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## GENERAL SPECIFICATIONS

The station coordinates listed herein were furnished by the Defense Mapping Agency, Hydrographic Center and are based upon the World Geodetic System (WGS) 1984. The U.S. Coast Guard is working to synchronize all Loran-C stations to within  $\pm 100$  nanoseconds to UTC.

The following parameters were used in the baseline length computations:

- a. Signal propagation: Use the velocity of light in free space as  $2.99792458 \times 10^8$  m/s and an index of refraction of 1.000338 at the surface for standard atmosphere.
- b. Phase of the groundwave: As defined in NBS Circular 573 (Available from Superintendent of Documents, U.S. Government Printing Office, Washington, D.C.)
- c. Conductivity:  $\Sigma = 5.0$  mhos/meter (seawater). Baseline electrical distance computations were made assuming a smooth, all seawater transmission path between stations.
- d. Permittivity of the earth:  $\epsilon_2 = 80$  ESU (for seawater)
- e. Altitude in meters:  $h_2 = 0$
- f. Parameter associated with the vertical lapse rate of the permittivity of the atmosphere:  $a = 0.75$  meters
- g. Frequency: 100kHz
- h. Spheroid: WGS 84 (equatorial radius:  $a = 6378137.0$  meters, polar radius:  $b = 6356752$  meters, flattening:  $F = (a-b)/a = .003352811$ )
- i. Emission Delay = Baseline Length + Coding Delay

## GENERAL NOTES

The notes below are referenced by number, where applicable, in the right-most column of each data sheet.

1. Host nation manned.
2. GCF-W-756CG Two Pulse Communications installed (Uses pulses 7 & 8 for backup control communications.)
3. Unmanned receiver site.
4. Manned receiver site.
5. Priority blanking used.
6. Alternate blanking used.

## LORAN-C CHAIN DATA SHEET

## CANADIAN EAST COAST LORAN-C CHAIN - GRI 5930

| STATION                                             | FUNCTION            | (NGS-84)<br>COORDINATES        | EMISSION/<br>CODING<br>DELAY, us | RADIATED<br>PEAK<br>POWER, KW | NOMINAL<br>ECD, us | CSECD<br>(us)                                                   | TOLERANCE<br>ECD (us) TD                                                 | GENERAL NOTES                                               |
|-----------------------------------------------------|---------------------|--------------------------------|----------------------------------|-------------------------------|--------------------|-----------------------------------------------------------------|--------------------------------------------------------------------------|-------------------------------------------------------------|
| CARBOU, ME                                          | MASTER              | 46 48 27.305N<br>67 55 37.159W |                                  | 800                           | 0.0                |                                                                 |                                                                          | (6)<br>Dual-rated to Northeast<br>U.S. Chain (9980)         |
| NANTUCKET, MA                                       | XRAY                | 41 15 12.046N<br>69 58 38.536W | 13131.88<br>11000                | 400                           | 0.0                |                                                                 |                                                                          | (6)<br>Dual-rated to Northeast<br>U.S. Chain (9980)         |
| CAPE RACE,<br>NEWFOUNDLAND,<br>CANADA               | YANKEE              | 46 46 32.286N<br>53 10 27.808W | 28755.02<br>25000                | 500                           | 0.0                |                                                                 |                                                                          | (1),(5)<br>Dual-rated to NFLD<br>East Coast Chain (7270)    |
| FOX HARBOUR,<br>CANADA                              | ZULU                | 52 22 35.252N<br>55 42 27.882W | 41594.59<br>38000                | 900                           | 0.0                |                                                                 |                                                                          | (1),(5)<br>Dual-rated to NFLD<br>East Coast Chain<br>(7270) |
| LORMONSITE<br>CAPE ELIZABETH,<br>ME                 | MONITOR             | 43 33 54.90N<br>70 11 57.90W   |                                  |                               |                    |                                                                 |                                                                          | (3)                                                         |
| LORMONSITE<br>MONTAGUE, PEI,<br>CANADA              | MONITOR             | 46 11 40.10N<br>62 39 37.40W   |                                  |                               |                    | M +1.5<br>X +1.1 14449.83<br>Y +1.1 29824.48<br>Z +0.9 43071.47 | $\pm 1.5$<br>$\pm 1.5 \pm 0.1$<br>$\pm 1.5 \pm 0.1$<br>$\pm 1.5 \pm 0.1$ | (3)                                                         |
| LORMONSTA<br>ST ANTHONY,<br>NEWFOUNDLAND,<br>CANADA | MONITOR/<br>CONTROL | 51 21 37.10N<br>55 37 28.48W   |                                  |                               |                    |                                                                 |                                                                          | (1),(4)                                                     |

