AUTOMATED SHIPBOARD AEROLOGICAL PROGRAMME (ASAP)

ANNUAL REPORT FOR 2000

WMO/TD-No. 1069

JCOMM Technical Report No. 12

WORLD METEOROLOGICAL ORGANIZATION

INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION (OF UNESCO)

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N O T E

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FOREWORD

I am pleased to introduce the Annual report on ASAP operations for 2000. It has been compiled by the ASAP Panel (ASAPP) on the basis of national reports submitted by ASAP operators and related ship-borne upper air sounding units. A total of 21 such units were operated during last year. Individual national reports are included in the annexes in a standard format, together with monitoring reports provided by ECMWF, EUMETSAT and Météo France.

All operators have indicated that they plan to continue operations at the same or enhanced levels in future years. The ASAP Panel continues to work to encourage and assist the expansion of the ASAP, especially in ocean areas outside the North Atlantic. In particular, a new cooperative global ASAP project, the Worldwide Recurring ASAP Project (WRAP), was agreed and developed during the year, and eventually successfully implemented in early 2001.

Finally I have to thank all the ASAPP members for their contributions, as well as the Secretariat of WMO for its assistance.

Klaus Hedegaard
Chairman ASAPP

C O N T E N T S

ANNUAL REPORT 2000

The number of radiosoundings taken within the framework of the Automated Shipboard Aerological Programme (ASAP) averages around 5300 soundings annually in the period 1994 to 2000, c.f. Table 1 and Figure 1. There are fairly large fluctuations from year-to-year, mainly through the influence of enhanced activities in specific observational programmes such as FASTEX in 1997. Year 2000 showed a decrease of 22% in the number of soundings compared to 1999, and it is the lowest number of soundings in the last 7 years. This decrease can largely be ascribed to a large decrease in the number of soundings carried out by the United States, but a slight decrease in the German ASAP activity also plays a part. The total number of ASAP units operated in 2000 was 21; the operators were: Denmark (2 units), EUMETNET (1 unit), France (4 units), Germany (2 units), Japan (7 units), Russia (1 unit), Spain (1 unit), Sweden-Iceland (1 unit), United Kingdom (1 unit) and the United States (1 unit). This report includes the individual national reports as well as monitoring reports provided by ECMWF, EUMETSAT and Météo France.

The operational statistics provided by the operators for 2000 is summarized in Table 2. The performance is quite stable with respect to the terminal height reached and the communication efficiency.

The ASAP Panel (ASAPP), formerly called the ASAP Co-ordinating Committee (ACC), consists of a group of national operators along with ECMWF and EUMETSAT. It held its annual meeting, ASAPP-XII, in Reading, United Kingdom, 27-29 September 2000. The session was attended by seven countries, Australia, Denmark, France, Germany, Iceland, United Kingdom and the United States. ECMWF and EUMETSAT participated in the meeting as well as the EUCOS Programme Manager. The meeting was also attended by representatives of manufacturers (Vaisala and GEOLINK).

The total number of ASAP soundings in 2000 corresponds approximately to the number of soundings which could be performed annually by a little more than 6 ocean weather ships. Their geographical distribution is presented in Figure 2 (courtesy of Météo France). It displays the location of all the TEMP SHIP messages that were received in Toulouse, France, during 2000. Clearly, most of the soundings were taken in the northern Atlantic Ocean.

EUMETNET, which is a network grouping of 18 European National Meteorological Services, has started a programme on ASAP, called E-ASAP. In 2000 an ASAP on a route within the Mediterranean was established. In 2001 another one on a route between the English Channel and the Southeastern Seaboard of the United States is expected to become operational. E-ASAP is jointly funded by the EUMETNET Members, taking into account existing activities providing upper-air profile data from the oceans.

In order to expand the ASAP globally, the work programme of the ASAP Panel includes support to selected countries in the Southern Hemisphere to encourage and assist implementation of ASAP in these data sparse ocean areas. Considerable progress in this area took place in 2000 with preparation of WRAP (Worldwide Recurring ASAP Project) with an ASAP on a route passing both the Cape of Good Hope and Cape Horn, calling at ports in Australia, New Zealand, Brazil and Western Europe. Australia is the major contributor concerning the operating costs while the US (NOAA OGP) has made the sounding and launching equipment available and the UK assisted with the equipment installation and crew training. The first WRAP unit started operations in April 2001. The ASAP Panel will work actively to find more sponsoring countries to cover the running costs for WRAP, and this should include Southern Hemisphere as well as European countries (EUMETNET).

			Table	1				
ver. 08.05.2001								
	1994	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**Average**
Denmark	806	772	772	954	701	752	768	789
EUMETNET							27	27
France	1389	1336	1249	1383	1364	1421	1360	1357
Germany	1925	2147	2061	1439	1139	1210	956	1654
Japan	530	630	707	747	956	1098	871	778
Russia			109	84	209	138	69	108
Spain	77	174	130	175	0	0	3	80
Sweden-Iceland		35	259	331	265	174	117	197
United Kingdom	287	110	145	53	0	151	220	138
United States		366	277	418	167	752	25	334
Total	5014	5570	5709	5584	4801	5696	4416	5256
Change to previous year		11%	2%	-2%	-14%	19%	-22%	

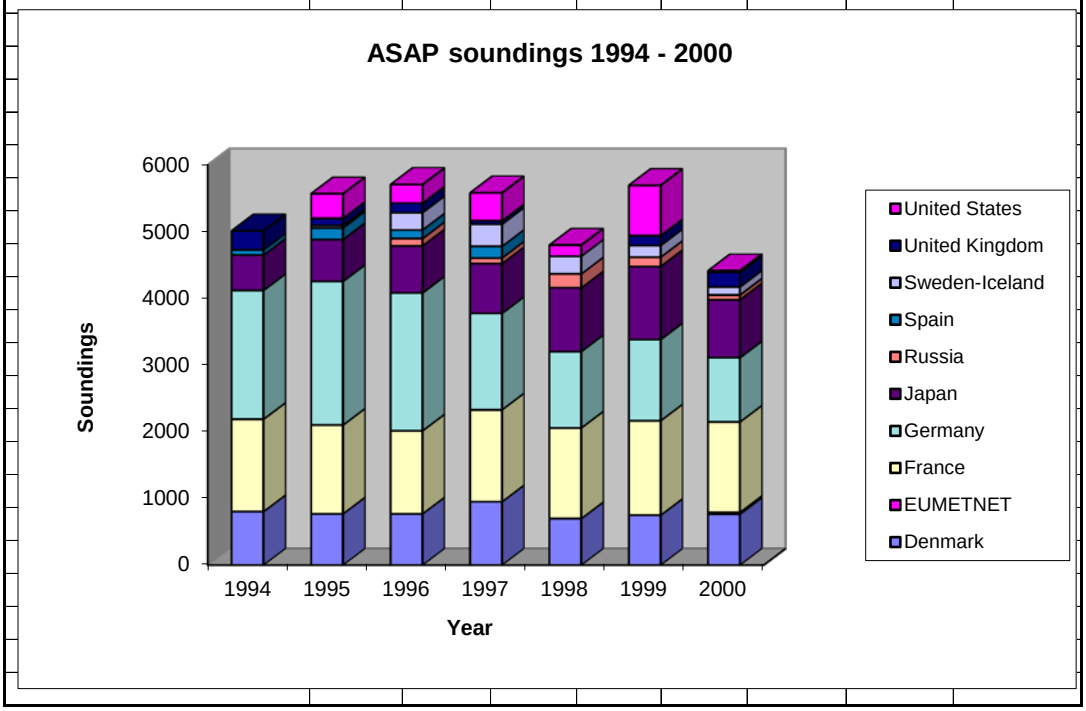


Table 2. Statistics on ASAP units operated during 2000

Operator	ASAP units	Number of soundings	Average terminal sounding height (gpkm)	Percentage of data on the GTS
Denmark	2	768	18.5	99.2%
EUMETNET	1	27	21.7	100%
France	4	1360	22.0	98.7%
Germany	2	956	20	63.4%
Japan	7	871	19.3	100%
Russia	1	69[1)]	[2)]	[2)]
Spain	1	3[1)]	[2)]	[2)]
Sweden-Ice-land	1	117	22.3	78.6%
United Kingdom	1	220	24.8	97.5%
United States	1	25[1)]	[2)]	[2)]
Total or average	**21**	**4416**	**20.5**	**90.6%**

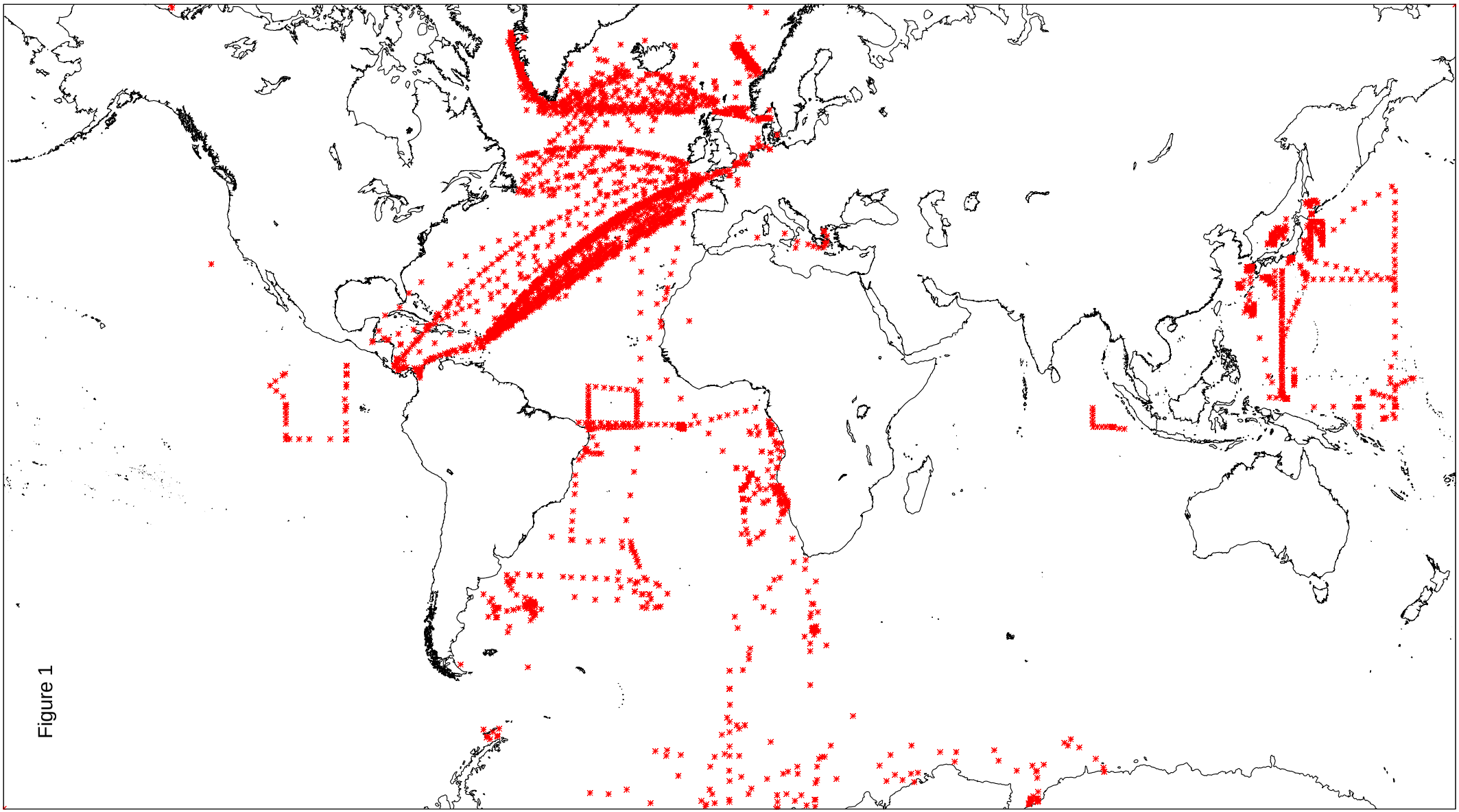
1. Based upon reports received at ECMWF as published in the monthly ECMWF report (only those also reaching 100 hPa)
2. Information not available as of May 2001

