- an attractive means of displaying the traditional set of charts, and

- an exhibition area that will allow the Met Office to sell itself.

The use of high-quality materials and high design objectives and specifications, plus the employment of suitable high technology, has combined to produce an effect that is both informative and stylish.

As with all frontispieces, there is substantial support behind the scenes. Fibre-optic cables have been installed to bring the video images to the Entrance Hall monitors from CFO and AUTOCOM. This communications harness was designed and installed on time by a Met O 5 team led by **Dave Pervin**. The radar rainfall images are from a modified proprietary equipment, known as a Rainfall Analysis Unit built by, and on loan from, Software Sciences Ltd of Farnborough. This RAU is located in CFO and is linked to the Radarnet system. The Meteosat images are from an extra port on the AUTOSAT-1 computer, and are a copy of the frames selected for operational purposes by CFO staff.

The Current Weather Information Display Screen is a direct replacement for the CARD 1 display. Whilst the information source is still at Beaufort Park, the data are transferred by a British Telecom medium-speed digital data link (*Kilostream*) to the Main Building where they are received by an IBM Personal Computer located in AUTOCOM. The PC, which is running software written by **Alan Wright** of Met O 16a, processes the input data and generates a local visual display image. This video image is then transmitted to the Main Entrance via the fibre-optics communications system. Similarly, the teletext image is brought from a dedicated viewdata terminal, located in CFO, which is edited by the Met O 7 videotex staff led by **Heather Tellam**.

The design for the new image was commissioned by the Met Office from Marketing Triangle, under the watchful eye of **Gordon Higgins** of Met O 23. The final display was created and engineered by Button Design Ltd. Overall responsibility for implementing the scheme was given by DD Met O(O) to **Derek Painting** — now AD Met O(OI) — and the project co-ordination was by Met O 16a(4).

* Head of Met O 16a(4)

This co-operative project, the end results of which appeared in early March, involved contributions from Met Os 1, 2, 3, 4, 5, 7, 16, 18, 22 and 23, as well as the Property Services Agency.

Ed.

Britannia waives the rules!

Valerie Maltby broke a long-standing custom when she became the first woman to sail as one of the meteorological staff on a UK weather ship — leaving Greenock on 12 March, aboard OWS *Cumulus*. Although she has a BSc in Nautical Studies and works in the Enquiry Section of the Marine Division, Valerie had no *sea-going* experience. The trip was therefore arranged to provide a greater understanding of the weather problems facing mariners.

The ship spent a month at sea, three weeks of which were on station Lima — either rolling in the long Atlantic swell or facing storm force winds. Getting one's sea legs can take quite a time in such conditions. Valerie's duties included hourly surface observations, launches of radiosonde-carrying balloons and recording sea temperatures to a depth of 900 feet.

WMO Regional Association I (Africa)

Margaret Atkins represented the United Kingdom at the Ninth Session of RA I, held in Harare, Zimbabwe in December. We qualify for membership by virtue of our station on St Helena. Emphasis was placed on the importance of meteorology for economic development in Africa, and the Session accordingly set up a working group (with UK representation) to consider the planning, co-ordination and implementation of World Weather Watch within the region.

Tropical cyclone 'Uma' strikes Vanuatu

On 7 February, tropical cyclone 'Uma' devastated most of Port Vila, Vantuatu and the southern islands of the group. The Director of Met Services, Mike Longworth — who was formerly in Met O 1 — reported that all meteorological staff and their families were safe, but that most of the roof of the meteorological headquarters had been destroyed. Elsewhere in the capital the cyclone had damaged 95 per cent of the buildings, including Mike's own house. **Euan MacDonald** (Met O 19) and **Colin Pye** (Met O 16) have gone out there to conduct a survey of the damage to meteorological equipment, to carry out repairs and, where appropriate, to recommend replacements. Colin was due to return after a couple of months, but Euan will be on a 2-year secondment to the Overseas Development Administration.

