

Creation of the DOPPler Adjustment Data File

DOPPAD

(and Associated Files)

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August 1987

TL
798
.G4
L33
1987
omgre

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1.0 Introduction

The objective of this report is to document the procedure followed to create the DOPPLer Adjustment Data file. The main objective behind creating the DOPPAD file was to consolidate all of the observed DOPPLER data known to Geodetic Survey on one file, for present (NAD83 Secondary Integration) and future network maintenance. The project was begun April, 1986.

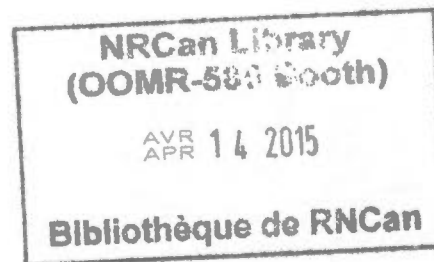
2.0 Procedure

The procedure can be broken into 2 steps:

1. Data Acquisition

and

2. Data Verification.



Before describing the data acquisition process, I should first discuss briefly a term which I will be using often in the course of this report, namely: **TAPE9**.

The intent of the DOPPAD was to house DOPPLER adjustment data, or in other words, data suitable as input to least squares adjustment program GHOST. When reading DOPPLER data, program GHOST requires as input either ASCII coded records containing X, Y, Z and covariance information, or what is known as a **TAPE9** file, containing essentially the same information in binary format. Due to the nature of DOPPLER data, the most efficient way to store it is in binary format. Consequently, most of the data on the DOPPAD exists as a binary TAPE9. A TAPE9 consists of X, Y, Z and variance-covariance data (in binary format) for a figure, or group of figures, where a figure consists of a group of stations observed using the same base stations. A figure may contain up to 15 stations.

The TAPE9 files in question originated from multistation GEODOP runs. Most were created by the Primary Horizontal Control Section (PHCS), using several generations of program GEODOP written since 1973, the year that DOPPLER processing began. The original version of GEODOP used at Geodetic Survey was a modified version of a program created at SHELL Canada 1970/71.

2.1 Data Acquisition

The DOPPAD began from 3 "seed" files of DOPPLER TAPE9S created by Bob Morris in July, 1984: PRECISEBLOCK, FRAMEDENSDOP, and SECONDARYDOP, containing, respectively, Precise, Framework Densification, and Secondary DOPPLER data observed in the DOPPLER satellite system.

These 3 files had been created to provide DOPPLER data for the NAD83 Continental adjustment, and only the best configured or most accurate data had been included. An inventory of all DOPPLER data observed since 1973 by Federal, Provincial and Private Agencies revealed that the three files contained about 69% of the existing TAPE9'S. To have a complete, comprehensive DOPPLER data file required for NAD83 Secondary Integration, the other 31% of the TAPE9'S had to be acquired. Bob Morris and Steve Delahunt of PHC provided much assistance in this task. Most of the TAPE9'S were either on PHC "IMULTI" files (where an "IMULTI" file for, say 1982, would contain all of the TAPE9'S processed by PHC in the year 1982) or on "STRANGER" tapes sent to us by other agencies.

Eventually, the 3 "seed" files were combined with the newly acquired TAPE9'S onto the file, now known as the "DOPPAD".

2.2 Data Verification

2.2 (a) Station Number Verification:

The integrity of the station numbers on the 3 "seed" files had already been established: only the station numbers on the newly acquired TAPE9'S had to undergo the following verification/modification process.

- before adding a TAPE9 to the DOPPAD file, each station number on it was verified against the NGDB, to ensure that correct numbers were used.
- a program known as "DOPNUM" was written to facilitate changing station numbers on a binary TAPE9 file. It was used whenever it was necessary to change a number. A record was kept of all of the station number changes, and is included in APPENDIX A.

2.2 (b) X,Y,Z, and Covariance Data Verification

Only the data in the newly acquired TAPE9'S had to undergo the following verification process:

-the TAPE9'S were transformed using program "DOPTRN" from the satellite system to the NAD83 system. The shifts are as follows:

| | | |
|-------------|-------------------------|---------------|
| Delta X | =0.0 | |
| Delta Y | =0.0 | {Translations |
| Delta Z | =+4.5 m | |
| Omega X | =0.0 | |
| Omega Y | =0.0 | {Rotations |
| Omega Z | =+0.814 arcseconds east | |
| Delta SCALE | =-0.6 ppm | {Scale change |

Several "GHOST" adjustments were run on the transformed - to- NAD83 TAPE9'S, constraining established framework stations to their July 86 NAD83 values where possible.

These adjustments included about 180 figures totalling about 1000 stations.

The GHOST adjustments were used to identify problems with some of the new data: problems such as station misidentification, or stations to which a necessary eccentric correction (or other shift) had not been applied. Most of these problems were easily resolved. A modified version of program "QLIST" was written and, where required, was used to correct the X, Y, Z values on a binary TAPE9 file. In some cases, as in Manitoba SHELL, a shift had to be applied to every station in the TAPE9 file before acceptable results were obtained from program GHOST. A list of the X, Y, Z shifts that were done to the original TAPE9'S is in APPENDIX C.

In 4 instances, one of which is FIG08.S81, the reason for the TAPE9 appearing poor was, and still is, a mystery. These questionable TAPE9'S were placed on a file known as the "DOPPLERNOTUSED" file, and will only be accessed if a need arises for coordinates in them. The DOPPLERNOTUSED file is described in detail in the next section of this report.

3.0 DOPPAD and DOPPADINDEX

The DOPPAD is an IPF file containing approximately 400 binary DOPPLER TAPE9 files comprising about 2000 stations. The data was observed in the DOPPLER satellite system, using both the Precise and Broadcast ephemerides. There is a parallel file to the DOPPAD called the "DOPPADTRANSTONAD83" in which the TAPE9S have been transformed from the satellite system to the NAD83 system. This file is being used to supply DOPPLER data for NAD83 secondary integration. A list, by year, of all the DOPPLER TAPE9'S on the DOPPAD file is in APPENDIX F. The list, as well as indicating the TAPE9 file name and, in most cases, the year of observation, also indicates the agency responsible for the data and the geographical location of the survey.

The cross reference file to the DOPPAD is the "DOPPADINDEX" which is an "UPDATE" file (UPDATE is a system routine used on the CYBER computer. The routine is not available on the VAX) of all the figures on the DOPPAD. It is, as its name suggests, an index to the DOPPAD, by year and figure, and is structured to contain information about every occupation of every DOPPLER station, which is a useful attribute. A sample page from the DOPPADINDEX is in APPENDIX D.

It should be mentioned that shortly after this report was written, the TAPE9'S that were transformed to the NAD83 system (ie the files on the DOPPADTRANSTONAD83 IPF file) were transferred from the CYBER computer over to the VAX to be used in NAD83 Secondary Integration. Due to space constraints on the VAX, only the TAPE9'S in the NAD83 system are being stored there. It is a relatively simple task to transform the TAPE9'S from the NAD83 system to some other datum, if required.

4.0 DOPPLERNOTUSED File

The DOPPLERNOTUSED file is structured identically to the DOPPAD, and contains DOPPLER figures that were deemed unsuitable to include in NAD83 secondary integration, either due to poor configuration, lack of proper integration, or due to poor results in the data verification process described in 2(b). It contains 26 figures, comprising 102 DOPPLER stations. Note that the station numbers have not been verified on this file, so it should only be used when absolutely necessary, and with discretion. It was not considered a priority to correct the numbers for these figures, since, in many cases the stations will probably never be used. A list of the TAPE9S in this file, along with a brief description, can be found in APPENDIX C of this report, and a list of the actual stations in the file can be found in APPENDIX E. Note also that even though a station appears on this list, it could still be on the DOPPAD file in another figure. The APPENDIX E list is more a reflection of the figures, rather than the stations, not included on the DOPPAD file.

An index file for the DOPPLERNOTUSED file has also been created, and is called the "DOPPLERNOTUSEDINDEX". It is structured identically to the DOPPADINDEX. As with the DOPPLERNOTUSED file, the index should be used with caution, as the station numbers have not been verified.

5.0 Future Considerations

Because it would be desirable to have a similar file to the DOPPAD for storing GPS data, a small version called the GPSAD, containing 5 GPS projects comprising some 80 GPS stations has been created. It will be maintained as new projects are evaluated. Along with the GPSAD will be a list of all the GPS projects in existence, which will indicate other information such as the number of stations, the agencies involved, and whether or not we have the data on the GPSAD. Such a list would be useful to the other provinces involved in NAD83 secondary integration. As with the DOPPAD, the GPSAD will have an index: the GPSADINDEX, describing every occupation of every GPS station.

Eventually we would also like to accumulate VLBI data on a file similar in structure to the GPSAD and the DOPPAD. However, no work has been done on this file to date.

6.0 Conclusions

What I am hoping to accomplish is to maintain a system of files which collectively contain space systems data for all of Canada, to be used for present (NAD83 secondary integration) and future geodetic network maintenance.

APPENDIX A (PART 1)

 DOPPLER NUMBER CHANGES--SORTED BY NEW NUMBER

| OLD NO. ----- | NEW NO. ----- | FIGURE ----- |
|------------------|------------------|-----------------|
| 23207 | 23207A | FIG0986 2 |
| PEMBROKE | 24302 | MNRRJC4 2 |
| 2 | 24302 | MNRRJC1 3 |
| PLUM | 25402 | MANSHP1P22 |
| PLUM | 25402 | MANSHLP346 |
| 41HT039 | 41H0957 | FIG35F82 4 |
| 300 | 47300 | MMMONT 11 |
| 0148 | 484021 | MANSHP1P79 |
| 488108 | 488108X | PRECIS75 2 |
| 517178 | 51H1444 | FIG34F82 3 |
| 517183 | 51H1460 | FIG34F82 2 |
| 517183 | 51H1460 | FIG33F82 4 |
| 52HT079 | 52H1560 | FIG35F82 2 |
| 567488 | 56H2348 | FIG33F82 5 |
| 567411 | 56H2533 | FIG31F82 2 |
| 567411 | 56H2533 | FIG32F82 2 |
| 57309 | 57306 | MNRRJC5 9 |
| 319 | 57319 | MMMONT 3 |
| 59KT207 | 59KX007 | 870316SG16 |
| 59KT279 | 59KX068 | 870316SGQ7 |
| 59KT319 | 59KX099 | 870316SGQ4 |
| 59KT326 | 59KX105 | 870316SGQ5 |
| 59KT348 | 59KX126 | 870316SGQ6 |
| 59KT361 | 59KX137 | 870316SGQ8 |
| 59KT405 | 59KX182 | 870316SG12 |
| 59KT440 | 59KX217 | 870316SG11 |
| 802509 | 602518 | MCE13VLQU2 |
| 799511 | 609043 | MCE4PE79 2 |
| 799506 | 609046 | MCE5PE79 2 |
| 799506 | 609046 | MCE6PE79 2 |
| 609564 | 609264 | MCEB3ARC 2 |
| 607206 | 60H3147 | FIG33F82 3 |
| 607206 | 60H3147 | FIG34F82 5 |
| 61KT354 | 61KX001 | 870316SG14 |
| 61KT350 | 61KX027 | 870316SG15 |
| 627241 | 62H3249 | FIG33F82 2 |
| 353 | 633488 | MMMONT 18 |
| 63KT489 | 63KX017 | 870316SG13 |
| LYNN | 644000 | MANSHLP3 2 |
| LYNN | 644000 | MANSHP1P28 |
| 64KT269 | 64KP093 | 870316SG17 |
| 65HT078 | 65H3825 | FIG35F82 3 |
| BI | 674101E | MANSHP1P23 |
| PG | 674102 | MANSHP1P15 |
| 67HT327 | 67HNO39 | FIG34F82 6 |
| 736108 | 686054 | FIG0486 2 |
| 736108 | 686054 | FIG0586 2 |
| 687919 | 68H6588 | FIG34F82 4 |
| 0137 | 68R010 | MANSHP1P66 |
| 0144 | 68R116 | MANSHP1P72 |
| R215 | 68R124 | MANSHLP337 |
| 68K3135 | 69K3135 | MCE11VLQU2 |
| 0119 | 69R070 | MANSHP1P39 |
| MN | 714005 | MANSHP1P27 |
| 0147 | 714008 | MANSHP1P81 |
| 0150 | 714009 | MANSHP1P80 |
| 0141 | 714010 | MANSHP1P78 |
| 0136 | 714011 | MANSHP1P77 |
| BH | 714013 | MANSHP1P23 |
| FSM | 7193002 | FIG2285 3 |
| FSM | 7193002 | FIG2585 3 |
| FSM | 7193002 | FIG2385 3 |
| FSM | 7193002 | FIG2685 3 |
| FSM | 7193002 | FIG2485 3 |
| 71799 | 71D0799 | MNRRJC6 2 |
| 1 | 71D1520 | MNRRJC1 2 |
| 544 | 71DT036 | MMMONT 2 |
| 0149 | 71R006 | MANSHP1P74 |
| 0145 | 71R024 | MANSHP1P73 |

| OLD NO. ----- | NEW NO. ----- | FIGURE ----- |
|------------------|------------------|-----------------|
| 0125 | 72R007 | MANSHP 1P41 |
| 15 | 72R015 | MANSHP 1P19 |
| 13 | 72R104 | MANSHP 1P17 |
| 848143 | 72Y200 | FIG2684 2 |
| 848143 | 72Y200 | FIG2784 2 |
| 0122 | 734013 | MANSHP 1P76 |
| 0134 | 734014 | MANSHP 1P75 |
| 79K0790 | 73KFO43 | 87O316SG02 |
| R210 | 73MO21 | MANSHP310 |
| 73T013 | 73T013 | FIG2585 5 |
| 73T026 | 73T026 | FIG2485 5 |
| 73T057 | 73T057 | FIG2685 4 |
| 747030US | 74730US | FIG0383 4 |
| RES | 749159 | GRHMISCY44 |
| 747041 | 74D7041 | MNRRJC7 2 |
| 74T004 | 74T004 | FIG2385 5 |
| 74T021 | 74T021 | FIG1985 5 |
| 74T035 | 74T035 | FIG2285 5 |
| 74T044 | 74T044 | FIG2585 4 |
| 74T068 | 74T068 | FIG2285 4 |
| 74T080 | 74T080 | FIG2085 5 |
| 74T087 | 74T087 | FIG2185 4 |
| 74T090 | 74T090 | FIG1985 4 |
| 74T100 | 74T100 | FIG1885 4 |
| 74T101 | 74T101 | FIG1785 4 |
| 130 | 753130 | MMMONT 7 |
| NWM | 759201 | FIG2685 2 |
| NWM | 759201 | FIG1185 2 |
| NWM | 759201 | FIG2485 2 |
| NWM | 759201 | FIG2785 2 |
| NWM | 759201 | FIG2585 2 |
| NWM | 759201 | FIG1585 2 |
| NWM | 759201 | FIG2185 2 |
| NWM | 759201 | FIG1385 2 |
| NWM | 759201 | FIG2385 2 |
| NWM | 759201 | FIG1685 2 |
| NWM | 759201 | FIG1885 2 |
| NWM | 759201 | FIG1285 2 |
| NWM | 759201 | FIG2285 2 |
| NWM | 759201 | FIG1785 2 |
| NWM | 759201 | FIG2085 2 |
| NWM | 759201 | FIG1485 2 |
| NWM | 759201 | FIG1985 2 |
| 0135 | 75RA05 | MANSHP 1P43 |
| RA05 | 75RA05 | MANSHP313 |
| 24 | 75RA39 | MANSHP 1P31 |
| 25 | 75RA40 | MANSHP 1P32 |
| 22 | 75RA41 | MANSHP 1P29 |
| 23 | 75RA42 | MANSHP 1P30 |
| 03 | 75RA43 | MANSHP 1P26 |
| 07 | 75RA44 | MANSHP 1P10 |
| 06 | 75RA45 | MANSHP 1P29 |
| 08 | 75RA46 | MANSHP 1P11 |
| 02 | 75RA47 | MANSHP 1P25 |
| 04 | 75RA48 | MANSHP 1P27 |
| 05 | 75RA49 | MANSHP 1P28 |
| 01 | 75RA50 | MANSHP 1P24 |
| 09 | 75RA52 | MANSHP 1P16 |
| 10 | 75RA53 | MANSHP 1P12 |
| 11 | 75RA54 | MANSHP 1P13 |
| 12 | 75RA55 | MANSHP 1P14 |
| 14 | 75RA56 | MANSHP 1P18 |
| 16 | 75RA57 | MANSHP 1P20 |
| 18 | 75RA58 | MANSHP 1P22 |
| 20 | 75RA59 | MANSHP 1P25 |
| 21 | 75RA60 | MANSHP 1P26 |
| 19 | 75RF68 | MANSHP 1P24 |
| 17 | 75RF78 | MANSHP 1P21 |
| 75T014 | 75T014 | FIG1785 6 |