(KH/DMI, 8 May 2001)

METEO FRANCE

MAP OF TEMPSHIP

year 2000



5672 observations

Figure 1

Annual National ASAP Report

COUNTRY: DENMARK	NAME OF AGENCY: DMI	YEAR: 2000

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 method[3)]	Launch height[5)]	Area of operations[6)]	ASAP unit ID no.
Merch-ant ship	Nuka Arctica	OXYH2	Inmarsat-C	Loran-C/GPS RS90-AL or RS80-G	10-foot container, semi-auto.	18 m	North Atlantic	DK/ASAP1
Merch-ant ship	Arina Arctica	OVYA2	Inmarsat-C	Loran-C/GPS RS90-AL or RS80-G	10-foot container, semi-auto.	14 m	North Atlantic	DK/ASAP2
Merch-ant ship	Irena Arctica	OXTS2	Inmarsat-C	Loran-C/GPS RS90-AL or RS80-G	10-foot container, semi-auto.	9 m	North Atlantic	DK/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.
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	Average terminal sounding height (km)	Balloon size (gr)	Percentage on GTS[1)]
OXYH2	>312	312	n/a	19.5	200	98.1%
OVYA2	>337	337	n/a	18.0	200	100%
OXTS2	>119	119	n/a	17.4	200	100%
Total or average	>768	768		18.5		99.2%

1) Ratio of reports received at ECMWF (500 hPa statistics) against reports transmitted, and which reached the 500 hPa level. GTS insertion point: Copenhagen (EKMI)

COMMENTS:
The systems have generally performed satisfactorily during the year. The transfer of launcher and sounding equipment between the different ships continues, and is carried out without noticeable difficulties. The transfers are necessitated because of changes in sailing schedules for the ships. It concerned transfer from “Irena Arctica” (OXTS2) to “Nuka Arctica” (OXYH2) in April and vice versa in December.

ESTIMATES FOR FOLLOWING YEAR:
The programme is expected to continue more or less as in 2000. The 10’ container launchers are worn out after nearly 15 years of use, and will be replaced one new launcher in 2001 and the other one expected to be replaced in 2002.

Annual National ASAP Report

COUNTRY : FRANCE NAME OF AGENCY: METEO-FRANCE YEAR: 2000

.....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 aera, 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	347	317	34	21.6	98.8
FNPH	357	324	29	21.8	99.1
FNOU	350	335	15	22.2	99.7
FNOR	306	295	11	22.2	97.2
Total or average	1360	1271	73	22.0	98.7

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

ANNUAL NATIONAL ASAP REPORT (CONTINUED)
YEAR 2000

COMMENTS ON THE PERFORMANCE

Ever since the OMEGA system stopped, our main concern was the availability of wind data produced by Vaisala GPS sondes during the year 2000.

Improvements were indeed noticed, and sondes ground rejections were fewer during the preliminary steps of radiosounding(We first gauge satellite reception and wind measurement before launching the sondes).

Nevertheless, the system reliability was still too dependant on the good working of the cable feed, and even with it working well, we are not sure to get the wind data. During the year 2000, up to 11% of the radiosounding lacked wind data, and that amount doesn't take in account the holes in the radiosonding with some wind data.

Another concern is the reliability of Temp transmission towards Meteosat using DCP balises. As recent troubles appeared in the late 2000 on several ships , we are beginning to question either Meteosat working conditions, or a broadcast jamming during the time intervals we were alloted.

ESTIMATES FOR THE NEXT YEAR

In order to palliate the measurement troubles and as a consequence of our tender, we have to change our shipboard systems. We hope we can operate GEOLINK stations as soon as fall 2001.

We put high expectations on the availability of wind data using that GEOLINK system, as the trials performed at sea as well as ashore showed a wind availability of about 99%.

The year 2001 will give us the opportunity to experiment Temp-ship transmission by SATCOM following C and Mini M standards.

We will thus evaluate the reliability of such systems and ascertain its operational capability.

Annual National ASAP Report

COUNTRY: Germany . . NAME OF AGENCY: Deutscher Wetterdienst. YEAR: 2000. . . .

...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.
Research ship	Meteor	DBBH	Meteosat	GPS RS80	Container manual	8m	N+S-Atlantic Mediterranean Sea	DCP 112057B 4-ASAP2
Merchant ship	Hornbay	ELML7	Meteosat	GPS RS80	Container Manual	11m	N-Atlantic-Caribbean	DCP 112007C 8-ASAP5

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)]
DBBH	459	459	0	20 km	200gr	71,9%
ELML7	497	497	0	20 km	200 gr	55,6%
Total or average						
1) Based upon reports received at a data centre or GTS insertion point, name: Darmstadt Ratio of reports received against reports transmitted						

COMMENTS:

ESTIMATES FOR FOLLOWING YEAR:

Annual National ASAP Report

COUNTRY:ICELAND - Sweden . NAME OF AGENCY:SMHI/IMO . . YEAR: 2000. . . .

....1.. ASAP units operated during the year 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.
Merchant	Selfoss	S6LA	ISAT-C	LORANC/ RS80-L	Container/Manual	13	North Atlantic	

Merchant ship, research ship, supply ship, etc.

Using IDCS, Inmarsat-C, or others

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

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

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

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)]
S6LA	117	92	5	22.3	300	78.6
Total or average						

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

COMMENTS:
The ship operates between Reykjavik, Iceland and Norfolk, Virginia, USA, departing from Reykjavík every fourth Friday afternoon. The ASAP was only in operation until September when m/v Selfoss was replaced by another vessel (Skogafoss). It was clear from the beginning that Skogafoss would only be used for few months so it was too expensive to install the container there. During July the LORAN-C antenna was out of order but was repaired. The performance of the ASAP was highly depending on the staff onboard.
We have used the time since September for highly needed repair and maintenance work on the container.

ESTIMATES FOR FOLLOWING YEAR:

We expect to be able to start again on a new vessel ín April/May and hope for better result as the improvements made on the container with automatic transmission of the message by INMARSAT-C will make it easier for the crew as the filling and release of the balloon will be their only workload.

Annual National ASAP Report

COUNTRY: JAPAN NAME OF AGENCY: Japan Meteorological Agency . YEAR: 2000

7 ASAP units operated during the year on 7 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.
R.V.	Ryofu Maru	JGQH	others (DCP)	GPS/Vaisala RS80-G	container (semi-automatic)	8m	North Pacific	708514
R.V.	Kofu Maru	JDWX	others (DCP)	GPS/Vaisala RS80-G	container (semi-automatic)	6 m	Seas adjacent to Japan	191678
R.V.	Seifu Maru	JIVB	others (DCP)	GPS/Vaisala RS80-G	container (semi-automatic)	6 m	Seas adjacent to Japan	458533
R.V.	Chofu Maru	JCCX	others (DCP)	GPS/Vaisala RS80-G	container (semi-automatic)	6 m	Seas adjacent to Japan	126138
R.V.	Keifu Maru	JBOA	others (DCP)	RTH/Meisei RS91	deck launcher (fixed)	8 m	North Pacific	32889
R.V.	Shumpu Maru	JFDG	Inmarsat -C	GPS/Vaisala RS80-G	deck launcher (portable)	4 m	Seas adjacent to Japan	
R.V.	Mirai	JNSR	Inmarsat -C	GPS/Vaisala RS80-G	container (semi-automatic)	16 m	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

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	135	258	3	24.7	350	100
JDWX	134	137	2	19.2	350	100
JIVB	67	122	4	24.1	350	100
JCCX	104	210	1	21.0	350	100
JBOA	80	148	5	24.2	350	100
JFDG	26	26	2	20.5	350	100
JNSR	325	320	27	20.5	350	100
Total or average	871	1209	44	19.3	350	100

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

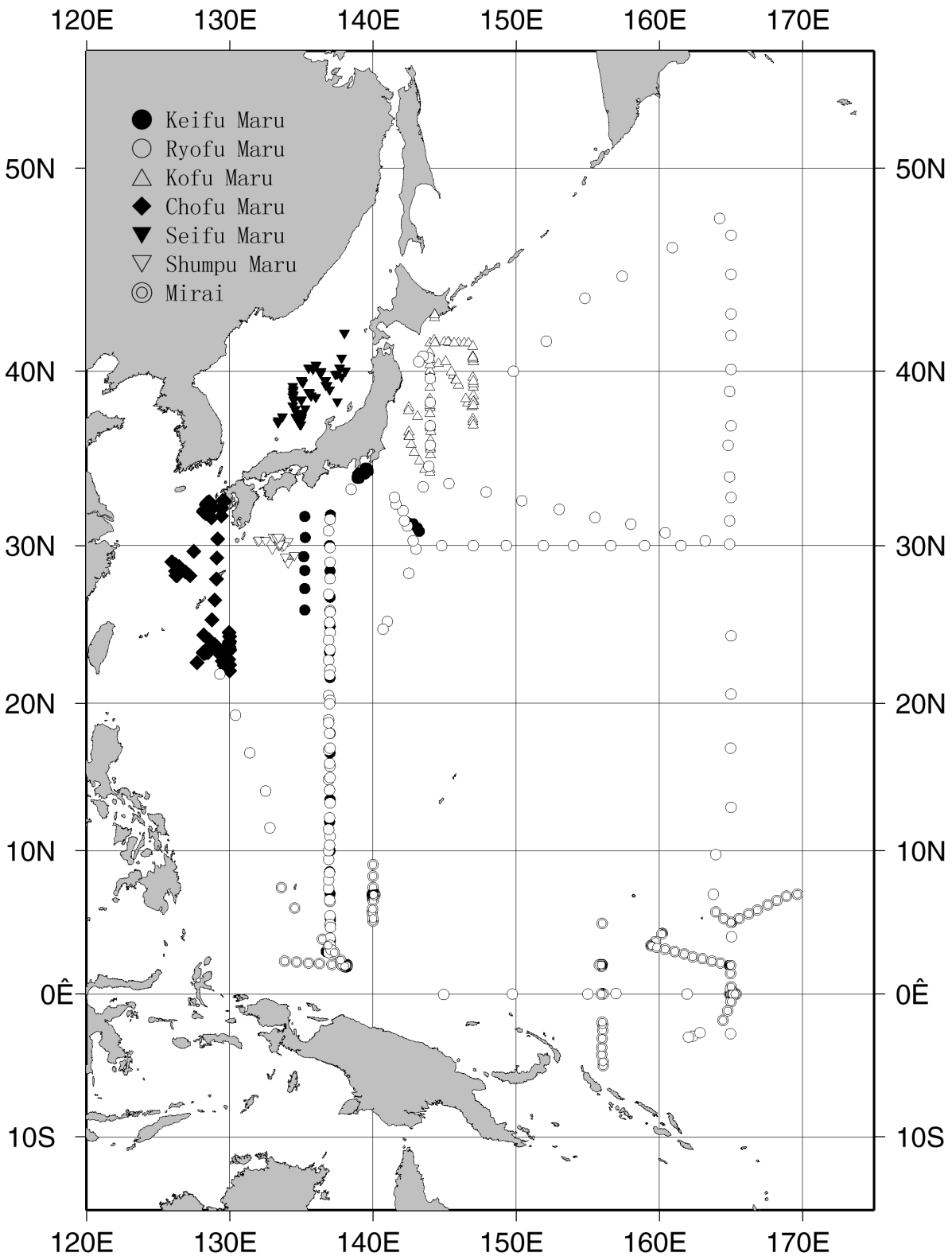
COMMENTS:

The Japan Meteorological Agency (JMA) makes upper-air observations in the western North Pacific and in the waters adjacent to Japan on a semi-regular basis on board five vessels among six oceanographic/meteorological observation vessels operated by JMA.

