99-00 | 101 | 241 | 316 |



8 x 15cm/50 41st Year

DIRECTORS
2

ARCS OF FIRE



Range
20,500 yds 41.0"
FC Radar **+0**
None

| TARGET SPEED | GUNNERY (FCS) | | |
|--------------|---------------|----------------|--------------|
| | SHORT BRD NAR | MEDIUM BRD NAR | LONG BRD NAR |
| 0-9 | 16 11 | 13 9 | 11 7 |
| 10-18 | 12 8 | 10 6 | 8 5 |
| 19-26 | 11 7 | 8 6 | 7 5 |
| 27-32 | 9 6 | 7 5 | 6 4 |

| CPC YDS | PENETRATION TABLE | | | |
|---------|-------------------|----------|----------|----------|
| | SHORT | MEDIUM | LONG | |
| ROF | 10 | 8 | 6 | 3 |
| HORZ | 0 | 0 | 1 | 2 |
| VERT | 7 | 4 | 3 | 2 |

| KTS | 30 | | | | | | |
|-----|----|--|--|--|--|--|--|
| | | | | | | | |

| TORPEDOES | | | |
|-----------|---|----|---|
| TT | 0 | RL | 0 |

| |
|--------------|
| None |
| Damage Class |
| Settings |
| |
| |
| |

| PROPULSION / MANEUVER | | | | | | | | | | | | |
|-----------------------|---|----|----|----|----|----|----|----------|--|--|--|--|
| Engine Rm | 4 | 30 | 27 | 17 | 6 | 0 | 0 | Std Turn | | | | |
| Prop/Shaft | 4 | 30 | 26 | 15 | 4 | 0 | 0 | 45 | | | | |
| Boiler Rm | 8 | 30 | 29 | 27 | 23 | 18 | 13 | Emg Turn | | | | |
| | | | 7 | 2 | 0 | 0 | 0 | 60 | | | | |

| Speed Increase | 00-23 kt | 24+ kt | | | | |
|----------------|----------|--------|--|--|--|--|
| | 4.0 | 1.0 | | | | |

| LOSS OF SPEED DURING TURNS | | | | | | | | | | | | | | | | | | | |
|----------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| KTS | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 30 | 32 | 34 | 36 | 38 | 40 |
| STD | 3 | 5 | 6 | 8 | 9 | 10 | 12 | 13 | 15 | 16 | 18 | 19 | 21 | 22 | 24 | 26 | 27 | 28 | 30 |
| EMG | NA | NA | NA | NA | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |

| GUNNERY RECORD | | | | | | | | | | | |
|----------------|-------|--------|------|-----|---|----|-------|--------|------|-----|---|
| T# | RANGE | TARGET | RNDS | TBL | H | T# | RANGE | TARGET | RNDS | TBL | H |
| | | | | | | | | | | | |
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| T# | RANGE | TARGET | SETNG | TORPS | ANG | TGT MOVE | ARRIVE |
|----|-------|--------|-------|-------|-----|----------|--------|
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Ships In Class
HARUNA, HIEI, KIRISHIMA, KONGO



SUZUYA Class
CL JAPAN

1944 to 1944

2719-3
Displacement 12,400 ts
Complement 850

SHIP LOG SHEET

Version AOTF1922A

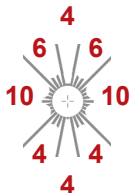
As modified June-July 1944.

Length 650 ft
Beam 66 ft
Draft 19.4 ft



10 x 20cm/50 Type 3 No.2

ARCS OF FIRE



DIRECTORS

2

| | |
|------------|-------|
| Range | |
| 32,500 yds | 65.0" |
| FC Radar | + 0 |
| None | |

| GUNNERY (FCS) | | | | | | |
|----------------------|-------|-----|--------|-----|------|-----|
| TARGET | SHORT | | MEDIUM | | LONG | |
| SPEED | BRD | NAR | BRD | NAR | BRD | NAR |
| 0-9 | 23 | 16 | 18 | 13 | 15 | 11 |
| 10-18 | 18 | 12 | 14 | 10 | 12 | 8 |
| 19-26 | 15 | 11 | 12 | 8 | 10 | 7 |
| 27-32 | 13 | 9 | 10 | 7 | 9 | 6 |

| 35% PENETRATION TABLE | | | | |
|------------------------------|-------|-------|--------|--------|
| SAPBC | SHORT | | MEDIUM | LONG |
| YDS | 3,000 | 8,000 | 15,000 | 32,500 |
| ROF | 9 | 7 | 5 | 2 |
| HORZ | 0 | 1 | 1 | 5 |
| VERT | 14 | 10 | 6 | 2 |

| Targ Sz | Crew | Sea |
|---------|------|-----|
| 2 | | |

| Searchlights | Port | Stbd |
|--------------|------|------|
| | | |

| PROTECTION | |
|-------------------|---|
| ARMOR VALUE | |
| HORIZONTAL | 2 |
| VERTICAL | 2 |

| HIT LOCATION | | |
|---------------------|-------|-------|
| RANGE | HORZ | VERT |
| SHORT | 01-05 | 06-00 |
| MEDIUM | 01-19 | 20-00 |
| LONG | 01-39 | 40-00 |

| | | | | | | | | | |
|----------------------------------|--|--|--|--|--|--|--|--|--|
| 14 7 DAMAGE CONTROL (DCR) | | | | | | | | | |
| | | | | | | | | | |

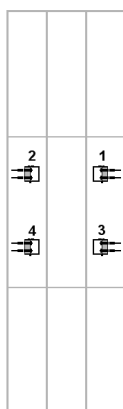
FLAG COMMAND RATING (FCR)

| | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|
| | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|

W2-2A

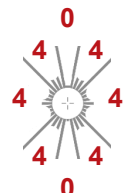
DAMAGE DETERMINATION

| ROLL | CLASS 1 | CLASS 2 | CLASS 3 |
|-------|---------|---------|---------|
| 01-02 | 100 | 202 | 304 |
| 03-04 | 128 | 201 | 302 |
| 05-06 | 102 | 203 | 303 |
| 07-08 | 103 | 205 | 301 |
| 09-10 | 109 | 210 | 305 |
| 11-13 | 104 | 200 | 306 |
| 14-16 | 106 | 204 | - |
| 17-19 | 107 | 206 | - |
| 20-22 | 105 | 207 | 310 |
| 23-25 | 114 | 211 | - |
| 26-28 | 111 | 213 | 312 |
| 29-31 | 121 | 214 | 313 |
| 32-34 | 144 | 215 | 314 |
| 35-37 | 171 | 217 | 315 |
| 38-40 | 150 | 218 | - |
| 41-43 | 135 | 219 | 317 |
| 44-46 | 132 | 220 | - |
| 47-49 | 145 | 221 | - |
| 50-52 | 123 | 222 | - |
| 53-55 | 124 | 223 | - |
| 56-58 | 125 | 224 | - |
| 59-61 | 127 | 226 | - |
| 62-64 | 146 | 227 | - |
| 65-67 | 133 | 229 | 318 |
| 68-70 | 126 | 230 | - |
| 71-73 | 118 | 231 | 305 |
| 74-76 | 116 | 237 | - |
| 77-79 | 115 | 238 | - |
| 80-83 | 108 | 208 | 319 |
| 84-87 | 113 | 212 | - |
| 88-91 | 129 | 248 | 307 |
| 92-95 | 151 | 244 | 308 |
| 96-98 | 152 | 242 | 310 |
| 99-00 | 101 | 241 | 316 |



8 x 12.7cm/40 Type 89

ARCS OF FIRE



DIRECTORS

2

| | |
|------------|-------|
| Range | |
| 16,000 yds | 32.0" |
| FC Radar | + 0 |
| None | |

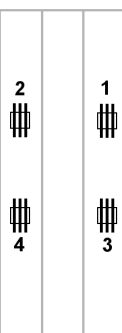
| GUNNERY (FCS) | | | | | | |
|----------------------|-------|-----|--------|-----|------|-----|
| TARGET | SHORT | | MEDIUM | | LONG | |
| SPEED | BRD | NAR | BRD | NAR | BRD | NAR |
| 0-9 | 18 | 13 | 14 | 10 | 12 | 8 |
| 10-18 | 14 | 10 | 11 | 7 | 9 | 6 |
| 19-26 | 12 | 8 | 9 | 6 | 8 | 5 |
| 27-32 | 10 | 7 | 8 | 6 | 7 | 5 |

| 18% PENETRATION TABLE | | | | |
|------------------------------|-------|-------|--------|--------|
| HE | SHORT | | MEDIUM | LONG |
| YDS | 2,000 | 4,000 | 8,000 | 16,000 |
| ROF | 10 | 8 | 6 | 3 |
| HORZ | 0 | 0 | 0 | 1 |
| VERT | 4 | 3 | 2 | 1 |

KTS 34

PROPULSION / MANEUVER

| Engine Rm | 4 | 34 | 30 | 20 | 6 | 0 | 0 |
|------------|---|----|----|----|----|----|----|
| Prop/Shaft | 4 | 34 | 30 | 17 | 4 | 0 | 0 |
| Boiler Rm | 8 | 34 | 33 | 31 | 27 | 21 | 14 |
| | | | 8 | 3 | 0 | 0 | 0 |
| Std Turn | | 60 | | | | | |
| Emg Turn | | 90 | | | | | |



| | | | |
|-------------------|----|----|----|
| TORPEDOES | | | |
| TT | 12 | RL | 24 |
| 61cm Type 93 M1-2 | | | |
| Damage Class A | | | |
| Settings | | | |
| 22,000/48 | | | |
| 35,000/40 | | | |
| 43,700/36 | | | |

| Speed Increase | 00-10 kt | 11-19 kt | 20-24 kt | 25-27 kt | 28-30 kt | 31+ kt |
|----------------|----------|----------|----------|----------|----------|--------|
| | 11.0 | 9.0 | 5.0 | 3.0 | 2.0 | 1.0 |

| LOSS OF SPEED DURING TURNS | | | | | | | | | | | | | | | | | | | |
|-----------------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| KTS | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 30 | 32 | 34 | 36 | 38 | 40 |
| STD | 3 | 5 | 6 | 8 | 9 | 10 | 12 | 13 | 15 | 16 | 18 | 19 | 21 | 22 | 24 | 26 | 27 | 28 | 30 |
| EMG | NA | NA | NA | NA | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |

GUNNERY RECORD

| T# | RANGE | TARGET | RNDS | TBL | H | T# | RANGE | TARGET | RNDS | TBL | H |
|----|-------|--------|------|-----|---|----|-------|--------|------|-----|---|
| | | | | | | | | | | | |
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| | | | | | | | | | | | |

| T# | RANGE | TARGET | SETNG | TORPS | ANG | TGT MOVE | ARRIVE |
|----|-------|--------|-------|-------|-----|----------|--------|
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Ships In Class
KUMANO, SUZUYA



PENNSYLVANIA Class
BB UNITED STATES

1943 to 1945

2185-5
Displacement 34,823 ts
Complement 1052

SHIP LOG SHEET

Version AOTF-20220315



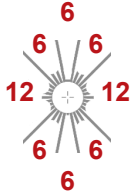
Length 600 ft
Beam 97 ft
Draft 28.8 ft



12 x 14"/45 Mk 8

DIRECTORS
2

ARCS OF FIRE



Range
34,000 yds 68.0"

FC Radar +2
Mark 3 (FC)

| TARGET SPEED | SHORT | | MEDIUM | | LONG | |
|--------------|-------|-----|--------|-----|------|-----|
| | BRD | NAR | BRD | NAR | BRD | NAR |
| 0-9 | 23 | 16 | 18 | 13 | 15 | 11 |
| 10-18 | 18 | 12 | 14 | 10 | 12 | 8 |
| 19-26 | 15 | 11 | 12 | 8 | 10 | 7 |
| 27-32 | 13 | 9 | 10 | 7 | 9 | 6 |

| APCBC YDS | SHORT | | MEDIUM | LONG |
|-----------|-------|--------|--------|--------|
| | 4,000 | 10,000 | 21,000 | 34,000 |
| ROF | 5 | 5 | 4 | 3 |
| HORZ | 1 | 2 | 3 | 8 |
| VERT | 25 | 19 | 13 | 9 |

| Targ Sz | Crew | Sea |
|---------|------|-----|
| 2 | | |

| PROTECTION | |
|-------------|----|
| ARMOR VALUE | |
| HORIZONTAL | 4 |
| VERTICAL | 10 |

| HIT LOCATION | | |
|--------------|-------|-------|
| RANGE | HORZ | VERT |
| SHORT | 01-05 | 06-00 |
| MEDIUM | 01-19 | 20-00 |
| LONG | 01-39 | 40-00 |

| | | | | | | | |
|----|----|-----------------------------|--|--|--|--|--|
| 24 | 12 | DAMAGE CONTROL (DCR) | | | | | |
| | | | | | | | |

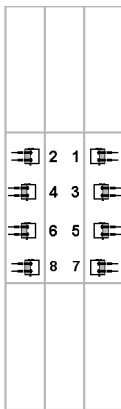
FLAG COMMAND RATING (FCR)

| | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|
| | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|

W2-2AR

DAMAGE DETERMINATION

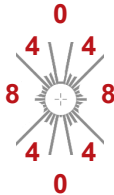
| ROLL | CLASS 1 | CLASS 2 | CLASS 3 |
|-------|---------|---------|---------|
| 01-02 | 100 | 202 | 304 |
| 03-04 | 128 | 201 | 302 |
| 05-06 | 102 | 203 | 303 |
| 07-08 | 103 | 205 | 301 |
| 09-10 | 109 | 210 | 305 |
| 11-13 | 104 | 200 | 306 |
| 14-16 | 106 | 246 | - |
| 17-19 | 107 | 206 | - |
| 20-22 | 105 | 207 | 310 |
| 23-25 | 114 | 211 | - |
| 26-28 | 111 | 213 | 312 |
| 29-31 | 121 | 214 | 313 |
| 32-34 | 144 | 215 | 314 |
| 35-37 | 171 | 217 | 315 |
| 38-40 | 165 | 218 | - |
| 41-43 | 135 | 219 | 317 |
| 44-46 | 132 | 220 | - |
| 47-49 | 145 | 221 | - |
| 50-52 | 123 | 222 | - |
| 53-55 | 124 | 223 | - |
| 56-58 | 125 | 224 | - |
| 59-61 | 127 | 226 | - |
| 62-64 | 146 | 227 | - |
| 65-67 | 133 | 229 | 318 |
| 68-70 | 126 | 230 | - |
| 71-73 | 118 | 231 | 305 |
| 74-76 | 116 | 237 | - |
| 77-79 | 115 | 238 | - |
| 80-83 | 108 | 208 | 319 |
| 84-87 | 113 | 212 | 320 |
| 88-91 | 129 | 248 | 307 |
| 92-95 | 151 | 244 | 308 |
| 96-98 | 163 | 242 | 310 |
| 99-00 | 101 | 241 | 316 |



16 x 5"/38 Mk 12

DIRECTORS
4

ARCS OF FIRE



Range
18,000 yds 36.0"

FC Radar +2
Mark 4 (FD)

| TARGET SPEED | SHORT | | MEDIUM | | LONG | |
|--------------|-------|-----|--------|-----|------|-----|
| | BRD | NAR | BRD | NAR | BRD | NAR |
| 0-9 | 22 | 15 | 17 | 12 | 14 | 10 |
| 10-18 | 19 | 13 | 15 | 10 | 13 | 9 |
| 19-26 | 18 | 12 | 14 | 10 | 12 | 8 |
| 27-32 | 16 | 12 | 13 | 9 | 11 | 8 |

| COM YDS | SHORT | | MEDIUM | LONG |
|---------|-------|-------|--------|--------|
| | 2,000 | 6,000 | 10,000 | 18,000 |
| ROF | 10 | 7 | 5 | 2 |
| HORZ | 0 | 0 | 0 | 2 |
| VERT | 7 | 4 | 2 | 2 |

KTS 21

| TORPEDOES | |
|-----------|--------|
| TT | 0 RL 0 |

PROPULSION / MANEUVER

| | | | | | | | | |
|------------|---|----|----|----|----|---|---|----------|
| Engine Rm | 3 | 21 | 17 | 7 | 0 | 0 | 0 | Std Turn |
| Prop/Shaft | 4 | 21 | 18 | 11 | 3 | 0 | 0 | 60 |
| Boiler Rm | 6 | 21 | 20 | 17 | 13 | 8 | 3 | Emg Turn |
| | | | 0 | 0 | 0 | 0 | 0 | 90 |

| | |
|--------------|--|
| None | |
| Damage Class | |
| Settings | |

| | | | | | | |
|----------------|----------|--------|--|--|--|--|
| Speed Increase | 00-16 kt | 17+ kt | | | | |
| | 3.0 | 1.0 | | | | |

LOSS OF SPEED DURING TURNS

| KTS | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 30 | 32 | 34 | 36 | 38 | 40 |
|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| STD | 3 | 5 | 6 | 8 | 9 | 10 | 12 | 13 | 15 | 16 | 18 | 19 | 21 | 22 | 24 | 26 | 27 | 28 | 30 |
| EMG | NA | NA | NA | NA | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |

GUNNERY RECORD

| T# | RANGE | TARGET | RNDS | TBL | H |
|----|-------|--------|------|-----|---|
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| T# | RANGE | TARGET | RNDS | TBL | H |
|----|-------|--------|------|-----|---|
| | | | | | |
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| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

| T# | RANGE | TARGET | SETNG | TORPS | ANG | TGT MOVE | ARRIVE |
|----|-------|--------|-------|-------|-----|----------|--------|
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Ships In Class
ARIZONA, PENNSYLVANIA



NEW MEXICO Class
BB UNITED STATES

1944 to 1945

2189-4
Displacement 33,420 ts
Complement 1443

SHIP LOG SHEET

Version AOTF1922A



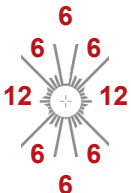
Length 600 ft
Beam 106 ft
Draft 30 ft



12 x 14"/50 Mk 7,11

DIRECTORS
2

ARCS OF FIRE



Range
37,000 yds 74.0"
FC Radar +2
Mark 3 (FC)

GUNNERY (FCS)

| TARGET | SHORT | MEDIUM | LONG |
|--------|---------|---------|---------|
| SPEED | BRD NAR | BRD NAR | BRD NAR |
| 0-9 | 23 16 | 18 13 | 15 11 |
| 10-18 | 18 12 | 14 10 | 12 8 |
| 19-26 | 15 11 | 12 8 | 10 7 |
| 27-32 | 13 9 | 10 7 | 9 6 |

70% PENETRATION TABLE

| APCBC | SHORT | MEDIUM | LONG | |
|-------|-------|--------|--------|--------|
| YDS | 4,000 | 10,000 | 21,000 | 37,000 |
| ROF | 5 | 5 | 4 | 2 |
| HORZ | 1 | 2 | 3 | 9 |
| VERT | 26 | 21 | 14 | 9 |

| Targ Sz | Crew | Sea |
|---------|------|-----|
| 2 | | |

| Searchlights | Port | Stbd |
|--------------|------|------|
| | | |

PROTECTION

ARMOR VALUE

| | |
|------------|----|
| HORIZONTAL | 4 |
| VERTICAL | 10 |

HIT LOCATION

| RANGE | HORZ | VERT |
|-------|------|------|
|-------|------|------|

| | | |
|--------|-------|-------|
| SHORT | 01-05 | 06-00 |
| MEDIUM | 01-19 | 20-00 |
| LONG | 01-39 | 40-00 |

23 12 DAMAGE CONTROL (DCR)

| | | | | | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| | | | | | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|