| OLD NO. ----- | NEW NO. ----- | FIGURE ----- |
|------------------|------------------|-----------------|
| 75T025 | 75T025 | FIG1485 6 |
| 75T031 | 75T031 | FIG1485 5 |
| 75T038 | 75T038 | FIG1785 5 |
| 75T041 | 75T041 | FIG1385 5 |
| 75T048 | 75T048 | FIG1885 5 |
| 75T049 | 75T049 | FIG1385 4 |
| R219 | 764018 | MANSHLP341 |
| R223 | 764037 | MANSHLP323 |
| 76KP038 | 76K0952 | 870316SGQ3 |
| RO16 | 76R016 | MANSHLP347 |
| RO19 | 76R019 | MANSHLP348 |
| RO26 | 76R026 | MANSHLP349 |
| O101 | 76R501 | MANSHP1P53 |
| O102 | 76R502 | MANSHP1P54 |
| O103 | 76R503 | MANSHP1P55 |
| O104 | 76R504 | MANSHP1P56 |
| O105 | 76R505 | MANSHP1P57 |
| O106 | 76R506 | MANSHP1P58 |
| O107 | 76R507 | MANSHP1P59 |
| O108 | 76R508 | MANSHP1P60 |
| O109 | 76R509 | MANSHP1P61 |
| O110 | 76R510 | MANSHP1P62 |
| O111 | 76R511 | MANSHP1P63 |
| O112 | 76R512 | MANSHP1P68 |
| O113 | 76R513 | MANSHP1P64 |
| O114 | 76R514 | MANSHP1P65 |
| O115 | 76R515 | MANSHP1P49 |
| O116 | 76R516 | MANSHP1P44 |
| O117 | 76R517 | MANSHP1P50 |
| O118 | 76R518 | MANSHP1P51 |
| O120 | 76R520 | MANSHP1P45 |
| O121 | 76R521 | MANSHP1P52 |
| O123 | 76R523 | MANSHP1P33 |
| O124 | 76R524 | MANSHP1P40 |
| O126 | 76R526 | MANSHP1P42 |
| O127 | 76R527 | MANSHP1P34 |
| O128 | 76R528 | MANSHP1P35 |
| O129 | 76R529 | MANSHP1P36 |
| O130 | 76R530 | MANSHP1P37 |
| O131 | 76R531 | MANSHP1P38 |
| O132 | 76R532 | MANSHP1P46 |
| O133 | 76R533 | MANSHP1P47 |
| O138 | 76R538 | MANSHP1P67 |
| O139 | 76R539 | MANSHP1P68 |
| O140 | 76R540 | MANSHP1P69 |
| O142 | 76R542 | MANSHP1P70 |
| O143 | 76R543 | MANSHP1P71 |
| O146 | 76R546 | MANSHP1P82 |
| 76T004 | 76T004 | FIG1585 4 |
| 76T015 | 76T015 | FIG1585 5 |
| 84X423 | 776015Z | FIG1584 2 |
| 77D4004E | 77D004E | GPSONT85 2 |
| 10774004 | 77D009 | MCELHEN210 |
| 77KH603 | 77KB173 | 870316SG09 |
| R107 | 77R107 | MANSHLP350 |
| R200 | 77R200 | MANSHLP3 3 |
| R201 | 77R201 | MANSHLP3 4 |
| R202 | 77R202 | MANSHLP3 5 |
| R203 | 77R203 | MANSHLP331 |
| R204 | 77R204 | MANSHLP332 |
| R205 | 77R205 | MANSHLP333 |
| R206 | 77R206 | MANSHLP3 6 |
| R207 | 77R207 | MANSHLP3 7 |
| R208 | 77R208 | MANSHLP3 8 |
| R209 | 77R209 | MANSHLP3 9 |
| R211 | 77R211 | MANSHLP311 |
| R212 | 77R212 | MANSHLP334 |
| R213 | 77R213 | MANSHLP335 |
| R214 | 77R214 | MANSHLP336 |

OLD NO.

NEW NO.

FIGURE

| | | |
|----------|---------|------------|
| R217 | 77R217 | MANSHLP339 |
| R218 | 77R218 | MANSHLP340 |
| R220 | 77R220 | MANSHLP342 |
| R221 | 77R221 | MANSHLP322 |
| R222 | 77R222 | MANSHLP314 |
| R224 | 77R224 | MANSHLP315 |
| R225 | 77R225 | MANSHLP316 |
| R226 | 77R226 | MANSHLP317 |
| R227 | 77R227 | MANSHLP324 |
| R228 | 77R228 | MANSHLP318 |
| R229 | 77R229 | MANSHLP319 |
| R230 | 77R230 | MANSHLP320 |
| R231 | 77R231 | MANSHLP325 |
| R232 | 77R232 | MANSHLP321 |
| R234 | 77R234 | MANSHLP326 |
| R235 | 77R235 | MANSHLP327 |
| R236 | 77R236 | MANSHLP328 |
| R237 | 77R237 | MANSHLP329 |
| R238 | 77R238 | MANSHLP330 |
| R239 | 77R239 | MANSHLP343 |
| R240 | 77R240 | MANSHLP344 |
| R241 | 77R241 | MANSHLP345 |
| R242 | 77R242 | MANSHLP351 |
| R243 | 77R243 | MANSHLP312 |
| HEARST | 78DO033 | MCELHEN1 3 |
| HEARST | 78DO033 | MCELHEN2 3 |
| 5 | 78DT033 | MNRRJC 1 4 |
| 6 | 78DT034 | MNRRJC 1 5 |
| 78KH7 16 | 78KB410 | 87O316SG10 |
| 7193014 | 793014 | MCELHEN2 9 |
| 793014 | 793014X | MCEL2DNT 2 |
| 793919X | 7939119 | NORCHAN792 |
| 793920X | 7939120 | NORCHAN793 |
| 793921X | 7939121 | NORCHAN794 |
| REA | 799265 | GRHMISCY43 |
| 813021 | 79D0511 | FIG2881 2 |
| 51236 | 80801US | FIG2480 3 |
| 51237 | 80802US | FIG2780 5 |
| 51238 | 80803US | FIG2880 2 |
| 51239 | 80804US | FIG2480 2 |
| 51239 | 80804US | FIG2680 2 |
| 51239 | 80804US | FIG2580 2 |
| 51250 | 80805US | FIG2780 3 |
| 51251 | 80806US | FIG2880 3 |
| 51254 | 80807US | FIG2780 4 |
| 51240 | 80808US | FIG2780 2 |
| 51240 | 80808US | FIG2580 3 |
| 51240 | 80808US | FIG2480 4 |
| 86X001 | 80X500 | FIG0686 2 |
| 86X002 | 80X501 | FIG0586 3 |
| FOXHARB | 8109119 | FIG2681 2 |
| 9337 | 8149100 | MCELMAN 2 |
| 9338 | 8149101 | MCELMAN 3 |
| 9340 | 8149102 | MCELMAN 4 |
| 9341 | 8149103 | MCELMAN 5 |
| 9342 | 8149104 | MCELMAN 6 |
| 9344 | 8149106 | MCELMAN 7 |
| 9346 | 8149108 | MCELMAN 8 |
| 9347 | 8149109 | MCELMAN 9 |
| 9348 | 8149110 | MCELMAN 10 |
| 9349 | 8149111 | MCELMAN 11 |
| 9350 | 8149112 | MCELMAN 12 |
| 9351 | 8149113 | MCELMAN 13 |
| 9352 | 8149114 | MCELMAN 14 |
| 9353 | 8149115 | MCELMAN 15 |
| 9354 | 8149116 | MCELMAN 16 |
| 9355 | 8149117 | MCELMAN 17 |
| 9356 | 8149118 | MCELMAN 18 |
| 9357 | 8149119 | MCELMAN 19 |

| OLD NO. ----- | NEW NO. ----- | FIGURE ----- |
|------------------|------------------|-----------------|
| 9359 | 8149121 | MCELMAN 21 |
| 9360 | 8149122 | MCELMAN 22 |
| 9361 | 8149123 | MCELMAN 23 |
| 9362 | 8149124 | MCELMAN 24 |
| 9363 | 8149125 | MCELMAN 25 |
| 9364 | 8149126 | MCELMAN 26 |
| 9365 | 8149127 | MCELMAN 27 |
| 9366 | 8149128 | MCELMAN 28 |
| 9367 | 8149129 | MCELMAN 29 |
| 9368 | 8149130 | MCELMAN 30 |
| 9369 | 8149131 | MCELMAN 31 |
| GRA-MO | 819207 | GRHMISCY22 |
| GRA | 819207 | GRHMISCY42 |
| STA101 | 81D0101 | MNRRJC4 4 |
| STA102 | 81D0102 | MNRRJC4 3 |
| 1T5041 | 81T5041 | BF19MCE812 |
| 251 | 82D0251 | MNRRJC5 2 |
| 252 | 82D0252 | MNRRJC5 3 |
| 253 | 82D0253 | MNRRJC5 4 |
| 254 | 82D0254 | MNRRJC5 5 |
| 255 | 82D0255 | MNRRJC5 6 |
| 256 | 82D0256 | MNRRJC5 7 |
| 257 | 82D0257 | MNRRJC5 8 |
| 837020US | 83720US | FIGO383 3 |
| 837021US | 83721US | FIGO383 2 |
| 837022US | 83722US | FIGO483 2 |
| 837005US | 838005US | FIGO483 3 |
| 830345 | 83D0345 | MNRRJC6 3 |
| 830346 | 83D0346 | MNRRJC6 4 |
| 830347 | 83D0347 | MNRRJC6 5 |
| 830348 | 83D0348 | MNRRJC7 3 |
| 701 | 83D0701 | MMMONT 5 |
| 702 | 83D0702 | MMMONT 10 |
| 711 | 83D0711 | MMMONT 6 |
| 712 | 83D0712 | MMMONT 8 |
| 713 | 83D0713 | MMMONT 9 |
| 714 | 83D0714 | MMMONT 4 |
| 721 | 83D0721 | MMMONT 12 |
| 722 | 83D0722 | MMMONT 13 |
| 723 | 83D0723 | MMMONT 14 |
| 724 | 83D0724 | MMMONT 16 |
| 725 | 83D0725 | MMMONT 15 |
| 730 | 83D0730 | MMMONT 17 |
| 731 | 83D0731 | MMMONT 19 |
| 10830801 | 83D0801 | MCELHEN2 5 |
| 10830802 | 83D0802 | MCELHEN2 8 |
| 10830803 | 83D0803 | MCELHEN2 4 |
| 10830804 | 83D0804 | MCELHEN211 |
| 10830805 | 83D0805 | MCELHEN2 7 |
| 10830806 | 83D0806 | MCELHEN1 7 |
| 10830808 | 83D0808 | MCELHEN1 4 |
| 10830811 | 83D0811 | MCELHEN110 |
| 10830812 | 83D0812 | MCELHEN1 9 |
| 10830814 | 83D0814 | MCELHEN2 6 |
| 10830819 | 83D0819 | MCELHEN1 6 |
| 10830824 | 83D0824 | MCELHEN1 5 |
| 10830828 | 83D0828 | MCELHEN1 8 |
| CDCHRANE | 83D0830 | MCELHEN2 2 |
| CDCHRANE | 83D0830 | MCELHEN1 2 |
| 09208X | 842008 | FIGO185 2 |
| 09208ECC | 842008 | FIG1684 2 |
| 09208ECC | 842008 | FIG1784 2 |
| 8435037 | 8425011 | FIG18PB4 2 |
| 508144 | 848122 | FIG3184 2 |
| AKM | 849010 | FIG2785 3 |
| AKM | 849010 | FIG2185 3 |
| AKM | 849010 | FIG1285 3 |
| AKM | 849010 | FIG1885 3 |
| AKM | 849010 | FIG1585 3 |

OLD NO.

NEW NO.

FIGURE

| | | | |
|--------|---------|---------|---|
| AKM | 849010 | FIG1185 | 3 |
| AKM | 849010 | FIG1985 | 3 |
| AKM | 849010 | FIG1685 | 3 |
| AKM | 849010 | FIG1485 | 3 |
| AKM | 849010 | FIG1785 | 3 |
| AKM | 849010 | FIG1385 | 3 |
| 850927 | 8593001 | FIG2785 | 4 |
| 85N800 | 8599800 | FIG1185 | 4 |
| 85N801 | 8599801 | FIG1185 | 5 |
| 85N802 | 8599802 | FIG1185 | 6 |
| 85N803 | 8599803 | FIG1685 | 4 |
| 85N804 | 8599804 | FIG1285 | 4 |
| 85N805 | 8599805 | FIG1485 | 4 |
| 85N806 | 8599806 | FIG2185 | 5 |
| 85N807 | 8599807 | FIG2485 | 4 |
| 85N808 | 8599808 | FIG2385 | 4 |
| 85N809 | 8599809 | FIG2485 | 6 |

APPENDIX A (PART 2)