For the period from 16 September to 4 October 2000, two research vessels (*Chofu Maru* and *Shumpu Maru*) of JMA performed enhanced upper-air observations (4 times per day) in order to monitor and investigate typhoon in the Sub-tropical area of the western North Pacific. R/V Shumpu Maru does not make upper-air observation on a regular basis, but joined this enhanced observations.

ESTIMATES FOR FOLLOWING YEAR:

The number of soundings is expected to decrease, because *R/V Keifu Maru* was decommissioned in June 2000. Its successor commissioned in October 2000 does not make upper-air observation on a regular basis. Besides, *R/V Shumpu Maru* is to be decommissioned in March 2001.



Upper-air observations by Japan in 2000

Annual National ASAP Report

COUNTRY: **GREAT BRITAIN** NAME OF AGENCY: **MET OFFICE** YEAR: 2000

1 ASAP unit operated during the year 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.
Merchant	CanMar Pride	ZCBP6	Inmarsat-C	GPS RS80-15GH	Container (semi-automatic)	22 metres	North Atlantic	GB/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						
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	220	159	Nil	24.835	350	97.5%
Total or average	220	159	Nil	24.835	350	97.5%
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 the 17 ASAP operational voyages of the containership CanMar Pride for the year 2000.

The first voyage, which commenced on the10th.of January 2000, was a training / operational voyage to instruct the ship's officers in the operation of the equipment. The training was undertaken by a former ASAP operative employed by the Met Office. Overall, this was operationally successful, all equipment working satisfactorily and the operatives learning how to operate the system. Launches were not attempted on 15 occasions due to exceptionally strong winds.

ESTIMATES FOR FOLLOWING YEAR:

The United Kingdom will continue to operate the one unit, GB/ASAP1, for the year 2001.
A portable balloon launcher will be purchased, expected to be operational in February, in order to attempt to reduce the sounding failure rate. It will be used in conjunction with the present fixed launcher.

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

Annual National ASAP Report

OWNER: EUMETNET countries	NAME OF AGENCY: E-ASAP	YEAR: 2000

1 ASAP unit operated during the year on 1 ship

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

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	Average terminal sounding height (km)	Balloon size (gr)	Percentage on GTS[1)]
SWJS	27	22	4	21.7	350	100

1) Ratio of reports received against reports transmitted. Based upon reports received at: Copenhagen (EKMI) GTS insertion point: Athens (LGAT)

COMMENTS:
The EU/ASAP1 is the first jointly financed ASAP within EUMETNET. The unit started operations on 12 December 2000. The ship plies mainly between Greece and the western Mediterranean, but calls also at ports in the eastern Mediterranean from time to time. The sounding schedule is based on taking the soundings at 06 and 18 UTC when the ship is in sea areas where bordering land stations take soundings at 00 and 12 UTC only. Otherwise the soundings are taken at 00 and 12 UTC when being more than 75 nm from a land based sounding station. The sounding equipment is Vaisala DigiCORA III, and with software developed to handle the Inmarsat-C communication automatically, i.e. without operator intervention.

ESTIMATES FOR FOLLOWING YEAR:
The Mediterranean E-ASAP is expected to take about 450 soundings in 2001. An Atlantic E-ASAP will be established (EU/ASAP2), and is expected to become operational within the 3rd quarter of 2001.

European Centre for Medium-Range Weather Forecasts

SUMMARY REPORT ON THE MONITORING OF ASAP SHIP DATA

Input for the ASAP Coordination Committee, twelfth session

1. DATA AVAILABILITY

- The frequency of reception for TEMPSHIP platforms from January 1995 to December 2000 is shown in **figures 1 to 4**. The frequency of reception for the main two cycles (00/12 UTC) is shown in figure 1.

- The normal frequency maximum during the Northern Hemisphere summer shows a decreasing trend whereas the amount of reports received during the Northern Hemisphere winter in 2000 is smaller than the number of reports in the previous winter.

- The number of reports received at 06 and 18 UTC has been stable during the last year.

- In December 2000 a new European ASAP with ID SWJS began to operate in the Mediterranean area providing good quality observations. These observations have been assimilate and used at ECMWF since then. The tracks for this platform in January 2001 can be found in Figure 8.b.

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 2000.

- Only two cases of misplaced observations have been detected since January 2000. In both cases the observations were rejected and had no impact on the model analysis.

3. DATA QUALITY

- **Figure 5** shows Temperature statistics (January-December 2000) 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 0.6-0.9 degrees, which are reasonable figures. The comparison with similar statistics for the period January-August 1999 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 7 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 2001. The enclosed statistics are only for data used by the model and the plots show a pretty similar performance for both groups of platforms.

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 1965** to **December 2000** for Geopotential
2	500 hPa	06/18 UTC	Similar to Figure 1
3	500 hPa	06/18 UTC	Time series showing the frequency of reception at ECMWF for TEMPSHIP on a global area from **January 1965** to **December 2000** for Wind
4	200 hPa	06/18 UTC	Similar to figure 3
5	500/100hPa	00/12 UTC	Temperature sorted statistics from **January 2000** to **December 2000** 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 2000** to **December 2000** Overlay: **RHS** Number of data used in the statistics **LHS** Station Ids Statistics: **VRMS** (Vector difference rms) in m/s
7.a	All	All	Vertical statistics for temperature and wind components **January 2001** (Sondes versus Tempship)
7.b	All	All	Vertical statistics for temperature and specific humidity **January 2001** (Sondes versus Tempship)
8.a	--	--	Tempship tracks for **January 2001**.
8.b	--	--	SWJS track for **January 2001**

TABLE 1

REPORTS received at ECMWF January-December 2000
Geopotential 500 hPa

SGN	00	06	12	18	UTC
BNOU	0	0	0	0	
CLML7	0	0	0	0	
D//H	0	0	0	0	
D/BH	0	0	2	0	
D/LK	0	0	0	0	
D/RH	0	0	0	0	
DASAP	0	0	3	0	
DB/D	0	0	0	0	
DB/H	0	0	0	0	
DB/J	0	0	0	0	
DB/K	0	0	0	0	
DBB/	1	0	1	0	
DBBH	108	0	134	0	
DBBI	0	0	0	0	
DBBJ	0	0	0	0	
DBBL	0	0	0	0	
DBBX	0	0	0	0	
DBCH	0	0	0	0	
DBJH	0	0	0	0	
DBL/	0	0	0	0	
DBLK	0	3	135	0	
DBRH	0	0	0	0	
DBZO	1	0	0	0	
DFBH	0	0	0	0	
DFLK	0	0	0	0	
DJBH	0	0	0	0	
DNOR	0	0	0	0	
DNOU	0	0	1	0	
DRBH	1	0	0	0	
E.JL7	0	0	1	0	
EBBH	0	0	0	0	
EBLK	0	0	0	0	
EFBH	0	0	0	0	
EHML7	1	0	0	0	
EHOA	0	0	3	0	
EHOE	0	0	0	0	
EL//7	0	0	0	0	
EL/L7	0	0	0	0	
ELIL7	0	0	0	0	
ELL7	1	0	0	0	
ELM/7	0	0	0	0	
ELMD/	0	0	0	0	
ELMH7	1	0	0	0	
ELML7	177	0	215	0	
ELMM7	0	0	0	0	
ELOL7	0	0	0	0	

TABLE 1(continued)

SGN	00	06	12	18	UTC
F/BH	0	0	0	0	
F/DU	0	0	1	0	
F/OR	0	0	0	0	
F/PH	0	0	0	0	
F/RS	1	0	0	0	
F7135	0	1	1	0	
F:SS	0	0	0	0	
FBCG	0	2	0	0	
FBLK	0	0	0	0	
FG/R	0	0	0	0	
FLRS	0	0	0	0	
FN/H	0	0	1	0	
FN/R	0	0	0	0	
FN/S	0	0	0	0	
FN/U	0	0	1	0	
FNGR	1	0	0	0	
FNNR	0	0	0	0	
FNO/	1	0	0	0	
FNOB	0	0	0	0	
FNOP	0	0	0	0	
FNOQ	0	0	1	0	
FNOR	140	0	123	0	
FNOS	0	0	0	0	
FNOU	154	0	153	0	
FNOZ	0	0	0	0	
FNP/	0	0	0	0	
FNPH	141	0	138	0	
FNPJ	0	0	0	0	
FNRC	0	0	0	0	
FNRS	146	0	142	0	
FNSS	0	0	0	0	
FNZS	0	0	0	0	
FOOR	0	0	0	0	
FOOU	0	0	0	0	
FORS	0	0	0	0	
GLML7	0	0	0	0	
GNOU	0	0	0	0	
GNRS	0	0	0	0	
INOR	0	0	0	0	
JBOA	30	6	31	5	
JCCX	35	15	36	15	
JDWX	39	4	42	5	
JFDG	8	4	8	3	
JGQH	73	0	55	0	
JIVB	29	0	28	2	
JNSR	37	31	36	29	
JQUB	3	5	3	4	
LBBH	0	0	0	0	
LDSR	0	0	0	0	
LDWR	336	336	334	323	

TABLE 1 (continued)

SGN	00	06	12	18	UTC
LD_R	0	0	0	0	
NNNN	0	0	0	0	
NNNN/	0	0	0	0	
NNNN?	0	0	0	0	
NNNNU	0	0	0	0	
NOOU	0	0	1	0	
OVYA2	173	0	155	0	
OXTS2	63	0	55	0	
OXYH2	145	0	155	0	
S6LA	36	0	35	0	
SHIP	15	9	0	0	
SWJS	2	5	7	9	
TBLK	0	0	0	0	
UCKZ	65	0	6	0	
VNOR	0	0	0	0	
VNOU	0	0	0	0	
WTEC	15	0	15	3	
ZCBP6	80	0	64	0	

