AUTOMATED SHIPBOARD AEROLOGICAL PROGRAMME (ASAP)

ANNUAL REPORT FOR 2001

WMO/TD-No. 1112

JCOMM Technical Report No. 15

WORLD METEOROLOGICAL ORGANIZATION

INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION (OF UNESCO)

AUTOMATED SHIPBOARD AEROLOGICAL PROGRAMME (ASAP)

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N O T E

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FOREWORD

I am pleased to present the Annual Report on ASAP operations for 2002. This document results from a compilation of national reports submitted by operators of ASAP and related ship-borne upper-air sounding units. A total of 24 units were operated during 2001. Each national report is presented in a standard format in the appendix. Monitoring reports provided by ECMWF, EUMETSAT and Meteo-France are included in this document.

For the next year, most operators are planning to keep the same level of radiosoundings. Moreover, some countries such as Spain are planning to equip new ships. The ASAP Panel aim is to continue to encourage and assist the Member States to enhance upper air soundings, especially over ocean areas, where only sparse meteorological data are available. Thus, I am very pleased to report that the Worldwide Recurring ASAP Project (WRAP) has now achieved successful operational status, and that two new ASAP lines have been implemented through the EUMETNET ASAP Project.

This document could not have been prepared without the contributions of every ASAP Panel member. I therefore have to thank them as well as the WMO Secretariat for their help.

Jean-Louis GAUMET
ASAP Panel Chairman

C O N T E N T S

ANNUAL REPORT 2001

The operational statistics of radiosoundings performed in 2001 within the framework of the Automated Shipboard Aerological Programme (ASAP) are summarized in Tables 1 and 2. The number of radiosoundings is about 5300, similar to the average of most previous years, due to specific observational programmes or changes in total number of ASAP units. However, it is important to note the substantial increase compared to the 4416 soundings obtained in 2000. This increase can largely be ascribed to a large enhancement in the number of soundings carried out by Japan, Germany and EUMETNET. At the same time, two countries (Russia and the USA) have, temporarily at least, ceased their ASAP activities. The total number of ASAP units operated in 2001 was 24; the operators were: Denmark (3 units), EUMETNET (2 units), France (4 units), Germany (3 units), Japan (7 units), Spain (1 unit), Sweden-Iceland (1 unit), United Kingdom (2 units) and WRAP (1 unit). This document includes the individual national reports and the monitoring reports provided by ECMWF, EUMETSAT and Meteo-France.

The performance of ASAP operators is quite stable with respect to the terminal height. However, the communication efficiency of Germany and Spain remains low. EUMETSAT has been informed of this problem and will propose solutions.

The ASAP Panel (ASAPP) consists of a group of national operators along with ECMWF and EUMETSAT. Its annual meeting, ASAPP-XIII, was held in Goa, India, as a component of the First Session of the Joint WMO/IOC Technical Commission for Oceanography and Marine Meteorology (JCOMM) Ship Observations Team, 25 February – 2 March 2002. The session was attended by ASAP operators from Australia, France, Germany, United Kingdom, United States, Russia and Japan. EUMETSAT participated in the meeting as well as the WRAP project leader. The meeting was also attended by representatives of manufacturers (Vaisala) and external projects (Seakeepers).

The geographical distribution of ASAP soundings in 2001 corresponds approximately to those of 2000. Figure 2, provided by Meteo France, shows the location of all the TEMP-SHIP messages received in Toulouse (France) during 2001. It can be seen that most soundings continued to be located over the North Atlantic Ocean.

EUMETNET, a meteorological network grouping 18 European national meteorological services, has started an ASAP programme, called E-ASAP. In the first instance, two routes have been implemented, one within the Mediterranean and the second between the English Channel and the south-eastern seaboard of the US. These two units are operational, and the first results are reported here.

Another main goal of the ASAPP is to encourage and assist the implementation of ASAP units in data sparse ocean areas, especially in the Southern Hemisphere where upper air soundings are very few. The WRAP (Wordwide Recurring ASAP Project) is a very good example of success for the ASAP Panel, with contributions from Australia, the United Kingdom and the United States. The first results of this operation are reported in this document.

Finally, the ongoing objective of the ASAPP in 2002 will be to continue to increase the amount of ASAP data over the oceans, especially in the Southern Hemisphere.

Annual evolution of ASAP since 1994

TABLE 1

	1994	1995	1996	1997	1998	1999	2000	2001	Average
Denmark	806	772	772	954	701	752	768	648	718
EUMETNET							27	464	245
France	1389	1336	1249	1383	1364	1421	1360	1385	1371
Germany	1925	2147	2061	1439	1139	1210	956	1309	1481
Japan	530	630	707	747	956	1098	871	1073	925
Russia			109	84	209	138	69	0	54
Spain	77	174	130	175	0	0	3	107	93
Sweden-Iceland		35	259	331	265	174	117	129	163
United Kingdom	287	110	145	53	0	151	220	276	207
United States		366	277	418	167	752	25	0	167
WRAP								33	
TOTAL	5014	5570	5709	5584	4801	5696	4416	5424	5424
Change to previous year		11%	2%	-2%	-14%	19%	-22%	23%	

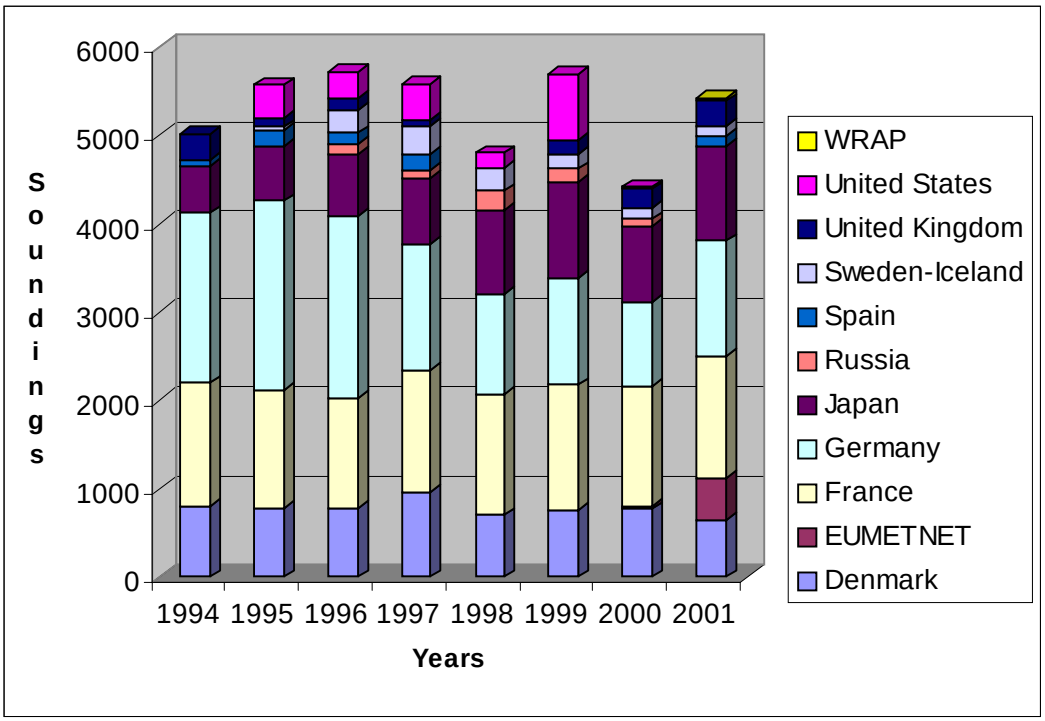


Table 2. Statistics on ASAP units operated during 2001

Operator	**ASAP** Units	Number of soundings	Average terminal sounding height (km)	Percentage of data on the GTS
Denmark	3	648	19.8	99
EUMETNET	2	464		91.5
France	4	1385	22.5	95.8
Germany	3	1309	22.8	64
Japan	7	1073	25.2	80.8
Russia	0			
Spain	1	107	21	63
Sweden-Iceland	1	129	18.3	78
United Kingdom	2	276	24.7	92
United States	0			
WRAP	1	33	25.2	93
Total or average	**24**	**5324**	**22.4**	**84.1**

Figures 1, 2, 3 (pp. 4-6) in separate .pdf file.

Annual National ASAP Report

COUNTRY: Denmark NAME OF AGENCY: DMI YEAR: 2001

2 ASAP units operated during the year on 3 ships								
Type of ship[1)]	Name	Call sign	Comm. method[2)]	Windfind method/ Sonde type [3)]	Launch Method4)	Launch height[5)]	Area of operations[6)]	ASAP Unit ID No.
Merchant	Arina Arctica	OVY A2	Inmarsat -C	Vaisala RS90-G/RS90-L	Container/semiaut.	14	North Atlantic	1
Merchant	Nuka Arctica	OXY H2	Inmarsat -C	Vaisala RS90-G/RS90-L	Container/semiaut.	18	North Atlantic	2
Merchant	Irena Arctica	OXT S2	Inmarsat -C	Vaisala RS90-G/RS90-L	Container/semiaut.	9	North Atlantic	2

1) Merchant ship, research ship, supply ship, etc.

2) Using IDCS, Inmarsat-C, or others

3) E.G. GPS/Vaisala RS80-G, Loran/Vaisala RS80-L, VIZ GPS Mark II Microsonde, etc.

4) Launch method e.g.: deck launcher (portable); deck launcher (fixed); container (manual); container (semi-automatic); other.

5) The height above sea level from where the sonde and balloon is released

6) Ocean area, e.g. North Pacific, North Atlantic, Indian Ocean, variable

Summary of performance of ASAP units during the year

Call sign	Total No. of sondes launched	No. of messages transmitted	No. of relaunches	Average terminal sounding height (km)	Balloon Size (gm)	Percentage on GTS[1)]
OVYA2	311	275	----	20040	200	100
OXYH2	232	196	----	20703	200	100
OXTS2	105	94	----	18731	200	97
Total or average	648	568	----	19825	200	99

1) Based upon reports received at a data centre or GTS insertion point, name: EKMI
Ratio of reports received against reports transmitted

COMMENTS:

ESTIMATES FOR FOLLOWING YEAR:

Annual National ASAP Report

COUNTRY : FRANCE NAME OF AGENCY: METEO-FRANCE YEAR: 2001

.....ASAP units operated during the year on 4 ships							
Type of ship[1)]	Name	Call sign	Comm method[2)]	Windfind Method[3)]	Lauch height	Area of operations[5)]	ASAP Unit Serial No
Merchant	Douce France	FNRS	IDCS	GPS	27	North Atlantic	FASAP 3
Merchant	Fort Desaix	FNPH	IDCS	GPS	27	North Atlantic	FASAP 4
Merchant	Fort Fleur d'Epée	FNOU	IDCS	GPS	13	North Atlantic	FASAP 2
Merchant	Fort Royal	FNOR	IDCS	GPS	13	North Atlantic	FASAP 1

1) Merchant ship, research ship, supply ship, etc
2) Using IDCS, Inmarsat-C, or others
3) Loran-C, GPS, Loran/GPS, RTH
4) The height above sea level from where the sonde and balloon is released
5) Ocean area, e.g. North Pacific, North Atlantic, Indian Ocean, variable

Summary of performance of ASAP units during the year					
Call sign	Total No. of sondes launched	No. of messages transmitted	No. of relaunches	Average terminal sounding height (km)	Percentage on GTS[1)]
FNRS	367	325	42	22.3	99.4
FNPH	344	318	26	22.7	89.7
FNOU	358	339	19	22.7	99.1
FNOR	316	302	14	22.1	94.6
Total or average	1385	1284	101	22.5	95.8

1) Based upon reports at a data centre or GTS insertion point, name BDM Toulouse
Ratio of reports received against reports transmitted

Annual National ASAP Report (Continued)

Year 2001

Comments on performance

A major concern, the same as last year, was the high number of soundings without wind data (12% during 2001 versus 11% during 2000). Except unwinder problems, most of the troubles always occurred the same way: In a first step, an as-usual troubleless ground preparation, the sonde picks up enough satellite signals to allow a correct wind data processing. In a second stage, as soon as launched, these sondes cannot pick up any longer the four satellite broadcasts needed to calculate wind data.

Let us point also a slight increase of the number of sonde ground rejection due to PTU sensor failures.

Then, let us recall the DCP transmission troubles, which have been lasting since the end of the year 2000. Since 2001, Cotel - the French data dissemination system - has been able to receive messages transmitted through Meteosat as well as through the American satellite. In most of cases, when messages sent through Meteosat were corrupted, they were not when sent through the American satellite. We therefore have strong suspicions about Météosat optimal operational state.

Estimates for the following year

External circumstances forced us to delay the installation of Geolink sondes on our ships up to beginning 2002.

Although we expect of this a very good availability of the wind data, we shall only be able to conclude after a six months' operational use.

About the transmissions, we are fitting all our ships with Inmarsat (C or mini M). We expect of this upgrade an increase of the number of transmitted messages as well as a better quality of those received in Toulouse (the monitoring centre).

Annual ASAP Report

Country: Germany	NAME OF AGENCY: DWD / AWI	YEAR: 2001

2 ASAP units operated during the year on 2 ships

Type of ship[1)]	Name	Call sign	Comm. method[2)]	Windfind. method/Sonde type[3)]	Launch method[3)]	Launch height[5)]	Area of operations[6)]	ASAP unit ID no.
Research vessel	METEOR	DBBH	DCP	GPS / Vaisala RS80-G	Container semi automatic	6 m	Atlantic	D/ASAP-3
Cont. vessel	HORNBAY	ELML 7	DCP	GPS / Vaisala RS80-G	Container semi automatic	10 m	North Atlantic / Caribbean	D/ASAP-1
Research vessel	POLARSTERN	DBLK	DCP	GPS / Vaisala RS80-G	Manual from balloon hall	10 m	North Atlantic inc. North and South Polar Regions	D/AWI-1

1) Merchant ship, research ship, supply ship, etc.
2) Using IDCS, Inmarsat-C, or others
3) E.G. GPS/Vaisala RS80-G, Loran/Vaisala RS80-L, VIZ GPS Mark II Microsonde, etc.
3) Launch method e.g.: deck launcher (portable); deck launcher (fixed); container (manual); container (semi-automatic); other.
5) The height above sea level from where the sonde and balloon is released
6) Ocean area, e.g. North Pacific, North Atlantic, Indian Ocean, variable

Summary of performance of ASAP units during the year

Call sign	Total no. of sondes launched	No. of messages transmitted	No. of relaunches Or failed launches	Median terminal sounding height (km)	Balloon size (gr)	Percentage on GTS [1)]
DBBH	380	375 [2)]	-	21	200	54 %
ELML7	538	500 [2)]	-	19	200	88 %
DBLK [3)]	391	391 [3)]	-	29,9	600	46 % [3)]

1) Ratio of successful reports received via back up against reports received via GTS at: Offenbach (EDZW)
2) Transmission failures caused by PC malfunction
3) See Comments

COMMENTS:

Deutscher Wetterdienst (DWD) operated 2 ASAP units in 2001:

DBBH: Satellite transmission link unreliable when position of the vessel being east of 000 degrees Longitude.

DBBH/ELML7:Some messages were not transmitted due to PC failures

DBLK is operated by Alfred Wegener Institute for Polar and Marine Research (AWI). They are not part of the ASAP system in a strict sense, but report on an informal basis:

DCP transmission from polar regions is extremely bad, especially west of the Antarctic Peninsula; North of 82 degrees no DCP transmission is available; in those cases transmission was conducted via Irridium Mobile phone – but even that was not successful in every case.

ESTIMATES FOR FOLLOWING YEAR:

The two DWD units will continue operations as in 2001, but with totally refurbished systems. Additionally 2 new systems will come into operation during 2002. All 4 units will have the identical technical standard. Telecommunication link will witch from Eumetsat to Inmarsat.

AWI operations as before.

Annual National ASAP Report

COUNTRY: ICELAND/Sweden

NAME OF AGENCY: Icelandic Meteorological Office /SMHI YEAR: 2001

1 ASAP units operated during the year on 1 ships								
Type of ship[1)]	Name	Call sign	Comm. method[2)]	Windfind method/ Sonde type [3)]	Launch Method4)	Launch height[5)]	Area of operations[6)]	ASAP Unit ID No.
Merchant ship	Lagarfoss	V2XO	Inmarsat-C	Loran/Vaisala RS80-L	Container (manual)	13 m	North Atlantic	IS-1

1) Merchant ship, research ship, supply ship, etc.

2) Using IDCS, Inmarsat-C, or others

3) E.G. GPS/Vaisala RS80-G, Loran/Vaisala RS80-L, VIZ GPS Mark II Microsonde, etc.

4) Launch method e.g.: deck launcher (portable); deck launcher (fixed); container (manual); container (semi-automatic); other.

5) The height above sea level from where the sonde and balloon is released

7) Ocean area, e.g. North Pacific, North Atlantic, Indian Ocean, variable

Summary of performance of ASAP units during the year 2001

Call sign	Total No. of sondes launched	No. of messages transmitted	No. of relaunches	Average terminal sounding height (km)	Balloon Size (gm)	Percentage on GTS[1)]
V2XO	129	103	7	18.3 km	300 gr	78%
Total or average						

1) Based upon reports received at a data centre or GTS insertion point, name: BIRK
Ratio of reports received against reports transmitted 78%

COMMENTS: Year 2001. M/v Lagarfoss started on the route Reykjavik-Argentia-Norfolk–Argentia-Reykjavik in beginning of June. But the installation of the equipment was delayed one trip, until 28 June. On the trip 26 July – 23 August we had failure on the MARWIN system and no soundings were from that period. So for the whole year we only had 5.5 effective trips. During the SOP period, Sep-Oct, we were able to do some extra soundings. In November the soundings had lot of “early balloon burst” and the average height only 9 km. For December we had failure in the INMARSAT-C antenna and therefore few soundings on GTS. We used the first half of the year for maintenance work on the container and to modernize the observation system. We installed our own INMARSAT-C transmitter with GPS-receiver and also moved all antennas to the container. We also installed digital thermometer and hygrometer on the container so now all but the Helium batteries are installed in the container. In the future it should be much cheaper and easier to move from one boat to another. The TEMP messages are now sent automatically by E-mail to the Icelandic Met. Office and there automatically inserted on GTS.