DOPPLER NUMBER CHANGES-SORTED BY OLD NUMBER

| OLD NO. | NEW NO. | FIGURE |
|---------|---------|------------|
| 73T013 | 73T013 | FIG2585 5 |
| 73T026 | 73T026 | FIG2485 5 |
| 73T057 | 73T057 | FIG2685 4 |
| 74T004 | 74T004 | FIG2385 5 |
| 74T021 | 74T021 | FIG1985 5 |
| 74T035 | 74T035 | FIG2285 5 |
| 74T044 | 74T044 | FIG2585 4 |
| 74T068 | 74T068 | FIG2285 4 |
| 74T080 | 74T080 | FIG2085 5 |
| 74T087 | 74T087 | FIG2185 4 |
| 74T090 | 74T090 | FIG1985 4 |
| 74T100 | 74T100 | FIG1885 4 |
| 74T101 | 74T101 | FIG1785 4 |
| 75T014 | 75T014 | FIG1785 6 |
| 75T020 | 75T020 | FIG2085 4 |
| 75T025 | 75T025 | FIG1485 6 |
| 75T031 | 75T031 | FIG1485 5 |
| 75T038 | 75T038 | FIG1785 5 |
| 75T041 | 75T041 | FIG1385 5 |
| 75T048 | 75T048 | FIG1885 5 |
| 75T049 | 75T049 | FIG1385 4 |
| 76T004 | 76T004 | FIG1585 4 |
| 76T015 | 76T015 | FIG1585 5 |
| 850927 | 8593001 | FIG2785 4 |
| 85N800 | 8599800 | FIG1185 4 |
| 85N801 | 8599801 | FIG1185 5 |
| 85N802 | 8599802 | FIG1185 6 |
| 85N803 | 8599803 | FIG1685 4 |
| 85N804 | 8599804 | FIG1285 4 |
| 85N805 | 8599805 | FIG1485 4 |
| 85N806 | 8599806 | FIG2185 5 |
| 85N807 | 8599807 | FIG2485 4 |
| 85N808 | 8599808 | FIG2385 4 |
| 85N809 | 8599809 | FIG2485 6 |
| 9337 | 8149100 | MCELMAN 2 |
| 9338 | 8149101 | MCELMAN 3 |
| 9340 | 8149102 | MCELMAN 4 |
| 9341 | 8149103 | MCELMAN 5 |
| 9342 | 8149104 | MCELMAN 6 |
| 9344 | 8149106 | MCELMAN 7 |
| 9346 | 8149108 | MCELMAN 8 |
| 9347 | 8149109 | MCELMAN 9 |
| 9348 | 8149110 | MCELMAN 10 |
| 9349 | 8149111 | MCELMAN 11 |
| 9350 | 8149112 | MCELMAN 12 |
| 9351 | 8149113 | MCELMAN 13 |
| 9352 | 8149114 | MCELMAN 14 |
| 9353 | 8149115 | MCELMAN 15 |
| 9354 | 8149116 | MCELMAN 16 |
| 9355 | 8149117 | MCELMAN 17 |
| 9356 | 8149118 | MCELMAN 18 |
| 9357 | 8149119 | MCELMAN 19 |
| 9358 | 8149120 | MCELMAN 20 |
| 9359 | 8149121 | MCELMAN 21 |
| 9360 | 8149122 | MCELMAN 22 |
| 9361 | 8149123 | MCELMAN 23 |
| 9362 | 8149124 | MCELMAN 24 |
| 9363 | 8149125 | MCELMAN 25 |
| 9364 | 8149126 | MCELMAN 26 |
| 9365 | 8149127 | MCELMAN 27 |
| 9366 | 8149128 | MCELMAN 28 |
| 9367 | 8149129 | MCELMAN 29 |
| 9368 | 8149130 | MCELMAN 30 |
| 9369 | 8149131 | MCELMAN 31 |
| AKM | 849010 | FIG1885 3 |
| AKM | 849010 | FIG1185 3 |
| AKM | 849010 | FIG2185 3 |
| AKM | 849010 | FIG1785 3 |
| AKM | 849010 | FIG2085 3 |

| OLD NO. ----- | NEW NO. ----- | FIGURE ----- |
|------------------|------------------|-----------------|
| AKM | 849010 | FIG2785 3 |
| AKM | 849010 | FIG1585 3 |
| AKM | 849010 | FIG1985 3 |
| AKM | 849010 | FIG1385 3 |
| AKM | 849010 | FIG1685 3 |
| AKM | 849010 | FIG1285 3 |
| FSM | 7193002 | FIG2685 3 |
| FSM | 7193002 | FIG2285 3 |
| FSM | 7193002 | FIG2585 3 |
| FSM | 7193002 | FIG2485 3 |
| FSM | 7193002 | FIG2385 3 |
| NWM | 759201 | FIG1585 2 |
| NWM | 759201 | FIG2785 2 |
| NWM | 759201 | FIG1285 2 |
| NWM | 759201 | FIG2085 2 |
| NWM | 759201 | FIG1785 2 |
| NWM | 759201 | FIG2585 2 |
| NWM | 759201 | FIG1485 2 |
| NWM | 759201 | FIG2285 2 |
| NWM | 759201 | FIG1685 2 |
| NWM | 759201 | FIG2685 2 |
| NWM | 759201 | FIG1185 2 |
| NWM | 759201 | FIG1885 2 |
| NWM | 759201 | FIG1385 2 |
| NWM | 759201 | FIG2485 2 |
| NWM | 759201 | FIG2185 2 |
| NWM | 759201 | FIG2385 2 |
| NWM | 759201 | FIG1985 2 |
| O1 | 75RA50 | MANSHP1P24 |
| O101 | 76R501 | MANSHP1P53 |
| O102 | 76R502 | MANSHP1P54 |
| O103 | 76R503 | MANSHP1P55 |
| O104 | 76R504 | MANSHP1P56 |
| O105 | 76R505 | MANSHP1P57 |
| O106 | 76R506 | MANSHP1P58 |
| O107 | 76R507 | MANSHP1P59 |
| O108 | 76R508 | MANSHP1P60 |
| O109 | 76R509 | MANSHP1P61 |
| O110 | 76R510 | MANSHP1P62 |
| O111 | 76R511 | MANSHP1P63 |
| O112 | 76R512 | MANSHP1P48 |
| O113 | 76R513 | MANSHP1P64 |
| O114 | 76R514 | MANSHP1P65 |
| O115 | 76R515 | MANSHP1P49 |
| O116 | 76R516 | MANSHP1P44 |
| O117 | 76R517 | MANSHP1P50 |
| O118 | 76R518 | MANSHP1P51 |
| O119 | 69R070 | MANSHP1P39 |
| O120 | 76R520 | MANSHP1P45 |
| O121 | 76R521 | MANSHP1P52 |
| O122 | 734013 | MANSHP1P76 |
| O123 | 76R523 | MANSHP1P33 |
| O124 | 76R524 | MANSHP1P40 |
| O125 | 72R007 | MANSHP1P41 |
| O126 | 76R526 | MANSHP1P42 |
| O127 | 76R527 | MANSHP1P34 |
| O128 | 76R528 | MANSHP1P35 |
| O129 | 76R529 | MANSHP1P36 |
| O130 | 76R530 | MANSHP1P37 |
| O131 | 76R531 | MANSHP1P38 |
| O132 | 76R532 | MANSHP1P46 |
| O133 | 76R533 | MANSHP1P47 |
| O134 | 734014 | MANSHP1P75 |
| O135 | 75RA05 | MANSHP1P43 |
| O136 | 714011 | MANSHP1P77 |
| O137 | 68R010 | MANSHP1P66 |
| O138 | 76R538 | MANSHP1P67 |
| O139 | 76R539 | MANSHP1P68 |
| O140 | 76R540 | MANSHP1P69 |

| OLD NO. ----- | NEW NO. ----- | FIGURE ----- |
|------------------|------------------|-----------------|
| 0142 | 76R542 | MANSHP1P70 |
| 0143 | 76R543 | MANSHP1P71 |
| 0144 | 6BR116 | MANSHP1P72 |
| 0145 | 71R024 | MANSHP1P73 |
| 0146 | 76R546 | MANSHP1P82 |
| 0147 | 714008 | MANSHP1P81 |
| 0148 | 484021 | MANSHP1P79 |
| 0149 | 71R006 | MANSHP1P74 |
| 0150 | 714009 | MANSHP1P80 |
| 02 | 75RA47 | MANSHP1P25 |
| 03 | 75RA43 | MANSHP1P26 |
| 04 | 75RA48 | MANSHP1P27 |
| 05 | 75RA49 | MANSHP1P28 |
| 06 | 75RA45 | MANSHP1P29 |
| 07 | 75RA44 | MANSHP1P10 |
| 08 | 75RA46 | MANSHP1P11 |
| 09 | 75RA52 | MANSHP1P16 |
| 09208ECC | 842008 | FIG1784 2 |
| 09208ECC | 842008 | FIG1684 2 |
| 09208X | 842008 | FIGO185 2 |
| 1 | 71D1520 | MNRRJC 1 2 |
| 10 | 75RA53 | MANSHP1P12 |
| 10774004 | 77D009 | MCELHEN210 |
| 10830801 | 83D0801 | MCELHEN2 5 |
| 10830802 | 83D0802 | MCELHEN2 8 |
| 10830803 | 83D0803 | MCELHEN2 4 |
| 10830804 | 83D0804 | MCELHEN211 |
| 10830805 | 83D0805 | MCELHEN2 7 |
| 10830806 | 83D0806 | MCELHEN1 7 |
| 10830808 | 83D0808 | MCELHEN1 4 |
| 10830811 | 83D0811 | MCELHEN110 |
| 10830812 | 83D0812 | MCELHEN1 9 |
| 10830814 | 83D0814 | MCELHEN2 6 |
| 10830819 | 83D0819 | MCELHEN1 6 |
| 10830824 | 83D0824 | MCELHEN1 5 |
| 10830828 | 83D0828 | MCELHEN1 8 |
| 11 | 75RA54 | MANSHP1P13 |
| 12 | 75RA55 | MANSHP1P14 |
| 13 | 72R104 | MANSHP1P17 |
| 130 | 753130 | MMMONT 7 |
| 14 | 75RA56 | MANSHP1P18 |
| 15 | 72R015 | MANSHP1P19 |
| 16 | 75RA57 | MANSHP1P20 |
| 17 | 75RF78 | MANSHP1P21 |
| 18 | 75RA58 | MANSHP1P22 |
| 19 | 75RF68 | MANSHP1P24 |
| 1T5041 | 81T5041 | BF19MCE812 |
| 2 | 24302 | MNRRJC1 3 |
| 20 | 75RA59 | MANSHP1P25 |
| 21 | 75RA60 | MANSHP1P26 |
| 22 | 75RA41 | MANSHP1P29 |
| 23 | 75RA42 | MANSHP1P30 |
| 23207 | 23207A | FIGO986 2 |
| 24 | 75RA39 | MANSHP1P31 |
| 25 | 75RA40 | MANSHP1P32 |
| 251 | 82D0251 | MNRRJC5 2 |
| 252 | 82D0252 | MNRRJC5 3 |
| 253 | 82D0253 | MNRRJC5 4 |
| 254 | 82D0254 | MNRRJC5 5 |
| 255 | 82D0255 | MNRRJC5 6 |
| 256 | 82D0256 | MNRRJC5 7 |
| 257 | 82D0257 | MNRRJC5 8 |
| 300 | 47300 | MMMONT 11 |
| 319 | 57319 | MMMONT 3 |
| 353 | 633488 | MMMONT 18 |
| 41HTO39 | 41H0957 | FIG35F82 4 |
| 488108 | 488108X | PRECIS75 2 |
| 5 | 78DT033 | MNRRJC1 4 |
| 508144 | 848122 | FIG3184 2 |

| OLD NO. ----- | NEW NO. ----- | FIGURE ----- |
|------------------|------------------|-----------------|
| 51237 | 80802US | FIG2780 5 |
| 51238 | 80803US | FIG2880 2 |
| 51239 | 80804US | FIG2480 2 |
| 51239 | 80804US | FIG2580 2 |
| 51239 | 80804US | FIG2680 2 |
| 51240 | 80808US | FIG2780 2 |
| 51240 | 80808US | FIG2580 3 |
| 51240 | 80808US | FIG2480 4 |
| 51250 | 80805US | FIG2780 3 |
| 51251 | 80806US | FIG2880 3 |
| 51254 | 80807US | FIG2780 4 |
| 517178 | 51H1444 | FIG34F82 3 |
| 517183 | 51H1460 | FIG34F82 2 |
| 517183 | 51H1460 | FIG33F82 4 |
| 52HT079 | 52H1560 | FIG35F82 2 |
| 544 | 71DT036 | MMMONT 2 |
| 567411 | 56H2533 | FIG31F82 2 |
| 567411 | 56H2533 | FIG32F82 2 |
| 567488 | 56H2348 | FIG33F82 5 |
| 57309 | 57306 | MNRRJC5 9 |
| 59KT207 | 59KX007 | 870316SG16 |
| 59KT279 | 59KX068 | 870316SG07 |
| 59KT319 | 59KX099 | 870316SG04 |
| 59KT326 | 59KX105 | 870316SG05 |
| 59KT348 | 59KX126 | 870316SG06 |
| 59KT361 | 59KX137 | 870316SG08 |
| 59KT405 | 59KX182 | 870316SG12 |
| 59KT440 | 59KX217 | 870316SG11 |
| 6 | 78DT034 | MNRRJC1 5 |
| 607206 | 60H3147 | FIG33F82 3 |
| 607206 | 60H3147 | FIG34F82 5 |
| 609564 | 609264 | MCE83ARC 2 |
| 61KT350 | 61KX027 | 870316SG15 |
| 61KT354 | 61KX001 | 870316SG14 |
| 627241 | 62H3249 | FIG33F82 2 |
| 63KT489 | 63KX017 | 870316SG13 |
| 64KT269 | 64KP093 | 870316SG17 |
| 65HT078 | 65H3825 | FIG35F82 3 |
| 67HT327 | 67HNO39 | FIG34F82 6 |
| 687919 | 68H6588 | FIG34F82 4 |
| 68K3135 | 69K3135 | MCE11VLOU2 |
| 701 | 83DO701 | MMMONT 5 |
| 702 | 83DO702 | MMMONT 10 |
| 711 | 83DO711 | MMMONT 6 |
| 712 | 83DO712 | MMMONT 8 |
| 713 | 83DO713 | MMMONT 9 |
| 714 | 83DO714 | MMMONT 4 |
| 71799 | 71DO799 | MNRRJC6 2 |
| 7193014 | 793014 | MCELHEN2 9 |
| 721 | 83DO721 | MMMONT 12 |
| 722 | 83DO722 | MMMONT 13 |
| 723 | 83DO723 | MMMONT 14 |
| 724 | 83DO724 | MMMONT 16 |
| 725 | 83DO725 | MMMONT 15 |
| 730 | 83DO730 | MMMONT 17 |
| 731 | 83DO731 | MMMONT 19 |
| 736108 | 686054 | FIGO486 2 |
| 736108 | 686054 | FIGO586 2 |
| 747030US | 74730US | FIGO383 4 |
| 747041 | 74D7041 | MNRRJC7 2 |
| 76KP038 | 76KO952 | 870316SG03 |
| 77D4004E | 77D004E | GPSONT85 2 |
| 77KH603 | 77KB173 | 870316SG09 |
| 78KH716 | 78KB410 | 870316SG10 |
| 793014 | 793014X | MCEL2ONT 2 |
| 793919X | 7939119 | NORCHAN792 |
| 793920X | 7939120 | NORCHAN793 |
| 793921X | 7939121 | NORCHAN794 |
| 799505 | 729282 | MCE5PE79 3 |

OLD NO.

NEW NO.

FIGURE

| | | |
|----------|----------|------------|
| 799506 | 609046 | MCE5PE79 2 |
| 799511 | 609043 | MCE4PE79 2 |
| 79K0790 | 73KF043 | 8703165GQ2 |
| 802509 | 602518 | MCE13VLQ2 |
| 813021 | 79D0511 | FIG2881 2 |
| 830345 | 83D0345 | MNRRJC6 3 |
| 830346 | 83D0346 | MNRRJC6 4 |
| 830347 | 83D0347 | MNRRJC6 5 |
| 830348 | 83D0348 | MNRRJC7 3 |
| 837005US | 838005US | FIGO483 3 |
| 837020US | 83720US | FIGO383 3 |
| 837021US | 83721US | FIGO383 2 |
| 837022US | 83722US | FIGO483 2 |
| 8435037 | 8425011 | FIG18P84 2 |
| 84B143 | 72Y200 | FIG2684 2 |
| 84B143 | 72Y200 | FIG2784 2 |
| 84X423 | 776015Z | FIG1584 2 |
| 86X001 | 80X500 | FIGO686 2 |
| 86X002 | 80X501 | FIGO586 3 |
| BH | 714013 | MANSHP1P23 |
| BI | 674101E | MANSHP1P23 |
| COCHRANE | 83D0830 | MCELHEN2 2 |
| COCHRANE | 83D0830 | MCELHEN1 2 |
| FOXHARB | 8109119 | FIG2681 2 |
| GRA | 819207 | GRHMISCY42 |
| GRA-MD | 819207 | GRHMISCY22 |
| HEARST | 78D0033 | MCELHEN2 3 |
| HEARST | 78D0033 | MCELHEN1 3 |
| LYNN | 644000 | MANSHP3 2 |
| LYNN | 644000 | MANSHP1P28 |
| MN | 714005 | MANSHP1P27 |
| PEMBROKE | 24302 | MNRRJC4 2 |
| PG | 674102 | MANSHP1P15 |
| PLUM | 25402 | MANSHP1P22 |
| PLUM | 25402 | MANSHP346 |
| RO16 | 76R016 | MANSHP347 |
| RO19 | 76R019 | MANSHP348 |
| RO26 | 76R026 | MANSHP349 |
| R107 | 77R107 | MANSHP350 |
| R200 | 77R200 | MANSHP3 3 |
| R201 | 77R201 | MANSHP3 4 |
| R202 | 77R202 | MANSHP3 5 |
| R203 | 77R203 | MANSHP331 |
| R204 | 77R204 | MANSHP332 |
| R205 | 77R205 | MANSHP333 |
| R206 | 77R206 | MANSHP3 6 |
| R207 | 77R207 | MANSHP3 7 |
| R208 | 77R208 | MANSHP3 8 |
| R209 | 77R209 | MANSHP3 9 |
| R210 | 73M021 | MANSHP310 |
| R211 | 77R211 | MANSHP311 |
| R212 | 77R212 | MANSHP334 |
| R213 | 77R213 | MANSHP335 |
| R214 | 77R214 | MANSHP336 |
| R215 | 68R124 | MANSHP337 |
| R216 | 77R216 | MANSHP338 |
| R217 | 77R217 | MANSHP339 |
| R218 | 77R218 | MANSHP340 |
| R219 | 764018 | MANSHP341 |
| R220 | 77R220 | MANSHP342 |
| R221 | 77R221 | MANSHP322 |
| R222 | 77R222 | MANSHP314 |
| R223 | 764037 | MANSHP323 |
| R224 | 77R224 | MANSHP315 |
| R225 | 77R225 | MANSHP316 |
| R226 | 77R226 | MANSHP317 |
| R227 | 77R227 | MANSHP324 |
| R228 | 77R228 | MANSHP318 |
| R229 | 77R229 | MANSHP319 |

OLD NO.

