ZEPHYR

DECEMBER 1973 DECEMBRE

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CANADA'S MOBILE WEATHER SHIP

The Canadian Pacific Ship Company's M/V W.C. Van Horne has completed a two-year program of providing upper air observations in many parts of the vast Pacific. The Atmospheric Environment Service and C.P. ships originated the program on October 9, 1971 and the last observation was taken in late October of 1973 as the ship docked in Japan.

The ship is a large bulk carrier carrying coal at 55,000 tons a load. Sailing time from B.C. to Japan is about 14 days and from Japan to Australia about 11 days.

During the past two years the Van Horne has made thirteen return voyages from B.C. to Japan, seven return voyages from Japan to Australia and one return trip from Japan to Chile – a total of almost 200,000 nautical miles. While at sea, twice daily soundings were taken in the northern hemisphere and once a day soundings in the southern hemisphere. In all, 821 upper air soundings were carried out with excellent results, attaining an average height of 42 millibars (more than 70,000 ft.) and one balloon reached 5 millibars (more than 100,000 ft.)

Reports were transmitted from the ship to shore radio stations in Canada, U.S.A., Japan, Guam, Australia and New Zealand and on one occasion, when poor reception made it impossible to contact the normal station, the report was picked up and relayed by a radio station in South Africa.

Two A.E.S. upper air technicians were employed in this program – Dennis Engemoen and George Kyle. These men were not strangers to service at sea as both had served on Canada's Ocean Station Papa's weather ships. But life on a mobile ship has it's differences. There are the exotic foreign ports of call and the work on board is different. One man handles the entire sounding from base line check to balloon inflation and release, recording, computing and coding the observations. Only a few flights were missed despite the rough seas of the North Pacific, winds as high as 70 knots, the heat of the tropics truly an excellent record and certainly a result of good equipment, excellent facilities and the full co-operation of the captain and crew of the Van Horne.

The Van Horne is fully equipped as a Canadian Selected Ship. The Ship's Officers carry out a complete surface weather observing program and their work has been of high standard they have received Excellence Awards for the past two years.

This was Canada's first venture into the Mobile Ship program and it is felt it was a successful one U.S. participation in the program ended some time ago and with Canada's agreement with C.P. now terminated, only the United Kingdom is continuing the program.

The bulk carrier and mobile weather ship, M/V W.C. Van Horne, sails under the Lions Gate Bridge outbound from Vancouver carrying coal to Japan.

Photo courtesy Bill Cunningham.

LE PROGRAMME D'ÉTUDE GLOBALE DE L'ATMOSPHÈRE

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La maîtrise de la météorologie est un rêve creux, qui a des chances de le demeurer pour toujours; même si une certaine puissance technologique arrivait à ce genre de dirigisme, les complications légales seraient énormes, car tout le monde est loin de désirer le même type de temps au même moment.

Prédire le temps est une autre question, et la plupart des hommes seraient satisfaits si les bulletins météorologiques étaient plus exacts, plus assurés. Depuis quelques années, les prévisions à court terme se sont beaucoup améliorées, grâce en particulier aux nouvelles techniques de collecte des informations et à la mise à contribution des ordinateurs qui tirent les conclusions avec une grande rapidité. Les prévisions à long terme, au contraire, qui seraient si précieuses si elles étaient constamment sûres, relèvent encore plutôt de l'art que de la science. Cependant, il ne manque pas de bonne raisons de penser qu'il n'en sera pas toujours ainsi et que la solution est au moins du domaine des possibilités. Ce qu'il nous faudrait d'abord, c'est la connaissance physique des détails de formation de grands systèmes météorologiques du monde, et de leur évolution, car on sait bien que le temps qu'il fait sur une contrée dépend de ce qui se passe à des milliers de kilomètres de là, de là où il représente un facteur capital de l'activité humaine. Un grand pas dans cette direction est en train de s'accomplir sous la forme d'un Programme d'étude globale de l'atmosphère (GARP = Global Atmospheric Research Programme) organisé conjointement par le conseil international des Unions scientifiques et l'Organisation météorologique mondiale. Ses deux ambitions principales sont la connaissance du comportement de l'atmosphère, tel qu'il ressort des grandes fluctuations atmosphériques du globe (qui conditionnent les changements de temps) et de connaître les facteurs déterminants des propriétés statistiques de la circulation atmosphérique, pour mieux saisir les bases physiques des climats. Le programme comprend des études théoriques et des recherches pratiques, dont l'une des plus importantes est la surveillance minutieuse de toute l'atmosphère, pendant un an, et jusqu'à l'altitude de 30 km. Deux périodes d'étude intensive plus particulières totaliseront une durée de trois mois. Nulle date précise n'a été fixée jusqu'ici pour le premier travail global du GARP (désigné lui-même sous le signe FGGE), mais on espère que le coup d'envoi sera donné en 1976.

Le FGGE sera essentiellement une étude de faisabilité destinée à préciser le terme auquel on peut pratiquement prévoir le temps – du moins avec la relative certitude que nous escomptons pour nos prévisions à court terme – d'après l'évolution des accidents qui affectent ce système turbulent et hautement complexe qu'est notre atmosphère. Les météorologistes admettent actuellement qu'il serait possible de donner des bulletins corrects portant sur trois semaines, si des observations couvrant l'ensemble du globe pouvaient être effectuées systématiquement avec une périodicité de 500 km horizontalement et 3-4 km verticalement. Cela correspondrait à environ 100,000 points d'observations individuelles.

L'aspect général du temps est naturellement la somme des effets d'un nombre considérable de facteurs divers, et il est bien difficile de quantifier certains des paramètres qui les composent: par exemple, les actions réciproques de l'océan et de l'atmosphère, la turbulence, la convection des nuages. Un grand progrès éclaire déjà l'élaboration mathématique de modèles d'atmosphères idéales – qui aboutit à des prévisions satisfaisantes portant sur des durées de l'ordre de plusieurs mois – alors que l'élaboration de modèles de l'atmosphère réelle est encore à ses débuts. L'un des grands problèmes qui se posent est la

quantification de tous les paramètres utiles. Le principal objectif de GARP est de mettre en forme des modèles mathématiques valables du comportement de l'atmosphère.

De toute évidence, les prévisions météorologiques à long terme sont de deux sortes. La première est celle que nous avons envisagée jusqu'ici: une extrapolation dans l'avenir, de quelques semaines à peine. La deuxième est la prévision du temps bien plus éloignée: l'été prochain sera-t-il particulièrement sec ou pluvieux, et l'hiver qui suivra? Pour arriver à ce genre de prédiction, avec un certain degré de certitude, il nous faut bien essayer de connaître les facteurs de modifications lointaines dans la formation du temps atmosphérique, dont il semble bien que les plus marquées ressortissent à l'interaction de l'atmosphère et des océans. C'est pourquoi le programme comporte des dispositions spéciales en ce qui concerne la circulation au-dessus des mers.

