SRP

1993 PASSCAL-OREGON SNAKE RIVER PLAINS EXPERIMENT

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University of Oregon

October, 1994

PASSCAL Data Report 94-014

IRIS DATA MANAGEMENT SYSTEM

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1993 PASSCAL-Oregon Snake River Plains Experiment

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I. Introduction

From May through November of 1993, the University of Oregon operated a set of 25 predominately broad-band sites across the eastern Snake River Plains (ESRP), Idaho, USA. The array was a 550 km long NW-SE trending line array which was symmetrically centered about the 90 km wide volcanic depression associated with the eastern Snake River Plains. The array crossed the ESRP at Pocatello, Idaho; which is 250 km SW of the Yellowstone Volcanic Caldera. The primary data collection goal was recording teleseismic waveforms to image the crust-mantle system beneath the SRP. The experiment went very well and 33 Gb of continuous SEGY data were collected, of which 4 Gb of event associated data form this PASSCAL data product.

II. Array Configurations

A total of 55 different stations were occupied during the course of the experiment; however, at any one time no more than 25 stations were operational. Typically, each of the 55 stations recorded data for 2.5 months. (Table 1). The time dependent configuration of the 25 sensors consisted of four configurations.

> Configuration I (jday 112-152): the array was configured at a 10 km spacing with a sample rate of 20 sps and extended 250 km from the BOR to NIT stations.
>
> Configuration II (jday 152-220): the array was configured at a 20 km spacing with a sample rate of 10 sps and extended 550 km from SDM to CAR.
>
> Configuration III (jday 222-290): the array was again configured at a 20 km spacing with a sample rate of 10 sps and extended from SDM to CAR. The difference with respect to the configuration II was that the sites within the interior of the array were shifted by 10 km. Thus, many of the stations occupied during Configuration I were re-occupied.
>
> Configuration IV (jday 290-320): Stations were concentrated across the SRP at a 10 km spacing and the sample rate was 50 sps (although the event data associated with this data product was downsampled with the PASSCAL prog firfilt to 25 sps).

III. Stations

The total configuration of the array was 550 km with an average final station spacing of 10 km (Figure 1; Table 2). Most of the sites were on bedrock; however, notable exceptions which show significant signal from sedimentary basin were BCN, BUC, and NIT. The vaults were a one meter cubed box of 1 inch plywood insulated with 2 inches of blue board along the sides and 4 inches under the lid. To add further thermal insulation, an inner box was placed around the sensor and up to a feet of dirt was placed over each lid. The pad was 2 foot in diameter and was usually poured directly onto bedrock.

Station locations were mostly derived from the GPS locations provided in the REFTEK log file every hour when the GPS locks. After removing obvious outleirs, the mean of the over 500 locations for each station were found yielding locations accurate to within 100 meters. For the four stations which had exclusive omega timing, map locations were used.

IV. Events

The 374 events windowed from the continuous data were identified from the Preliminary Determination of Epicenter catalogue (PDE's) using the following delta-magnitude selection criterion: >5.8 for 95-180°; >5.5 for 60-95°; >5.0 for 30-60°; >4.5 for 10-30°; and > 3.0 for 0-10° (Figure 2) The event table is in the info directory on tape 4 and contains the PDE parameters used for windowing the continuous data. We did not attempt to extract local events.

V. Sensors

The sensor table is keyed to the data set through the sensor number (Table 3). The sensor transfer functions are the nominal parameters provided by the manufacturer. The free-period is in seconds, the damping factor in percent of critical and the V,N,E numbers are the sensor gain in V/M/S. All the sensors (except the cmg hybrids and the 3-T) are second order systems which are described by the free-period and damping factor. The three hybrid sensors (model cmg-hyp-10 and the guralp-3-T) responses are not the standard second-order system (i.e., damped harmonic oscillator), but are instead first-order systems. Thus, the free period in Table 3 represents a pure real pole in the Laplace plane which of course is just an exponentially decaying response. Of course, the damping factor does not apply to these first-order sensors and has been arbitrarily set to zero in the sensor table.

The sensor performance was typical of broad-band deployment; they worked but did produce "weird signal" at times. In general, about 80% of the data provided in this product is of high quality running noise levels comparable to the GSN stations. The remaining 20% of the data does suffer from a variety of broad-band sensor problems. Specifically, most of the Strekheisen's suffered episodically from the occurence of a large long period (>50-100 sec) instabilities which were quite often well-correlated between the channels (the "drunken strekie syndrome"). The problem from our own testing and discussion with Strekheisen apparently result from "some non-linear problem associated with absolute temperature". The problem affected some of the small amplitude surface waves recordings, but does not really affect the body waves and can be effectively removed with a high-pass filter. Likewise, occasionally a few of the guralps produced "weird signal" due to sensor problems.

To keep the sensors running properly, the REFTEK calibration function was used to auto-center the broad-band sensor every two days. For the most part, this auto-centering kept over 90% of the sensors well-centered. Sensor calibrations were also performed upon most visits by sending the REFTEK step function calibration signal to the sensors.

VI. DAS and Timing

All the DAS were 6 channel Reftek recorders which were run in a 16 bit continuous mode with one hour long files. The gain for all the broad-bands was 32 and 512 for the L4c's. The sample rate changed 3 times, as noted above. The power system comprised two 100 amp-hr gell cells and 60 watts of solar panels which provided an almost flawless power system.

The timing was mostly GPS, provideding timing errors of less than 5 milliseconds. In a few cases, the GPS failed to lock for up to a week producing timing errors of up to a half a second. We have not corrected these very infrequent timing errors; however, these errors may be evaluated by looking at the REFTEK log files. The ±1 sec "REFTEK systems bug" occurred very infrequently.

The only non-GPS DAS's where 364, 365, and 368 which had omega timing. The timing accuracy of these clocks was checked visually with the PASSCAL clockview program and found to keep accurate time. The only exception was DAS 368 which ran at HOG from jday 246-288 and did not lock at all during this epoch due to a bad clock board.

VII. Trace Processing

The site-epoch table lists the array configuration and equipment with respect to time (Table 4), i.e., what DAS and sensor were at what site at a particular time. This table is derived from field notes from the 552 site visits which occurred approximately every 3 weeks during the experiment. In addition, the site-epoch table contains the orientation of the channels. To keep our channels naturally rotated for the circum-Pacific seismicity the N and E channels are NOT respectively, north and east. The N channel points to the northwest (N45W) and the E channel points to the northeast (N45E). A declination of 15 degrees was used along the entire array.

In table TAB_all is a list of all possible station/event pairs recorded by our experiment. This table was derived by cross-correlating the site-epoch table against the event table. Thus, this list of 8652 possible station event pairs is theoretical, in the sense that it ignored station down-time associated with installation, station moves, and equipment failure. >From this list, 7406 stn-event pairs were extracted given a >86% data recovery rate. This file is thus the primary information linking a event, station, sensor, and DAS to a specific trace.

Using the TAB_all table to drive a csh programs which called segymerge, each stn-event file was derived from the continuous data. Each file starts 100 sec before the P-time predicted by the IASP travel-time program. The length of each record after the predicted P-time is proportional to the distance of each stn-event pair and was made generous enough to capture the entire minor arc surface wave arrivals.

VIII. Tapes

The whole data set is contained on four UNIX tar tapes. The tapes are sorted by event number and the data format is SEGY. Each data tape has the data stored by event number; for example, event eight is stored in directory /008. Within each event directory exists all the data associated with that event. The filenames are of the form: <event number>.<station name>.<component>. For example, the filename 008.MOR.V is the trace associated with event eight, station MOR recorded on the vertical component. On tape four is the ancillary information associated with our experiment. The REFTEK log and error directories are present and the filenames contained herein are identified by the moniker which is produced by ref2segy (i.e., 288.0107.log is DAS 0107 which was visited on day 288). In the TABLES directory on tape 4 is contained the tables presented herein.