NEW NO.

FIGURE

| | | |
|--------|---------|------------|
| R231 | 77R231 | MANSHLP325 |
| R232 | 77R232 | MANSHLP321 |
| R234 | 77R234 | MANSHLP326 |
| R235 | 77R235 | MANSHLP327 |
| R236 | 77R236 | MANSHLP328 |
| R237 | 77R237 | MANSHLP329 |
| R238 | 77R238 | MANSHLP330 |
| R239 | 77R239 | MANSHLP343 |
| R240 | 77R240 | MANSHLP344 |
| R241 | 77R241 | MANSHLP345 |
| R242 | 77R242 | MANSHLP351 |
| R243 | 77R243 | MANSHLP312 |
| RA05 | 75RA05 | MANSHLP313 |
| REA | 799265 | GRHMISCY43 |
| RES | 749159 | GRHMISCY44 |
| STA101 | 81D0101 | MNRRJC4 4 |
| STA102 | 81D0102 | MNRRJC4 3 |

APPENDIX B

X,Y,Z Shifts and Changes Applied to Original TAPE9'S

1. Baffin Island DOPPLER M.C.E. 1981, (BF14MCE.81, BF15MCE.81, BF16MCE.81, BF17MCE.81 BF18MCE.81 AND BF19MCE.81) required station 749159 RESOLUTE to be shifted by the following amount:

delta X--10.020 metres

delta Y--2.517 metres

delta Z-- 0.000 metres

An eccentric correction needed to be applied.

2. Turnor Lake (TURNRLK.NEW) . The file used was "TAPE9SASK76", id=ICT on PHC DUMPF tape "DOPPLER73T081", VSN=E16136.

Station 665201 KEELEY was shifted by the following amount:

delta X= +3.684 metres

delta Y=+11.003 metres

delta Z=-16.290 metres

3. MANITOBA SHELL 1976, 1977. There were 3 phases of SHELL, PHASE 1, 2, and 3.

In PHASE 1 (MANSHL.P1), the following shift had to be applied at station 644000 LYNN:

delta X=-29.18 metres

delta Y=-98.84 metres

delta Z=-61.29 metres

An eccentric correction needed to be applied.

In PHASE2 (MANSHL.P2), the same shift had to be applied at LYNN, and as well, the following shift had to be applied to the entire TAPE9:

delta X--15.0 metres

delta Y=+165.0 metres

delta Z=+175.0 metres

These X,Y,Z values represent a shift from the NWL9D to the MAY76 system. It had to be removed.

In PHASE 3 (MANSHL1.P3 TO MANSHL5.P3), an incorrect shift had been applied to the data. To correct it, the following shift had to be applied:

delta X--30.0 metres

delta Y=+330.0 metres

delta Z=+350.0 metres

Note that this shift represents the NWL9D to MAY76 correction, but had

been applied in the wrong direction. It had to be removed.

4. Graham Island SHELL 1981 (GRHMIS2.SHL,GRHMIS4.SHL) . There were 2 TAPE9 files used:

GRAHAMISLANDDOPPLER, ID-DOP1982 ,cy-2

GRAHAMISLANDDOPPLER ,ID-DOP1982 ,cy-4

The 2 files had to have their X,Y,Z 's shifted by the following amount:

delta x--15.0 metres

delta y--165.0 metres

delta z--175.0 metres

As was mentioned above with MANITOBA SHELL, this is the NWL9D to MAY76 shift, and had to be removed.

5. In 1979 MCE Baffin figure 3 (MCE3PE.79 , there were 2 occurrences of station 569129A POND on the original TAPE9.

The problem was solved by changing the number of the second occurrence of the station to "POND". The 2nd occurrence of POND appeared to have the least number of observation passes on it, as indicated by the variance/covariance terms appearing in the TAPE9.

APPENDIX C

DOPPLERNOTUSED TAPE9 Files

- FIG29.80** Not enough information on stations to use. Doesn't appear to be integrated.(E.P.B. points in STELIAS MTS)
- MMM5.ONT** This is a combination of 4 other figures sent to us by MNR. The other figures (MMM4.ONT) were used.(data is the same)
- FIG02.83** Data in this figure suspected to be poor.(CHS SUDBURY)
- FIG08.881** Poor results in GHOST adjustments.(N MANITOBA)
- FIG11.82** Data in this figure suspected to be poor. Other, better DOPPLER data in area, so left out.(CHS BEAUFORT SEA)
- FIG08PT.81** These 3 figures observed by MCE , and came out poor
FIG09PT.81 in GHOST adjustments (station COAT appears to be mis-
FIG10PT.81 identified, but no reason for this could be found.This data is located in Ontario)
- HUDSON.79** This data is located in the Coats/Mansel Islands area of Hudson's Bay It did not appear to be integrated, so was left out.
- MCE1B.79**
MCE2B.79
MCE3B.79 There is a corresponding Precise ephemeris figure for each
MCE4B.79 of these 6 Broadcast figures. Since the data is probably the
MCE5B.79 same, these weren't used.
MCE6B.79
- MCE1PE.79** Not enough data in this figure to use. Went singular in GHOST adjustment.(NWT. The 2 stations in this figure are not tied to any other DOPPLER data, nor are they tied to any secondary or framework terrestrial data.)
- MNRRJC.6** Not enough data in these 2 figures to use. Went singular
MNRRJC.7 in GHOST adjustment.(ONT contract for MNR. Not tied to any secondary terrestrial or other DOPPLER stations)

FIG20.84 Point position in US. Not necessary to include in NAD83 secondary integration.(STELIAS MTS)

CLALT1.MCE

CLALT2.MCE Cold Lake Alberta, M.C.E. 1981. Survey was done to

CLALT3.MCE position microwave towers at an airport. Points are

CLALT4.MCE very close together. Not of any benefit to NAD83 secondary

CLALT5.MCE integration.

CLALT6.MCE

CLALT6.MCE

APPENDIX D

SAMPLE OF PAGE FROM "DOPPAD INDEX" FILE

UNLABELED OLDPL MASTER AUDIT, IDENT CARD TOTAL UPDATE 1.4-650. 10/06/87 10.25

LIST OF CONTROL, ACTIVE, AND/OR INACTIVE CARDS IN FIGO2F77

| | | | | | | | | | | | | |
|----------|-------|----------|--------|---|----|----|----------|-----|----|----------|---------|----------|
| FIGO2F77 | *DECK | FIGO2F77 | | N | | | | | | | | FIGO2F77 |
| FIGO2F77 | 69 | 734011 | MURPHY | N | 53 | 44 | 44.16796 | 101 | 46 | 17.99927 | 246.029 | FIGO2F77 |
| FIGO2F77 | 69 | 61407 | GILL | N | 51 | 36 | 34.87970 | 101 | 18 | 28.79396 | 669.830 | FIGO2F77 |
| FIGO2F77 | 69 | 764015 | 764015 | N | 53 | 45 | 41.18460 | 101 | 13 | 54.14598 | 246.521 | FIGO2F77 |
| FIGO2F77 | 69 | 764020 | 764020 | N | 54 | 37 | 52.36336 | 100 | 0 | 12.85301 | 247.590 | FIGO2F77 |
| FIGO2F77 | 69 | 764018 | R219 | N | 54 | 34 | 28.59856 | 101 | 22 | 19.82807 | 269.405 | FIGO2F77 |

LIST OF CONTROL, ACTIVE, AND/OR INACTIVE CARDS IN FIGO2F78

| | | | | | | | | | | | | |
|----------|-------|----------|-------------|---|----|----|----------|----|----|----------|---------|----------|
| FIGO2F78 | *DECK | FIGO2F78 | | N | | | | | | | | FIGO2F78 |
| FIGO2F78 | 69 | 78K0002 | TOURAINÉ | N | 47 | 5 | 46.29836 | 78 | 2 | 42.83852 | 363.750 | FIGO2F78 |
| FIGO2F78 | 69 | 773314 | ROOF VENT 1 | N | 45 | 24 | 4.58954 | 75 | 42 | 17.79884 | 65.228 | FIGO2F78 |
| FIGO2F78 | 69 | 682007 | LAUZON | N | 46 | 48 | 52.68679 | 71 | 9 | 26.60687 | 94.039 | FIGO2F78 |

LIST OF CONTROL, ACTIVE, AND/OR INACTIVE CARDS IN FIGO2F79

| | | | | | | | | | | | | |
|----------|-------|----------|------------|---|----|----|----------|----|----|----------|---------|----------|
| FIGO2F79 | *DECK | FIGO2F79 | | N | | | | | | | | FIGO2F79 |
| FIGO2F79 | 69 | 36005 | ROBINSONS | N | 48 | 15 | 32.58690 | 58 | 47 | 58.05855 | 88.317 | FIGO2F79 |
| FIGO2F79 | 69 | 730100 | SATANT | N | 47 | 34 | 17.47050 | 52 | 41 | 39.35146 | 81.332 | FIGO2F79 |
| FIGO2F79 | 69 | 73GT006 | 913060 | N | 46 | 38 | 36.77689 | 53 | 8 | 50.02560 | 53.509 | FIGO2F79 |
| FIGO2F79 | 69 | 790004 | OTTER | N | 48 | 33 | 14.28183 | 57 | 20 | 6.75865 | 515.584 | FIGO2F79 |
| FIGO2F79 | 69 | 4209002 | GOLD | N | 46 | 50 | 4.92356 | 54 | 11 | 6.47286 | 128.543 | FIGO2F79 |
| FIGO2F79 | 69 | 73GT001 | 834070 | N | 48 | 22 | 21.38284 | 53 | 21 | 51.90789 | 127.454 | FIGO2F79 |
| FIGO2F79 | 69 | 79GT001 | T3-RASCO | N | 48 | 49 | 53.78115 | 56 | 51 | 33.98696 | 299.950 | FIGO2F79 |
| FIGO2F79 | 69 | 790002 | RODDICKTON | N | 50 | 49 | 1.16081 | 56 | 12 | 49.23420 | 349.177 | FIGO2F79 |
| FIGO2F79 | 69 | 48053 | COBB | N | 49 | 36 | 35.21185 | 54 | 33 | 35.38933 | 108.590 | FIGO2F79 |
| FIGO2F79 | 69 | 790001 | JUMBO | N | 49 | 19 | 16.96772 | 58 | 12 | 27.80974 | 673.510 | FIGO2F79 |
| FIGO2F79 | 69 | 790003 | NDEL | N | 48 | 30 | 38.77889 | 56 | 21 | 47.71234 | 388.575 | FIGO2F79 |

LIST OF CONTROL, ACTIVE, AND/OR INACTIVE CARDS IN FIGO2F82

| | | | | | | | | | | | | |
|----------|-------|----------|-----------------|---|----|----|----------|----|----|----------|---------|----------|
| FIGO2F82 | *DECK | FIGO2F82 | | N | | | | | | | | FIGO2F82 |
| FIGO2F82 | 69 | 49202 | SQUAW | N | 54 | 50 | 18.23072 | 66 | 46 | 44.82024 | 579.894 | FIGO2F82 |
| FIGO2F82 | 69 | 650001B | SATELLITE REF B | N | 53 | 18 | 30.16699 | 60 | 21 | 52.57820 | 26.259 | FIGO2F82 |
| FIGO2F82 | 69 | 60010 | HOPEDALE SH 95 | N | 55 | 27 | 43.58601 | 60 | 14 | 56.38849 | 161.857 | FIGO2F82 |
| FIGO2F82 | 69 | 620007 | HAWKE | N | 53 | 2 | 30.64474 | 55 | 57 | 41.53834 | 247.649 | FIGO2F82 |
| FIGO2F82 | 69 | 5809159 | MAKKOVIK (2925) | N | 55 | 10 | 19.46711 | 59 | 9 | 43.56171 | 272.408 | FIGO2F82 |
| FIGO2F82 | 69 | 46201 | BARREN | N | 51 | 8 | 32.24331 | 61 | 32 | 34.15318 | 440.277 | FIGO2F82 |
| FIGO2F82 | 69 | 590017 | A-17 | N | 52 | 39 | 49.71282 | 60 | 9 | 31.46615 | 531.559 | FIGO2F82 |
| FIGO2F82 | 69 | 590038 | A-38 | N | 53 | 33 | 4.72957 | 56 | 49 | 45.49902 | 434.549 | FIGO2F82 |

LIST OF CONTROL, ACTIVE, AND/OR INACTIVE CARDS IN FIGO3F77

| | | | | | | | | | | | | |
|----------|-------|----------|--------|---|----|----|----------|-----|----|----------|---------|----------|
| FIGO3F77 | *DECK | FIGO3F77 | | N | | | | | | | | FIGO3F77 |
| FIGO3F77 | 69 | 734011 | MURPHY | N | 53 | 44 | 44.30670 | 101 | 46 | 17.93520 | 246.362 | FIGO3F77 |
| FIGO3F77 | 69 | 61407 | GILL | N | 51 | 36 | 35.00752 | 101 | 18 | 28.73013 | 670.942 | FIGO3F77 |
| FIGO3F77 | 69 | 774000 | 774000 | N | 52 | 50 | 31.46687 | 99 | 1 | 5.68611 | 211.328 | FIGO3F77 |
| FIGO3F77 | 69 | 774002 | 774002 | N | 53 | 32 | 25.77923 | 99 | 21 | 5.17952 | 251.526 | FIGO3F77 |
| FIGO3F77 | 69 | 775000 | 775000 | N | 54 | 35 | 16.49734 | 102 | 0 | 26.90906 | 281.467 | FIGO3F77 |

LIST OF CONTROL, ACTIVE, AND/OR INACTIVE CARDS IN FIGO3F78

0 1 2 3 4 5 6 7 8
 12345678901234567890123456789012345678901234567890123456789012345678901234567890

APPENDIX "E"