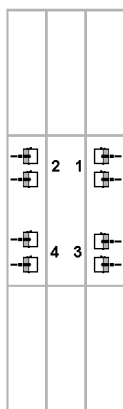
FLAG COMMAND RATING (FCR)

| | | | | | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| | | | | | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|

W2-2AR

DAMAGE DETERMINATION

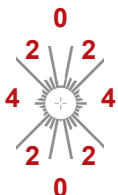
| ROLL | CLASS 1 | CLASS 2 | CLASS 3 |
|-------|---------|---------|---------|
| 01-02 | 100 | 202 | 304 |
| 03-04 | 128 | 201 | 302 |
| 05-06 | 102 | 203 | 303 |
| 07-08 | 103 | 205 | 301 |
| 09-10 | 109 | 210 | 305 |
| 11-13 | 104 | 200 | 306 |
| 14-16 | 106 | 246 | - |
| 17-19 | 107 | 206 | - |
| 20-22 | 105 | 207 | 310 |
| 23-25 | 114 | 211 | - |
| 26-28 | 111 | 213 | 312 |
| 29-31 | 121 | 214 | 313 |
| 32-34 | 144 | 215 | 314 |
| 35-37 | 171 | 217 | 315 |
| 38-40 | 165 | 218 | - |
| 41-43 | 135 | 219 | 317 |
| 44-46 | 132 | 220 | - |
| 47-49 | 145 | 221 | - |
| 50-52 | 123 | 222 | - |
| 53-55 | 124 | 223 | - |
| 56-58 | 125 | 224 | - |
| 59-61 | 127 | 226 | - |
| 62-64 | 146 | 227 | - |
| 65-67 | 133 | 229 | 318 |
| 68-70 | 126 | 230 | - |
| 71-73 | 118 | 231 | 305 |
| 74-76 | 116 | 237 | - |
| 77-79 | 115 | 238 | - |
| 80-83 | 108 | 208 | 319 |
| 84-87 | 113 | 212 | 320 |
| 88-91 | 129 | 248 | 307 |
| 92-95 | 151 | 244 | 308 |
| 96-98 | 163 | 242 | 310 |
| 99-00 | 101 | 241 | 316 |



8 x 5"/25 Mk 10 DP

DIRECTORS
2

ARCS OF FIRE



Range
14,500 yds 29.0"
FC Radar +3
Mark 18

GUNNERY (FCS)

| TARGET | SHORT | MEDIUM | LONG |
|--------|---------|---------|---------|
| SPEED | BRD NAR | BRD NAR | BRD NAR |
| 0-9 | 15 9 | 11 7 | 8 5 |
| 10-18 | 10 7 | 7 5 | 6 4 |
| 19-26 | 9 5 | 6 4 | 5 3 |
| 27-32 | 7 5 | 5 3 | 4 3 |

18% PENETRATION TABLE

| COM | SHORT | MEDIUM | LONG | |
|------|-------|--------|-------|--------|
| YDS | 2,000 | 4,000 | 8,000 | 14,500 |
| ROF | 10 | 8 | 5 | 2 |
| HORZ | 0 | 0 | 0 | 2 |
| VERT | 5 | 3 | 2 | 1 |

| | | | | | | | | | |
|-----|----|--|--|--|--|--|--|--|--|
| KTS | 21 | | | | | | | | |
|-----|----|--|--|--|--|--|--|--|--|

| TORPEDOES | | | |
|-----------|---|----|---|
| TT | 0 | RL | 0 |

| |
|--------------|
| None |
| Damage Class |
| Settings |

PROPULSION / MANEUVER

| Engine Rm | 4 | 21 | 19 | 12 | 4 | 0 | 0 |
|------------|---|----|----|----|----|---|---|
| Prop/Shaft | 4 | 21 | 18 | 11 | 3 | 0 | 0 |
| Boiler Rm | 3 | 21 | 17 | 8 | 0 | 0 | 0 |
| | | | 0 | 0 | 0 | 0 | 0 |
| Std Turn | | | | | 45 | | |
| Emg Turn | | | | | 90 | | |

| Speed Increase | 00-16 kt | 17+ kt | | | | | |
|----------------|----------|--------|--|--|--|--|--|
| | 3.0 | 1.0 | | | | | |

| LOSS OF SPEED DURING TURNS | | | | | | | | | | | | | | | | | | | |
|----------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| KTS | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 30 | 32 | 34 | 36 | 38 | 40 |
| STD | 3 | 5 | 6 | 8 | 9 | 10 | 12 | 13 | 15 | 16 | 18 | 19 | 21 | 22 | 24 | 26 | 27 | 28 | 30 |
| EMG | NA | NA | NA | NA | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |

GUNNERY RECORD

| T# | RANGE | TARGET | RNDS | TBL | H | T# | RANGE | TARGET | RNDS | TBL | H |
|----|-------|--------|------|-----|---|----|-------|--------|------|-----|---|
| | | | | | | | | | | | |
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| T# | RANGE | TARGET | SETNG | TORPS | ANG | TGT MOVE | ARRIVE |
|----|-------|--------|-------|-------|-----|----------|--------|
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Ships In Class
IDAHO, MISSISSIPPI, NEW MEXICO



TENNESSEE Class
BB UNITED STATES

1944 to 1945

2193-3
Displacement 34,858 ts
Complement 2375

SHIP LOG SHEET

Version AOTF1922A



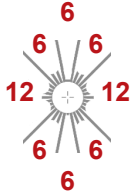
Length 600 ft
Beam 114 ft
Draft 30.2 ft



12 x 14"/50 Mk 7,11

DIRECTORS
2

ARCS OF FIRE



Range
37,000 yds 74.0"
FC Radar +3
Mark 8 (CXEM)

| TARGET SPEED | SHORT | | MEDIUM | | LONG | |
|--------------|-------|-----|--------|-----|------|-----|
| | BRD | NAR | BRD | NAR | BRD | NAR |
| 0-9 | 29 | 20 | 23 | 16 | 19 | 14 |
| 10-18 | 26 | 18 | 20 | 14 | 17 | 12 |
| 19-26 | 24 | 17 | 18 | 13 | 16 | 11 |
| 27-32 | 22 | 15 | 17 | 12 | 15 | 10 |

| APCBC YDS | 70% SHORT | | MEDIUM | LONG |
|-----------|-----------|--------|--------|--------|
| | 4,000 | 10,000 | 21,000 | 37,000 |
| ROF | 5 | 5 | 4 | 2 |
| HORZ | 1 | 2 | 3 | 9 |
| VERT | 26 | 21 | 14 | 9 |

| Targ Sz | Crew | Sea |
|---------|------|-----|
| 3 | | |

| PROTECTION ARMOR VALUE | |
|------------------------|----|
| HORIZONTAL | 6 |
| VERTICAL | 10 |

| HIT LOCATION | RANGE | HORZ | VERT |
|--------------|-------|-------|-------|
| | SHORT | 01-05 | 06-00 |
| MEDIUM | 01-19 | 20-00 | |
| LONG | 01-39 | 40-00 | |

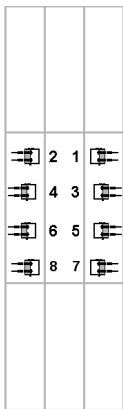
| 24 | 12 | DAMAGE CONTROL (DCR) | | | | | | | |
|----|----|----------------------|--|--|--|--|--|--|--|
| | | | | | | | | | |

| FLAG COMMAND RATING (FCR) | | | | | | | | | |
|---------------------------|--|--|--|--|--|--|--|--|--|
| | | | | | | | | | |

W2-2AR

DAMAGE DETERMINATION

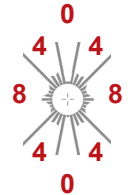
| ROLL | CLASS 1 | CLASS 2 | CLASS 3 |
|-------|---------|---------|---------|
| 01-02 | 100 | 202 | 304 |
| 03-04 | 128 | 201 | 302 |
| 05-06 | 102 | 203 | 303 |
| 07-08 | 103 | 205 | 301 |
| 09-10 | 109 | 210 | 305 |
| 11-13 | 104 | 200 | 306 |
| 14-16 | 106 | 246 | - |
| 17-19 | 107 | 206 | - |
| 20-22 | 105 | 207 | 310 |
| 23-25 | 114 | 211 | - |
| 26-28 | 111 | 213 | 312 |
| 29-31 | 121 | 214 | 313 |
| 32-34 | 144 | 215 | 314 |
| 35-37 | 171 | 217 | 315 |
| 38-40 | 165 | 218 | - |
| 41-43 | 135 | 219 | 317 |
| 44-46 | 132 | 220 | - |
| 47-49 | 145 | 221 | - |
| 50-52 | 123 | 222 | - |
| 53-55 | 124 | 223 | - |
| 56-58 | 125 | 224 | - |
| 59-61 | 127 | 226 | - |
| 62-64 | 146 | 227 | - |
| 65-67 | 133 | 229 | 318 |
| 68-70 | 126 | 230 | - |
| 71-73 | 118 | 231 | 305 |
| 74-76 | 116 | 237 | - |
| 77-79 | 115 | 238 | - |
| 80-83 | 108 | 208 | 319 |
| 84-87 | 113 | 212 | 320 |
| 88-91 | 129 | 248 | 307 |
| 92-95 | 151 | 244 | 308 |
| 96-98 | 163 | 242 | 310 |
| 99-00 | 101 | 241 | 316 |



16 x 5"/38 Mk 12

DIRECTORS
4

ARCS OF FIRE



Range
18,000 yds 36.0"
FC Radar +2
Mark 4 (FD)

| TARGET SPEED | SHORT | | MEDIUM | | LONG | |
|--------------|-------|-----|--------|-----|------|-----|
| | BRD | NAR | BRD | NAR | BRD | NAR |
| 0-9 | 22 | 15 | 17 | 12 | 14 | 10 |
| 10-18 | 19 | 13 | 15 | 10 | 13 | 9 |
| 19-26 | 18 | 12 | 14 | 10 | 12 | 8 |
| 27-32 | 16 | 12 | 13 | 9 | 11 | 8 |

| COM YDS | 18% SHORT | | MEDIUM | LONG |
|---------|-----------|-------|--------|--------|
| | 2,000 | 6,000 | 10,000 | 18,000 |
| ROF | 10 | 7 | 5 | 2 |
| HORZ | 0 | 0 | 0 | 2 |
| VERT | 7 | 4 | 2 | 2 |

| KTS | 20 | | | | | | |
|-----|----|--|--|--|--|--|--|
| | | | | | | | |

| TORPEDOES | | |
|-----------|---|----|
| TT | 0 | RL |
| | 0 | 0 |

| |
|--------------|
| None |
| Damage Class |
| Settings |
| |
| |
| |
| |

| PROPULSION / MANEUVER | | | | | | | | | | |
|-----------------------|---|----|----|----|----|----|---|---|---|----------|
| Engine Rm | 2 | 20 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | Std Turn |
| Prop/Shaft | 4 | 20 | 17 | 10 | 3 | 0 | 0 | 0 | 0 | 45 |
| Boiler Rm | 8 | 20 | 20 | 18 | 16 | 12 | 8 | 0 | 0 | Emg Turn |
| | | | 5 | 2 | 0 | 0 | 0 | 0 | 0 | 90 |

| Speed Increase | 00-14 kt | 15+ kt | | | | |
|----------------|----------|--------|--|--|--|--|
| | 2.0 | 1.0 | | | | |

| LOSS OF SPEED DURING TURNS | | | | | | | | | | | | | | | | | | | |
|----------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| KTS | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 30 | 32 | 34 | 36 | 38 | 40 |
| STD | 3 | 5 | 6 | 8 | 9 | 10 | 12 | 13 | 15 | 16 | 18 | 19 | 21 | 22 | 24 | 26 | 27 | 28 | 30 |
| EMG | NA | NA | NA | NA | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |

| GUNNERY RECORD | | | | | | | | | | | |
|----------------|-------|--------|------|-----|---|----|-------|--------|------|-----|---|
| T# | RANGE | TARGET | RNDS | TBL | H | T# | RANGE | TARGET | RNDS | TBL | H |
| | | | | | | | | | | | |
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| | | | | | | | | | | | |

| T# | RANGE | TARGET | SETNG | TORPS | ANG | TGT MOVE | ARRIVE |
|----|-------|--------|-------|-------|-----|----------|--------|
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Ships In Class
CALIFORNIA, TENNESSEE



COLORADO Class
BB UNITED STATES

1943 to 1944

2196-4
Displacement 32,600 ts
Complement 1080

SHIP LOG SHEET

Version AOTF1922A



Length 600 ft
Beam 108 ft
Draft 30.2 ft

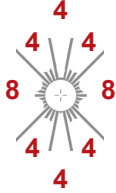


8 x 16"/45 Mk 1, 5, 8

DIRECTORS

2

ARCS OF FIRE



Range

35,000 yds 70.0"

FC Radar +2

Mark 3 (FC)

83%

PENETRATION TABLE

| APCBC | SHORT | | MEDIUM | LONG |
|-------|-------|--------|--------|--------|
| YDS | 4,000 | 10,000 | 21,000 | 35,000 |
| ROF | 5 | 5 | 4 | 2 |
| HORZ | 1 | 2 | 4 | 10 |
| VERT | 28 | 23 | 16 | 11 |

GUNNERY (FCS)

| TARGET | SHORT | | MEDIUM | | LONG | |
|--------|-------|-----|--------|-----|------|-----|
| SPEED | BRD | NAR | BRD | NAR | BRD | NAR |
| 0-9 | 28 | 20 | 22 | 15 | 18 | 13 |
| 10-18 | 23 | 16 | 18 | 12 | 15 | 10 |
| 19-26 | 20 | 14 | 16 | 11 | 13 | 9 |
| 27-32 | 18 | 13 | 14 | 10 | 12 | 8 |

| Targ Sz | Crew | Sea |
|---------|------|-----|
| 3 | | |

| Searchlights | Port | Stbd |
|--------------|------|------|
| | | |

PROTECTION

ARMOR VALUE

HORIZONTAL 4

VERTICAL 10

HIT LOCATION

RANGE HORZ VERT

SHORT 01-05 06-00

MEDIUM 01-19 20-00

LONG 01-39 40-00

23 12 DAMAGE CONTROL (DCR)

| | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|--|
| | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|--|

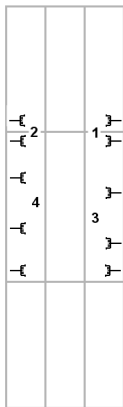
FLAG COMMAND RATING (FCR)

| | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|--|
| | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|--|

W2-2AR

DAMAGE DETERMINATION

| ROLL | CLASS 1 | CLASS 2 | CLASS 3 |
|-------|---------|---------|---------|
| 01-02 | 100 | 202 | 304 |
| 03-04 | 128 | 201 | 302 |
| 05-06 | 102 | 203 | 303 |
| 07-08 | 103 | 205 | 301 |
| 09-10 | 109 | 210 | 305 |
| 11-13 | 104 | 200 | 306 |
| 14-16 | 106 | 246 | - |
| 17-19 | 107 | 206 | - |
| 20-22 | 105 | 207 | 310 |
| 23-25 | 114 | 211 | - |
| 26-28 | 111 | 213 | 312 |
| 29-31 | 121 | 214 | 313 |
| 32-34 | 144 | 215 | 314 |
| 35-37 | 171 | 217 | 315 |
| 38-40 | 165 | 218 | - |
| 41-43 | 135 | 219 | 317 |
| 44-46 | 132 | 220 | - |
| 47-49 | 145 | 221 | - |
| 50-52 | 123 | 222 | - |
| 53-55 | 124 | 223 | - |
| 56-58 | 125 | 224 | - |
| 59-61 | 127 | 226 | - |
| 62-64 | 146 | 227 | - |
| 65-67 | 133 | 229 | 318 |
| 68-70 | 126 | 230 | - |
| 71-73 | 118 | 231 | 305 |
| 74-76 | 116 | 237 | - |
| 77-79 | 115 | 238 | - |
| 80-83 | 108 | 208 | 319 |
| 84-87 | 113 | 212 | 320 |
| 88-91 | 129 | 248 | 307 |
| 92-95 | 151 | 244 | 308 |
| 96-98 | 163 | 242 | 310 |
| 99-00 | 101 | 241 | 316 |

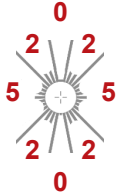


10 x 5"/51 Mk 7, 8, 15

DIRECTORS

2

ARCS OF FIRE



Range

16,000 yds 32.0"

FC Radar +3

Mark 28

18%

PENETRATION TABLE

| APC | SHORT | | MEDIUM | LONG |
|------|-------|-------|--------|--------|
| YDS | 2,000 | 6,000 | 10,000 | 16,000 |
| ROF | 11 | 8 | 5 | 3 |
| HORZ | 0 | 0 | 0 | 1 |
| VERT | 6 | 3 | 2 | 1 |

GUNNERY (FCS)

| TARGET | SHORT | | MEDIUM | | LONG | |
|--------|-------|-----|--------|-----|------|-----|
| SPEED | BRD | NAR | BRD | NAR | BRD | NAR |
| 0-9 | 18 | 13 | 14 | 10 | 12 | 8 |
| 10-18 | 14 | 10 | 11 | 7 | 9 | 6 |
| 19-26 | 12 | 8 | 9 | 6 | 8 | 5 |
| 27-32 | 10 | 7 | 8 | 6 | 7 | 5 |

KTS 21

TORPEDOES

| | | | |
|----|---|----|---|
| TT | 0 | RL | 0 |
|----|---|----|---|

PROPULSION / MANEUVER

| | | | | | | | | |
|------------|---|----|----|----|----|----|---|----------|
| Engine Rm | 2 | 21 | 12 | 0 | 0 | 0 | 0 | Std Turn |
| Prop/Shaft | 4 | 21 | 18 | 11 | 3 | 0 | 0 | 45 |
| Boiler Rm | 8 | 21 | 21 | 19 | 16 | 13 | 9 | Emg Turn |
| | | | 5 | 2 | 0 | 0 | 0 | 90 |

None

Damage Class

Settings

| | | | | | | |
|----------|----------|--------|--|--|--|--|
| Speed | 00-16 kt | 17+ kt | | | | |
| Increase | 3.0 | 1.0 | | | | |

LOSS OF SPEED DURING TURNS

| KTS | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 30 | 32 | 34 | 36 | 38 | 40 |
|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| STD | 3 | 5 | 6 | 8 | 9 | 10 | 12 | 13 | 15 | 16 | 18 | 19 | 21 | 22 | 24 | 26 | 27 | 28 | 30 |
| EMG | NA | NA | NA | NA | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |

GUNNERY RECORD

| T# | RANGE | TARGET | RNDS | TBL | H | T# | RANGE | TARGET | RNDS | TBL | H |
|----|-------|--------|------|-----|---|----|-------|--------|------|-----|---|
| | | | | | | | | | | | |
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| | | | | | | | | | | | |

| T# | RANGE | TARGET | SETNG | TORPS | ANG | TGT MOVE | ARRIVE |
|----|-------|--------|-------|-------|-----|----------|--------|
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Ships In Class
COLORADO, MARYLAND, WEST VIRGINIA



NORTH CAROLINA Class
BB UNITED STATES

1944 to 1945

2201-2
Displacement 37,484 ts
Complement 1880

SHIP LOG SHEET

Version AOTF1922A



Length 714 ft
Beam 108 ft
Draft 26.8 ft
Boilers and engines were combined into four machinery compartments. Any damage reference to a boiler room is considered to be engine room.