IX. Participated Personals

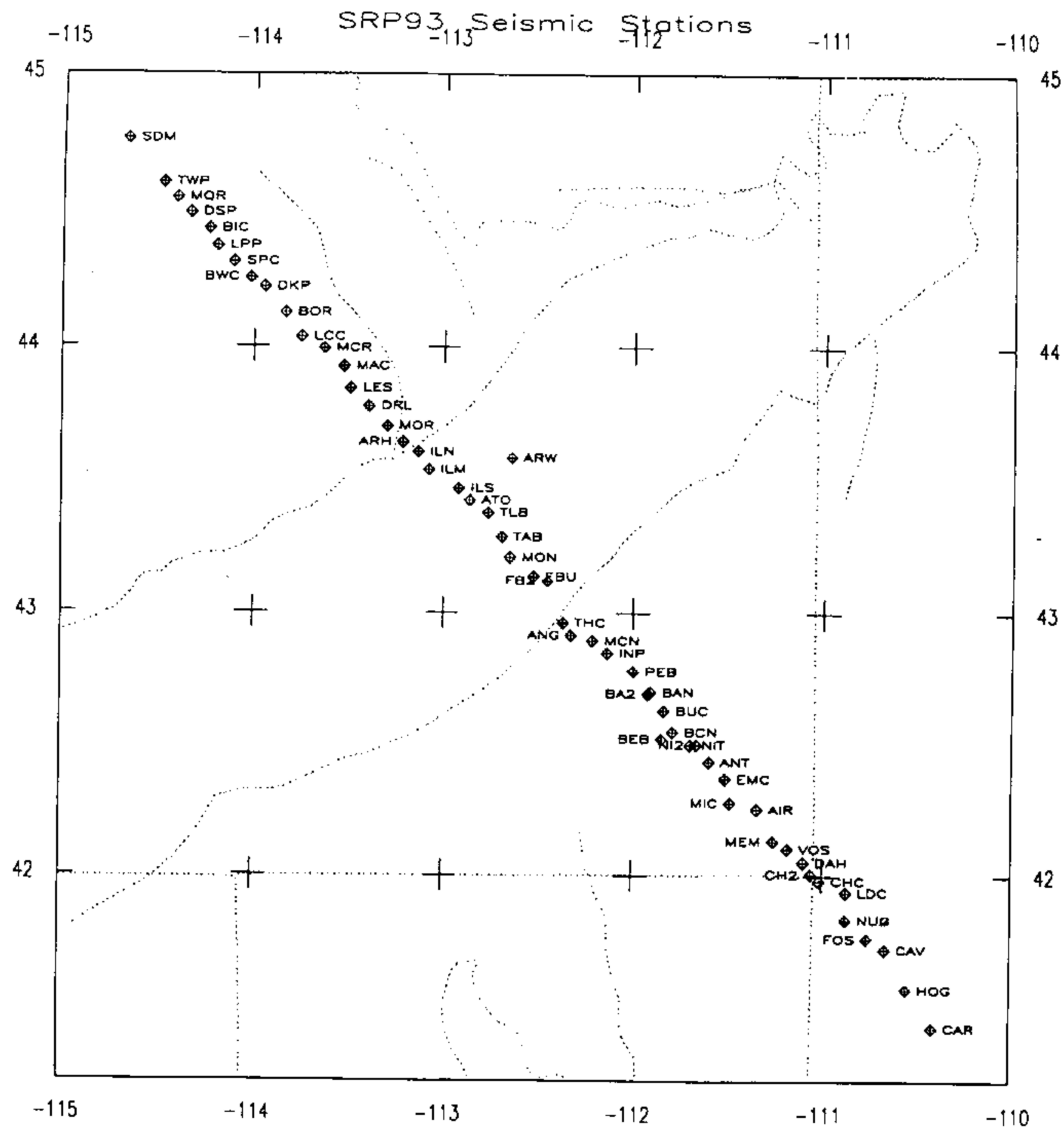
From the Oregon Geophysics program we thanks the following people for their devoted service: Gene Humphreys, Ken Dueker, Randy Palmer, Pat Ryan, Doug Hennion, Chris Bryant, Chris Smith, Peng Xianpeng, Dave Zike, Glen Biasi, Jeff Ball, Bill Zedicker, Rebeca Saltzer, and Steve Dueker.

In addition, we thank both Bob Busby and Paul Friburg from the Passcal Instrument Center for their generous support and help.

X. TABLES

XI. FIGURES

Figure 1.



SRP93 Seismic Stations
-115
-114
-113
-112
-111
-110
45
44
43
42
SDM
TWP
MQR
DSP
BIC
LPP
SPC
BWC
DKP
BOR
LCC
MCR
MAC
LES
DRL
MOR
ARH
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LDC
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CAV
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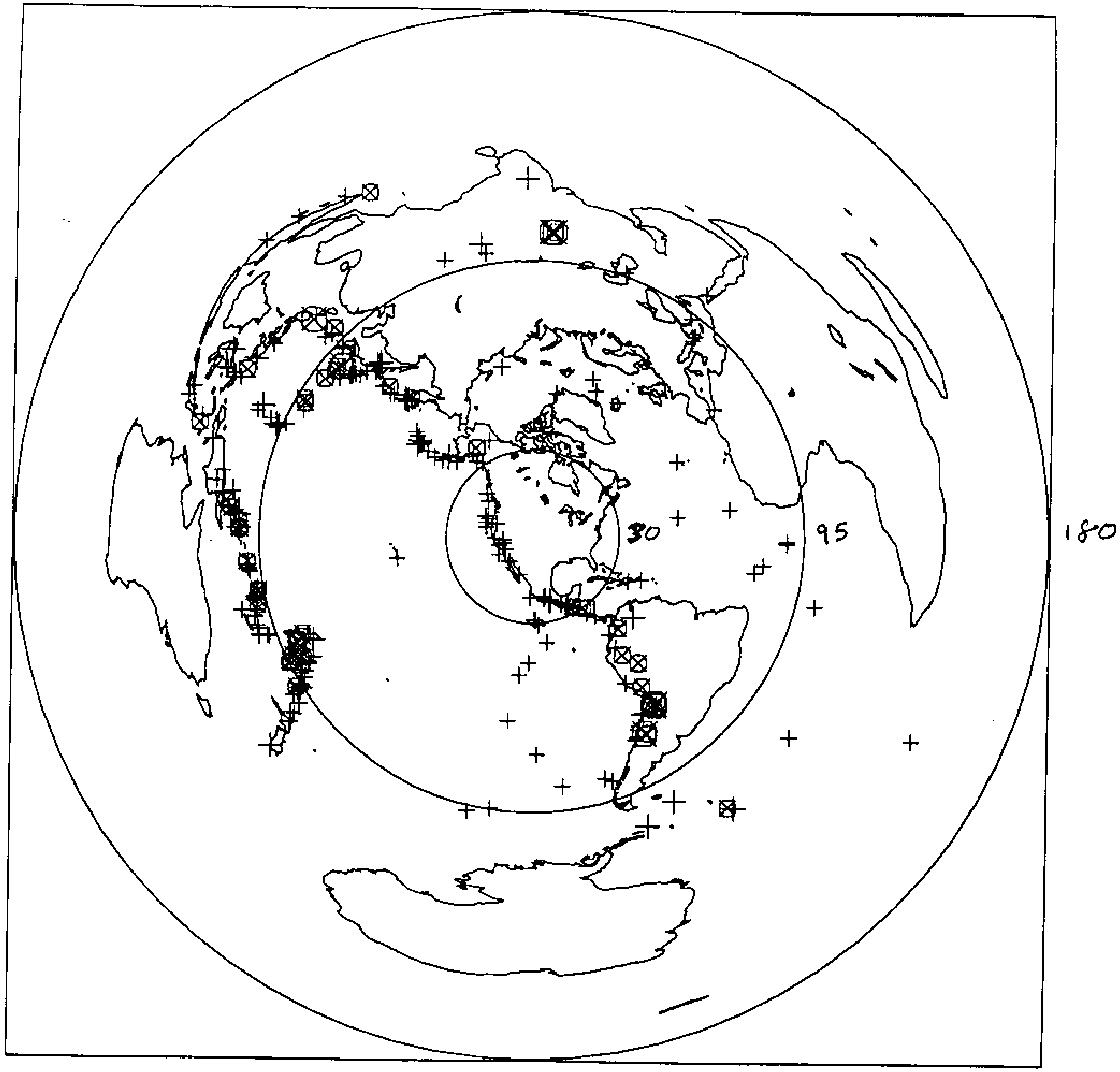
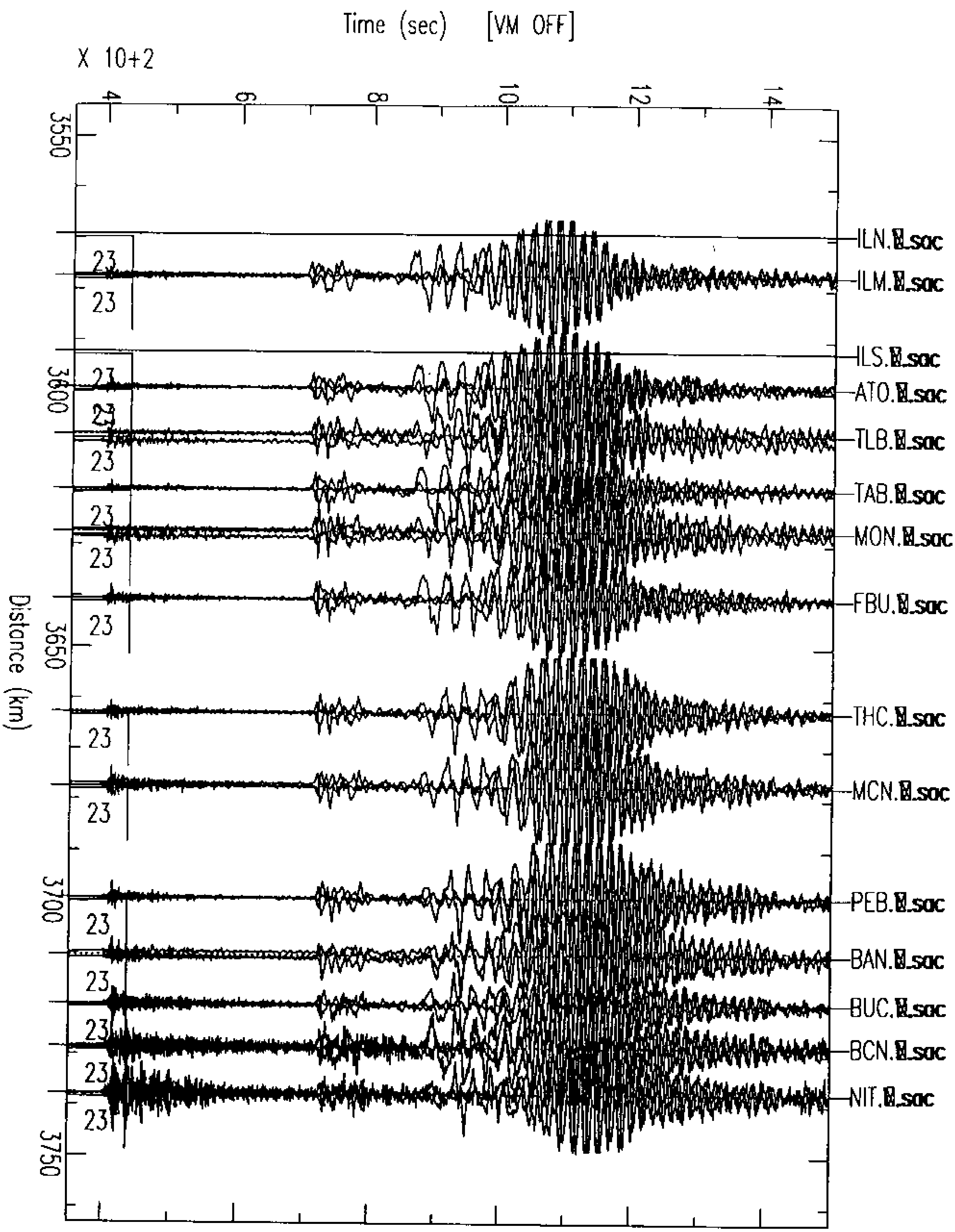
CAR

Figure 2.