STATIONS IN "DOPPLERNOTUSED" FILE

| | | | | | | | | | | | |
|----|----------|---------------|---|----|----|----------|-----|----|----------|-------------------|----|
| 69 | 29305 | MACPHERSON | D | 46 | 19 | 8.31311 | 80 | 16 | 6.73119 | 248.601FIGO283 | 2 |
| 69 | 47300 | WAWA | D | 48 | 1 | 35.11940 | 84 | 44 | 7.45252 | 493.202MNRMMM1 | 11 |
| 69 | 54636 | X 2 | D | 54 | 49 | 14.47362 | 110 | 1 | 50.04174 | 674.615CLALT4MCE6 | |
| 69 | 569129A | POND | D | 72 | 41 | 49.98933 | 77 | 58 | 44.79660 | 150.099MCE2B79 | 6 |
| 69 | 569129A | POND | D | 72 | 41 | 50.22327 | 77 | 58 | 45.76828 | 151.778MCE4B79 | 2 |
| 69 | 569129A | POND | D | 72 | 41 | 50.18785 | 77 | 58 | 45.08527 | 154.412MCE3B79 | 7 |
| 69 | 569129A | POND | D | 72 | 41 | 50.34466 | 77 | 58 | 46.16436 | 150.484MCE6B79 | 2 |
| 69 | 569129A | POND | D | 72 | 41 | 50.12820 | 77 | 58 | 45.89349 | 154.387MCE3B79 | 2 |
| 69 | 569129A | POND | D | 72 | 41 | 50.25224 | 77 | 58 | 45.59242 | 151.107MCE5B79 | 3 |
| 69 | 57319 | SIDUX | D | 50 | 5 | 21.65774 | 92 | 0 | 2.31257 | 414.700MNRMMM1 | 3 |
| 69 | 594157 | 59 A22 | D | 58 | 2 | 13.78970 | 96 | 0 | 16.63103 | 229.754FIGO8S81 | 6 |
| 69 | 609043 | 60A43 | D | 72 | 52 | 38.39051 | 76 | 19 | 11.08507 | 958.008MCE4B79 | 3 |
| 69 | 609046 | 60A46 | D | 70 | 52 | 49.72149 | 69 | 52 | 59.67674 | 491.066MCE6B79 | 4 |
| 69 | 609046 | 60A46 | D | 70 | 52 | 49.63091 | 69 | 52 | 59.43146 | 491.695MCE5B79 | 8 |
| 69 | 633488 | 63 S 3 (353) | D | 48 | 5 | 27.24296 | 85 | 56 | 48.82413 | 331.551MNRMMM1 | 18 |
| 69 | 653981 | 65 G 33 | D | 45 | 55 | 6.46518 | 77 | 17 | 4.46564 | 179.761FIGO8PTB18 | |
| 69 | 653981 | 65 G 33 | D | 45 | 55 | 6.60842 | 77 | 17 | 4.37972 | 180.252FIGO9PTB18 | |
| 69 | 653981 | 65 G 33 | D | 45 | 55 | 6.52269 | 77 | 17 | 4.46771 | 179.633FIG10PTB12 | |
| 69 | 663101 | OBS PIER | D | 45 | 19 | 46.31949 | 75 | 52 | 59.26151 | 130.979FIGO8PTB19 | |
| 69 | 663101 | OBS PIER | D | 45 | 19 | 46.46914 | 75 | 52 | 59.13003 | 130.443FIGO9PTB19 | |
| 69 | 663101 | OBS PIER | D | 45 | 19 | 46.39714 | 75 | 52 | 59.22180 | 130.602FIG10PTB13 | |
| 69 | 664000 | CHURCHILL | D | 58 | 47 | 1.41711 | 94 | 11 | 58.38094 | -25.603FIGO8S81 | 7 |
| 69 | 664002 | DAK | D | 58 | 45 | 33.12872 | 93 | 59 | 24.93466 | -11.618FIGO8S81 | 2 |
| 69 | 664005 | KNIGHT | D | 58 | 45 | 8.27479 | 93 | 31 | 9.05321 | -25.256FIGO8S81 | 8 |
| 69 | 664011 | LED | D | 58 | 55 | 8.75063 | 95 | 54 | 7.87175 | 129.096FIGO8S81 | 3 |
| 69 | 683028 | COAT | D | 42 | 10 | 25.98280 | 82 | 21 | 43.02348 | 192.868FIGO9PTB10 | |
| 69 | 683028 | COAT | D | 42 | 10 | 25.83072 | 82 | 21 | 43.13854 | 193.293FIGO8PTB10 | |
| 69 | 683028 | COAT | D | 42 | 10 | 25.92880 | 82 | 21 | 43.08498 | 193.022FIG10PTB14 | |
| 69 | 699039X | PULLEN ECC | D | 69 | 46 | 39.28441 | 134 | 23 | 46.46519 | 149.235FIG1182 | 4 |
| 69 | 713501 | PM 71 M 6 | D | 45 | 54 | 48.01962 | 77 | 27 | 54.91872 | 218.573FIGO9PTB17 | |
| 69 | 71D0799 | O08710799 | D | 44 | 46 | 45.04607 | 78 | 38 | 43.18584 | 321.320MNRJUC6 | 2 |
| 69 | 71D036 | 71 544 PEARL | D | 48 | 42 | 17.97695 | 88 | 37 | 46.62978 | 233.524MNRMMM1 | 2 |
| 69 | 729282 | 72A64 | D | 69 | 0 | 19.72159 | 68 | 5 | 28.72720 | 698.650MCE5B79 | 10 |
| 69 | 734005 | 59-A-71 | D | 57 | 55 | 16.12154 | 92 | 49 | 3.91495 | -34.507FIGO8S81 | 5 |
| 69 | 7399006X | BAILLIE 2 ECC | D | 70 | 38 | 8.84110 | 128 | 16 | 43.86084 | 142.441FIG1182 | 3 |
| 69 | 749154 | 749154 | D | 71 | 59 | 41.66070 | 125 | 16 | 58.78618 | 220.905FIG1182 | 2 |
| 69 | 74D7041 | O57747041 | D | 44 | 45 | 21.57634 | 80 | 0 | 30.01874 | 298.169MNRJUC7 | 2 |
| 69 | 753130 | GERALDTON | D | 49 | 44 | 42.68501 | 86 | 57 | 10.96593 | 346.316MNRMMM1 | 7 |
| 69 | 775001 | 775001 | D | 54 | 35 | 42.99468 | 109 | 14 | 32.91994 | 713.002CLALT2MCE3 | |
| 69 | 775001 | 775001 | D | 54 | 35 | 42.68995 | 109 | 14 | 32.80133 | 714.506CLALT3MCE4 | |
| 69 | 775005 | 54110.19 | D | 54 | 22 | 25.03603 | 110 | 0 | 21.07105 | 611.046CLALT4MCE4 | |
| 69 | 776001 | 54110.22 | D | 54 | 32 | 51.76461 | 110 | 18 | 31.03170 | 630.772CLALT1MCE2 | |
| 69 | 776001 | 54110.22 | D | 54 | 32 | 51.78588 | 110 | 18 | 30.81419 | 632.316CLALT4MCE2 | |
| 69 | 776001 | 54110.22 | D | 54 | 32 | 51.71037 | 110 | 18 | 30.89496 | 633.551CLALT2MCE2 | |
| 69 | 776001 | 54110.22 | D | 54 | 32 | 51.42796 | 110 | 18 | 30.76898 | 632.137CLALT3MCE2 | |
| 69 | 776002 | 54110-21 | D | 54 | 35 | 22.64191 | 111 | 46 | 12.06770 | 664.748CLALT4MCE5 | |
| 69 | 776002 | 54110-21 | D | 54 | 35 | 22.52256 | 111 | 46 | 12.35587 | 660.907CLALT1MCE3 | |
| 69 | 776002 | 54110-21 | D | 54 | 35 | 22.49277 | 111 | 46 | 12.08846 | 665.905CLALT2MCE4 | |
| 69 | 776002 | 54110-21 | D | 54 | 35 | 22.19980 | 111 | 46 | 12.06908 | 664.749CLALT3MCE5 | |
| 69 | 776021 | 55110-3 | D | 55 | 17 | 15.31334 | 110 | 0 | 22.13275 | 745.532CLALT7MCE3 | |
| 69 | 776021 | 55110-3 | D | 55 | 17 | 15.54945 | 110 | 0 | 22.45500 | 737.841CLALT1MCE4 | |
| 69 | 776021 | 55110-3 | D | 55 | 17 | 15.40971 | 110 | 0 | 22.08513 | 745.148CLALT5MCE3 | |
| 69 | 776021 | 55110-3 | D | 55 | 17 | 15.44620 | 110 | 0 | 22.05223 | 744.510CLALT2MCE5 | |
| 69 | 776021 | 55110-3 | D | 55 | 17 | 15.18697 | 110 | 0 | 22.13680 | 745.009CLALT3MCE6 | |
| 69 | 776021 | 55110-3 | D | 55 | 17 | 15.47280 | 110 | 0 | 22.16739 | 742.615CLALT6MCE3 | |
| 69 | 776021 | 55110-3 | D | 55 | 17 | 15.53972 | 110 | 0 | 22.06907 | 742.914CLALT4MCE7 | |
| 69 | 784252 | 784252 | D | 58 | 25 | 37.65860 | 93 | 5 | 57.26094 | -36.529FIGO8S81 | 4 |
| 69 | 793035 | 793035 | D | 45 | 59 | 18.94586 | 77 | 20 | 44.88574 | 151.357FIGO8PTB15 | |
| 69 | 793037 | WEGNER | D | 45 | 57 | 35.09105 | 77 | 18 | 51.83011 | 149.781FIGO8PTB12 | |
| 69 | 799247 | DUNE | D | 61 | 55 | 9.25526 | 79 | 26 | 49.37536 | 103.553HUDSON79 | 2 |
| 69 | 799248 | CALCAIRE | D | 61 | 50 | 2.94085 | 80 | 11 | 33.65625 | 88.161HUDSON79 | 3 |
| 69 | 799249 | GEOMETRE | D | 62 | 21 | 23.84348 | 79 | 56 | 32.00504 | 96.934HUDSON79 | 4 |
| 69 | 799250 | BENIS | D | 63 | 2 | 3.90149 | 82 | 36 | 31.35457 | 96.598HUDSON79 | 5 |
| 69 | 799251 | CASLAND | D | 62 | 58 | 2.43883 | 82 | 44 | 15.93941 | 83.657HUDSON79 | 6 |
| 69 | 799253 | LECLERC | D | 62 | 29 | 51.30082 | 82 | 34 | 36.97110 | 134.260HUDSON79 | 7 |
| 69 | 799500 | 799500 | D | 70 | 3 | 32.63292 | 80 | 35 | 1.57963 | 129.088MCE4B79 | 4 |
| 69 | 799501 | 799501 | D | 69 | 59 | 57.69960 | 78 | 42 | 14.24919 | 173.025MCE4B79 | 5 |
| 69 | 799502 | 799502 | D | 69 | 28 | 22.74966 | 75 | 53 | 7.58044 | 375.933MCE3B79 | 6 |
| 69 | 799503 | 799503 | D | 70 | 2 | 24.53097 | 74 | 37 | 19.61055 | 678.091MCE4B79 | 6 |
| 69 | 799503 | 799503 | D | 70 | 2 | 24.64054 | 74 | 37 | 19.57057 | 679.223MCE2B79 | 4 |
| 69 | 799508 | 799508 | D | 70 | 58 | .55265 | 76 | 39 | 2.92686 | 782.040MCE3B79 | 4 |

| | | | | | | | | | | | | |
|----|---------|--------------|---|----|----|----------|-----|----|----------|------|---------------|----|
| 69 | 799509 | 799509 | D | 71 | 50 | 25.19835 | 74 | 20 | 34.33617 | 943 | 331MCE5B79 | 2 |
| 69 | 799510 | 799510 | D | 71 | 45 | 16.41775 | 75 | 48 | 27.49027 | 1014 | 557MCE4B79 | 7 |
| 69 | 799513 | 799513 | D | 73 | 45 | 6.72384 | 80 | 50 | 29.18987 | 150 | 057MCE5B79 | 5 |
| 69 | 799515 | 799515 | D | 69 | 55 | 22.97015 | 67 | 13 | 47.99085 | 148 | 085MCE6B79 | 3 |
| 69 | 799515 | 799515 | D | 69 | 55 | 22.81233 | 67 | 13 | 48.32337 | 148 | 221MCE5B79 | 7 |
| 69 | 799517 | 799517 | D | 70 | 4 | 9.46893 | 72 | 31 | 11.84322 | 789 | 944MCE2B79 | 2 |
| 69 | 799521 | 799521 | D | 70 | 11 | 46.01462 | 75 | 38 | 50.52286 | 620 | 762MCE2B79 | 3 |
| 69 | 799528 | 799528 | D | 68 | 40 | 12.14542 | 78 | 43 | 23.24942 | 114 | 869MCE1PE79 | 3 |
| 69 | 799528 | 799528 | D | 68 | 40 | 12.16742 | 78 | 43 | 23.22216 | 117 | 139MCE1B79 | 2 |
| 69 | 799529 | 799529 | D | 68 | 11 | 11.75690 | 79 | 4 | 39.56655 | 114 | 258MCE1PE79 | 2 |
| 69 | 799529 | 799529 | D | 68 | 11 | 11.74422 | 79 | 4 | 39.64038 | 117 | 358MCE1B79 | 3 |
| 69 | 799530 | 799530 | D | 68 | 20 | 5.17608 | 74 | 48 | 51.93422 | 128 | 403MCE2B79 | 5 |
| 69 | 799531 | 799531 | D | 68 | 14 | 51.12098 | 75 | 16 | 56.07407 | 121 | 022MCE2B79 | 7 |
| 69 | 799531 | 799531 | D | 68 | 14 | 51.29778 | 75 | 16 | 56.72529 | 125 | 500MCE3B79 | 5 |
| 69 | 799532 | 799532 | D | 68 | 14 | 13.88874 | 76 | 37 | 23.35014 | 123 | 003MCE5B79 | 9 |
| 69 | 799533 | 799533 | D | 67 | 16 | 31.76533 | 76 | 59 | 5.38514 | 116 | 657MCE5B79 | 11 |
| 69 | 799534 | 799534 | D | 67 | 18 | 21.66359 | 75 | 33 | 45.61673 | 114 | 143MCE5B79 | 6 |
| 69 | 799535 | 799535 | D | 67 | 56 | 53.38714 | 74 | 43 | 12.82442 | 121 | 883MCE3B79 | 8 |
| 69 | 799536 | 799536 | D | 67 | 52 | 55.29315 | 73 | 24 | 56.91783 | 122 | 825MCE4B79 | 8 |
| 69 | 799538 | 799538 | D | 70 | 24 | 34.69476 | 77 | 18 | 32.80772 | 568 | 634MCE3B79 | 3 |
| 69 | 799538 | 799538 | D | 70 | 24 | 34.82864 | 77 | 18 | 32.79463 | 566 | 578MCE5B79 | 4 |
| 69 | 803502 | CARB | D | 45 | 54 | 36.80582 | 77 | 32 | 36.56529 | 278 | 842FIGO9PT816 | 16 |
| 69 | 803503 | APEX | D | 45 | 51 | 53.93990 | 77 | 30 | 58.57431 | 183 | 104FIGO8PT816 | 16 |
| 69 | 803504 | 803504 | D | 45 | 57 | 31.90496 | 77 | 29 | 50.60424 | 208 | 734FIGO8PT813 | 13 |
| 69 | 803505 | RHINE | D | 45 | 55 | 49.71803 | 77 | 35 | 16.79274 | 192 | 184FIGO9PT813 | 13 |
| 69 | 803506 | KING | D | 45 | 53 | 45.24098 | 77 | 25 | 44.87897 | 184 | 016FIGO9PT814 | 14 |
| 69 | 803507 | PAQUETTE | D | 45 | 53 | 19.41200 | 77 | 22 | 7.34189 | 172 | 887FIGO9PT812 | 12 |
| 69 | 803508 | MIDWAY | D | 45 | 55 | 1.18673 | 77 | 19 | 24.38791 | 169 | 077FIGO9PT815 | 15 |
| 69 | 803509 | DUKE | D | 45 | 57 | 48.76963 | 77 | 22 | .08062 | 173 | 162FIGO8PT814 | 14 |
| 69 | 803510 | MACKENZIE | D | 45 | 56 | 59.35707 | 77 | 24 | 54.97737 | 198 | 002FIGO8PT817 | 17 |
| 69 | 808520 | 808520 | D | 60 | 0 | 13.47285 | 136 | 51 | 23.66982 | 946 | 128FIG2980 | 2 |
| 69 | 815501 | 815501 | D | 54 | 49 | 20.88424 | 108 | 53 | 23.98244 | 799 | 219CLALT6MCE4 | 4 |
| 69 | 815502 | 815502 | D | 54 | 49 | 32.34179 | 109 | 20 | 44.47963 | 703 | 620CLALT7MCE4 | 4 |
| 69 | 815503 | 815503 | D | 54 | 59 | 16.37359 | 109 | 29 | 53.98145 | 679 | 298CLALT5MCE4 | 4 |
| 69 | 815504 | 815504 | D | 55 | 0 | 31.05467 | 109 | 0 | 56.25102 | 777 | 368CLALT6MCE5 | 5 |
| 69 | 815505 | 815505 | D | 55 | 13 | 30.43837 | 109 | 19 | 50.93186 | 758 | 354CLALT5MCE5 | 5 |
| 69 | 815506 | 815506 | D | 55 | 15 | 12.58485 | 109 | 52 | 46.77214 | 765 | 783CLALT5MCE6 | 6 |
| 69 | 815507 | 815507 | D | 54 | 54 | 35.59405 | 109 | 57 | 37.65155 | 704 | 858CLALT7MCE6 | 6 |
| 69 | 816501 | 816501 | D | 54 | 44 | 50.89589 | 110 | 2 | 32.76977 | 772 | 717CLALT3MCE3 | 3 |
| 69 | 816501 | 816501 | D | 54 | 44 | 51.25918 | 110 | 2 | 32.60207 | 771 | 122CLALT4MCE3 | 3 |
| 69 | 816501 | 816501 | D | 54 | 44 | 51.03306 | 110 | 2 | 32.81748 | 772 | 799CLALT7MCE2 | 2 |
| 69 | 816501 | 816501 | D | 54 | 44 | 51.16443 | 110 | 2 | 32.76926 | 771 | 531CLALT6MCE2 | 2 |
| 69 | 816501 | 816501 | D | 54 | 44 | 51.12633 | 110 | 2 | 32.63053 | 772 | 454CLALT5MCE2 | 2 |
| 69 | 816502 | 816502 | D | 54 | 23 | 43.59985 | 110 | 15 | 53.15148 | 609 | 614CLALT7MCE5 | 5 |
| 69 | 8339112 | BILL | D | 46 | 16 | 10.52367 | 80 | 27 | 37.31111 | 216 | 508FIGO283 | 3 |
| 69 | 8339113 | PETE | D | 46 | 15 | 11.98288 | 80 | 28 | 35.00246 | 214 | 778FIGO283 | 4 |
| 69 | 83D0345 | 010830345 | D | 44 | 53 | 44.79661 | 78 | 28 | 11.91059 | 337 | 352MNRJRJC6 | 3 |
| 69 | 83D0346 | 010830346 | D | 44 | 52 | 27.89680 | 78 | 6 | 54.71396 | 372 | 087MNRJRJC6 | 4 |
| 69 | 83D0347 | 010830347 | D | 44 | 53 | 50.09918 | 77 | 58 | 1.22758 | 372 | 150MNRJRJC6 | 5 |
| 69 | 83D0348 | 010830348 | D | 44 | 55 | 3.22907 | 80 | 9 | 54.12190 | 192 | 312MNRJRJC7 | 3 |
| 69 | 83D0701 | 010830701 | D | 48 | 1 | 23.61653 | 89 | 32 | 45.29169 | 153 | 065MNRMMM1 | 5 |
| 69 | 83D0702 | 010830702 | D | 50 | 20 | 16.58892 | 88 | 4 | 6.68784 | 290 | 716MNRMMM1 | 10 |
| 69 | 83D0711 | 010830711 | D | 47 | 59 | 49.98593 | 89 | 51 | 39.41708 | 429 | 177MNRMMM1 | 6 |
| 69 | 83D0712 | 010830712 | D | 49 | 9 | 34.10539 | 89 | 57 | 8.96442 | 429 | 833MNRMMM1 | 8 |
| 69 | 83D0713 | 010830713 | D | 49 | 40 | 45.12102 | 89 | 55 | 46.33038 | 430 | 962MNRMMM1 | 9 |
| 69 | 83D0714 | 010830714 | D | 50 | 18 | 50.08758 | 91 | 23 | 24.32371 | 375 | 046MNRMMM1 | 4 |
| 69 | 83D0721 | 010830721 | D | 50 | 3 | 6.60408 | 85 | 20 | 9.62929 | 152 | 577MNRMMM1 | 12 |
| 69 | 83D0722 | 010830722 | D | 50 | 14 | 32.48026 | 86 | 1 | 7.05448 | 231 | 176MNRMMM1 | 13 |
| 69 | 83D0723 | 010830723 | D | 49 | 35 | 31.17282 | 85 | 20 | 15.71941 | 293 | 774MNRMMM1 | 14 |
| 69 | 83D0724 | 010830724 | D | 49 | 7 | 10.07828 | 85 | 20 | 44.44524 | 306 | 475MNRMMM1 | 16 |
| 69 | 83D0725 | 010830725 | D | 49 | 8 | 54.93250 | 85 | 47 | 6.65018 | 380 | 977MNRMMM1 | 15 |
| 69 | 83D0730 | 010830730 | D | 48 | 23 | 6.48292 | 86 | 12 | 6.56195 | 160 | 572MNRMMM1 | 17 |
| 69 | 83D0731 | 010830731 | D | 47 | 43 | 6.28509 | 85 | 57 | 23.08932 | 152 | 069MNRMMM1 | 19 |
| 69 | 84701US | BLACKDIAMOND | D | 56 | 59 | 20.63635 | 132 | 22 | 45.48205 | 1740 | 561FIG2084 | 2 |
| 69 | ICB | | D | 59 | 58 | 8.53679 | 141 | 39 | 11.43020 | 125 | 006FIG2980 | 4 |
| 69 | YAK1959 | | D | 60 | 4 | 59.38662 | 142 | 30 | 33.08697 | 127 | 123FIG2980 | 3 |