## LORAN-C CHAIN DATA SHEET

## RUSSIAN AMERICAN LORAN-C CHAIN - GRI 5980

| STATION                                     | FUNCTION                   | WGS - 84<br>COORDINATES         | EMISSION/<br>CODING<br>DELAY, us | RADIATED<br>PEAK<br>POWER, KW | NOMINAL<br>ECD, us | CSECD<br>(us) | ASSIGNED<br>CSTD<br>(us) | TOLERANCE<br>ECD (us) TD | GENERAL NOTES                                             |
|---------------------------------------------|----------------------------|---------------------------------|----------------------------------|-------------------------------|--------------------|---------------|--------------------------|--------------------------|-----------------------------------------------------------|
| PETROPAVLOVSK,<br>KAMCHATKA,<br>RUSSIA      | MASTER                     | 53 07 47.584N<br>157 41 42.900E |                                  | 700                           | 0.0                |               |                          |                          | (1)<br>Dual-rated to Eastern<br>Russian Chain (7950)      |
| ATTU,<br>ATTU ISLAND,<br>ALASKA, USA        | XRAY                       | 52 49 44.134N<br>173 10 49.528E | 14467.56<br>11000                | 400                           | 0.0                |               |                          |                          | (5) (4)<br>Dual-rated to Northern<br>Pacific Chain (9990) |
| ALEXANDROVSK,<br>SAGHALEN ISLAND,<br>RUSSIA | YANKEE                     | 51 04 42.80N<br>142 42 04.95E   | 31508.50<br>28000                | 700                           | 0.0                |               |                          |                          | (1)<br>Dual-rated to Eastern<br>Russian Chain (7950)      |
| KODIAK,<br>KODIAK ISLAND,<br>ALASKA, USA    | A-1<br>MONITOR/<br>CONTROL |                                 |                                  |                               |                    | X T80         | 11001.92                 | $\pm 1.5 \pm 0.2$        |                                                           |

NOTE 1: Primary baseline control of the Russian Transmitting stations as performed/maintained by the Russian master station at Petropavlovsk, Russia.

NOTE 2: The XRAY baseline control process is a mixture of USCG technique (SAM) and Russian Chayka control methods. This process may result in small incremental CSTD changes (50 nanoseconds minimum). These changes will be announced and promulgated through user notices.

## LORAN—C CHAIN DATA SHEET

## CANADIAN WEST COAST LORAN—C CHAIN — GRI 5990

| STATION                              | FUNCTION           | WGS-84<br>COORDINATES           | EMISSION/<br>CODING<br>DELAY, us | RADIATED<br>PEAK<br>POWER, KW | NOMINAL<br>ECD, us | CSECO<br>(us)                      | TOLERANCE<br>ECD (us) TD   | GENERAL NOTES                                          |
|--------------------------------------|--------------------|---------------------------------|----------------------------------|-------------------------------|--------------------|------------------------------------|----------------------------|--------------------------------------------------------|
| WILLIAMS LAKE,<br>BC, CANADA         | MASTER/<br>CONTROL | 51 57 58.876N<br>122 22 01.686W |                                  | 400                           | +1.0               |                                    |                            | (1)(2)(6)<br>Dual-rated to North Central<br>U.S. Chain |
| SHOAL COVE, AK                       | XRAY               | 55 26 20.940N<br>131 15 19.094W | 13343.60<br>11000                | 560                           | 0.0                |                                    |                            | (2)(6) Dual-rated to Gulf<br>of Alaska Loran—C Chain   |
| GEORGE, WA                           | YANKEE             | 47 03 48.096N<br>119 44 38.976W | 28927.36<br>27000                | 1400                          | +0.5               |                                    |                            | (2)(6) Dual-rated to U.S.<br>West Coast Loran—C Chain  |
| PORT HARDY, BC,<br>CANADA            | ZULU/<br>MONITOR   | 50 38 29.830N<br>127 21 28.489W | 42288.63<br>41000                | 350                           | 0.0                | M +0.8                             | ± 1.5                      | (1)                                                    |
| LORMONSTE<br>SANDSPIT, BC,<br>CANADA | MONITOR            | 55 14 00.0N<br>131 48 50.0W     |                                  |                               |                    | X +2.1 11974.42                    | ± 1.5 ± 0.1                | (3)                                                    |
| LORMONSTE<br>WHIDBEY IS,<br>WA       | MONITOR            | 48 17 38.52N<br>122 33 59.53W   |                                  |                               |                    | Y +1.3 28405.29<br>Z -0.1 42345.84 | ± 1.5 ± 0.1<br>± 1.5 ± 0.1 | (3)                                                    |