ESTIMATES FOR FOLLOWING YEAR:

Same programme as last year.

Annual National ASAP Report

COUNTRY JAPAN NAME OF AGENCY: Japan Meteorological Agency YEAR: 2001

6 ASAP units operated during the year on 6 ships

Type of ship[1)]	Name	Call sign	Comm. method[2)]	Windfind method / Sonde type[3)]	Launch Method[4)]	Launch height[5)]	Area of operations[6)]	ASAP Unit ID No.
research ship	Ryofu Maru	JGQH	others (DCP via the GMS)	GPS/Vaisala RS80-G	container (semi-automatic)	8 m	North Pacific	708514
research ship	Kofu Maru	JDWX	others (DCP via the GMS)	GPS/Vaisala RS80-G	container (semi-automatic)	6 m	Seas adjacent to Japan	191678
research ship	Seifu Maru	JIVB	others (DCP via the GMS)	GPS/Vaisala RS80-G	container (semi-automatic)	6 m	Seas adjacent to Japan	458533
research ship	Chofu Maru	JCCX	others (DCP via the GMS)	GPS/Vaisala RS80-G	container (semi-automatic)	6 m	Seas adjacent to Japan	126138
research ship	Keifu Maru	JPBN	others (DCP via the GMS)	GPS/Vaisala RS80-G	deck-launcher (portable)	8 m	North Pacific	-
research ship	Mirai	JNSR	Inmarsat-C	GPS/Vaisala RS80-G	container (semi-automatic)	16 m	variable	-
research ship	Hakuho Maru	JDSS	Inmarsat-C	GPS/Vaisala RS80-G	deck-launcher (portable)	-	variable	-

1) Merchant ship, research ship, supply ship, etc.

2) Using IDCS, Inmarsat-C, or others

3) E.G. GPS/Vaisala RS80-G, Loran/Vaisala RS80-L, VIZ GPS Mark II Microsonde, etc.

4) Launch method e.g.: deck launcher (portable); deck launcher (fixed); container (manual); container (semi-automatic); other.

5) The height above sea level from where the sonde and balloon is released

6) Ocean area, e.g. North Pacific, North Atlantic, Indian Ocean, variable

Summary of performance of ASAP units during the year 2001

Call sign	Total No. of sondes launched	No. of messages transmitted	No. of relaunches	Average terminal sounding height (km)	Balloon Size (gm)	Percentage on GTS[1)]
JGQH	177	169	8	25.2	350	100
JDWX	189	180	9	24.1	350	100
JIVB	216	190	26	23.5	350	100
JCCX	193	177	16	22.4	350	88.7
JPBN	29	25	4	19.6	350	100
JNSR	269	267	2	22.3	350	42.6
JDSS	81	35	2	-	350	25.7
Total or average	1073	1043	67	-	350	80.8

1) Based upon reports received at a data centre or GTS insertion point, name: Tokyo (RJTD)
Ratio of reports received against reports transmitted

COMMENTS:

During the year of 2001 in Japan upper-air observations over the oceans are made by seven oceanographic research vessels listed in the above table. *R/V Mirai* (JNSR) is operated by the Japan Marine Science and Technology Center (JAMSTEC), *R/V Hakuho Maru* (JDSS) is operaten by the Ocean Research Institution of the University of Tkyo, and the others are operated by the Japan Meteorological Agency (JMA).

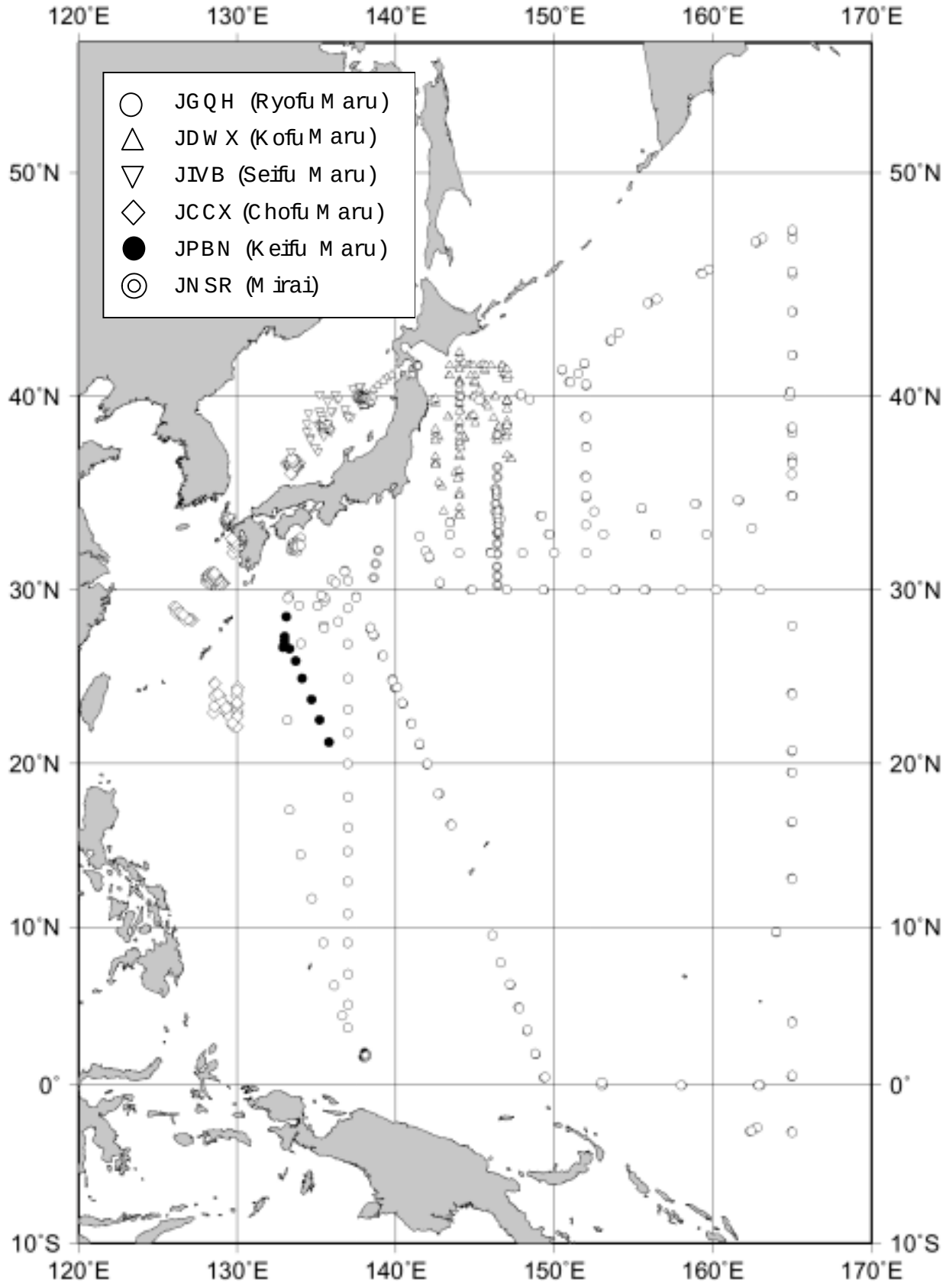
JMA makes upper-air observations in the western North Pacific and the seas adjacent to Japan on a regular basis (twice a day) on board four vessels (JGQH, JDWX, JIVB and JCCX) among five research vessels operated by JMA. *R/V Keifu Maru* (JPBN) does not make upper-air observation on a regular basis.

In July 2001, three research vessels (JGQH, JCCX and JPBN) of JMA performed enhanced upper-air observations (four times per day) in order to monitor and investigate typhoons in the western subtropical North Pacific. *R/V Keifu Maru* (JPBN) joined this enhanced observations using a portable deck-launcher.

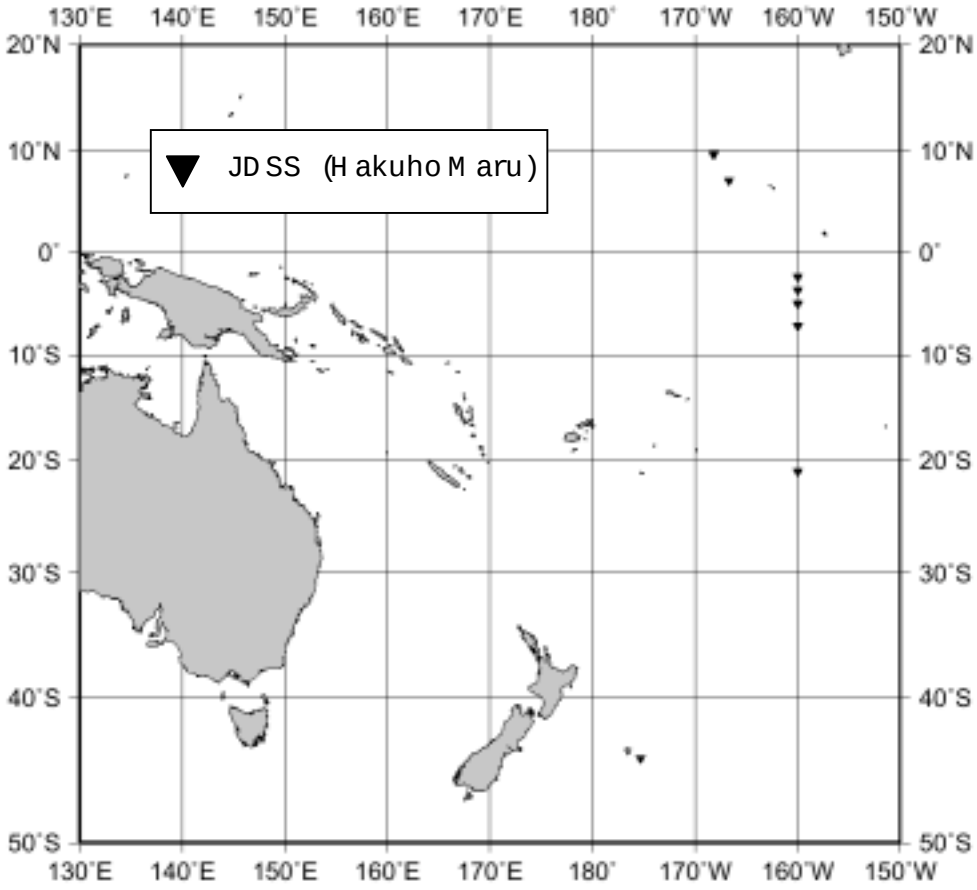
In December 2001, *R/V Hakuho Maru* (JDSS) operated by the Ocean Research Institution of the University of Tokyo performed research based observations using a portable deck-launcher in the central Pacific.

ESTIMATES FOR FOLLOWING YEAR:

JMA will carry out upper-air observations in the similar regions in 2002 almost as many times as in 2001.



Upper-air observations by Japan in 2001 for the western North Pacific
including equatorial regions. (JGQH, JDWX, JIVB, JCCX, JPBN,



Upper-air observations by Japan in 2001
(JDSS)

Annual National ASAP Report

COUNTRY: **Spain** NAME OF AGENCY**: Instituto Nacional de Meteorología** YEAR: **2001**

1 ASAP units operated during the year 2001 on 1 ship								
Type of ship [1)]	Name	Call sign	Comm. method [2)]	Windfind method/ Sonde type [3)]	Launch method [4)]	Launch height [5)]	Area of operations [6)]	ASAP Unit ID No.
Hospital Ship	ESPERANZA DEL MAR	EHOA	IDCS	GPS/Vaisala RS80-15G	Manual	6 m.	North Atlantic	Spain/ ASAP1

1) Merchant ship, research ship, supply ship, etc.

2) Using IDCS, Inmarsat-C, or others

3) E.G. GPS/Vaisala RS80-G, Loran/Vaisala RS80-L, VIZ GPS Mark II Microsonde, etc.

4) Launch method e.g. : deck launcher (portable); deck launcher (fixed); container (manual); container (semi-automatic); other.

5) The height above sea level from where the sonde and balloon is released

6) Ocean area, e.g. north Pacific, North Atlantic, Indian Ocean, Variable

Summary of performance of ASAP units during the year 2001						
Call sign	Total No. of sondes launched	No. of messages transmitted	No. of relaunches	Average terminal sounding height (km)	Balloon Size (gm)	Percentage on GTS [1)]
EHOA	107	68	0	21	350	63
Total o average						

1) Based upon reports received at a data centre or GTS insertion point, name: Eumetsat/Offenbach, ratio of reports received against reports transmitted

COMMENTS:
The DCP antenna was broken down during the period from January to March, and it caused that the radiosonde information wasn't transmitted.
On September 2001, the Hospital Ship, "Esperanza del Mar (call sign EHOA), went retired of service and, consequently the launches ceased.

ESTIMATES FOR FOLLOWING YEAR:

A new ship with the same name as the former but with call sign EBUQ began to operate on October 2001. An ASAP container, equipped with an INMARSAT transmission unit, was installed on board. We have some problems related with the admission of messages by the LES stations. For this reason, the radiosonde information can't be disseminated. When that problems solved, one launch will be scheduled daily at 12 UTC, during the ship operation period (approximated 22 days by month). The ship route is from Canary Islands to Noahdibou, in Mauritania, along the West African coast.

Annual National ASAP Report

COUNTRY: .**GREAT BRITAIN** . . . . NAME OF AGENCY: **MET OFFICE** . . . . . YEAR: .**2001** . . .

...2... ASAP units operated during the year on ...2... ships								
Type of ship[1)]	Name	Call sign	Comm. method[2)]	Windfind method/ Sonde type [3)]	Launch Method[4)]	Launch Height[5)]	Area of operations[6)]	ASAP Unit ID No.
Merchant	CanMar Pride	ZCBP6	Inmarsat-C	GPS RS80-15GH	Container (semi-automatic)	22 metres	North Atlantic	GB/ASAP1
Research	RRS Charles Darwin	GDLS	Inmarsat-C	GPS RS80-15GH	Deck launcher (portable)	8 metres	Indian Ocean	N/A

1) Merchant ship, research ship, supply ship, etc.

2) Using IDCS, Inmarsat-C, or others

3) E.G. GPS/Vaisala RS80-G, Loran/Vaisala RS80-L, VIZ GPS Mark II Microsonde, etc.

4) Launch method e.g.: deck launcher (portable); deck launcher (fixed); container (manual); container (semi-automatic); other.

5) The height above sea level from where the sonde and balloon is released

6) Ocean area, e.g. North Pacific, North Atlantic, Indian Ocean, variable

Summary of performance of ASAP units during the year						
Call sign	Total No. of sondes launched	No. of messages transmitted	No. of relaunches	Average terminal sounding height (km)	Balloon Size (gm)	Percentage on GTS[1)]
ZCBP6	256	174	Nil	24.684	350	100%
GDLS	20	16	Nil	Not Available	200	84%
Total or average	276	190	Nil	N/A		92%
1)	Based upon reports received at a data centre or GTS insertion point, name: _EGRR_____ Ratio of reports received against reports transmitted					

COMMENTS:

Figures in the preceding tables are based on 18 ASAP operational voyages of the containership CanMar Pride and on 1 voyage of the NERC research ship RRS Charles Darwin for the year 2001.

Figures in the 'messages transmitted' column are for successful soundings only, i.e. ascents producing data to ≥ 200 mb. Although the average terminal sounding heights for the RRS Charles Darwin are not presently available, 80% of the sondes launched achieved a height of 50 mb and above.

Launches from CanMar Pride were not attempted on 13 occasions due to exceptionally strong winds and extreme weather conditions. On 6 occasions no coded TEMP message was generated due to technical problems.

Trials were undertaken during the course of the year using a portable deck launcher located on the starboard side of the funnel deck on the CanMar Pride i.e. in addition to the container launcher on the port side. Although it had been hoped that the use of this portable launcher would avoid some of the problems being experienced when launching balloons under adverse wind conditions, this was not the case. The portable launcher was therefore removed in January 2002.

On RRS Charles Darwin, overall the system worked well and no problems were experienced in performing the manual launches although the wind speeds for the period were low. However a problem did occur with the Vaisala DigiCORA MW15 Receiver Unit, which resulted in 3 out of the 20 flights terminating prematurely when generating the first level TEMP message at approx. 850 mb. Due to the limited number of Radiosonde available these flights were not repeated.

UK Met Office staff were also actively involved in the installation of the ASAP system used in connection with the Worldwide Recurring ASAP Project (WRAP) which was installed on the UK observing ship *Palliser Bay* in March 2001

ESTIMATES FOR FOLLOWING YEAR:

The United Kingdom will continue to operate the one unit, GB/ASAP1, for the year 2002.

The British Antarctic Survey may make soundings later in the year from their research ship *James Clark Ross.*

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Annual ASAP Report

OWNER: EUMETNET countries	NAME OF AGENCY: E-ASAP	YEAR: 2001

2 ASAP units operated during the year on 2 ships

Type of ship[1)]	Name	Call sign	Comm. method[2)]	Windfind. method/Sonde type[3)]	Launch method[3)]	Launch height[5)]	Area of operations[6)]	ASAP unit ID no.
Cont. vessel	PELJASPER	SWJS	Inmarsat-C	Loran-C/ RS90-AL	10-foot container	16 m	Mediterranean	EU/ASAP1
Cont. vessel	SEALAND ACHIEVER	WPKD	Inmarsat-C	Loran-C or GPS RS90-AL or AG	10-foot container	30 m	North Atlantic	EU/ASAP2

1) Merchant ship, research ship, supply ship, etc.
2) Using IDCS, Inmarsat-C, or others
3) E.G. GPS/Vaisala RS80-G, Loran/Vaisala RS80-L, VIZ GPS Mark II Microsonde, etc.
3) Launch method e.g.: deck launcher (portable); deck launcher (fixed); container (manual); container (semi-automatic); other.
5) The height above sea level from where the sonde and balloon is released
6) Ocean area, e.g. North Pacific, North Atlantic, Indian Ocean, variable

Summary of performance of ASAP units during the year

Call sign	Total no. of sondes launched	No. of messages transmitted	No. of relaunches Or failed launches	Median terminal sounding height (hPa)	Balloon size (gr)	Percentage on GTS[1)]
SWJS	262	240	22	30.4[2)]	350	86.7
WPKD	202	170	32	36.5[3)]	350	97.6

1) Ratio of reports received against reports transmitted. Based upon reports received at: Copenhagen (EKMI) GTS insertion point: Athens (LGAT) for SWJS and Bracknell (EGRR) for WPKD
2) Average (mean): 89.1 hPa The median height corresponds to about 24 km height.
3) Average (mean): 108.5 hPa The median height corresponds to about 23 km height.
For the WPKD the height statistics are of technical reasons only based on the last 46 soundings in the year.