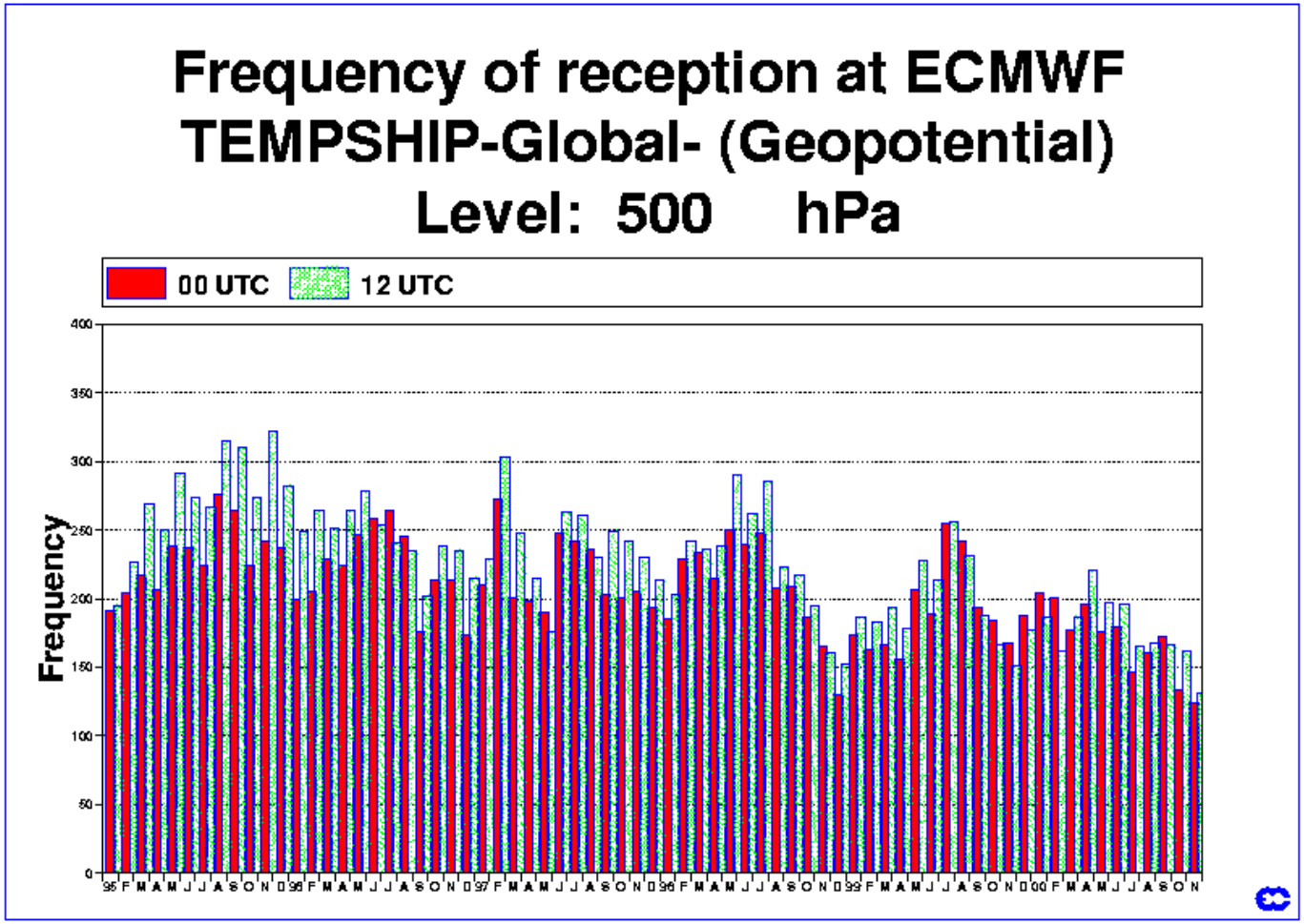

Frequency of reception at ECMWF
TEMPSHIP-Global- (Geopotential)
Level: 500 hPa
00 UTC
12 UTC
Frequency
400
350
300
250
200
150
100
50
0
95 F M A M J J A S O N D 96 F M A M J J A S O N D 97 F M A M J J A S O N D 98 F M A M J J A S O N D 99 F M A M J J A S O N D 00 F M A M J J A S O N

Figure 1

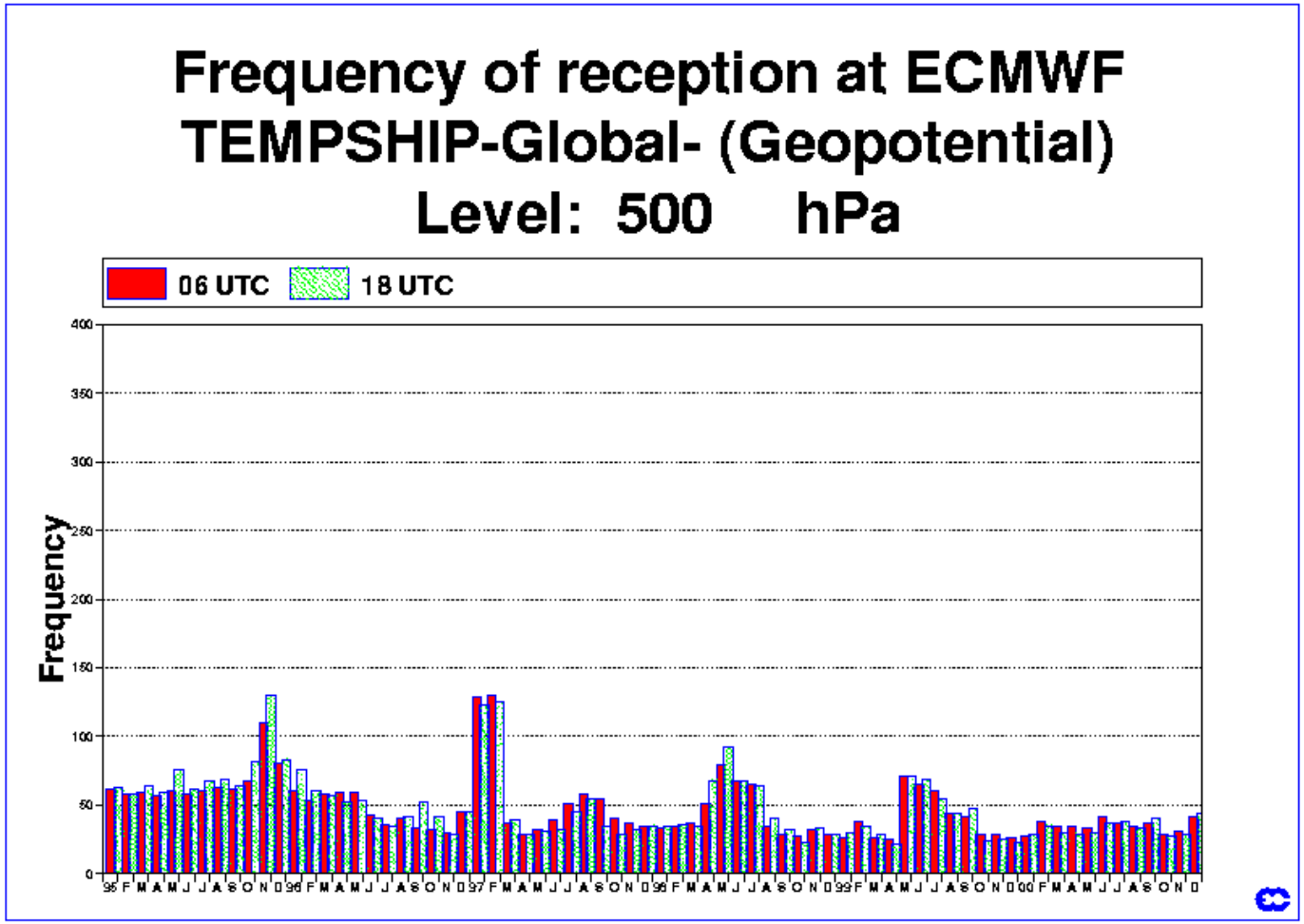

Frequency of reception at ECMWF
TEMPSHIP-Global- (Geopotential)
Level: 500 hPa
06 UTC
18 UTC
Frequency
400
350
300
250
200
150
100
50
0
95 F M A M J J A S O N D 96 F M A M J J A S O N D 97 F M A M J J A S O N D 98 F M A M J J A S O N D 99 F M A M J J A S O N D 00 F M A M J J A S O N D

Figure 2

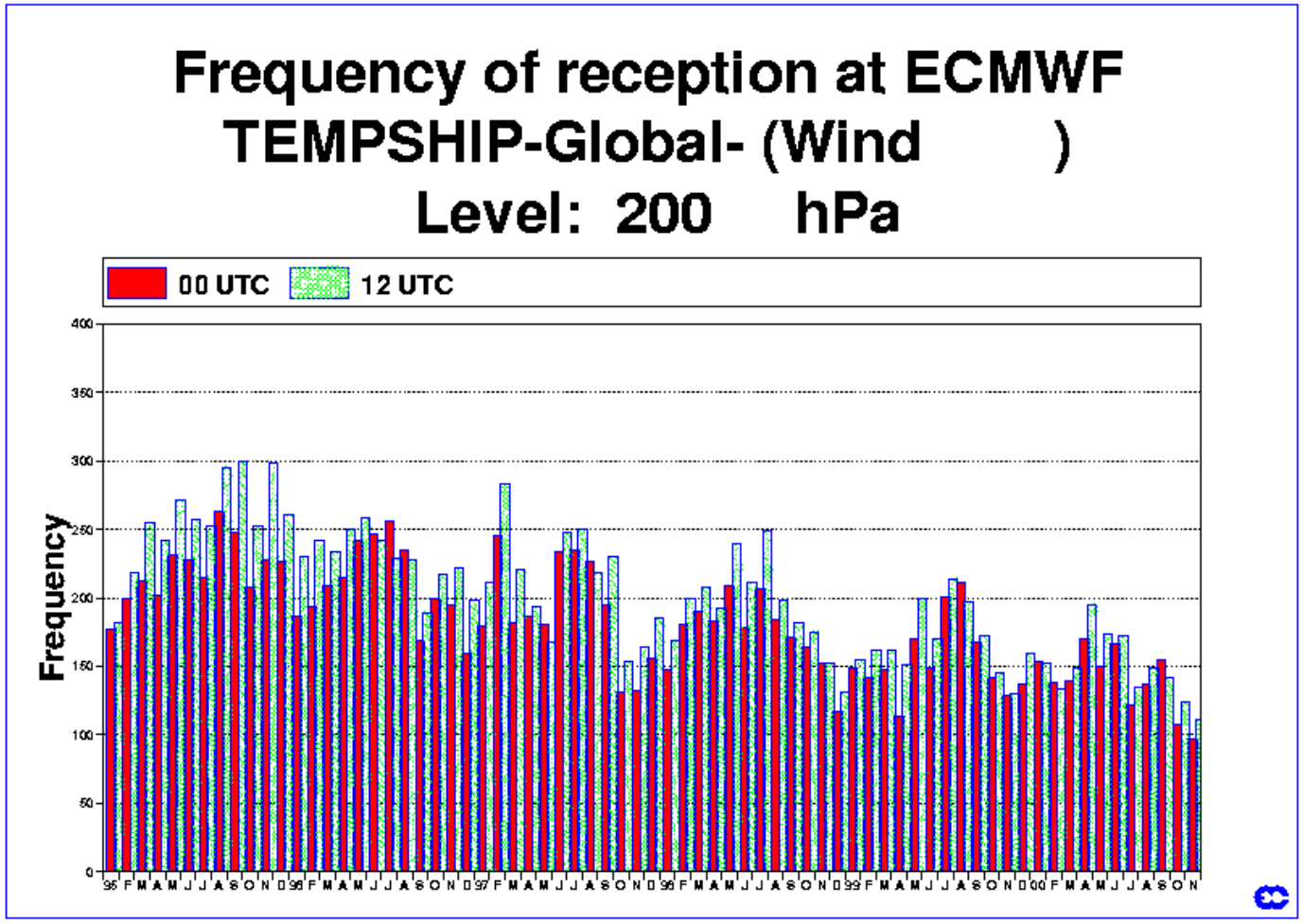

Frequency of reception at ECMWF
TEMPSHIP-Global- (Wind)
Level: 200 hPa
00 UTC
12 UTC
Frequency
400
350
300
250
200
150
100
50
0
95 F M A M J J A S O N D 96 F M A M J J A S O N D 97 F M A M J J A S O N D 98 F M A M J J A S O N D 99 F M A M J J A S O N D 00 F M A M J J A S O N