## LORAN-C CHAIN DATA SHEET

## NEWFOUNDLAND EAST COAST LORAN-C CHAIN - GRI 7270

| STATION                                              | FUNCTION            | WGS - 84<br>COORDINATES        | EMISSION/<br>CODING<br>DELAY, us | RADIATED<br>PEAK<br>POWER, kW | NOMINAL<br>ECD, us | CSECD<br>(us)       | TOLERANCE<br>ECD (us) TD                            | GENERAL NOTES                                                |
|------------------------------------------------------|---------------------|--------------------------------|----------------------------------|-------------------------------|--------------------|---------------------|-----------------------------------------------------|--------------------------------------------------------------|
| COMFORT COVE,<br>NEWFOUNDLAND,<br>CANADA             | MASTER              | 49 19 53.57N<br>54 51 42.57W   |                                  | 250                           |                    |                     |                                                     | (1)                                                          |
| CAPE RACE,<br>NEWFOUNDLAND,<br>CANADA                | WHISKEY             | 46 46 32.288N<br>53 10 27.606W | 12037.49<br>11000                | 500                           | 0.0                |                     |                                                     | (1),(5)<br>Dual-rated to Canadian<br>East Coast Chain (5930) |
| FOX HARBOR,<br>NEWFOUNDLAND,<br>CANADA               | XRAY                | 52 22 35.252N<br>55 42 27.862W | 26148.01<br>25000                | 900                           | 0.0                |                     |                                                     | (1),(5)<br>Dual-rated to Canadian<br>East Coast Chain (5930) |
| LORMONSTA<br>ST. ANTHONY,<br>NEWFOUNDLAND,<br>CANADA | MONITOR/<br>CONTROL | 51 21 37.1N<br>55 37 27.4W     |                                  |                               |                    | M<br>W ***<br>X *** | $\pm 1.5$<br>$\pm 1.5 \pm 0.1$<br>$\pm 1.5 \pm 0.1$ | (1),(4)                                                      |
| LORMONSTE<br>RED HEAD,<br>NEWFOUNDLAND,<br>CANADA    | MONITOR             | 47 43 01.7N<br>52 42 32.0W     |                                  |                               |                    |                     |                                                     | (3)                                                          |

\*\*\* NOTE: THIS CHAIN STILL UNDER DEVELOPMENT AT TIME OF  
PRINTING

## LORAN-C CHAIN DATA SHEET

## GULF OF ALASKA LORAN-C CHAIN - GRI 7960

| STATION                     | FUNCTION                     | WGS - 84<br>COORDINATES         | EMISSION/<br>COOKING<br>DELAY, us | RADIATED<br>PEAK<br>POWER, KW | NOMINAL<br>ECO, us | CSECD CSTD<br>(us)        | TOLERANCE<br>ECD (us) TD | GENERAL NOTES                                                |
|-----------------------------|------------------------------|---------------------------------|-----------------------------------|-------------------------------|--------------------|---------------------------|--------------------------|--------------------------------------------------------------|
| TOK, AK                     | MASTER                       | 63 19 42.884N<br>142 48 31.346W |                                   | 560                           | +1.0               |                           |                          | (2)                                                          |
| KODIAK, AK                  | XRAY/<br>MONITOR/<br>CONTROL | 57 26 20.30N<br>152 22 10.65W   | 13804.45<br>11000                 | 400                           | 0.0                | M +0.7<br>X +2.1 11263.65 | $\pm 1.5 \pm 0.1$        | (2),(4),(6)<br>Dual-rated to North<br>Pacific Chain (9990)   |
| SHOAL COVE, AK              | YANKEE                       | 55 26 20.940N<br>131 15 19.094W | 29651.14<br>26000                 | 560                           | 0.0                |                           |                          | (2),(6)<br>Dual-rated to Canadian<br>West Coast Chain (5990) |
| PORT CLARENCE,<br>AK        | ZULU                         | 65 14 40.372N<br>166 53 11.996W | 47932.52<br>45000                 | 1000                          | 0.0                |                           |                          | (6)<br>Dual-rated to North<br>Pacific Chain (9990)           |
| LORMONSTE<br>JUNEAU, AK     | MONITOR                      | 58 21 35.188N<br>134 35 53.843W |                                   |                               |                    | Y +1.4 28559.49           | $\pm 1.5 \pm 0.1$        | (3)                                                          |
| LORMONSTE<br>FAIRBANKS, AK  | MONITOR                      | 64 49 02.860N<br>147 52 47.300W |                                   |                               |                    | Z +0.3 49922.55           | $\pm 1.5 \pm 0.1$        | (3)                                                          |
| LORMONSTE<br>GALENA, AK *** | MONITOR                      |                                 |                                   |                               |                    |                           |                          | (3)                                                          |