Pour obtenir les données nécessaires, une extraordinaire richesse de moyens sera à notre disposition. Les plus fameux, et en fait les plus indispensables, seront les satellites météorologiques, dont le premier n'a été lancé qu'en 1960. Ils permettent de monitorer systématiquement les terres lointaines et inhospitalières que les méthodes traditionnelles sont incapables d'atteindre. Il a été décidé de lancer quatre satellites stationnaires et quatre orbitaux, qui auront pour mission d'interroger les bouées et les stations. En outre, il y aura des ballons à hautes pressions (et altitudes constantes), à 200 mb sous toutes les latitudes et à 900 mb sous les tropiques.

Les tropiques sont en effet au premier plan, car c'est là que la plus grande partie de l'énergie solaire est reçue sur notre globe. On peut dire qu'ils représentent le foyer d'où provient la chaleur de tout le système. Nous aurons donc aussi une observation spéciale de l'Atlantique tropical, qui débutera probablement en 1974, et couvrira une superficie d'environ 10^6 km^2.

Cette année de surveillance intensive de l'atmosphère inclut une étude spéciale de l'interaction air-mer. Son objet sera de trouver les moyens d'incorporer au modèle mathématique les paramètres correspondants aux transferts massifs de chaleur, de vapeur d'eau, et aux moments qui affectent les couches d'air à la limite de la surface terrestre. La contribution de la Grande-Bretagne – conjointement avec les Services météorologiques néerlandais – se concrétisera dans une étude spéciale, d'une durée d'un mois, dans l'Atlantique Nord-Est, en vue de mesurer la variabilité des phénomènes atmosphériques et maritimes dans certaines limites d'espace et de temps.

Le GARP fait inévitablement penser aux quatre grands programmes internationaux de naguère: les Années polaires (1882-3 et 1932), l'Année géophysique internationale (1957-8), et les Années internationales du soleil calme (1964-5). Comme elles, il suppose un immense travail préparatoire, qui a été confié à un Comité de coordination, composé de douze membres. Outre l'importance pratique des résultats que l'on espère recueillir, ce grand effort de collaboration internationale doit être salué avec enthousiasme à une époque où tant de hautes ambitions humaines sont contrecarrées par les dissentiments qui opposent les nations du monde.

H.H. BINDON AND CO.
NORRIS ARM, BOTWOOD, GANDER, NFLD.
1936-1939

1935	H.H. Bindon	– working on research at the Banting Institute, Toronto University.
1935-36		– on second MA course Meteorology with J.R.H. Noble, W. Hewson, C. Muskat, and a few others.
Sept. 1936		– with course members, hired by the Meteorological Service of Canada.
. . . . .	. . . . .	. . . . .
Summer 1936	J.H. Kirk	– who had arrived in St. John's, Nfld. late in 1935, and used temporary office space in the Post Office building, Water St., opened an office in the Memorial University building.
		– duties were to inspect observing stations already operative, and to open a number of secondary and auxiliary observing stations in the Island.
		– hired two clerks, J.J. Moakler, and G. Redmond, to handle climatological summaries, and support services for the new observing stations - also to take pilot balloon observations.
	R.C. Jacobson	in his own aircraft, flew in to St. John's Nfld., where he contacted J.H. Kirk
		- arranged with Doug Fraser to use Fairchild 71 to take upper air observations, using a meteorograph and thermometers strapped to the struts of the aircraft (Fraser was the owner/pilot, mechanic Kent).
		proceeded by train to Norris Arm, selected as the base for the upper air ascents got accommodation with a Lacey family – made arrangements for the new operation – and later took H. Lacey on as a general helper.
Sept. 1936		returned by train (and ferry) to Toronto.
Sept 28, 1936		arrived back in Norris Arm with H.H. Bindon.
Oct. 15, 1936		- after training H.H. Bindon on the operation, returned to St. John's, and then flew to Sydney, and back to Toronto.
. . . .	. . . . .	. . . . .
Oct. 1936	H.H. Bindon	moved from temporary accommodation to that previously used by Jacobson – with Lacey family.

		– carried on with upper air ascents – used rowboat as transportation, and stood on pontoons of aircraft to reach position for meteorograph.
Oct. 29, 1936		– got involved in trying to keep aircraft from capsizing in heavy seas – HHB in rowboat holding on to aircraft with a boathook, and risking a dunking – operation successful.
		– aircraft off at 06:30 a.m. reaching altitude at 14,000 feet.
Jan. 18, 1936	R.G. Reid	– of the railway-building family, commenced weather observations at Gleneagles on Gander Lake, not far from the outlet of the lower Gander River.
		– observations continued until the end of January 1937, according to records held at the AES headquarters.

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1937	Hal Pattison	– retired Squadron Leader RAF, representing British Air Ministry.
		- in Botwood making arrangements for installation of radio and other facilities in preparation for the pending transatlantic flights by flying boats of the Imperial Airways and Pan-Am.
1937	H. Lacey	– in Norris Arm – taking pilot balloon observations in support of upper-air ascents.
Mar. 1937	H.H. Bindon	- travelled to Botwood from Norris Arm, by snowshoes over the sea ice, and suffered injuries to his feet.
		- purpose of trip – to discuss with Pattison the hiring of staff for map-plotting and weather observations in Botwood.
Mar.-May 1937	H. Carter	of Botwood, together with M. Sparkes of St. John's and T. Baird of Grand Falls, hired for map-plotting and other weather duties in Botwood.
	Radio staff	- hired for ground-to-air, and ground-to-ground radio transmission-reception duties in Botwood – in contact with Montreal, New York, and Foynes (Ireland), and with aircraft in flight: and copying radio broadcasts of weather information.
June 1937	McTaggart-Cowan	- with A. Thomson and J.R.H. Noble arrived in Botwood to activate meteorological facilities in support of transatlantic flights by flying boats New York Botwood – Foynes.
Aug. 1, 1937	H Lacey	- commenced weather observations at Gleneagles, Gander Lake.