APPENDIX "F"

DOPPLER FIGURE LIST

N.B.(1) : THE NAME ON THE LEFT IS THE IDENTIFIER OF THE FIGURE IN THE DOPPAD INDEX
 N.B.(2) : A FILE SUCH AS FIGO1F77 WOULD BE IDENTIFIED AS FIGO1.F77 ON THE DOPPAD. ANOMALIES ARE LISTED AFTER EACH CASE. A FILE SUCH AS FIGO884 WOULD BE IDENTIFIED AS FIGO8.84 ON THE DOPPAD.

1973

PREC73PTS GEODETTIC PRECISE PTS NWL9D
 *** NOTE:CALLED PREC.P73 ON DOPPAD ***
 CAPBRNGP73 GEODETTIC CAPE BARING PRECISE NWL9D
 *** NOTE:CALLED CAPBRNG.P73 ON DOPPAD ***

1974

PREC1P74 GEODETTIC PRECISE NWL9D TRANSLOCATION
 PREC2P74 GEODETTIC PRECISE NWL9D TRANSLOCATION
 PREC3P74 GEODETTIC PRECISE NWL9D TRANSLOCATION
 PREC4P74 GEODETTIC PRECISE NWL9D TRANSLOCATION
 PREC5P74 GEODETTIC PRECISE NWL9D TRANSLOCATION
 PREC6P74 GEODETTIC PRECISE NWL9D TRANSLOCATION
 PREC7P74 GEODETTIC PRECISE NWL9D TRANSLOCATION
 *** NOTE:CALLED PREC.P74 ON DOPPAD (1 FILE) ***

1975

PREC1P75 GEODETTIC PRECISE NWL9D TRANSLOCATION
 PREC2P75 GEODETTIC PRECISE NWL9D TRANSLOCATION
 PREC3P75 GEODETTIC PRECISE NWL9D TRANSLOCATION
 PREC4P75 GEODETTIC PRECISE NWL9D TRANSLOCATION
 PREC5P75 GEODETTIC PRECISE NWL9D TRANSLOCATION
 PREC6P75 GEODETTIC PRECISE NWL9D TRANSLOCATION
 PREC7P75 GEODETTIC PRECISE NWL9D TRANSLOCATION
 PREC8P75 GEODETTIC PRECISE NWL9D TRANSLOCATION
 PREC9P75 GEODETTIC PRECISE NWL9D TRANSLOCATION
 PREC10P75 GEODETTIC PRECISE NWL9D TRANSLOCATION
 PREC11P75 GEODETTIC PRECISE NWL9D TRANSLOCATION
 PREC12P75 GEODETTIC PRECISE NWL9D TRANSLOCATION
 *** NOTE:CALLED PREC.P75 ON DOPPAD (1 FILE) ***

1976

PREC1P76 GEODETTIC PRECISE NWL9D TRANSLOCATION
 PREC2P76 GEODETTIC PRECISE NWL9D TRANSLOCATION
 PREC3P76 GEODETTIC PRECISE NWL9D TRANSLOCATION
 PREC4P76 GEODETTIC PRECISE NWL9D TRANSLOCATION
 PREC5P76 GEODETTIC PRECISE NWL9D TRANSLOCATION
 PREC6P76 GEODETTIC PRECISE NWL9D TRANSLOCATION
 PREC7P76 GEODETTIC PRECISE NWL9D TRANSLOCATION
 PREC8P76 GEODETTIC PRECISE NWL9D TRANSLOCATION
 PREC9P76 GEODETTIC PRECISE NWL9D TRANSLOCATION
 *** NOTE:CALLED PREC.P76 ON DOPPAD (1 FILE) ***
 MASHLO1P1 SHELL MANITOBA PHASE 1 BROADCAST
 MASHLO2P1 SHELL MANITOBA PHASE 1 BROADCAST
 MASHLO3P1 SHELL MANITOBA PHASE 1 BROADCAST
 MASHLO4P1 SHELL MANITOBA PHASE 1 BROADCAST
 MASHLO5P1 SHELL MANITOBA PHASE 1 BROADCAST
 *** NOTE:CALLED MANSHL.P1 ON DOPPAD (1 FILE) ***
 MASHLO1P2 SHELL MANITOBA PHASE 2 BROADCAST
 MASHLO2P2 SHELL MANITOBA PHASE 2 BROADCAST
 MASHLO3P2 SHELL MANITOBA PHASE 2 BROADCAST

| | | |
|--|-------|----------------------------|
| MASHLO4P2 | SHELL | MANITOBA PHASE 2 BROADCAST |
| MASHLO5P2 | SHELL | MANITOBA PHASE 2 BROADCAST |
| MASHLO6P2 | SHELL | MANITOBA PHASE 2 BROADCAST |
| MASHLO7P2 | SHELL | MANITOBA PHASE 2 BROADCAST |
| *** NOTE: CALLED MANSHL.P2 ON DOPPAD (1 FILE) *** | | |
| MASHLO1P3 | SHELL | MANITOBA PHASE 3 BROADCAST |
| MASHLO2P3 | SHELL | MANITOBA PHASE 3 BROADCAST |
| MASHLO3P3 | SHELL | MANITOBA PHASE 3 BROADCAST |
| MASHLO4P3 | SHELL | MANITOBA PHASE 3 BROADCAST |
| MASHLO5P3 | SHELL | MANITOBA PHASE 3 BROADCAST |
| *** NOTE: CALLED MANSHL1.P3 (ETC) ON DOPPAD *** | | |
| TRNRLKNEW | | TURNOR LAKE |
| *** NOTE: CALLED TRNRLK.NEW ON DOPPAD *** | | |
| *** NOTE: THIS HAS BEEN TENTATIVELY STRAIGHTENED OUT *** | | |

*** NOTE: UNLESS "PRECISE" IS SPECIFIED, THE FOLLOWING FIGURES WERE OBSERVED BY THE METHOD OF BROADCAST TRANSLOCATION ***

1977

| | | |
|--|--------------|------------------|
| BONNECH77 | L. HENNESSEY | BONNECHERE ONT |
| *** NOTE: CALLED BONNECH.77 ON DOPPAD *** | | |
| FIG01F77 | A. EATON | ALTA SASK MAN |
| FIG02F77 | A. EATON | ALTA SASK MAN |
| FIG03F77 | A. EATON | ALTA SASK MAN |
| FIG04F77 | A. EATON | ALTA SASK MAN |
| FIG05F77 | A. EATON | ALTA SASK MAN |
| FIG06F77 | A. EATON | ALTA SASK MAN |
| FIG07F77 | A. EATON | ALTA SASK MAN |
| FIG08S77 | A. EATON | BAFFIN SOUTH |
| FIG09S77 | A. EATON | BAFFIN SOUTH |
| FIG10S77 | A. EATON | BAFFIN SOUTH |
| FIG11S77 | A. EATON | BAFFIN SOUTH |
| FIG12S77 | A. EATON | BAFFIN SOUTH |
| FIG13S77 | A. EATON | BAFFIN SOUTH |
| FIG14S77 | A. EATON | BAFFIN SOUTH |
| FIG15F77 | A. EATON | SOMERSET BOOTHIA |
| FIG16F77 | A. EATON | SOMERSET BOOTHIA |
| FIG17F77 | A. EATON | ALTA SASK MAN |
| FIG18F77 | A. EATON | ALTA SASK MAN |
| FIG19F77 | A. EATON | ALTA SASK MAN |
| FIG20F77 | A. EATON | ALTA SASK MAN |
| FIG21F77 | A. EATON | ALTA SASK MAN |
| FIG22F77 | A. EATON | ALTA SASK MAN |
| FIG23F77 | A. EATON | ALTA SASK MAN |
| FIG24F77 | A. EATON | ALTA SASK MAN |
| FIG25F77 | A. EATON | ALTA SASK MAN |
| FIG26F77 | A. EATON | ALTA SASK MAN |
| FIG27F77 | A. EATON | ALTA SASK MAN |
| FIG28F77 | A. EATON | ALTA SASK MAN |
| FIG29F77 | A. EATON | ALTA SASK MAN |
| FIG30F77 | A. EATON | ALTA SASK MAN |
| FIG31F77 | A. EATON | ALTA SASK MAN |
| FIG32F77 | A. EATON | ALTA SASK MAN |
| FIG33S77 | M. SWANSON | FUNDY |
| FIG34S77 | M. SWANSON | FUNDY |
| FIG35S77 | M. SWANSON | FUNDY |
| NWS1S77 | F. WELTER | ONTARIO N COAST |
| NWS2S77 | F. WELTER | ONTARIO N COAST |
| *** NOTE: CALLED NWS1.S77 (ETC) ON DOPPAD *** | | |
| FOXCRS77 | F. WELTER | FOX CREEK ALTA |
| *** NOTE: CALLED FOXCR.S77 ON DOPPAD *** | | |
| GEOS3 BR A | E.P.B. 1977 | GEOS 3 BROADCAST |
| GEOS3 PR B | E.P.B. 1977 | GEOS 3 PRECISE |
| GEOS3 BR C | E.P.B. 1977 | GEOS 3 BROADCAST |
| GEOS3 BR D | E.P.B. 1977 | GEOS 3 BROADCAST |
| *** NOTE: GEOS 3 FIGURES NOT USED BECAUSE STATIONS ARE TOO FAR APART *** | | |

1978

| | | |
|----------|-------------|---------------------|
| FIG01F78 | S. CROSSLEY | MATTAWAMATAGAMI QUE |
| FIG02F78 | S. CROSSLEY | MATTAWAMATAGAMI QUE |
| FIG03F78 | S. CROSSLEY | SASKATCHEWAN S |
| FIG04F78 | S. CROSSLEY | SASKATCHEWAN S |
| FIG05F78 | S. CROSSLEY | SASKATCHEWAN S |

| | | |
|--|--------------|-----------------------|
| FIGO6S78 | S. CROSSLEY | BAFFIN NW |
| FIGO7S78 | S. CROSSLEY | BAFFIN NW |
| FIGO8S78 | S. CROSSLEY | BAFFIN NW |
| FIGO9S78 | S. CROSSLEY | BAFFIN NW |
| FIG10F78 | S. CROSSLEY | YUKON N |
| FIG11F78 | S. CROSSLEY | WEST COAST BC |
| FIG12F78 | S. CROSSLEY | SASKATCHEWAN CENTRAL |
| FIG13F78 | S. CROSSLEY | SASKATCHEWAN CENTRAL |
| FIG14F78 | S. CROSSLEY | SASKATCHEWAN CENTRAL |
| FIG15F78 | S. CROSSLEY | SASKATCHEWAN CENTRAL |
| FIG16F78 | S. CROSSLEY | COCHRANE R MAN |
| FIG17F78 | S. CROSSLEY | ONT MAN SUPERIOR WEST |
| ABITIBIF78 | S. CROSSLEY | MATTAWAMATAGAMI QUE |
| *** NOTE: CALLED ABIT.F78 ON DOPPAD *** | | |
| CHIC1S78 | S. CROSSLEY | CHICOUTIMI QUEBEC |
| CHIC2S78 | S. CROSSLEY | CHICOUTIMI QUEBEC |
| *** NOTE: CALLED CHIC1.S78 (ETC) ON DOPPAD *** | | |
| HUDSON78 | C. VIGNEAULT | COATS MANSEL |
| *** NOTE: CALLED HUDSON.78 ON DOPPAD *** | | |
| MANWKIS78 | R. FEENY | MANIWAKI QUEBEC |
| *** NOTE: CALLED MANIWKI.S78 ON DOPPAD *** | | |
| MECAS78 | R. CARRIERE | MECATINA RIVER QUE |
| *** NOTE: CALLED MECA.S78 ON DOPPAD *** | | |