COMMENTS:
Both E-ASAP units are equipped with a Vaisala DigiCORA III sounding unit. Wind finding is primarily done by using Loran-C, but they are also equipped with a GPS-processor board. This also makes it possible to have an automated position setting such that the operator only has to accept the given position. Thereby errors in keying in positions are avoided, and as a consequence there should be no position errors from the two E-ASAP units, unlike what may be the case when position is input manually. Experience with the WPKD have shown that Loran-C windfinding is possible on its route from the English Channel to Charleston SC in at least 80% of the time.

Both units uses Inmarsat-C communications. The communication is automated such that no operator intervention is needed under normal operating conditions. This also means that the TEMP SHIP bulletins are communicated as soon they are ready, i.e. the parts A and B are transmitted soon after the sonde has passed the 100 hPa level, and the transmission does not await the burst of the balloon and the processing of parts C and D. The communication is based on use of Code 41. Both systems are set up to request confirmation of reception of data by the LES. E-ASAP is charged for this by the LES's, but the amounts are negligible.

NOAA/Office of Global Programs have contributed to E-ASAP to have the WPKD take soundings in the Gulf of Mexico on its route between the Keys and Houston, and vice versa. Due to technical problems only a couple soundings were taken.

ESTIMATES FOR FOLLOWING YEAR:
The two units will continue operations as in 2001, and the equipment on the WPKD should be able to take the soundings in the Gulf of Mexico.

Annual National ASAP Report

COUNTRY: ..WRAP..... NAME OF AGENCY: ..ASAPP..... YEAR: .2001....

...1.... ASAP units operated during the year on ..1..... ships

Type of ship[1)]	Name	Call sign	Comm. method[2)]	Windfind method/ Sonde type [3)]	Launch Method 4)	Launch height[5)]	Area of operations[6)]	ASAP Unit ID No.
Merchant	Palliser Bay	GWAN	Inmarsat-C	GPS/RS80-15GH	Deck Launcher Portable	31m	Indian Ocean, Gt Aust Bight, S.Pacific Ocean to 160E	WRAP 1

1) Merchant ship, research ship, supply ship, etc.

2) Using IDCS, Inmarsat-C, or others

3) E.G. GPS/Vaisala RS80-G, Loran/Vaisala RS80-L, VIZ GPS Mark II Microsonde, etc.

4) Launch method e.g.: deck launcher (portable); deck launcher (fixed); container (manual); container (semi-automatic); other.

5) The height above sea level from where the sonde and balloon is released

8) Ocean area, e.g. North Pacific, North Atlantic, Indian Ocean, variable

Summary of performance of ASAP units during the year

Call sign	Total No. of sondes launched	No. of messages transmitted	No. of relaunches	Average terminal sounding height (km)	Balloon Size (gm)	Percentage on GTS[1)]
GWAN	91	70	11	25.2	350	93
Total or average						

1) Based upon reports received at a data centre or GTS insertion point, name: Melbourne
Ratio of reports received against reports transmitted

COMMENTS:
A total of 24 soundings failed prematurely – either due to faulty sonde (or sounding system) preventing release, electronics failure (including loss of GPS signal) soon after launch, or balloon train colliding with ship or sea.

The total number of sondes launched does not include sondes which failed the ground check.

ESTIMATES FOR FOLLOWING YEAR:

European Centre for Medium-Range Weather Forecasts

SUMMARY REPORT ON THE MONITORING OF ASAP SHIP DATA

Input for the ASAP Coordination Committee, 13th session

1. DATA AVAILABILITY

- The frequency of reception for TEMPSHIP platforms from January 1995 to December 2001 is shown in **figures 1 to 4**. The frequency of reception for the main two cycles (00/12 UTC) is shown in figure 1 (500 hPa geopotential) and figure 3 (200 hPa wind). Figures 2 and 4 show similar plots at 06 and 18 UTC.

- The number of reports at 00 UTC in 2001 were similar to those in 2000 whereas the number of reports received at ECMWF at 12 UTC were larger in 2001 than in the previous year.

- The number of received reports at 06 and 18 UTC showed a maximum in October and November 2001.

- The European ASAP SWJS is still operating in the Mediterranean area providing good quality observations. These observations have been assimilate and used at ECMWF since then. Compared to the previous year is worth to note the presence of three new ASAP. EHOA (with only three reports in 2000) is operating from Canary Islands to the south; WPKD is operating on N Atlantic and GWAN in a route linking S Africa and Australia. Tracks and statistics from the three of them can be found in figures 9 to 11.

2. TROUBLE SHOOTING

- Corrupted call-signs can be found with the same rates as in previous years. Table 1 shows a summary of the collected ids at ECMWF from January to December 2001. In that table the corrupted call-signs can be easily distinguished from the genuine ones.

- Since January 2001 four cases of bad positions have been detected In April 2001 GWAN sent two reports reversing the sign of the latitude (North instead of South), in December 2001 WPKD sent a report reversing the sign of the longitude (East instead of West) and again in January 2002 the same platform sent two reports changing the longitude from West to East (see figure 12). In all cases the observations resulted in gross errors and were rejected by the 4DVAR

3. DATA QUALITY

- **Figure 5** shows Temperature statistics (January-December 2001) for the layer 500/100 hPa. Only platforms reporting an average of at least five observations per level and month have been considered.

- The layer weighted average bias and rms in meters have been computed and then the stations have been sorted by decreasing rms. The statistics have been carried out by comparing the observations with the model background field.

- The computed rms values show a good quality standard with maximum rms values around 0.6-0.7 degrees, which are reasonable figures. The comparison with similar statistics for the period January-August 2000 shows similar values.

- Similar statistics have been computed also for the COSNA area (not shown) in order to compare TEMPSHIP with land based stations. The comparison shows that the quality of the TEMPSHIP observations is comparable or even better than land based stations.

- **Figure 6** shows similar statistics for the wind. Now the considered layer is 400/100 hPa and the statistics have been carried out in terms of vector difference rms in m/s. The stations have been then sorted by decreasing VRMS.

- The computed VRMS values range from 3 to 6 m/s showing high quality standards.

- Again the comparisons for the COSNA area shows that the TEMPSHIP quality standards are comparable to land based stations.

- **Figure 7** shows comparisons between land-based Sondes and ASAP for temperature, humidity and wind (COSNA area, all cycles included) for January 2002. The enclosed statistics are only for data used by the model and the plots show a pretty similar performance for both groups of platforms.

- **Figure 8** shows a similar comparison but this time for temperature and relative humidity. ASAP statistics show a larger negative bias and std peaking around 850 hPa. Anyway the number of observations is much smaller in the case of ASAPs than in the case of land-based stations and this must be taken into account. Another important factor is the known dry bias of the Vaisala humidity sensors.

4. DESCRIPTION OF THE PLOTS

Figure	Layer	Time	Contents
1	500 hPa	00/12 UTC	Time series showing the frequency of reception at ECMWF for TEMPSHIP on a global area from **January 1995** to **December 2001** for Geopotential
2	500 hPa	06/18 UTC	Similar to Figure 1
3	500 hPa	00/12 UTC	Time series showing the frequency of reception at ECMWF for TEMPSHIP on a global area from **January 1995** to **December 2001** for Wind
4	200 hPa	06/18 UTC	Similar to figure 3
5	500/100hPa	00/12 UTC	Temperature sorted statistics from **January 2001** to **December 2001** Overlay: **RHS** Number of data used in the statistics **LHS** Station Ids Statistics: **rms/bias** in degrees
6	400/100hPa	00/12UTC	Wind sorted statistics from **January 2001** to **December 2001** Overlay: **RHS** Number of data used in the statistics **LHS** Station Ids Statistics: **VRMS** (Vector difference rms) in m/s
7	All	All	Vertical statistics for temperature and wind components **January 2002** (Sondes versus Tempship)
8	All	All	Vertical statistics for temperature and relative humidity **January 2002** (Sondes versus Tempship)
9	--	--	**EHOA** track and statistics for **April 2001**.

TABLE 1
Reports received at ECMWF January – December 2001
Geopotential 500 hPa

SGN	00	06	12	18	UTC
BNOR	0	0	0	0	
BNRS	0	0	0	0	
D/BH	0	0	0	0	
D/CH	0	0	0	0	
D/JL	0	0	0	0	
DASAP	0	0	5	0	
DB//	0	0	0	0	
DB/C	0	0	0	0	
DB/H	0	0	0	0	
DB/K	0	0	0	0	
DBB/	0	0	0	0	
DBBH	75	0	145	0	
DBBL	0	0	0	0	
DBBX	0	0	0	0	
DBCH	0	0	0	0	
DBHK	0	0	0	0	
DBJH	0	0	0	0	
DBL/	0	0	0	0	
DBLK	13	0	128	0	
DBRJ	0	0	0	0	
DFCH	0	0	0	0	
DNOR	0	0	0	0	
DNOU	1	0	0	0	
DRBH	0	0	1	0	
E/ML7	0	0	1	0	
EDML7	0	0	0	0	
EHOA	0	0	66	0	
EL//7	0	0	0	0	
EL/L7	0	0	1	0	
ELEL7	0	0	0	0	
ELL7	0	0	2	0	
ELLL7	0	0	0	0	
ELM/4	0	0	0	0	
ELM/7	0	0	0	0	
ELMF3	0	0	0	0	
ELMH7	0	0	0	0	
ELML'	0	0	0	0	
ELML/	0	0	1	0	
ELML1	0	0	0	0	
ELML3	0	0	0	0	
ELML5	0	0	0	0	
ELML7	188	9	190	9	
ELML9	0	0	0	0	
ELML?	0	0	0	0	
ELMM7	1	0	0	0	
ELMN7	0	0	0	0	
ELMX7	0	0	0	0	

TABLE 1 (continued)

SGN	00	06	12	18	UTC

ENML7	0	0	0	0
F//R	0	0	0	0
F/I/	0	0	0	0
F/LU	0	0	0	0
F/OR	0	0	0	0
F/OU	1	0	0	0
FFOR	0	0	0	0
FHOR	1	0	0	0
FHPH	0	0	0	0
FI/R	1	0	0	0
FJOR	0	0	0	0
FLOR	0	0	0	0
FLOU	0	0	0	0
FN/E	0	0	0	0
FN/Q	0	0	0	0
FN/R	0	0	0	0
FN/S	0	0	1	0
FN/U	0	0	0	0
FN/V	1	0	0	0
FN1:	0	0	0	0
FNCM	37	0	38	0
FNGU	0	0	0	0
FNKR	0	0	1	0
FNMR	0	0	1	0
FNO/	0	0	0	0
FNOP	1	0	0	0
FNOQ	0	0	0	0
FNOR	123	0	133	6
FNOS	0	0	0	0
FNOT	0	0	0	0
FNOU	153	0	151	8
FNOZ	0	0	0	0
FNPH	130	0	133	4
FNPS	0	0	0	0
FNR/	0	0	0	0
FNRS	140	4	139	9
FNSS	0	0	0	0
FNVS	0	0	0	0
FNWR	0	0	0	0
FORS	0	0	0	0
GDLS	0	7	0	9
GDNU	1	0	0	0
GLML7	0	0	0	0
GNOR	0	0	0	0
GNOU	0	0	0	0
GWAN	21	1	28	0
HAM2	0	0	2	0
JCCX	45	27	42	28
JDSS	3	2	1	2
JDWX	71	10	70	10

TABLE 1 (continued)

SGN	00	06	12	18	UTC
JGQH	86	5	66	4	

JIVB	48	24	54	25
JNSR	31	26	31	26
JPBN	4	4	5	5
LBBH	0	0	0	0
LDWR	353	340	345	341
LDWV	0	0	0	0
MLML7	0	0	0	0
NNJU	0	0	0	0
NNNN	0	0	0	0
NNOR	1	0	0	0
NNOU	0	0	0	0
OVYA2	87	45	91	50
OXTS2	33	15	30	14
OXYH2	47	55	38	51
PACDG	3	1	0	0
QNOU	0	0	0	0
RRAUU	0	0	0	0
RRCUU	0	0	0	0
SHIP	4	4	0	0
SMLQ	6	4	5	6
SWJS	37	57	43	58
UBBH	0	0	0	0
ULML7	0	0	0	0
V2XO	26	11	25	12
VNRS	1	0	0	0
WPKD	50	33	49	41
WTEC	47	13	53	0
ZCBP6	75	0	86	13

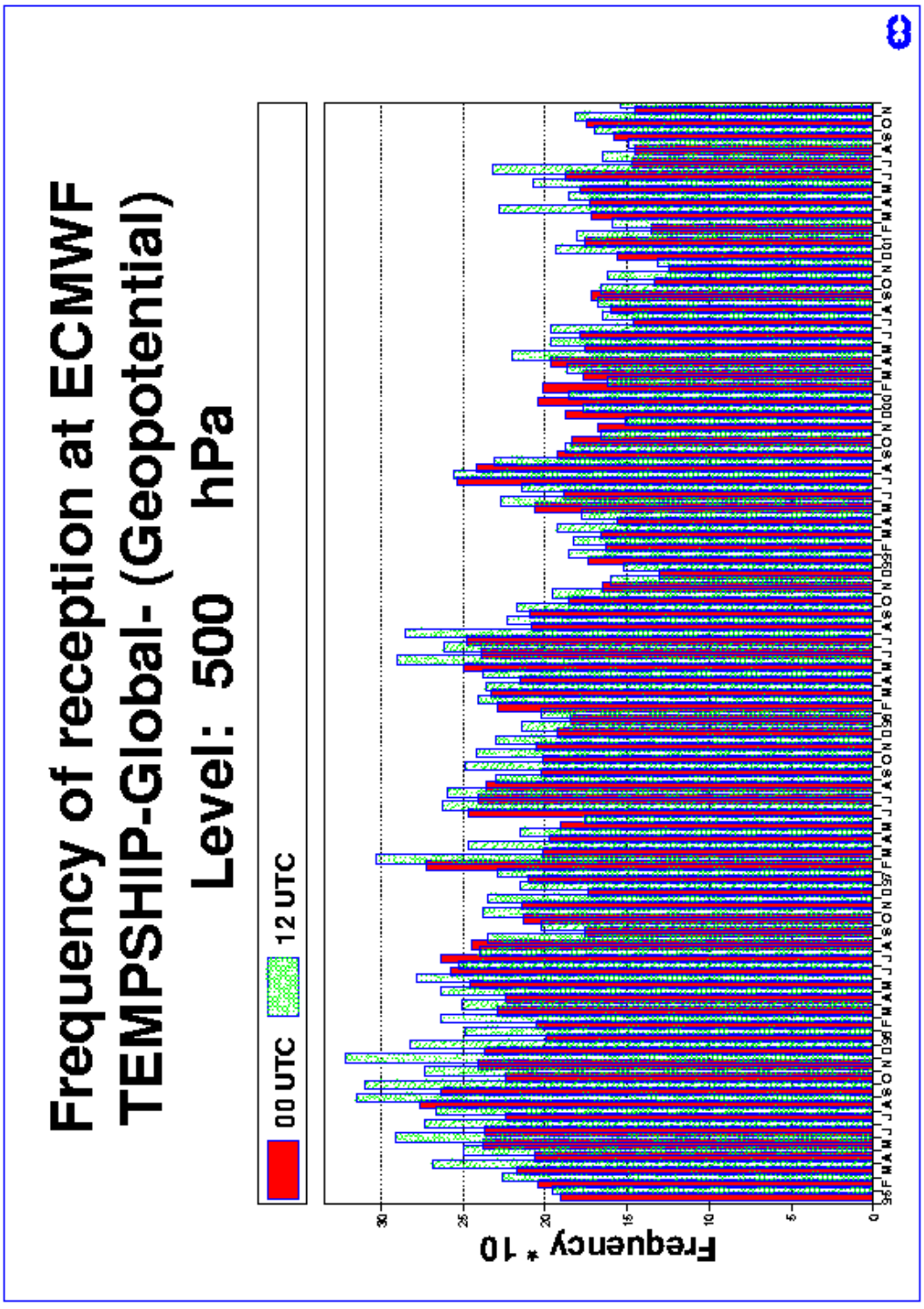

Frequency of reception at ECMWF
TEMPSHIP-Global- (Geopotential)
Level: 500 hPa
00 UTC
12 UTC
Frequency * 10
0
5
10
15
20
25
30
96F M A M J J A S O N D 97F M A M J J A S O N D 98F M A M J J A S O N D 99F M A M J J A S O N D 00F M A M J J A S O N D 01F M A M J J A S O N