9 x 16"/45 Mk 6 M1

DIRECTORS: 2

ARCS OF FIRE

Range: **36,500 yds** 73.0"

FC Radar: +3
Mark 13

87%

| APCBC | PENETRATION TABLE | | | |
|-------|-------------------|--------|--------|--------|
| | SHORT | MEDIUM | LONG | |
| YDS | 3,000 | 8,000 | 21,000 | 36,500 |
| ROF | 6 | 6 | 4 | 2 |
| HORZ | 1 | 2 | 4 | 19 |
| VERT | 29 | 25 | 17 | 10 |

GUNNERY (FCS)

| TARGET SPEED | SHORT | | MEDIUM | | LONG | |
|--------------|-------|-----|--------|-----|------|-----|
| | BRD | NAR | BRD | NAR | BRD | NAR |
| 0-9 | 29 | 20 | 23 | 16 | 19 | 14 |
| 10-18 | 26 | 18 | 20 | 14 | 17 | 12 |
| 19-26 | 24 | 17 | 18 | 13 | 16 | 11 |
| 27-32 | 22 | 15 | 17 | 12 | 15 | 10 |

| Targ Sz | Crew | Sea |
|---------|------|-----|
| 3 | | |

Searchlights: Port Stbd

PROTECTION

ARMOR VALUE

| | |
|------------|----|
| HORIZONTAL | 6 |
| VERTICAL | 13 |

HIT LOCATION

| | RANGE | HORZ | VERT |
|--------|-------|-------|------|
| SHORT | 01-05 | 06-00 | |
| MEDIUM | 01-19 | 20-00 | |
| LONG | 01-39 | 40-00 | |

DAMAGE CONTROL (DCR)

| | | | | | | | | | |
|----|----|--|--|--|--|--|--|--|--|
| 25 | 13 | | | | | | | | |
|----|----|--|--|--|--|--|--|--|--|

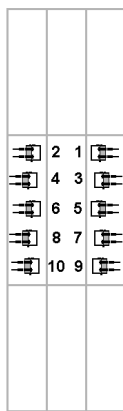
FLAG COMMAND RATING (FCR)

| | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|
| | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|

W2-2AR

DAMAGE DETERMINATION

| ROLL | CLASS 1 | CLASS 2 | CLASS 3 |
|-------|---------|---------|---------|
| 01-02 | 100 | 202 | 304 |
| 03-04 | 128 | 201 | 302 |
| 05-06 | 102 | 203 | 303 |
| 07-08 | 103 | 205 | 301 |
| 09-10 | 109 | 210 | 305 |
| 11-13 | 104 | 200 | 306 |
| 14-16 | 106 | 246 | - |
| 17-19 | 107 | 206 | - |
| 20-22 | 105 | 207 | 310 |
| 23-25 | 114 | 211 | - |
| 26-28 | 111 | 213 | 312 |
| 29-31 | 121 | 214 | 313 |
| 32-34 | 144 | 215 | 314 |
| 35-37 | 171 | 217 | 315 |
| 38-40 | 165 | 218 | - |
| 41-43 | 135 | 219 | 317 |
| 44-46 | 132 | 220 | - |
| 47-49 | 145 | 221 | - |
| 50-52 | 123 | 222 | - |
| 53-55 | 124 | 223 | - |
| 56-58 | 125 | 224 | - |
| 59-61 | 127 | 226 | - |
| 62-64 | 146 | 227 | - |
| 65-67 | 133 | 229 | 318 |
| 68-70 | 126 | 230 | - |
| 71-73 | 118 | 231 | 305 |
| 74-76 | 116 | 237 | - |
| 77-79 | 115 | 238 | - |
| 80-83 | 108 | 208 | 319 |
| 84-87 | 113 | 212 | 320 |
| 88-91 | 129 | 248 | 307 |
| 92-95 | 151 | 244 | 308 |
| 96-98 | 163 | 242 | 310 |
| 99-00 | 101 | 241 | 316 |



20 x 5"/38 Mk 12

DIRECTORS: 4

ARCS OF FIRE

Range: **18,000 yds** 36.0"

FC Radar: +3
Mark 12

18%

| COM | PENETRATION TABLE | | | |
|------|-------------------|--------|--------|--------|
| | SHORT | MEDIUM | LONG | |
| YDS | 2,000 | 6,000 | 10,000 | 18,000 |
| ROF | 10 | 7 | 5 | 2 |
| HORZ | 0 | 0 | 0 | 2 |
| VERT | 7 | 4 | 2 | 2 |

GUNNERY (FCS)

| TARGET SPEED | SHORT | | MEDIUM | | LONG | |
|--------------|-------|-----|--------|-----|------|-----|
| | BRD | NAR | BRD | NAR | BRD | NAR |
| 0-9 | 22 | 15 | 17 | 12 | 14 | 10 |
| 10-18 | 19 | 13 | 15 | 10 | 13 | 9 |
| 19-26 | 18 | 12 | 14 | 10 | 12 | 8 |
| 27-32 | 16 | 12 | 13 | 9 | 11 | 8 |

KTS 28

| | | | | | | | |
|--|--|--|--|--|--|--|--|
| | | | | | | | |
|--|--|--|--|--|--|--|--|

TORPEDOES

| | | | |
|----|---|----|--|
| TT | 0 | RL | |
|----|---|----|--|

PROPULSION / MANEUVER

| | 4 | 28 | 25 | 16 | 5 | 0 | 0 |
|------------|---|----|----|----|---|---|---|
| Engine Rm | 4 | 28 | 25 | 16 | 5 | 0 | 0 |
| Prop/Shaft | 4 | 28 | 24 | 14 | 4 | 0 | 0 |
| Boiler Rm | 0 | 28 | 0 | 0 | 0 | 0 | 0 |

Std Turn: 45
Emg Turn: 90

None

Damage Class

Settings

Speed Increase

| 00-23 kt | 24+ kt | | | | |
|----------|--------|--|--|--|--|
| 4.0 | 1.0 | | | | |

LOSS OF SPEED DURING TURNS

| KTS | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 30 | 32 | 34 | 36 | 38 | 40 |
|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| STD | 3 | 5 | 6 | 8 | 9 | 10 | 12 | 13 | 15 | 16 | 18 | 19 | 21 | 22 | 24 | 26 | 27 | 28 | 30 |
| EMG | NA | NA | NA | NA | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |

GUNNERY RECORD

| T# | RANGE | TARGET | RNDS | TBL | H |
|----|-------|--------|------|-----|---|
| | | | | | |
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| | | | | | |
| | | | | | |

| T# | RANGE | TARGET | SETNG | TORPS | ANG | TGT MOVE | ARRIVE |
|----|-------|--------|-------|-------|-----|----------|--------|
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Ships In Class
NORTH CAROLINA, WASHINGTON



INDIANA Class
BB UNITED STATES

1943 to 1945

2205-1
Displacement 37,970 ts
Complement 1793

SHIP LOG SHEET

Version AOTF1922A



Boilers and engines were combined into four machinery compartments. Any damage reference to a boiler room is considered to be engine room.

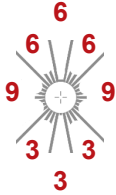
Length 666 ft
Beam 108 ft
Draft 29.2 ft



9 x 16"/45 Mk 6 M1

DIRECTORS
2

ARCS OF FIRE



Range
36,500 yds 73.0"
FC Radar +3
Mark 8 (CXEM)

| TARGET SPEED | SHORT | | MEDIUM | | LONG | |
|--------------|-------|-----|--------|-----|------|-----|
| | BRD | NAR | BRD | NAR | BRD | NAR |
| 0-9 | 29 | 20 | 23 | 16 | 19 | 14 |
| 10-18 | 26 | 18 | 20 | 14 | 17 | 12 |
| 19-26 | 24 | 17 | 18 | 13 | 16 | 11 |
| 27-32 | 22 | 15 | 17 | 12 | 15 | 10 |

| APCBC YDS | PENETRATION TABLE | | | |
|-----------|-------------------|--------|------|----|
| | SHORT | MEDIUM | LONG | |
| ROF | 6 | 6 | 4 | 2 |
| HORZ | 1 | 2 | 4 | 19 |
| VERT | 29 | 25 | 17 | 10 |

| | | |
|--------------|------|------|
| Targ Sz | Crew | Sea |
| 3 | | |
| Searchlights | Port | Stbd |

| PROTECTION | |
|-------------|----|
| ARMOR VALUE | |
| HORIZONTAL | 7 |
| VERTICAL | 14 |

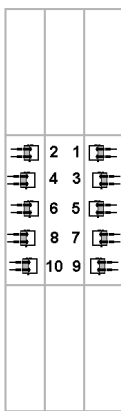
| HIT LOCATION | | |
|--------------|-------|-------|
| RANGE | HORZ | VERT |
| SHORT | 01-05 | 06-00 |
| MEDIUM | 01-19 | 20-00 |
| LONG | 01-39 | 40-00 |

| | | | | | | | |
|----|----|-----------------------------|--|--|--|--|--|
| 25 | 13 | DAMAGE CONTROL (DCR) | | | | | |
| | | | | | | | |

| | | | | | | | |
|----------------------------------|--|--|--|--|--|--|--|
| FLAG COMMAND RATING (FCR) | | | | | | | |
| | | | | | | | |

W2-2AR

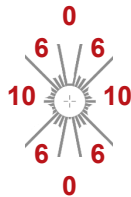
| DAMAGE DETERMINATION | | | |
|----------------------|---------|---------|---------|
| ROLL | CLASS 1 | CLASS 2 | CLASS 3 |
| 01-02 | 100 | 202 | 304 |
| 03-04 | 128 | 201 | 302 |
| 05-06 | 102 | 203 | 303 |
| 07-08 | 103 | 205 | 301 |
| 09-10 | 109 | 210 | 305 |
| 11-13 | 104 | 200 | 306 |
| 14-16 | 106 | 246 | - |
| 17-19 | 107 | 206 | - |
| 20-22 | 105 | 207 | 310 |
| 23-25 | 114 | 211 | - |
| 26-28 | 111 | 213 | 312 |
| 29-31 | 121 | 214 | 313 |
| 32-34 | 144 | 215 | 314 |
| 35-37 | 171 | 217 | 315 |
| 38-40 | 165 | 218 | - |
| 41-43 | 135 | 219 | 317 |
| 44-46 | 132 | 220 | - |
| 47-49 | 145 | 221 | - |
| 50-52 | 123 | 222 | - |
| 53-55 | 124 | 223 | - |
| 56-58 | 125 | 224 | - |
| 59-61 | 127 | 226 | - |
| 62-64 | 146 | 227 | - |
| 65-67 | 133 | 229 | 318 |
| 68-70 | 126 | 230 | - |
| 71-73 | 118 | 231 | 305 |
| 74-76 | 116 | 237 | - |
| 77-79 | 115 | 238 | - |
| 80-83 | 108 | 208 | 319 |
| 84-87 | 113 | 212 | 320 |
| 88-91 | 129 | 248 | 307 |
| 92-95 | 151 | 244 | 308 |
| 96-98 | 163 | 242 | 310 |
| 99-00 | 101 | 241 | 316 |



20 x 5"/38 Mk 12

DIRECTORS
4

ARCS OF FIRE



Range
18,000 yds 36.0"
FC Radar +2
Mark 4 (FD)

| TARGET SPEED | SHORT | | MEDIUM | | LONG | |
|--------------|-------|-----|--------|-----|------|-----|
| | BRD | NAR | BRD | NAR | BRD | NAR |
| 0-9 | 22 | 15 | 17 | 12 | 14 | 10 |
| 10-18 | 19 | 13 | 15 | 10 | 13 | 9 |
| 19-26 | 18 | 12 | 14 | 10 | 12 | 8 |
| 27-32 | 16 | 12 | 13 | 9 | 11 | 8 |

| COM YDS | PENETRATION TABLE | | | |
|---------|-------------------|--------|------|---|
| | SHORT | MEDIUM | LONG | |
| ROF | 10 | 7 | 5 | 2 |
| HORZ | 0 | 0 | 0 | 2 |
| VERT | 7 | 4 | 2 | 2 |

| | | | | | | | | | |
|-----|----|--|--|--|--|--|--|--|--|
| KTS | 28 | | | | | | | | |
|-----|----|--|--|--|--|--|--|--|--|

| | | |
|-----------|---|----|
| TORPEDOES | | |
| TT | 0 | RL |

| | |
|--------------|--|
| None | |
| Damage Class | |
| Settings | |

| PROPULSION / MANEUVER | | | | | | | | | |
|-----------------------|---|----|----|----|---|---|---|----------|--|
| Engine Rm | 4 | 28 | 25 | 16 | 5 | 0 | 0 | Std Turn | |
| Prop/Shaft | 4 | 28 | 24 | 14 | 4 | 0 | 0 | 45 | |
| Boiler Rm | 0 | 28 | 0 | 0 | 0 | 0 | 0 | Emg Turn | |
| | | | 0 | 0 | 0 | 0 | 0 | 90 | |

| | | | | | | | |
|----------------|----------|--------|--|--|--|--|--|
| Speed Increase | 00-23 kt | 24+ kt | | | | | |
| | 4.0 | 1.0 | | | | | |

| LOSS OF SPEED DURING TURNS | | | | | | | | | | | | | | | | | | | |
|----------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| KTS | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 30 | 32 | 34 | 36 | 38 | 40 |
| STD | 3 | 5 | 6 | 8 | 9 | 10 | 12 | 13 | 15 | 16 | 18 | 19 | 21 | 22 | 24 | 26 | 27 | 28 | 30 |
| EMG | NA | NA | NA | NA | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |

| GUNNERY RECORD | | | | | | | | | | | |
|----------------|-------|--------|------|-----|---|----|-------|--------|------|-----|---|
| T# | RANGE | TARGET | RNDS | TBL | H | T# | RANGE | TARGET | RNDS | TBL | H |
| | | | | | | | | | | | |
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| T# | RANGE | TARGET | SETNG | TORPS | ANG | TGT MOVE | ARRIVE |
|----|-------|--------|-------|-------|-----|----------|--------|
| | | | | | | | |
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Ships In Class
ALABAMA, INDIANA, MASSACHUSETTS



SOUTH DAKOTA Class
BB UNITED STATES

1943 to 1945

2797-1
Displacement 37,970 ts
Complement 1793

SHIP LOG SHEET

Version AOTF1922A



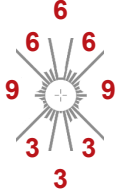
Boilers and engines were combined into four machinery compartments. Any damage reference to a boiler room is considered to be engine room.



9 x 16"/45 Mk 6 M1

DIRECTORS
2

ARCS OF FIRE



Range
36,500 yds 73.0"
FC Radar +2
Mark 3 (FC)

| TARGET SPEED | SHORT | | MEDIUM | | LONG | |
|--------------|-------|-----|--------|-----|------|-----|
| | BRD | NAR | BRD | NAR | BRD | NAR |
| 0-9 | 29 | 20 | 23 | 16 | 19 | 14 |
| 10-18 | 26 | 18 | 20 | 14 | 17 | 12 |
| 19-26 | 24 | 17 | 18 | 13 | 16 | 11 |
| 27-32 | 22 | 15 | 17 | 12 | 15 | 10 |

| APCBC YDS | SHORT | | MEDIUM | LONG |
|-----------|-------|-------|--------|--------|
| | 3,000 | 8,000 | 21,000 | 36,500 |
| ROF | 6 | 6 | 4 | 2 |
| HORZ | 1 | 2 | 4 | 19 |
| VERT | 29 | 25 | 17 | 10 |

| | | |
|---------|------|-----|
| Targ Sz | Crew | Sea |
| 3 | | |

| PROTECTION ARMOR VALUE | |
|------------------------|----|
| HORIZONTAL | 7 |
| VERTICAL | 14 |

| RANGE | HIT LOCATION | |
|--------|--------------|-------|
| | HORZ | VERT |
| SHORT | 01-05 | 06-00 |
| MEDIUM | 01-19 | 20-00 |
| LONG | 01-39 | 40-00 |

Searchlights Port Stbd

| | | | | | | | | | |
|----|----|-----------------------------|--|--|--|--|--|--|--|
| 25 | 13 | DAMAGE CONTROL (DCR) | | | | | | | |
| | | | | | | | | | |

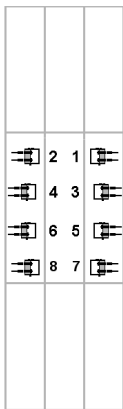
FLAG COMMAND RATING (FCR)

| | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|
| | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|

W2-2AR

DAMAGE DETERMINATION

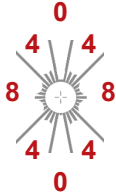
| ROLL | CLASS 1 | CLASS 2 | CLASS 3 |
|-------|---------|---------|---------|
| 01-02 | 100 | 202 | 304 |
| 03-04 | 128 | 201 | 302 |
| 05-06 | 102 | 203 | 303 |
| 07-08 | 103 | 205 | 301 |
| 09-10 | 109 | 210 | 305 |
| 11-13 | 104 | 200 | 306 |
| 14-16 | 106 | 246 | - |
| 17-19 | 107 | 206 | - |
| 20-22 | 105 | 207 | 310 |
| 23-25 | 114 | 211 | - |
| 26-28 | 111 | 213 | 312 |
| 29-31 | 121 | 214 | 313 |
| 32-34 | 144 | 215 | 314 |
| 35-37 | 171 | 217 | 315 |
| 38-40 | 165 | 218 | - |
| 41-43 | 135 | 219 | 317 |
| 44-46 | 132 | 220 | - |
| 47-49 | 145 | 221 | - |
| 50-52 | 123 | 222 | - |
| 53-55 | 124 | 223 | - |
| 56-58 | 125 | 224 | - |
| 59-61 | 127 | 226 | - |
| 62-64 | 146 | 227 | - |
| 65-67 | 133 | 229 | 318 |
| 68-70 | 126 | 230 | - |
| 71-73 | 118 | 231 | 305 |
| 74-76 | 116 | 237 | - |
| 77-79 | 115 | 238 | - |
| 80-83 | 108 | 208 | 319 |
| 84-87 | 113 | 212 | 320 |
| 88-91 | 129 | 248 | 307 |
| 92-95 | 151 | 244 | 308 |
| 96-98 | 163 | 242 | 310 |
| 99-00 | 101 | 241 | 316 |



16 x 5"/38 Mk 12

DIRECTORS
4

ARCS OF FIRE



Range
18,000 yds 36.0"
FC Radar +3
Mark 8 (CXEM)

| TARGET SPEED | SHORT | | MEDIUM | | LONG | |
|--------------|-------|-----|--------|-----|------|-----|
| | BRD | NAR | BRD | NAR | BRD | NAR |
| 0-9 | 22 | 15 | 17 | 12 | 14 | 10 |
| 10-18 | 19 | 13 | 15 | 10 | 13 | 9 |
| 19-26 | 18 | 12 | 14 | 10 | 12 | 8 |
| 27-32 | 16 | 12 | 13 | 9 | 11 | 8 |

| COM YDS | SHORT | | MEDIUM | LONG |
|---------|-------|-------|--------|--------|
| | 2,000 | 6,000 | 10,000 | 18,000 |
| ROF | 10 | 7 | 5 | 2 |
| HORZ | 0 | 0 | 0 | 2 |
| VERT | 7 | 4 | 2 | 2 |