1979

| | | |
|---|-------------------|---------------------------|
| AEPMBX ALT | A. PETERSON 1979 | FORT SMITH ALBERTA |
| AEPMBX ALT | A. PETERSON 1979 | FORT SMITH ALBERTA |
| *** NOTE: ABOVE FIGURES NOT USED *** | | |
| FIGO1F79 | S. CROSSLEY | NFLD |
| FIGO2F79 | S. CROSSLEY | NFLD |
| FIGO3F79 | S. CROSSLEY | NFLD |
| FIGO4F79 | S. CROSSLEY | VICTORIA IS NWT |
| FIGO5F79 | S. CROSSLEY | VICTORIA IS NWT |
| FIGO6F79 | S. CROSSLEY | VICTORIA IS NWT |
| FIGO7F79 | S. CROSSLEY | DEVON BATHURST NWT |
| FIGO8F79 | S. CROSSLEY | DEVON BATHURST NWT |
| FIGO9F79 | S. CROSSLEY | DEVON BATHURST NWT |
| FIG10F79 | S. CROSSLEY | MANITOBA NE |
| FIG11F79 | S. CROSSLEY | SUPERIOR WEST ONT |
| FIG12F79 | S. CROSSLEY | SUPERIOR WEST ONT |
| FIG13F79 | S. CROSSLEY | ONTARIO CENTRAL |
| FIG14F79 | S. CROSSLEY | ONTARIO CENTRAL |
| FIG15F79 | S. CROSSLEY | LAC ST JEAN JAMES BAY QUE |
| FIG16F79 | S. CROSSLEY | LAC ST JEAN JAMES BAY QUE |
| FIG17F79 | S. CROSSLEY | LAC ST JEAN JAMES BAY QUE |
| FIG18F79 | S. CROSSLEY | GASPE QUEBEC |
| HUDSON79 | C. VIGNEAULT | HUDSON BAY |
| *** NOTE: THIS FIGURE ON DOPPLERNOTUSED FILE *** | | |
| MELVL1S79 | SHELTECH | MELVILLE SHELL NWT |
| MELVL2S79 | SHELTECH | MELVILLE SHELL NWT |
| MELVL3S79 | SHELTECH | MELVILLE SHELL NWT |
| *** NOTE: CALLED MELVIL1.S79 (ETC) ON DOPPAD *** | | |
| NORCHAN79 | R. FEENY | SAULT STE MARIE ONT |
| *** NOTE: CALLED NORCHAN.79 ON DOPPAD *** | | |
| ONMNR1S79 | R. CARRIERE/MNR | PEMBROKE KALADAR ONT |
| ONMNR2S79 | R. CARRIERE/MNR | PEMBROKE KALADAR ONT |
| UNGAVA179 | C.H.S./R.CARRIERE | UNGAVA PEN NFLD |
| UNGAVA279 | C.H.S./R.CARRIERE | UNGAVA PEN NFLD |
| MCE1PE79 | M.C.E. | BAFFIN PRECISE |
| *** NOTE: THIS FIGURE ON DOPPLERNOTUSED FILE *** | | |
| *** NOTE: CALLED MCE1PE.79 ON DOPPLERNOTUSED *** | | |
| MCE2PE79 | M.C.E. | BAFFIN PRECISE |
| MCE3PE79 | M.C.E. | BAFFIN PRECISE |
| MCE4PE79 | M.C.E. | BAFFIN PRECISE |
| MCE5PE79 | M.C.E. | BAFFIN PRECISE |
| MCE6PE79 | M.C.E. | BAFFIN PRECISE |
| *** NOTE: THERE WAS A BROADCAST FIGURE FOR THE 6 MCE FIGURES ABOVE, | | |
| *** NOTE: CALLED MCE2PE.79 (ETC) ON DOPPAD *** | | |
| BUT SINCE IT IS THE SAME DATA AS WAS USED FOR THE PRECISE , | | |
| WE ARE ONLY USING THE PRECISE FIGURES. | | |
| THE BROADCAST FIGURES ARE ON THE DOPPLERNOTUSED FILE *** | | |

1980

| | | |
|----------|---------------------|-------------------------------|
| FIGO1S80 | V. DOUCETTE 1980 | WEDGEPORT NS |
| FIGO2S80 | V. DOUCETTE 1980 | WEDGEPORT NS |
| FIGO3S80 | V. DOUCETTE 1980 | WEDGEPORT NS |
| FIGO4S80 | S.CROSSLEY/MCE 1980 | JAMES BAY SW COAST |
| FIGO580 | M.C.E. 1980 | ELLESMERE IS N (OP HURRICANE) |

| | | |
|----------|------------------|-----------------|
| FIG0680 | A. EATON 1980 | VICTORIA ISLAND |
| FIG0780 | A. EATON 1980 | VICTORIA ISLAND |
| FIG0880 | A. EATON 1980 | VICTORIA ISLAND |
| FIG0980 | A. EATON 1980 | VICTORIA ISLAND |
| FIG1080 | A. EATON 1980 | VICTORIA ISLAND |
| FIG1180 | A. EATON 1980 | VICTORIA ISLAND |
| FIG1280 | A. EATON 1980 | VICTORIA ISLAND |
| FIG1380 | A. EATON 1980 | VICTORIA ISLAND |
| FIG1480 | A. EATON 1980 | VICTORIA ISLAND |
| FIG1580 | A. EATON 1980 | VICTORIA ISLAND |
| FIG16S80 | S. CROSSLEY 1980 | QUE VERMONT IBC |
| FIG17S80 | A. EATON 1980 | SW ONT |
| FIG18S80 | A. EATON 1980 | SW ONT |
| FIG19S80 | A. EATON 1980 | SW ONT |
| FIG20S80 | A. EATON 1980 | SW ONT |
| FIG21S80 | A. EATON 1980 | SW ONT |
| FIG22S80 | A. EATON 1980 | SW ONT |
| FIG23S80 | M.C.E. 1980 | ST ELIAS MTNS |
| FIG2480 | M.C.E. 1980 | ST ELIAS MTNS |
| FIG2580 | M.C.E. 1980 | ST ELIAS MTNS |
| FIG2680 | M.C.E. 1980 | ST ELIAS MTNS |
| FIG2780 | M.C.E. 1980 | ST ELIAS MTNS |
| FIG2880 | M.C.E. 1980 | ST ELIAS MTNS |
| FIG2980 | M.C.E. 1980 | ST ELIAS MTNS |

*** NOTE: THIS FIGURE IS ON DOPPLER NOTUSED FILE ***

| | | |
|----------|------------------|--------------------|
| FIG3180 | A. EATON 1980 | YELLOWKNIFE NWT |
| FIG32S80 | S. CROSSLEY 1980 | MAN SASK |
| FIG33S80 | S. CROSSLEY 1980 | MAN SASK |
| FIG34S80 | S. CROSSLEY 1980 | MAN SASK |
| FIG35S80 | S. CROSSLEY 1980 | MAN SASK |
| FIG36F80 | S. CROSSLEY 1980 | SASKATCHEWAN N |
| FIG37F80 | S. CROSSLEY 1980 | SASKATCHEWAN N |
| FIG38F80 | S. CROSSLEY 1980 | SASKATCHEWAN N |
| FIG39F80 | S. CROSSLEY 1980 | SASKATCHEWAN N |
| FIG40F80 | S. CROSSLEY 1980 | MANITOBA N |
| FIG41F80 | S. CROSSLEY 1980 | LAKE SUPERIOR W |
| FIG42S80 | S. CROSSLEY 1980 | JAMES BAY/TIMMINS |
| FIG43S80 | S. CROSSLEY 1980 | JAMES BAY/TIMMINS |
| FIG44F80 | S. CROSSLEY 1980 | QUEBEC CENTRAL |
| FIG45F80 | S. CROSSLEY 1980 | QUEBEC CENTRAL |
| FIG46F80 | S. CROSSLEY 1980 | QUEBEC CENTRAL |
| FIG47F80 | S. CROSSLEY 1980 | QUEBEC CENTRAL |
| FIG48F80 | S. CROSSLEY 1980 | QUEBEC CENTRAL |
| FIG49F80 | S. CROSSLEY 1980 | QUEBEC CENTRAL |
| RJCA S80 | R. CARRIERE/MNR | EAR FALLS RED LAKE |
| RJCB S80 | R. CARRIERE/MNR | NAKINA FT FRANCIS |

*** NOTE: CALLED RJCA.S80 (ETC) ON DOPPAD ***

1981

| | | |
|----------|---------------|----------------------|
| FIG01S81 | A. EATON 1981 | ALTA WEST CENTRAL |
| FIG02S81 | A. EATON 1981 | GREAT SLAVE BEAR |
| FIG03S81 | A. EATON 1981 | GREAT SLAVE BEAR |
| FIG04S81 | A. EATON 1981 | GREAT SLAVE BEAR |
| FIG05S81 | A. EATON 1981 | GREAT SLAVE BEAR |
| FIG06S81 | A. EATON 1981 | ALBANY KIN JAMES BAY |
| FIG07S81 | A. EATON 1981 | MANITOBA N |
| FIG08S81 | A. EATON 1981 | MANITOBA N |

*** NOTE: THIS FIGURE IS ON DOPPLER NOTUSED FILE ***

| | | |
|----------|------------------|----------------------|
| FIG09S81 | A. EATON 1981 | DEVON BATHURST WALES |
| FIG10S81 | A. EATON 1981 | DEVON BATHURST WALES |
| FIG11S81 | A. EATON 1981 | DEVON BATHURST WALES |
| FIG12S81 | A. EATON 1981 | DEVON BATHURST WALES |
| FIG13S81 | A. EATON 1981 | DEVON BATHURST WALES |
| FIG14S81 | A. EATON 1981 | DEVON BATHURST WALES |
| FIG15S81 | A. EATON 1981 | DEVON BATHURST WALES |
| FIG16S81 | A. EATON 1981 | DEVON BATHURST WALES |
| FIG17S81 | A. EATON 1981 | DEVON BATHURST WALES |
| FIG18S81 | A. EATON 1981 | DEVON BATHURST WALES |
| FIG19S81 | A. EATON 1981 | DEVON BATHURST WALES |
| FIG20S81 | A. EATON 1981 | DEVON BATHURST WALES |
| FIG21S81 | A. EATON 1981 | DEVON BATHURST WALES |
| FIG22S81 | A. EATON 1981 | DEVON BATHURST WALES |
| FIG23S81 | A. EATON 1981 | DEVON BATHURST WALES |
| FIG24S81 | A. EATON 1981 | DEVON BATHURST WALES |
| FIG25S81 | A. EATON 1981 | DEVON BATHURST WALES |
| FIG2681 | C.H.S. 1981 | NFLD |
| FIG27A81 | S. CROSSLEY 1981 | ONTARIO |
| FIG27B81 | S. CROSSLEY 1981 | ONTARIO |

*** NOTE: CALLED FIG27A.81 (ETC) ON DOPPAD ***

| | | |
|---------|---------------|---------|
| FIG2881 | A. EATON 1981 | ONTARIO |
|---------|---------------|---------|

| | | |
|--|------------------|--------------------|
| FIG2981 | A. EATON 1981 | ONTARIO |
| FIG30F81 | S. CROSSLEY 1981 | QUE NORTH LABRADOR |
| FIG31F81 | S. CROSSLEY 1981 | QUEBEC |
| FIG32F81 | S. CROSSLEY 1981 | QUEBEC |
| FIG33F81 | S. CROSSLEY 1981 | QUEBEC |
| FIG34F81 | S. CROSSLEY 1981 | QUEBEC |
| FIG35F81 | S. CROSSLEY 1981 | QUEBEC |
| FIG36F81 | S. CROSSLEY 1981 | QUEBEC |
| FIG37F81 | S. CROSSLEY 1981 | QUEBEC |
| FIG38F81 | S. CROSSLEY 1981 | QUEBEC |
| FIG39F81 | S. CROSSLEY 1981 | QUEBEC |
| FIG40F81 | S. CROSSLEY 1981 | QUEBEC |
| FIG41F81 | S. CROSSLEY 1981 | QUEBEC |
| FIG42F81 | S. CROSSLEY 1981 | QUE NORTH LABRADOR |
| FIG43F81 | S. CROSSLEY 1981 | QUEBEC |
| FIG44F81 | S. CROSSLEY 1981 | QUEBEC |
| FIG45F81 | S. CROSSLEY 1981 | QUEBEC |
| FIG46F81 | S. CROSSLEY 1981 | QUEBEC |
| FIG47F81 | S. CROSSLEY 1981 | QUEBEC |
| BF14MCE81 | M.C.E. 1981 | BAFFIN ISLAND |
| BF15MCE81 | M.C.E. 1981 | BAFFIN ISLAND |
| BF16MCE81 | M.C.E. 1981 | BAFFIN ISLAND |
| BF17MCE81 | M.C.E. 1981 | BAFFIN ISLAND |
| BF18MCE81 | M.C.E. 1981 | BAFFIN ISLAND |
| BF19MCE81 | M.C.E. 1981 | BAFFIN ISLAND |
| *** NOTE: CALLED BF14MCE.81 (ETC) ON DOPPAD *** | | |
| FIG08PT81 | M.C.E. 1981 | PETTAWAWA ONT |
| FIG09PT81 | M.C.E. 1981 | PETTAWAWA ONT |
| FIG10PT81 | M.C.E. 1981 | PETTAWAWA ONT |
| *** NOTE: FIG08PT81-FIG10PT81 ON DOPPLERNOTUSED FILE *** | | |
| *** NOTE: CALLED FIG08PT.81 (ETC) ON DOPPLERNOTUSED *** | | |
| CLALT1MCE | M.C.E. 1981 | COLD LAKE ALTA |
| CLALT2MCE | M.C.E. 1981 | COLD LAKE ALTA |
| CLALT3MCE | M.C.E. 1981 | COLD LAKE ALTA |
| CLALT4MCE | M.C.E. 1981 | COLD LAKE ALTA |
| CLALT5MCE | M.C.E. 1981 | COLD LAKE ALTA |
| CLALT6MCE | M.C.E. 1981 | COLD LAKE ALTA |
| CLALT7MCE | M.C.E. 1981 | COLD LAKE ALTA |
| *** NOTE: CLALT1MCE-CLALT7MCE ON DOPPLERNOTUSED FILE *** | | |
| *** NOTE: CALLED CLALT1.MCE (ETC) ON DOPPLERNOTUSED *** | | |

