

Meteorologist's profile – John Harding

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During the early 1930s, aviation forecasting was in its infancy, and organised training for it non-existent. When in 1933 Jim Boyden was transferred to forecasting duties, he “spent some light hearted hours learning the squiggles used in plotting a synoptic chart, [and] training consisted of watching forecasters at work without getting in their way” Boyden (1986). Not surprisingly, when in 1935 the Met. Office was notified that experimental commercial flights across the Atlantic were likely within a year or so and that a forecasting service would be needed in support, Sir George Simpson, then Director of the Met. Office, realised that high-quality staff would be required and that the dilettante approach to training would no longer suffice. Moreover, as forecasts for long oceanic routes had never previously been attempted, a completely new scientific technique would have to be developed.

Later that year, the Office started to recruit graduates in mathematics and physics who appeared to have potential not only to be trained as forecasters but also to act as pioneers in a completely new field. One of those who started work on this venture early in 1936 was John Harding from Belfast, born in December 1911, who had graduated and also obtained an MSc in Physics at Trinity College, Dublin. The new entrants gradually assembled at Croydon (London) Airport where a new Atlantic Investigation and Training Section of the Overseas Branch was created under S. P. Peters, helped by two forecasters and some observers from the Main Met. Office for UK and Continental civil flights that was located at the Airport. This unique course has been described in some detail elsewhere (see Meade 1986). A year later, after a great deal of work, three officers had to be selected to accompany Peters to the flying-boat base at Foynes, near the mouth of the River Shannon in western Ireland. During the training period, John

Harding had shown an extraordinary flair for forecasting, so Peters decided he must be one of those to go, together with D. A. (later Sir Arthur) Davies who had made several Atlantic crossings on a cargo boat, studying weather conditions at first hand and making pilot-balloon soundings whenever possible. John's distinguished career as an operational forecaster therefore started in Ireland in February 1937.

There are few more demanding, forecaster-proving areas than the North Atlantic. Although a skeleton of ship reports was available before the War, and no doubt aircrew provided some additional data, successful oceanic chart analysis depended on an ability to link every piece of information from very sparse reports into a coherent picture that could then be followed from chart to chart. In these early days, forecasters did not have the great benefits of satellites and computers, but they did have the incomparable stimulation and challenge, so often lacking today, of working face to face with those they served who were about to fly in the weather predicted. In these circumstances, the establishment of warm personal relations based on mutual trust and respect is vital, and John's wonderful gift for making pleasant and easy contact with everyone he met greatly helped with the dual task not only of prediction, but also of then communicating his reasoned thoughts to others. His overall performance in this taxing role brought him an invitation to transfer to the Irish Met. Service then being formed, but he firmly declined this, preferring to continue with the flying-boat crews he had come to know, working for the UK service which had appointed and trained him. The essential proving flights for what was really a leap into the future took a long time, but in July 1939 the transatlantic passenger services at last began on a regular basis.

This did not last for long, however, because at the outbreak of war, John and his colleagues were recalled to the UK and, not surprisingly, John was earmarked as someone who could make a major contribution to aviation meteorology, especially over the oceans. From the autumn of 1939 and through 1940, 1941 and 1942 he spent most of his time on the Assistant Forecaster Bench in the Central Forecasting

Office (CFO) at Dunstable, responsible *inter alia* for the advisory aviation forecasts that were broadcast to all stations. To broaden his experience by covering different types of Atlantic operations, he did have short spells at Prestwick, Gloucester and Plymouth, some of these designed to qualify him for promotion to Acting Senior Technical Officer (STO) which he achieved early in January 1943 at the age of just 31.

The Chief Forecaster at CFO throughout the War was the redoubtable C. K. M. Douglas, and one may infer that it did not take him long to realise that John was a very talented forecaster. Although many of those on the CFO rosters were older and much more experienced, it was to John that Douglas turned in 1942 when he wanted someone to co-author an important paper "The construction of prebaratic charts" (Douglas and Harding 1943). More than 50 years later it is impossible to determine how much each contributed to this joint work; parts of it quite clearly came from Douglas, but what may be termed the understanding of outstation ways of thought were almost certainly due to John's influence. The key point is that although a somewhat remote personality, Douglas was known and greatly respected as a forecaster at the top of his profession; he would never have engaged as joint author anyone so much younger who did not understand what forecasting was all about.