\*\*\* LORMONSTE GALENA STILL BEING DEVELOPED AT TIME OF  
PRINTING

## LORAN-C CHAIN DATA SHEET

## SOUTHEAST U.S. LORAN-C CHAIN - GRI 7980

| STATION                       | FUNCTION           | WGS - 84<br>COORDINATES         | EMISSION/<br>CODING<br>DELAY, us | RADIATED<br>PEAK<br>POWER, kW | NOMINAL<br>ECD, us | CSECD<br>(us)                                | TOLERANCE<br>ECD (us) TD                            | GENERAL NOTES                                           |
|-------------------------------|--------------------|---------------------------------|----------------------------------|-------------------------------|--------------------|----------------------------------------------|-----------------------------------------------------|---------------------------------------------------------|
| MALONE, FL                    | MASTER/<br>CONTROL | 30 59 38.870N<br>085 10 08.751W |                                  | 800                           | 0.0                |                                              |                                                     | (6)<br>Dual-rated to Great<br>Lakes Chain (8870)        |
| GRANGEVILLE, LA               | WHISKEY            | 30 43 33.149N<br>090 49 43.046W | 12809.54<br>11000                | 800                           | -0.5               |                                              |                                                     | (6)<br>Dual-rated to South<br>Central U.S. Chain (9810) |
| RAYMONDVILLE,<br>TX           | XRAY               | 28 31 55.141N<br>097 49 59.539W | 27443.38<br>23000                | 540                           | 0.0                |                                              |                                                     | (6)<br>Dual-rated to South<br>Central U.S. Chain (9810) |
| JUPITER, FL                   | YANKEE             | 27 01 58.63N<br>080 08 52.97W   | 45201.88<br>43000                | 350                           | 0.0                |                                              |                                                     |                                                         |
| CAROLINA BEACH,<br>NC         | ZULU               | 34 03 46.17N<br>077 54 46.21W   | 61542.72<br>59000                | 600                           | 0.0                |                                              |                                                     | (6)<br>Dual-rated to Northeast<br>U.S. Chain (9980)     |
| LORMONSITE<br>MAYPORT, FL     | MONITOR            | 30 22 59.90N<br>81 25 12.50W    |                                  |                               |                    | Y +1.7 45290.72<br>Z +1.6 62075.39           | $\pm 1.5 \pm 0.1$<br>$\pm 1.5 \pm 0.1$              | (3)                                                     |
| LORMONSITE<br>NEW ORLEANS, LA | MONITOR            | 29 49 17.40N<br>90 01 43.60W    |                                  |                               |                    | M +1.5<br>W +2.0 11612.46<br>X +1.3 28656.71 | $\pm 1.5$<br>$\pm 1.5 \pm 0.1$<br>$\pm 1.5 \pm 0.1$ | (3)                                                     |
| LORMONSITE<br>DESTIN, FL      | MONITOR            | 30 23 03.9 N<br>86 32 14.9 W    |                                  |                               |                    |                                              |                                                     | (3)                                                     |



