Appendix A - Mount Specific Data
For
SWE- DISH Mobile Antenna

This appendix describes the unique functions of the RC3050 for the SWE-DISH mobile mount.

Revision History: 29 January 2003 reflecting software version 1.17.

1.1 Manual Organization

This appendix is provided as a supplement to the baseline RC3050 manual. The corresponding paragraphs in the baseline RC3050 manual are referred to when data specific to the SWE-DISH mount is described.

1.2 RC3050 Features

All RC3050 features described in the baseline manual are present with this version. The unique features of this version of the RC3050 are:

1) the ability to manually control the fairing.

2) automatic opening and closing of the fairing as part of the DEPLOY and STOW operations.

3) ability to program the fairing configuration and fairing closing delay.

Software Configuration. The model number for this version is S1.

1.3.1 Controller Description.

In addition to the baseline RC3050A hardware, the 3KF-WG-DRV1 fairing control module is integrated into the controller.

1.3.2 System Interface Requirements.

The following unique interface requirements are present for the S1 version of the RC3050:

1) a fairing safe signal is required to be present on the J3 pins normally used for the pol stow input

2) the fairing control interfaces as described in section 2.2.5 of this appendix are required

1.3.3 Operational Overview

All of the manual jogging and automatic stow and deploy features of the standard RC3050 are available with the S1 version. In addition, manual and automatic control of the fairing is provided.

1.3.4 Drive System

Interlock logic is provided that:
1) disables azimuth and elevation movement if the fairing is not in a safe position
2) disables fairing movement if the elevation axis is not at the stow position
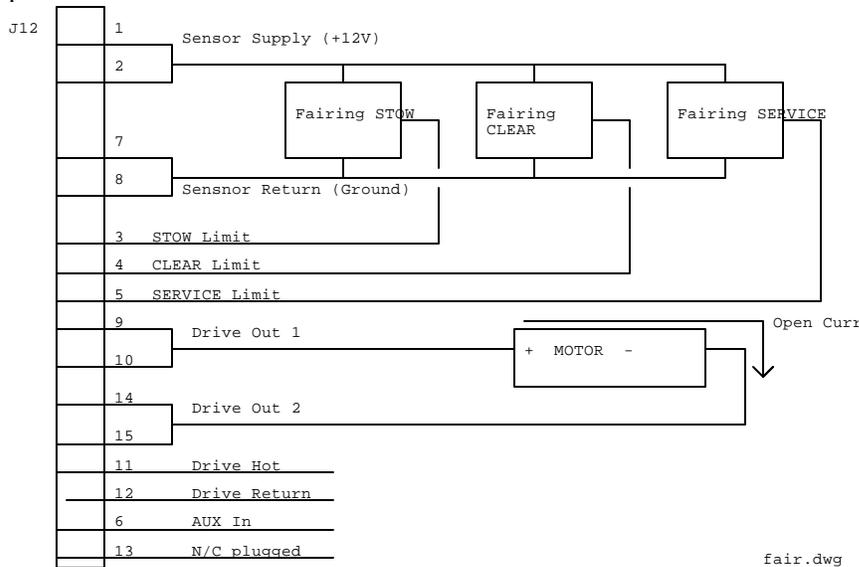
2.1.2 Electronic Clinometer

The inclinometer should be rigged with the backstructure vertical. With the backstructure vertical, the inclinometer should be mounted so that it is 7.8 (35.0 –27.2) degrees from vertical.

2.2 Electrical Connections

In addition to the RC3050's standard IO requirements, the S1 version adds a J12 connectors to interface to the fairing.

2.2.5 Fairing Control

To control the fairing the 3KF-WG-DRV1 module must be installed in the RC3000. This module connects to the fairing system via the J12 connector on the back of the RC3000. The following diagram shows the J12 pinout.

```
J12        1
              Sensor Supply (+12V)
           2
                      Fairing STOW    Fairing       Fairing SERVICE
                                      CLEAR
           7
           8
              Sensnor Return (Ground)
           3   STOW Limit
           4   CLEAR Limit
           5   SERVICE Limit
           9                                                    Open Curr
              Drive Out 1
           10                           +  MOTOR  -
           14
              Drive Out 2
           15
           11    Drive Hot
           12    Drive Return
           6     AUX In
           13    N/C plugged                          fair.dwg
```

2.3 Calibration

Azimuth, elevation and polarization reference positions and the elevation scale factor should be set as described in the baseline manual.

3.1 Operation Overview

The S1 version adds the FAIR (manual fairing control - 3.2.3) mode to the operating group of modes and the FAIR SWITCH (fairing switch configuration - 3.3.7) and FAIR DELAY (fairing stow delay - 3.3.8) modes to the programming group.