SRP93 Event distribution




Time (sec) [VM OFF]
X 10+2
Distance (km)
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MON.■.sac
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THC.■.sac
MCN.■.sac
PEB.■.sac
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Figure 3.

Table 1.

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112 --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- FBU --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---
113 --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- TLB TAB --- FBU --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---
114 --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- TLB TAB MON FBU --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---
115 --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- TLB TAB MON FBU --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---
116 --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ARB --- --- --- --- --- TLB TAB MON FBU --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---
117 --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ARB --- --- --- --- ATO TLB TAB MON FBU --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---
118 --- --- --- --- --- --- --- --- --- --- --- MCR MAC LES DRL MOR ARB --- --- --- --- ATO TLB TAB MON FBU --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---
119 --- --- --- --- --- --- --- --- --- --- LCC MCR MAC LES DRL MOR ARB --- --- --- --- ATO TLB TAB MON FBU --- --- --- MCN --- --- --- --- --- BCN --- NIT --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---
120 --- --- --- --- --- --- --- --- --- --- LCC MCR MAC LES DRL MOR ARB --- ILM --- ILS ATO TLB TAB MON FBU --- --- --- MCN --- --- --- --- --- BCN --- NIT --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---
121 --- --- --- --- --- --- --- --- --- --- LCC MCR MAC LES DRL MOR ARB ILN ILM --- ILS ATO TLB TAB MON FBU --- TBC --- MCN --- --- --- --- --- BCN --- NIT --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---
122 --- --- --- --- --- --- --- --- --- --- LCC MCR MAC LES DRL MOR ARB ILN ILM --- ILS ATO TLB TAB MON FBU --- TBC --- MCN --- --- --- --- --- BCN --- NIT --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---
123 --- --- --- --- --- --- --- --- --- --- LCC MCR MAC LES DRL MOR ARB ILN ILM --- ILS ATO TLB TAB MON FBU --- TBC --- MCN --- --- --- --- --- BCN --- NIT --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---
124 --- --- --- --- --- --- --- --- --- --- LCC MCR MAC LES DRL MOR ARB ILN ILM --- ILS ATO TLB TAB MON FBU --- TBC --- MCN --- --- --- --- --- BCN --- NIT --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---
125 --- --- --- --- --- --- --- --- --- --- LCC MCR MAC LES DRL MOR ARB ILN ILM --- ILS ATO TLB TAB MON FBU --- TBC --- MCN --- --- --- --- --- BCN --- NIT --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---
126 --- --- --- --- --- --- --- --- --- --- LCC MCR MAC LES DRL MOR ARB ILN ILM --- ILS ATO TLB TAB MON FBU --- TBC --- MCN --- --- --- --- --- BCN --- NIT --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---
127 --- --- --- --- --- --- --- --- --- --- LCC MCR MAC LES DRL MOR ARB ILN ILM --- ILS ATO TLB TAB MON FBU --- TBC --- MCN --- PEB BAN --- BUC BCN --- NIT --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---
128 --- --- --- --- --- --- --- --- --- --- LCC MCR MAC LES DRL MOR ARB ILN ILM --- ILS ATO TLB TAB MON FBU --- TBC --- MCN --- PEB BAN --- BUC BCN --- NIT --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---
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162 --- --- --- DSP --- LPP --- BMC --- BOR LCC --- MAC LES DRL --- ARB --- ILM --- --- ATO --- TAB --- FBU --- TBC --- MCN --- PEB --- --- BUC --- --- --- NI2 --- EMC --- AIR --- VOS --- CBC --- --- NUG --- --- CAV --- --- ---
163 --- --- --- DSP --- LPP --- BMC --- BOR LCC --- MAC LES DRL --- ARB --- ILM --- --- ATO --- TAB --- FBU --- TBC --- MCN --- PEB --- --- BUC --- --- --- NI2 --- EMC --- AIR --- VOS --- CBC --- --- NUG --- --- CAV --- --- ---
164 --- --- --- DSP --- LPP --- BMC --- BOR LCC --- MAC LES DRL --- ARB --- ILM --- --- ATO --- TAB --- FBU --- TBC --- MCN --- PEB --- --- BUC --- --- --- NI2 --- EMC --- AIR --- VOS --- CBC --- --- NUG --- --- CAV --- --- ---
165 --- --- --- DSP --- LPP --- BMC --- BOR LCC --- MAC LES DRL --- ARB --- ILM --- --- ATO --- TAB --- FBU --- TBC --- MCN --- PEB --- --- BUC --- --- --- NI2 --- EMC --- AIR --- VOS --- CBC --- --- NUG --- --- CAV --- --- ---
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167 --- --- --- DSP --- LPP --- BMC --- BOR LCC --- MAC LES DRL --- ARB --- ILM --- --- ATO --- TAB --- FBU --- TBC --- MCN --- PEB --- --- BUC --- --- --- NI2 --- EMC --- AIR --- VOS --- CBC --- --- NUG --- --- CAV --- --- ---
168 --- --- --- DSP --- LPP --- BMC --- BOR LCC --- MAC LES DRL --- ARB --- ILM --- --- ATO --- TAB --- FBU --- TBC --- MCN --- PEB --- --- BUC --- --- --- NI2 --- EMC --- AIR --- VOS --- CBC --- --- NUG --- --- CAV --- --- ---
169 --- --- --- DSP --- LPP --- BMC --- BOR LCC --- MAC LES DRL --- ARB --- ILM --- --- ATO --- TAB --- FBU --- TBC --- MCN --- PEB --- --- BUC --- --- --- NI2 --- EMC --- AIR --- VOS --- CBC --- --- NUG --- --- CAV --- --- ---
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172 --- --- --- DSP --- LPP --- BMC --- BOR LCC --- MAC LES DRL --- ARB --- ILM --- --- ATO --- TAB --- FBU --- TBC --- MCN --- PEB --- --- BUC --- --- --- NI2 --- EMC --- AIR --- VOS --- CBC --- --- NUG --- --- CAV --- --- ---
173 --- --- --- DSP --- LPP --- BMC --- BOR LCC --- MAC LES DRL --- ARB --- ILM --- --- ATO --- TAB --- FBU --- TBC --- MCN --- PEB --- --- BUC --- --- --- NI2 --- EMC --- AIR --- VOS --- CBC --- --- NUG --- --- CAV --- --- ---
174 --- --- --- DSP --- LPP --- BMC --- BOR LCC --- MAC LES DRL --- ARB --- ILM --- --- ATO --- TAB --- FBU --- TBC --- MCN --- PEB --- --- BUC --- --- --- NI2 --- EMC --- AIR --- VOS --- CBC --- --- NUG --- --- CAV --- --- ---
175 --- --- --- DSP --- LPP --- BMC --- BOR LCC --- MAC LES DRL --- ARB --- ILM --- --- ATO --- TAB --- FBU --- TBC --- MCN --- PEB --- --- BUC --- --- --- NI2 --- EMC --- AIR --- VOS --- CBC --- --- NUG --- --- CAV --- --- ---
176 --- --- --- DSP --- LPP --- BMC --- BOR LCC --- MAC LES DRL --- ARB --- ILM --- --- ATO --- TAB --- FBU --- TBC --- MCN --- PEB --- --- BUC --- --- --- NI2 --- EMC --- AIR --- VOS --- CBC --- --- NUG --- --- CAV --- --- ---
177 --- --- --- DSP --- LPP --- BMC --- BOR LCC --- MAC LES DRL --- ARB --- ILM --- --- ATO --- TAB --- FBU --- TBC --- MCN --- PEB --- --- BUC --- --- --- NI2 --- EMC --- AIR --- VOS --- CBC --- --- NUG --- --- CAV --- --- ---
178 --- --- --- DSP --- LPP --- BMC --- BOR LCC --- MAC LES DRL --- ARB --- ILM --- --- ATO --- TAB --- FBU --- TBC --- MCN --- PEB --- --- BUC --- --- --- NI2 --- EMC --- AIR --- VOS --- CBC --- --- NUG --- --- CAV --- --- ---
179 --- --- --- DSP --- LPP --- BMC --- BOR LCC --- MAC LES DRL --- ARB --- ILM --- --- ATO --- TAB --- FBU --- TBC --- MCN --- PEB --- --- BUC --- --- --- NI2 --- EMC --- AIR --- VOS --- CBC --- --- NUG --- --- CAV --- --- ---
180 --- --- --- DSP --- LPP --- BMC --- BOR LCC --- MAC LES DRL --- ARB --- ILM --- --- ATO --- TAB --- --- FB2 TBC --- MCN --- PEB --- --- BUC --- --- --- NI2 --- EMC --- AIR --- VOS --- CBC --- --- NUG --- --- CAV --- --- ---
181 --- --- --- DSP --- LPP --- BMC --- BOR LCC --- MAC LES DRL --- ARB --- ILM --- --- ATO --- TAB --- --- FB2 TBC --- MCN --- PEB --- --- BUC --- --- --- NI2 --- EMC --- AIR --- VOS --- CBC --- --- NUG --- --- --- --- CAR ---
182 --- --- --- DSP --- LPP --- BMC --- BOR LCC --- MAC LES DRL --- ARB --- ILM --- --- ATO --- TAB --- --- FB2 TBC --- MCN --- PEB --- --- BUC --- --- --- NI2 --- EMC --- AIR --- VOS --- CBC --- --- NUG --- --- --- --- CAR ---
183 --- --- --- DSP --- LPP --- BMC --- BOR LCC --- MAC LES DRL --- ARB --- ILM --- --- ATO --- TAB --- --- FB2 TBC --- MCN --- PEB --- --- BUC --- --- --- NI2 --- EMC --- AIR --- VOS --- CBC --- --- NUG --- --- --- --- CAR ---
184 --- --- --- DSP --- LPP --- BMC --- BOR LCC --- MAC LES DRL --- ARB --- ILM --- --- ATO --- TAB --- --- FB2 TBC --- MCN --- PEB --- --- BUC --- --- --- NI2 --- EMC --- AIR --- VOS --- CBC --- --- NUG --- --- --- --- CAR ---
185 --- --- --- DSP --- LPP --- BMC --- BOR LCC --- MAC LES DRL --- ARB --- ILM --- --- ATO --- TAB --- --- FB2 TBC --- MCN --- PEB --- --- BUC --- --- --- NI2 --- EMC --- AIR --- VOS --- --- CB2 --- NUG --- --- --- --- CAR ---
186 --- --- --- DSP --- LPP --- BMC --- BOR LCC --- MAC LES DRL --- ARB --- ILM --- --- ATO --- TAB --- --- FB2 TBC --- MCN --- PEB --- --- BUC --- --- --- NI2 --- EMC --- AIR --- VOS --- --- CB2 --- NUG --- --- --- --- CAR ---
187 --- --- --- DSP --- LPP --- BMC --- BOR LCC --- MAC LES DRL --- ARB --- ILM --- --- ATO --- TAB --- --- FB2 TBC --- MCN --- PEB --- --- BUC --- --- --- NI2 --- EMC --- AIR --- VOS --- --- CB2 --- NUG --- --- --- --- CAR ---
188 --- --- --- DSP --- LPP --- BMC --- BOR LCC --- MAC LES DRL --- ARB --- ILM --- --- ATO --- TAB --- --- FB2 TBC --- MCN --- PEB --- --- BUC --- --- --- NI2 --- EMC --- AIR --- VOS --- --- CB2 --- NUG --- --- --- --- CAR ---
189 --- --- --- DSP --- LPP --- BMC --- BOR LCC --- MAC LES DRL --- ARB --- ILM --- --- ATO --- TAB --- --- FB2 TBC --- MCN --- PEB --- --- BUC --- --- --- NI2 --- EMC --- AIR --- VOS --- --- CB2 --- NUG --- --- --- --- CAR ---
190 --- TWP --- DSP --- LPP --- BMC --- BOR LCC --- MAC LES DRL --- ARB --- ILM --- --- ATO --- TAB --- --- FB2 TBC --- MCN --- PEB --- --- BUC --- --- --- NI2 --- EMC --- AIR --- VOS --- --- CB2 --- NUG --- --- --- --- CAR ---
191 --- TWP --- DSP --- LPP --- BMC --- BOR LCC --- MAC --- DRL --- ARB --- ILM --- --- ATO --- TAB --- --- FB2 TBC --- MCN --- PEB --- --- BUC --- --- --- NI2 --- EMC --- AIR --- VOS --- --- CB2 --- NUG --- --- --- --- CAR ---