This paper reached the outstations like a breath of fresh air, bringing a fascinating blend of honest common sense and stimulating forward thinking. It was, for example, very reassuring in the outfield to learn that even at CFO "free use of the india rubber is usually required", "if a number of experienced forecasters are in substantial agreement, the forecast may nevertheless go wrong", "a single observation from an otherwise unrepresented area may alter the whole aspect of the prebar" (how true that is!), and that the purpose of a prebar is "to provide an aid to forecasting and not to prescribe a Medean law". By contrast to these down-to-earth remarks, we also have an emphasis on the need for a three-dimensional approach, the importance of ageostrophic factors, thermal steering, and so on. At the time the paper made us all think and it remained the

primary guidance on practical chart work until well after World War II; even today it makes interesting reading, with its hints of what was to come with Sutcliffe's post-war development ideas and the subsequent numerical approach.

John's promotion to STO in January 1943 was accompanied by a move across the room to become by far the youngest member of the Senior Forecaster's Bench, working directly under Douglas and alongside Sverre Peterssen with his new upper-air unit. In April that year, forecasters were commissioned in the RAFVR, and almost all of us went into uniform virtually overnight; but as CFO was a Headquarters unit the vast majority of its staff remained in civilian clothes. Promotion to STO implied RAF promotion to squadron leader or above but, not being in uniform, John merely acquired enhanced status in CFO but without its usual visible signs. He remained in close support of Douglas throughout the D-Day period, and carried on to complete 12 years working operationally on the bench. Most forecasters served overseas at some stage during World War II, but John did not, no doubt because Douglas was reluctant to release him. However, having been promoted to Principal Scientific Officer (PSO) in 1948, the following year he was sent to Ismailia as Deputy Chief Met. Officer for the Middle East, and served two full tours in this post. In addition to looking after the Main Met. Office at Air HQ, he also had to oversee all the met. offices in the command in Egypt, Libya, Cyprus etc., all of which he visited. He also found time to produce a Met. Research Paper about "Jet stream profiles in the Middle East". No doubt to his subsequent relief, his return to the UK in 1955 was before the Suez affair.

At first sight John's posting to Wyton, near Huntingdon, at this juncture seems strange, but there was a very good reason for it. During World War II Wyton had been an important Pathfinder airfield and also the base from which the famous PAMPA (Photo-recce And Meteorological Photography Aircraft) flights operated meteorological reconnaissance sorties over enemy territory. In 1952, Wyton was given a new role as the home of the Strategic Reconnaissance Force whose squadrons were equipped initially with Photo Reconnaissance (PR) versions of Mosquito and Meteor aircraft,

then of Canberras. But in 1955, the reconnaissance ability of the Force was greatly enhanced by the arrival of PR versions of one of the so-called V-bombers – the Valiant – which remained there throughout John's stay. Although these were RAF aircraft, much of their work was for civilian and humanitarian purposes and they operated at high altitudes almost anywhere in the world; the year after John left, they even had to keep a photographic eye on Tristan da Cunha after the volcanic eruption there. Clearly an experienced oceanic forecaster was needed to control the met. office there and plan its work. Published reminders of his days at Wyton include photographs of cumulonimbus tops and reports of hail damage at 30 000 ft (9140 m).

After five years at Wyton, John was promoted to Senior Principal Scientific Officer (SPSO) and became Assistant Director (General Services). That post was then responsible for the fast-expanding services to the public and also to agriculture.

As there was an agricultural specialist (L. P. Smith) already in the Branch, John was able to devote most of his time to the public arena where his ability to communicate both to receivers of services and to staff was invaluable; this was a job after his own heart and he brought to it the understanding of a born forecaster. The first public Weather Centre, in London, had been opened early in 1959, followed just before the turn of the year by another in Glasgow; but John himself was responsible for setting-up two more – Manchester in 1960 and Southampton in 1961. Needless to say he visited all the Centres, getting to know the staff involved, and some of his friendly and supportive comments and advice are still remembered by individuals nearly 40 years later!