## LORAN-C CHAIN DATA SHEET

## NORTH CENTRAL U.S. LORAN-C CHAIN - GRI 8290

| STATION                        | FUNCTION | WGS - 84<br>COORDINATES         | EMISSION/<br>CODING<br>DELAY, us | RADIATED<br>PEAK<br>POWER, KW | NOMINAL<br>ECD, us | CSECD<br>(us)                                   | TOLERANCE<br>ECD (us) TD                                          | GENERAL NOTES                                              |
|--------------------------------|----------|---------------------------------|----------------------------------|-------------------------------|--------------------|-------------------------------------------------|-------------------------------------------------------------------|------------------------------------------------------------|
| HAVRE, MT                      | MASTER   | 48 44 38.58N<br>109 58 53.613W  |                                  | 400                           | 0.0                |                                                 |                                                                   |                                                            |
| BAUDETTE, MN                   | WHISKEY  | 48 36 49.947N<br>094 33 17.915W | 14786.56<br>11000                | 800                           | 0.0                |                                                 |                                                                   | (6)<br>Dual-related to Great Lakes<br>Loran-C Chain (8970) |
| GILLETTE, WY                   | XRAY     | 44 00 11.305N<br>105 57 23.895W | 29084.44<br>27000                | 540                           | 0.0                |                                                 |                                                                   | (6)<br>Dual-related to South Central<br>U.S. Chain (9810)  |
| WILLIAMS LAKE, BC,<br>CANADA   | YANKEE   | 51 57 58.876N<br>122 22 01.686W | 45171.62<br>42000                | 400                           | 0.0                |                                                 |                                                                   | (6)<br>Dual-related to Canadian<br>West Coast Chain (5990) |
| LORMONSITE<br>BISMARCK, ND     | MONITOR  | 46 47 07.164N<br>100 44 52.023W |                                  |                               |                    | M +1.95<br>W +2.04 14058.72<br>X +2.02 28303.21 | $\pm 1.5$ $\pm 0.1$<br>$\pm 1.5$ $\pm 0.1$<br>$\pm 1.5$ $\pm 0.1$ | (5)                                                        |
| LORSTA<br>MIDDLETOWN, CA       | CONTROL  | 38 46 57.110N<br>122 29 43.975W |                                  |                               |                    |                                                 |                                                                   |                                                            |
| LORMONSITE<br>SPOKANE, WA      | MONITOR  | 47 36 47N<br>117 32 57W         |                                  |                               |                    | Y +1.20 45235.62                                | $\pm 1.5 \pm 0.1$                                                 | (5)                                                        |
| LORMONSITE<br>MEDICAL LAKE, WA | MONITOR  | 47 33 03N<br>117 43 35W         |                                  |                               |                    |                                                 |                                                                   | (5)                                                        |

## LORAN-C CHAIN DATA SHEET

## GREAT LAKES LORAN-C CHAIN - GRI 8970

| STATION                             | FUNCTION         | WGS - 84<br>COORDINATES         | EMISSION/<br>CODING<br>DELAY, us | RADIATED<br>PEAK<br>POWER, kW | NOMINAL<br>ECD, us | CSECD<br>(us)              | CSTD<br>(us)         | TOLERANCE<br>ECD (us) TD                            | GENERAL NOTES                                                    |
|-------------------------------------|------------------|---------------------------------|----------------------------------|-------------------------------|--------------------|----------------------------|----------------------|-----------------------------------------------------|------------------------------------------------------------------|
| DANA, IN                            | MASTER           | 39 51 07.658N<br>087 29 11.586W |                                  | 400                           | -0.5               |                            |                      |                                                     | (6)<br>Dual-rated to Northeast<br>U.S. Chain (9980)              |
| MALONE, FL                          | WHISKEY          | 30 59 38.870N<br>085 10 08.751W | 14355.11<br>11000                | 800                           | 0.0                |                            |                      |                                                     | (6)<br>Dual-rated to Southeast<br>U.S. Chain (7980)              |
| SENECA, NY                          | XRAY/<br>CONTROL | 42 42 50.716N<br>076 49 33.306W | 31162.08<br>28000                | 800                           | 0.0                |                            |                      |                                                     | (6)<br>Dual-rated to Northeast<br>U.S. Chain (9980)              |
| BAUDETTE, MN                        | YANKEE           | 48 38 49.947N<br>094 33 17.915W | 47753.74<br>44000                | 800                           | 0.0                |                            |                      |                                                     | (6)<br>Dual-rated to North<br>Central U.S. Chain (8290)          |
| BOISE CITY, OK                      | ZULU             | 36 30 20.783N<br>102 53 59.487W | 63669.46<br>59000                | 900                           | 0.0                |                            |                      |                                                     | (6)<br>Dual-rated to South<br>Central U.S. Chain (9610)          |
| EECEN,<br>WILDWOOD, NJ              | TANGO            | 38 56 58.22N<br>74 52 01.57W    | 71617.92<br>72000                | Various                       |                    |                            |                      |                                                     | Experimental station.<br>NOT to be used for<br>navigational use. |
| LORMON SITE<br>DUNBAR FOREST,<br>MI | MONITOR          | 46 19 24.7 N<br>84 13 17.9 W    |                                  |                               |                    | M +2.2<br>X +2.0<br>Y +0.7 | 30978.80<br>47929.82 | $\pm 1.5$<br>$\pm 1.5 \pm 0.1$<br>$\pm 1.5 \pm 0.1$ | (3)                                                              |
| LORMON SITE<br>PLUMBROOK, OH        | MONITOR          | 44 22 47.1 N<br>82 39 37.9 W    |                                  |                               |                    |                            |                      |                                                     | (3)                                                              |
| LORMON SITE<br>LITTLE ROCK, AK      | MONITOR          | 34 43 55.083N<br>092 14 08.489W |                                  |                               |                    | W +2.6<br>Z +2.1           | 14801.09<br>84599.82 | $\pm 1.5 \pm 0.1$<br>$\pm 1.5 \pm 0.1$              | (3)                                                              |
| LORMON SITE<br>NEW ORLEANS, LA      | MONITOR          | 29 49 17.40N<br>90 01 43.80W    |                                  |                               |                    |                            |                      |                                                     | (3)                                                              |