KTS 28

| | | |
|-----------|---|----|
| TORPEDOES | | |
| TT | 0 | RL |

PROPULSION / MANEUVER

| | 4 | 28 | 25 | 16 | 5 | 0 | 0 | Std Turn |
|------------|---|----|----|----|---|---|---|----------|
| Engine Rm | 4 | 28 | 25 | 16 | 5 | 0 | 0 | 45 |
| Prop/Shaft | 4 | 28 | 24 | 14 | 4 | 0 | 0 | Emg Turn |
| Boiler Rm | 0 | 28 | 0 | 0 | 0 | 0 | 0 | 90 |
| | | | 0 | 0 | 0 | 0 | 0 | |

| | |
|--------------|--|
| None | |
| Damage Class | |
| Settings | |

| | | | | | | |
|----------------|----------|--------|--|--|--|--|
| Speed Increase | 00-23 kt | 24+ kt | | | | |
| | 4.0 | 1.0 | | | | |

LOSS OF SPEED DURING TURNS

| KTS | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 30 | 32 | 34 | 36 | 38 | 40 |
|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| STD | 3 | 5 | 6 | 8 | 9 | 10 | 12 | 13 | 15 | 16 | 18 | 19 | 21 | 22 | 24 | 26 | 27 | 28 | 30 |
| EMG | NA | NA | NA | NA | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |

GUNNERY RECORD

| T# | RANGE | TARGET | RNDS | TBL | H |
|----|-------|--------|------|-----|---|
| | | | | | |
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| T# | RANGE | TARGET | RNDS | TBL | H |
|----|-------|--------|------|-----|---|
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| | | | | | |

| T# | RANGE | TARGET | SETNG | TORPS | ANG | TGT MOVE | ARRIVE |
|----|-------|--------|-------|-------|-----|----------|--------|
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Ships In Class
SOUTH DAKOTA



IOWA Class
BB UNITED STATES

1943 to 1945

2207-0
Displacement 48,110 ts
Complement 1921

SHIP LOG SHEET

Version AOTF1922A



Length 860 ft
Beam 108 ft
Draft 29 ft

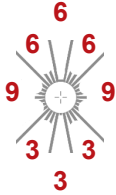


9 x 16"/50 Mk 7

DIRECTORS

2

ARCS OF FIRE



Range

42,500 yds 85.0"

FC Radar +3
Mark 8 (CXEM)

| TARGET SPEED | SHORT | | MEDIUM | | LONG | |
|--------------|-------|-----|--------|-----|------|-----|
| | BRD | NAR | BRD | NAR | BRD | NAR |
| 0-9 | 29 | 20 | 23 | 16 | 19 | 14 |
| 10-18 | 26 | 18 | 20 | 14 | 17 | 12 |
| 19-26 | 24 | 17 | 18 | 13 | 16 | 11 |
| 27-32 | 22 | 15 | 17 | 12 | 15 | 10 |

| APCBC YDS | SHORT | | MEDIUM | LONG |
|-----------|-------|--------|--------|--------|
| | 4,000 | 10,000 | 21,000 | 42,500 |
| ROF | 6 | 6 | 4 | 2 |
| HORZ | 1 | 3 | 4 | 11 |
| VERT | 32 | 26 | 19 | 13 |

| Targ Sz | Crew | Sea |
|---------|------|-----|
| 4 | | |

| Searchlights | Port | Stbd |
|--------------|------|------|
| | | |

| PROTECTION | |
|-------------|----|
| ARMOR VALUE | |
| HORIZONTAL | 7 |
| VERTICAL | 14 |

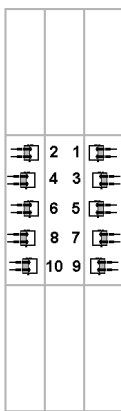
| HIT LOCATION | | |
|--------------|-------|-------|
| RANGE | HORZ | VERT |
| SHORT | 01-05 | 06-00 |
| MEDIUM | 01-19 | 20-00 |
| LONG | 01-39 | 40-00 |

| | | | | | | | |
|----|----|-----------------------------|--|--|--|--|--|
| 28 | 14 | DAMAGE CONTROL (DCR) | | | | | |
| | | | | | | | |

| | | | | | | | |
|----------------------------------|--|--|--|--|--|--|--|
| FLAG COMMAND RATING (FCR) | | | | | | | |
| | | | | | | | |

W2-2AR

| DAMAGE DETERMINATION | | | |
|----------------------|---------|---------|---------|
| ROLL | CLASS 1 | CLASS 2 | CLASS 3 |
| 01-02 | 100 | 202 | 304 |
| 03-04 | 128 | 201 | 302 |
| 05-06 | 102 | 203 | 303 |
| 07-08 | 103 | 205 | 301 |
| 09-10 | 109 | 210 | 305 |
| 11-13 | 104 | 200 | 306 |
| 14-16 | 106 | 246 | - |
| 17-19 | 107 | 206 | - |
| 20-22 | 105 | 207 | 310 |
| 23-25 | 114 | 211 | - |
| 26-28 | 111 | 213 | 312 |
| 29-31 | 121 | 214 | 313 |
| 32-34 | 144 | 215 | 314 |
| 35-37 | 171 | 217 | 315 |
| 38-40 | 165 | 218 | - |
| 41-43 | 135 | 219 | 317 |
| 44-46 | 132 | 220 | - |
| 47-49 | 145 | 221 | - |
| 50-52 | 123 | 222 | - |
| 53-55 | 124 | 223 | - |
| 56-58 | 125 | 224 | - |
| 59-61 | 127 | 226 | - |
| 62-64 | 146 | 227 | - |
| 65-67 | 133 | 229 | 318 |
| 68-70 | 126 | 230 | - |
| 71-73 | 118 | 231 | 305 |
| 74-76 | 116 | 237 | - |
| 77-79 | 115 | 238 | - |
| 80-83 | 108 | 208 | 319 |
| 84-87 | 113 | 212 | 320 |
| 88-91 | 129 | 248 | 307 |
| 92-95 | 151 | 244 | 308 |
| 96-98 | 163 | 242 | 310 |
| 99-00 | 101 | 241 | 316 |

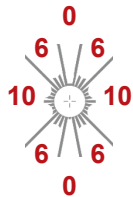


20 x 5"/38 Mk 12

DIRECTORS

4

ARCS OF FIRE



Range

18,000 yds 36.0"

FC Radar +2
Mark 4 (FD)

| TARGET SPEED | SHORT | | MEDIUM | | LONG | |
|--------------|-------|-----|--------|-----|------|-----|
| | BRD | NAR | BRD | NAR | BRD | NAR |
| 0-9 | 22 | 15 | 17 | 12 | 14 | 10 |
| 10-18 | 19 | 13 | 15 | 10 | 13 | 9 |
| 19-26 | 18 | 12 | 14 | 10 | 12 | 8 |
| 27-32 | 16 | 12 | 13 | 9 | 11 | 8 |

| COM YDS | SHORT | | MEDIUM | LONG |
|---------|-------|-------|--------|--------|
| | 2,000 | 6,000 | 10,000 | 18,000 |
| ROF | 10 | 7 | 5 | 2 |
| HORZ | 0 | 0 | 0 | 2 |
| VERT | 7 | 4 | 2 | 2 |

| | | | | | | | | | |
|-----|----|--|--|--|--|--|--|--|--|
| KTS | 33 | | | | | | | | |
|-----|----|--|--|--|--|--|--|--|--|

| TORPEDOES | | |
|-----------|---|----|
| TT | 0 | RL |

| |
|--------------|
| None |
| Damage Class |
| Settings |

| PROPULSION / MANEUVER | | | | | | | | | | |
|-----------------------|---|----|----|----|---|---|---|----------|--|--|
| Engine Rm | 4 | 33 | 29 | 19 | 6 | 0 | 0 | Std Turn | | |
| Prop/Shaft | 4 | 33 | 29 | 17 | 4 | 0 | 0 | 45 | | |
| Boiler Rm | 4 | 33 | 30 | 20 | 8 | 0 | 0 | Emg Turn | | |
| | | | 0 | 0 | 0 | 0 | 0 | 60 | | |

| Speed Increase | 00-08 kt | 09-24 kt | 25-28 kt | 29+ kt |
|----------------|----------|----------|----------|--------|
| | 5.0 | 4.0 | 2.0 | 1.0 |

| LOSS OF SPEED DURING TURNS | | | | | | | | | | | | | | | | | | | |
|----------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| KTS | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 30 | 32 | 34 | 36 | 38 | 40 |
| STD | 3 | 5 | 6 | 8 | 9 | 10 | 12 | 13 | 15 | 16 | 18 | 19 | 21 | 22 | 24 | 26 | 27 | 28 | 30 |
| EMG | NA | NA | NA | NA | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |

| GUNNERY RECORD | | | | | | | | | | | |
|----------------|-------|--------|------|-----|---|----|-------|--------|------|-----|---|
| T# | RANGE | TARGET | RNDS | TBL | H | T# | RANGE | TARGET | RNDS | TBL | H |
| | | | | | | | | | | | |
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| | | | | | | | | | | | |

| T# | RANGE | TARGET | SETNG | TORPS | ANG | TGT MOVE | ARRIVE |
|----|-------|--------|-------|-------|-----|----------|--------|
| | | | | | | | |
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Ships In Class
IOWA, MISSOURI, NEW JERSEY, WISCONSIN



NORTHAMPTON Class
CA UNITED STATES

1944 to 1945

2233-3
Displacement 9,006 ts
Complement 617

SHIP LOG SHEET

Version AOTF1922A



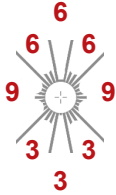
Length 582 ft
Beam 66 ft
Draft 19.4 ft



9 x 8"/55 Mk 9-10

DIRECTORS
2

ARCS OF FIRE



Range
32,000 yds 64.0"
FC Radar **+3**
Mark 8 (CXEM)

| TARGET SPEED | SHORT | | MEDIUM | | LONG | |
|--------------|-------|-----|--------|-----|------|-----|
| | BRD | NAR | BRD | NAR | BRD | NAR |
| 0-9 | 23 | 16 | 18 | 13 | 15 | 11 |
| 10-18 | 18 | 12 | 14 | 10 | 12 | 8 |
| 19-26 | 15 | 11 | 12 | 8 | 10 | 7 |
| 27-32 | 13 | 9 | 10 | 7 | 9 | 6 |

| APCBC YDS | SHORT | | MEDIUM | LONG |
|-----------|-------|-------|--------|--------|
| | 3,000 | 8,000 | 15,000 | 32,000 |
| ROF | 10 | 7 | 5 | 2 |
| HORZ | 0 | 1 | 1 | 5 |
| VERT | 15 | 10 | 6 | 2 |

| Targ Sz | Crew | Sea |
|---------|------|-----|
| 1 | | |

| Searchlights | Port | Stbd |
|--------------|------|------|
| | | |

| PROTECTION | |
|-------------|---|
| ARMOR VALUE | |
| HORIZONTAL | 1 |
| VERTICAL | 2 |

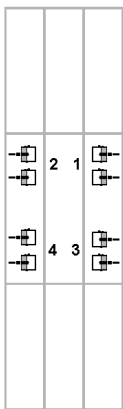
| | HIT LOCATION | | |
|--------|--------------|-------|------|
| | RANGE | HORZ | VERT |
| SHORT | 01-05 | 06-00 | |
| MEDIUM | 01-19 | 20-00 | |
| LONG | 01-39 | 40-00 | |

| 12 | 6 | DAMAGE CONTROL (DCR) | | | | | | | | | |
|----|---|----------------------|--|--|--|--|--|--|--|--|--|
| | | | | | | | | | | | |

| FLAG COMMAND RATING (FCR) | | | | | | | | | | | |
|---------------------------|--|--|--|--|--|--|--|--|--|--|--|
| | | | | | | | | | | | |

W2-2AR

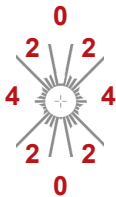
| DAMAGE DETERMINATION | | | | |
|----------------------|---------|---------|---------|--|
| ROLL | CLASS 1 | CLASS 2 | CLASS 3 | |
| 01-02 | 100 | 202 | 304 | |
| 03-04 | 128 | 201 | 302 | |
| 05-06 | 102 | 203 | 303 | |
| 07-08 | 103 | 205 | 301 | |
| 09-10 | 109 | 210 | 305 | |
| 11-13 | 104 | 200 | 306 | |
| 14-16 | 106 | 246 | - | |
| 17-19 | 107 | 206 | - | |
| 20-22 | 105 | 207 | 310 | |
| 23-25 | 114 | 211 | - | |
| 26-28 | 111 | 213 | 312 | |
| 29-31 | 121 | 214 | 313 | |
| 32-34 | 144 | 215 | 314 | |
| 35-37 | 171 | 217 | 315 | |
| 38-40 | 165 | 218 | - | |
| 41-43 | 135 | 219 | 317 | |
| 44-46 | 132 | 220 | - | |
| 47-49 | 145 | 221 | - | |
| 50-52 | 123 | 222 | - | |
| 53-55 | 124 | 223 | - | |
| 56-58 | 125 | 224 | - | |
| 59-61 | 127 | 226 | - | |
| 62-64 | 146 | 227 | - | |
| 65-67 | 133 | 229 | 318 | |
| 68-70 | 126 | 230 | - | |
| 71-73 | 118 | 231 | 305 | |
| 74-76 | 116 | 237 | - | |
| 77-79 | 115 | 238 | - | |
| 80-83 | 108 | 208 | 319 | |
| 84-87 | 113 | 212 | 320 | |
| 88-91 | 129 | 248 | 307 | |
| 92-95 | 151 | 244 | 308 | |
| 96-98 | 163 | 242 | 310 | |
| 99-00 | 101 | 241 | 316 | |



8 x 5"/25 Mk 10 DP

DIRECTORS
2

ARCS OF FIRE



Range
14,500 yds 29.0"
FC Radar **+2**
Mark 4 (FD)

| TARGET SPEED | SHORT | | MEDIUM | | LONG | |
|--------------|-------|-----|--------|-----|------|-----|
| | BRD | NAR | BRD | NAR | BRD | NAR |
| 0-9 | 18 | 13 | 14 | 10 | 12 | 8 |
| 10-18 | 14 | 10 | 11 | 7 | 9 | 6 |
| 19-26 | 12 | 8 | 9 | 6 | 8 | 5 |
| 27-32 | 10 | 7 | 8 | 6 | 7 | 5 |

| COM YDS | SHORT | | MEDIUM | LONG |
|---------|-------|-------|--------|--------|
| | 2,000 | 4,000 | 8,000 | 14,500 |
| ROF | 10 | 8 | 5 | 2 |
| HORZ | 0 | 0 | 0 | 2 |
| VERT | 5 | 3 | 2 | 1 |

| | | | | | | | | | | |
|-----|----|--|--|--|--|--|--|--|--|--|
| KTS | 32 | | | | | | | | | |
|-----|----|--|--|--|--|--|--|--|--|--|

| TORPEDOES | | |
|-----------|---|----|
| TT | 0 | RL |
| | 0 | 0 |

| PROPULSION / MANEUVER | | | | | | | | | | | |
|-----------------------|---|----|----|----|---|---|---|----------|----------|--|--|
| Engine Rm | 2 | 32 | 18 | 0 | 0 | 0 | 0 | | Std Turn | | |
| Prop/Shaft | 4 | 32 | 28 | 16 | 4 | 0 | 0 | 45 | | | |
| Boiler Rm | 4 | 32 | 29 | 20 | 7 | 0 | 0 | Emg Turn | | | |
| | | | 0 | 0 | 0 | 0 | 0 | 90 | | | |

| | |
|--------------|--|
| None | |
| Damage Class | |
| Settings | |

| Speed Increase | 00-06 kt | 07-16 kt | 17-20 kt | 21-23 kt | 24-25 kt | 26+ kt |
|----------------|----------|----------|----------|----------|----------|--------|
| | 7.0 | 5.0 | 4.0 | 3.0 | 2.0 | 1.0 |

| LOSS OF SPEED DURING TURNS | | | | | | | | | | | | | | | | | | | |
|----------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| KTS | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 30 | 32 | 34 | 36 | 38 | 40 |
| STD | 3 | 5 | 6 | 8 | 9 | 10 | 12 | 13 | 15 | 16 | 18 | 19 | 21 | 22 | 24 | 26 | 27 | 28 | 30 |
| EMG | NA | NA | NA | NA | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |

| GUNNERY RECORD | | | | | | | | | | | |
|----------------|-------|--------|------|-----|---|----|-------|--------|------|-----|---|
| T# | RANGE | TARGET | RNDS | TBL | H | T# | RANGE | TARGET | RNDS | TBL | H |
| | | | | | | | | | | | |
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| T# | RANGE | TARGET | SETNG | TORPS | ANG | TGT MOVE | ARRIVE |
|----|-------|--------|-------|-------|-----|----------|--------|
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Ships In Class
AUGUSTA, CHESTER, CHICAGO, HOUSTON, LOUISVILLE,
NORTHAMPTON



PORTLAND Class
CA UNITED STATES

1944 to 1945

2239-2
Displacement 10,258 ts
Complement 807

SHIP LOG SHEET

Version AOTF1922A



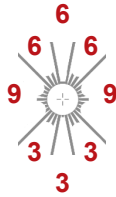
Length 592 ft
Beam 66 ft
Draft 21.5 ft



9 x 8"55 Mk 9-10

DIRECTORS
2

ARCS OF FIRE



Range
32,000 yds 64.0"
FC Radar **+3**
Mark 8 (CXEM)

| TARGET SPEED | GUNNERY (FCS) | | |
|--------------|---------------|----------------|--------------|
| | SHORT BRD NAR | MEDIUM BRD NAR | LONG BRD NAR |
| 0-9 | 29 20 | 23 16 | 19 14 |
| 10-18 | 26 18 | 20 14 | 17 12 |
| 19-26 | 24 17 | 18 13 | 16 11 |
| 27-32 | 22 15 | 17 12 | 15 10 |

| APCBC YDS | PENETRATION TABLE | | | |
|-----------|-------------------|----------|----------|----------|
| | SHORT | MEDIUM | LONG | |
| ROF | 10 | 7 | 5 | 2 |
| HORZ | 0 | 1 | 1 | 5 |
| VERT | 15 | 10 | 6 | 2 |

| Targ Sz | Crew | Sea |
|----------|------|-----|
| 2 | | |

| PROTECTION ARMOR VALUE | |
|------------------------|----------|
| HORIZONTAL | 2 |
| VERTICAL | 3 |

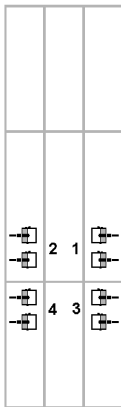
| RANGE | HIT LOCATION | |
|--------|--------------|-------|
| | HORZ | VERT |
| SHORT | 01-05 | 06-00 |
| MEDIUM | 01-19 | 20-00 |
| LONG | 01-39 | 40-00 |

| 13 | 7 | DAMAGE CONTROL (DCR) | | | | | | | | | | | | |
|----|---|----------------------|--|--|--|--|--|--|--|--|--|--|--|--|
| | | | | | | | | | | | | | | |

| FLAG COMMAND RATING (FCR) | | | | | | | | | | | |
|---------------------------|--|--|--|--|--|--|--|--|--|--|--|
| | | | | | | | | | | | |

