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Greetings

It is a most pleasant task to thank all of you in the Atmospheric Environment Service for a year of dedicated effort, and to extend my warmest wishes for the holiday season and success in the coming year. As we approach the end of 1977 we can look back on it as a year of accomplishment and change; a year which saw the initiation of a number of major projects: the Weatheradio Canada facility in Vancouver began continuous 24-hour broadcast of weather information on a dedicated circuit; public forecasts were provided in both languages through automated translation; the CMC computer facility became a major multi-computer resource; the Computer Prediction Support System (CPSS) was continued in support of Canmar and the Beaufort

Meilleur Voeux

Il m'est très agréable de vous remercier tous, au Service de l'Environnement atmosphérique, pour cette année d.efforts soutenus, de vous souhaiter de joyeuses fêtes de fin d'année et de vous adresser mes voeux les plus sincères pour le nouvel an. L'année 1977 touchant à sa fin, il nous est loisible de l'examiner; elle apparaît comme une année de réalisations et de changements, une année qui a vu débuter un certain nombre de grands programmes, notamment: l'installation de Radiométéo Canada à Vancouver a commencé à diffuser 24 heures sur 24 des renseignements météorologiques sur un circuit spécialisé; les prévisions destinées au public ont été fournies dans les deux langues grâce à la traduction automatique; l'installation informatique

Sea drilling program; Stratoprobe balloon launchings at selected sites continued the program of total ozone measurements; a system for monitoring climatic variability and the provision of its information on its nature and effects was instituted; a novel approach to environmental impact assessment was developed; pollutant-sensitive biological indicators such as plants and lichens were successfully used to delineate areas of high pollutant concentrations and to determine the removal rate of pollutants from the atmosphere; and finally, there was the appointment of a new assistant deputy minister.

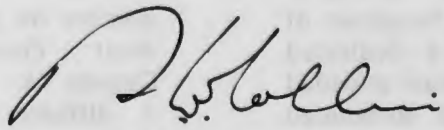
I am proud of the high standard of professionalism manifest in the work of our staff from coast to coast and into the high Arctic. Ours is a vital service which goes on 24 hours a day, 365 days a year and it is with pleasure that I take this opportunity to send a special message of appreciation to all of you who have provided these services during the past year. I know that the Service can count on you to accept the opportunities and challenges of the year to come.

Season's greetings to each and every one of you.

du CMC est devenue une grande ressource multicalculatrice; le système informatique de prévision a continué de fonctionner à l'appui des activités de la CANMAR et du programme de forage de la mer de Beaufort; le lancement des ballons Stratoprobe dans des emplacements sélectionnés a permis de poursuivre le programme de mesure de la quantité totale d'ozone; un système a été établi pour surveiller la variabilité climatique et fournir des renseignements sur la nature et les effets de cette variabilité; une nouvelle méthode prospective d'environnement a été élaborée; des indicateurs biologiques sensibles à la pollution tels que des plantes et des lichens ont été utilisés avec succès pour délimiter les zones de forte concentration de pollution et pour déterminer la vitesse de disparition des polluants de l'atmosphère; et, pour finir, il y a eu la nomination d'un nouveau sous-ministre adjoint.

Je suis fier du degré élevé de compétence dont fait preuve dans son travail tout notre personnel d'un océan à l'autre et jusque dans l'Arctique septentrional. Nous assurons une assistance 24 heures sur 24, 365 jours par an et c'est avec plaisir que je saisis cette occasion pour adresser un message spécial de reconnaissance à tous ceux qui ont fourni ces services au cours de l'année passée. Je sais que l'on peut compter sur vous pour profiter des occasions et relever les défis de l'année qui s'en vient.

Joyeux Noël et Bonne année à tous!