## LORAN-C CHAIN DATA SHEET

## SOUTH CENTRAL U.S. LORAN-C CHAIN - GRI 9610

| STATION                           | FUNCTION | WGS - 84<br>COORDINATES         | EMISSION/<br>CODING<br>DELAY, us | RADIATED<br>PEAK<br>POWER, kW | NOMINAL<br>ECD, us | CSECD<br>(us)                                  | TOLERANCE<br>ECD (us) TD                            | GENERAL NOTES                                           |
|-----------------------------------|----------|---------------------------------|----------------------------------|-------------------------------|--------------------|------------------------------------------------|-----------------------------------------------------|---------------------------------------------------------|
| BOISE CITY, OK                    | MASTER   | 36 30 20.783N<br>102 53 59.467W |                                  | 900                           | 0.0                |                                                |                                                     | (6)<br>Dual-rated to Great<br>Lakes Chain (8970)        |
| GILLETTE, WY                      | VICTOR   | 44 00 11.305N<br>105 37 23.895W | 13884.48<br>11000                | 540                           | 0.0                |                                                |                                                     | (6)<br>Dual-rated to North<br>Central U.S. Chain (8290) |
| SEARCHLIGHT,<br>NV                | WHISKEY  | 35 19 18.305N<br>114 48 16.881W | 28611.81<br>25000                | 540                           | 0.0                |                                                |                                                     | (6)<br>Dual-rated to U.S. West<br>Coast Chain (9940)    |
| LAS CRUCES,<br>NM                 | XRAY     | 32 04 18.130N<br>106 52 04.388W | 42044.93<br>40000                | 540                           | 0.0                |                                                |                                                     |                                                         |
| RAYMONDVILLE,<br>TX               | YANKEE   | 26 31 55.141N<br>097 49 59.539W | 56024.80<br>52000                | 540                           | 0.0                |                                                |                                                     | (6)<br>Dual-rated to Southeast<br>U.S. Chain (7980)     |
| GRANGEVILLE, LA                   | ZULU     | 30 43 33.149N<br>090 49 43.046W | 69304.00<br>65000                | 600                           |                    |                                                |                                                     | (6)<br>Dual-rated to Southeast<br>U.S. Chain (7980)     |
| LORMON SITE<br>LITTLE ROCK, AK    | MONITOR  | 34 43 55.083N<br>092 14 06.489W |                                  |                               |                    | Z +2.60 67581.09                               | $\pm 1.5 \pm 0.1$                                   | (3)                                                     |
| LORMON SITE<br>GRAND JUNCT,<br>CO | MONITOR  | 39 07 24.790N<br>108 30 56.180W |                                  |                               |                    | M +1.5<br>V +1.80 13949.76<br>W +2.50 29033.22 | $\pm 1.5$<br>$\pm 1.5 \pm 0.1$<br>$\pm 1.5 \pm 0.1$ | (3)                                                     |
| LORMON SITE<br>MIDLAND, TX        | MONITOR  | 31 56 53.609N<br>102 12 32.499W |                                  |                               |                    | X +2.20 41814.55<br>Y +1.60 56780.08           | $\pm 1.5 \pm 0.1$<br>$\pm 1.5 \pm 0.1$              | (3)                                                     |
| LORMON SITE<br>BISMARCK, ND       | MONITOR  | 46 47 07.164N<br>100 44 52.023W |                                  |                               |                    |                                                |                                                     | (3)                                                     |