192 --- TWP --- DSP --- LPP --- BMC --- BOR LCC --- MAC --- DRL --- ARB --- ILM --- --- ATO --- TAB --- --- FB2 TBC --- MCN --- PEB --- --- BUC --- --- --- NI2 --- EMC --- AIR --- VOS --- --- CB2 --- --- NU2 --- --- --- CAR ---
193 --- TWP --- DSP --- LPP --- BMC --- BOR LCC --- MAC --- DRL --- ARB --- ILM --- --- ATO --- TAB --- --- FB2 TBC --- MCN --- PEB --- --- BUC --- --- --- NI2 --- EMC --- AIR --- VOS --- --- CB2 --- --- NU2 --- --- --- CAR ---
194 --- TWP --- DSP --- LPP --- BMC --- BOR LCC --- MAC --- DRL --- ARB --- ILM --- --- ATO --- TAB --- --- FB2 TBC --- MCN --- PEB --- --- BUC --- --- --- NI2 --- EMC --- AIR --- VOS --- --- CB2 --- --- NU2 --- --- --- CAR ---
195 --- TWP --- DSP --- LPP --- BMC --- BOR LCC --- MAC --- DRL --- ARB --- ILM --- --- ATO --- TAB --- --- FB2 TBC --- MCN --- PEB --- --- BUC --- --- --- NI2 --- EMC --- AIR --- VOS --- --- CB2 --- --- NU2 --- --- --- CAR ---
196 --- TWP --- DSP --- LPP --- BMC --- BOR LCC --- MAC --- DRL --- ARB --- ILM --- --- ATO --- TAB --- --- FB2 TBC --- MCN --- PEB --- --- BUC --- --- --- NI2 --- EMC --- AIR --- VOS --- --- CB2 --- --- NU2 --- --- --- CAR ---
197 --- TWP --- DSP --- LPP --- BMC --- BOR LCC --- MAC --- DRL --- ARB --- ILM --- --- ATO --- TAB --- --- --- TBC --- MCN --- PEB --- --- BUC --- --- --- NI2 --- EMC --- AIR --- VOS --- --- CB2 --- --- NU2 --- --- --- CAR ---
198 --- TWP --- DSP --- LPP --- BMC --- BOR LCC --- MAC --- DRL --- ARB --- ILM --- --- ATO --- TAB --- --- --- TBC --- MCN --- PEB --- --- BUC --- --- --- NI2 --- EMC --- AIR --- VOS --- --- CB2 --- --- NU2 --- --- --- CAR ---
199 --- TWP --- DSP --- LPP --- BMC --- BOR LCC --- MAC --- DRL --- ARB --- ILM --- --- ATO --- TAB --- --- --- TBC --- MCN --- PEB --- --- BUC --- --- --- NI2 --- EMC --- AIR --- VOS --- --- CB2 --- --- NU2 --- --- --- CAR ---
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Table 1.


```
200 --- TWP --- DSP --- LPP --- BMC --- BOR LCC --- MAC --- DRL --- ARB --- ILM --- --- ATO --- TAB --- --- --- TBC --- MCN --- FEB --- --- BUC --- --- --- NI2 --- EMC --- AIR --- VOS --- --- CB2 --- --- MU2 --- --- --- CAR ---
201 --- TWP --- DSP --- LPP --- BMC --- BOR LCC --- MAC --- DRL --- ARB --- ILM --- --- ATO --- TAB --- --- --- TBC --- MCN --- FEB --- --- BUC --- --- --- NI2 --- EMC --- AIR --- VOS --- --- CB2 --- --- MU2 --- --- --- CAR ---
202 --- TWP --- DSP --- LPP --- BMC --- BOR LCC --- MAC --- DRL --- ARB --- ILM --- --- ATO --- TAB --- --- --- TBC --- MCN --- FEB --- --- BUC --- --- --- NI2 --- EMC --- AIR --- VOS --- --- CB2 --- --- MU2 --- --- --- CAR ---
203 --- TWP --- DSP --- LPP --- BMC --- BOR LCC --- MAC --- DRL --- ARB --- ILM --- --- ATO --- TAB --- --- --- TBC --- MCN --- FEB --- --- BUC --- --- --- NI2 --- EMC --- AIR --- VOS --- --- CB2 --- --- MU2 --- --- --- CAR ---
204 --- TWP --- DSP --- LPP --- BMC --- BOR LCC --- MAC --- DRL --- ARB --- ILM --- --- ATO --- TAB --- --- --- TBC --- MCN --- FEB --- --- BUC --- --- --- NI2 --- EMC --- AIR --- VOS --- --- CB2 --- --- MU2 --- --- --- CAR ---
205 --- TWP --- DSP --- LPP --- BMC --- BOR LCC --- MAC --- DRL --- ARB --- ILM --- --- ATO --- TAB --- --- --- TBC --- MCN --- FEB --- --- BUC --- --- --- NI2 --- EMC --- AIR --- VOS --- --- CB2 --- --- MU2 --- --- --- CAR ---
206 --- TWP --- DSP --- LPP --- BMC --- BOR LCC --- MAC --- DRL --- ARB --- ILM --- --- ATO --- TAB --- --- --- TBC --- MCN --- FEB --- --- BUC --- --- --- NI2 --- EMC --- AIR --- VOS --- --- CB2 --- --- MU2 --- --- --- CAR ---
207 --- TWP --- DSP --- LPP --- BMC --- BOR LCC --- MAC --- DRL --- ARB --- ILM --- --- ATO --- TAB --- --- --- TBC --- MCN --- FEB --- --- BUC --- --- --- NI2 --- EMC --- AIR --- VOS --- --- CB2 --- --- MU2 --- --- --- CAR ---
208 --- TWP --- DSP --- LPP --- BMC --- BOR LCC --- MAC --- DRL --- ARB --- ILM --- --- ATO --- TAB --- --- --- TBC --- MCN --- FEB --- --- BUC --- --- --- NI2 --- EMC --- AIR --- VOS --- --- CB2 --- --- MU2 --- --- --- CAR ---
209 --- TWP --- DSP --- LPP --- BMC --- BOR LCC --- MAC --- DRL --- ARB --- ILM --- --- ATO --- TAB --- --- --- TBC --- MCN --- FEB --- --- BUC --- --- --- NI2 --- EMC --- AIR --- VOS --- --- CB2 --- --- MU2 --- --- --- CAR ---
210 --- TWP --- DSP --- LPP --- BMC --- BOR LCC --- MAC --- DRL --- ARB --- ILM --- --- ATO --- TAB --- --- --- TBC --- MCN --- FEB --- --- BUC --- --- --- NI2 --- EMC --- AIR --- VOS --- --- CB2 --- --- MU2 --- --- --- CAR ---
211 --- TWP --- DSP --- LPP --- BMC --- BOR LCC --- MAC --- DRL --- ARB --- ILM --- --- ATO --- TAB --- --- --- TBC --- MCN --- FEB --- --- BUC --- --- --- NI2 --- EMC --- AIR --- VOS --- --- CB2 --- --- MU2 --- --- --- CAR ---
212 --- TWP --- DSP --- LPP --- BMC --- BOR LCC --- MAC --- DRL --- ARB --- ILM --- --- ATO --- TAB --- --- --- TBC --- MCN --- FEB --- --- BUC --- --- --- NI2 --- EMC --- AIR --- VOS --- --- CB2 --- --- MU2 --- --- --- CAR ---
213 --- TWP --- DSP --- LPP --- BMC --- BOR LCC --- MAC --- DRL --- ARB --- ILM --- --- ATO --- TAB --- --- --- TBC --- MCN --- --- BAN --- BUC --- --- --- NI2 --- EMC --- AIR --- VOS --- --- CB2 --- --- MU2 --- --- --- CAR ---
214 --- TWP --- DSP --- LPP --- BMC --- BOR LCC --- MAC --- DRL --- ARB --- ILM --- --- ATO --- TAB --- --- --- TBC --- MCN --- --- BAN --- BUC --- --- --- NI2 --- EMC --- AIR --- VOS --- --- CB2 --- --- MU2 --- --- --- CAR ---
215 --- TWP --- DSP --- LPP --- BMC --- BOR LCC --- MAC --- DRL --- ARB --- ILM --- --- ATO --- TAB --- --- --- TBC --- MCN --- --- BAN --- BUC --- --- --- NI2 --- EMC --- AIR --- VOS --- --- CB2 --- --- MU2 --- --- --- CAR ---
216 --- TWP --- DSP --- LPP --- BMC --- BOR LCC --- MAC --- DRL --- ARB --- ILM --- --- ATO --- TAB --- --- --- TBC --- MCN --- --- BAN --- BUC --- --- --- NI2 --- EMC --- AIR --- VOS --- --- CB2 --- --- MU2 --- --- --- CAR ---
217 --- TWP --- DSP --- LPP --- BMC --- BOR LCC --- MAC --- DRL --- ARB --- ILM --- --- ATO --- TAB --- --- --- TBC --- MCN --- --- BAN --- BUC --- --- --- NI2 --- EMC --- AIR --- VOS --- --- CB2 --- --- MU2 --- --- --- CAR ---
218 --- TWP --- DSP --- LPP --- BMC --- BOR LCC --- MAC --- DRL --- ARB --- ILM --- --- ATO --- TAB --- --- --- TBC --- MCN --- --- BAN --- BUC --- --- --- NI2 --- EMC --- AIR --- VOS --- --- CB2 --- --- MU2 --- --- --- CAR ---
219 --- TWP --- DSP --- LPP --- BMC --- BOR LCC --- MAC --- DRL --- ARB --- ILM --- --- ATO --- TAB --- --- --- --- ANG --- INP --- BAN --- BUC --- --- --- NI2 --- EMC --- AIR --- VOS --- --- CB2 --- --- MU2 --- --- --- CAR ---
220 --- TWP --- DSP --- LPP --- BMC --- BOR LCC --- MAC --- DRL --- ARB --- ILM --- --- --- TLB --- MON --- --- --- ANG --- INP --- BAN --- --- --- BEB --- --- ANT EMC --- AIR --- VOS --- --- CB2 --- --- MU2 --- --- --- CAR ---
221 --- TWP --- DSP --- LPP --- BMC --- BOR LCC --- MAC --- DRL --- ARB --- ILM --- --- --- TLB --- MON --- --- --- ANG --- INP --- BAN --- --- --- BEB --- --- ANT EMC --- AIR --- VOS --- --- CB2 --- --- MU2 --- --- --- CAR ---
222 --- TWP --- DSP --- LPP --- BMC --- BOR LCC --- MAC --- DRL --- --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- INP --- BAN --- --- --- BEB --- --- ANT --- MIC --- MEM VOS --- --- CB2 --- --- MU2 --- --- --- CAR ---
223 --- TWP --- DSP --- LPP --- BMC --- BOR LCC MCR --- LES --- --- --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- INP --- BAN --- --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- CB2 --- --- MU2 --- --- --- CAR ---
224 --- TWP --- DSP BIC LPP --- --- DKP BOR --- MCR --- LES --- --- --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- INP --- BAN --- --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- --- CAR ---
225 --- TWP --- DSP BIC --- SPC --- DKP BOR --- MCR --- LES --- --- --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- INP --- BAN --- --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- --- CAR ---
226 --- TWP --- DSP BIC --- SPC --- DKP BOR --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- INP --- BAN --- --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- --- CAR ---
227 --- TWP --- DSP BIC --- SPC --- DKP BOR --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- INP --- BAN --- --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- --- CAR ---
228 --- TWP --- DSP BIC --- SPC --- DKP BOR --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- INP --- BAN --- --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- --- CAR ---
229 --- TWP --- DSP BIC --- SPC --- DKP BOR --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- INP --- BAN --- --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- --- CAR ---
230 --- TWP --- DSP BIC --- SPC --- DKP BOR --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- INP --- BAN --- --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- --- CAR ---
231 --- TWP --- DSP BIC --- SPC --- DKP BOR --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- INP --- --- BA2 --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- --- CAR ---
232 --- TWP --- DSP BIC --- SPC --- DKP BOR --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- INP --- --- BA2 --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- --- CAR ---
233 --- TWP --- DSP BIC --- SPC --- DKP BOR --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- INP --- --- BA2 --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- --- CAR ---
234 SDM TWP MQR --- BIC --- SPC --- DKP --- --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- INP --- --- BA2 --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- --- CAR ---
235 SDM TWP MQR --- BIC --- SPC --- DKP --- --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- INP --- --- BA2 --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- --- CAR ---