Figure 1

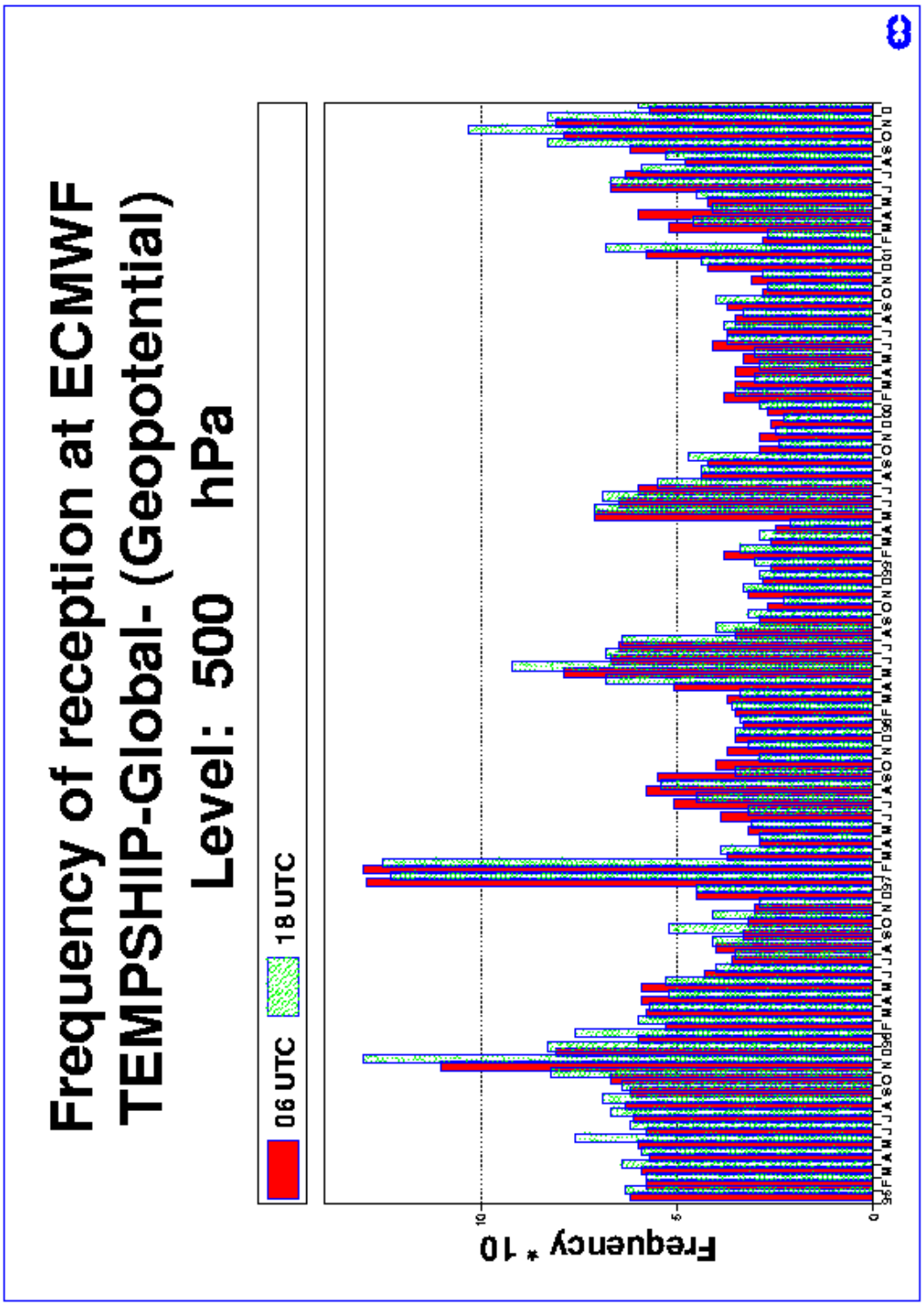

Frequency of reception at ECMWF
TEMPSHIP-Global- (Geopotential)
Level: 500 hPa
06 UTC
18 UTC
Frequency * 10
0
5
10

Figure 2

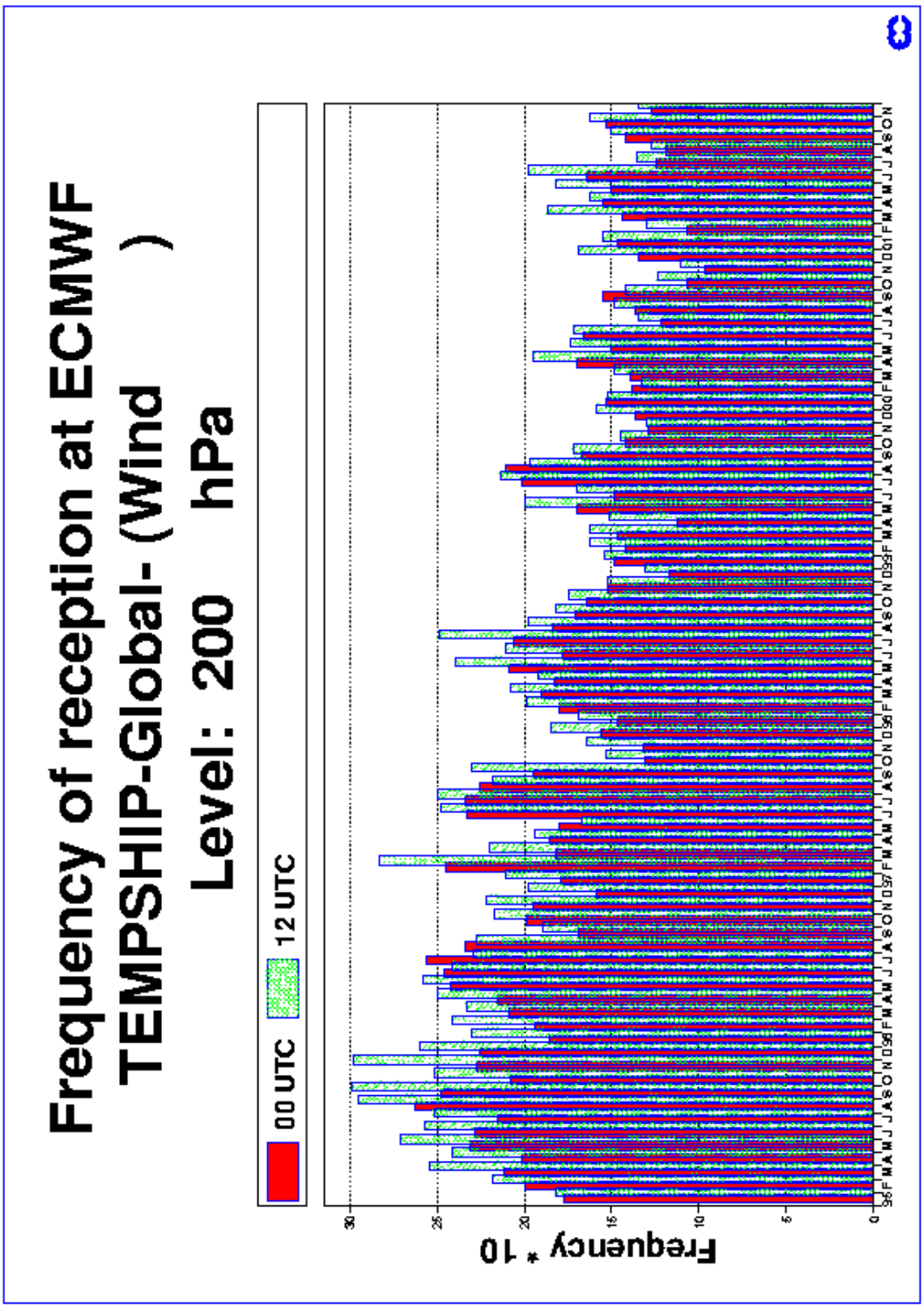

Frequency of reception at ECMWF
TEMPSHIP-Global- (Wind)
Level: 200 hPa
00 UTC
12 UTC
Frequency * 10
0
5
10
15
20
25
30

Figure 3

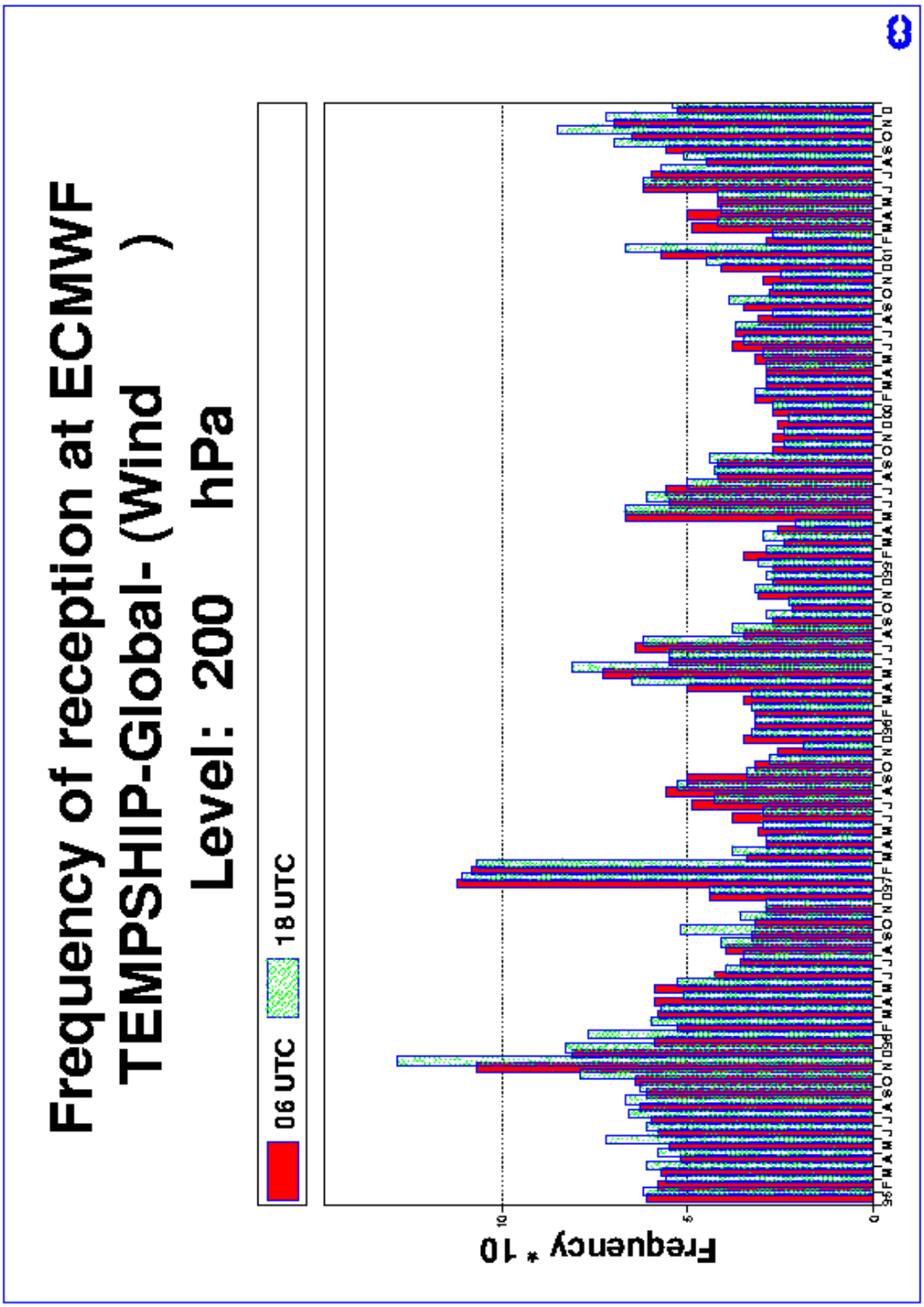

Frequency of reception at ECMWF
TEMPSHIP-Global- (Wind)
Level: 200 hPa
06 UTC
18 UTC
Frequency * 10
0
5
10