Figure 3

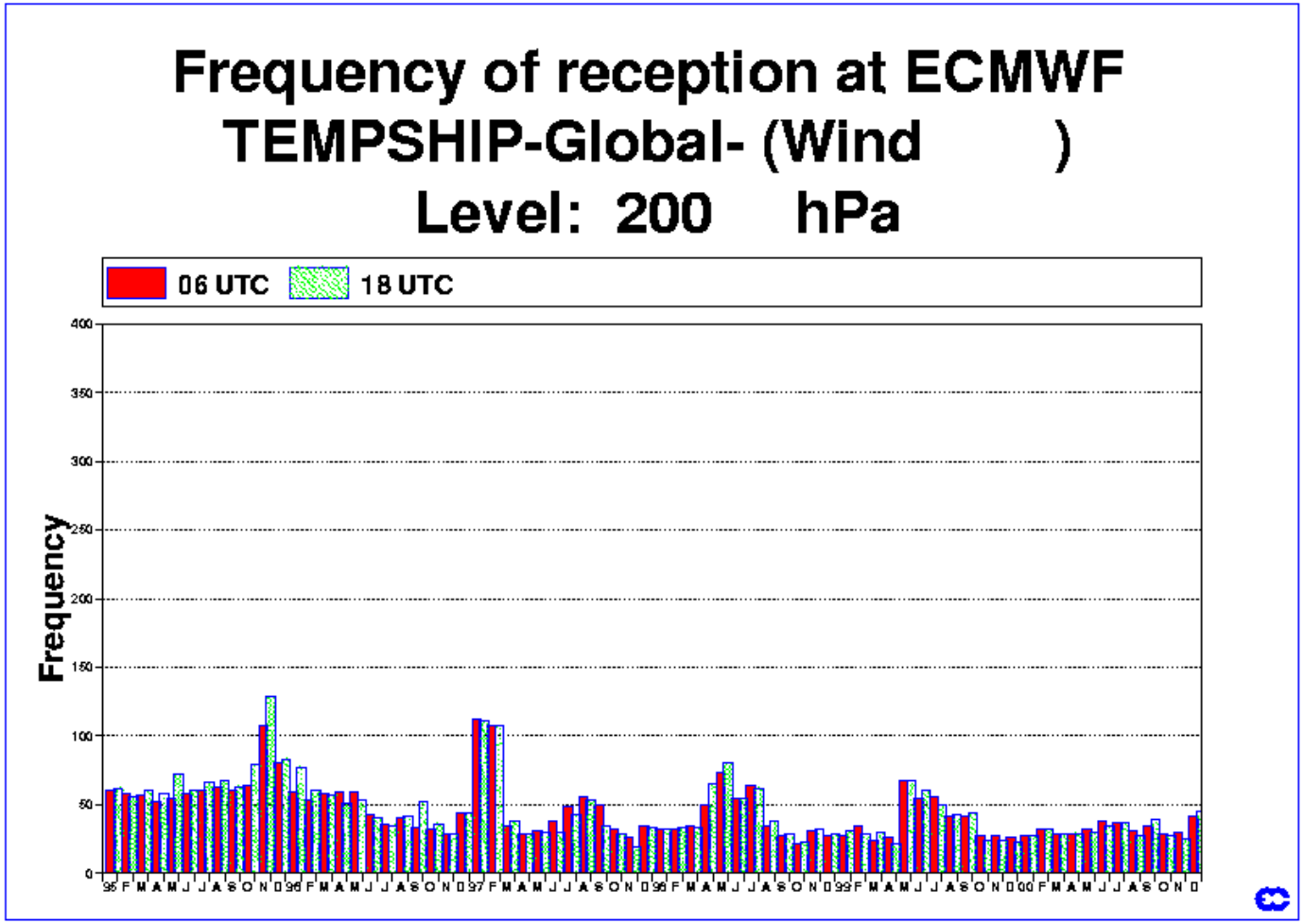

Frequency of reception at ECMWF
TEMPSHIP-Global- (Wind)
Level: 200 hPa
06 UTC
18 UTC
Frequency
400
350
300
250
200
150
100
50
0
95 F M A M J J A S O N D 96 F M A M J J A S O N D 97 F M A M J J A S O N D 98 F M A M J J A S O N D 99 F M A M J J A S O N D 00 F M A M J J A S O N D

Figure 4

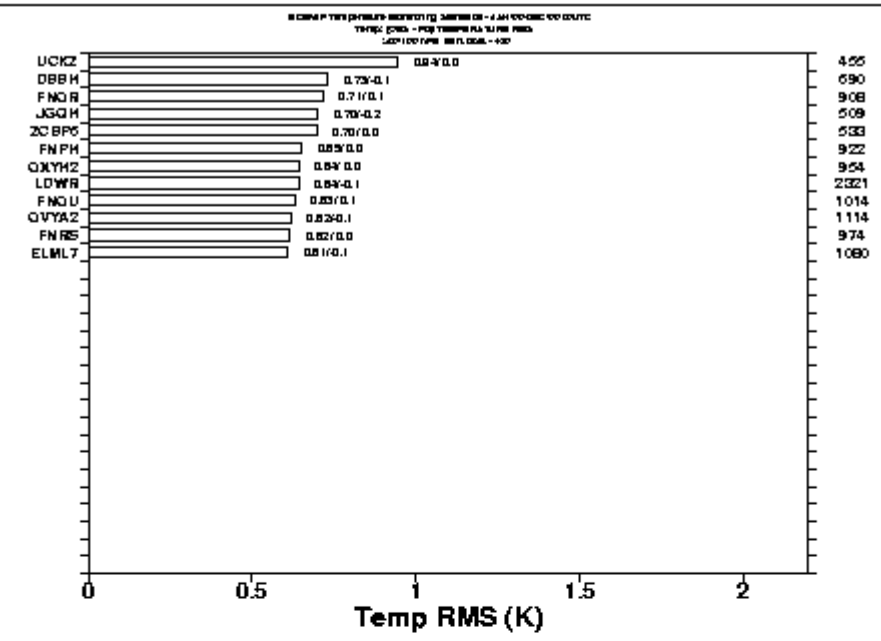


Figure 5.a

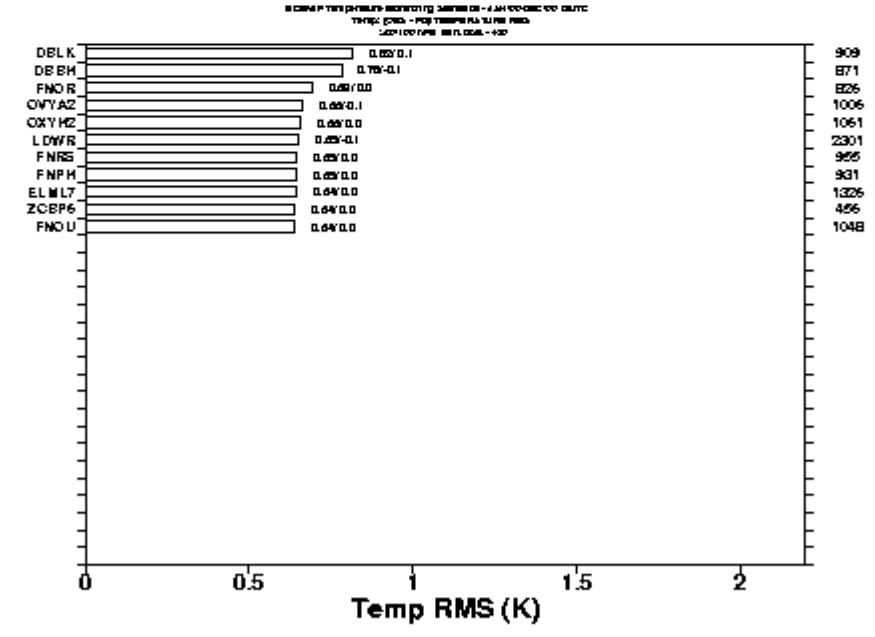


Figure 5.b

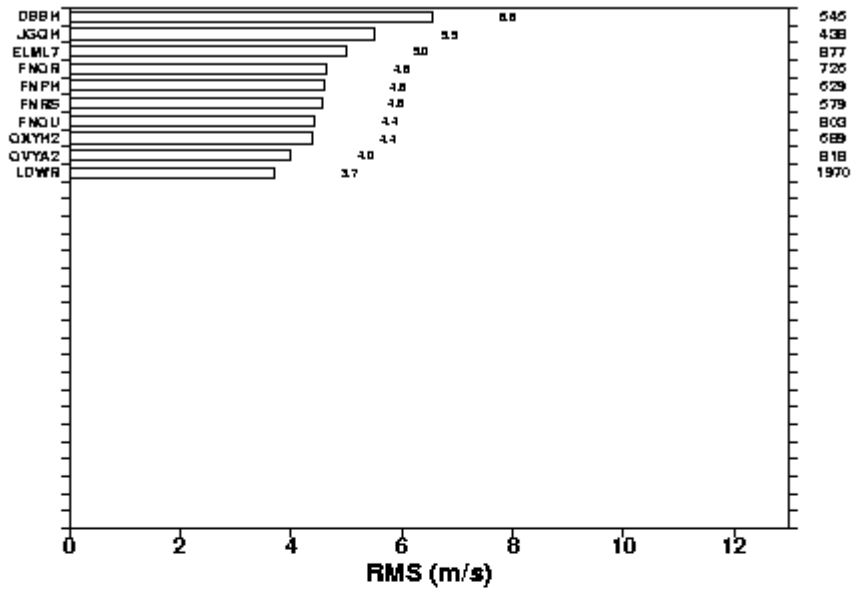


Figure 5.a

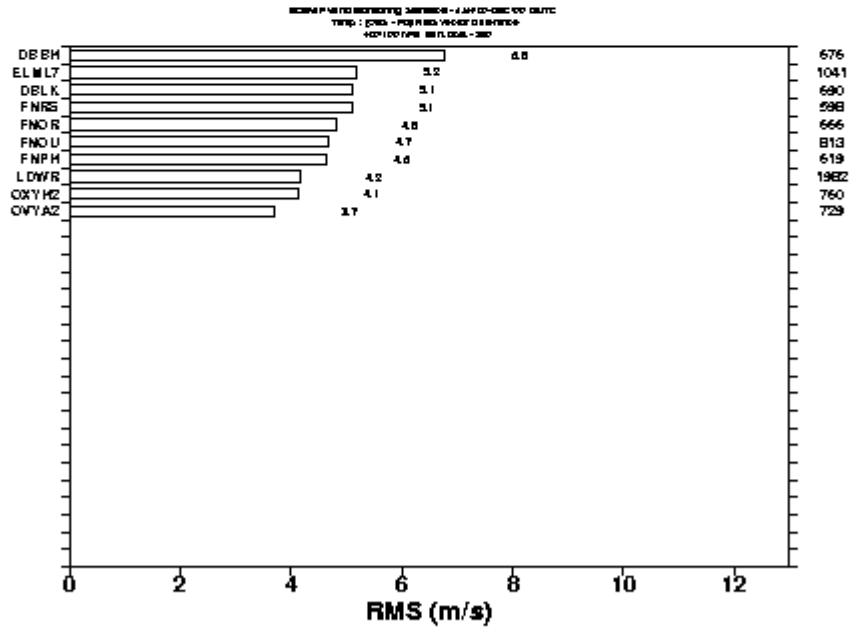


Figure 5.b

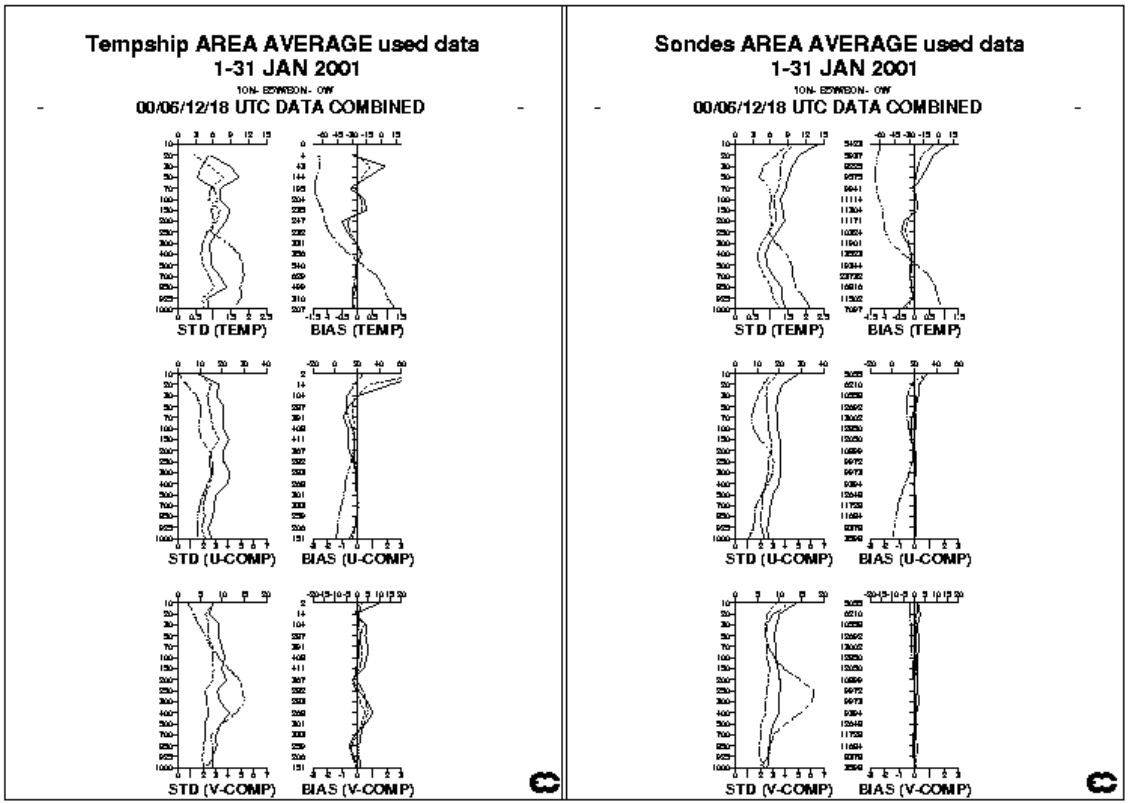

Tempship AREA AVERAGE used data
1-31 JAN 2001
10N- 82W82N- 0W
00/06/12/18 UTC DATA COMBINED
STD (TEMP)
BIAS (TEMP)
STD (U-COMP)
BIAS (U-COMP)
STD (V-COMP)
BIAS (V-COMP)
Sondes AREA AVERAGE used data
1-31 JAN 2001
10N- 82W82N- 0W
00/06/12/18 UTC DATA COMBINED
STD (TEMP)
BIAS (TEMP)
STD (U-COMP)
BIAS (U-COMP)
STD (V-COMP)
BIAS (V-COMP)