## LORAN-C CHAIN DATA SHEET

## U.S. WEST COAST LORAN-C CHAIN - GRI 9940

| STATION                            | FUNCTION         | WGS-84<br>COORDINATES           | EMISSION/<br>CODING<br>DELAY, us | RADIATED<br>PEAK<br>POWER, kW | NOMINAL<br>ECD, us | CSECD<br>(us)                                | TOLERANCE<br>ECD (us) TD                            | GENERAL NOTES                                                  |
|------------------------------------|------------------|---------------------------------|----------------------------------|-------------------------------|--------------------|----------------------------------------------|-----------------------------------------------------|----------------------------------------------------------------|
| FALLON, NV                         | MASTER           | 39 33 08.740N<br>118 49 55.816W |                                  | 400                           | +1.0               |                                              |                                                     |                                                                |
| GEORGE, WA                         | WHISKEY          | 47 03 48.098N<br>119 44 38.976W | 13798.90<br>11000                | 1400                          | +0.5               |                                              |                                                     | (2),(6)<br>Dual-related to Canadian<br>West Coast Chain (5990) |
| MIDDLETOWN, CA                     | XRAY/<br>CONTROL | 38 48 57.110N<br>122 29 43.976W | 28094.50<br>27000                | 400                           | +0.5               |                                              |                                                     | (2)                                                            |
| SEARCHLIGHT, NV                    | YANKEE           | 35 19 18.305N<br>114 48 16.881W | 41967.30<br>40000                | 580                           | 0.0                |                                              |                                                     | (2),(6)<br>Dual-related to South<br>Central U.S. Chain (9810)  |
| LORMONSTE<br>POINT PINOS, CA       | MONITOR          | 36 38 12.36N<br>121 56 07.95W   |                                  |                               |                    | M +1.4<br>X +1.6 27494.29<br>Y +1.7 42756.06 | $\pm 1.5$<br>$\pm 1.5 \pm 0.1$<br>$\pm 1.5 \pm 0.1$ | (3)                                                            |
| LORMONSTE<br>POINT CABRILLO,<br>CA | MONITOR          | 39 20 54.1 N<br>123 40 29.4 W   |                                  |                               |                    | W +0.2 15428.14                              | $\pm 1.5 \pm 0.1$                                   | (3)                                                            |