		– these regular daily observations continued until October 29, 1937, when Lacey moved to the Newfoundland Airport (Gander).
Aug. 1937	Flights	– transatlantic flights commenced – – Imperial Airways (Caledonia) – Pan-Am
Nov. 1, 1937	H. Lacey	– continued regular daily observations at the Newfoundland Airport (Gander) – these were continued until the end of November 1938, when the Botwood activity was transferred to the Newfoundland Airport.
Late 1937	A. Thomson	– left Botwood for Toronto, and followed later by J.R.H. Noble.
Jan. 20, 1937	C.J. Cahill	– commenced regular daily observations at Hatties' Camp – (Newfoundland Airport) - observations continued through to Oct. 31, 1937, when H. Lacey took over the responsibility.
Aug. 17, 1937	Staff	– Botwood – weather observations commenced, and continued until Nov. 30, 1938, when the operation was transferred to the Newfoundland Airport.
Feb. 10, 1937	Mrs. F. Wall	– Glenwood – – H.H. Bindon instructed her, and station for secondary observations was started.
. . . . .		
April 1938	H.H. Bindon	– moved his working base from Norris Arm to Botwood aircraft landed at Botwood after flight. HHB took off the meteorograph, passed extra meteorograph to the pilot, who then flew back to Norris Arm.
Dec. 1, 1938	Staff	– McTaggart-Cowan, H.H. Bindon, Gib Henry, and observing staff moved from Botwood to the Newfoundland Airport where the forecast/observing operation commenced. H. Lacey included in routine assignments. Signals staff also set up operations at the Newfoundland Airport.
. . . . .		
1939		– transatlantic flights continued through Botwood with small support staff from the Newfoundland Airport manning facilities at Botwood during the flight period
Sept. 1939	WWII	- The day that war was declared. H.H. Bindon was at Botwood installing weather observing instrumentation on two paper boats.

July 1939	J.H. Kirk	– with J.J. Moakler and G. Redmond moved climatology-inspection operations from Memorial University in St. John's to the Newfoundland Airport, and these three became additional weather office staff members.
Aug. 1939	K.T. McLeod	– arrived on staff – his class-mate D. Ross arrived late May 1941.
. . . . .		
July 1940	Gander	– name "Gander" used on record sheets of weather observations for first time – as "Newfoundland Airport, Gander".
. . . . .		
Fall 1941	H.H. Bindon	– moved from Gander to Montreal to hire staff and set up a forecast office in support of the transatlantic ferry operations.

H.H. BINDON RETIRES

by J.J. Moakler

In recognition of his retirement and of his contribution over the years to the Instruments Branch and to its parent organization, more than a hundred and fifty friends and co-workers, and their wives, gathered in the cafeteria dining area at 4905 Dufferin St., Downsview, on December 19, 1973, to share a pleasant period of reminiscing, tall tales, friendly banter and good fellowship with Hugh Bindon and his accomplice Dorothy. A few of the already retired were on hand to welcome the Bindons into their fraternal group.

Fellow workers, whose roots in the Instruments Branch dated back to the early fifties, were treated to a display of about thirty photo slides, showing themselves in work and in play groups during 1952-57, in weather displays at the CNE, at a 1958 Christmas Party at 60 Richmond St., and at the Walker House New Year's 1958. The slides were presented by Lief Hanson, a 22-year employee of the Branch. There was much dusting-off of memory boxes as familiar faces were recognized, and the long distant activities remembered in detail. Lief also provided taped background music, light and easy, composed of selections from million-dollar-memory records, covering the past 20 years.

The work of resident cartoonist Norm Steinhaur decorated the walls and pillars of the cafeteria, depicting milestones in the working life of H.H.B., including skating across the sea ice in Notre Dame Bay in 1936 in the line of duty, flying the APOB 1936-40, developing a special-duty thermometer, and his capability in a certain second language, which he had mastered during the early days.

A few photos taken in Newfoundland in his pioneer days showed the young Hugh with a moustache yet, while a clairvoyant photo for 1993 showed the addition of a grandfatherly beard.

Wines, cheeses, a variety of crackers, and Christmas cakes were available in quantity at 4:30 p.m., but were in short supply by 7:45 p.m. when the final well-wishers headed out into the five inches of freshly-fallen snow.

Stu Dewar, staunch MC for the occasion, used a Stevenson Screen (on stand) as a lectern, and set the mood for the affair with his carefully researched stories as lead-ins, and introduced the selection of top speakers, noted for their contribution to the life and times of H.H. Bindon, and for their capacity to tell tales-out-of-school.

Lead-off speaker, in the review of the many stages of the Bindon career, was K.T. McLeod, a veteran of the retirement group, and one who was associated with H.H.B. at Gander, Montreal and Head Office. The highlights of the years 1936-42 came through as adventuresome, but handled with ease, as the McLeod wit, patter and charm were used to give a capsule of how it was in them-there days. Keith was a hard act for his more serious colleagues to follow

Don Ross, reminiscing the years 1942-46, including the support role of bombers-to-Britain, identified H.H.B. as the man who invented bogus data even before the days of computer analysis, and the man who was secretly voted the top indoors man during the Winter 1940-41. His winter topcoat remained at the Brants' home on Chestnut Drive, and H.H.B. did not see a use for it until he was packing his bags for the trip to Montreal in May 1941

H.H. BINDON

Photo Courtesy Alex Blokhine

Les Tibbles, noted for his scenic paintings while stationed at Gander, commented on Hugh's second tour at Gander 1946-49.

The years 1949-51, when Hugh was Superintendent of Transoceanic Aviation, were spent in the Dog House, out behind 315 Bloor Street West. Another tenant at the same time was Frank Benum, who regaled his listeners with a variety of shaggy dog-house stories.

A more serious vein ran through Larry Campbell's view of the years 1951-73, during which H.H.B. in the Instruments Division, and later a Branch, managed to maintain his autonomy within the management coterie, and survived a number of moves from one location to another, as his staff increased in size and activities.

At this stage Stu Dewar read a letter from Henry Belhouse, who regretted his absence, managed to include a recent Newfie joke, and ended with the rallying cry of Instruments personnel – "A Bindon Hope all ye who enter here."

Two current representatives of Instruments Branch then took their turn, H. Gerger relating incidents of more recent vintage, and indicating the respect and esteem in which his staff held their Director, while Norm Steinhaur displayed wit and timing in introducing a letter from the publisher of the Globe and Mail to H.H. Bindon, and then reading the letter, which turned out to be 18-carat, and completely aware of Hugh's addiction to the morning paper.

Another retired confrere, Clarence Boughner, a man who had known Hugh Bindon since his university days, paid tribute to various aspects of the Bindon career, from those early days right through to the Seventies, and welcomed him into the retirement ranks.

The contacts of Instruments Branch with the MOT Telecommunications Branch were recognized by the presence and comments of Frank Lay, Director Air, and Boris Boradchuk, Policy Adviser, who came up from the Capital City to represent their top man Earle Porter.