3.2.2.1 Deploy

When enabled, fairing control will attempt to open the fairing to the CLEAR position if the fairing is currently at the STOW position. The message "OPEN" will be flashed.   After opening the fairing, the normal DEPLOY sequence will start.

If the CLEAR or SERVICE switch is not activated, the message "FAIR NOT CLEAR will be displayed. The rest of the DEPLOY sequence will not continue in this condition.

If the fairing is already at the STOW or SERVICE position, the DEPLOY will continue. Note that if the fairing is at an unknown position (no switches activated), automatic movement of the fairing will not be attempted.

3.2.2.2 Stow

When enabled, fairing control will attempt to close the fairing after the normal STOW elevation, polarization and elevation sequence has occurred. During the fairing movement the message "CLOSE" will be flashed. If the fairing movement times out and the fairing stow switch is not activated, the message "FAIR NOT STOWED " will be displayed.

The fairing close movement will not begin if the elevation is not at STOW. The message "ELEV NOT STOWED" will be displayed.

3.2.3 Fairing Control Mode

When fairing control is enabled, manual control of the fairing may be initiated via the FAIR mode screen.

```
<UP>SRVC    FAIR
<DN>STOW   CLEAR
```

Below the "FAIR" header shows the current sensed position of the fairing system: STOW, CLEAR, SERVC (SERVICE), -------- (no switches active), OPEN(ing) or CLOSE(ing)
.
If multiple switches are active, the abbreviations of the sensed switches are flashed. For example, if T and C are flashing it means that the RC3050 senses that both the s(T)ow and (C)ear switches are currently activated. The message "*MULT SW*" is placed on the bottom line indicating that an incorrect switch configuration exists.

The left side of the screen prompts the user for action to be taken. Actions that will open the fairing are initiated by the UP key and actions that will close the fairing are initiated by the DN key. The following table shows the actions that may be initiated based on the current state of the fairing switches. Actions allowed from a certain fairing position may be different depending on whether the two switch (2:) or three switch (3:) fairing configuration is enabled.

FAIR	Message	<UP> action	<DN> action
STOW	<UP>CLEAR	Opens fairing until the CLEAR switch is activated	Closing fairing further is not allowed from this position
CLEAR	3:<UP>SERVC <DN>STOW 2: <DN>STOW	3:open to SERVICE 2:no further opening allowed	Close to STOW
SERVC (N/A for 2:)	3: <DN>CLEAR	No further opening allowed	Close to CLEAR
-------- (unknown position)	<UP>OPEN <DN>CLOSE	Open until CLEAR or SERVICE	Close until CLEAR or STOW
T C S (multiple switches)	*MULT SW*	No movement allowed	No movement allowed

When the UP key is pushed, the FAIR field will flash "OPEN". The following screen shows how the display will appear after the UP key was pressed with the fairing in the STOW position.

```
FAIR
OPEN
```

Similarly during movements initiated by the DN key, the FAIR field will flash "CLOSE".
Note that any movement may be halted by pressing the MODE key. All opening and closing movements will also "time out" after approximately 15 seconds.

All fairing movements are also disabled if the elevation stow switch is not activated. If the elevation stow switch is not active, the bottom line will show the message "ELEV NOT STOWED".

3.3.6 Polarization Limits

A second line has been added to this screen to aid in maintenance of the fairing control inputs.

```
PL CW:0 CC:1 F:0
FR ST:0 CL:0 S:0
```

A "1" indicates that the fairing ST(ow), CL(ear) or S(ervice) switch is active.

Also the state of the fairing safe input is displayed in the F: field on line 1.

3.3.7 Fairing Switch Configuration

The type of fairing system configuration present is described to the RC3050 via the FAIR SWITCH configuration screen. At the FAIR SWITCH field either 0, 1 or 2 may be selected. Pressing the UP key cycles the value through the 0/1/2 sequence. Pressing the FAST/SLOW key initiates setting the value as in other configuration screens.

```
FAIR SWITCH:   1
<UP> <F/S>SET
```

0 indicates that no fairing control from the RC3050 is required. This would be the case where the external fairing control box is used.

1 indicates that fairing control from the RC3050 is to be enabled and that the 3 switch (STOW, CLEAR & SERVICE) fairing configuration exists.

2 indicates that fairing control from the RC3050 is to be enabled and that the 2 switch (STOW & CLEAR) fairing configuration exists.

The default value is 1 (3 switch configuration).

3.3.8 Fairing Stow Delay

The amount of time that the fairing drive will continue to supply closing current after reaching the fairing stow switch is set via the FAIR DELAY screen.

```
FAIR DELAY:    1.0
<UP/DN> <F/S>SET
```

Pressing the UP or DOWN keys will increment or decrement the delay value by 0.1 seconds. Pressing the FAST/SLOW key initiates setting the value as in other configuration screens.

The default value is 1.0 seconds.