Figure 7.a

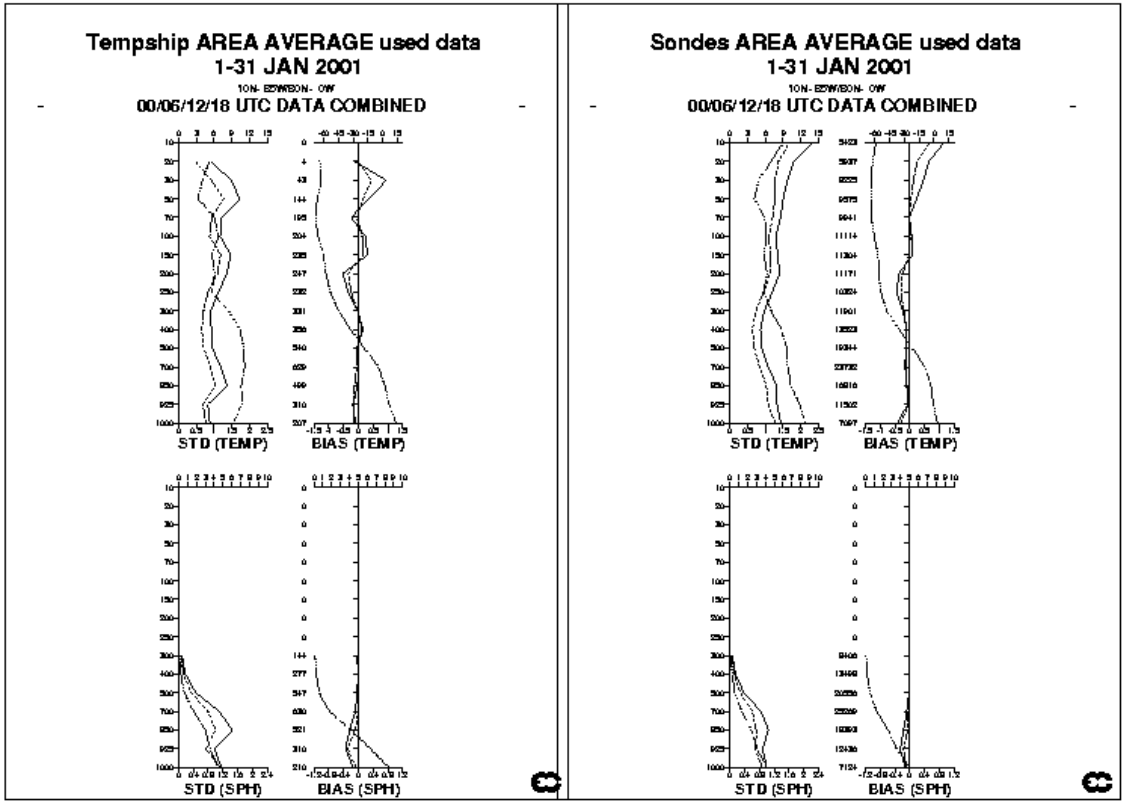

Tempship AREA AVERAGE used data
1-31 JAN 2001
10N- 85W/80N- 0W
00/06/12/18 UTC DATA COMBINED
STD (TEMP)
BIAS (TEMP)
STD (SPH)
BIAS (SPH)
Sondes AREA AVERAGE used data
1-31 JAN 2001
10N- 85W/80N- 0W
00/06/12/18 UTC DATA COMBINED
STD (TEMP)
BIAS (TEMP)
STD (SPH)
BIAS (SPH)

Figure 7.b

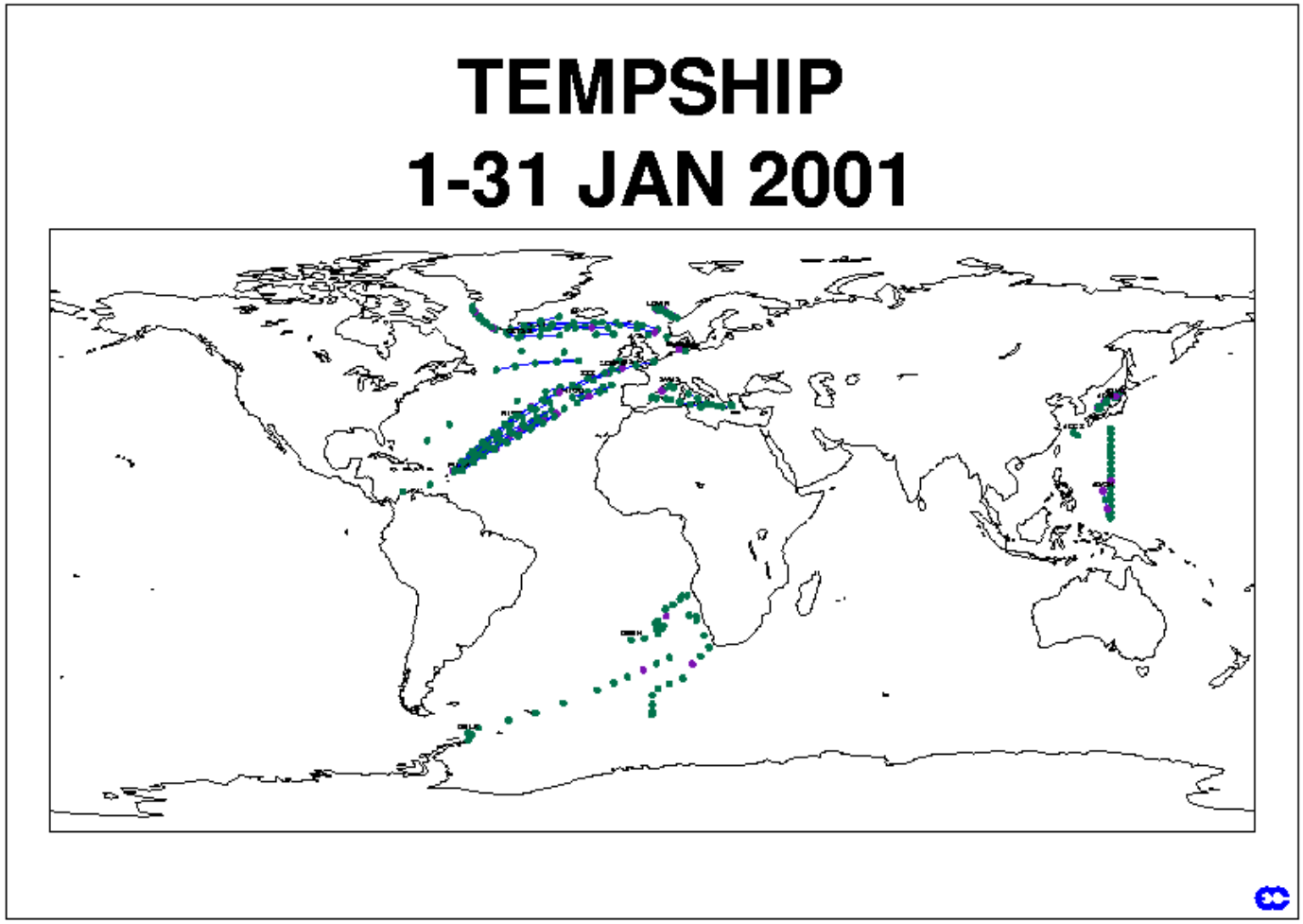


Figure 8.a

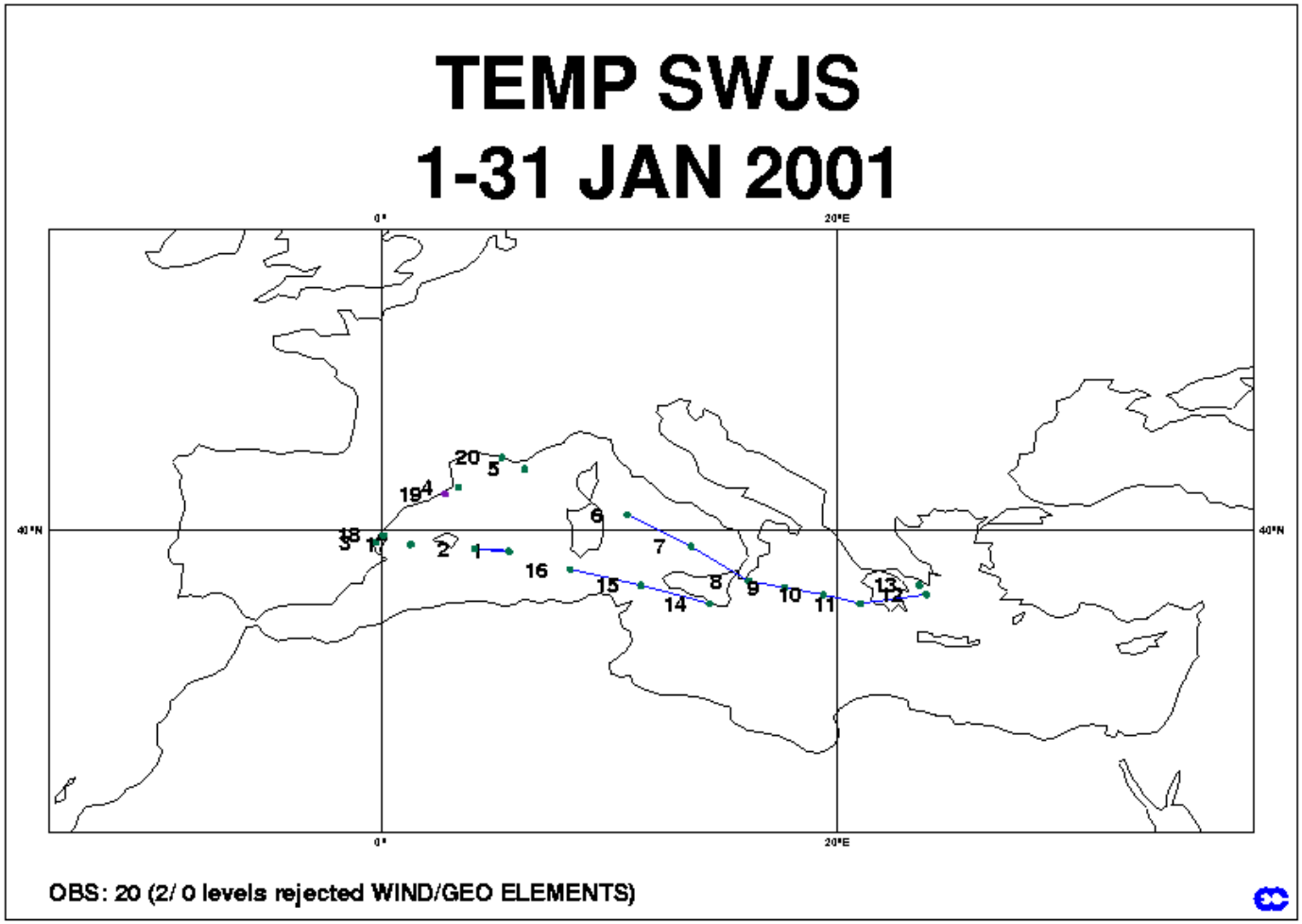

TEMP SWJS
1-31 JAN 2001
0°
20°E
40°N
20
5
19
4
18
3
17
2
1
6
7
16
15
14
8
9
10
11
13
12
OBS: 20 (2/ 0 levels rejected WIND/GEO ELEMENTS)

Figure 8.b

2000 EUMETSAT REPORT FOR THE AUTOMATED SHIPBOARD AEROLOGICAL PROGRAMME PANNEL (ASAPP)

1. Status Of The Meteosat System

1.1 Meteosat Satellites Operations

Meteosat-7 is the current prime operational satellite at 0°W.