Figure 4

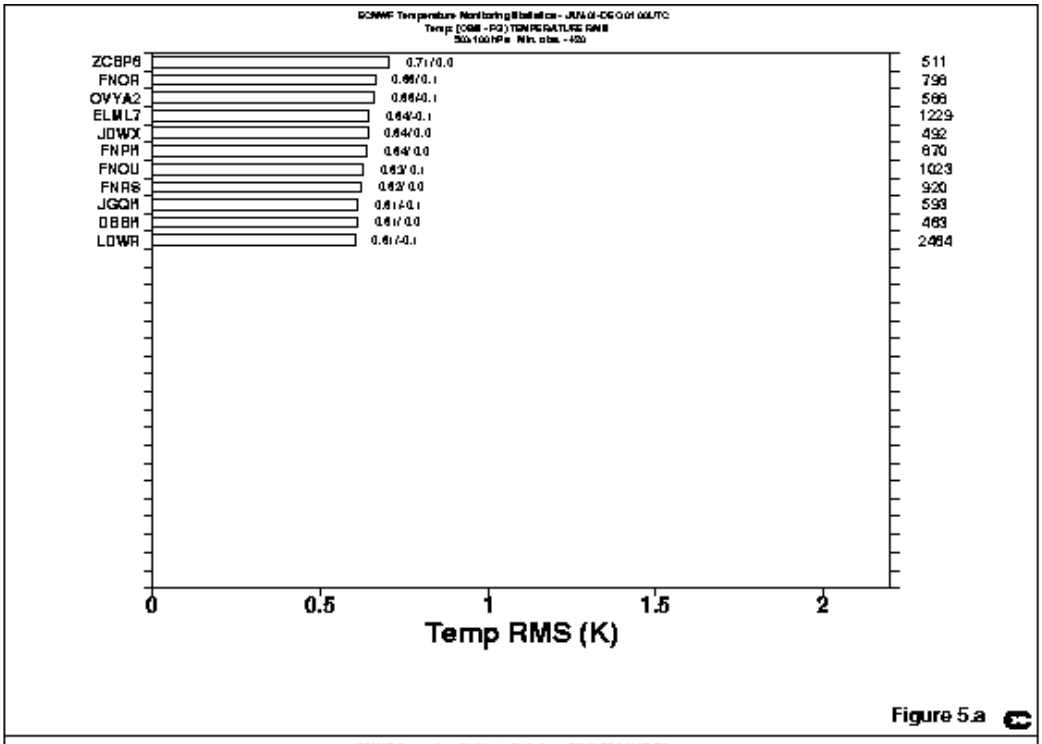


Figure 5.a

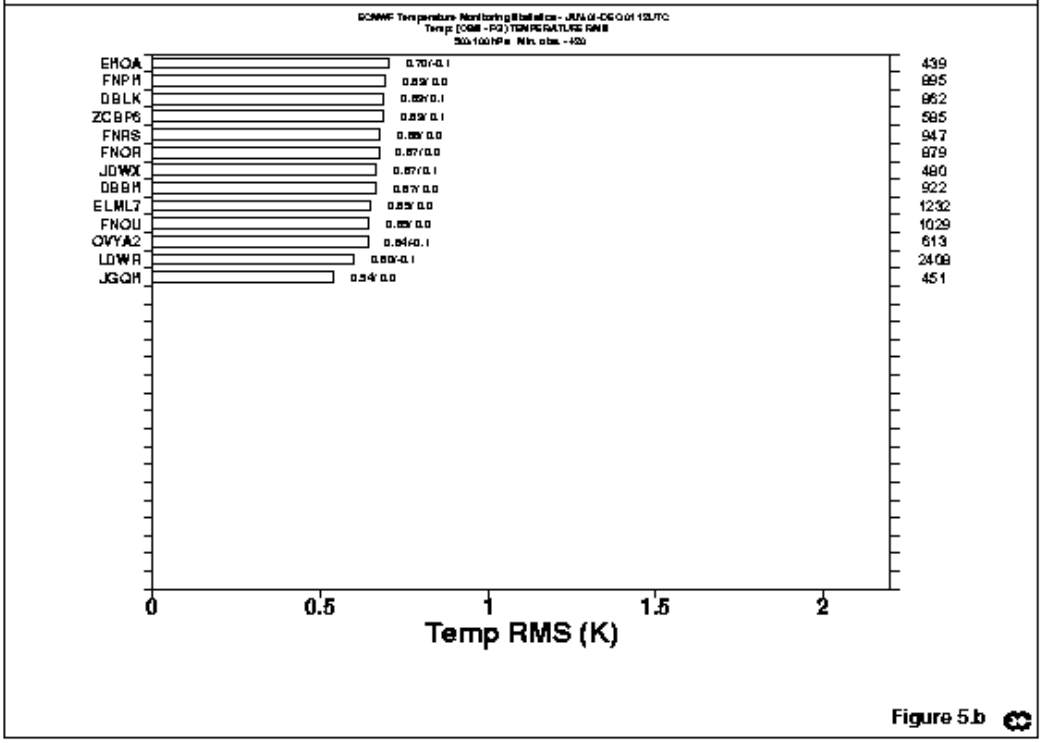


Figure 5.b

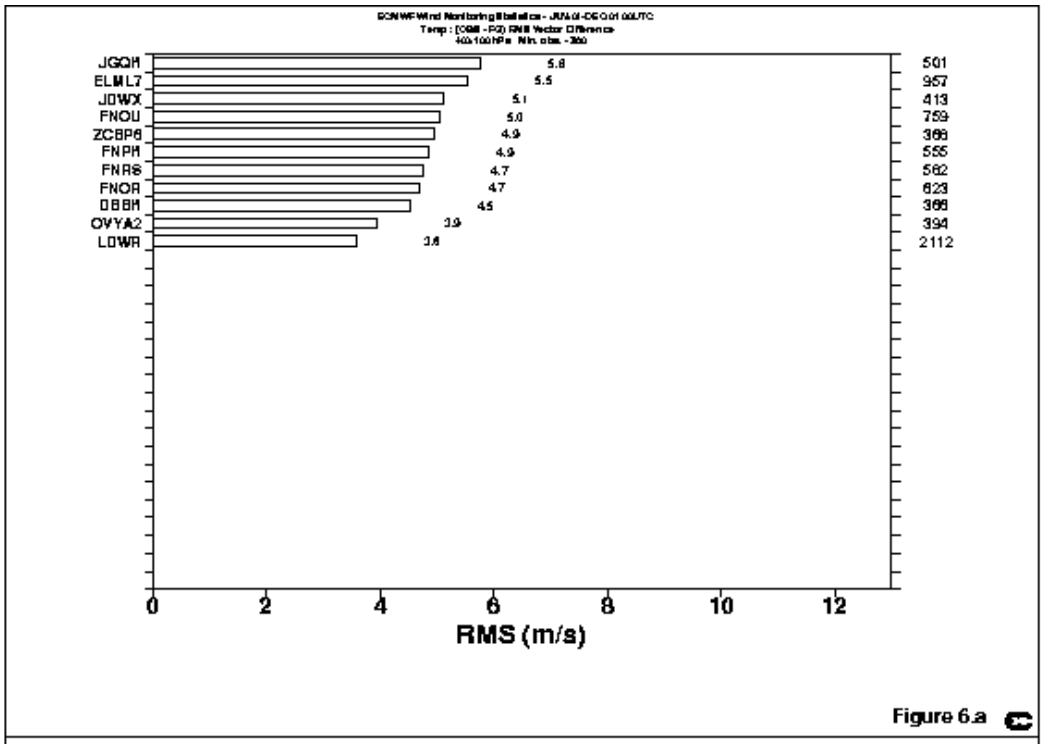


Figure 6.a

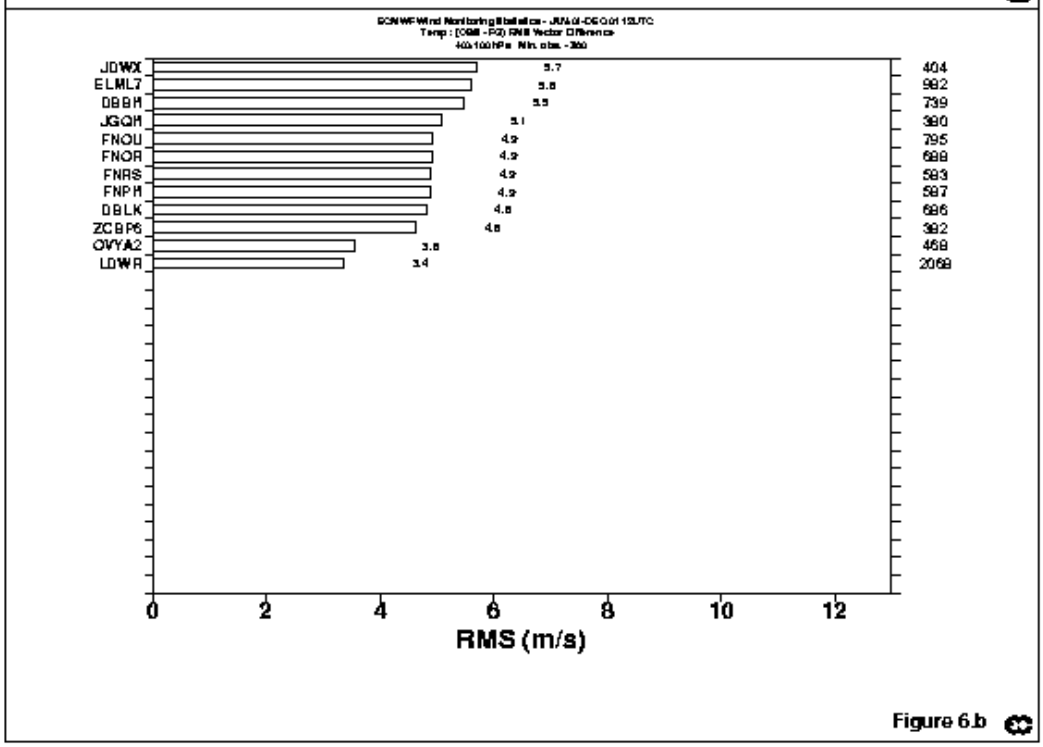


Figure 6.b

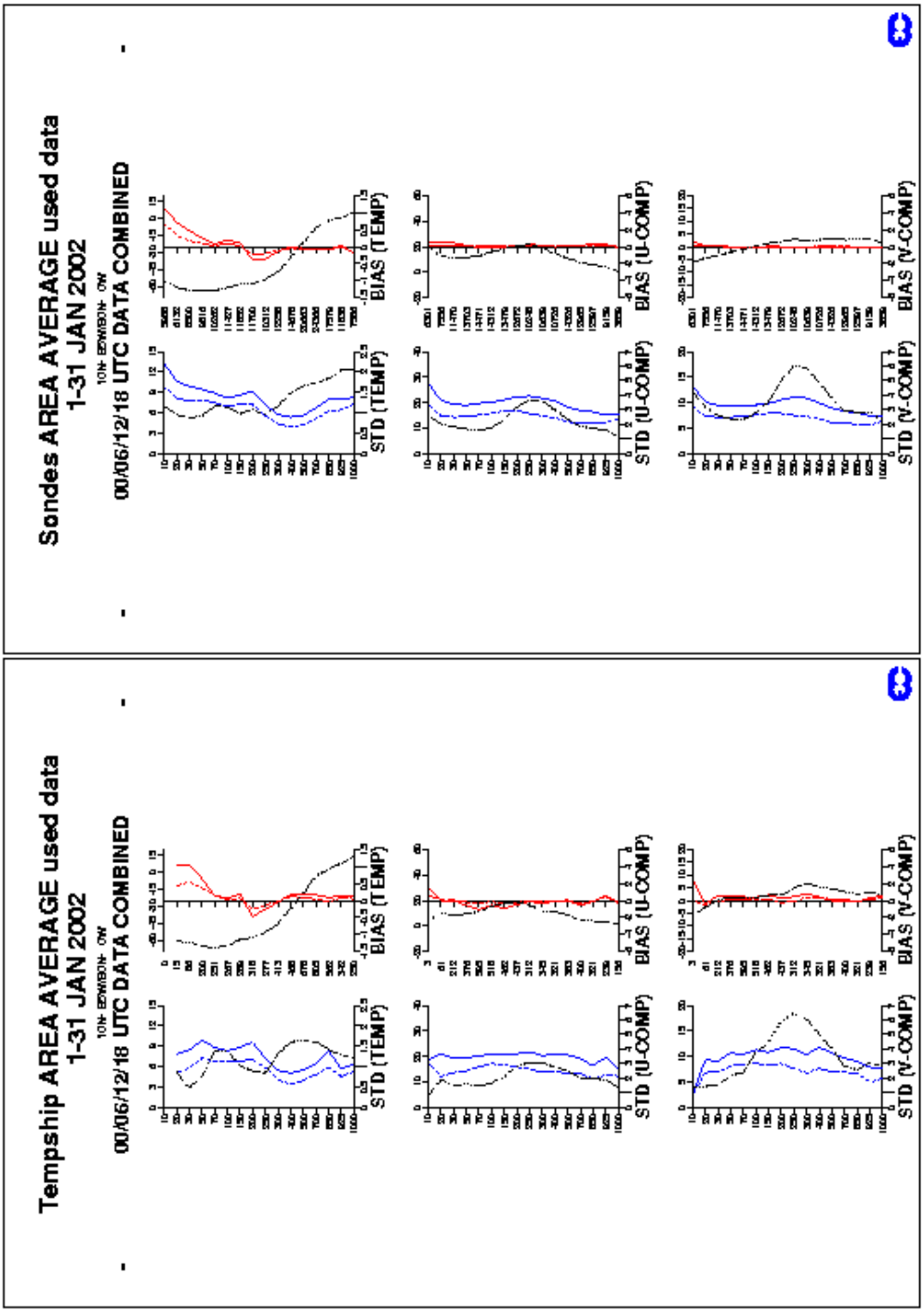

Sondes AREA AVERAGE used data
1-31 JAN 2002
10N-EQWBGN- 0W
00/06/12/18 UTC DATA COMBINED
BIAS (TEMP)
STD (TEMP)
BIAS (U-COMP)
STD (U-COMP)
BIAS (V-COMP)
STD (V-COMP)
Tempship AREA AVERAGE used data
1-31 JAN 2002
10N-EQWBGN- 0W
00/06/12/18 UTC DATA COMBINED
BIAS (TEMP)
STD (TEMP)
BIAS (U-COMP)
STD (U-COMP)
BIAS (V-COMP)
STD (V-COMP)

Figure 7

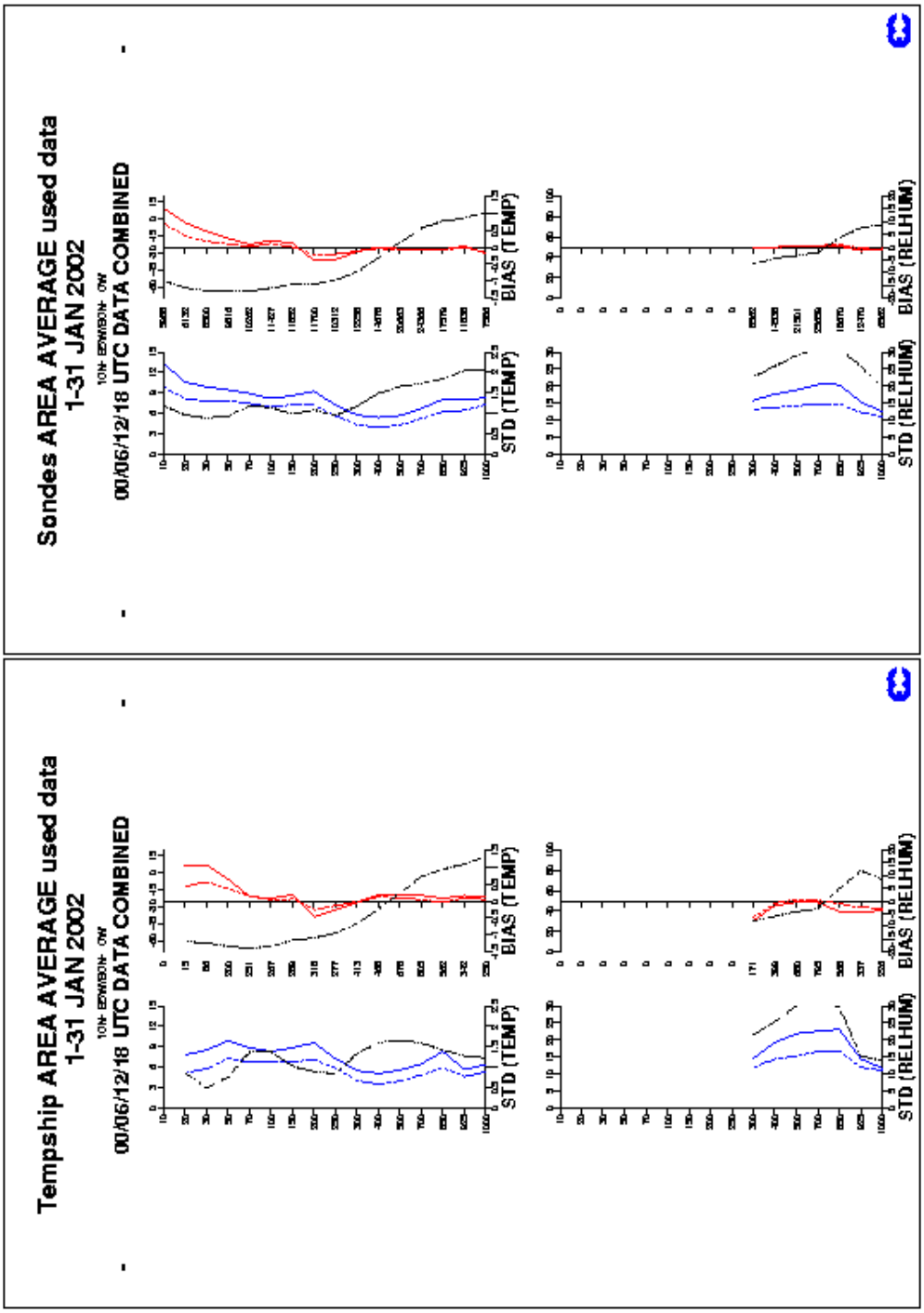
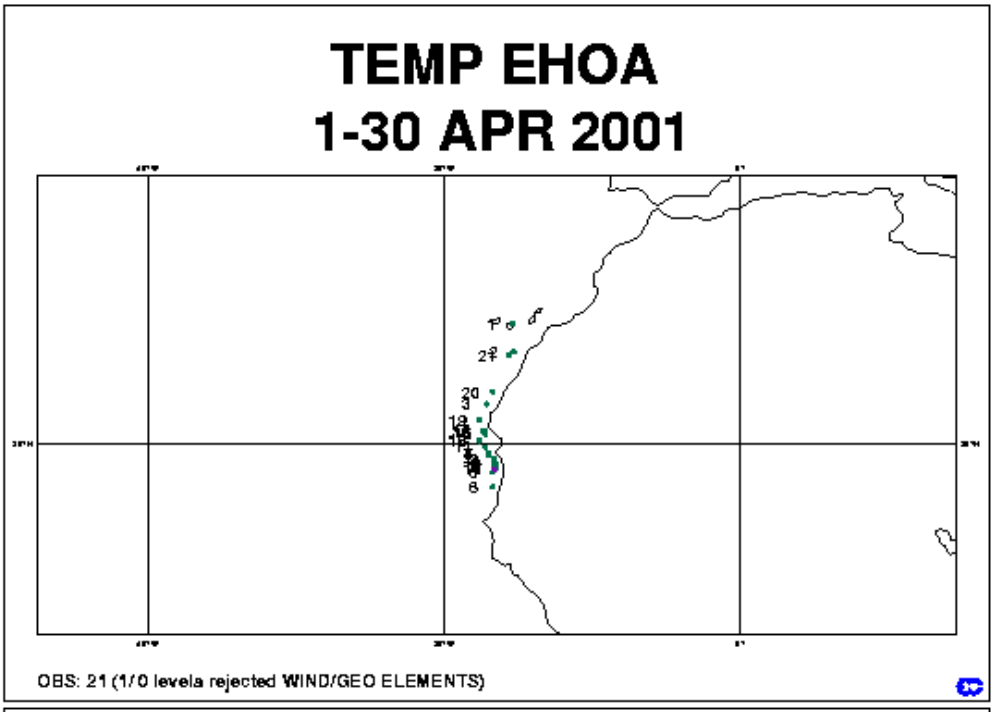

Sondes AREA AVERAGE used data
1-31 JAN 2002
10N- 60W/30N- 0W
00/06/12/18 UTC DATA COMBINED
BIAS (TEMP)
STD (TEMP)
BIAS (RELHUM)
STD (RELHUM)
Tempship AREA AVERAGE used data
1-31 JAN 2002
10N- 60W/30N- 0W
00/06/12/18 UTC DATA COMBINED
BIAS (TEMP)
STD (TEMP)
BIAS (RELHUM)
STD (RELHUM)

Figure 8


TEMP EHOA
1-30 APR 2001
OBS: 21 (1/0 levels rejected WIND/GEO ELEMENTS)

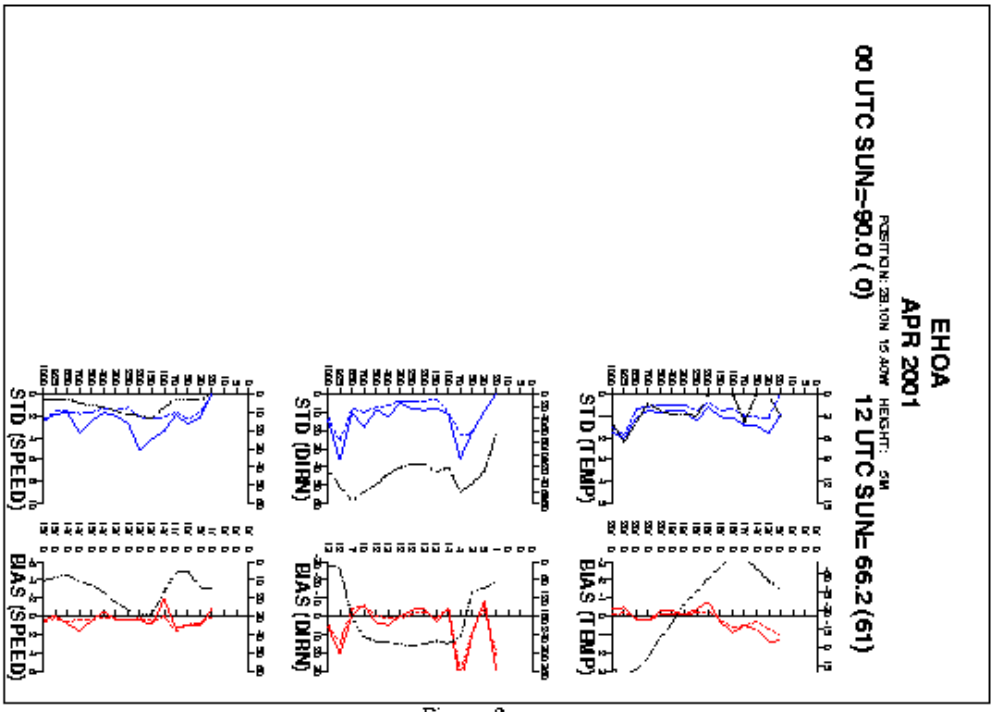

EHOA
APR 2001
00 UTC SUN=-90.0 (0)
12 UTC SUN= 66.2 (61)
STD (SPEED)
STD (DIRN)
STD (TEMP)
BIAS (SPEED)
BIAS (DIRN)
BIAS (TEMP)