A.E. Collin

SECTION DE REVISION DES PUBLICATIONS EN FRANCAIS (ACTE)

par

Monique Allaire, Réviseur scientifique

La mise sur pied de la section de révision des publications en français découle directement de la politique sur les langues officielles du gouvernement. En effet, en juin 1973, le Parlement adoptait une résolution réaffirmant le statut des deux langues officielles et en septembre 1975, il émettait une politique linquistique sur les instruments de travail. On forma alors un module d'édition à Montréal. Mais puisque celui-ci révisait les publications de cinq services du ministère de l'Environnement, en accordant à chacun une priorité égale, il ne pouvait fournir au SEA des services dans un délai acceptable. Ceci incita le SEA à se doter de sa propre section de révision composée d'un personnel ayant une formation en météorologie. On a donc formé cette section pour accélérer le processus de révision, pour aider adéquatement les traducteurs et pour s'assurer de la qualité terminologique des textes. Aussi, puisque la Direction de la formation avait décidé de fournir des cours en français et puisqu'elle avait un pressant besoin de documents en français, on décida que la section de révision (ACTE) serait sous la Direction de la formation.

Les deux unités de révision, celle de Montréal et celle du SEA, ne sont pas compétitives. Au contraire, elles doivent travailler en parallèle. Le module de Montréal révise les arriérés des documents en provenance du SEA, se charge de la composition typographique et de la lecture des épreuves et retourne aux clients les documents prêts à être imprimés. Par contre, la section du SEA révise les nouvelles publications sans se soucier de la composition typographique, faute de facilités sur place. De plus, puisqu'elle est située dans l'édifice du SEA, ses réviseurs peuvent facilement consulter l'auteur d'un document lorsque survient un problème. Ainsi, la section de révision du SEA assure un travail de meilleure qualité et un service plus rapide.

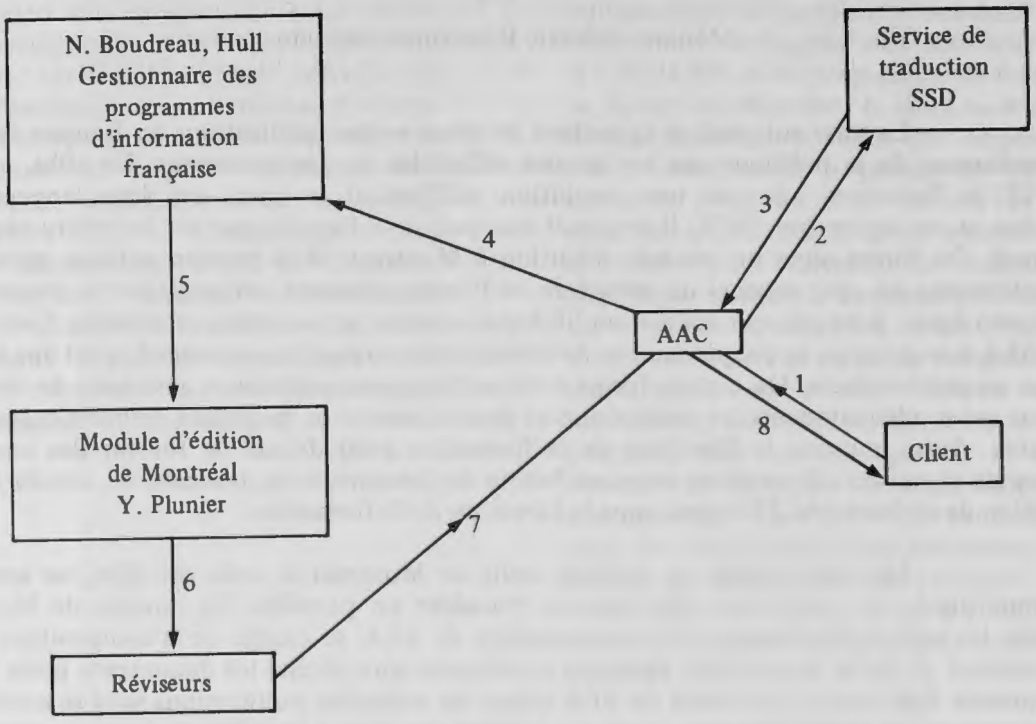
Les démarches à suivre pour obtenir les services de l'une de ces unités se résument facilement par les organigrammes suivants montrant le cheminement suivi par un document original anglais à être traduit et révisé.

Voyons maintenant plus en détail l'organisation et les fonctions de la section de révision des publications en français (ACTE).