## LORAN-C CHAIN DATA SHEET

## NORTHEAST U.S. LORAN-C CHAIN - GRI 9960

| STATION                             | FUNCTION           | WGS - 84<br>COORDINATES         | EMISSION/<br>CODING<br>DELAY, us | RADIATED<br>PEAK<br>POWER, kW | NOMINAL<br>ECD, us | CSECD<br>(us)                                | TOLERANCE<br>ECD (us) TD                            | GENERAL NOTES                                                    |
|-------------------------------------|--------------------|---------------------------------|----------------------------------|-------------------------------|--------------------|----------------------------------------------|-----------------------------------------------------|------------------------------------------------------------------|
| SENECA, NY                          | MASTER/<br>CONTROL | 42 42 50.716N<br>076 49 33.308W |                                  | 800                           | 0.0                |                                              |                                                     | (6)<br>Dual-rated to Great<br>Lakes Chain (8970)                 |
| CARIBOU, ME                         | WHISKEY            | 46 48 27.305N<br>067 55 37.159W | 13797.20<br>11000                | 800                           | 0.0                |                                              |                                                     | (6)<br>Dual-rated to Canadian<br>East Coast Chain (5930)         |
| NANTUCKET, MA                       | XRAY               | 41 15 12.048N<br>069 58 38.536W | 28969.93<br>25000                | 400                           | 0.0                |                                              |                                                     | (6)<br>Dual-rated to Canadian<br>East Coast Chain (5930)         |
| CAROLINA BEACH,<br>NC               | YANKEE             | 34 03 46.17N<br>077 54 46.21W   | 42221.65<br>39000                | 600                           | 0.0                |                                              |                                                     | (6)<br>Dual-rated to Northeast<br>U.S. Chain (9960)              |
| DANA, IN                            | ZULU               | 39 51 07.858N<br>087 29 11.586W | 57162.06<br>54000                | 400                           | -0.5               |                                              |                                                     | (6)<br>Dual-rated to Great<br>Lakes Chain (8970)                 |
| EECEN,<br>WILLOWOOD, NJ             | TANGO              | 38 56 58.22N<br>074 52 01.57W   | 81500.49<br>80000                | Various                       |                    |                                              |                                                     | Experimental station.<br>NOT to be used for<br>navigational use. |
| LORMONSITE<br>CAPE ELIZABETH,<br>ME | MONITOR            | 43 33 54.90N<br>070 11 57.90W   |                                  |                               |                    | W +1.2 13311.48                              | $\pm 1.5 \pm 0.1$                                   | (3)                                                              |
| LORMONSITE<br>SANDY HOOK, NJ        | MONITOR            | 40 28 17.10N<br>074 01 03.10W   |                                  |                               |                    | M +2.0<br>X +1.5 26999.78<br>Y +2.1 43720.37 | $\pm 1.5$<br>$\pm 1.5 \pm 0.1$<br>$\pm 1.5 \pm 0.1$ | (3)                                                              |
| LORMONSITE<br>PLUM BROOK, OH        | MONITOR            | 41 22 47.1 N<br>082 39 37.9 W   |                                  |                               |                    | Z +1.5 56950.89                              | $\pm 1.5 \pm 0.1$                                   | (3)                                                              |
| LORMONSITE<br>DUNBAR FOREST,<br>MI  | MONITOR            | 46 19 24.7N<br>084 13 17.9W     |                                  |                               |                    |                                              |                                                     | (3)                                                              |

## LORAN-C CHAIN DATA SHEET

## NORTH PACIFIC LORAN-C CHAIN - GRI 9990

| STATION                     | FUNCTION         | WGS - 84<br>COORDINATES           | EMISSION/<br>CODING<br>DELAY, us | RADIATED<br>PEAK<br>POWER, kW | NOMINAL<br>ECD, us | CSECD<br>(us)    | CSSTD<br>(us)        | TOLERANCE<br>ECD (us) TD               | GENERAL NOTES                                             |
|-----------------------------|------------------|-----------------------------------|----------------------------------|-------------------------------|--------------------|------------------|----------------------|----------------------------------------|-----------------------------------------------------------|
| ST PAUL,<br>PRIEBLOF IS, AK | MASTER           | 57 09 12.350N<br>170 15 06.245W   |                                  | 400                           | 0.0                |                  |                      |                                        | (4)                                                       |
| ATTU,<br>ATTU IS, AK        | XRAY             | 52 49 44.134N<br>173 10 49.528E   | 14875.25<br>11000                | 400                           | 0.0                |                  |                      |                                        | (4),(5)<br>Dual-related to Russian<br>American Chain 5980 |
| PORT CLARENCE,<br>AK        | YANKEE           | 65 14 40.372N<br>168 53 11.996W   | 32068.95<br>29000                | 1000                          | 0.0                |                  |                      |                                        | (6)<br>Dual-related to Gulf of<br>Alaska Chain (7980)     |
| KODIAK,<br>NARROW CAPE, AK  | ZULU/<br>CONTROL | 57 26 20.30N<br>152 22 10.65W     | 46590.45<br>43000                | 400                           | 0.0                |                  |                      |                                        | (6)<br>Dual-related to Gulf of<br>Alaska Chain (7980)     |
| LORMONSITE<br>KODIAK, AK    | MONITOR          | 57 49 24.095N<br>152 19 41.386W   |                                  |                               |                    | M +0.1<br>Z +2.1 | 43146.93             | $\pm 1.5$<br>$\pm 1.5 \pm 0.1$         |                                                           |
| LORMONSITE<br>ST PAUL, AK   | MONITOR          | 57 09 15.852N<br>170 13 13.948W   |                                  |                               |                    |                  |                      |                                        |                                                           |
| LORMONSITE<br>ADAK IS., AK  | MONITOR          | 51 57 10.611 N<br>176 36 28.069 W |                                  |                               |                    | X +1.2<br>Y +0.8 | 14848.23<br>34977.00 | $\pm 1.5 \pm 0.1$<br>$\pm 1.5 \pm 0.1$ |                                                           |