Figure 9

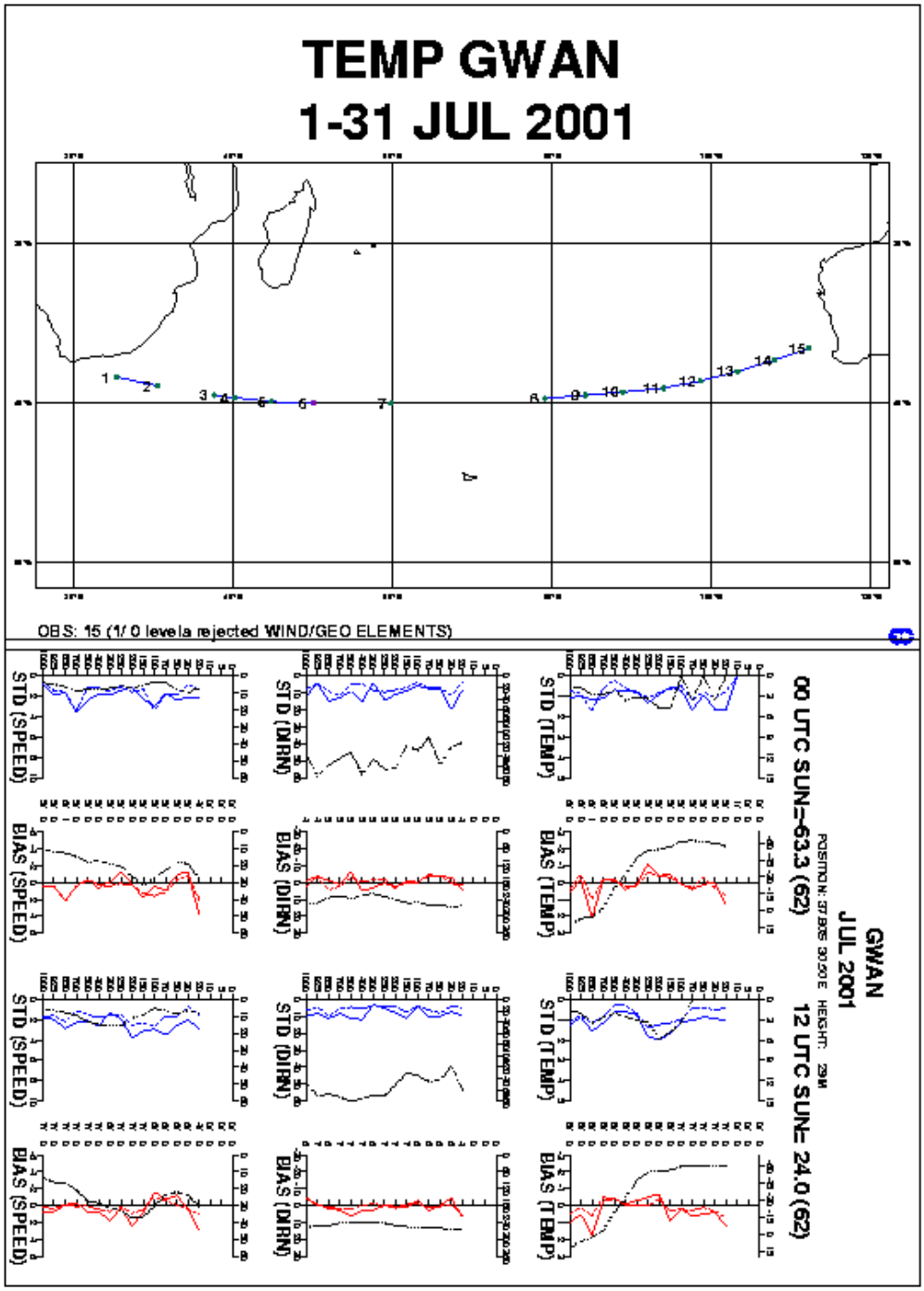

TEMP GWAN
1-31 JUL 2001
OBS: 15 (1/ 0 levels rejected WIND/GEO ELEMENTS)
STD (SPEED)
STD (DIRN)
STD (TEMP)
BIAS (SPEED)
BIAS (DIRN)
BIAS (TEMP)
GWAN
JUL 2001
00 UTC SUN=-63.3 (62)
12 UTC SUN= 24.0 (62)

Figure 10

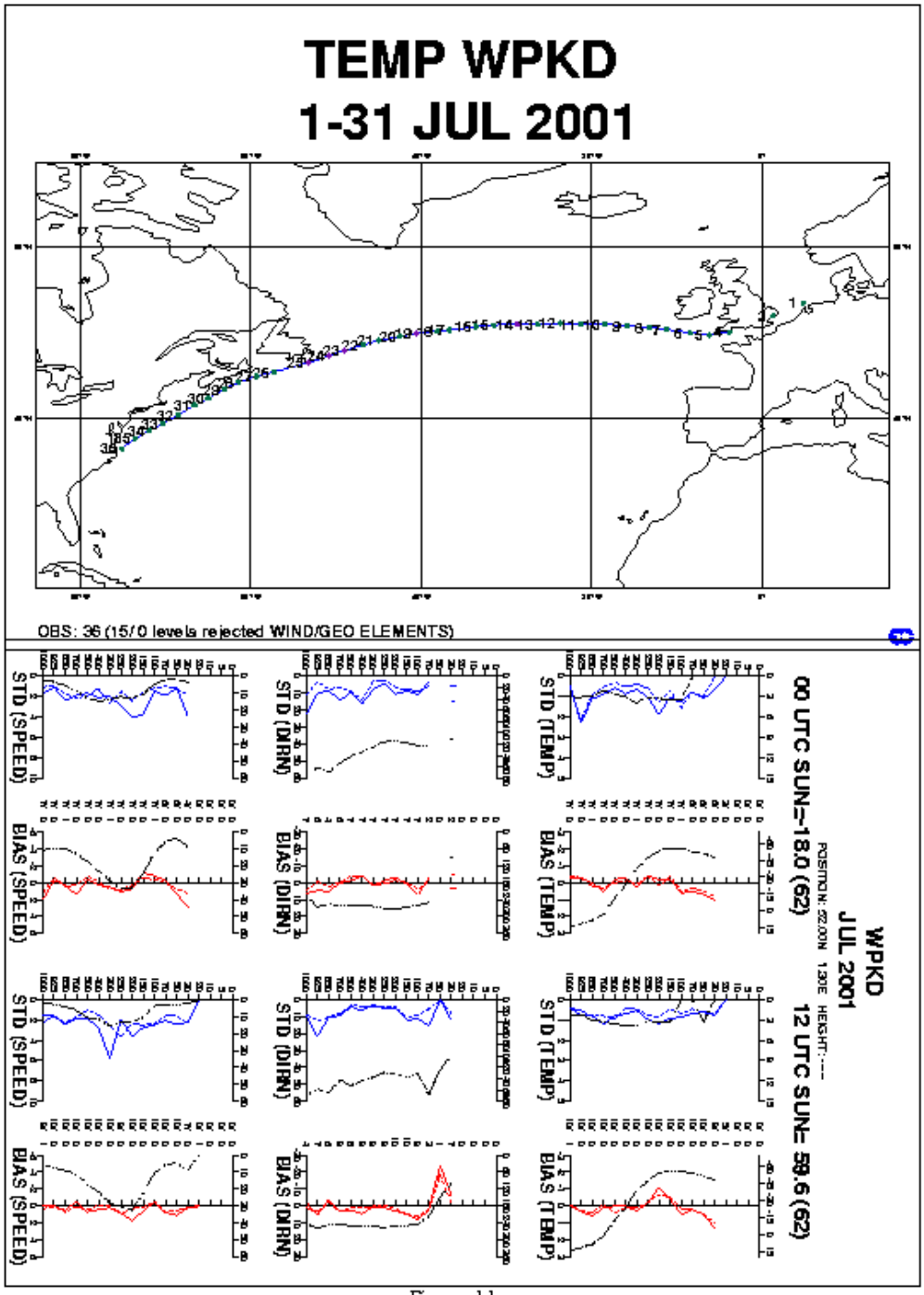

TEMP WPKD
1-31 JUL 2001
OBS: 36 (15/0 levels rejected WIND/GEO ELEMENTS)
STD (SPEED)
STD (DIRN)
STD (TEMP)
BIAS (SPEED)
BIAS (DIRN)
BIAS (TEMP)
WPKD
JUL 2001
POSITION: 52.00N 130E HEIGHT:---
00 UTC SUN=-18.0 (62)
12 UTC SUN= 59.6 (62)

Figure 11

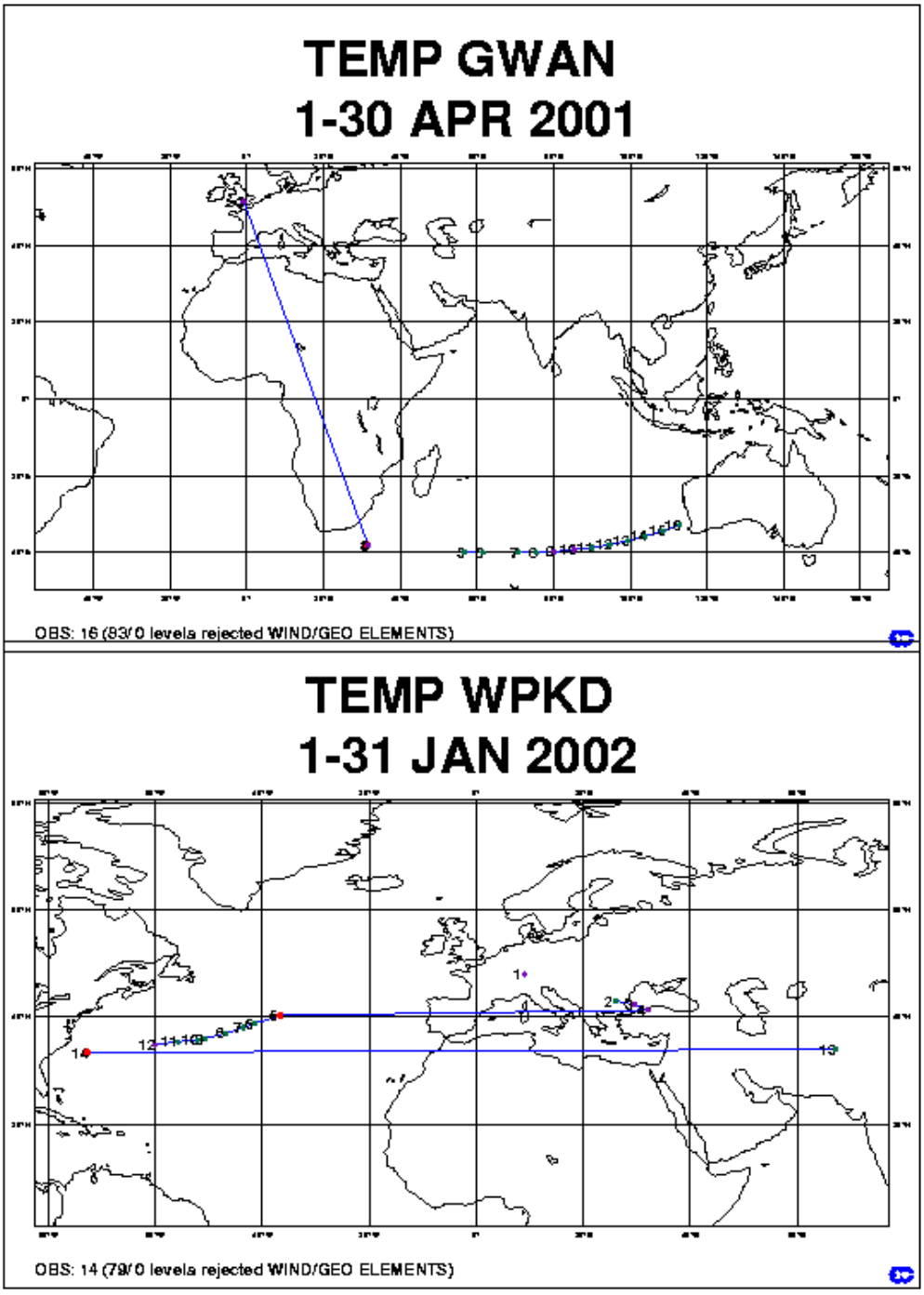

TEMP GWAN
1-30 APR 2001
OBS: 16 (83/0 levels rejected WIND/GEO ELEMENTS)
TEMP WPKD
1-31 JAN 2002
OBS: 14 (79/0 levels rejected WIND/GEO ELEMENTS)

Figure 12

EUMETSAT Status Report

Subject : EUMETSAT Status Report for the 1st Session of SOT

This paper summarises the status of Meteosat operations in the period Jan 2001 – Dec 2001 for the following areas:

1 MTP Spacecraft Status

1.1 Meteosat-5

Meteosat-5 has been used in support of the Indian Ocean Data Coverage service since the formal start of EUMETSAT support to the INDOEX experiment on 1 July 1998. No DCP or MDD services have been provided via Meteosat-5.

The orbital inclination of the satellite at the end of this reporting period was 4.39° and increasing. The remaining hydrazine fuel on board is estimated to be 5.46 kg, of which a 4kg reserve will be required to de-orbit the spacecraft at the end of its useful life. The on-board fuel reserve limit of Meteosat-5 will be re-evaluated towards the end of 2004.

Orbit			**Attitude**	
Inclination	Longitude	E/W Drift	Right Ascension	Declination
4.39852°	63.2106°	-0.0241°	342.356°	85.705°

Meteosat-5 Orbital Parameters for 1st August 2001

The spacecraft configuration status has remained stable since the failure of Power Amplifier 3 in July 1998.

Meteosat-6

Meteosat-6 has been used both as an in-orbit spare at around 9.5°W, to support Rapid Scan trials, and to support validation of the re-engineered Meteosat-6 Correction system (in addition to, or in place of, routine weekly imaging).

The inclination of the satellite at the end of this reporting period was 1.36° and increasing. The remaining hydrazine fuel on board is estimated to be 8.715 kg, of which a 4kg reserve will be required to de-orbit the spacecraft at the end of its useful life. The on-board fuel reserve limit of Meteosat-6 will be re-assessed during 2005.

Orbit			**Attitude**	
Inclination	Longitude	E/W Drift	Right Ascension	Declination
1.3660°	-8.8618°	-0.0095°	332.693°	88.837°

Meteosat-6 Orbital Parameters for 1st August 2001

The spacecraft configuration status remains stable.

From the 1 September the Meteosat-6 Rapid Scanning Service was declared operational.

1.3 Meteosat-7

During the reporting period, Meteosat-7 has been used to provide the nominal 0° operational service.

The routine reception of DCP messages was transferred to Meteosat-6 during Meteosat-7 eclipses when Power Amplifier 2 was de-configured. This was due to the depth of the eclipse and the available battery capacity.

The inclination of the satellite at the end of this reporting period was 0.29° and decreasing. The remaining hydrazine fuel on board is estimated to be 26.757 kg, of which a 4kg reserve will be needed to re-orbit the spacecraft at the end of its useful life. It is estimated that the fuel available is enough to allow nominal orbit and attitude control until the year 2005.

Orbit			**Attitude**	
Inclination	Longitude	E/W Drift	Right Ascension	Declination
0.2911°	0.0193°	0.0144°	247.502°	89.803°

Meteosat-7 Orbital Parameters for 1st August 2001

The spacecraft configuration status remains stable.

The EUMETSAT Council has agreed provision of the MTP service until at least the end of 2003. This end date will be reviewed in summer 2002, operations are feasible until at least 2005.

2 Data Collection System Performance - ASAP

2.1 DCPs on the Internet

EUMETSAT has an on-line DCP service available for DCP operators. This password-protected service allows the operators of DCPs to download their DCP messages from the EUMETSAT web site. In addition the DCP web pages also give monthly DCP reception statistics. This includes the number of transmissions and the maximum and minimum power levels of received DCP messages. A web based system for co-ordinating the IDCS channels was introduced at the end of 1998.

2.2 ASAP DCP Transmissions

Table 1 shows the ASAP DCP transmissions through the Meteosat satellite from January to December 2001. Figures 1 and 2 show this graphically, for the reporting countries.

DCP Address	DCP Name	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
112007C8	D/ASAP 1	188	225	92	232	403	370	377	354	414	334	348	382
112044C2	D/ASAP 2	0	0	80	178	259	270	213	271	0	0	0	0
112057B4	D/ASAP 3	492	112	123	432	205	158	186	111	431	7	16	31
160037D2	D/ASAP 4	88	115	173	59	146	262	221	47	0	0	1	0
1180F11A	F/ASAP 1	105	51	76	28	46	18	168	182	204	169	122	204
11810364	F/ASAP 2	153	170	180	192	179	179	166	205	213	170	171	190
11819606	F/ASAP 3	168	147	196	195	210	197	192	172	199	230	173	153
1181A39C	F/ASAP 4	141	128	41	24	0	4	0	51	77	0	0	1
1183207C	F/ASAP 5	107	97	148	190	193	143	65	122	116	11	0	0
11836376	SPAIN/ASAP 1	10	2	6	49	14	48	34	58	60	17	0	0

Table 1: ASAP DCP transmissions

Figure 1: D/ASAP transmissions

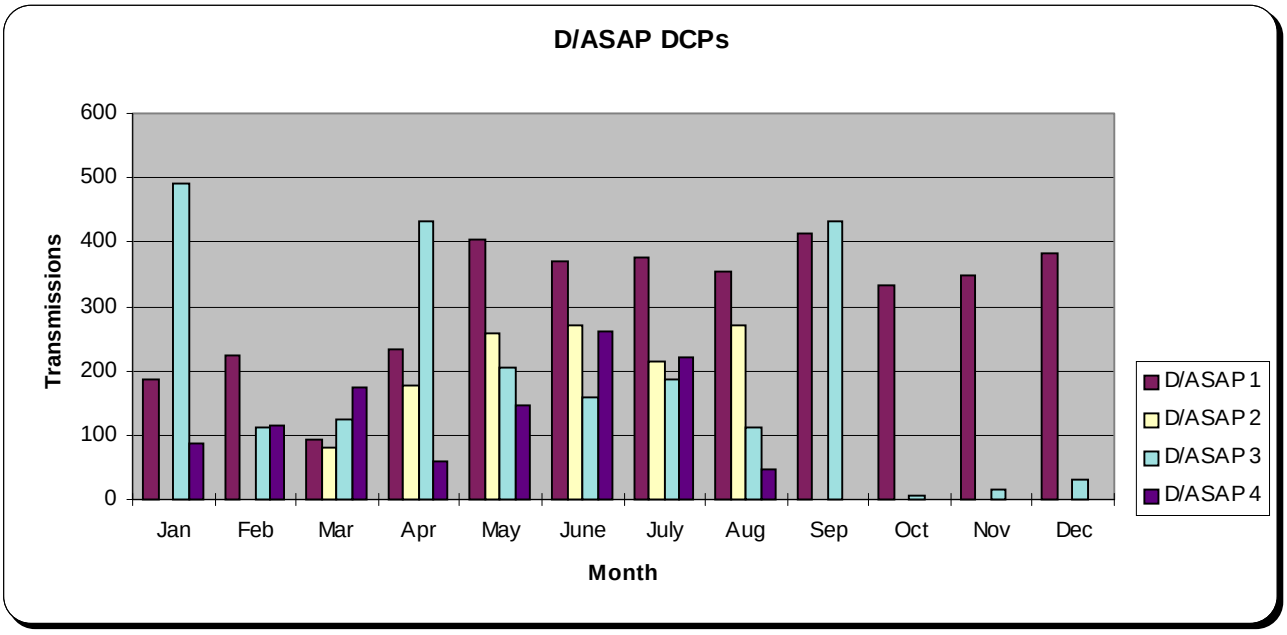
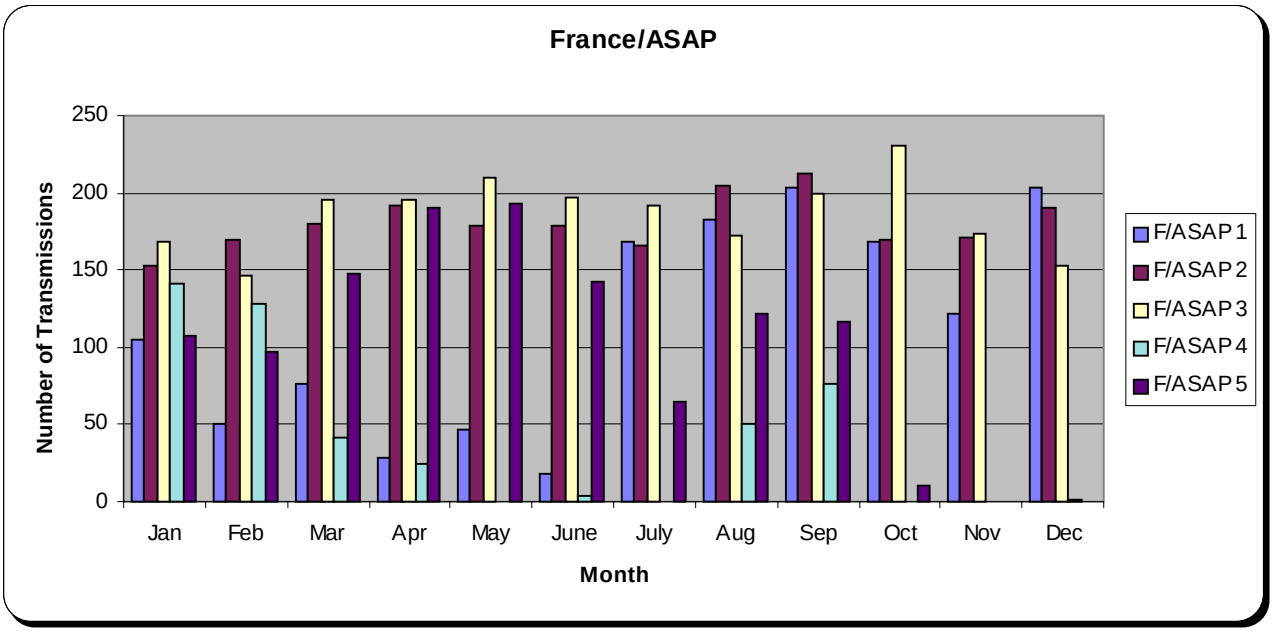


Figure 2: F/ASAP transmissions

2.3 ASAP IDCS Allocations



The following tables give the present allocations for the ASAP DCPs on I12 *and I10*.