A more personal note, concerning the respect held for Bindon by Instruments' employees, was struck by Jay Dickson, himself a veteran of 21 years, and by Stu Dewar who read out a long list of employees who predated the Bindon era in the Branch, and who were present on this occasion.

In spite of the MC's efforts to keep speakers to a reasonably short time limit, the enthusiasm of the various speakers for their task resulted in the presentation of gifts taking place almost two hours after the opening bell. Nevertheless, listener enthusiasm was maintained throughout, and a large number stayed on to see Dorothy and Hugh react to the three gifts selected.

Jay Dickson, with the help of Frank Harris and Joe Deschenes, wheeled up a large wrapped container, and after suitable delay unveiled a scale replica of the monumental sculpture which stands on the front lawn of the headquarters building. H.H.B. had been in the planning group which selected the sculpture.

Mrs. Gerry Metcalfe, H.H.B.'s "office wife" of some fifteen years received a corsage from the MC early in the evening. Now, Gerry assisted J.R.H. Noble in presenting to the Bindons a painting by Les Tibbles. ADMA did a little reminiscing too, on this occasion, and related that Hugh had written up his lab reports when they were on course together.

R.E. Vockeroth (left) making presentation to H.H. Bindon.

J. Deschenes (left) and W. Richardson (right) Scale replica of AES Sculpture presented to H.H. Bindon.

The third gift was a hand calculator.

The recipient of all this attention and commendation was a pretty tired listener, and rather embarrassed by it all towards the end of the formal part of the evening. He managed to convey his sincere thanks and appreciation for all that had been done for himself and Dorothy, although words failed him towards the end.

Hugh, and Dorothy, will long be remembered within the Instruments Branch and within the AES. We wish him a successful retirement, and good travelling.

TELLING TALES OUT-OF-SCHOOL

J.R.H. Noble

K.T. McLeod

C.C. Boughner

L.T. Campbell

S.W. Dewar

H.H. Bindon-Rebuttal

H. Gerger

D.S. Ross

N.S. Steinhaur

Photos courtesy of John Cook

END OF AN ERA – GOOSE BAY

On November 20, 1973, Gander Weather Office assumed the responsibility for forecasts for Labrador and the contiguous waters. This marked the end of Goose Weather Office as a producer of forecasts and the beginning of its functioning as a Consultation and Presentation Office. Further consideration may see it in due course relegated to the level of WO 4.

The phase down began on July 17, 1973, when Gander W.O. assumed the responsibility for the Marine Forecasts for the Labrador Sea and Davis Strait areas. The process continued as Montreal W.O. took over the responsibility for Aviation Forecasts for northern Quebec on October 10 and Edmonton Arctic Central took over the forecasting for Baffin Island.

The implementation of the change came as a culmination of a study of the problems and a search for solutions by AES Headquarters and Atlantic Regional staff which began several years ago. Improvement in communications and in centrally produced forecast information, as well as the raising of the standards of the technicians have all contributed to the situation, in which the professional input to meet the weather service requirements at Goose Bay can be provided from other offices. The result is the more efficient use of manpower and financial resources, with the realization of considerable savings, while maintaining high standards of service.

In 1942 a staging route for aircraft across the North Atlantic was in operation and short range aircraft were being delivered to Europe, following an agreement made in 1941 between Canada and the United States. Goose Bay was to play a major role in this scheme and Weather Services began at the site in February 1942. Unofficial observations had been taken since January.

Since its meteorological beginning there have been scores and scores of meteorologists, technicians and communicators spending tours of duty at the Goose Weather Office one time known as a Main Meteorological Office. For the most part the individuals benefitted and in their own way enjoyed in varying degrees the life in the rigors of the sub-arctic climate. Many found the associations with the native peoples and with the military fraternity to their liking. There were some of course who disliked every minute but these were a small minority.

During its existence as a forecast office many of our professionals cut their baby teeth there, so to speak. The operations of Goose W.O. as an independent forecast office provided professionals with a wonderful opportunity to gain experience in considerable breadth and depth in a relatively short period of time. The forecast responsibility encompassed service to aviation, domestic and military, public weather service and marine forecasting. The geographical area of meteorological concern ranged from the high Arctic to the sub-tropics and from the western reaches of our continent across Greenland, Iceland, and the north Atlantic into western Europe. Aviation service encompassed (and still does) information for the safe operation of the complete spectrum of aircraft from the single engined charter to the huge multi-engined behemoths. Marine services were provided for inshore fishermen and coastal shipping as well as for off-shore fishermen, ice breakers, and deep sea shipping plying the lanes to Churchill and the northern supply routes

Administration of such an office with responsibility to both the civil and military communities provided an excellent proving ground for professionals interested in

John Knox (left) and Bernie Power (right) at Goose Bay WEATHER OFFICE.

RCAF Officers Mess Bar (note prices) April 1946, Goose Bay, Labrador.

Photos: Courtesy of W. Gutzman

management. Most of the graduates of the Goose Weather Office have spread across the country leaving the organization with the additional knowledge acquired while, for the most part advancing to positions of greater responsibility in the operational, scientific and managerial fields.

It will be with nostalgia that some of us will view the passing of Goose Weather Office from the ranks of the WO 1's, but the logistics of operating, staffing and financing the office will be considerably simpler and less costly for the Department.

The first forecasters to go into Goose Bay were Don McClellan, Harold Hutchon and Harold Baynton and included in the early technicians were Frank Rowe, Fred Mercer, Claude Jeans, George Andrews, Austin Mills and George Petrie.

In one of the accompanying pictures many will recognize two of the early graduates of the Goose Weather Office: Johnny Knox now Regional Director AES, Pacific Region, and Bernie Power of Weather Engineering fame. In the other, one can see one of the means that were used to cope with the severity of the Labrador environment. Apologies are made to the individuals whose names are lost in antiquity, along with the prices!

UN BUREAU MÉTÉOROLOGIQUE PAS COMME LES AUTRES

par

Réal Franc

Le bureau météorologique de Sherbrooke a été inauguré en février 1972. Le bureau se situe au centre-ville et ne fait que de la présentation.

Placé dans un contexte autre que celui de desservir l'aviation, le travail est des plus intéressant parce que l'on a plus d'usages qui ont un besoin vital de connaître le temps; il faut donc se créer de toutes pièces une clientèle au même titre que tout autre commerce. L'innovation et la créativité sont donc deux facteurs importants pour établir cette clientèle.