Meteosat-6 is the in-orbit spare located at 9°W.

Meteosat-5 is currently at 63°E and is providing support to the Indian Ocean Data Coverage (IODC) Service.

1.2 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.

1.3 Interference on ASAP channel I12

Following problems observed with corrupted messages, EUMETSAT investigated for interference on channel I12 (402.0355 MHz). The results showed an increase in interference on this channel. To alleviate this problem all existing ASAP DCPs on channel I12 have been given another allocation on channel I10 (402.0295 MHz), which is noise free. I12 still remains available for use. All operators have been notified that channel I10 should be used for DCP transmissions.

1.4 ASAP DCP Transmissions

Table 1 shows the ASAP DCP transmissions through the Meteosat satellite from January to December 2000. 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	93	153	114	91	143	264	285	234	331	275	248	187
112044C2	D/ASAP 2	0	0	0	0	0	0	0	1	0	1	0	0
112057B4	D/ASAP 3	526	580	656	672	587	592	658	582	526	551	5	0
160037D2	D/ASAP 4	0	1	0	0	0	0	0	0	0	41	281	173
1180F11A	F/ASAP 1	153	169	189	154	176	138	144	130	130	79	177	110
11810364	F/ASAP 2	168	184	191	150	177	192	180	148	168	184	92	181
11819606	F/ASAP 3	92	183	14	68	65	91	157	167	162	165	120	154
1181A39C	F/ASAP 4	183	152	202	146	188	171	183	187	179	175	1	111
1183207C	F/ASAP 5	207	166	137	103	118	101	43	76	26	37	173	33
11836376	SPAIN/ASAP 1	0	0	0	1	1	0	1	1	0	44	17	15

Table 1: ASAP DCP transmissions

Figure 1: D/ASAP transmissions

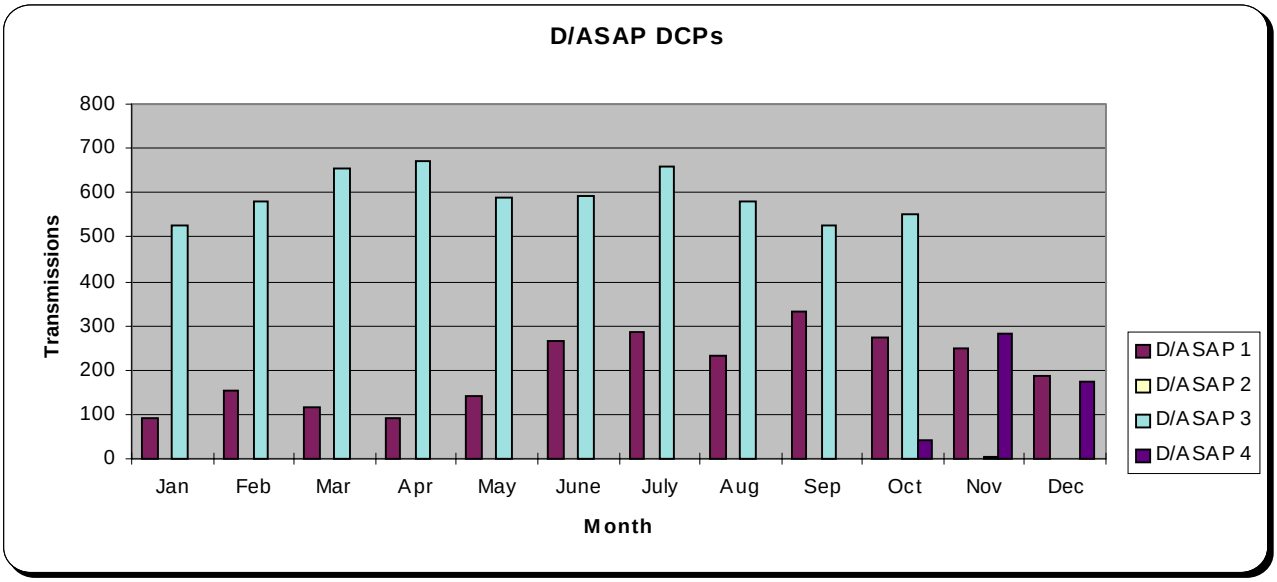
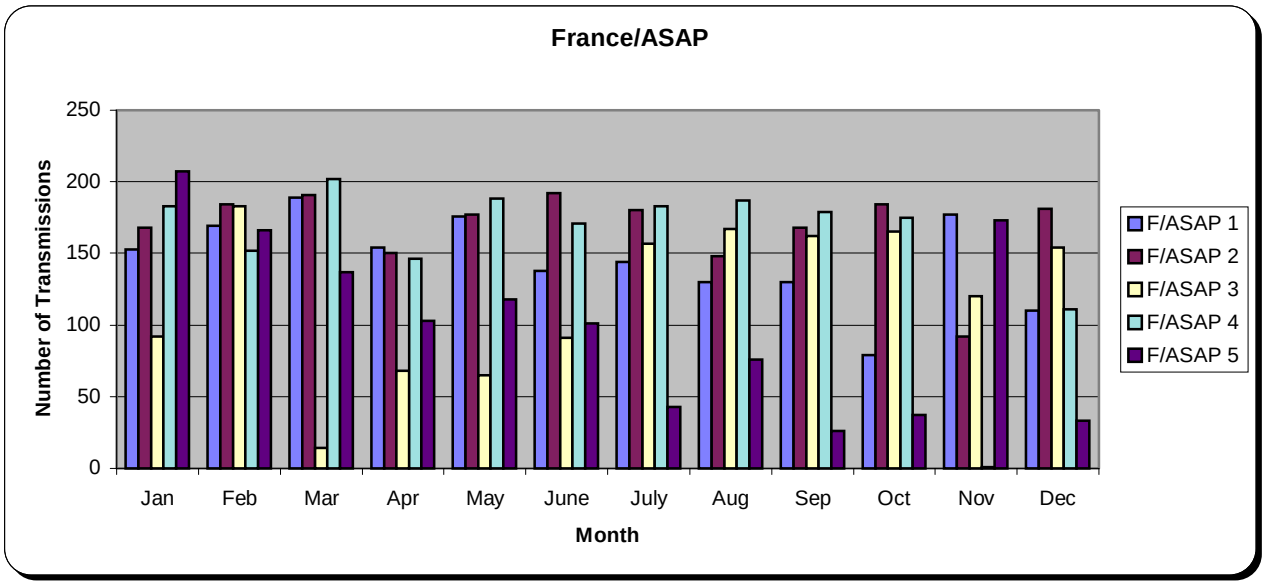


Figure 2: F/ASAP transmissions



1.5 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

ASAP END-TO-END MONITORING
REPORT TO WMO-ASAP, PRESENTED BY FRANCE

1. INTRODUCTION

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

This end-to-end monitoring has been applied to all TEMP-SHIP messages received at LFPW (Toulouse) from EGRR (Bracknell) and EDZW (Offenbach). As in previous years, part A of messages has been analysed from the syntactic point of view. When the original data were available, digit-to-digit comparison has been made. We excluded only messages with obviously erroneous ship's call sign.

2. CONTROLLED MESSAGES

From all processed messages, we have a total of call signs which have been accepted for analysis. This is summarised in Table 1 with the originating country of the ship, when possible.

Some spurious call sign have been taken in account with a correspondence table used in LFPW enables 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 fiability. It is clear that the telecommunication system may corrupt indifferently the call sign and the message. It has also to be noted that all messages with erroneous call sign come mainly from EDZW.

Country	Call sign	Accepted messages number	Country	Call sign	Accepted messages number
Germany	DDBH DBLK DASAP1 DASAP3 ELML7	661 186 10 9 1219	Great Britain	ZCBP6	165
			USA	WTEC	36
Denmark	OXTS2 OVYA2 OXYH2	119 335 309	Eumetnet	SWJS	16
France	FNOR FNOU FNPH FNRS	931 1081 961 902	Iceland/Sweden	S6LA	76
			Norway	LDWR	1388
Spain	EHOA	4	Russia	UCKZ	72
Japan	JIVB. JCCX. JFDG. JNSR. JDWX. JGQH. JBOA.	61 103 23 151 104 128 74	Unidentified or spurious call sign	JQUB DBFK DDJH DJBH ELML6 FBBH TBBH TUBH FBCG SHIP	16 1 1 1 2 2 1 1 3 29

Table 1 : Ship's call sign received in LFPW 2000

3. THE MONITORING

3.1 Origin of messages

For the statistic presented here, we have used the messages coming from the 36 ships with call signs registered as OK in Table 1. From January 2000 to December 2000, this corresponds to 9098 messages, 46.7% of them coming from EGRR and 53.3% 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	(X)
DK		X
GB	X	
S		X
RU	(X)	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, RU = Russia)

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 messages 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	239	2	157	8	149	80	0	80	229	95,82	156
	edzw	409	0	213	64	149	196	29	167	316	77,26	288
	total	648	2	370	72	298	276	29	247	545	84,10	444
Febr-01	egrr	281	0	87	1	86	194	5	189	275	97,86	226
	edzw	457	0	186	56	130	271	79	192	322	70,46	290
	total	738	0	273	57	216	465	84	381	597	80,89	516
Mar-01	egrr	275	0	147	3	144	128	8	120	264	96	200
	edzw	452	0	178	58	120	274	62	212	332	73,45	285
	total	727	0	325	61	264	402	70	332	596	81,98	485
Apr-01	egrr	403	0	211	9	202	192	11	181	383	95,04	239
	edzw	418	0	166	45	121	252	60	192	313	74,88	263
	total	821	0	377	54	323	444	71	373	696	84,77	502
May-01	egrr	496	0	216	8	208	280	11	269	477	96,17	302
	edzw	443	0	193	63	130	250	66	184	314	70,88	257
	total	939	0	409	71	343	530	77	453	796	84,77	564
June-01	egrr	391	0	205	9	196	186	1	185	381	97,44	254
	edzw	412	0	171	37	134	241	59	182	316	76,70	258
	total	803	0	376	46	330	427	60	367	697	86,80	512
July-01	egrr	437	0	235	12	223	202	7	195	418	95,65	283
	edzw	459	0	215	74	141	244	51	193	334	72,77	272
	total	896	0	450	86	364	446	58	388	752	8 3,93	555
Aug-01	egrr	350	0	282	6	276	68	0	68	344	98,29	212
	edzw	391	0	219	74	145	172	23	149	294	75,19	245
	total	741	0	501	80	421	240	23	217	638	86,10	457
Sept-01	egrr	394	0	311	8	303	83	0	83	386	97,97	253
	edzw	430	0	298	109	189	132	11	121	310	72,09	244
	total	824	0	609	117	492	215	11	204	696	84,47	497
Octo-01	egrr	297	0	200	7	193	97	1	96	289	97,31	206
	edzw	302	0	174	82	92	128	11	117	209	69,21	191
	total	599	0	374	89	285	225	12	213	498	83,14	399
Nove-01	egrr	374	0	280	17	263	94	0	94	357	95,45	243
	edzw	341	0	185	67	118	156	18	138	256	75,07	215
	total	715	0	465	84	381	250	18	232	613	85,73	458
Dec-01	egrr	310	0	258	22	236	52	1	51	287	92,58	174
	edzw	337	0	185	83	102	152	19	133	235	69,73	206
	total	647	0	443	105	338	204	20	184	522	80,68	380
Total	egrr	4247	2	2589	110	2479	1656	45	1611	4090	96,30	2748
	edzw	4851	0	2383	812	1571	2468	488	1980	3551	73,20	3014
	total	9098	2	4972	922	4050	4124	533	3591	7641	83,99	5762
average	egrr	353,92	16,67	215,75	9,17	206,58	138	3.75	134,25	340.83	96,30	229
	edzw	404,25	0	198,26	67,67	130,92	205,67	40,67	165	295,92	73,20	251,17
	total	758,17	16,67	414,01	76,83	337,50	343,67	44,42	299.25	636,75	83,19	480,17

Table 3. Bracknell and Offenbach statistics from January 2000 to December 2000.