236 SDM TWP MQR --- BIC --- SPC --- DKP --- --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- INP --- --- BA2 --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- --- CAR ---
237 SDM TWP MQR --- BIC --- SPC --- DKP --- --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- INP --- --- BA2 --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- --- CAR ---
238 SDM TWP MQR --- BIC --- SPC --- DKP --- --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- INP --- --- BA2 --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- --- CAR ---
239 SDM TWP MQR --- BIC --- SPC --- DKP --- --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- INP --- --- BA2 --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- --- CAR ---
240 SDM TWP MQR --- BIC --- SPC --- DKP --- --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- INP --- --- BA2 --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- --- CAR ---
241 SDM TWP MQR --- BIC --- SPC --- DKP --- --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- INP --- --- BA2 --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- --- CAR ---
242 SDM TWP MQR --- BIC --- SPC --- DKP --- --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- INP --- --- BA2 --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- --- CAR ---
243 SDM TWP MQR --- BIC --- SPC --- DKP --- --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- INP --- --- BA2 --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- --- CAR ---
244 SDM TWP MQR --- BIC --- SPC --- DKP --- --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- INP --- --- BA2 --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- --- CAR ---
245 SDM TWP MQR --- BIC --- SPC --- DKP --- --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- INP --- --- BA2 --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- --- CAR ---
246 SDM TWP MQR --- BIC --- SPC --- DKP --- --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- INP --- --- BA2 --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- BOG CAR ---
247 SDM TWP MQR --- BIC --- SPC --- DKP --- --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- INP --- --- BA2 --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- BOG CAR ---
248 SDM TWP MQR --- BIC --- SPC --- DKP --- --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- INP --- --- BA2 --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- BOG CAR ---
249 SDM TWP MQR --- BIC --- SPC --- DKP --- --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- INP --- --- BA2 --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- BOG CAR ---
250 SDM TWP MQR --- BIC --- SPC --- DKP --- --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- INP --- --- BA2 --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- BOG CAR ---
251 SDM TWP MQR --- BIC --- SPC --- DKP --- --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- INP --- --- BA2 --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- BOG CAR ---
252 SDM TWP MQR --- BIC --- SPC --- DKP --- --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- --- --- --- --- --- BA2 --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- BOG CAR ---
253 SDM TWP MQR --- BIC --- SPC --- DKP --- --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- --- --- --- --- --- BA2 --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- BOG CAR ---
254 SDM TWP MQR --- BIC --- SPC --- DKP --- --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- --- --- --- --- --- BA2 --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- BOG CAR ---
255 SDM TWP MQR --- BIC --- SPC --- DKP --- --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- --- --- --- BA2 --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- BOG CAR ---
256 SDM TWP MQR --- BIC --- SPC --- DKP --- --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- INP --- --- BA2 --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- BOG CAR ---
257 SDM TWP MQR --- BIC --- SPC --- DKP --- --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- INP --- --- BA2 --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- BOG CAR ---
258 SDM TWP MQR --- BIC --- SPC --- DKP --- --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- INP --- --- BA2 --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- BOG CAR ---
259 SDM TWP MQR --- BIC --- SPC --- DKP --- --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- INP --- --- BA2 --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- BOG CAR ---
260 SDM TWP MQR --- BIC --- SPC --- DKP --- --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- INP --- --- BA2 --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- BOG CAR ---
261 SDM TWP MQR --- BIC --- SPC --- DKP --- --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- INP --- --- BA2 --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- BOG CAR ---
262 SDM TWP MQR --- BIC --- SPC --- DKP --- --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- INP --- --- BA2 --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- BOG CAR ---
263 SDM TWP MQR --- BIC --- SPC --- DKP --- --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- INP --- --- BA2 --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- BOG CAR ---
264 SDM TWP MQR --- BIC --- SPC --- DKP --- --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- INP --- --- BA2 --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- BOG CAR ---
265 SDM TWP MQR --- BIC --- SPC --- DKP --- --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- INP --- --- BA2 --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- BOG CAR ---
266 SDM TWP MQR --- BIC --- SPC --- DKP --- --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- INP --- --- BA2 --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- BOG CAR ---
267 SDM TWP MQR --- BIC --- SPC --- DKP --- --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- INP --- --- BA2 --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- BOG CAR ---
268 SDM TWP MQR --- BIC --- SPC --- DKP --- --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- INP --- --- BA2 --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- BOG CAR ---
269 SDM TWP MQR --- BIC --- SPC --- DKP --- --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- INP --- --- BA2 --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- BOG CAR ---
270 SDM TWP MQR --- BIC --- SPC --- DKP --- --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- INP --- --- BA2 --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- BOG CAR ---
271 SDM TWP MQR --- BIC --- SPC --- DKP --- --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- INP --- --- BA2 --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- BOG CAR ---
272 SDM TWP MQR --- BIC --- SPC --- DKP --- --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- INP --- --- BA2 --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- BOG CAR ---
273 SDM TWP MQR --- BIC --- SPC --- DKP --- --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- INP --- --- BA2 --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- BOG CAR ---
274 SDM TWP MQR --- BIC --- SPC --- DKP --- --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- INP --- --- BA2 --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- BOG CAR ---
275 SDM TWP MQR --- BIC --- SPC --- DKP --- --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- INP --- --- BA2 --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- BOG CAR ---
276 SDM TWP MQR --- BIC --- SPC --- DKP --- --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- INP --- --- BA2 --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- BOG CAR ---
277 SDM TWP MQR --- BIC --- SPC --- DKP --- --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- INP --- --- BA2 --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- BOG CAR ---
278 SDM TWP MQR --- BIC --- SPC --- DKP --- --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- INP --- --- BA2 --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- BOG CAR ---
279 SDM TWP MQR --- BIC --- SPC --- DKP --- --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- INP --- --- BA2 --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- BOG CAR ---
280 SDM TWP MQR --- BIC --- SPC --- DKP --- --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- INP --- --- BA2 --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- BOG CAR ---
281 SDM TWP MQR --- BIC --- SPC --- DKP --- --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- INP --- --- BA2 --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- BOG CAR ---
282 SDM TWP MQR --- BIC --- SPC --- DKP --- --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- INP --- --- BA2 --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- BOG CAR ---
283 SDM TWP MQR --- BIC --- SPC --- DKP --- --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- --- --- --- BA2 --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- BOG CAR ---
284 SDM TWP MQR --- BIC --- SPC --- DKP --- --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- --- --- --- BA2 --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- BOG CAR ---
285 SDM TWP MQR --- BIC --- SPC --- DKP --- --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- --- --- --- BA2 --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- BOG CAR ---
286 SDM TWP MQR --- BIC --- SPC --- DKP --- --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- --- --- --- BA2 --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- BOG CAR ---
287 SDM TWP MQR --- BIC --- SPC --- DKP --- --- MCR --- LES --- MOR --- --- --- --- ILS --- TLB --- MON --- --- --- ANG --- --- --- --- BA2 --- --- BEB --- --- ANT --- MIC --- MEM --- DAB --- --- LOC --- --- FOS --- BOG CAR ---
```