Ce genre de travail demande beaucoup plus de support de la part de la régie interne étant donné le nouveau genre d'activités du bureau. Le support interne reste a être rodé et amélioré. A ce moment-là, travailler dans un bureau comme celui de Sherbrooke deviendra une expérience des plus enrichissante pour tous ceux qui en auront l'opportunité.

A WEATHER OFFICE WITH A DIFFERENCE

by

Réal Franc

Translated by M.M. Pickup

The Sherbrooke Meteorological Office was opened in February, 1972. It is situated in the centre of the city and deals only with presentation.

Since it serves other uses than just aviation, and is to help those who have a vital need for weather information, the work is very interesting. As in other businesses, ingenuity and imagination are required to build up a clientele for each section of the service.

This new, varied work demands more internal resources, which I have still to develop. Once this personal initiative has been achieved the experience of working in such an office should prove most rewarding.

WMO SYMPOSIUM "AGROMETEOROLOGY OF THE WHEAT CROP"

by

R.A. Treidl

"Agrometeorology of the Wheat Crop" was the theme of an international Symposium of the WMO, which was held at Braunschweig (Federal Republic of Germany) from 22-27 October. 1973.

There were 60 participants from 17 WMO member countries attending the Symposium and they included agronomists, meteorologists, crop scientists and economists. Canada was represented by a contingent of four, Messrs. G.A. McKay, Chief of the Applications and Consultation Division, George Robertson, Winnipeg, Dr. D.M. Brown, Univ of Guelph and Dr. W. Baier, Chief of the Agromet section of CDA. The scientific program was organized by Dr. W. Baier, who is President of the Commission for Agricultural Meteorology of the WMO.

Wheat is now the world's major cereal crop Its production is, therefore, of great importance in helping resolve the world's food problems. Regional droughts such as in Africa have shown the need for global planning of food supplies, and this in turn can be achieved best where there are sound prediction systems. These systems will identify surpluses as well as deficiencies. From both social and economic viewpoints, the accurate, early prediction of crop failure and surpluses is becoming of paramount importance. These various considerations made this conference on wheat of special importance.

One seventh of the world's agricultural lands are dedicated to wheat production The 1971 harvest of wheat was 343 million tons, compared to 307 million tons of maize

and a similar tonnage of rice. Sharp annual variations in production occur regionally, sometimes due to governmental or land policies and markets, but often because of climatic conditions. Another cause of change is technology which has dramatically increased yields in Europe and Africa. However, a similar rate of increase is not apparent in North America, possibly because of our great dependence on spring wheat.

The Food and Agriculture Organization has developed instability indices of crop production throughout the world and proposes a five-year scheme of grain holdover. A world storage of 300,000,000 tons would cover global risks. Through the sound use of prediction techniques and international cooperation the holdover amount might be greatly reduced.

Dr. Wallén of the WMO Secretariat, after analyzing the fruitfulness of the Symposium, concluded the international meeting with a special word of thanks to the Program Director and the other officials for their part in making this Symposium a memorable success. All delegates were favourably impressed with the arrangements and the hospitality offered to them by the host country.

NECROLOGIE

Révérend Père Ernesto Gherzi, S.J.

A la maison des Jésuites, à St-Jérôme, est décédé le 6 décembre 1973, à l'âge de 87 ans et quatre mois, le Père Ernesto Gherzi. Né à Sanremo, en Italie, le 8 août 1886, il entra dans la Compagnie de Jésus, en France, le 22 octobre 1903. Il fut ordonné prêtre le 29 juin 1916, en Angleterre. Sa carrière de jésuite et de prêtre fut consacrée à la science, en particulier à la géophysique, surtout à la météorologie. Il a vécu presque toute sa vie active à l'Observatoire de Zikawei, en Chine, dont il fut le directeur pendant de longues années. Et durant trente-cinq ans, il fut dévoué au service de la navigation internationale dans les dangereuses mers de Chine, si souvent infestées par les terribles typhons, ce qui lui a valu le titre de "Père des typhons". Dans cette fonction, il a laissé en Chine et dans le milieu des navigateurs une renommée de très grand savant. Il a écrit un très grand nombre d'articles scientifiques dans les meilleures revues spécialisées. Il a été le fondateur de l'Observatoire de géophysique de Macao, après son expulsion de Chine par les communistes. En 1955, invité à l'Observatoire de géophysique du Collège Jean-de-Brébeuf à Montréal, le Père Gherzi y fut nommé directeur de la recherche en météorologie et contribua considérablement au rayonnement de l'Observatoire par ses nombreux articles et notes scientifiques, qu'il rédigea jusqu'à la toute dernière fin de sa vie. Il était membre de l'Académie pontificale des sciences, de plusieurs autres académies et institutions de recherches scientifiques. Il avait reçu au cours de sa longue vie de savant, plusieurs décorations italiennes, portugaises et autres. Il laisse dans le deuil des neveux et nièces en Europe.

OZONESONDE PROGRAM STARTED AT CHURCHILL, MANITOBA

Following a brief period of on-station training given by a visiting headquarters technician, measurements of the vertical ozone distribution began at the upper air station Churchill on October 31, 1973. The sensor in use is the Brewer/Mast Model 730-7 ozonesonde which is flown each Wednesday in conjunction with the regular 12 GMT radiosonde ascent.

The ozonesonde network now comprises four stations, the other locations being Resolute, Stony Plain and Goose.

AN EXCERPT FROM A METEOROLOGICAL OBSERVER'S REPORT

by

Bill Thompson
Prairie Provinces Water Board

The following excerpt is from the "Annual Snow Survey of the Bow River Valley", a report prepared for the Director of the Meteorological Office by Mr. N.B. Sanson, who doubled as the Meteorological Observer and River Gauge Reader at Banff. The report was the eighth and last in a series of annual snow surveys conducted early each June in the mountains near Lake Louise for use in the preparation of Flood Forecasts on the Bow River. The report was filed June 19, 1923.

. . While at Saddleback area two gentlemen arrive, Messrs. Strickland, Provincial Entomologist and tourist. They went to the top of Fairview Mountain and reported no snow except a few drift patches on the top.

I took their report instead of going up myself for without Messrs. Ford and Whyte with me time hardly allowed for going up the mountain and I averagely got an idea of conditions there.

While these two were on top of Fairview Mountain they experienced a rare occurrence. An electrical charged cloud over the mountain (no lightning) gave a buzzing noise in one of their heads being heard by the other some distance away, while the one affected called out that there was something in his hair, also his hair stood upright. By putting their sticks upright a buzzing noise occurred and on putting their fingers on the ferrule of the stick the noise would stop and give a slight shock. Being always open for experiences I was sorry that I had not been able to go with them.