Call Sign	A	N	B	C	D	B2	C2	D2	T	T%	U	P
DASAP1	10	0	0	.	.	10	0	10	10	100	2	?
DASAP3	9	0	0	.	.	9	3	6	6	66	1	?
DBBH	661	0	57	51	6	604	240	364	370	55	200	91
DBFK	1	0	0	.	.	1	1	0	0	.	0	?
DBLK	186	0	0	.	.	186	68	118	118	63	118	?
DDJH	1	0	0	.	.	1	1	0	0	.	0	?
DJBH	1	0	0	.	.	1	1	0	0	.	0	?
EHOA	4	0	0	.	.	4	4	0	0	.	0	?
ELML6	2	0	0	.	.	2	2	0	0	.	0	?
ELML7	1219	0	425	100	325	794	113	681	1006	82	398.	122
EMML7	1	0	0	.	.	1	1	0	0	.	0	?
FBBH	2	0	0	.	.	2	2	0	0	.	0	?
FBCG	3	0	0	.	.	3	0	3	3	100	3	?
FNOR	931	0	920	269	651	11	11	0	651	69	276	307
FNOU	1081	1	1072	207	865	8	7	1	866	80	318	335
FNPH	961	0	899	122	777	62	5	57	834	86	306	301
FNRS	902	0	893	174	719	9	5	4	723	80	300	328
JBOA	74	0	0	.	.	74	0	74	74	100	73	?
JCCX	103	0	0	.	.	103	0	103	103	100	103	?
JDWX	104	0	0	.	.	104	0	104	104	100	103	?
JFDG	23	0	0	.	.	23	0	23	23	100	23	?
JGQH	128	0	0	.	.	128	0	128	128	100	128	?
JIVB	61	0	0	.	.	61	0	61	61	100	59	?
JNSR	151	0	0	.	.	151	0	151	151	100	150	?
JQUB	16	0	0	.	.	16	0	16	16	100	16	?
LDWR	1388	0	0	.	.	1388	62	1326	1326	95	1313	?
OVYA2	335	0	329	3	326	6	0	6	332	99	331	335
OXTS2	119	0	118	2	116	1	0	1	117	98	117	119
OXYH2	309	0	306	2	304	3	0	3	307	99	305	311
S6LA	76	0	0	.	.	76	1	75	75	98	75	?
SHIP	29	0	0	.	.	29	0	29	29	100	27	?
SWJS	16	0	0	.	.	16	0	16	16	100	16	?
TBBH	1	0	0	.	.	1	1	0	0	.	0	?
TJBH	1	0	0			1	1	0	0	.	0	?
UCKZ	72	0	0	.	.	72	0	72	72	100	72	?
WTEC	36	0	0	.	.	36	1	35	35	97	35	?
ZCBP6	165	1	0	.	.	164	4	160	160	96	157	?
	9182	2	5019	930	4089	4161	534	3627	7716	84	5025	.

Table 4. **Global Statistics for each accepted call sign from January to December 2000**

During these twelve months, LFPW has received a total (T) of 7641 usable messages, representing 84 % of the income. The percentage of NIL messages is insignificant. Nevertheless, if we put aside the duplicates, we only get 5762 really used messages (U) representing 63,33 % of the income. This confirms results of the previous reports.

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

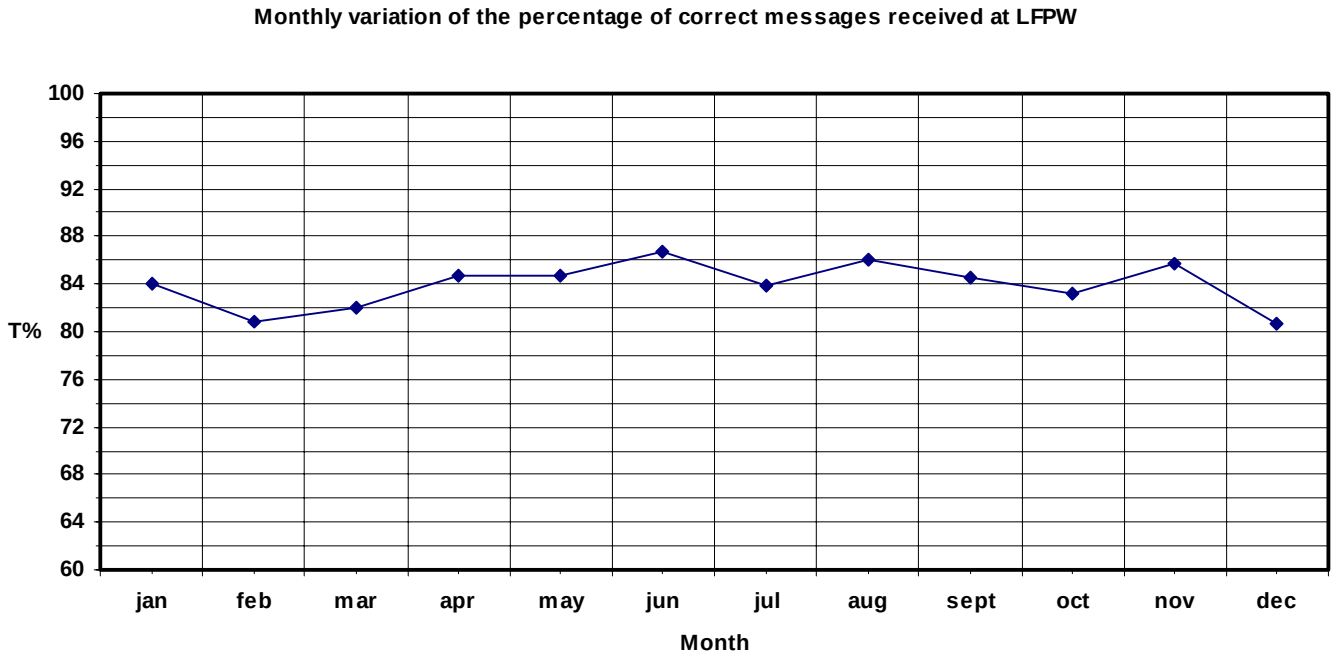


Figure 1: monthly variation of the percentage of correct messages (T%) received at LFPW

The global population of messages can be divided into two populations:

a) 4972 messages having been compared to an original, 18.5% of them being corrupted during the transmission;

b) 4124 messages subject to syntactic check only 12.9 % of them found as incorrect.

Apparently, the telecommunication system may interchange characters in the messages in without changing the general syntax. On a monthly average, LFPW has received total 480 messages non-corrupted and non-duplicated, corresponding approximately to 13 messages for each of the 36 call signs.

3.3 Ships with available originals

We have separately studied the sample of messages for which the ship's observation programme was available. This sample includes 4502 messages which global analysis is given in Tables 5 and 6 where column 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 non-duplications and a high quality transmission. Values less than 50% highlight an important duplication rate.

C/B Percentage of messages rejected by the analysis

Call Sign	A	N	B	C	D	B2	C2	D2	T	T%	U
FNOR	931	0	920	269	651	11	11	0	651	69	276
FNOU	1081	1	1072	207	865	8	7	1	866	80	318
FNPH	961	0	899	122	777	62	5	57	834	86	306
FNRS	902	0	893	174	719	9	5	4	723	80	300
OVYA2	335	0	329	3	326	6	0	6	332	99	331
OXTS2	119	0	118	2	116	1	0	1	117	98	117
OXYH2	309	0	306	2	304	3	0	3	307	99	305
DBBH	661	0	57	51	6	604	240	364	370	55	200
ELML7	1219	0	425	100	325	794	113	681	1006	82	398
TOTAL	6518	1	5019	930	4089	1498	381	1117	5206	748	2551

Table 5: Global statistics from January 2000 to December 2000 for ships with available programme.

Call Sign	U	P	U/P(%)	U/A(%)	%EGRR	%EDZW	C/B%	C2/B2%
FNOR	276	307	89	29,6	52	48	29	100
FNOU	318	335	94	29,4	51	49	19	87,5
FNPH	306	301	100	31,8	56	44	13,5	8
FNRS	300	328	91	33,2	59	41	19,5	55
DBBH	200	91		30,2	46	54	89	39,7
ELML7	398	122		32,6	58	42	23,5	14,2
OVYA2	331	335	98	98,8	81	19	0,9	0
OXTS2	117	119	98	98,3	0	100	1	0
OXYH2	305	311	98	98,7	0	100	0,6	0
TOTAL	2551	2249	95,4	53,6	57,5	55,2		

Table 6: System efficiency for ships with available programme

Out of these 6518 messages, 77 % (B/A) have been compared to originals. From them, only 81,4 % (D/B) are identical to one original. The percentage of messages non-identical to the original (C/B/ and C2/B2) is higher for the ships with duplication than for those without.

The global system efficiency (U/P) appears as high with 95.4 % 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 low telecommunication efficiency (U/A) of 53.6 % of usable messages as compared to the input to LFPW. The good reception (T%) for those ships is 83.1 % rising to 88 **%** if we exclude the ships with high duplication rate.

3.4 Ships without available originals

Out of all the messages received at LFPW, we also have studied the 2664 for which we had no originals (table7). From this syntactic point of view the score of the system (U/A) amounts up to 59.5 %. This result is far above the one of the comparison with the original, which is far more stringent than the syntactic comparison. Duplicates are also lesser than in the other population messages.

Call Sign	% U/A	% egrr	% edzw
DASAP1	20	0	100
DASAP3	11,11	0	100
DBFK	0	0	100
DBLK	63,44	0	100
DDJH	0	0	100
DJBH	0	0	100
EHOA	0	0	100
ELML6	0	0	100
EMML7	0	0	100
FBBH	0	0	100
FBCG	100	0	0
JBOA	98,65	100	0
JCCX	100	100	0
JDWX	99,04	100	0
JFDG	100	100	0
JGQH	100	100	0
JIVB	96,72	100	0
JNSR	99,34	100	0
JQUB	100	100	0
LDWR	94,60	0	100
S6LA	98,68	0	100
SHIP	93,10	10,34	0
SWJS	100	0	100
TBBH	0	0	100
TJBH	0	0	100
UCKZ	100	0	100
WTEC	97,22	100	0
ZCBP6	95,15	100	0

Table 7: Statistics from January 2000 to December 2000
for ships without available programme .

4. CONCLUSION

In analyzing the monitoring statistics it is of interest to note that the best scores are achieved by ships inserting their data in the GTS through only one RTH. This result confirms what has been noted last years.

However, duplication has probably no direct link to the corruption of data. It may be only a workload for data processing centres, which has to be avoided, but it may also be considered as a back-up. Main sources of data corruption are thought to be found else where. For this reason it is very important to perform the exercise with all original data available.