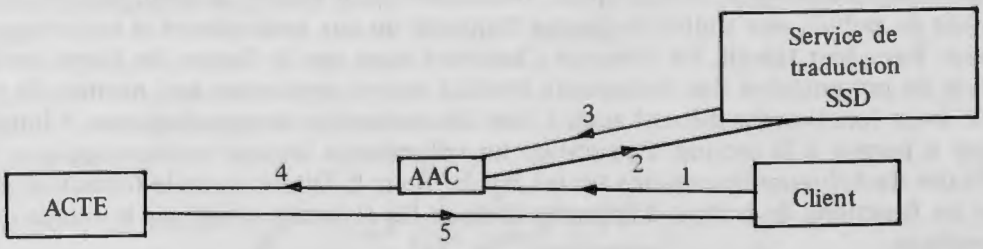
Elle est constituée de quatre postes: un réviseur scientifique en chef (MT-5), un réviseur scientifique (MT-2), un réviseur technique (EG-6) et une secrétaire. Les réviseurs corrigent et préparent pour la publication les traductions, de l'anglais au français, de tous les manuels, documents scientifiques, techniques et d'intérêt général, rédigés au SEA et destinés au public, aux unités de langue française ou aux instructeurs et inspecteurs francophones. Dans leur travail, les réviseurs s'assurent aussi que la forme, les titres, les figures et le style de présentation des documents traduits soient conformes aux normes du gouvernement. Leur fonction les mènent aussi à faire des recherches terminologiques et linguistiques, ce qui a permis à la section d'assembler un volumineux lexique météorologique. Enfin, la secrétaire dactylographie certains textes révisés pour la Direction de la formation et remplit aussi les fonctions de lecteur d'épreuves lorsque les réviseurs n'ont pas le temps de le faire eux-mêmes.

En fait, le réviseur scientifique s'occupe principalement des Publications internes pour la formation (PIF). Sa tâche consiste à consulter le responsable du cours de formation pour francophones à l'Université du Québec à Montréal (UQAM) et à établir une liste de priorité de traduction des PIF. Le réviseur scientifique s'occupe aussi des

MODULE D'EDITION DE MONTREAL



SECTION DE REVISION DES PUBLICATIONS EN FRANCAIS (ACTE)



AAC: Service des langues officielles.

"Mémoires techniques", des notes de cours pour l'UQAM et des documents de climatologie, bioclimatologie, agrométéorologie, etc . . . Quant au réviseur technique, il revoit aussi des notes de cours, des "Mémoires techniques", des travaux de climatologie et d'instrumentation atmosphérique mais il se spécialise surtout dans la révision des manuels tels que MANUPP, MANOBS, MANICE, MANMAR, PAWRS, MANLAKE, METNET, etc . . . . Aussi, l'unité corrige des épreuves des publications françaises du Bureau des services d'information (ISO) et traduit des lettres et notes de service. D'ailleurs vous pouvez consulter le "Training Branch Monthly Report" pour une liste complète des travaux effectués par l'ACTE.

De plus, pour accroître son efficacité, la section de révision crée un dossier pour chaque document permettant de conserver les nouveaux termes, les erreurs typiques de la traduction et les corrections effectuées. Aussi, la section de révision effectue des recherches lexicologiques en vue de déterminer les différentes significations d'un terme et d'établir un consensus de façon à ce qu'un même terme anglais soit toujours traduit, dans la mesure du possible, par la même expression française. A ce sujet, le réviseur scientifique travaille présentement sur un projet d'informatique visant à créer une banque de termes traduits qui pourra facilement être tenue à jour et que les usagers pourront consulter à leur gré. Ensuite, il établira une banque de sources de références françaises pour différents sujets météorologiques. Cette documentation sera particulièrement utilisée pour inventorier les différentes significations d'un terme et pour connaître les différents contextes dans lesquels on l'utilise.