The phenomena happened some years ago while a party of Alpine Club Members were on the top of the Mountain, (but I think there was lightning seen then). One lady's long hair stood upright and ice axes and alpenstocks gave off sparks with buzzing

noises and slight shocks. On a sloping wall rock mountain I have seen the lightning flare along the rock. One usually drops any metal implement they may be carrying on such occasions.

When one is at work on the mountains it would be well to have during the thunderstorms some sort of glass soleing for the boots . . .

AES PARTICIPATION IN THE 1973 ALBERTA HAIL STUDIES PROJECT

by

Robert S. Schemenauer

The AES involvement in the 1973 Alberta Hail Studies Project (ALHAS) was in three areas: provision of scientific advice, provision and operation of weather services and conducting of hail oriented field experiments.

The AES is represented on the Executive Committee of the Alberta Hail Research Project and on the Hail Studies Advisory Committee of the Research Council of Alberta. At meetings of these committees in 1972 and 1973 the AES contributed to the planning of the 1973 ALHAS project and committed financial and human resources.

AES personnel involved in the project were two meteorologists, three summer students, three technicians (at Rocky Mountain House) and three research scientists who spent part of the year in Alberta on field projects.

A weather office was operated by the AES at the ALHAS field headquarters (Penhold) continuously from June 18 through August 28 with an AES meteorologist in charge of the operation and performing the bulk of the forecast duties. A Research Council of Alberta (RCA) meteorologist supervised the initial organization of the office and assisted in the forecasting during the season. This year AES participation also included a meteorologist from the 1972-73 B.Sc. meteorologist course who assisted occasionally in the forecasting and directed two AES summer students involved in field studies. A third summer student was assigned to work in the weather office. Meteorological communications consisted of teletype, weatherfax and a telex; the RCA provided a telecopier which was used mainly for the exchange of weather data with the Alberta Forestry Service.

Daily forecasts of convective activity and hail were issued based on the usual upper air soundings, facsimile and locally prepared weather maps, the LMA-70 updraft model, and a telephone conference with the duty local storms forecaster at the Prairie Weather Central in Winnipeg. A detailed weather briefing was presented each morning at 1100 MDT on the basis of which the project supervisor decided on the day's operations. Following the briefing, an information copy of the forecast was sent to weather offices in Edmonton and Winnipeg along with a summary of the previous day's hail activity.

A total of 145 radiosonde ascents were made at Rocky Mountain House from June 18 to August 28. Daily soundings were scheduled for 0730 MDT and 1715 MDT. At Penhold, 68 soundings were made during the season along with several pre-season training

flights. The release times of these soundings varied throughout the afternoon to assist in forecast decisions on days of marginal convective activity.

The only other direct involvement the AES had in the operations was the occasional availability of an AES research scientist to direct the ALHAS and the University of Alberta mobile sampling trucks from the ALHAS radar room.

During the summer the AES and the RCA continued their cooperation in measuring immersion – freezing nucleus concentrations in precipitation. The aim of the project was to further examine the correlations between high ice nucleus concentrations and silver concentrations in precipitation collected downwind from seeded storms. The 1973 results suggest that geographical variations in ice nucleus concentrations may mask the experted direct correlation between the two quantities. Measurements of concentrations of large particles ($>20\mu$) at CFB Penhold indicated a correlation with wind speed and precipitation; however, the measurements were made principally to test a new technique and no firm conclusions can be drawn.

The AES spring program to collect graupel in the foothills (Zephyr, July 1973) was continued into the summer by a B.Sc. meteorologist and two summer students who used a mobile sampling unit to collect and photograph hail samples in the foothills. The collected samples were subsequently shipped back to AES Headquarters in Toronto for analysis. This four month sampling of graupel, small hail and hail is being analyzed for continuity in particle shape, structure and concentrations. The most significant result to date is the finding that graupel concentrations at the ground can be as high as several thousand particles per cubic meter and that the variation from storm to storm can be over three orders of magnitude.

COST/BENEFITS

In a recent ice storm in Saskatchewan a stretch of power lines near Outlook, Saskatchewan were iced up. Plans were developed by the Saskatchewan Power Commission to de-ice the lines. A natural thaw occurred saving SPC some $10,000.

Previously in a major freezing rain storm November 11-12 major transmission lines were iced up with coatings as thick as 11/4" – 13/4". In this instance SPC attempted to de-ice the lines by a low voltage high amperage current but only 15 miles were covered.

The saving in the Outlook case was $10,000 but in addition there were the indirect savings because the iced lines could not be economically utilized.

Mother Nature still seems to have the last word when it comes to determining cost benefits.

DID YOU KNOW THAT . . .?

What are the trends in the application of meteorology to various human activities?

Most people have the impression that the most important activities of meteorologists, in the sense of economic benefit to the country, are the general forecasts for the public and the daily routine services to civil aviation. This is understandable but far from the truth.

The benefits accruing from meteorological activities, such as special forecasts for aviation, agriculture and industry, are not always easy to calculate; is it possible, for instance, to assess the value of human lives? In spite of such difficulties, comprehensive studies have been made and it has generally been concluded that the savings to the national economy are many times greater than the money spent by a country on meteorology.

What kind of human activities benefit most from meteorological services? They vary from country to country but it will be a surprise to many to see the list below which is valid for a large developed country and gives the activities in the order in which they may benefit from available meteorological services:

1) Fishing, 2) Agriculture, 3) Air transport, 4) Forestry, 5) Construction, 6) Land transport, 7) Water transport, 8) Energy production and distribution, 9) Merchandising, 10) Water supply and control, 11) Communications, 12) Recreation, 13) Manufacturing.

Here are some examples of the practical applications of meteorology.

The effect of bad weather (strong wind, frost, rain, etc.) on industry is obvious when the work takes place in the open, though manufacturing processes and working conditions in indoor industries are also influenced by the weather. It is the meteorologist's job to give advice which will enable these effects to be reduced to a minimum. It is estimated that the annual loss to the United States construction industry due to weather amounts to 3,000 million dollars.

In commerce the demand for certain commodities is greatly affected by weather conditions. The additional load placed on power supplies in cold spells is a good example of the fluctuating demand, and sales of food (ice cream!) and clothing are also greatly dependent on weather influences. Many of the risks against which people insure themselves or their property are directly or indirectly related to the weather. The rates of insurance are often determined on the basis of climatological statistics. Marine and crop insurance are two obvious examples.

Almost every aspect of agriculture, from the planning of land use to the transportation of crops, calls for expert meteorological advice. Areas previously considered barren can today be made productive thanks to a wider understanding of the significant meteorological factors involved in plant growth.