W2-2AR

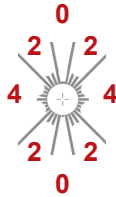
| ROLL | DAMAGE DETERMINATION | | |
|-------|----------------------|---------|---------|
| | CLASS 1 | CLASS 2 | CLASS 3 |
| 01-02 | 100 | 202 | 304 |
| 03-04 | 128 | 201 | 302 |
| 05-06 | 102 | 203 | 303 |
| 07-08 | 103 | 205 | 301 |
| 09-10 | 109 | 210 | 305 |
| 11-13 | 104 | 200 | 306 |
| 14-16 | 106 | 246 | - |
| 17-19 | 107 | 206 | - |
| 20-22 | 105 | 207 | 310 |
| 23-25 | 114 | 211 | - |
| 26-28 | 111 | 213 | 312 |
| 29-31 | 121 | 214 | 313 |
| 32-34 | 144 | 215 | 314 |
| 35-37 | 171 | 217 | 315 |
| 38-40 | 165 | 218 | - |
| 41-43 | 135 | 219 | 317 |
| 44-46 | 132 | 220 | - |
| 47-49 | 145 | 221 | - |
| 50-52 | 123 | 222 | - |
| 53-55 | 124 | 223 | - |
| 56-58 | 125 | 224 | - |
| 59-61 | 127 | 226 | - |
| 62-64 | 146 | 227 | - |
| 65-67 | 133 | 229 | 318 |
| 68-70 | 126 | 230 | - |
| 71-73 | 118 | 231 | 305 |
| 74-76 | 116 | 237 | - |
| 77-79 | 115 | 238 | - |
| 80-83 | 108 | 208 | 319 |
| 84-87 | 113 | 212 | 320 |
| 88-91 | 129 | 248 | 307 |
| 92-95 | 151 | 244 | 308 |
| 96-98 | 163 | 242 | 310 |
| 99-00 | 101 | 241 | 316 |



8 x 5"25 Mk 10 DP

DIRECTORS
2

ARCS OF FIRE



Range
14,500 yds 29.0"
FC Radar **+3**
Mark 28

| TARGET SPEED | GUNNERY (FCS) | | |
|--------------|---------------|----------------|--------------|
| | SHORT BRD NAR | MEDIUM BRD NAR | LONG BRD NAR |
| 0-9 | 18 13 | 14 10 | 12 8 |
| 10-18 | 14 10 | 11 7 | 9 6 |
| 19-26 | 12 8 | 9 6 | 8 5 |
| 27-32 | 10 7 | 8 6 | 7 5 |

| COM YDS | PENETRATION TABLE | | | |
|---------|-------------------|----------|----------|----------|
| | SHORT | MEDIUM | LONG | |
| ROF | 10 | 8 | 5 | 2 |
| HORZ | 0 | 0 | 0 | 2 |
| VERT | 5 | 3 | 2 | 1 |

KTS **32** [] [] [] [] [] [] [] [] [] []

| TORPEDOES | | |
|-----------|---|----|
| TT | 0 | RL |
| | 0 | 0 |

None
Damage Class
Settings

| PROPULSION / MANEUVER | | | | | | | | | | | | |
|-----------------------|---|----|----|----|---|---|---|----------|--|--|--|--|
| Engine Rm | 2 | 32 | 18 | 0 | 0 | 0 | 0 | Std Turn | | | | |
| Prop/Shaft | 4 | 32 | 28 | 16 | 4 | 0 | 0 | 45 | | | | |
| Boiler Rm | 4 | 32 | 29 | 20 | 7 | 0 | 0 | Emg Turn | | | | |
| | | | 0 | 0 | 0 | 0 | 0 | 90 | | | | |

| Speed Increase | 00-06 kt | 07-16 kt | 17-20 kt | 21-23 kt | 24-25 kt | 26+ kt |
|----------------|----------|----------|----------|----------|----------|--------|
| | 7.0 | 5.0 | 4.0 | 3.0 | 2.0 | 1.0 |

| LOSS OF SPEED DURING TURNS | | | | | | | | | | | | | | | | | | | |
|----------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| KTS | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 30 | 32 | 34 | 36 | 38 | 40 |
| STD | 3 | 5 | 6 | 8 | 9 | 10 | 12 | 13 | 15 | 16 | 18 | 19 | 21 | 22 | 24 | 26 | 27 | 28 | 30 |
| EMG | NA | NA | NA | NA | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |

| GUNNERY RECORD | | | | | | | | | | | | | |
|----------------|-------|--------|------|-----|---|----|-------|--------|------|-----|---|--|--|
| T# | RANGE | TARGET | RNDS | TBL | H | T# | RANGE | TARGET | RNDS | TBL | H | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | |

| T# | RANGE | TARGET | SETNG | TORPS | ANG | TGT MOVE | ARRIVE |
|----|-------|--------|-------|-------|-----|----------|--------|
| | | | | | | | |
| | | | | | | | |
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| | | | | | | | |

Ships In Class
INDIANAPOLIS, PORTLAND



ASTORIA Class
CA UNITED STATES

1944 to 1945

2243-2
Displacement 10,136 ts
Complement 868

SHIP LOG SHEET

Version AOTF1922A



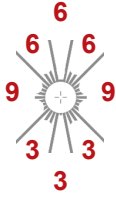
Length 578 ft
Beam 62 ft
Draft 22.75 ft



9 x 8"/55 Mk 12/15

DIRECTORS 2

ARCS OF FIRE



| | | |
|-------------|------------|-------|
| Range | 32,000 yds | 64.0" |
| FC Radar | + 2 | |
| Mark 3 (FC) | | |

| 34% PENETRATION TABLE | | | | |
|-----------------------|-------|-------|--------|--------|
| APCBC | SHORT | | MEDIUM | LONG |
| YDS | 3,000 | 8,000 | 15,000 | 32,000 |
| ROF | 10 | 7 | 5 | 2 |
| HORZ | 0 | 1 | 1 | 5 |
| VERT | 15 | 10 | 6 | 2 |

| GUNNERY (FCS) | | | | | | |
|---------------|-------|-----|--------|-----|------|-----|
| TARGET SPEED | SHORT | | MEDIUM | | LONG | |
| | BRD | NAR | BRD | NAR | BRD | NAR |
| 0-9 | 23 | 16 | 18 | 13 | 15 | 11 |
| 10-18 | 18 | 12 | 14 | 10 | 12 | 8 |
| 19-26 | 15 | 11 | 12 | 8 | 10 | 7 |
| 27-32 | 13 | 9 | 10 | 7 | 9 | 6 |

| Targ Sz | Crew | Sea |
|---------|------|-----|
| 1 | | |

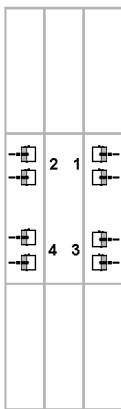
| PROTECTION | |
|-------------|---|
| ARMOR VALUE | |
| HORIZONTAL | 2 |
| VERTICAL | 5 |

| HIT LOCATION | | |
|--------------|-------|-------|
| RANGE | HORZ | VERT |
| SHORT | 01-05 | 06-00 |
| MEDIUM | 01-19 | 20-00 |
| LONG | 01-39 | 40-00 |

| | | |
|--------------|------|------|
| Searchlights | Port | Stbd |
|--------------|------|------|

| 13 7 DAMAGE CONTROL (DCR) | | | | | | | | | |
|---------------------------|--|--|--|--|--|--|--|--|--|
| | | | | | | | | | |

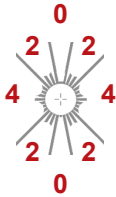
| DAMAGE DETERMINATION | | | |
|----------------------|---------|---------|---------|
| ROLL | CLASS 1 | CLASS 2 | CLASS 3 |
| 01-02 | 100 | 202 | 304 |
| 03-04 | 128 | 201 | 302 |
| 05-06 | 102 | 203 | 303 |
| 07-08 | 103 | 205 | 301 |
| 09-10 | 109 | 210 | 305 |
| 11-13 | 104 | 200 | 306 |
| 14-16 | 106 | 246 | - |
| 17-19 | 107 | 206 | - |
| 20-22 | 105 | 207 | 310 |
| 23-25 | 114 | 211 | - |
| 26-28 | 111 | 213 | 312 |
| 29-31 | 121 | 214 | 313 |
| 32-34 | 144 | 215 | 314 |
| 35-37 | 171 | 217 | 315 |
| 38-40 | 165 | 218 | - |
| 41-43 | 135 | 219 | 317 |
| 44-46 | 132 | 220 | - |
| 47-49 | 145 | 221 | - |
| 50-52 | 123 | 222 | - |
| 53-55 | 124 | 223 | - |
| 56-58 | 125 | 224 | - |
| 59-61 | 127 | 226 | - |
| 62-64 | 146 | 227 | - |
| 65-67 | 133 | 229 | 318 |
| 68-70 | 126 | 230 | - |
| 71-73 | 118 | 231 | 305 |
| 74-76 | 116 | 237 | - |
| 77-79 | 115 | 238 | - |
| 80-83 | 108 | 208 | 319 |
| 84-87 | 113 | 212 | 320 |
| 88-91 | 129 | 248 | 307 |
| 92-95 | 151 | 244 | 308 |
| 96-98 | 163 | 242 | 310 |
| 99-00 | 101 | 241 | 316 |



8 x 5"/25 Mk 10 DP

DIRECTORS 2

ARCS OF FIRE



| | | |
|-------------|------------|-------|
| Range | 14,500 yds | 29.0" |
| FC Radar | + 2 | |
| Mark 4 (FD) | | |

| 18% PENETRATION TABLE | | | | |
|-----------------------|-------|-------|--------|--------|
| COM | SHORT | | MEDIUM | LONG |
| YDS | 2,000 | 4,000 | 8,000 | 14,500 |
| ROF | 10 | 8 | 5 | 2 |
| HORZ | 0 | 0 | 0 | 2 |
| VERT | 5 | 3 | 2 | 1 |

| GUNNERY (FCS) | | | | | | |
|---------------|-------|-----|--------|-----|------|-----|
| TARGET SPEED | SHORT | | MEDIUM | | LONG | |
| | BRD | NAR | BRD | NAR | BRD | NAR |
| 0-9 | 18 | 13 | 14 | 10 | 12 | 8 |
| 10-18 | 14 | 10 | 11 | 7 | 9 | 6 |
| 19-26 | 12 | 8 | 9 | 6 | 8 | 5 |
| 27-32 | 10 | 7 | 8 | 6 | 7 | 5 |

| | | | | | | | | | | | | |
|-----|----|--|--|--|--|--|--|--|--|--|--|--|
| KTS | 32 | | | | | | | | | | | |
|-----|----|--|--|--|--|--|--|--|--|--|--|--|

| TORPEDOES | | | |
|-----------|---|----|---|
| TT | 0 | RL | 0 |

| PROPULSION / MANEUVER | | | | | | | | | | |
|-----------------------|-----------|----|----|----|---|---|---|----------|----------|--|
| | Engine Rm | 2 | 32 | 18 | 0 | 0 | 0 | 0 | Std Turn | |
| Prop/Shaft | 4 | 32 | 28 | 16 | 4 | 0 | 0 | | 60 | |
| Boiler Rm | 4 | 32 | 29 | 20 | 7 | 0 | 0 | Emg Turn | 90 | |
| | | | 0 | 0 | 0 | 0 | 0 | | | |

| |
|--------------|
| None |
| Damage Class |
| Settings |

| Speed Increase | 00-06 kt | 07-16 kt | 17-20 kt | 21-23 kt | 24-25 kt | 26+ kt |
|----------------|----------|----------|----------|----------|----------|--------|
| | 7.0 | 5.0 | 4.0 | 3.0 | 2.0 | 1.0 |

| LOSS OF SPEED DURING TURNS | | | | | | | | | | | | | | | | | | | |
|----------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| KTS | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 30 | 32 | 34 | 36 | 38 | 40 |
| STD | 3 | 5 | 6 | 8 | 9 | 10 | 12 | 13 | 15 | 16 | 18 | 19 | 21 | 22 | 24 | 26 | 27 | 28 | 30 |
| EMG | NA | NA | NA | NA | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |

| GUNNERY RECORD | | | | | | | | | | | |
|----------------|-------|--------|------|-----|---|----|-------|--------|------|-----|---|
| T# | RANGE | TARGET | RNDS | TBL | H | T# | RANGE | TARGET | RNDS | TBL | H |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
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| | | | | | | | | | | | |

| T# | RANGE | TARGET | SETNG | TORPS | ANG | TGT MOVE | ARRIVE |
|----|-------|--------|-------|-------|-----|----------|--------|
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Ships In Class
ASTORIA, MINNEAPOLIS, NEW ORLEANS, QUINCY, SAN FRANCISCO, TUSCALOOSA, VINCENNES



WICHITA Class
CA UNITED STATES

1944 to 1945

2810-2
Displacement 10,589 ts
Complement 929

SHIP LOG SHEET

Version AOTF1922A

After refit completed in December 1943

Length 600 ft
Beam 62 ft
Draft 23.8 ft

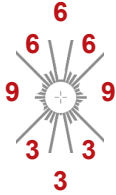


9 x 8"/55 Mk 12/15

DIRECTORS

2

ARCS OF FIRE



Range

30,000 yds 60.0"

FC Radar +3
Mark 8 (CXEM)

| 36% PENETRATION TABLE | | | | |
|-----------------------|-------|-------|--------|--------|
| APCBC | SHORT | | MEDIUM | LONG |
| YDS | 2,000 | 8,000 | 15,000 | 30,000 |
| ROF | 10 | 7 | 5 | 2 |
| HORZ | 0 | 1 | 1 | 5 |
| VERT | 14 | 10 | 7 | 3 |

| GUNNERY (FCS) | | | | | | |
|---------------|-------|-----|--------|-----|------|-----|
| TARGET | SHORT | | MEDIUM | | LONG | |
| SPEED | BRD | NAR | BRD | NAR | BRD | NAR |
| 0-9 | 29 | 20 | 23 | 16 | 19 | 14 |
| 10-18 | 26 | 18 | 20 | 14 | 17 | 12 |
| 19-26 | 24 | 17 | 18 | 13 | 16 | 11 |
| 27-32 | 22 | 15 | 17 | 12 | 15 | 10 |

| Targ Sz | Crew | Sea |
|---------|------|-----|
| 1 | | |

| Searchlights | Port | Stbd |
|--------------|------|------|
| | | |

| PROTECTION | |
|-------------|---|
| ARMOR VALUE | |
| HORIZONTAL | 2 |
| VERTICAL | 6 |

| HIT LOCATION | | |
|--------------|-------|-------|
| RANGE | HORZ | VERT |
| SHORT | 01-05 | 06-00 |
| MEDIUM | 01-19 | 20-00 |
| LONG | 01-39 | 40-00 |

| 13 | 7 | DAMAGE CONTROL (DCR) | | | | | | | | | |
|----|---|----------------------|--|--|--|--|--|--|--|--|--|
| | | | | | | | | | | | |

| FLAG COMMAND RATING (FCR) | | | | | | | | | |
|---------------------------|--|--|--|--|--|--|--|--|--|
| | | | | | | | | | |

W2-2AR

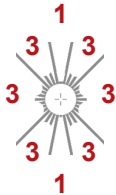
| DAMAGE DETERMINATION | | | |
|----------------------|---------|---------|---------|
| ROLL | CLASS 1 | CLASS 2 | CLASS 3 |
| 01-02 | 100 | 202 | 304 |
| 03-04 | 128 | 201 | 302 |
| 05-06 | 102 | 203 | 303 |
| 07-08 | 103 | 205 | 301 |
| 09-10 | 109 | 210 | 305 |
| 11-13 | 104 | 200 | 306 |
| 14-16 | 106 | 246 | - |
| 17-19 | 107 | 206 | - |
| 20-22 | 105 | 207 | 310 |
| 23-25 | 114 | 211 | - |
| 26-28 | 111 | 213 | 312 |
| 29-31 | 121 | 214 | 313 |
| 32-34 | 144 | 215 | 314 |
| 35-37 | 171 | 217 | 315 |
| 38-40 | 165 | 218 | - |
| 41-43 | 135 | 219 | 317 |
| 44-46 | 132 | 220 | - |
| 47-49 | 145 | 221 | - |
| 50-52 | 123 | 222 | - |
| 53-55 | 124 | 223 | - |
| 56-58 | 125 | 224 | - |
| 59-61 | 127 | 226 | - |
| 62-64 | 146 | 227 | - |
| 65-67 | 133 | 229 | 318 |
| 68-70 | 126 | 230 | - |
| 71-73 | 118 | 231 | 305 |
| 74-76 | 116 | 237 | - |
| 77-79 | 115 | 238 | - |
| 80-83 | 108 | 208 | 319 |
| 84-87 | 113 | 212 | 320 |
| 88-91 | 129 | 248 | 307 |
| 92-95 | 151 | 244 | 308 |
| 96-98 | 163 | 242 | 310 |
| 99-00 | 101 | 241 | 316 |

8 x 5"/38 Mk 12

DIRECTORS

2

ARCS OF FIRE



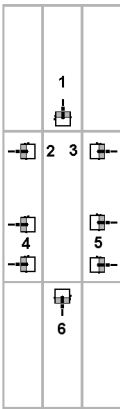
Range

18,000 yds 36.0"

FC Radar +2
Mark 4 (FD)

| 18% PENETRATION TABLE | | | | |
|-----------------------|-------|-------|--------|--------|
| COM | SHORT | | MEDIUM | LONG |
| YDS | 2,000 | 6,000 | 10,000 | 18,000 |
| ROF | 10 | 7 | 5 | 2 |
| HORZ | 0 | 0 | 0 | 2 |
| VERT | 7 | 4 | 2 | 2 |

| GUNNERY (FCS) | | | | | | |
|---------------|-------|-----|--------|-----|------|-----|
| TARGET | SHORT | | MEDIUM | | LONG | |
| SPEED | BRD | NAR | BRD | NAR | BRD | NAR |
| 0-9 | 22 | 15 | 17 | 12 | 14 | 10 |
| 10-18 | 19 | 13 | 15 | 10 | 13 | 9 |
| 19-26 | 18 | 12 | 14 | 10 | 12 | 8 |
| 27-32 | 16 | 12 | 13 | 9 | 11 | 8 |



| KTS | 33 | | | | | | | | | |
|-----|----|--|--|--|--|--|--|--|--|--|
|-----|----|--|--|--|--|--|--|--|--|--|

| TORPEDOES | | | |
|-----------|---|----|---|
| TT | 0 | RL | 0 |

PROPULSION / MANEUVER

| | | | | | | | | |
|------------|---|----|----|----|---|---|---|----------|
| Engine Rm | 2 | 33 | 19 | 0 | 0 | 0 | 0 | Std Turn |
| Prop/Shaft | 4 | 33 | 29 | 17 | 4 | 0 | 0 | 45 |
| Boiler Rm | 4 | 33 | 30 | 20 | 8 | 0 | 0 | Emg Turn |
| | | | 0 | 0 | 0 | 0 | 0 | 60 |

| Speed Increase | 00-08 kt | 09-14 kt | 15-21 kt | 22-26 kt | 27-29 kt | 30+ kt |
|----------------|----------|----------|----------|----------|----------|--------|
| | 9.0 | 7.0 | 6.0 | 4.0 | 2.0 | 1.0 |

LOSS OF SPEED DURING TURNS

| KTS | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 30 | 32 | 34 | 36 | 38 | 40 |
|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| STD | 3 | 5 | 6 | 8 | 9 | 10 | 12 | 13 | 15 | 16 | 18 | 19 | 21 | 22 | 24 | 26 | 27 | 28 | 30 |
| EMG | NA | NA | NA | NA | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |

GUNNERY RECORD

| T# | RANGE | TARGET | RNDS | TBL | H |
|----|-------|--------|------|-----|---|
| | | | | | |
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| T# | RANGE | TARGET | RNDS | TBL | H |
|----|-------|--------|------|-----|---|
| | | | | | |
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| T# | RANGE | TARGET | SETNG | TORPS | ANG | TGT MOVE | ARRIVE |
|----|-------|--------|-------|-------|-----|----------|--------|
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Ships In Class
WICHITA



BROOKLYN Class
CL UNITED STATES

1944 to 1945

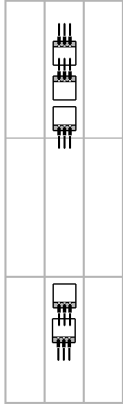
2290-2
Displacement 9,767 ts
Complement 868

SHIP LOG SHEET

Version AOTF1922A



Length 600 ft
Beam 62 ft
Draft 22.8 ft



15 x 6"/47 Mk 16

DIRECTORS
2

ARCS OF FIRE



| | | |
|-------------|------------|-------|
| Range | 25,500 yds | 51.0" |
| FC Radar | + 2 | |
| Mark 3 (FC) | | |

| GUNNERY (FCS) | | | |
|---------------|---------|---------|---------|
| TARGET | SHORT | MEDIUM | LONG |
| SPEED | BRD NAR | BRD NAR | BRD NAR |
| 0-9 | 29 20 | 23 16 | 19 14 |
| 10-18 | 26 18 | 20 14 | 17 12 |
| 19-26 | 24 17 | 18 13 | 16 11 |
| 27-32 | 22 15 | 17 12 | 15 10 |

| 25% PENETRATION TABLE | | | | |
|-----------------------|-------|--------|--------|--------|
| APCBC | SHORT | MEDIUM | LONG | |
| YDS | 3,000 | 8,000 | 12,000 | 25,500 |
| ROF | 10 | 7 | 5 | 2 |
| HORZ | 0 | 1 | 1 | 3 |
| VERT | 10 | 7 | 5 | 2 |

| Targ Sz | Crew | Sea |
|--------------|------|------|
| 1 | | |
| Searchlights | Port | Stbd |

| PROTECTION | |
|-------------|---|
| ARMOR VALUE | |
| HORIZONTAL | 2 |
| VERTICAL | 5 |

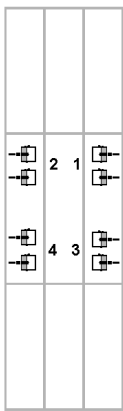
| HIT LOCATION | | |
|--------------|-------|-------|
| RANGE | HORZ | VERT |
| SHORT | 01-05 | 06-00 |
| MEDIUM | 01-19 | 20-00 |
| LONG | 01-39 | 40-00 |

| 13 | 6 | DAMAGE CONTROL (DCR) | | | |
|----|---|----------------------|--|--|--|
| | | | | | |

| FLAG COMMAND RATING (FCR) | | | | | | | | | |
|---------------------------|--|--|--|--|--|--|--|--|--|
| | | | | | | | | | |

W2-2AR

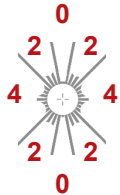
| DAMAGE DETERMINATION | | | |
|----------------------|---------|---------|---------|
| ROLL | CLASS 1 | CLASS 2 | CLASS 3 |
| 01-02 | 100 | 202 | 304 |
| 03-04 | 128 | 201 | 302 |
| 05-06 | 102 | 203 | 303 |
| 07-08 | 103 | 205 | 301 |
| 09-10 | 109 | 210 | 305 |
| 11-13 | 104 | 200 | 306 |
| 14-16 | 106 | 246 | - |
| 17-19 | 107 | 206 | - |
| 20-22 | 105 | 207 | 310 |
| 23-25 | 114 | 211 | - |
| 26-28 | 111 | 213 | 312 |
| 29-31 | 121 | 214 | 313 |
| 32-34 | 144 | 215 | 314 |
| 35-37 | 171 | 217 | 315 |
| 38-40 | 165 | 218 | - |
| 41-43 | 135 | 219 | 317 |
| 44-46 | 132 | 220 | - |
| 47-49 | 145 | 221 | - |
| 50-52 | 123 | 222 | - |
| 53-55 | 124 | 223 | - |
| 56-58 | 125 | 224 | - |
| 59-61 | 127 | 226 | - |
| 62-64 | 146 | 227 | - |
| 65-67 | 133 | 229 | 318 |
| 68-70 | 126 | 230 | - |
| 71-73 | 118 | 231 | 305 |
| 74-76 | 116 | 237 | - |
| 77-79 | 115 | 238 | - |
| 80-83 | 108 | 208 | 319 |
| 84-87 | 113 | 212 | 320 |
| 88-91 | 129 | 248 | 307 |
| 92-95 | 151 | 244 | 308 |
| 96-98 | 163 | 242 | 310 |
| 99-00 | 101 | 241 | 316 |



8 x 5"/25 Mk 10 DP

DIRECTORS
2

ARCS OF FIRE



| | | |
|-------------|------------|-------|
| Range | 14,500 yds | 29.0" |
| FC Radar | + 2 | |
| Mark 4 (FD) | | |

| GUNNERY (FCS) | | | |
|---------------|---------|---------|---------|
| TARGET | SHORT | MEDIUM | LONG |
| SPEED | BRD NAR | BRD NAR | BRD NAR |
| 0-9 | 18 13 | 14 10 | 12 8 |
| 10-18 | 14 10 | 11 7 | 9 6 |
| 19-26 | 12 8 | 9 6 | 8 5 |
| 27-32 | 10 7 | 8 6 | 7 5 |

| 18% PENETRATION TABLE | | | | |
|-----------------------|-------|--------|-------|--------|
| COM | SHORT | MEDIUM | LONG | |
| YDS | 2,000 | 4,000 | 8,000 | 14,500 |
| ROF | 10 | 8 | 5 | 2 |
| HORZ | 0 | 0 | 0 | 2 |
| VERT | 5 | 3 | 2 | 1 |

| | | | | | | | | | | |
|-----|----|--|--|--|--|--|--|--|--|--|
| KTS | 32 | | | | | | | | | |
|-----|----|--|--|--|--|--|--|--|--|--|

| TORPEDOES | | | |
|-----------|---|----|---|
| TT | 0 | RL | 0 |

| |
|--------------|
| None |
| Damage Class |
| Settings |

| PROPULSION / MANEUVER | | | | | | | | | |
|-----------------------|---|----|----|----|---|---|---|----------|--|
| Engine Rm | 2 | 32 | 18 | 0 | 0 | 0 | 0 | Std Turn | |
| Prop/Shaft | 4 | 32 | 28 | 16 | 4 | 0 | 0 | 45 | |
| Boiler Rm | 4 | 32 | 29 | 20 | 7 | 0 | 0 | Emg Turn | |
| | | | 0 | 0 | 0 | 0 | 0 | 90 | |

| | | | | | | |
|----------|----------|----------|----------|----------|----------|--------|
| Speed | 00-09 kt | 10-17 kt | 18-22 kt | 23-24 kt | 25-26 kt | 27+ kt |
| Increase | 10.0 | 8.0 | 4.0 | 3.0 | 2.0 | 1.0 |

| LOSS OF SPEED DURING TURNS | | | | | | | | | | | | | | | | | | | |
|----------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| KTS | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 30 | 32 | 34 | 36 | 38 | 40 |
| STD | 3 | 5 | 6 | 8 | 9 | 10 | 12 | 13 | 15 | 16 | 18 | 19 | 21 | 22 | 24 | 26 | 27 | 28 | 30 |
| EMG | NA | NA | NA | NA | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |

| GUNNERY RECORD | | | | | |
|----------------|-------|--------|------|-----|---|
| T# | RANGE | TARGET | RNDS | TBL | H |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

| T# | RANGE | TARGET | SETNG | TORPS | ANG | TGT MOVE | ARRIVE |
|----|-------|--------|-------|-------|-----|----------|--------|
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Ships In Class
BOISE, BROOKLYN, HELENA, HONOLULU, NASHVILLE,
PHILADELPHIA, PHOENIX, SAVANNAH, ST. LOUIS



CLEVELAND Class
CL UNITED STATES

1943 to 1945

7436-0
Displacement 11,744 ts
Complement 1285

SHIP LOG SHEET

Version AOTF1922A



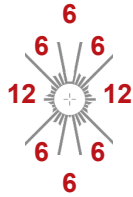
Length 600 ft | 1 catapult removed c. 1944-45
Beam 66 ft
Draft 24.5 ft



12 x 6"/47 Mk 16

DIRECTORS
2

ARCS OF FIRE



Range
26,000 yds 52.0"
FC Radar **+3**
Mark 8 (CXEM)

| TARGET SPEED | SHORT | | MEDIUM | | LONG | |
|--------------|-------|-----|--------|-----|------|-----|
| | BRD | NAR | BRD | NAR | BRD | NAR |
| 0-9 | 29 | 20 | 23 | 16 | 19 | 14 |
| 10-18 | 26 | 18 | 20 | 14 | 17 | 12 |
| 19-26 | 24 | 17 | 18 | 13 | 16 | 11 |
| 27-32 | 22 | 15 | 17 | 12 | 15 | 10 |

| APCBC YDS | 25% PENETRATION TABLE | | | |
|-----------|-----------------------|--------|------|---|
| | SHORT | MEDIUM | LONG | |
| ROF | 10 | 7 | 5 | 2 |
| HORZ | 0 | 1 | 1 | 4 |
| VERT | 10 | 7 | 5 | 1 |

| Targ Sz | Crew | Sea |
|--------------|------|------|
| 2 | | |
| Searchlights | Port | Stbd |

| PROTECTION ARMOR VALUE | |
|------------------------|---|
| HORIZONTAL | 2 |
| VERTICAL | 5 |

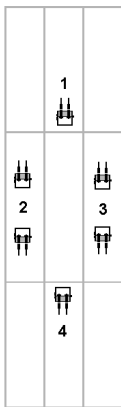
| HIT LOCATION | | |
|--------------|-------|-------|
| RANGE | HORZ | VERT |
| SHORT | 01-05 | 06-00 |
| MEDIUM | 01-19 | 20-00 |
| LONG | 01-39 | 40-00 |

| | | | | | | | | | | | |
|----|---|-----------------------------|--|--|--|--|--|--|--|--|--|
| 14 | 7 | DAMAGE CONTROL (DCR) | | | | | | | | | |
|----|---|-----------------------------|--|--|--|--|--|--|--|--|--|

| | | | | | | | | | | |
|----------------------------------|--|--|--|--|--|--|--|--|--|--|
| FLAG COMMAND RATING (FCR) | | | | | | | | | | |
|----------------------------------|--|--|--|--|--|--|--|--|--|--|

W2-2AR

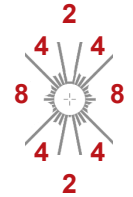
| DAMAGE DETERMINATION | | | |
|----------------------|---------|---------|---------|
| ROLL | CLASS 1 | CLASS 2 | CLASS 3 |
| 01-02 | 100 | 202 | 304 |
| 03-04 | 128 | 201 | 302 |
| 05-06 | 102 | 203 | 303 |
| 07-08 | 103 | 205 | 301 |
| 09-10 | 109 | 210 | 305 |
| 11-13 | 104 | 200 | 306 |
| 14-16 | 106 | 246 | - |
| 17-19 | 107 | 206 | - |
| 20-22 | 105 | 207 | 310 |
| 23-25 | 114 | 211 | - |
| 26-28 | 111 | 213 | 312 |
| 29-31 | 121 | 214 | 313 |
| 32-34 | 144 | 215 | 314 |
| 35-37 | 171 | 217 | 315 |
| 38-40 | 165 | 218 | - |
| 41-43 | 135 | 219 | 317 |
| 44-46 | 132 | 220 | - |
| 47-49 | 145 | 221 | - |
| 50-52 | 123 | 222 | - |
| 53-55 | 124 | 223 | - |
| 56-58 | 125 | 224 | - |
| 59-61 | 127 | 226 | - |
| 62-64 | 146 | 227 | - |
| 65-67 | 133 | 229 | 318 |
| 68-70 | 126 | 230 | - |
| 71-73 | 118 | 231 | 305 |
| 74-76 | 116 | 237 | - |
| 77-79 | 115 | 238 | - |
| 80-83 | 108 | 208 | 319 |
| 84-87 | 113 | 212 | 320 |
| 88-91 | 129 | 248 | 307 |
| 92-95 | 151 | 244 | 308 |
| 96-98 | 163 | 242 | 310 |
| 99-00 | 101 | 241 | 316 |



12 x 5"/38 Mk 12

DIRECTORS
2

ARCS OF FIRE



Range
18,000 yds 36.0"
FC Radar **+2**
Mark 4 (FD)

| TARGET SPEED | SHORT | | MEDIUM | | LONG | |
|--------------|-------|-----|--------|-----|------|-----|
| | BRD | NAR | BRD | NAR | BRD | NAR |
| 0-9 | 22 | 15 | 17 | 12 | 14 | 10 |
| 10-18 | 19 | 13 | 15 | 10 | 13 | 9 |
| 19-26 | 18 | 12 | 14 | 10 | 12 | 8 |
| 27-32 | 16 | 12 | 13 | 9 | 11 | 8 |

| COM YDS | 18% PENETRATION TABLE | | | |
|---------|-----------------------|--------|------|---|
| | SHORT | MEDIUM | LONG | |
| ROF | 10 | 7 | 5 | 2 |
| HORZ | 0 | 0 | 0 | 2 |
| VERT | 7 | 4 | 2 | 2 |

| | | | | | | | | | |
|-----|----|--|--|--|--|--|--|--|--|
| KTS | 32 | | | | | | | | |
|-----|----|--|--|--|--|--|--|--|--|

| TORPEDOES | | | |
|-----------|---|----|---|
| TT | 0 | RL | 0 |

| PROPULSION / MANEUVER | | | | | | | | | | |
|-----------------------|---|----|----|----|---|---|---|----------|--|--|
| Engine Rm | 2 | 32 | 18 | 0 | 0 | 0 | 0 | Std Turn | | |
| Prop/Shaft | 4 | 32 | 28 | 16 | 4 | 0 | 0 | 45 | | |
| Boiler Rm | 4 | 32 | 29 | 20 | 7 | 0 | 0 | Emg Turn | | |
| | | | 0 | 0 | 0 | 0 | 0 | 90 | | |

| | |
|--------------|--|
| None | |
| Damage Class | |
| Settings | |

| Speed Increase | 00-09 kt | 10-17 kt | 18-22 kt | 23-24 kt | 25-26 kt | 27+ kt |
|----------------|----------|----------|----------|----------|----------|--------|
| | 10.0 | 8.0 | 4.0 | 3.0 | 2.0 | 1.0 |

| LOSS OF SPEED DURING TURNS | | | | | | | | | | | | | | | | | | | |
|----------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| KTS | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 30 | 32 | 34 | 36 | 38 | 40 |
| STD | 3 | 5 | 6 | 8 | 9 | 10 | 12 | 13 | 15 | 16 | 18 | 19 | 21 | 22 | 24 | 26 | 27 | 28 | 30 |
| EMG | NA | NA | NA | NA | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |

| GUNNERY RECORD | | | | | | | | | | | |
|----------------|-------|--------|------|-----|---|----|-------|--------|------|-----|---|
| T# | RANGE | TARGET | RNDS | TBL | H | T# | RANGE | TARGET | RNDS | TBL | H |
| | | | | | | | | | | | |
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| | | | | | | | | | | | |
| | | | | | | | | | | | |

| T# | RANGE | TARGET | SETNG | TORPS | ANG | TGT MOVE | ARRIVE |
|----|-------|--------|-------|-------|-----|----------|--------|
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Ships In Class
BILOXI, BIRMINGHAM, CLEVELAND, COLUMBIA, DENVER, HOUSTON, MIAMI, MOBILE, MONTPELIER, SANTA FE, DULUTH, PASADENA +



AGANO Class
CL JAPAN

1944 to 1944

1671-1
Displacement 6,652 ts
Complement 730

SHIP LOG SHEET

Version AOTF1922A



Length 564 ft
Beam 50 ft
Draft 18.5 ft

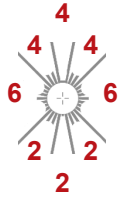


6 x 15cm/50 Type 41

DIRECTORS

1

ARCS OF FIRE



Range
23,000 yds 46.0"

FC Radar +0
None

| TARGET SPEED | GUNNERY (FCS) | | | | | |
|--------------|---------------|-----|--------|-----|------|-----|
| | SHORT | | MEDIUM | | LONG | |
| | BRD | NAR | BRD | NAR | BRD | NAR |
| 0-9 | 23 | 16 | 18 | 13 | 15 | 11 |
| 10-18 | 18 | 12 | 14 | 10 | 12 | 8 |
| 19-26 | 15 | 11 | 12 | 8 | 10 | 7 |
| 27-32 | 13 | 9 | 10 | 7 | 9 | 6 |

22%

| CPC YDS | PENETRATION TABLE | | | |
|---------|-------------------|--------|------|---|
| | SHORT | MEDIUM | LONG | |
| ROF | 10 | 8 | 5 | 2 |
| HORZ | 0 | 0 | 1 | 2 |
| VERT | 7 | 4 | 2 | 2 |

| Targ Sz | Crew | Sea |
|---------|------|-----|
| 1 | | |

| Searchlights | Port | Stbd |
|--------------|------|------|
| | | |

| PROTECTION | |
|-------------|---|
| ARMOR VALUE | |
| HORIZONTAL | 1 |
| VERTICAL | 1 |

| HIT LOCATION | | |
|--------------|-------|-------|
| RANGE | HORZ | VERT |
| SHORT | 01-05 | 06-00 |
| MEDIUM | 01-19 | 20-00 |
| LONG | 01-39 | 40-00 |

10 5 DAMAGE CONTROL (DCR)

FLAG COMMAND RATING (FCR)

W2-1A

DAMAGE DETERMINATION

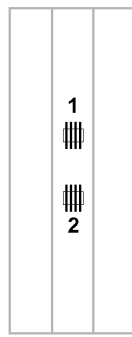
| ROLL | CLASS 1 | CLASS 2 | CLASS 3 |
|-------|---------|---------|---------|
| 01-02 | 100 | 202 | 304 |
| 03-04 | 128 | 201 | 302 |
| 05-06 | 102 | 203 | 303 |
| 07-08 | 103 | 205 | 301 |
| 09-10 | 109 | 210 | 305 |
| 11-13 | 111 | 200 | 306 |
| 14-16 | 152 | 202 | - |
| 17-19 | 107 | 250 | - |
| 20-22 | 105 | 207 | 310 |
| 23-25 | 117 | 207 | - |
| 26-28 | 111 | 225 | 312 |
| 29-31 | 121 | 214 | 313 |
| 32-34 | 144 | 215 | 314 |
| 35-37 | 171 | 217 | 315 |
| 38-40 | 150 | 218 | - |
| 41-43 | 135 | 219 | 317 |
| 44-46 | 132 | 220 | 318 |
| 47-49 | 145 | 221 | - |
| 50-52 | 123 | 222 | - |
| 53-55 | 124 | 223 | - |
| 56-58 | 125 | 224 | - |
| 59-61 | 127 | 226 | - |
| 62-64 | 146 | 227 | - |
| 65-67 | 133 | 229 | 318 |
| 68-70 | 126 | 230 | - |
| 71-73 | 118 | 231 | 305 |
| 74-76 | 116 | 237 | - |
| 77-79 | 115 | 237 | - |
| 80-83 | 131 | 241 | 319 |
| 84-87 | 136 | 207 | - |
| 88-91 | 129 | 248 | 307 |
| 92-95 | 151 | 244 | 308 |
| 96-98 | 152 | 242 | 310 |
| 99-00 | 101 | 241 | 316 |