Enfin, dans un tel domaine, la communication entre les usagers et les réviseurs est essentiellle car on introduit sans cesse de nouveaux termes techniques pour les besoins d'usage et le réviseur peut ne pas connaître ces derniers développements. Aussi, vos remarques pertinentes au sujet d'un document révisé par l'ACTE seront toujours très appréciées. N'hésitez pas à consulter la section de révision du SEA pour tout problème de terminologie. Pour tous renseignements, veuillez communiquer avec le réviseur scientifique en chef au numéro 667-4529 ou avec ses adjoints au numéro 667-4528, ou bien veuillez écrire à l'adresse suivante:

Section de révision des publications en français
Direction de la formation
Service de l'Environnement atmosphérique
4905, rue Dufferin
Downsview (Ontario)
M3H 5T4

THE EDITING UNIT (ACTE)

by

Monique Allaire, scientific editor

The French Editing Unit was set up as a direct result of the government's official languages policy. In June 1973, Parliament adopted a resolution reaffirming the status of both official languages and in September 1975, it issued a languages policy on work instruments. It was at that time that the Editing Module in Montreal was established. But it edited publications for five services in the Department of Fisheries and the Environment, giving equal priority to all and therefore could not provide service within acceptable time limits for AES. This led AES to set up its own editing unit composed of personnel trained in meteorology. It was to speed up the editing process, provide adequate help to translators, and ensure accuracy of terminology in texts. Because the Training Branch had decided to provide courses in French and had a pressing need for documents in French, it was decided that the editing unit (ACTE) would be placed under it.

The Montreal and AES editing units are not in competition with each other. The Montreal module edits older AES documents, takes care of typographical composition and proofreading, and returns documents ready for printing. The AES unit edits new publications but does not concern itself with typographical composition, for lack of on-the-spot facilities. As the unit is located in the AES building, its editors can easily consult authors of publications when there is a problem. Thus the AES unit provides better quality work and more rapid service.

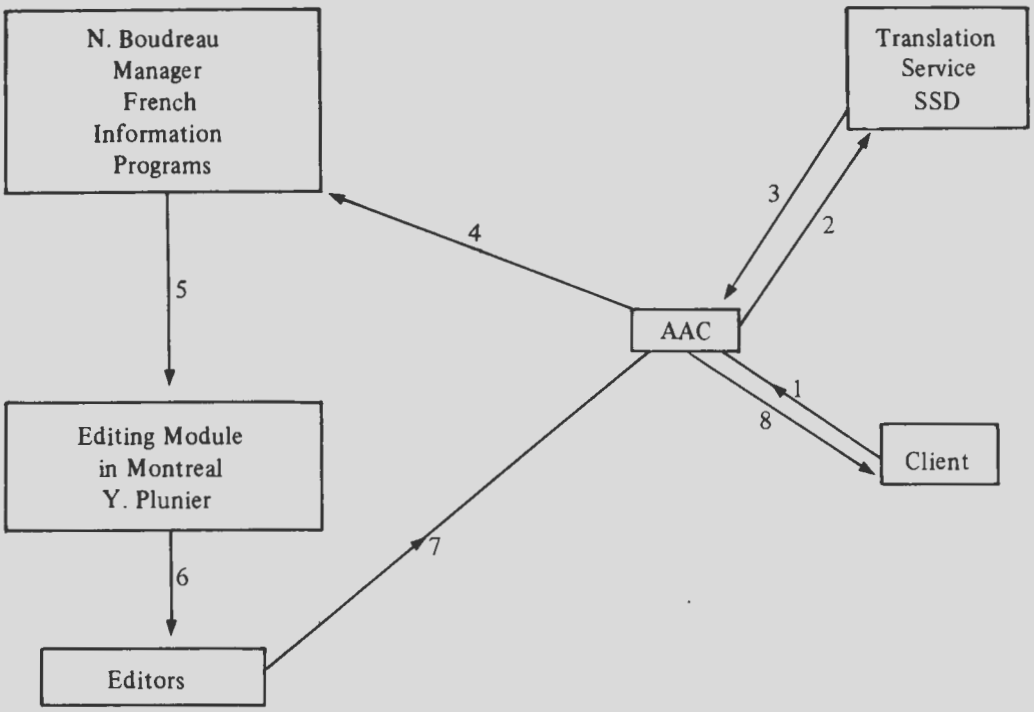
The proper procedure for obtaining services from one of these units is indicated in the following organization charts, which show the path taken by an English document when sent for translation and editing.

Following is a more detailed description of the French Editing Unit (ACTE).