ASAP Communications Schedule For Operation On IDCS Channel 12 And 10

Transmission timeslots on International Channel 12 for ASAP use 90-second timeslots composed of a 30-second guard band and 59 seconds of data.

The following are the allocations for the primary first transmission timeslot at 0000 and 1200UTC. The second transmission is 30 minutes later. The backup timeslot is 1 hour after the primary timeslot:

Operator	DCP name	DCP address	Primary Transmission Time For 0000 UTC	
			First Transmission 00.30.00 - 01.00 00	Second Transmission 01.00.00 - 01.30.00
Spain	SPAIN/ASAP 1	11836376	01.00.00 - 01.01.30	01.00.00 - 01.01.30
NOAA	CANADA/ASAP 1	A040056E	01.01.30 - 01.03.00	01.01.30 - 01.03.00
Reserved for future ASAP use	N/A	N/A	00.33.00 - 00.34.30	01.03.00 - 01.04.30
NOAA	CANADA/ASAP 2	A0401618	01.04.30 - 01.06.00	01.04.30 - 01.06.00
Germany	D/ASAP 1	112007C8	00.36.00 - 00.37.30	01.06.00 - 01.07.30
Germany	D/ASAP 2	112044C2	00.37.30 - 00.39.00	01.07.30 - 01.09.00
Germany	D/ASAP 3	112057B4	00.39.00 - 00.40.30	01.09.00 - 01.10.30
Germany	D/ASAP 4	160037D2	00.40.30 - 00.42.00	01.10.30 - 01.12.00
NOAA	CANADA/ASAP 3	A0402382	01.13.30 - 01.15.00	01.13.30 - 01.15.00
Reserved for future ASAP use	N/A	N/A	00.45.00 - 00.46.30	01.15.00 - 01.16.30
NOAA	CANADA/ASAP 4	A04030F4	01.16.30 - 01.18.00	01.16.30 - 01.18.00
France	F/ASAP 1	1180F11A	00.51.00 - 00.52.30	01.21.00 - 01.22.30
NOAA	CANADA/ASAP 5	A0404664	01.19.30 - 01.21.00	01.19.30 - 01.21.00
France	F/ASAP 2	11810364	00.52.30 - 00.54.00	01.22.30 - 01.24.00
France	F/ASAP 3	11819606	00.54.00 - 00.55.30	01.24.00 - 01.25.30
France	F/ASAP 4	1181A39C	00.57.00 - 00.58.30	01.27.00 - 01.28.30
Reserved for future ASAP use	N/A	N/A	00.55.30 - 00.57.00	01.25.30 - 01.27.00
France	F/ASAP 5	1183207C	00.48.00 - 00.51.30	01.18.00 - 01.19.30
Reserved for future ASAP use	N/A	N/A	00.58.30 - 01.00.00	01.28.30 - 01.30.00

Operator	DCP name	DCP address	Backup Transmission Time For 0000 UTC	
			First Transmission 01.30.00 - 01.30 00	Second Transmission 02.00.00 - 02.30.00
Spain	SPAIN/ASAP 1	11836376	02.15.00 - 02.16.30	02.25.30 - 02.27.00
NOAA	CANADA/ASAP 1	A040056E	02.01.30 - 02.03.00	02.01.30 - 02.03.00
Reserved for future ASAP use	N/A	N/A	01.33.00 - 01.34.30	02.03.00 - 02.04.30
NOAA	CANADA/ASAP 2	A0401618	02.04.30 - 02.06.00	02.04.30 - 02.06.00
Germany	D/ASAP 1	112007C8	01.36.00 - 01.37.30	02.06.00 - 02.07.30
Germany	D/ASAP 2	112044C2	01.37.30 - 01.39.00	02.07.30 - 02.09.00
Germany	D/ASAP 3	112057B4	01.39.00 - 01.40.30	02.09.00 - 02.10.30
Germany	D/ASAP 4	160037D2	01.40.30 - 01.42.00	02.10.30 - 02.12.00
NOAA	CANADA/ASAP 3	A0402382	02.13.30 - 02.15.00	02.13.30 - 02.15.00
Reserved for future ASAP use	N/A	N/A	01.45.00 - 01.46.30	02.15.00 - 02.16.30
NOAA	CANADA/ASAP 4	A04030F4	02.16.30 - 02.18.00	02.16.30 - 02.18.00
France	F/ASAP 1	1180F11A	01.51.00 - 01.52.30	02.21.00 - 02.22.30
NOAA	CANADA/ASAP 5	A0404664	02.19.30 - 02.21.00	02.19.30 - 02.21.00
France	F/ASAP 2	11810364	01.52.30 - 01.54.00	02.22.30 - 02.24.00
France	F/ASAP 3	11819606	01.54.00 - 01.55.30	02.24.00 - 02.25.30
France	F/ASAP 4	1181A39C	01.57.00 - 01.58.30	02.27.00 - 02.28.30
Reserved for future ASAP use	N/A	N/A	01.55.30 - 01.57.00	02.25.30 - 02.27.00
France	F/ASAP 5	1183207C	01.48.00 - 01.49.30	02.18.00 - 02.19.30
Reserved for future ASAP use	N/A	N/A	01.58.30 - 02.00.00	02.28.30 - 02.30.00

3 Future programs status

3.1 METEOSAT Second Generation

3.1.1 Spacecraft
The MSG-1 launch is planned for July 2002 with the launch of MSG-2 not sooner than 18 months later.

3.1.2 Ground Segment
Integration and Operational Validation of the MSG facilities is ongoing. The System Validation Test 2 was completed in January 2002.

The delivery of the Image Processing System has been delayed which will impact on the start of the operational service. This is now scheduled for mid 2003.

3.1.3 Satellite Application Facilities
- Nowcasting (E,F,S)
  - Pre-operational phase planned to start March 2002
- Ocean and Sea-Ice (F, DK, S, N, NL)
  - Pre-operational phase planned to start July 2002
- Ozone (SF, NL, B, D, DK, F, GR)
- Total column Ozone from MSG has been developed and will be produced by EUMETSAT from Day-1 of MSG

3.2 EUMETSAT Polar System

3.2.1 Spacecraft
Industrial activities are progressing. The METOP-1 launch planned for July 2005

3.2.2 Ground segment
Core ground segment kicked off, other elements are in procurement process (ITT)

3.2.3 Satellite Application Facilities
4 SAFs have been kicked off:
- NWP (UK, ECMWF, NL, F)
  - Climate (D, B, SF, NL, S)
- GRAS (DK as host)
  - Land Applications (P as host)

4 Transition to MSG operations

During commissioning MSG-1 will be at a position of around 10°W. Meteosat-7 will remain on the operational position of 0° and Meteosat-6 will remain the in-orbit stand-by at around 9°W.

At end of commissioning a swap of satellite positions is required. MSG-1 will become the prime mission satellite at 0° and Meteosat-7 will then be positioned at around 9°W.

Re-pointing of MTP user station antennas including DCP Reception Stations will be necessary to continue to receive MTP data.

DCP operators will be able to receive DCP data directly from the MTP satellite until the end of MTP operations. Current DCP allocations will be also transferred to MSG, with data available on the GTS and the Internet as soon as the spacecraft is declared operational. The DCP data will also be available from MSG directly using a Low Rate User Station (LRUS).

ASAP MONITORING REPORT
YEAR 2001

1. GENERAL COMMENTS.

This document describes the end-to-end monitoring of the ASAP data dissemination performance which was proposed by Meteo-France.

This end-to-end monitoring was applied to all TEMP-SHIP messages received in LFPW (Toulouse) from EGRR (Bracknell) and EDZW (Offenbach). Like for the last years, part A of messages was analysed from the syntactic point of view. When the original data were available, digit-to-digit comparison was done. Only messages with obviously erroneous ship's call sign were excluded.

2. SHIP 'S CALL SIGN ANALYSED.

Country	Call sign	Accepted messages number	Country	1.1.1.1.1.1.1.1 all sign	Accepted messages number
Germany	DDBH DBLK DASAP3 ELML7	1990 181 19 1960	Great Britain	ZCBP6 GDLS	190 17
			USA	WTEC WPKD	136 189
Denwark	OXTS2 OVYA2 OXYH2	96 279 203	Eumetnet	SWJS	228
France Experiment	FNOR FNOU FNPH FNRS FNCM	884 1156 434 1107 76	Iceland Sweden Norway	V2XO SMLQ LDWR	80 20 1383
Spain	EHOA	67	Eumetsat	HAM2	8
Japan	JIVB. JNSR. JDWX. JGQH. JDSS JCCX JPBN	207 117 181 172 9 158 26	Unidentified call sign	SHIP XXXX GWAN	8 23 54

Table 1 : Ship's call sign received in LFPW 2001

From the whole of processed messages, we get a total of call signs accepted for analysis. This is summarised in Table 1, with, if possible the originating country of the ship.

Some spurious call sign were taken in account, as a correspondence table used in LFPW enables as to link a spurious call sign to a well know one. The corresponding message is then studied, and gives a supplementary information on telecommunications system reliability. It is clear that the telecommunication system may corrupt indifferently the call sign and the message.

3. THE MONITORING

3.1 Origin of messages

For the statistic presented here, we have used the messages issued from the 32 ships with call signs registered as OK in Table 1.

From January 2001 until December 2001, this amounts up to 11282 messages, *44.6%* of them coming from EGRR and *55.3%* from EDZW. Duplication of origins is mainly due to ships operated by France and Germany.

Country	EGRR	EDZW
D	X	X
SP		X
F	X	X
JP	X	
DK		X
GB	X	
S		X
USA	X	

Table 2 **: Origin of messages, according to ship's Country**
(D = Germany, SP = Espagne,F = France, JP = Japan, DK = Denmark,
GB = Great Britain, S = Sweden)

3.2 Global system performance

The Table 3 describes the global results of the syntactic check for the messages with agreed call signs, the headers of columns having the following meaning:

A number of message received from EGRR and EDZW;
N number of messages NIL;
B number of message compared with original (B=C+D)
C number of message different from original
D number of message identical to original;
B2 number of message syntactically checked if original non available (B2=C2+D2);
C2 number of message syntactically rejected;
D2 number of message syntactically good;
T number of good message including duplicates;

T% percentage of good reception (T%=100*T/A);
U number of good and non-duplicated messages.

MONTH	ORIGIN	A	N	B	C	D	B2	C2	D2	T	T%	U
Janu-01	**egrr**	468	0	238	41	197	230	4	226	423	90.4	330
	edzw	447	65	183	100	83	199	19	180	263	58.8	228
	total	915	65	421	141	280	429	23	406	686	75.0	501
Febr-01	**egrr**	368	0	247	65	182	121	0	121	303	82.3	216
	edzw	360	59	133	68	65	168	16	152	217	60.3	188
	total	728	59	380	133	247	289	16	273	520	71.4	408
Mar-01	**egrr**	302	0	210	65	145	92	1	91	236	78.2	166
	edzw	316	32	100	38	62	184	2	182	244	77.2	216
	total	618	32	310	103	207	276	3	273	480	77.7	383
Apr-01	**egrr**	378	0	198	11	187	180	8	172	359	95.0	250
	edzw	490	94	176	67	109	220	17	203	312	63.4	265
	total	868	94	374	78	296	400	25	375	671	77.3	502
May-01	**egrr**	384	0	203	55	148	181	10	171	319	83.1	210
	edzw	536	120	181	72	109	235	24	211	320	59.7	264
	total	920	120	384	127	257	416	34	382	639	69.5	431
June-01	**egrr**	481	0	200	58	142	281	5	276	418	86.9	302
	edzw	492	112	152	50	102	228	18	210	312	63.4	257
	total	973	112	352	108	244	509	23	486	730	75.0	507
July-01	**egrr**	460	0	211	15	196	249	1	248	444	96.5	332
	edzw	495	120	135	62	73	240	18	222	295	59.6	252
	total	955	120	346	77	269	489	19	470	739	77.4	558
Aug-01	**egrr**	349	0	274	17	257	75	9	66	323	92.6	205
	edzw	530	124	175	70	105	231	37	194	299	56.4	254
	total	879	**124**	449	87	362	306	46	260	622	70.8	408
Sept-01	**egrr**	524	0	232	18	214	292	12	280	494	94.3	266
	edzw	818	304	209	80	129	305	36	269	398	48.7	286
	total	1342	304	441	98	343	597	48	549	892	66.5	460
Octo-01	**egrr**	542	0	360	19	341	182	0	182	523	96.5	326
	edzw	686	238	254	94	160	194	5	189	349	50.9	275
	total	1228	238	614	113	501	376	5	371	872	71.0	534
Nove-01	**egrr**	445	0	220	15	205	225	7	218	423	95.1	318
	edzw	560	178	176	89	87	206	5	201	288	51.4	246
	total	1005	178	396	104	292	431	12	419	711	70.7	544
Dec-01	**egrr**	336	0	225	4	221	111	0	111	332	98.8	219
	edzw	515	146	175	84	91	194	11	183	274	53.2	243
	total	851	146	400	88	312	305	11	294	606	71.2	436
Total	**egrr**	5037	0	2818	383	2435	2219	57	2162	4597	91.3	3140
	edzw	6245	1592	2049	874	1175	2604	208	2396	3571	57.2	2974
	total	11282	1592	4867	1257	3610	4823	265	4558	8168	72.4	5672
average	**egrr**	419.75	0	234.8	31.9	202.9	184.9	4.8	180.2	383.0	91.2	261.7
	edzw	520.42	132.7	170.8	72.8	97.9	217.0	17.3	199.7	297.6	57.2	247.8
	total	940.16	132.7	405.6	104.8	300.8	401.9	22.1	379.8	680.7	72.4	472.7

Table 3. Bracknell and Offenbach statistics from January 2001 to December 2001.

Call Sign	A	N	B	C	D	B2	C2	D2	T	T%	U	P
DASAP	19	0	0	.	.	19	4	15	15	78	6	?
DDBH	1990	1480	355	241	114	155	40	115	229	11	138	296
DBLK	181	0	0	.	.	181	51	130	130	71	128	?
ELML7	1960	112	1275	367	908	573	107	466	1374	70	624	353
EHOA	67	0	0	.	.	67	4	63	63	94	63	?
FNCM	76	0	0	.	.	76	0	76	76	100	76	?
FNOR	884	0	876	239	637	8	6	2	639	72	267	314
FNOU	1156	0	1152	271	881	4	3	1	882	76	327	339
FNPH	434	0	427	51	376	7	4	3	379	87	267	324
FNRS	1107	0	1015	115	900	92	6	86	986	89	334	312
JCCX	158	0	0	.	.	158	5	153	153	96	149	?
JDWX	181	0	0	.	.	181	1	180	180	99	178	?
JDSS	9	0	0	.	.	9	0	9	9	100	8	?
JGQH	172	0	0	.	.	172	5	167	167	97	162	?
JIVB	207	0	0	.	.	207	0	207	207	100	186	?
JNSR	117	0	0	.	.	117	1	116	116	99	115	?
JPBN	26	0	0	.	.	26	1	25	25	96	25	?
LDWR	1383	0	0	.	.	1383	4	1379	1379	99	1375	?
OVYA2	279	0	0	.	.	279	3	276	276	98	275	?
OXTS2	96	0	0	.	.	96	0	96	96	100	94	?
OXYH2	203	0	0	.	.	203	2	201	201	99	198	?
ZCBP6	190	0	0	.	.	190	0	190	190	100	190	?
WTEC	136	0	0	.	.	136	1	135	135	99	131	?
WPKD	189	0	0	.	.	189	0	189	189	100	187	?
GDLS	17	0	0	.	.	17	0	17	17	100	17	?
V2XO	80	0	0	.	.	80	0	80	80	100	80	?
SMLQ	20	0	0	.	.	20	20	0	0	.	0	?
SWJS	228	0	0	.	.	228	0	228	228	100	206	?
HAM2	8	0	0	.	.	8	0	8	8	100	2	?
SHIP	8	0	0	.	.	8	0	8	8	100	8	?
XXXX	23	0	0	.	.	23	17	6	6	26	3	?
GWAN	54	0	0	.	?	54	0	54	54	100	51	?