The social consequences of applied meteorology are seldom as plain as they are in relation to food production. It has often been stated that one half of the world's population does not get sufficient to eat to maintain normal health. This horrifying figure presents a challenge that is all the more desperate because the explosive growth of population of our times tends to absorb every increase in production without providing more food per head.

By the year 2000, we are told, there will be two mouths to feed for every one today. New sources of food must be found and agricultural production must reach unprecedented levels if starvation is not to assume catastrophic proportions.

In many ways our ability to respond to this challenge depends to a considerable degree not only on opening up new land for crops but also on preventing the losses which now result from climate and weather. A much more detailed knowledge of the range of climatic fluctuations in food-producing regions is necessary, as well as a thorough understanding of atmospheric processes if damaging weather conditions are to be predicted far enough ahead.

The implementation of the World Weather Watch should enable meteorologists to play a major part in the food production campaign by enabling them to give better scientific advice to the agriculturalist. A stronger justification than this would be difficult to find.

The safe, efficient and regular operation of air, sea and land transport depends to a considerable extent on the weather along the route. The provision of accurate weather information and forecasts is accordingly of prime importance to these operations. The advent of high-flying jet aircraft and the use of radar and other electronic aids have not made this information redundant but have rather created a demand for more highly specialized advice.

The need to divert to an alternative airport or the effects of clear air turbulence in forcing airliners to reduce altitude also have obvious financial effects, and the coming introduction of supersonic aircraft flying higher and faster will make these problems more critical. It is extremely doubtful whether any radical improvement in accuracy can be expected over many of the world's air routes until more information is available from them. The planned global observational system would furnish this information.

Meteorological information has many other applications to transport, affecting both its safety and the economics of its operation. The effects of even relatively minor delays caused by fog, ice or snow extend beyond the personal inconvenience they cause to passengers, resulting in a loss of working hours which can hamper national economic growth.

The transport of perishable goods by land or sea also depends on specialized weather information. It has been estimated that by 1975 the total world freight costs for ocean cargoes could amount to $15,000 million per year. If better routing along minimum time paths, thus reducing storm losses, fuel consumption and time at sea, could achieve a reduction of only 1 per cent in these costs, the annual savings would be $150 million.

DOSSIER BILINGUISME À LA FACULTÉ DE MÉTÉOROLOGIE DE L'ÉCOLE DES SERVICES DE L'AIR

par

Gérard Desjardins

Il est assez surprenant de constater que l'adage disant que: "Plus ça change plus c'est pareil", n'est pas véridique dans toutes les circonstances.

Pour un technicien qui n'a pas eu affaire à l'école de formation d'Ottawa depuis ces dernières années: dont moi-même: il est difficile d'estimer l'évolution rapide que subit cet institut de formation.

Le bilinguisme est en train de s'y installer à un pas accéléré.

En effet, bien avant que le parlement n'adopte la loi des langues officielles, la direction de cette école avait senti le besoin grandissant d'une capacité opérationnelle bilingue.

Afin de combler le vide; dès les années 1968 et 1969 on fit appel à des instructeurs francophones provisoires. Le rôle que ceux-ci ont joué à l'époque, fut celui de cataplasme afin de combler une carence linguistique grandissante.

Depuis les deux dernières années, un travail gigantesque a été effectué dans la traduction de volumes et de brochures se rapportant au cours de base. Comme résultat concret cela a donné en 1973, déjà deux cours uniquement en français (73-1 et 73-3) et les résultats semblent fort encourageants.

La traduction du matériel des cours avancés progresse à un rythme accéléré. Il est presque certain que dès 1974 la plupart des cours seront bilingues avec une capacité opérationnelle française prévue pour 1975.

Cette transformation rapide a été rendu plus facile grâce à l'utilisation depuis ces dernières années d'une nouvelle méthode autodidactique (instructions programmées). De cette façon l'on peut facilement, avec le concours d'instructeurs bilingues, former des stagiaires dans les deux langues en même temps.

Tous ces changements semblent se faire sans trop de frictions. La bonne volonté et la coopération du personnel en place y sont surement pour quelque chose.

PERSONNEL

The following transfers took place:

G.R. Atchison	From: 1 CAG LAHR To: Gander WO
J.W. Ogletree	From: 22 NRWC North Bay To: CFWO Chatham
R.A. Parry	From: Staff Officer MOT To: CFWS HQ Ottawa
E.J.G. Guimond	From: Maritime WO To: Frobisher WO

The following are on temporary duty or project assignment:

P.W. Cote	From: CFWO Trenton To: Ice Forecast Central, Ottawa
E.A. Einarsson	From: Prairie Weather Central To: Prairie Hydromet Centre, Regina
M.R. Morgan	From: METOC Centre, Halifax To: Maritime Command HQ, Halifax

The following have accepted positions as a result of competition:

72–AES–CC–321	Meteorology MT7 Scientific Support Officer Quebec Region Headquarters G. Piette
73–DOE–TOR–CC–107	Meteorology Captain Canadian Forces – Air Element Canadian Forces Weather Service R.J. Nutton

Retirements:

S.J. Buckler	Prairie Hydromet Centre, Regina
P.R. Brun	Vancouver WO
G.H. Washburn	Atlantic Region Headquarters, Moncton
R.V. Dexter	Maritime Command Headquarters, Halifax
O. Johnson	Atmospheric Research, Suffield

G.H. Gilbert	Environmental Research, AES HQ, Downsview
H.H. Bindon	Instrument Branch, AES HQ, Downsview
H.L. Osmond	Prairie Weather Central, Winnipeg
R. Titus	Meteorological Applications, AES HQ, Downsview
J.M. Leaver	Canadian Meteorological Centre, Montreal
D.C. Day	Atlantic Weather Central, Halifax
H.A. Thompson	Meteorological Applications, AES HQ, Downsview
A.C. Duffy	Teletype User Services, AES HQ, Downsview

Dr. Warren L. Godson of the Atmospheric Environment Service of DOE, Canada, was elected President of the Commission for Atmospheric Sciences, of the World Meteorological Organization at the recent session of the commission held in Versailles.

HONOR GRADUATE

Maj. D.R. Miller, Senior Range Officer, is shown above presenting Cpl. D.P. McCann (Met. Tech.) with the Rocketsonde Trophy for having attained the highest standing in the Rocketsonde Indoctrination Course held recently at Vandenberg A.F.B. California. Congratulations Dan!