Proposal for a 1000 transputer machine at Edinburgh University

In January, **Roger Wiley** accompanied **Peter White** on a visit to the University of Edinburgh. Discussions were held with Professor Wallace, Physics Department, and Dr Harwood, Meteorology Department, about the possibility of setting up a CASE (Co-operative Awards in Sciences of the Environment) studentship to investigate the application of massively parallel computers to problems of numerical weather prediction. There is a proposal to install a machine consisting of 1000 transputers at Edinburgh.

The basic idea behind the transputer is to put a processor, some read/write storage and four input/output interfaces on a single silicon chip. In conventional computer designs, a number of components would be needed to achieve the same result. This packaging makes it relatively easy to use arrays of transputers, but there is a long way to go yet in using such ideas for operational weather forecasting.

REPORT OF VOYAGE ON BOARD OWS CUMULUS 10.3.87 - 14.4.87

Introduction

I joined the Meteorological Office as a Scientific Officer on August 26th 1986 and since then have completed a three month training course at the Met. Office College and spent 5 months working in the Marine Enquiries Section. My usual job involves dealing with all types of requests for information concerning weather at sea (hindcast only). These enquiries vary from legal firms requiring assessments of meteorological conditions (relating to damage to cargo or sinking of ships) to school children requiring general data for short projects.

I volunteered for a voyage on the UK Ocean Weather Ship Cumulus to gain practical experience of the conditions experienced by ships at sea and to discover the effects various wind and wave conditions have on such vessels. I hoped this experience would improve my knowledge of meteorology at sea and hence my ability to deal with enquiries.

The Voyage

On March 10th I boarded Cumulus for the start of a 5 week period to be spent in the North Atlantic, 500 miles off the coast of Ireland, at 57 N 20 W.
OWS Cumulus has a crew of 14 - who are supplied by the ship management company J.Marr & Sons of Hull (to whom I am very grateful for their considerable efforts to make my voyage as comfortable as possible) - with 5 Meteorological Office staff to carry out the scientific and observational duties of the weather ship.

My accommodation consisted of a single cabin (with 'en suite' shower and toilet) located on 'B' Deck (the decks are lettered from A highest to D lowest). Apart from the Captain and Officer's cabins the bulk of the accomadation was on 'C' Deck (Meteorologists) and 'D' Deck (Crew). Work on board consisted of 8 hour shifts for meteorological staff and 4 hour watches for the deck and engine crew.

The ship sailed from Greenock on March 11th. Unfortunately, shortly after leaving shore I started to suffer from seasickness and this matter caused some concern. After almost a week of this trouble, when I was showing no signs of recovery, the Captain of OWS Cumulus was seriously considering returning to port in order that I might be taken ashore. However, on the advice of the Meteorological Office Marine Superintendent the ship remained on station and I was given a little longer to adjust to the rolling swell of the Atlantic. Within twenty-four hours I began to recover and was soon amazed that the motion of the vessel had had such an extreme effect on me.

The Work on Board

Among the tasks undertaken by the meteorological staff are hourly surface observations, which are transmitted over HF radio to Portishead Radio Station thence to Bracknell and into the Global Telecommunications System, 6 hourly balloon launches and radio sonde tracking, regular Expendable Bathythermograph soundings for sea temperature profiles - for the benefit of the Institute of Oceanographic Sciences and MOD(N) - and keeping a watch on the birds and marine life in the vicinity, on behalf of a number of biological institutions.
While I was on board I was given thorough tuition in all these skills particulaly those applicable to my work in the Marine Enquiries division eg the observation of sea and swell and wind estimation from sea state.

The World Meteorological Organisation requests that sea and swell are estimated to the nearest half metre. The practice on board OWS Cumulus is to observe the sea from the lower deck which is very close to sea level, and which therefore makes it possible to give good estimations of the heights of wind waves and swell. There is a wave recorder on board but as this is only in operation for 20 minutes every three hours its use is limited to those observations which coincide with the periods when it is recording.
From my limited experience (five weeks observing at sea) I would suggest that the best and most accurate way of observing sea and swell (as opposed to combined sea which the wave recorder measures) is estimation by an experienced observer. It must be noted that however experienced an observer is, and however competent that person's observations are, meteorology is not an exact science and there are difficulties in observing (or indeed measuring) the sea state to any great degree of accuracy.