Table 1.

288	---	---	MOR	---	BIC	---	SPC	---	DKP	---	LCC	MCR	---	LES	---	MOR	---	---	---	---	ILS	---	TLB	---	MON	---	---	---	ANG	---	---	---	---	BA2	---	---	BEB	---	---	ANT	---	MIC	---	MEM	---	DAB	---	---	LOC	---	---	FOS	---	BOC	CAR	---
289	---	---	---	---	BIC	---	SPC	---	DKP	---	LCC	MCR	---	LES	DRL	MOR	ARB	---	ILM	---	ILS	---	TLB	---	MON	---	---	---	ANG	---	---	---	---	BA2	---	---	BEB	---	---	ANT	---	MIC	---	MEM	---	DAB	---	---	---	---	---	---	---	---	CAR	---
290	---	---	---	---	BIC	---	SPC	---	DKP	---	LCC	MCR	---	LES	DRL	MOR	ARB	---	ILM	---	ILS	ATO	TLB	TAB	MON	---	---	---	ANG	---	---	---	---	BA2	---	---	BEB	---	---	ANT	---	MIC	---	MEM	---	DAB	---	---	---	---	---	---	---	---	CAR	---
291	---	---	---	---	BIC	---	SPC	---	DKP	---	LCC	MCR	---	LES	DRL	MOR	ARB	---	ILM	---	ILS	ATO	TLB	TAB	MON	---	---	---	ANG	MCN	---	---	---	BA2	---	---	BEB	---	---	ANT	---	MIC	---	MEM	---	DAB	---	---	---	---	---	---	---	---	---	---
292	---	---	---	---	BIC	---	SPC	---	DKP	---	LCC	MCR	---	LES	DRL	MOR	ARB	---	ILM	---	ILS	ATO	TLB	TAB	MON	---	---	---	ANG	MCN	INP	---	---	BA2	---	---	BEB	---	---	ANT	---	MIC	---	MEM	---	---	---	---	---	---	---	---	---	---	---	---
293	---	---	---	---	BIC	---	SPC	---	DKP	---	LCC	MCR	---	LES	DRL	MOR	ARB	---	ILM	---	ILS	ATO	TLB	TAB	MON	---	---	---	ANG	MCN	INP	---	---	BA2	---	---	BEB	---	---	ANT	---	MIC	---	MEM	---	---	---	---	---	---	---	---	---	---	---	---
294	---	---	---	---	BIC	---	SPC	---	DKP	---	LCC	MCR	---	LES	DRL	MOR	ARB	---	ILM	---	ILS	ATO	TLB	TAB	MON	---	---	---	ANG	MCN	INP	---	---	BA2	---	---	BEB	---	---	ANT	---	MIC	---	MEM	---	---	---	---	---	---	---	---	---	---	---	---
295	---	---	---	---	BIC	---	SPC	---	DKP	---	LCC	MCR	---	LES	DRL	MOR	ARB	---	ILM	---	ILS	ATO	TLB	TAB	MON	---	---	---	ANG	MCN	INP	---	---	BA2	---	---	BEB	---	---	ANT	---	MIC	---	MEM	---	---	---	---	---	---	---	---	---	---	---	---
296	---	---	---	---	BIC	---	SPC	---	DKP	---	LCC	MCR	---	LES	DRL	MOR	ARB	---	ILM	---	ILS	ATO	TLB	TAB	MON	---	---	---	ANG	MCN	INP	---	---	BA2	---	---	BEB	---	---	ANT	---	MIC	---	MEM	---	---	---	---	---	---	---	---	---	---	---	---
297	---	---	---	---	BIC	---	SPC	---	DKP	---	LCC	MCR	---	LES	DRL	MOR	ARB	ILN	ILM	---	ILS	ATO	TLB	TAB	MON	---	---	---	ANG	MCN	INP	---	---	BA2	---	---	BEB	---	---	ANT	---	MIC	---	MEM	---	---	---	---	---	---	---	---	---	---	---	---
298	---	---	---	---	BIC	---	SPC	---	DKP	---	LCC	MCR	---	LES	DRL	MOR	ARB	ILN	ILM	---	ILS	ATO	TLB	TAB	MON	---	---	TBC	ANG	MCN	INP	---	---	BA2	---	---	BEB	---	---	ANT	---	MIC	---	MEM	---	---	---	---	---	---	---	---	---	---	---	---
299	---	---	---	---	BIC	---	SPC	---	DKP	---	LCC	MCR	---	LES	DRL	MOR	ARB	ILN	ILM	---	ILS	ATO	TLB	TAB	MON	---	---	TBC	ANG	MCN	INP	---	---	BA2	---	---	BEB	---	---	ANT	---	MIC	---	MEM	---	---	---	---	---	---	---	---	---	---	---	---
300	---	---	---	---	BIC	---	SPC	---	DKP	---	LCC	MCR	---	LES	DRL	MOR	ARB	ILN	ILM	---	ILS	ATO	TLB	TAB	MON	---	---	TBC	ANG	MCN	INP	---	---	BA2	---	---	BEB	---	---	ANT	---	MIC	---	MEM	---	---	---	---	---	---	---	---	---	---	---	---
301	---	---	---	---	BIC	---	SPC	---	DKP	---	LCC	MCR	---	LES	DRL	MOR	ARB	ILN	ILM	---	ILS	ATO	TLB	TAB	MON	---	---	TBC	ANG	MCN	INP	---	---	BA2	---	---	BEB	---	---	ANT	---	MIC	---	MEM	---	---	---	---	---	---	---	---	---	---	---	---
302	---	---	---	---	BIC	---	SPC	---	DKP	---	LCC	MCR	---	LES	DRL	MOR	ARB	ILN	ILM	---	ILS	ATO	TLB	TAB	MON	---	---	TBC	ANG	MCN	INP	---	---	BA2	---	---	BEB	---	---	ANT	---	MIC	---	MEM	---	---	---	---	---	---	---	---	---	---	---	---
303	---	---	---	---	BIC	---	SPC	---	DKP	---	LCC	MCR	---	LES	DRL	MOR	ARB	ILN	ILM	---	ILS	ATO	TLB	TAB	MON	---	---	TBC	ANG	MCN	INP	---	---	BA2	---	---	BEB	---	---	ANT	---	MIC	---	MEM	---	---	---	---	---	---	---	---	---	---	---	---
304	---	---	---	---	BIC	---	SPC	---	DKP	---	LCC	MCR	---	LES	DRL	MOR	ARB	ILN	ILM	---	ILS	ATO	TLB	TAB	MON	---	---	TBC	ANG	MCN	INP	---	---	BA2	---	---	BEB	---	---	ANT	---	MIC	---	MEM	---	---	---	---	---	---	---	---	---	---	---	---
305	---	---	---	---	BIC	---	SPC	---	DKP	---	LCC	MCR	---	LES	DRL	MOR	ARB	ILN	ILM	---	ILS	ATO	TLB	TAB	MON	---	---	TBC	ANG	MCN	INP	---	---	BA2	---	---	BEB	---	---	ANT	---	MIC	---	MEM	---	---	---	---	---	---	---	---	---	---	---	---
306	---	---	---	---	BIC	---	SPC	---	DKP	---	LCC	MCR	---	LES	DRL	MOR	ARB	ILN	ILM	---	ILS	ATO	TLB	TAB	MON	---	---	TBC	ANG	MCN	INP	---	---	BA2	---	---	BEB	---	---	ANT	---	MIC	---	MEM	---	---	---	---	---	---	---	---	---	---	---	---
307	---	---	---	---	BIC	---	SPC	---	DKP	---	LCC	MCR	---	LES	DRL	MOR	ARB	ILN	ILM	ARN	ILS	ATO	TLB	TAB	MON	---	---	TBC	ANG	MCN	INP	---	---	BA2	---	---	BEB	---	---	ANT	---	MIC	---	MEM	---	---	---	---	---	---	---	---	---	---	---	---
308	---	---	---	---	BIC	---	SPC	---	DKP	---	LCC	MCR	---	LES	DRL	MOR	ARB	ILN	ILM	ARN	ILS	ATO	TLB	TAB	MON	---	---	---	ANG	MCN	INP	---	---	BA2	---	---	BEB	---	---	ANT	---	MIC	---	MEM	---	---	---	---	---	---	---	---	---	---	---	---
309	---	---	---	---	BIC	---	SPC	---	DKP	---	LCC	MCR	---	LES	DRL	MOR	ARB	ILN	ILM	ARN	ILS	ATO	TLB	TAB	MON	---	---	---	ANG	MCN	INP	---	---	BA2	---	---	BEB	---	---	ANT	---	MIC	---	MEM	---	---	---	---	---	---	---	---	---	---	---	---
310	---	---	---	---	BIC	---	SPC	---	DKP	---	LCC	MCR	---	LES	DRL	MOR	ARB	ILN	ILM	ARN	ILS	ATO	TLB	TAB	---	---	---	---	ANG	MCN	INP	---	---	BA2	---	---	BEB	---	---	ANT	---	MIC	---	MEM	---	---	---	---	---	---	---	---	---	---	---	---
311	---	---	---	---	BIC	---	SPC	---	DKP	---	LCC	MCR	---	LES	DRL	MOR	ARB	ILN	ILM	ARN	ILS	ATO	TLB	TAB	---	---	---	---	ANG	MCN	INP	---	---	BA2	---	---	BEB	---	---	ANT	---	MIC	---	MEM	---	---	---	---	---	---	---	---	---	---	---	---
312	---	---	---	---	BIC	---	SPC	---	DKP	---	LCC	MCR	---	LES	DRL	MOR	ARB	ILN	ILM	ARN	ILS	ATO	TLB	TAB	---	---	---	---	ANG	MCN	INP	---	---	BA2	---	---	BEB	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
313	---	---	---	---	BIC	---	SPC	---	DKP	---	LCC	MCR	---	LES	DRL	MOR	ARB	ILN	ILM	ARN	ILS	ATO	TLB	TAB	---	---	---	---	ANG	MCN	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
314	---	---	---	---	BIC	---	SPC	---	DKP	---	LCC	MCR	---	LES	DRL	MOR	ARB	ILN	ILM	ARN	ILS	ATO	TLB	TAB	---	---	---	---	ANG	MCN	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
315	---	---	---	---	---	---	---	---	DKP	---	LCC	MCR	---	LES	DRL	MOR	ARB	ILN	ILM	ARN	ILS	ATO	TLB	TAB	---	---	---	---	ANG	MCN	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
316	---	---	---	---	---	---	---	---	DKP	---	LCC	MCR	---	LES	DRL	MOR	ARB	ILN	ILM	ARN	ILS	ATO	---	---	---	---	---	---	ANG	MCN	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
317	---	---	---	---	---	---	---	---	DKP	---	LCC	MCR	---	LES	DRL	MOR	ARB	ILN	ILM	ARN	ILS	ATO	---	---	---	---	---	---	ANG	MCN	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
318	---	---	---	---	---	---	---	---	DKP	---	LCC	MCR	---	LES	DRL	MOR	ARB	ILN	ILM	ARN	ILS	ATO	---	---	---	---	---	---	---	MCN	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
319	---	---	---	---	---	---	---	---	DKP	---	LCC	MCR	---	LES	DRL	MOR	ARB	ILN	ILM	ARN	ILS	ATO	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
320	---	---	---	---	---	---	---	---	DKP	---	LCC	MCR	---	---	---	---	---	---	---	ARN	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
321	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
322	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