Table 4. **Global Statistics for each accepted call sign from January to December 2001**

During these twelve monthes, LFPW received a total amount (T) of 8168 usable messages, representing *72.4 %* of the income. The significant percentage of NIL messages was *14%*. This value is due to the two german ships DDBH and ELML7.

Nevertheless, once the duplicates put aside, we only get 5672 really used messages (U) representing *50.3 %* of the income.

The two percentages 100*T/A or 100*U/A are significantly lower than years's ones.

The evolution of the percentage of correct messages for the period is illustrated in the figure below:

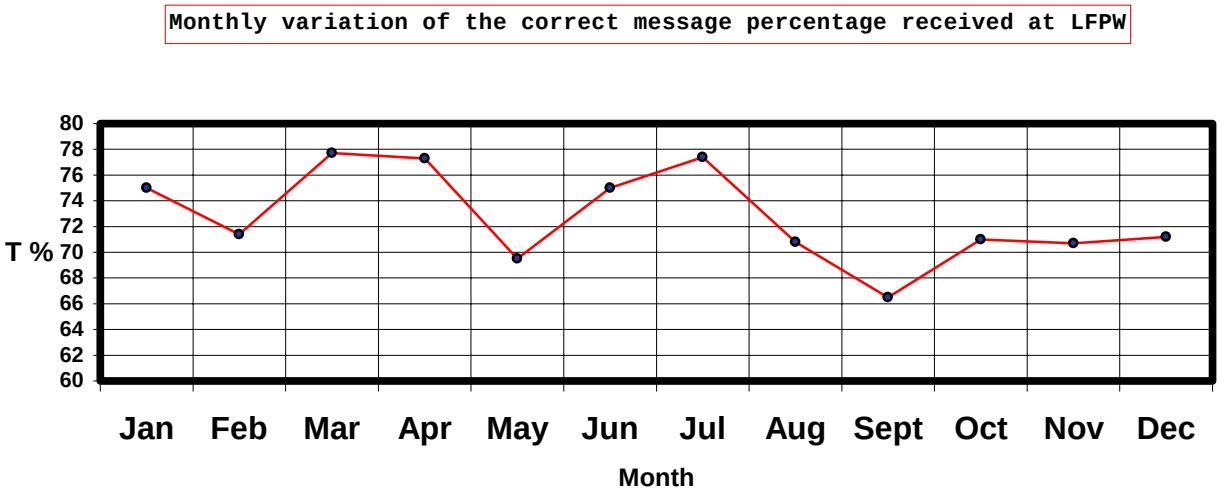


Figure 1 : monthly variation of the correct message percentage (T%) received at LFPW

On this graph, we can see that T% fluctuates about the average value *72 %*. In regard of last year 2000, T% has gone down *12%* (relative error)

The messages can be divided into two populations:

a) 4867 messages compared to an original, 25.8% (C/B) of them being corrupted during the transmission.

b) 4823 messages subject to syntactic check , only *5.5 %* (C2/B2) of them found as incorrect.

The telecommunication system may interchange characters in the messages without changing the general syntax.

The percentage (C/B) of messages corrupted during the transmission increased to *39%* (relative error) in comparison with last year 2000.

On a monthly average, LFPW received a total of 472 uncorrupted and unduplicated messages, corresponding approximately to 14 messages for each of the 32 call signs.

3.3 Ships with available originals

We studied separately the sample of messages for which the ship's observation programme was available. This sample includes 7531 messages which global analysis is given in Tables 5 and 6. In those tables headers are completed as follows, as compared to Table 3:

P Ship's programme;

U/P This is the final **« system-efficiency index »**, giving the TEMP ratio of all TEMP messages arrived to LFPW uncorrupted and non-duplicated TEMP produced by SHIPS. If this index is low, the system generates losses.

U/A This ratio can be interpreted as measuring **the power of the telecommunication system to generate non corrupted duplicates of original messages**. Values close to 100% indicate no duplications and a high quality transmission.
Values lower than 50% highlight an important duplication rate and a poor quality transmission.

C/B Percentage of messages rejected by the analysis

Call Sign	A	N	B	C	D	B2	C2	D2	T	T%	U
FNOR	884	0	876	239	637	8	6	2	639	72	267
FNOU	1156	0	1152	271	881	4	3	1	882	76	327
FNPH	434	0	427	51	376	7	4	3	379	87	267
FNRS	1107	0	1015	115	900	92	6	86	986	89	334
DBBH	1990	1480	355	241	114	155	40	115	229	11	138
ELML7	1960	112	1275	367	908	573	107	466	1374	70	426
TOTAL	7531	1593	5100	1284	3816	839	166	673	4489	59.6	1759

Table 5: Global statistics from January 2001 to December 2001 for ships with available programme.

Call Sign	U	P	U/P(%)	U/A(%)	%EGRR	%EDZW	C/B%	C2/B2%
FNOR	267	314	85	30.2	53.7	45.9	27.3	75.0
FNOU	327	339	96.5	28.3	50.0	50.0	23.5	75
FNPH	267	324	82.4	61.5	30.4	17.5	11.9	57.1
FNRS	334	312	100	30.2	58.5	41.0	11.3	6.5
DBBH	138	296	46.6	6.9	20.2	79.2	67.9	25.8
ELML7	426	353	100	21.7	54.4	45.3	28.8	18.7
TOTAL	1759	1938	90.8	23.4	43.8	52.8	25.2	19.8

Table 6: System effiency for ships with available programme

67.7 % of these 7531 messages, were compared to originals. Out of these only *74.8 %* (100*D/B) are identical to one original.

The global system efficency (U/P) appears as high with *91 %* of original messages able to be used at LFPW.

Nevertheless we note that the high degree of duplication coming from French and German ships leads to a very low coefficient efficiency *23.4%* of usable messages as compared to the input to LFPW.

Last year's value for the same ships were *31%*.
The rather good reception (T%) for these ships is *70 %*, rising up to *89 %* if we exclude the ship DDBH.

3.4 Ships without available originals.

Unfortunately this year the Danish ships are without available programme.
Out of all the messages received at LFPW, we also have studied the 4127 for which we had no originals (Table 7).

Almost certainly the ships whose call sign are in Table 7, apart DASAP3, DBLK, HAM2 and the unidentified XXXX must not duplicate their messages.

From this *syntactic point of view* the score of the system (U/A) amounts up to *5 %* if we exclude these four ships.
This result is about above the one of the comparison with the original (previous result), which is far more stringent than the syntactic comparison.

Call Sign	% U/A	% egrr	% edzw
DASAP3	31.6	0	100
DBLK	70.7	5.0	95.0
EHOA	94.0	0	100
FNCM	100	0	0
JCCX	94.3	100	0
JDWX	98.3	100	0
JDSS	88.9	100	0
JGQH	94.2	100	0
JIVB	89.9	100	0
JNSR	98.3	100	0
JPBN	96.0	100	0
LDWR	99.4	0	100
OXYH2	97.5	0	98.5
OVYA2	98.6	59.9	40.1
OXTS2	97.9	0	99
ZCP6	100	100	0
WTEC	96.3	100	0
WPKD	98.9	100	0
GDLS	100	100	0
V2XO	100	100	0
SMLQ	0	0	100
SHIP	100	0	0
SWJS	90.4	10.1	81.6
HAM2	25	0	100
XXXX	13.0	0	26.1
GWAN	94.4	100	0

Table 7 Statistics from January 2001 to December 2001
for ships without available programme.

4. CONCLUSION

- The percentage of good reception T % for ships with available programme, has undergone a decrease of 8 % in comparison with year 2000.

- For the ships operated by France or Germany, which rate of duplication is high, the telecommunication system percentage (100*U/A) and the percentage of good reception T%, are lower than these of last year, but the global system efficiency (100*U/P) remains about the same.

- It is interesting to note that the best scores are achieved by ships which make no duplication of origins.

A simple guide to operating the DigiCORAIII programme for weather balloons.

By Captain Gordon Mackie

There are several operating instructions available for using this programme, all of which have proven to be far too complicated and confusing for the budding meteorologist/ seafarer. By following this step by step guide there should be every success in the launching of future balloons.

1 Located on the portside maindeck are the helium bottles for filling the balloons, before opening the bottle valve make sure that the valves on the bridge wings are shut. Only open the bottle valve, the regulating valve does not need to be touched. After each balloon launch make sure the bottle valve is shut as there are leaks in the line between the upper deck and bridge wings.

2 Connect the length of hosing on the appropriate bridge wing and open the valve, give it a quick test to make sure there is pressure in the line.

3 Set up the balloon table, in a position on the bridge wing away from any obstruction, which may burst the balloon upon launching. One balloon launch ended in an embarrassing cloud of hot air (helium) when the balloon came in contact with the ships' structure. (See picture).

4 Take a balloon from the locker in the pilots cabin, they are packaged in small brown boxes. Remove the balloon from its packaging and lay under the blanket. Connect the hose and tie off with a piece of string to ensure the balloon can be filled. The Velcro also needs to be tied down as it is too weak to stay in place.

5 You can now leave the launch site and take a Sonde from the radio room; these can be found in the large cardboard box and are in a gold packaging.

6 Using the Met computer located port aft of the bridge, open up the DigiCORAIII programme. Once the programme has started click on **"Tools"**. Then select **"Station settings"** and then **"Station position"**. A screen will appear stating that the system is starting up. Don't be fooled though as this is just the programme locating and then locking onto a GPS position. After a couple of minutes another screen will appear showing GPS status, check the position against the ships information and if it matches click **"ok"**. Another screen will appear prompting you to prepare the radio sonde, don't as after a few seconds the programme will shut its self down, it is supposed to do this so don't worry.

7 Once the programme has shut down click on **"New sounding"**, the programme will start up again missing out the GPS part as this is now up and running. If for any reason you come completely out of the DigiCORAIII programme then you will need to find the GPS position again by going through station settings.

8 As soon as the screen appears that prompts you to fill the battery, you can now remove the sonde from its packaging. Open up both sides of the sonde and remove the tickertape and battery. Bend over the probe leaving the plastic cover on. Straighten the aerial.

9 Tear off the white printed end of the ticker tape, remove the sticker and place this in your soundings log. This is important, as every sonde must be accounted for, even if the launch is unsuccessful. Remove the battery from its packaging with the connectors out of the way place the battery back into its packaging and immerse in water for 4 minutes. The battery should be immersed by at least one centimetre.

10 Feed the ticker tape through the reading device, which is located underneath the monitor, the tape should be fed through in a quick, even pace. The tape is fed through with the line of small dots on the right; the heavy type should be facing down. If the reader fails to register the tape try again until it does. After a successful attempt a screen will appear asking you to select the sonde type, highlight **"RS80-15G"** and then click **"next"**.

11 Once the battery has been immersed for 4 minutes, pour out the water and then remove the battery. Give the battery a squeeze to remove the excess water. The battery can now be connected up and the battery compartment closed and taped up, leave the probe out with the plastic capsule still in place.

12 The next screen to appear is the **"Radio control"** screen, maximize the entire page so that you can see all of the menus. Next click on the display that says **'Audio off"** and select the **"PTU to Audio"**, you will now here a warbling sound. Click on the **"Sweep"** tab and the radio control will run through the spectrum until it finds the frequency of the sonde. The strength of the signal needs to be into the fifth bar, the bars are coloured green in the strength box.

13 Click on the **"Ascent Status"** miniview pane, which is the little box to the left of the screen above the box with a kind of green heart monitor wave on it. You are now into the **"Ground checks"** screen. Take of the plastic capsule from the sonde and place the sonde into the stabilization chamber. Click on **"next"** and wait for conditions to stabilize inside the chamber, the screen will prompt you. When prompted type in the readings, which from the chamber you will find in a box on the right of the screen. If these readings don't seem right, for example a humidity reading of greater than 100%, then the sonde is faulty and you will need to start a new sounding. The sonde could be stabilized without the stabilization chamber on the bridge, but we don't have the equipment onboard to do this, as a hygrometer is needed.

14 You will now be prompted to enter ground checks, don't do this yet as these checks are for stabilizing the sonde from its launch position and this can be done after the balloon has been launched. You can now go out onto the bridge wing and fill the balloon with helium. As a guide fill the balloon for 1.5 minutes; don't worry if it looks as though it is getting too big. This has been done many times and has been proven to work. Once filled to the required size, tie up the end of the balloon and remove the hosing, The sonde can now be removed from the bridge and attached to the balloon. Feed the mouth of the balloon through the mouth in the top of the blue plastic unraveller. Remember to remove the little black piece of rubber and pay out some of the line. Fold over the end of the balloon and tie up tightly. One person should then keep hold of the balloon whilst the other unzips one side of the cover, expose the balloon by removing the cover and walk the balloon out to the bridge wing and let go. Just keep an eye on the balloon after the launch to make sure that the sonde falls to its maximum extent. Now go back into the bridge and note the time and position of the launch.

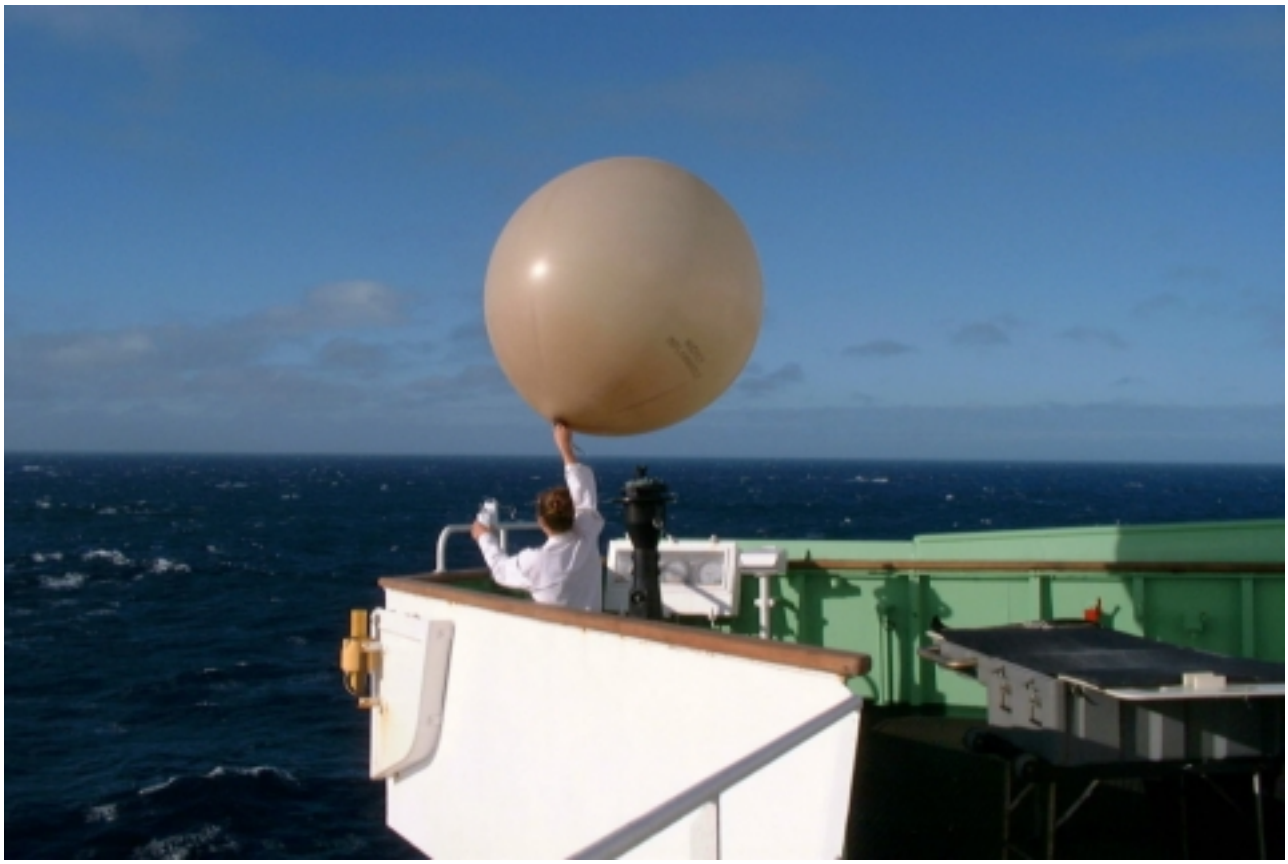
15 The next stage is the surface observations, follow the prompts on the screen. To work out the outside humidity use the **Rhcalcs.xls** programme on the Comms' computer and type in the dry bulb and dew points values, this will calculate humidity for you. For the wind speed value this must be in m/s, which is roughly speed in knots divided by two. When you have filled in these readings click **"next"** now you need to fill in details for the cloud group; total amount of cloud in 8ths, type of low cloud, height of lowest cloud, type of medium cloud, type of high cloud. This is in code and the codes can be obtained from the ships code card. Leave the ASAP status box blank and then enter the seawater temperature, press **"next"** and the computer will shortly inform you that **"start of sounding data received"**.

16 You can now pack away the launching equipment and dispose of the packaging. **REMEMBER TO CLOSE THE HELIUM VALVE AS THERE ARE LEAKS IN THE LINE.**

17 When the sounding is complete a voice will tell you that the **"Sounding terminated, reason was increasing pressure"** ensure that the **"archive sounding"** box is highlighted with an **'x'**. Follow the prompts and shut down the programme. Open up the **CAPSAT.EXE** programme, this works in the same way as using the ships SAT C. Load **"temp a"** and then merge files; **"temp b", "temp c" and "temp d".** Go to transmit and send the message. You will need to note the time of confirmation of this message which can be found under Logs (transmit logs).

18 Open up the DigiCORAIII programme again and go to **file**, click on **open** and select the last sounding, which is at the top of the box. When the next screen appears pick out the relevant information required for your rough sounding log, when you have these shut the programme down.

19 Using the Comms' computer go into **Microsoft Excel**, open up **30N/met/Asap Work Log (neat1).xls.** and fill in the information. When a sheet has been completed print out and archive the sheet into the meteorological file.



My thanks to all those involved in helping to make these instructions.

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