As well as learning the duties mentioned above, (plus the skills associated with the smooth running of the ship), I completed the practical work for a report relating to the way in which wind flows over ships. Using a hand held anemometer I took twice-hourly readings of wind speed at 14 locations around the ship (7 on each of the two decks). From this information and that which I recorded from the observations book and ship's instruments it has been possible for me to compile a report on the way in which wind speed varied around the vessel. On completing this project I should be able to produce a diagram illustrating the various degrees of shelter and exposure around the ship's decks, and then perhaps apply any suitable findings to similar vessels.

Conclusion

On my return to the Marine Enquiries Section in Bracknell, I have found the conditions I experienced on board Cumulus, and the techniques I learnt, to be of great use when dealing with the usual varied requests for marine infomation. When making assessments of meteorological conditions, particulaly for legal firms, I have a great deal more confidence in my capabilities (having had no previous synoptic experience when I started the job) and can therefore make a more valuable contribution to the work of the Marine Enquiries team. I would strongly recommend a short amount of practical sea time (such as my 5 week voyage) for those joining the Marine Division of the Meteorological Office who, like myself, have no practical or marine synoptic experience.

I thoroughly enjoyed my experience of life on a weather ship and consider the things I learnt and experienced to be of great value to my career in the Meteorological Office. I would have no hesitation in taking up any chances to go to sea again on either the weather ship or as part of the ASAP project (the upper air programme undertaken on selected merchant ships as they carry out their normal voyaging).

Finally I would like to thank all those people who made the voyage both possible and enjoyable especially our Marine Superintendent, Captain G V Mackie, and the Captain, Crew and Meteorological staff of OWS Cumulus.

- Valerie J Maltby -

A VOYAGE ON BOARD OCEAN WEATHER SHIP CUMULUS

by Valerie J Maltby
(Meteorological Office, Bracknell)

On March the 10th 1987 I joined OWS Cumulus at the start of a five week period to be spent in the North Atlantic Ocean, I was to learn about many of the duties carried out by those on board the vessel and also complete the practical work for an experiment into wind flow over the ship's decks.

I first saw Cumulus at 8.00am on a very cold Scottish morning as she sailed up the Clyde estuary towards Greenock. A number of thoughts occured at that point, not least of which was how small and vunerbale she seemed and how soon she would once more be weathering a month at sea among all that the elements could direct towards her. However, this time I would be on board making minor history as the first British women to sail on a weather ship.

My first evening after "signing on" the vessel was spent in port where I was escorted to the local "inn" by as yet unknown but friendly faces from the ship.Advice flowed in abundance on the whys and wherefores of life at sea and what I could expect while at station Lima, 500 miles off the west coast of Ireland.The age-old subject of seasickness was inevitably raised and when told by one and all, with great glee, "First you hope you won't die; second you wish you would die; third you're glad you didn't die" I failed to appreciate just how real the words were to become.

We were due to sail the next evening and as the ships departure became more and more imminent I said my last goodbyes to land and watched with definitely mixed feelings as the ropes were cast off and we "pulled away" from shore. The 'regulars' on board Cumulus looked at my forlorn face and said with cheerful resignation "its too far to jump and too deep to swim" but I had no real longing to leave the ship; afterall I had always wanted to be a sailor.

OWS Cumulus, operated by the United Kingdom Meteorological Office, is based at one of the three remaining operational weather stations at 57 00 N, 20 00 W. She is manned by a crew of 14, plus five Meteorological staff who carry out the observational and scientifc duties of the vessel. These tasks include hourly observations, which are then transmitted to land via telex for use in forecasting, regular bathythermograph soundings and also radiosonde balloon ascents. While I was on board I learnt a great deal about making observations etc putting all the theory I had learnt in Bracknell in to practice. Data from the weather ship at station 'Lima' is very useful for meteorologists in Bracknell forecasting weather for the British Isles.