Station						
Num	Stn	Lat	Lon	Xcrd	Ycrd	Elev
1	CAR	41.41	-110.41	548.412	-9.3739	6955
2	HOG	41.56	-110.55	527.428	-5.7745	6693
3	CAV	41.717	-110.665	507.71	-0	7218
4	FOS	41.7579	-110.76	497.953	-2.6268	7218
5	NUG	41.8311	-110.874	484.514	-3.7317	7218
6	NU2	41.8319	-110.874	484.447	-3.6717	7218
7	LDC	41.9375	-110.873	476.673	5.1208	6955
8	CHC	41.9811	-111.011	463.72	0.038	6299
9	CH2	42.0058	-111.057	458.64	-0.8225	7000
10	DAH	42.0522	-111.096	452.431	0.5435	7000
11	VOS	42.103	-111.18	442.752	-0.538	6529
12	MEM	42.1317	-111.256	435.331	-2.8956	6800
13	AIR	42.2541	-111.339	420.376	1.9797	5938
14	MIC	42.2784	-111.482	408.486	-5.03	6850
15	EMC	42.3694	-111.509	399.854	0.8191	6600
16	ANT	42.434	-111.593	389.111	0.8429	8200
17	NIT	42.4987	-111.695	379.437	1.8981	5420
18	NI2	42.4991	-111.662	377.161	-0.1968	5550
19	BEB	42.5201	-111.845	367.003	-2.0344	5850
20	BCN	42.5473	-111.788	364.978	-7.9007	5430
21	BUC	42.6277	-111.836	357.684	1.6187	5510
22	BA2	42.6909	-111.919	347.451	2.8303	6400
23	BAN	42.6972	-111.908	347.149	1.6211	5700
24	PEB	42.7758	-111.997	335.311	3.6924	5282
25	INP	42.8457	-112.134	320.508	0.8766	6069
26	MCN	42.8929	-112.211	311.582	-0.0681	6000
27	ANG	42.9136	-112.324	302.06	-5.4971	6000
28	THC	42.9618	-112.368	295.415	-4.253	5413
29	FB2	43.1215	-112.452	277.647	3.6683	4450
30	FBU	43.1376	-112.526	271.251	0.3488	4450
31	MON	43.2104	-112.651	256.995	-1.5458	4534
32	TAB	43.2869	-112.696	248.168	1.9671	4670

33	TLB	43.3791	-112.767	236.318	5.116	4920
34	ATO	43.4259	-112.865	225.983	2.8519	5010
35	ILS	43.4722	-112.922	220	5	4990
36	ILM	43.5417	-113.081	218.506	3.0684	5030
37	ARW	43.5874	-112.644	202.189	-1.1614	5800
38	ILN	43.6085	-113.137	193.263	0.8165	5280
39	ARH	43.6444	-113.219	184.794	-1.4049	5960
40	MOR	43.705	-113.303	174.424	-1.6431	6700
41	DRL	43.7793	-113.401	162.017	-1.6606	5640
42	LES	43.8451	-113.496	150.444	-2.1993	5850
43	MAC	43.9265	-113.53	141.974	2.3626	6500
44	MCR	43.994	-113.634	129.682	1.435	6500
45	LCC	44.0366	-113.751	118.263	-2.4255	6960
46	BOR	44.1266	-113.837	105.56	-0.3668	7500
47	DKP	44.222	-113.946	90.7858	0.645	7600
48	BWC	44.2556	-114.02	83.1002	-1.2184	6726
49	SPC	44.3146	-114.106	72.6092	-1.8035	6233
50	LPP	44.3736	-114.193	62.1182	-2.3886	6700
51	BIC	44.4372	-114.234	54.5085	0.2889	5400
52	DSP	44.4949	-114.333	43.2889	-1.1417	7000
53	MQR	44.549	-114.402	34.3595	-1.0608	6562
54	TWP	44.6031	-114.472	25.4301	-0.98	9022
55	SDM	44.7622	-114.666	0	-0	9300

Table 3.

