CURRENT STATUS OF METEOROLOGICAL OBSERVATIONS RELATED TO AIR OPERATIONS AT M. ZUCCHELLI STATION AND CONCORDIA STATION

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Current Status of Meteorological Observations Related to Air Operations at Mario Zucchelli Station and Concordia Station
CURRENT STATUS OF METEOROLOGICAL OBSERVATIONS RELATED TO AIR OPERATIONS
AT M. ZUCCHELLI STATION AND CONCORDIA STATION

2nd Antarctic Meteorological Observation, Modeling and Forecasting Workshop (CNR Rome – 26-28 June 2007)
The Fleet
The Hercules is used in the Intercontinental link between Christchurch (NZ) and MZS.

It carries 11 T of cargo or 60 passengers. On average, 10 flights/season.

It is used from October to early December.
The Twin Otter is used between MZS and Concordia Station.

In this route, it carries 1 T of cargo or 8 passengers.

Also, it is used to connect MZS with D.d’U., McMurdo, and remote field camps.
Depending on the scientific programme, 2 to 4 light helicopters are used.

In the very short range, it carries up to 1 T at the sling hook, or 5 passengers.
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MZS: STATION AREA
AWSs and INSTRUMENTS

- ENEIDE
- MARIA (Charlie)
- Ceilometer
- ENEIDE
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MZS: STATION AREA AWSs and INSTRUMENTS

AWS MARIA (Charlie)

Installed in: 1998
Type: Vaisala Milos 500
Height: 10m
Sensors: Ws, Wd, P, T, RH
Communication: Radiomodem
MZS: STATION AREA AWSs and INSTRUMENTS

CEILOMETER

Installed in: 1998
Type: Vaisala CT12K
Technology: Laser radiation
Measurement range: 0 to 12.650 feet
Resolution: 50 feet
Communication: Cable
MZS: STATION AREA AWSs and INSTRUMENTS

RADIOSOUNDING STATION

Installed in: 1987
Receiving Ground station: Vaisala Marwin12
Sondes: Vaisala RS92-SGP
Baloons: Totex TA-200
Launch time: 00:00 and 12:00 GMT
MZS: STATION AREA AWSs and INSTRUMENTS
RADIOSOUNDING STATION
MZS: STATION AREA AWSs and INSTRUMENTS
RADIOSOUNDING STATION
The airstrip system at MZS
Planning the Hercules airstrip

(October 2005)
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MZS: AIRSTRIP AWSs
Hercules airstrip
CURRENT STATUS OF METEOROLOGICAL OBSERVATIONS RELATED TO AIR OPERATIONS
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MZS: AIRSTRIP AWSs

ALFA

Type: Vaisala WT501
Height: 6m
Sensors: $W_s$, $W_d$
Communication: Radiomodem

BRAVO
The airstrip system at MZS
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MZS: T.O. AIRSTRIP AWSs

Enigma Lake
MZS: T.O. AIRSTRIP AWSs

Enigma Lake
MZS: T.O. AIRSTRIP AWSs
Browning Pass
MZS: T.O. AIRSTRIP AWSs

Browning Pass

MINNI

Type: Vaisala WT501
Height: 4m
Sensors: Ws, Wd
Communication: Radiomodem
CURRENT STATUS OF METEOROLOGICAL OBSERVATIONS RELATED TO AIR OPERATIONS AT M. ZUCCHELLI STATION AND CONCORDIA STATION

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MZS: REAL-TIME DATA MONITORING

Operation Room
MZS: REAL-TIME DATA MONITORING

VENTO ALFA

VENTO BRAVO

VENTO HELIPAD

VENTO CHARLIE

DIGITAL DISPLAY
CURRENT STATUS OF METEOROLOGICAL OBSERVATIONS RELATED TO AIR OPERATIONS AT M. ZUCCHELLI STATION AND CONCORDIA STATION

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Testing alternatives: Nansen Ice Sheet runway

Yellow track: Twin Otter (7 nov, 2006)
Blue track: Hercules (10 nov, 2006)
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DOME CONCORDIA: AIRSTRIPS
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AT M. ZUCCHELLI STATION AND CONCORDIA STATION

DOME CONCORDIA: AIRSTRIPS

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DOME CONCORDIA: AIRSTRIPS
DOME C: STATION AREA AWSs and INSTRUMENTS

AWS Concordia

Installed in: 2005
Type: Vaisala Milos 520
Height: 4m
Sensors: Ws, Wd, Ws (heated), Wd (heated), P, T, RH
Communication: Argos transmitter, Radiomodem, cable
DOME C: AIRSTRIP AWS

AWS AW11

Installed in: 1997
Type: Vaisala AW11
Height: 6m
Sensors: Ws, Wd, P, T, RH,
Ceilometer, Visibility meter
Communication: VHF, Radiomodem, cable
DOME C: AIRSTRIP AWS
AWS AW11

- Visibility Meter
- Lightning Rod
- VHF Antenna
- Wind Wane
- Obstruction Light
- Humidity and Temperature Probe
- Anemometer
- Coaxial Lidar Ceilometer
- Electronic Housing
- Pressure Sensor
- Measurement Unit
DOME C: REAL-TIME DATA MONITORING

Operation Room
DOME C: REAL-TIME DATA MONITORING
Operation Room

Spoken weather reports (speech synthesizer) via VHF radio (118-137 MHz)

Automatic data processing:
- METAR and SPECI

Sky condition:
- cloud layer height and coverage
- Visibility

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Thank you.