TRIVIA

A One Act Drama

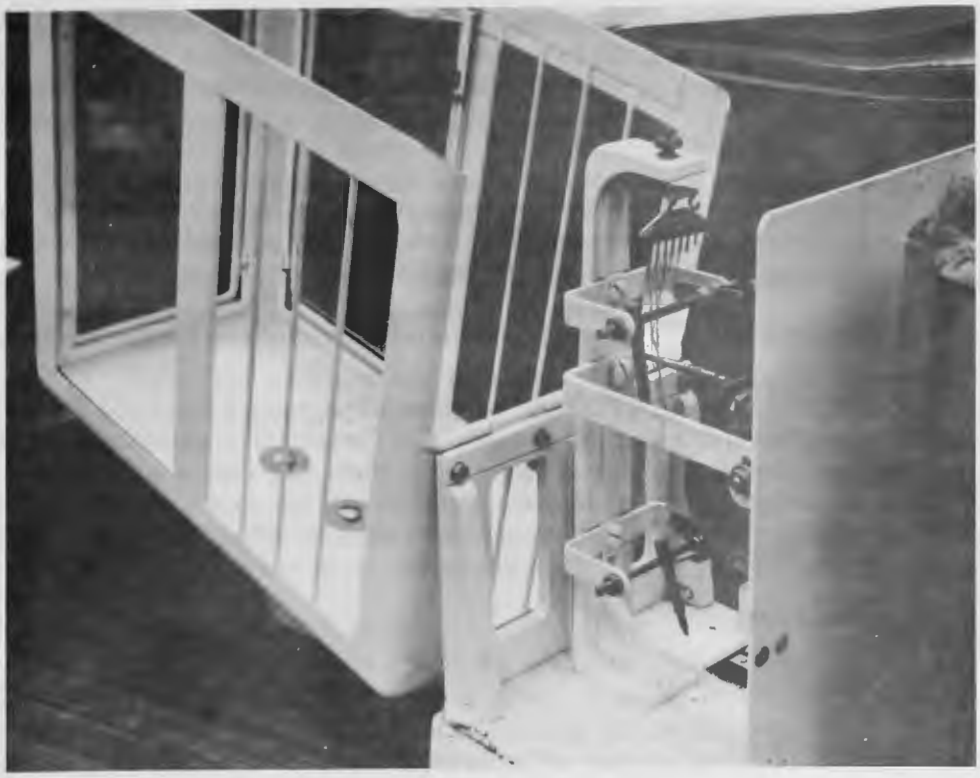
"The best laid schemes o'mice an' men"

(Robert Burns)

Act 1 Scene 1

Enter man; manifested in the person of an instruments branch systems engineer, who installs a thermohygrograph to provide check readings of the Point Petrie automatic reporting test station.

Enter mouse; in the form of a resident rodent of the test site foraging for a sheltered environment and nesting materials; discovers the thermohygrograph and utilizing the hairs from the sensing element builds himself a rotating pad inside the clock drum.



Photos courtesy Norman Steinhaur

Re-enter man; discovers the vandalised instrument and removes it to AES, HQ for repair.

Some considerable time later.

Act 1 Scene 2

Enter man; contemplating the decreasing frequency of office visitors and the increasing frequency of sideways glances; – enlightenment dawns – man forages for the source of the odious odour tracing it to the thermohygrograph.

Enter mouse; deceased and semi-decomposed having succumbed to the sterile environment of the AES, HQ building.

Finale

Exit Mouse – but quick!

Enter Fan

Exit Man

Exit Odour

THE LAW OF DELAY

by

C. Northcote Parkinson

Reviewed by Herbert V. Prochnow

The Law of Delay begins by examining what has happened to Parkinson's Law since it was first promulgated in Great Britain in 1958. You may remember its central theme: the number of persons employed by a government (or in business) expands by an inexorable rule of growth, irrespective of the work (if any) that has to be done. The number employed and the quantity of work have no relationship. The number of employees grows whether the volume of work increases, diminishes, or even disappears. Closely related to Parkinson's Law is the Law of Triviality, which states that in government or in business the time spent discussing an expenditure is in inverse proportion to the sum involved.

What has time revealed about Parkinson's Law? Do the statistics substantiate or undermine the theory? This question is difficult to answer because official statistics are inconsistent, complex and obscure. Moreover, government officials may themselves have been influenced by their knowledge of the law.

However, Parkinson believes there are grounds for regarding him as a true prophet. For example, in 1914 the British Navy, the largest in the world, needed 4,366 officials to keep it afloat. In 1967, when the navy was "practically powerless," over 33,000 civil servants were barely sufficient to administer "the navy we no longer possess." With

tongue in cheek, Parkinson says that the increase in the Foreign Office Diplomatic Service from 2,270 in 1940, and 5,670 in 1955, to almost 11,000 in 1967 – while Britain was losing large parts of its empire – must mean that officials now have an overwhelming influence on world affairs. Parkinson's Law apparently still operates.

Parkinson notes Anthony Jay's observation in Management and Machiavelli that the top executives of any large organization can be classed as barons or courtiers. A Medieval king had bishops, bankers, judges and generals to advise him. Courtiers had access to the king and were retained as long as they were useful. The barons who were in charge of whole provinces had only occasional access to the king.

Today the courtiers are the heads of production, marketing, advertising and finance. The barons manage the outlying plants. The courtiers want to centralize; the barons want autonomy. Parkinson says the one Medieval functionary not employed in today's corporation is the court jester. He was paid to talk out of turn. The king did not need to take the jester's advice nor had he any excuse for taking offense at anything the jester said. Parkinson asks, "Is his modern counterpart the industrial psychologist? When self-satisfaction and mutual praise in an organization reach their climax, someone needs to say, 'Rubbish.'"

This book of essays concludes with the Law of Delay. If you wish to kill an idea or project, you need not turn it down. Delay is the deadliest form of denial. According to the Law of Delay, the procrastinator determines how much time he needs to negate a proposal. If a drowning man calls for help, a five-minute delay is a negative answer.

In government or business, the procrastinator seldom says, "Your idea is no good." With apparent helpfulness, he says, "We shall set up a committee to study it, with subcommittees to deal with the various aspects of the idea." Then he emphasizes the need for research to discover all the facts. Factfinding becomes a substitute for thought. Memoranda begin to flow profusely in every direction. If 78 copies are needed, 100 are ordered because they cost little more. The extra copies go to the marginally interested. More and more persons at lower and lower levels spend longer and longer reading what concerns them less and less. Finally the idea is dead.

Although this book does not explore a single major idea as Parkinson did in some of his earlier work, it does point out glaring weaknesses in all kinds of organizations with a satirical eye and with sly humor, and with a determination to destroy complacency.

Herbert V. Prochnow is honorary Director and former President of the First National Bank of Chicago, Chicago, Illinois.