Every Saturday while at sea the full compliment of the vessel practice the fire drill and my first experience of this was carried out in somewhat uncomfortable circumstances. I was well and truely under the influence of seasickness and although I had managed to crawl out of my bunk and stuggle on to the upper deck it was soon noticed that I had put my lifejacket on rather askew (I felt too ill to care much).One of the crew kindly offered to retie it for me. The crewman in question

could hardly be described as small and it certainly did nothing for my state of health to have my life jacket fastened very tightly by a man of mammoth proportions pulling on the ties with all his strength. However, I did come through the episode with no dire consequences and I was grateful for the help even if at the time I felt otherwise. With kind words from the captain and concern from all those on board (as well as those on land) I survived the seasickness and was soon fully recovered.

Once I had found those renowned sealegs I was launched in to the full working life of the vessel. It must be said that life at sea has in reality few pleasures; food, therefore, becomes of great importance to all those on board. After a heavy storm or a particularly bad night with the enginees running it is imperative to have a good hearty meal to look forward to. The cooks on board were certainly excellent at their trade and for myself I would say that the huge helpings of dessert were wonderful. I did cause my own problems though as I am vegetarian which was something unknown on the weather ship. However I was supplied with a number of vegetarian delicacies by the extremely kind agent of J.Marr and Son (the agency that runs the vessel) which the cooks prepared with a willing hand supplementing my diet with home baked fare when possible. There was on board a standing "joke" about the size of the portions as a request for even the smallest amount of food usually resulted in a plate heaped high with whatever delicacy was on the menu.(I did wonder if anyone ever used the exercise bikes on board to work off the effects of such splendid food - I doubt it).

One of the most informative lectures I had while on-board Cumulus was about "lighter shades of dark". This was actually quite a famous speech given by meteorologist Mike Hatch to all the new observers when they first join the vessel. It involved standing on the stern of the ship in the pitch dark (in all weathers) learning about the techniques of observing cloud cover at night. With a rather stiff breeze blowing it took alot of willpower and dedication to remain on deck for the ten minutes it took for the eyes to become accumstomed to the dark before an observation could be made. However it was worth it in the end when the sky really was "lighter shades of dark" as the cloud height and thickness varied.

A highlight of my trip must have been seeing the schools of pilot whales and also two dolphins. I was in my cabin when the first school of "black fish" were spied and I had a telphone call from the Met Office to inform me of their presence. Rushing out on deck, I and was very impressed by the sight of such beautiful creatures swimming free. Two more schools of the whales swam alongside the vessel while we were at station 'Lima' and although I took some photographs even these reminders can never live up to the memory of seeing those graceful creatures wild.

Some things which are taken for granted in everyday life were sorely missed by myself while at sea and I suspect by mariners everywhere. There are no postal deliveries or daily newspapers, no quick telephone conversations to loved ones and friends and definetly no chance of a short walk for a change of scene.Two messages from home did reach me while I was at sea and I can honestly say that forty words (the standard BT message length) have never meant so much.

Many of the crew on board Cumulus were ex-deepsea trawlermen, and having a woman on board the vessel was inevitably a great shock to the system. I have always existed in a male dominated environment and so being the only female among 19 men was not so different to my everyday life. I was treated very well by all those on board but regretfully my being female perhaps precluded me from joining in the informal gatherings in the cabins at the end of the working day - be that at breakfast time, midnight or evening time.

I thoroughly enjoyed my time experiencing life at sea, learning a great deal both about meteorology and seafaring life in general, and would certainly take up the sailors life full time, should the oppurtunity arise. The 5 weeks I spent on the open wave did me a great deal of good and perhaps also broadened a few peoples ideas on the role of women in the traditionally male dominated nautical world.