Sensor Parameters						
Num	V	N	E	free-period	damping	model
316	963.7	995.4	995.4	30	0.707	cmg-esp-30
317	963.7	995.4	995.4	30	0.707	cmg-esp-30
318	1984.5	2020.3	2007.0	30	0.707	cmg-esp-30
323	1408.0	1486.0	1479.0	10	0.0	cmg-hyb-10-oregon
324	1407.0	1491.0	1468.0	10	0.0	cmg-hyb-10-oregon
337	1996.0	1966.0	1952.0	30	0.707	cmg-esp-30
338	1390.0	1454.0	1568.0	30	0.0	guralp-3-T-oregon
381	1997.0	2020.0	2002.0	30	0.707	cmg-esp-30-oregon
382	2000.0	1987.0	1987.0	30	0.707	cmg-esp-30-oregon
397	2002.0	2000.6	2000.8	30	0.707	cmg-esp-30
578	172	172	172	1	0.707	l4c-d
579	172	172	172	1	0.707	l4c-d
580	172	172	172	1	0.707	l4c-d
582	172	172	172	1	0.707	l4c-d
3143	1998.2	1995.6	2001.2	30	0.707	cmg-esp-30
3177	1006.8	1001.1	1008.7	30	0.707	cmg-esp-30
3184	1984.6	1988.8	1998.0	30	0.707	cmg-esp-30
3187	1983.2	1995.6	1999.0	30	0.707	cmg-esp-30
19028	1500	1500	1500	120	0.707	sts-2
19039	1500	1500	1500	120	0.707	sts-2
19040	1500	1500	1500	120	0.707	sts-2
19041	1500	1500	1500	120	0.707	sts-2
19107	1500	1500	1500	120	0.707	sts-2
19110	1500	1500	1500	120	0.707	sts-2
39305	1500	1500	1500	120	0.707	sts-2
39306	1500	1500	1500	120	0.707	sts-2
39310	1500	1500	1500	120	0.707	sts-2
39311	1500	1500	1500	120	0.707	sts-2
39325	1500	1500	1500	120	0.707	sts-2
99145	1500	1500	1500	120	0.707	sts-2
99147	1500	1500	1500	120	0.707	sts-2
99149	1500	1500	1500	120	0.707	sts-2
99150	1500	1500	1500	120	0.707	sts-2

Table 4.

Station Epoch										
Num	Stn	Sensor	Das	Start	Epoch	End	Epoch	polarity	Nazz	Eazz
55	SDM	19039	0390	234	20275200	287	24865200	1	-45.0	45.0
54	TWP	00316	0379	190	16488000	287	24876000	1	-45.0	45.0
53	MOR	00578	0472	234	20282400	288	24937200	1	-45.0	45.0
52	OSP	19039	0472	156	13478400	233	20214000	1	-45.0	45.0
51	BIC	19107	0709	224	19353600	260	22543200	1	-45.0	45.0
51	BIC	19041	0709	260	22543200	288	24886800	1	-45.0	45.0
51	BIC	19107	0709	288	24886800	314	27205200	1	-45.0	45.0
51	BIC	19107	0197	224	19353600	260	22543200	1	-45.0	45.0
51	BIC	19041	0197	260	22543200	288	24886800	1	-45.0	45.0
51	BIC	19107	0197	288	24886800	314	27205200	1	-45.0	45.0
50	LPP	19040	0365	156	13478400	224	19432800	1	-45.0	45.0
49	SPC	19040	0365	225	19440000	314	27198000	1	-45.0	45.0
48	BWC	19107	0709	155	13484000	189	16387200	1	-45.0	45.0
48	BWC	19107	0197	189	16387200	223	19346400	1	-45.0	45.0
47	DKP	99150	0366	224	19353600	320	27709200	1	-45.0	45.0
46	BOR	00578	0390	133	11481200	233	20206800	1	-45.0	45.0
45	LCC	99150	0366	119	10281600	223	19335600	1	-45.0	45.0
45	LCC	00578	0472	288	24955200	320	27730800	1	-45.0	45.0
44	MCR	19039	0472	118	10195200	147	12700800	1	-45.0	45.0
44	MCR	19041	0115	223	19332000	320	27709200	1	-45.0	45.0
43	MAC	19041	0115	118	10195200	222	19184400	1	-45.0	45.0
42	LES	00316	0379	118	10195200	190	16470000	1	-45.0	45.0
42	LES	00324	0359	223	19274400	319	27640800	1	-45.0	45.0
41	DRL	00324	0359	118	10195200	222	19260000	1	-45.0	45.0
41	DRL	19039	0390	289	24969600	290	25124400	1	-45.0	45.0
41	DRL	39310	0390	290	25124400	319	27640800	1	-45.0	45.0
40	MOR	19040	0365	118	10195200	147	12715200	1	-45.0	45.0
40	MOR	00580	0386	226	19605600	319	27633600	1	-45.0	45.0
39	ARH	99149	0110	116	10022400	221	19166400	1	-45.0	45.0
39	ARH	00316	0379	289	24984000	319	27630000	1	-45.0	45.0
38	ILN	00579	0709	121	10454400	153	13291200	1	-45.0	45.0
38	ILN	99149	0394	297	25718400	319	27626400	1	-45.0	45.0
36	ILM	99147	0364	120	10368000	221	19094400	1	-45.0	45.0
36	ILM	03177	0377	289	25052400	319	27622800	1	-45.0	45.0
37	ARW	00382	0393	307	26596800	320	27720000	1	-45.0	45.0
35	ILS	00582	0368	120	10368000	154	13305600	1	-45.0	45.0
35	ILS	99147	0364	222	19188000	319	27619200	1	-45.0	45.0
34	ATO	19110	0340	117	10108800	195	16855200	1	-45.0	45.0
34	ATO	39305	0340	195	16855200	219	18990000	1	-45.0	45.0
34	ATO	00579	0368	290	25138800	319	27615600	1	-45.0	45.0
33	TLB	00337	0261	113	9763200	152	13212000	1	-45.0	45.0
33	TLB	39305	0340	220	19008000	256	22197600	1	-45.0	45.0
33	TLB	19110	0340	256	22197600	285	24692400	1	-45.0	45.0
33	TLB	03184	0340	285	24692400	315	27291600	1	-45.0	45.0
32	TAB	99145	0097	113	9763200	200	17280000	1	-45.0	45.0
32	TAB	00579	0097	200	17280000	212	18320400	1	-45.0	45.0
32	TAB	39306	0097	212	18320400	219	19000800	1	-45.0	45.0
32	TAB	00317	0392	290	25128000	315	27288000	1	-45.0	45.0
31	MON	00317	0377	114	9849600	152	13201200	1	-45.0	45.0
31	MON	39306	0097	220	19008000	309	26762400	1	-45.0	45.0
30	FBU	19107	0386	112	9676800	154	13374000	1	-45.0	45.0
30	FBU	00579	0386	154	13374000	179	15544800	1	-45.0	45.0
29	FB2	00579	0386	180	15552000	196	16934400	1	-45.0	45.0
28	THC	00381	0388	121	10454400	218	18900000	1	-45.0	45.0
28	THC	00382	0393	298	25804800	307	26596800	1	-45.0	45.0
27	ANG	00382	6005	138	11930400	140	12096000	1	-45.0	45.0
27	ANG	00382	0145	140	12096000	151	13129200	1	-45.0	45.0
27	ANG	39311	0388	219	18921600	251	21690000	1	-45.0	45.0
27	ANG	39311	0348	255	22114800	317	27464400	1	-45.0	45.0
26	MCN	00318	0348	119	10281600	218	18918000	1	-45.0	45.0
26	MCN	00582	0261	291	25142400	318	27543600	1	-45.0	45.0

Table 4.

Station Epoch										
Num	Stn	Sensor	Das	Start	Epoch	End	Epoch	polarity	Nazz	Eazz
26	MCN	00582	0261	291	25142400	318	27543600	1	-45.0	45.0
25	INP	00318	0348	219	18928800	251	21693600	1	-45.0	45.0
25	INP	00318	0388	256	22118400	282	24364800	1	-45.0	45.0
25	INP	00318	0145	292	25293600	312	27014400	1	-45.0	45.0
24	PEB	03143	0119	127	10972800	212	18385200	1	-45.0	45.0
23	BAN	00397	0107	127	10972800	151	13114800	1	-45.0	45.0
23	BAN	03143	0119	213	18478800	230	19954800	1	-45.0	45.0
22	BA2	03143	0119	231	19962000	271	23418000	1	-45.0	45.0
22	BA2	39325	0119	271	23418000	312	27032400	1	-45.0	45.0
21	BUC	00338	0146	127	10972800	219	18986400	1	-45.0	45.0
20	BCN	19028	0341	119	10281600	151	13125600	1	-45.0	45.0
19	BEB	00336	0148	220	19008000	312	27028800	1	-45.0	45.0
17	NIT	00323	0235	119	10281600	151	13129200	1	-45.0	45.0
18	NI2	00323	0235	152	13132800	219	19000800	1	-45.0	45.0
16	ANT	00323	0235	220	19090800	311	26949600	1	-45.0	45.0
15	EMC	00397	0107	153	13219200	221	19177200	1	-45.0	45.0
14	MIC	00397	0107	222	19180800	311	26942400	1	-45.0	45.0
13	AIR	00580	0341	152	13132800	221	19162800	1	-45.0	45.0
12	MEM	00381	0341	222	19256400	311	26931600	1	-45.0	45.0
11	VOS	00382	0145	152	13132800	222	19260000	1	-45.0	45.0
10	DAH	00382	0145	223	19267200	291	25225200	1	-45.0	45.0
8	CHC	00317	0392	154	13305600	184	15955200	1	-45.0	45.0
9	CH2	00317	0392	185	15984000	223	19350000	1	-45.0	45.0
7	LDC	00317	0392	224	19353600	288	24951600	1	-45.0	45.0
5	NUG	00337	0377	154	13305600	191	16578000	1	-45.0	45.0
6	NU2	00337	0377	192	16588800	223	19339200	1	-45.0	45.0
4	FOS	03187	0377	224	19353600	270	23407200	1	-45.0	45.0
4	FOS	39310	0377	270	23407200	288	24958800	1	-45.0	45.0
3	CAV	19028	0261	154	13305600	174	15109200	1	-45.0	45.0
3	CAV	00582	0261	174	15109200	180	15624000	1	-45.0	45.0
2	HOG	00579	0368	246	21319200	288	24966000	1	-45.0	45.0
1	CAR	00582	0261	181	15703200	290	25056000	1	-45.0	45.0