KTS 35

| PROPULSION / MANEUVER | | | | | | | | | |
|-----------------------|---|----|----|----|----|---|---|----------|--|
| Engine Rm | 3 | 35 | 28 | 11 | 0 | 0 | 0 | Std Turn | |
| Prop/Shaft | 4 | 35 | 30 | 18 | 5 | 0 | 0 | 60 | |
| Boiler Rm | 5 | 35 | 33 | 26 | 16 | 6 | 0 | Emg Turn | |
| | | | 0 | 0 | 0 | 0 | 0 | 90 | |

| Speed Increase | 00-10 kt | 11-19 kt | 20-24 kt | 25-27 kt | 28-30 kt | 31+ kt |
|----------------|----------|----------|----------|----------|----------|--------|
| | 11.0 | 9.0 | 5.0 | 3.0 | 2.0 | 1.0 |

| TORPEDOES | | |
|-------------------|-----------|-------|
| TT | 8 | RL 16 |
| 61cm Type 93 M1-2 | | |
| Damage Class | A | |
| Settings | | |
| | 22,000/48 | |
| | 35,000/40 | |
| | 43,700/36 | |



| LOSS OF SPEED DURING TURNS | | | | | | | | | | | | | | | | | | | |
|----------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| KTS | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 30 | 32 | 34 | 36 | 38 | 40 |
| STD | 3 | 5 | 6 | 8 | 9 | 10 | 12 | 13 | 15 | 16 | 18 | 19 | 21 | 22 | 24 | 26 | 27 | 28 | 30 |
| EMG | NA | NA | NA | NA | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |

GUNNERY RECORD

| T# | RANGE | TARGET | RNDS | TBL | H |
|----|-------|--------|------|-----|---|
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| T# | RANGE | TARGET | RNDS | TBL | H |
|----|-------|--------|------|-----|---|
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| T# | RANGE | TARGET | SETNG | TORPS | ANG | TGT MOVE | ARRIVE |
|----|-------|--------|-------|-------|-----|----------|--------|
| | | | | | | | |
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| | | | | | | | |

Ships In Class
AGANO, NOSHIRO, SAKAWA, YAHAGI



KAGERO Class
DD JAPAN

1941 to 1943

1841-0
Displacement 2,033 ts
Complement 240

SHIP LOG SHEET

Version AOTF1922A



Length 381 ft
Beam 35 ft
Draft 12.3 ft

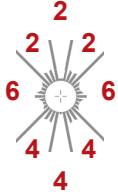


6 x 12.7cm/50 Type 3

DIRECTORS

1

ARCS OF FIRE



Range
20,000 yds 40.0"
FC Radar +0
None

| TARGET SPEED | GUNNERY (FCS) | | | | | |
|--------------|---------------|-----|--------|-----|------|-----|
| | SHORT | | MEDIUM | | LONG | |
| | BRD | NAR | BRD | NAR | BRD | NAR |
| 0-9 | 23 | 15 | 18 | 12 | 15 | 10 |
| 10-18 | 19 | 12 | 15 | 10 | 12 | 8 |
| 19-26 | 17 | 11 | 13 | 9 | 11 | 7 |
| 27-32 | 15 | 10 | 12 | 8 | 10 | 7 |

| HE | PENETRATION TABLE | | | |
|------|-------------------|--------|--------|--------|
| | SHORT | MEDIUM | LONG | |
| YDS | 2,500 | 6,000 | 10,000 | 20,000 |
| ROF | 10 | 8 | 5 | 3 |
| HORZ | 0 | 0 | 0 | 2 |
| VERT | 5 | 3 | 2 | 1 |

| Targ Sz | Crew | Sea |
|---------|------|-----|
| 1 | | |

| Searchlights | Port | Stbd |
|--------------|------|------|
| | | |

| PROTECTION | |
|-------------|---|
| ARMOR VALUE | |
| HORIZONTAL | 0 |
| VERTICAL | 0 |

| HIT LOCATION | | |
|--------------|-------|-------|
| RANGE | HORZ | VERT |
| SHORT | 01-05 | 06-00 |
| MEDIUM | 01-19 | 20-00 |
| LONG | 01-39 | 40-00 |

| DAMAGE CONTROL (DCR) | | | | | | | | | |
|----------------------|---|--|--|--|--|--|--|--|--|
| 6 | 3 | | | | | | | | |

| FLAG COMMAND RATING (FCR) | | | | | | | | | |
|---------------------------|--|--|--|--|--|--|--|--|--|
| | | | | | | | | | |

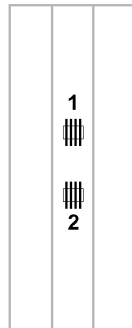
W2-1

| DAMAGE DETERMINATION | | | | |
|----------------------|---------|---------|---------|--|
| ROLL | CLASS 1 | CLASS 2 | CLASS 3 | |
| 01-02 | 100 | 202 | 304 | |
| 03-04 | 128 | 201 | 302 | |
| 05-06 | 102 | 203 | 303 | |
| 07-08 | 103 | 205 | 301 | |
| 09-10 | 109 | 210 | 305 | |
| 11-13 | 111 | 200 | 306 | |
| 14-16 | 117 | 200 | - | |
| 17-19 | 107 | 250 | - | |
| 20-22 | 105 | 207 | 310 | |
| 23-25 | 120 | 207 | 311 | |
| 26-28 | 112 | 225 | 312 | |
| 29-31 | 121 | 214 | 313 | |
| 32-34 | 144 | 215 | 314 | |
| 35-37 | 171 | 217 | 315 | |
| 38-40 | 122 | 218 | - | |
| 41-43 | 135 | 219 | 317 | |
| 44-46 | 132 | 220 | 318 | |
| 47-49 | 145 | 221 | - | |
| 50-52 | 123 | 222 | - | |
| 53-55 | 124 | 223 | 316 | |
| 56-58 | 125 | 224 | - | |
| 59-61 | 127 | 226 | - | |
| 62-64 | 141 | 227 | 317 | |
| 65-67 | 133 | 229 | - | |
| 68-70 | 126 | 230 | 318 | |
| 71-73 | 118 | 231 | - | |
| 74-76 | 130 | 237 | - | |
| 77-79 | 115 | 237 | - | |
| 80-83 | 131 | 248 | 307 | |
| 84-87 | 136 | 231 | 308 | |
| 88-91 | 111 | 248 | 310 | |
| 92-95 | 148 | 244 | 311 | |
| 96-98 | 167 | 242 | 310 | |
| 99-00 | 101 | 241 | 316 | |

KTS 35

| PROPULSION / MANEUVER | | | | | | | | | | |
|-----------------------|---|----|----|----|---|---|---|---|---|----------|
| Engine Rm | 1 | 35 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Std Turn |
| Prop/Shaft | 2 | 35 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 60 |
| Boiler Rm | 3 | 35 | 29 | 13 | 0 | 0 | 0 | 0 | 0 | Emg Turn |
| | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 90 |

| Speed Increase | 00-11 kt | 12-19 kt | 20-25 kt | 26-28 kt | 29+ kt |
|----------------|----------|----------|----------|----------|--------|
| | 12.0 | 9.0 | 5.0 | 3.0 | 1.0 |



| TORPEDOES | |
|-------------------|-----------|
| TT | 8 RL 16 |
| 61cm Type 93 M1-2 | |
| Damage Class | A |
| Settings | |
| | 22,000/48 |
| | 35,000/40 |
| | 43,700/36 |

| LOSS OF SPEED DURING TURNS | | | | | | | | | | | | | | | | | | | |
|----------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| KTS | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 30 | 32 | 34 | 36 | 38 | 40 |
| STD | 3 | 5 | 6 | 8 | 9 | 10 | 12 | 13 | 15 | 16 | 18 | 19 | 21 | 22 | 24 | 26 | 27 | 28 | 30 |
| EMG | NA | NA | NA | NA | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |

| GUNNERY RECORD | | | | | | | | | | | |
|----------------|-------|--------|------|-----|---|----|-------|--------|------|-----|---|
| T# | RANGE | TARGET | RNDS | TBL | H | T# | RANGE | TARGET | RNDS | TBL | H |
| | | | | | | | | | | | |
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| T# | RANGE | TARGET | SETNG | TORPS | ANG | TGT MOVE | ARRIVE |
|----|-------|--------|-------|-------|-----|----------|--------|
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Ships In Class
AMATSUKAZE, ARASHI, HAGIKAZE, HAMAKAZE, HATSUKAZE, ISOKAZE, KAGERO, NOWAKE, TANIKAZE, URAKAZE, YUKIKAZE +



YUGUMO Class
DD JAPAN

1944 to 1944

1856-0
Displacement 2,077 ts
Complement 228

SHIP LOG SHEET

Version AOTF1922A



Length 384 ft
Beam 35 ft
Draft 12.3 ft

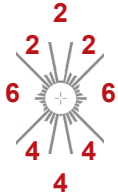


6 x 12.7cm/50 Type 3

DIRECTORS

1

ARCS OF FIRE



Range
20,000 yds 40.0"
FC Radar **+0**
None

GUNNERY (FCS)

| TARGET SPEED | SHORT | | MEDIUM | | LONG | |
|--------------|-------|-----|--------|-----|------|-----|
| | BRD | NAR | BRD | NAR | BRD | NAR |
| 0-9 | 23 | 15 | 18 | 12 | 15 | 10 |
| 10-18 | 19 | 12 | 15 | 10 | 12 | 8 |
| 19-26 | 17 | 11 | 13 | 9 | 11 | 7 |
| 27-32 | 15 | 10 | 12 | 8 | 10 | 7 |

| HE | 18% PENETRATION TABLE | | | |
|--------|-----------------------|--------|------|---|
| YDS | SHORT | MEDIUM | LONG | |
| 2,500 | | | | |
| 6,000 | | | | |
| 10,000 | | | | |
| 20,000 | | | | |
| ROF | 10 | 8 | 5 | 3 |
| HORZ | 0 | 0 | 0 | 2 |
| VERT | 5 | 3 | 2 | 1 |

| Targ Sz | Crew | Sea |
|---------|------|-----|
| 1 | | |

| PROTECTION | |
|-------------|---|
| ARMOR VALUE | |
| HORIZONTAL | 0 |
| VERTICAL | 0 |

| HIT LOCATION | | |
|--------------|-------|-------|
| RANGE | HORZ | VERT |
| SHORT | 01-05 | 06-00 |
| MEDIUM | 01-19 | 20-00 |
| LONG | 01-39 | 40-00 |

| Searchlights | Port | Stbd |
|--------------|------|------|
| | | |

| 6 | 3 | DAMAGE CONTROL (DCR) | | | | | | |
|---|---|----------------------|--|--|--|--|--|--|
| | | | | | | | | |

| FLAG COMMAND RATING (FCR) | | | | | | | |
|---------------------------|--|--|--|--|--|--|--|
| | | | | | | | |

W2-1

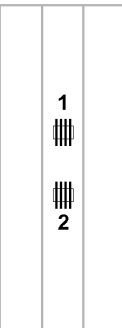
DAMAGE DETERMINATION

| ROLL | CLASS 1 | CLASS 2 | CLASS 3 |
|-------|---------|---------|---------|
| 01-02 | 100 | 202 | 304 |
| 03-04 | 128 | 201 | 302 |
| 05-06 | 102 | 203 | 303 |
| 07-08 | 103 | 205 | 301 |
| 09-10 | 109 | 210 | 305 |
| 11-13 | 111 | 200 | 306 |
| 14-16 | 117 | 200 | - |
| 17-19 | 107 | 250 | - |
| 20-22 | 105 | 207 | 310 |
| 23-25 | 120 | 207 | 311 |
| 26-28 | 112 | 225 | 312 |
| 29-31 | 121 | 214 | 313 |
| 32-34 | 144 | 215 | 314 |
| 35-37 | 171 | 217 | 315 |
| 38-40 | 122 | 218 | - |
| 41-43 | 135 | 219 | 317 |
| 44-46 | 132 | 220 | 318 |
| 47-49 | 145 | 221 | - |
| 50-52 | 123 | 222 | - |
| 53-55 | 124 | 223 | 316 |
| 56-58 | 125 | 224 | - |
| 59-61 | 127 | 226 | - |
| 62-64 | 141 | 227 | 317 |
| 65-67 | 133 | 229 | - |
| 68-70 | 126 | 230 | 318 |
| 71-73 | 118 | 231 | - |
| 74-76 | 130 | 237 | - |
| 77-79 | 115 | 237 | - |
| 80-83 | 131 | 248 | 307 |
| 84-87 | 136 | 231 | 308 |
| 88-91 | 111 | 248 | 310 |
| 92-95 | 148 | 244 | 311 |
| 96-98 | 167 | 242 | 310 |
| 99-00 | 101 | 241 | 316 |

KTS 35

| PROPULSION / MANEUVER | | | | | | | | | | |
|-----------------------|---|----|----|----|---|---|---|---|---|----------|
| Engine Rm | 1 | 35 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Std Turn |
| Prop/Shaft | 2 | 35 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 60 |
| Boiler Rm | 3 | 35 | 29 | 13 | 0 | 0 | 0 | 0 | 0 | Emg Turn |
| | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 90 |

| Speed | 00-11 kt | 12-19 kt | 20-25 kt | 26-28 kt | 29+ kt |
|----------|----------|----------|----------|----------|--------|
| Increase | 12.0 | 9.0 | 5.0 | 3.0 | 1.0 |



| TORPEDOES | |
|-------------------|-----------|
| TT | 8 RL 16 |
| 61cm Type 93 M1-2 | |
| Damage Class | A |
| Settings | |
| | 22,000/48 |
| | 35,000/40 |
| | 43,700/36 |

| LOSS OF SPEED DURING TURNS | | | | | | | | | | | | | | | | | | | |
|----------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| KTS | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 30 | 32 | 34 | 36 | 38 | 40 |
| STD | 3 | 5 | 6 | 8 | 9 | 10 | 12 | 13 | 15 | 16 | 18 | 19 | 21 | 22 | 24 | 26 | 27 | 28 | 30 |
| EMG | NA | NA | NA | NA | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |

| GUNNERY RECORD | | | | | |
|----------------|-------|--------|------|-----|---|
| T# | RANGE | TARGET | RNDS | TBL | H |
| | | | | | |
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| T# | RANGE | TARGET | SETNG | TORPS | ANG | TGT MOVE | ARRIVE |
|----|-------|--------|-------|-------|-----|----------|--------|
| | | | | | | | |
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Ships In Class
AKIGUMO, AKISHIMO, OKINAMI, NAGANAMI, KIYOSHIMO, KISHINAMI, HAYASHIMO, HAMANAMI, KAZEGUMO +



SHIMAKAZE Class
DD JAPAN

1944 to 1944

2736-1
Displacement 2,567 ts
Complement

SHIP LOG SHEET

Version AOTF1922A



Length 413 ft
Beam 37 ft
Draft 13.6 ft

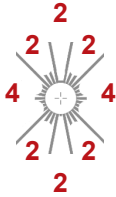


4 x 12.7cm/50 Type 3

DIRECTORS

1

ARCS OF FIRE



Range
20,000 yds 40.0"
FC Radar +0
None

| TARGET SPEED | GUNNERY (FCS) | | | | | |
|--------------|---------------|-----|--------|-----|------|-----|
| | SHORT | | MEDIUM | | LONG | |
| | BRD | NAR | BRD | NAR | BRD | NAR |
| 0-9 | 23 | 15 | 18 | 12 | 15 | 10 |
| 10-18 | 19 | 12 | 15 | 10 | 12 | 8 |
| 19-26 | 17 | 11 | 13 | 9 | 11 | 7 |
| 27-32 | 15 | 10 | 12 | 8 | 10 | 7 |

| HE YDS | PENETRATION TABLE | | | |
|--------|-------------------|--------|------|---|
| | SHORT | MEDIUM | LONG | |
| ROF | 10 | 8 | 5 | 3 |
| HORZ | 0 | 0 | 0 | 2 |
| VERT | 5 | 3 | 2 | 1 |

| Targ Sz | Crew | Sea |
|---------|------|-----|
| 1 | | |

| Searchlights | Port | Stbd |
|--------------|------|------|
| 6 | 3 | |

| PROTECTION | |
|-------------|---|
| ARMOR VALUE | |
| HORIZONTAL | 0 |
| VERTICAL | 0 |

| HIT LOCATION | | |
|--------------|-------|-------|
| RANGE | HORZ | VERT |
| SHORT | 01-05 | 06-00 |
| MEDIUM | 01-19 | 20-00 |
| LONG | 01-39 | 40-00 |

| DAMAGE CONTROL (DCR) | | | | | | | | | |
|----------------------|--|--|--|--|--|--|--|--|--|
| | | | | | | | | | |

| DAMAGE DETERMINATION | | | | |
|----------------------|---------|---------|---------|--|
| ROLL | CLASS 1 | CLASS 2 | CLASS 3 | |
| 01-02 | 100 | 202 | 304 | |
| 03-04 | 128 | 201 | 302 | |
| 05-06 | 102 | 203 | 303 | |
| 07-08 | 103 | 205 | 301 | |
| 09-10 | 109 | 210 | 305 | |
| 11-13 | 111 | 200 | 306 | |
| 14-16 | 117 | 200 | - | |
| 17-19 | 107 | 250 | - | |
| 20-22 | 105 | 207 | 310 | |
| 23-25 | 120 | 207 | 311 | |
| 26-28 | 112 | 225 | 312 | |
| 29-31 | 121 | 214 | 313 | |
| 32-34 | 144 | 215 | 314 | |
| 35-37 | 171 | 217 | 315 | |
| 38-40 | 122 | 218 | - | |
| 41-43 | 135 | 219 | 317 | |
| 44-46 | 132 | 220 | 318 | |
| 47-49 | 145 | 221 | - | |
| 50-52 | 123 | 222 | - | |
| 53-55 | 124 | 223 | 316 | |
| 56-58 | 125 | 224 | - | |
| 59-61 | 127 | 226 | - | |
| 62-64 | 141 | 227 | 317 | |
| 65-67 | 133 | 229 | - | |
| 68-70 | 126 | 230 | 318 | |
| 71-73 | 118 | 231 | - | |
| 74-76 | 130 | 237 | - | |
| 77-79 | 115 | 237 | - | |
| 80-83 | 131 | 248 | 307 | |
| 84-87 | 136 | 231 | 308 | |
| 88-91 | 111 | 248 | 310 | |
| 92-95 | 148 | 244 | 311 | |
| 96-98 | 167 | 242 | 310 | |
| 99-00 | 101 | 241 | 316 | |