As part of a reorganisation of headquarters Branches, in 1966 John became Assistant Director (Agriculture and Hydrometeorology). The field of hydrology was new to him, but he entered it with typical enthusiasm at what turned out to be a most interesting time. In pursuit of its aim of exercising operational control over rivers and reservoirs, the Water Resources Board (WRB) notified the Office of a compelling need for real-time rainfall inform-

ation of proven reliability and consistency. Radar offered a hope of meeting this requirement, but no one could be sure without a major and very thorough ground trial to verify the radar data against traditional rain gauge measurements and determine the boundaries of the areas affected. Promising full co-operation, WRB agreed to participate in a joint working group led by John; the radar manufacturer Plessey also joined the group and offered to provide one of the latest radars on free loan. The group chose the Chester–Dee catchment as the optimum location for these trials, then made detailed plans to set up and operate them (P. J. Meade, personal communication). All those concerned with what came to be known as the Chester–Dee Project realised that a successful outcome would have enormous potential over and above its immediate application to hydrology, in particular by offering the prospect of a national radar network to provide vital new information for use on the forecast bench.

For his firm leadership of the Chester–Dee Project and participation in all the relevant World Meteorological Organization affairs during his seven years in this post, John came to be held in high regard by hydrologists both at home and abroad. As a mark of his overall distinction as both forecaster and scientific administrator, in 1972 he was appointed an Officer of the Order of the British Empire – an honour he greatly treasured. Throughout his career, John had brought to his work not only a high degree of professional competence, but also a wealth of cheerful friendliness and a wish to help others that linger in the memory. It is not surprising that from 1967 to 1973 he was the invited Chairman of the Staff General Purposes Committee at Bracknell which co-ordinates all the social and sporting activities of the Office. His move after retirement at the end of April 1973 to exercise his skills in human relations by working for the Citizen's Advice Bureau in Bracknell was a natural progression.

But then a most unexpected opportunity turned up. In connection with its work in support of the offshore industry, the Institute of Oceanographic Sciences (IOS) needed one or two skilled analysts to reconstruct the wind and pressure fields over the North Sea and

some areas of the North Atlantic during over 40 cases of gales in the period 1946–76. No true forecaster can ever resist an opportunity for chart drawing and, when asked if he would do this work under contract, John jumped at it; he was assisted by Albert Binding, another very experienced forecaster who had recently retired. The report based on their work was published by IOS in 1978, and one particular gale (in January 1976) was also used as the subject for an article in the *Meteorological Magazine* that year.

John much enjoyed a party for his 70th birthday, but not many years later cancer developed and sadly the end came in the mid-1980s. Although he left behind relatively few published papers, his work will never be forgotten, nor will the endearing friendliness and

support which characteristically he brought to colleagues of all ranks.

References

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Book reviews

Natural environmental change, by A. M. Mannion. Routledge, London. 1999. xvii + 198 pp. Softback £12.99. ISBN 0 415 13933 3

It is rare to come across a textbook that is also an excellent read, but this book is just that. It is extremely well written, concise and yet comprehensive. It may be recommended to anyone who is interested in environmental change in the last 3 million years.

The wide range of disciplines involved and their contributions to the study of climatic change are discussed in five major chapters, covering everything from geological factors, Milankovic forcing, ice and deep-sea cores, etc. to pollen analysis and dendrochronology. There are brief, but clear descriptions of the various concepts and techniques. There are so many of these nowadays that the details are extremely useful. I have to admit to being ignorant of the potential for alkenone stratigraphy, for example, before reading the information given here.

Three important chapters discuss the evidence for environmental change at high, middle, and low latitudes. Rather than being restricted to largely European or North American examples, the coverage here is again very wide, with details of interesting results from research in South America, South Africa, and Australia, among others.

Each chapter has its own set of references, and there is an extremely comprehensive overall bibliography to 'proper' books and papers, rather than

the sketchy listing of ephemeral or peripatetic World Wide Web pages that seems to be too prevalent these days. For once a book lives up to its description of being an "exciting and innovative text". It is most highly recommended.

Storm Dunlop

The Times night sky 2000, by Michael Hendrie. Times Books, London. 1999. 32 pp. Softback £4.99. ISBN 0 7230 1040 4

This little booklet, which will be familiar to many readers, provides a useful guide to events in the night sky throughout the year. The charts are perhaps beginning to look slightly old-fashioned, but are perfectly adequate for their task. Also included is a short summary of astronomical developments in the past year.

The Times night sky companion, by Michael Hendrie. Times Books, London. 1999. 128 pp. Softback £6.99. ISBN 0 7230 1041 2

This book acts as a supplement to both the monthly notes that appear in *The Times* newspaper and to the yearly booklet (described above). Both are, of course, limited by their very nature in the amount of detail that they can include. In effect, then, this book describes the various objects that are visible in the night sky, and gives useful background information on the motions of celestial objects, for example, which are often so confusing