1982

| | | |
|--|---------------------|---------------------|
| FIG01F82 | S. CROSSLEY 1982 | QUE N LABRADOR |
| FIG02F82 | S. CROSSLEY 1982 | QUE N LABRADOR |
| FIG03S82 | A. EATON 1982 | SASKATCHEWAN N |
| FIG04S82 | A. EATON 1982 | SASKATCHEWAN N |
| FIG05S82 | A. EATON 1982 | YELLOWKNIFE NWT |
| FIG06S82 | A. EATON 1982 | SASKATCHEWAN N |
| FIG07S82 | A. EATON 1982 | SASKATCHEWAN N |
| FIG08S82 | A. EATON 1982 | SASKATCHEWAN N |
| FIG09S82 | A. EATON 1982 | SASKATCHEWAN N |
| FIG10S82 | A. EATON 1982 | YELLOWKNIFE NWT |
| FIG1182 | C.H.S. 1982 | BEAUFORT SEA |
| *** NOTE: THIS FIGURE NOT USED. THERE IS OTHER DOPPLER DATA IN THE BEAUFORT SEA AREA, AND THIS DATA IS SUSPECTED TO BE POOR. ON DOPPLERNOTUSED FILE. *** | | |
| FIG12S82 | A. EATON 1982 | HUDSON BAY |
| FIG13S82 | A. EATON 1982 | HUDSON BAY |
| FIG14S82 | A. EATON 1982 | GODS LAKE |
| FIG15S82 | A. EATON 1982 | ALBANY RIVER |
| FIG16S82 | A. EATON 1982 | ALBANY RIVER |
| FIG17S82 | A. EATON 1982 | BEAUFORT SEA COAST |
| FIG18S82 | A. EATON 1982 | BEAUFORT SEA COAST |
| FIG19S82 | A. EATON/MCE 1982 | PARRY ISLAND/ARCTIC |
| FIG20S82 | A. EATON/MCE 1982 | PARRY ISLAND/ARCTIC |
| FIG21S82 | A. EATON/MCE 1982 | PARRY ISLAND/ARCTIC |
| FIG22S82 | SHELTECH/D.MCARTHUR | NWT |
| FIG23S82 | SHELTECH/D.MCARTHUR | NWT |
| FIG24S82 | SHELTECH/D.MCARTHUR | NWT |
| FIG25S82 | SHELTECH/D.MCARTHUR | NWT |
| FIG26S82 | A. EATON 1982 | PARRY ISLAND/ARCTIC |
| FIG27S82 | A. EATON 1982 | PARRY ISLAND/ARCTIC |
| FIG28S82 | A. EATON 1982 | PARRY ISLAND/ARCTIC |
| FIG29S82 | A. EATON 1982 | PARRY ISLAND/ARCTIC |
| FIG30F82 | S. CROSSLEY 1982 | BC |
| FIG31F82 | S. CROSSLEY 1982 | BC |
| FIG32F82 | S. CROSSLEY 1982 | BC |
| FIG33F82 | S. CROSSLEY 1982 | BC |
| FIG34F82 | S. CROSSLEY 1982 | BC |

| | | |
|----------|-------------------|---------------------|
| FIG35F82 | S. CROSSLEY 1982 | BC |
| FIG36F82 | S. CROSSLEY 1982 | BC |
| FIG37S82 | A. EATON/MCE 1982 | PARRY ISLAND/ARCTIC |
| FIG38S82 | A. EATON/MCE 1982 | PARRY ISLAND/ARCTIC |

1983

| | | |
|--|------------------|---------------------|
| FIG01F83 | S. CROSSLEY | QUEBEC N |
| FIG0283 | C.H.S. | SUDBURY ONT |
| *** NOTE: THIS FIGURE ON DOPPLERNOTUSED FILE *** | | |
| FIG0383 | R.CHEWPA/D.SCOTT | ST ELIAS MTNS/N BC |
| FIG0483 | R.CHEWPA/D.SCOTT | ST ELIAS MTNS/N BC |
| FIG0583 | R.CHEWPA/D.SCOTT | ST ELIAS MTNS/N BC |
| FIG0683 | R.CHEWPA/D.SCOTT | ST ELIAS MTNS/N BC |
| FIG07S83 | A. EATON | CORONATION GULF NWT |
| FIG08S83 | A. EATON | CORONATION GULF NWT |
| FIG09S83 | A. EATON | CORONATION GULF NWT |
| FIG10S83 | A. EATON | CORONATION GULF NWT |
| FIG11S83 | A. EATON | CORONATION GULF NWT |
| FIG12S83 | A. EATON | CORONATION GULF NWT |
| FIG13S83 | A. EATON | CORONATION GULF NWT |
| FIG14S83 | A. EATON | CORONATION GULF NWT |
| FIG15S83 | A. EATON | CORONATION GULF NWT |
| FIG16S83 | A. EATON | CORONATION GULF NWT |
| MCE8301 | M.C.E. 1983 | N BAFFIN ISLAND |
| MCE8302 | M.C.E. 1983 | N BAFFIN ISLAND |
| MCE8303 | M.C.E. 1983 | N BAFFIN ISLAND |
| MCE8304 | M.C.E. 1983 | N BAFFIN ISLAND |
| MCE8305 | M.C.E. 1983 | N BAFFIN ISLAND |
| MCE8306 | M.C.E. 1983 | N BAFFIN ISLAND |
| MCE8307 | M.C.E. 1983 | N BAFFIN ISLAND |
| MCE8308 | M.C.E. 1983 | N BAFFIN ISLAND |
| MCE8309 | M.C.E. 1983 | N BAFFIN ISLAND |
| MCE8310 | M.C.E. 1983 | N BAFFIN ISLAND |
| MCE8311 | M.C.E. 1983 | N BAFFIN ISLAND |
| MCE8312 | M.C.E. 1983 | N BAFFIN ISLAND |
| MCE8313 | M.C.E. 1983 | N BAFFIN ISLAND |

*** NOTE: CALLED MCE8301.ARC (ETC) ON DOPPAD ***

1984

| | | |
|---|---------------|----------------|
| FIG01B4 | J.C. LAVERGNE | MINDEN ONT |
| *** NOTE: ABOVE FIGURE FOR TEST PURPOSES ONLY *** | | |
| FIG0284 | S. CROSSLEY | YUKON/NWT |
| FIG0384 | S. CROSSLEY | YUKON/NWT |
| FIG0484 | S. CROSSLEY | YUKON/NWT |
| FIG0584 | S. CROSSLEY | YUKON/NWT |
| FIG0684 | S. CROSSLEY | YUKON/NWT |
| FIG0784 | S. CROSSLEY | YUKON/NWT |
| FIG0884 | S. CROSSLEY | YUKON/NWT |
| FIG0984 | S. CROSSLEY | YUKON/NWT |
| FIG1084 | S. CROSSLEY | YUKON/NWT |
| FIG1184 | S. CROSSLEY | YUKON/NWT |
| FIG1284 | S. CROSSLEY | YUKON/NWT |
| FIG1384 | C.H.S. 1984 | BEAUFORT SEA |
| FIG1484 | A. EATON | BANFF ALTA |
| FIG1584 | A. EATON | BANFF ALTA |
| FIG1684 | R. CHEWPA | SHERBROOKE QUE |
| FIG1784 | R. CHEWPA | SHERBROOKE QUE |
| FIG18P84 | M.C.E. | PETTAWAWA ONT |

*** NOTE: CALLED FIG18P.84 ON DOPPAD ***

*** NOTE: FIG18P84 IS A PRECISE FIGURE. THERE WAS ALSO A BROADCAST FIGURE FOR FIG 18, BUT SINCE IT IS THE SAME DATA, WE WONT USE IT ***

| | | |
|---|------------------|---------------|
| FIG19 | *** NOT USED *** | |
| FIG2084 | D. SCOTT | ST ELIAS MTNS |
| (PRECISE POINT POSITIONING STATION 84701US) | | |

*** NOTE: THIS FIGURE ON DOPPLERNOTUSED FILE ***

| | | |
|---------|-------------|---------------|
| FIG2184 | V. DOUCETTE | HUDSON STRAIT |
| FIG2284 | V. DOUCETTE | HUDSON STRAIT |
| FIG2384 | R. CHEWPA | REPULSE BAY |
| FIG2484 | R. CHEWPA | REPULSE BAY |
| FIG2584 | R. CHEWPA | YUKON |
| FIG2684 | R. CHEWPA | YUKON |
| FIG2784 | R. CHEWPA | YUKON |
| FIG2884 | R. CHEWPA | YUKON |
| FIG2984 | R. CHEWPA | YUKON |
| FIG3084 | R. CHEWPA | YUKON |
| FIG3184 | R. CHEWPA | YUKON |
| FIG3284 | R. CHEWPA | YUKON |

| | | |
|---------|-------------|------------------|
| MCE0184 | M.C.E. 1984 | ELLESMERE ISLAND |
| MCE0284 | M.C.E. 1984 | ELLESMERE ISLAND |
| MCE0384 | M.C.E. 1984 | ELLESMERE ISLAND |
| MCE0484 | M.C.E. 1984 | ELLESMERE ISLAND |
| MCE0584 | M.C.E. 1984 | ELLESMERE ISLAND |
| MCE0684 | M.C.E. 1984 | ELLESMERE ISLAND |

*** NOTE: CALLED MCE01.84 ETC ON DOPPAD ***

1985

| | | |
|----------|-------------|----------------|
| FIG0185 | R. CHEWPA | SHERBROOKE QUE |
| FIG0285 | J. WEBB | N.B. |
| FIG0385 | A. EATON | BEAUFORT SEA |
| FIG0485 | A. EATON | BEAUFORT SEA |
| FIG0585 | V. DOUCETTE | HUDSON STRAIT |
| FIG0685 | R. CHEWPA | NFLD |
| FIG0785 | R. CHEWPA | NFLD |
| FIG07X85 | R. CHEWPA | NFLD |

*** NOTE: CALLED FIG07X.85 ON DOPPAD ***

| | | |
|---------|---------------|------------------|
| FIG0885 | R. CHEWPA | NFLD |
| FIG0985 | J.C. LAVERGNE | ONT/QUE FOR ISS |
| FIG1085 | J.C. LAVERGNE | ONT/QUE FOR ISS |
| FIG1185 | NORTECH 1985 | MACKENZIE R |
| FIG1285 | NORTECH 1985 | MACKENZIE R |
| FIG1385 | NORTECH 1985 | MACKENZIE R |
| FIG1485 | NORTECH 1985 | MACKENZIE R |
| FIG1585 | NORTECH 1985 | MACKENZIE R |
| FIG1685 | NORTECH 1985 | MACKENZIE R |
| FIG1785 | NORTECH 1985 | MACKENZIE R |
| FIG1885 | NORTECH 1985 | MACKENZIE R |
| FIG1985 | NORTECH 1985 | MACKENZIE R |
| FIG2085 | NORTECH 1985 | MACKENZIE R |
| FIG2185 | NORTECH 1985 | MACKENZIE R |
| FIG2285 | NORTECH 1985 | MACKENZIE R |
| FIG2385 | NORTECH 1985 | MACKENZIE R |
| FIG2485 | NORTECH 1985 | MACKENZIE R |
| FIG2585 | NORTECH 1985 | MACKENZIE R |
| FIG2685 | NORTECH 1985 | MACKENZIE R |
| FIG2785 | NORTECH 1985 | MACKENZIE R |
| FIG2885 | A. EATON | BC |
| FIG2985 | A. EATON | BC |
| FIG3085 | S. CROSSLEY | NWT/BC |
| FIG3185 | S. CROSSLEY | NWT/BC |
| FIG3285 | S. CROSSLEY | NWT/BC |
| FIG3385 | S. CROSSLEY | NWT/BC |
| FIG3485 | S. CROSSLEY | NWT/BC |
| FIG3585 | S. CROSSLEY | NWT/BC |
| FIG3685 | S. CROSSLEY | NWT/BC |
| FIG3785 | S. CROSSLEY | NWT/BC |
| MCE3885 | M.C.E. 1985 | ELLESMERE ISLAND |
| MCE3985 | M.C.E. 1985 | ELLESMERE ISLAND |
| MCE4085 | M.C.E. 1985 | ELLESMERE ISLAND |
| MCE4185 | M.C.E. 1985 | ELLESMERE ISLAND |
| MCE4285 | M.C.E. 1985 | ELLESMERE ISLAND |
| MCE4385 | M.C.E. 1985 | ELLESMERE ISLAND |
| MCE4485 | M.C.E. 1985 | ELLESMERE ISLAND |
| MCE4585 | M.C.E. 1985 | ELLESMERE ISLAND |

*** NOTE: CALLED MCE38.85 (ETC) ON DOPPAD ***

1986

| | | |
|--|-------------|--------------------|
| FIG0186 | B. MORRIS | ICE ISLAND |
| *** NOTE: ABOVE FIGURE IS NOT WELL INTEGRATED. DONT USE. *** | | |
| FIG0286 | A. EATON | ALTA (DENS DOPP) |
| FIG0386 | A. EATON | ALTA (DENS DOPP) |
| FIG0486 | A. EATON | ALTA (DENS DOPP) |
| FIG0586 | A. EATON | ALTA (DENS DOPP) |
| FIG0686 | A. EATON | ALTA (DENS DOPP) |
| FIG0786 | A. EATON | MANITOBA |
| FIG0886 | A. EATON | MANITOBA |
| FIG0986 | R. PENNEY | QUEBEC |
| MCE1086 | M.C.E. 1986 | ELLESMERE ISLAND |
| MCE1186 | M.C.E. 1986 | ELLESMERE ISLAND |
| MCE1286 | M.C.E. 1986 | ELLESMERE ISLAND |
| MCE1386 | M.C.E. 1986 | ELLESMERE ISLAND |
| MCE1486 | M.C.E. 1986 | ELLESMERE ISLAND |
| MCE1586 | M.C.E. 1986 | ELLESMERE ISLAND |
| MCE1686 | M.C.E. 1986 | ELLESMERE ISLAND |
| MCE1786 | M.C.E. 1986 | ELLESMERE ISLAND |

*** NOTE: MCE1086 TO MCE1786 STILL PENDING ***



3 2364 10000 5604

MISCELLANEOUS

| | | |
|---------|-----------------|---------|
| MNRRJC1 | R. CARRIERE/MNR | ONTARIO |
| MNRRJC4 | R. CARRIERE/MNR | ONTARIO |
| MNRRJC5 | R. CARRIERE/MNR | ONTARIO |
| MNRRJC6 | R. CARRIERE/MNR | ONTARIO |
| MNRRJC7 | R. CARRIERE/MNR | ONTARIO |

*** NOTE: MNRRJC6-MNRRJC7 ON DOPPLERNOTUSED FILE ***

*** NOTE: CALLED MNRRJC.1 (ETC) ON DOPPLERNOTUSED ***

| | | |
|----------|----------------|---------|
| MNRMCEL1 | MCELHENNEY/MNR | ONTARIO |
| MNRMCEL2 | MCELHENNEY/MNR | ONTARIO |

*** NOTE: CALLED MCEL1.ONT (ETC) ON DOPPAD ***

| | | |
|----------|-----------------|----------|
| MCEL1MAN | MCELHENNEY 1982 | MANITOBA |
| MCEL2MAN | MCELHENNEY 1982 | MANITOBA |
| MCEL3MAN | MCELHENNEY 1982 | MANITOBA |

*** NOTE: CALLED MCEL1.MAN (ETC) ON DOPPAD ***

| | | |
|---------|---------|---------|
| MNRMMM1 | MMM/MNR | ONTARIO |
|---------|---------|---------|

*** NOTE: MNRMMM1 CORRESPONDS TO MMM5.ONT ON DOPPLERNOTUSED FILE ***

| | | |
|---------|---------|---------|
| MNRMMM2 | MMM/MNR | ONTARIO |
| MNRMMM3 | MMM/MNR | ONTARIO |
| MNRMMM4 | MMM/MNR | ONTARIO |
| MNRMMM5 | MMM/MNR | ONTARIO |

*** NOTE: MNRMMM2-MNRMMM5 ARE ON MMM4.ONT ON DOPPAD FILE ***

| | | |
|------------|--------|----------------|
| MCE11VLQUE | M.C.E. | VALCARTIER QUE |
| MCE12VLQUE | M.C.E. | VALCARTIER QUE |
| MCE13VLQUE | M.C.E. | VALCARTIER QUE |

*** NOTE: CALLED MCE11VL.QUE (ETC) ON DOPPAD ***

| | | |
|------------|----------|---------------------|
| GRHMIS2SHL | SHELTECH | GRAHAM IS (CYCLE 2) |
| GRHMIS4SHL | SHELTECH | GRAHAM IS (CYCLE 4) |

*** NOTE: CALLED GRHMIS2.SHL (ETC) ON DOPPAD ***