KTS 39

| PROPULSION / MANEUVER | | | | | | | | | | |
|-----------------------|---|----|----|----|---|---|---|---|---|----------|
| Engine Rm | 1 | 39 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Std Turn |
| Prop/Shaft | 2 | 39 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 60 |
| Boiler Rm | 3 | 39 | 32 | 14 | 0 | 0 | 0 | 0 | 0 | Emg Turn |
| | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 90 |

| Speed Increase | 00-13 kt | 14-23 kt | 24-29 kt | 30-33 kt | 34+ kt |
|----------------|----------|----------|----------|----------|--------|
| | 14.0 | 10.0 | 6.0 | 4.0 | 1.0 |

| TORPEDOES | |
|-------------------|-----------|
| TT | 15 |
| RL | 15 |
| 61cm Type 93 M1-2 | |
| Damage Class | A |
| Settings | |
| | 22,000/48 |
| | 35,000/40 |
| | 43,700/36 |

| LOSS OF SPEED DURING TURNS | | | | | | | | | | | | | | | | | | | |
|----------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| KTS | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 30 | 32 | 34 | 36 | 38 | 40 |
| STD | 3 | 5 | 6 | 8 | 9 | 10 | 12 | 13 | 15 | 16 | 18 | 19 | 21 | 22 | 24 | 26 | 27 | 28 | 30 |
| EMG | NA | NA | NA | NA | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |

| GUNNERY RECORD | | | | | | | | | | | |
|----------------|-------|--------|------|-----|---|----|-------|--------|------|-----|---|
| T# | RANGE | TARGET | RNDS | TBL | H | T# | RANGE | TARGET | RNDS | TBL | H |
| | | | | | | | | | | | |
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| T# | RANGE | TARGET | SETNG | TORPS | ANG | TGT MOVE | ARRIVE |
|----|-------|--------|-------|-------|-----|----------|--------|
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Ships In Class
SHIMAKAZE



BAGLEY Class
DD UNITED STATES

1942 to 1945

6597-1
Displacement 1,646 ts
Complement 158

SHIP LOG SHEET

Version AOTF1922A



Length 334 ft
Beam 36 ft
Draft 12.9 ft

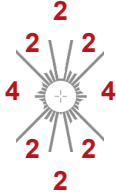


4 x 5"/38 Mk 12

DIRECTORS

1

ARCS OF FIRE



Range
18,000 yds 36.0"
FC Radar +2
Mark 4 (FD)

| TARGET SPEED | GUNNERY (FCS) | | | | | |
|--------------|---------------|-----|--------|-----|------|-----|
| | SHORT | | MEDIUM | | LONG | |
| | BRD | NAR | BRD | NAR | BRD | NAR |
| 0-9 | 23 | 16 | 18 | 13 | 15 | 11 |
| 10-18 | 18 | 12 | 14 | 10 | 12 | 8 |
| 19-26 | 15 | 11 | 12 | 8 | 10 | 7 |
| 27-32 | 13 | 9 | 10 | 7 | 9 | 6 |

| COM YDS | PENETRATION TABLE | | | |
|---------|-------------------|---|--------|------|
| | SHORT | | MEDIUM | LONG |
| ROF | 10 | 7 | 5 | 2 |
| HORZ | 0 | 0 | 0 | 2 |
| VERT | 7 | 4 | 2 | 2 |

| Targ Sz | Crew | Sea |
|--------------|------|------|
| 0 | | |
| Searchlights | Port | Stbd |

| PROTECTION | |
|-------------|---|
| ARMOR VALUE | |
| HORIZONTAL | 0 |
| VERTICAL | 0 |

| HIT LOCATION | | |
|--------------|-------|-------|
| RANGE | HORZ | VERT |
| SHORT | 01-05 | 06-00 |
| MEDIUM | 01-19 | 20-00 |
| LONG | 01-39 | 40-00 |

| | | | | | | | | | | | |
|---|---|-----------------------------|--|--|--|--|--|--|--|--|--|
| 5 | 3 | DAMAGE CONTROL (DCR) | | | | | | | | | |
| | | | | | | | | | | | |

| | | | | | | | | | | | |
|----------------------------------|--|--|--|--|--|--|--|--|--|--|--|
| FLAG COMMAND RATING (FCR) | | | | | | | | | | | |
| | | | | | | | | | | | |

W2-1R

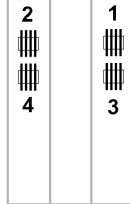
| DAMAGE DETERMINATION | | | | |
|----------------------|---------|---------|---------|--|
| ROLL | CLASS 1 | CLASS 2 | CLASS 3 | |
| 01-02 | 100 | 202 | 304 | |
| 03-04 | 128 | 201 | 302 | |
| 05-06 | 102 | 203 | 303 | |
| 07-08 | 103 | 205 | 301 | |
| 09-10 | 109 | 210 | 305 | |
| 11-13 | 111 | 200 | 306 | |
| 14-16 | 117 | 239 | - | |
| 17-19 | 107 | 250 | - | |
| 20-22 | 105 | 207 | 310 | |
| 23-25 | 120 | 207 | 311 | |
| 26-28 | 112 | 225 | 312 | |
| 29-31 | 121 | 214 | 313 | |
| 32-34 | 144 | 215 | 314 | |
| 35-37 | 171 | 217 | 315 | |
| 38-40 | 165 | 218 | - | |
| 41-43 | 135 | 219 | 317 | |
| 44-46 | 132 | 220 | 318 | |
| 47-49 | 145 | 221 | - | |
| 50-52 | 123 | 222 | - | |
| 53-55 | 124 | 223 | 316 | |
| 56-58 | 125 | 224 | - | |
| 59-61 | 127 | 226 | - | |
| 62-64 | 141 | 227 | 319 | |
| 65-67 | 133 | 229 | - | |
| 68-70 | 126 | 230 | 318 | |
| 71-73 | 118 | 231 | - | |
| 74-76 | 130 | 237 | 320 | |
| 77-79 | 115 | 239 | - | |
| 80-83 | 131 | 248 | 307 | |
| 84-87 | 136 | 233 | 308 | |
| 88-91 | 111 | 248 | 310 | |
| 92-95 | 148 | 244 | 311 | |
| 96-98 | 167 | 242 | 310 | |
| 99-00 | 101 | 241 | 316 | |

KTS 35

| PROPULSION / MANEUVER | | | | | | | | | | | |
|-----------------------|---|----|----|---|---|---|---|---|---|---|----------|
| Engine Rm | 1 | 35 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Std Turn |
| Prop/Shaft | 2 | 35 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 45 |
| Boiler Rm | 2 | 35 | 22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Emg Turn |
| | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 60 |

| Speed Increase | 00-11 kt | 12-19 kt | 20-25 kt | 26-28 kt | 29+ kt |
|----------------|----------|----------|----------|----------|--------|
| | 12.0 | 9.0 | 5.0 | 3.0 | 1.0 |

| TORPEDOES | |
|--------------|-----------|
| TT | 16 |
| RL | 16 |
| 21" Mark 15 | |
| Damage Class | B |
| Settings | |
| | 6,000/45 |
| | 10,000/33 |
| | 15,000/26 |



| LOSS OF SPEED DURING TURNS | | | | | | | | | | | | | | | | | | | |
|----------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| KTS | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 30 | 32 | 34 | 36 | 38 | 40 |
| STD | 3 | 5 | 6 | 8 | 9 | 10 | 12 | 13 | 15 | 16 | 18 | 19 | 21 | 22 | 24 | 26 | 27 | 28 | 30 |
| EMG | NA | NA | NA | NA | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |

| GUNNERY RECORD | | | | | | | | | | | |
|----------------|-------|--------|------|-----|---|----|-------|--------|------|-----|---|
| T# | RANGE | TARGET | RNDS | TBL | H | T# | RANGE | TARGET | RNDS | TBL | H |
| | | | | | | | | | | | |
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| T# | RANGE | TARGET | SETNG | TORPS | ANG | TGT MOVE | ARRIVE |
|----|-------|--------|-------|-------|-----|----------|--------|
| | | | | | | | |
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Ships In Class
BAGLEY, PATTERSON +



GLEAVES 2 Class
DD UNITED STATES

1943 to 1945

6719-0
Displacement 1,839 ts
Complement 208

SHIP LOG SHEET

Version AOTF1922A

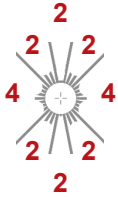


Length 341 ft
Beam 36 ft
Draft 13.1 ft



4 x 5"/38 Mk 12

ARCS OF FIRE



DIRECTORS

1

| Range | |
|-------------|-------|
| 18,000 yds | 36.0" |
| FC Radar +2 | |
| Mark 4 (FD) | |

| GUNNERY (FCS) | | | | | | |
|---------------|-------|-----|--------|-----|------|-----|
| TARGET | SHORT | | MEDIUM | | LONG | |
| SPEED | BRD | NAR | BRD | NAR | BRD | NAR |
| 0-9 | 26 | 18 | 20 | 14 | 17 | 12 |
| 10-18 | 20 | 14 | 15 | 11 | 13 | 9 |
| 19-26 | 17 | 12 | 13 | 9 | 11 | 8 |
| 27-32 | 15 | 10 | 12 | 8 | 10 | 7 |

| 18% PENETRATION TABLE | | | | |
|-----------------------|-------|-------|--------|--------|
| COM | SHORT | | MEDIUM | LONG |
| YDS | 2,500 | 6,000 | 10,000 | 18,000 |
| ROF | 10 | 8 | 5 | 2 |
| HORZ | 0 | 0 | 0 | 2 |
| VERT | 7 | 4 | 2 | 2 |

| Targ Sz | Crew | Sea |
|------------------------|------|-----|
| 0 | | |
| Searchlights Port Stbd | | |

| PROTECTION | |
|-------------|---|
| ARMOR VALUE | |
| HORIZONTAL | 0 |
| VERTICAL | 0 |

| HIT LOCATION | | |
|--------------|-------|-------|
| RANGE | HORZ | VERT |
| SHORT | 01-05 | 06-00 |
| MEDIUM | 01-19 | 20-00 |
| LONG | 01-39 | 40-00 |

| 5 3 DAMAGE CONTROL (DCR) | | | | | | | |
|--------------------------|--|--|--|--|--|--|--|
| | | | | | | | |

| FLAG COMMAND RATING (FCR) | | | | | | | |
|---------------------------|--|--|--|--|--|--|--|
| | | | | | | | |

W2-1R

| DAMAGE DETERMINATION | | | | |
|----------------------|---------|---------|---------|--|
| ROLL | CLASS 1 | CLASS 2 | CLASS 3 | |
| 01-02 | 100 | 202 | 304 | |
| 03-04 | 128 | 201 | 302 | |
| 05-06 | 102 | 203 | 303 | |
| 07-08 | 103 | 205 | 301 | |
| 09-10 | 109 | 210 | 305 | |
| 11-13 | 111 | 200 | 306 | |
| 14-16 | 117 | 239 | - | |
| 17-19 | 107 | 250 | - | |
| 20-22 | 105 | 207 | 310 | |
| 23-25 | 120 | 207 | 311 | |
| 26-28 | 112 | 225 | 312 | |
| 29-31 | 121 | 214 | 313 | |
| 32-34 | 144 | 215 | 314 | |
| 35-37 | 171 | 217 | 315 | |
| 38-40 | 165 | 218 | - | |
| 41-43 | 135 | 219 | 317 | |
| 44-46 | 132 | 220 | 318 | |
| 47-49 | 145 | 221 | - | |
| 50-52 | 123 | 222 | - | |
| 53-55 | 124 | 223 | 316 | |
| 56-58 | 125 | 224 | - | |
| 59-61 | 127 | 226 | - | |
| 62-64 | 141 | 227 | 319 | |
| 65-67 | 133 | 229 | - | |
| 68-70 | 126 | 230 | 318 | |
| 71-73 | 118 | 231 | - | |
| 74-76 | 130 | 237 | 320 | |
| 77-79 | 115 | 239 | - | |
| 80-83 | 131 | 248 | 307 | |
| 84-87 | 136 | 233 | 308 | |
| 88-91 | 111 | 248 | 310 | |
| 92-95 | 148 | 244 | 311 | |
| 96-98 | 167 | 242 | 310 | |
| 99-00 | 101 | 241 | 316 | |

KTS 35

| PROPULSION / MANEUVER | | | | | | | | | | |
|-----------------------|---|----|----|---|---|---|---|----------|--|--|
| Engine Rm | 2 | 35 | 20 | 0 | 0 | 0 | 0 | Std Turn | | |
| Prop/Shaft | 2 | 35 | 18 | 0 | 0 | 0 | 0 | 45 | | |
| Boiler Rm | 2 | 35 | 22 | 0 | 0 | 0 | 0 | Emg Turn | | |
| | | | 0 | 0 | 0 | 0 | 0 | 60 | | |

| TORPEDOES | | | |
|--------------|---|----|---|
| TT | 5 | RL | 5 |
| 21" Mark 15 | | | |
| Damage Class | B | | |
| Settings | | | |
| 6,000/45 | | | |
| 10,000/33 | | | |
| 15,000/26 | | | |

| Speed Increase | 00-11 kt | 12-19 kt | 20-25 kt | 26-28 kt | 29+ kt |
|----------------|----------|----------|----------|----------|--------|
| | 12.0 | 9.0 | 5.0 | 3.0 | 1.0 |

| LOSS OF SPEED DURING TURNS | | | | | | | | | | | | | | | | | | | |
|----------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| KTS | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 30 | 32 | 34 | 36 | 38 | 40 |
| STD | 3 | 5 | 6 | 8 | 9 | 10 | 12 | 13 | 15 | 16 | 18 | 19 | 21 | 22 | 24 | 26 | 27 | 28 | 30 |
| EMG | NA | NA | NA | NA | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |

| GUNNERY RECORD | | | | | |
|----------------|-------|--------|------|-----|---|
| T# | RANGE | TARGET | RNDS | TBL | H |
| | | | | | |
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| T# | RANGE | TARGET | SETNG | TORPS | ANG | TGT MOVE | ARRIVE |
|----|-------|--------|-------|-------|-----|----------|--------|
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Ships In Class
BALDWIN, THORN, WELLES +



FLETCHER Class
DD UNITED STATES

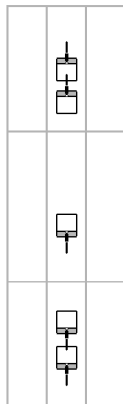
1943 to 1945
6883-0
Displacement 2,325 ts
Complement 273

SHIP LOG SHEET

Version AOTF1922A



Length 369 ft
Beam 40 ft
Draft 13.8 ft

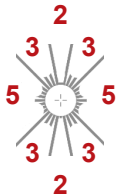


5 x 5"/38 Mk 12

DIRECTORS

1

ARCS OF FIRE



Range
18,000 yds 36.0"
FC Radar +2
Mark 4 (FD)

| TARGET SPEED | SHORT | | MEDIUM | | LONG | |
|--------------|-------|-----|--------|-----|------|-----|
| | BRD | NAR | BRD | NAR | BRD | NAR |
| 0-9 | 26 | 18 | 20 | 14 | 17 | 12 |
| 10-18 | 20 | 14 | 15 | 11 | 13 | 9 |
| 19-26 | 17 | 12 | 13 | 9 | 11 | 8 |
| 27-32 | 15 | 10 | 12 | 8 | 10 | 7 |

| COM YDS | PENETRATION TABLE | | | |
|---------|-------------------|--------|------|---|
| | SHORT | MEDIUM | LONG | |
| ROF | 10 | 8 | 5 | 2 |
| HORZ | 0 | 0 | 0 | 2 |
| VERT | 7 | 4 | 2 | 2 |

| Targ Sz | Crew | Sea |
|---------|------|-----|
| 1 | | |

| PROTECTION | |
|-------------|---|
| ARMOR VALUE | |
| HORIZONTAL | 0 |
| VERTICAL | 0 |

| HIT LOCATION | | |
|--------------|-------|-------|
| RANGE | HORZ | VERT |
| SHORT | 01-05 | 06-00 |
| MEDIUM | 01-19 | 20-00 |
| LONG | 01-39 | 40-00 |

| 6 | 3 | DAMAGE CONTROL (DCR) | | | | | | | | | | | | |
|---|---|----------------------|--|--|--|--|--|--|--|--|--|--|--|--|
| | | | | | | | | | | | | | | |

| FLAG COMMAND RATING (FCR) | | | | | | | | | | | |
|---------------------------|--|--|--|--|--|--|--|--|--|--|--|
| | | | | | | | | | | | |

W2-1R

| DAMAGE DETERMINATION | | | | |
|----------------------|---------|---------|---------|--|
| ROLL | CLASS 1 | CLASS 2 | CLASS 3 | |
| 01-02 | 100 | 202 | 304 | |
| 03-04 | 128 | 201 | 302 | |
| 05-06 | 102 | 203 | 303 | |
| 07-08 | 103 | 205 | 301 | |
| 09-10 | 109 | 210 | 305 | |
| 11-13 | 111 | 200 | 306 | |
| 14-16 | 117 | 239 | - | |
| 17-19 | 107 | 250 | - | |
| 20-22 | 105 | 207 | 310 | |
| 23-25 | 120 | 207 | 311 | |
| 26-28 | 112 | 225 | 312 | |
| 29-31 | 121 | 214 | 313 | |
| 32-34 | 144 | 215 | 314 | |
| 35-37 | 171 | 217 | 315 | |
| 38-40 | 165 | 218 | - | |
| 41-43 | 135 | 219 | 317 | |
| 44-46 | 132 | 220 | 318 | |
| 47-49 | 145 | 221 | - | |
| 50-52 | 123 | 222 | - | |
| 53-55 | 124 | 223 | 316 | |
| 56-58 | 125 | 224 | - | |
| 59-61 | 127 | 226 | - | |
| 62-64 | 141 | 227 | 319 | |
| 65-67 | 133 | 229 | - | |
| 68-70 | 126 | 230 | 318 | |
| 71-73 | 118 | 231 | - | |
| 74-76 | 130 | 237 | 320 | |
| 77-79 | 115 | 239 | - | |
| 80-83 | 131 | 248 | 307 | |
| 84-87 | 136 | 233 | 308 | |
| 88-91 | 111 | 248 | 310 | |
| 92-95 | 148 | 244 | 311 | |
| 96-98 | 167 | 242 | 310 | |
| 99-00 | 101 | 241 | 316 | |

KTS 36

| PROPULSION / MANEUVER | | | | | | | | | | |
|-----------------------|---|----|----|---|---|---|---|---|---|----------|
| Engine Rm | 2 | 36 | 21 | 0 | 0 | 0 | 0 | 0 | 0 | Std Turn |
| Prop/Shaft | 2 | 36 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 45 |
| Boiler Rm | 2 | 36 | 22 | 0 | 0 | 0 | 0 | 0 | 0 | Emg Turn |
| | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 60 |

| TORPEDOES | | | |
|--------------|----|----|----|
| TT | 10 | RL | 10 |
| 21" Mark 15 | | | |
| Damage Class | A | | |
| Settings | | | |
| 6,000/45 | | | |
| 10,000/33 | | | |
| 15,000/26 | | | |

| Speed Increase | 00-12 kt | 13-21 kt | 22-27 kt | 28-30 kt | 31+ kt |
|----------------|----------|----------|----------|----------|--------|
| | 13.0 | 9.0 | 6.0 | 3.0 | 1.0 |

| LOSS OF SPEED DURING TURNS | | | | | | | | | | | | | | | | | | | |
|----------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| KTS | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 | 26 | 28 | 30 | 32 | 34 | 36 | 38 | 40 |
| STD | 3 | 5 | 6 | 8 | 9 | 10 | 12 | 13 | 15 | 16 | 18 | 19 | 21 | 22 | 24 | 26 | 27 | 28 | 30 |
| EMG | NA | NA | NA | NA | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |

| GUNNERY RECORD | | | | | | | | | | | |
|----------------|-------|--------|------|-----|---|----|-------|--------|------|-----|---|
| T# | RANGE | TARGET | RNDS | TBL | H | T# | RANGE | TARGET | RNDS | TBL | H |
| | | | | | | | | | | | |
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| T# | RANGE | TARGET | SETNG | TORPS | ANG | TGT MOVE | ARRIVE |
|----|-------|--------|-------|-------|-----|----------|--------|
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
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Ships In Class
BOYD, CAPERTON, COGSWELL, INGERSOLL, HUNT, THE SULLIVANS +