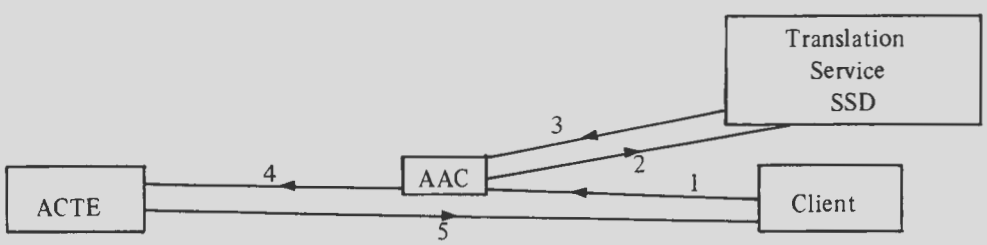
The unit contains four positions; a chief scientific editor (MT-5), a scientific editor (MT-2), a technical editor (EG-6) and a secretary. The editors correct and prepare for publication all French translations of English manuals and scientific, technical and general documents written at AES and intended for the public, for French-language units or for Francophone instructors or inspectors. They also check that the form, headings, illustrations and style of presentation of translated documents conform to government standards. Their job also entails carrying out terminological and linguistic research, which has resulted in the unit having compiled a very large meteorological glossary. The secretary types texts revised for the Training Branch and reads proofs when the editors are short of time.

The scientific editor deals mainly with Training Internal Publications (TIP). Part of his job is to consult the person in charge of professional development courses for Francophones at the University of Quebec in Montreal (UQAM) and draw up a list of priorities for translating TIPs. The scientific editor is also responsible for technical memoranda, course materials for UQAM and documents on such subjects as climatology, bioclimatology and agrometeorology. As for the technical editor, he also works on course materials, technical memoranda, and papers on climatology and atmospheric instruments, but he concentrates mainly on editing manuals such as MANUPP, MANOBS, MANICE, MANMAR, PAWRS, MANLAKE and METNET. The unit also proofreads French publications from the Information Services Office (ISO) and translates letters and memoranda. For a list of all work carried out by ACTE, consult the Training Branch Monthly Report.

EDITING MODULE IN MONTREAL



FRENCH EDITING UNIT (ACTE)



AAC: Official languages Service

For greater efficiency, the editing unit opens a file for each document, recording new terms, typical translation mistakes and the corrections made. The editing unit carries out lexicological research – it determines the various meanings of a term and seeks a consensus on a specific French term to be used wherever possible for translation of a given English term. The scientific editor is presently working on a computer project to set up a bank of translated terms, which could be easily kept up to date, and consulted by users. Afterwards, he will establish a bank of references on various meteorological subjects. This will be particularly useful for finding out the various meanings of a term and the various contexts in which it is used.

In this kind of work, communication between users and editors is essential as new terms are constantly being invented as needed and the editor might not be aware of the latest developments. Comments on documents by ACTE will therefore always be much appreciated. And do not hesitate to consult the AES editing section for any terminological problem. For information, please contact the chief scientific editor at 667-4529 or his assistants at 667-4528, or write to:

French Editing Unit
Training Branch
Atmospheric Environment Service
4905 Dufferin St.
Downsview, Ontario
M3H 5T4

HOW TO MAKE THE MOST OF A WEATHER BRIEFING

by

Earl Coatta

Another weekend rolls around and the hang glider pilot begins to think about the possibility of doing a little gliding. He picks up the phone and dials the number for the Weather Briefing Office. A ring or two and the briefer answers, "Aviation Weather Office". The hang glider then makes his request. "I would like to do some gliding around Hope today, or maybe a little further west in the valley. What's the weather look like?"

So starts the average conversation between the briefer and the hang glider pilot, and already we, the briefer and the hang glider are speaking different languages. Since the advent of hang gliding is relatively recent, particularly in our local area, many briefers are simply not aware that they are talking not to a sail plane enthusiast, but to one of those intrepid individuals who literally straps his body to a wing and takes off. The difference in requirements for both types of gliding is very real starting with cloud heights, necessary amounts of vertical motion and relative amounts of area required to have a successful flight. The first thing to get straight between the glider and the briefer is exactly what type of gliding is being done so that both are discussing the same problem.

It would be somewhat difficult, to say the least, to find a briefer who is a hang glider himself or even a briefer who has any great personal knowledge of the sport. What

assistance then can the briefer be? The answer to that question is to a large extent dependent on the hang glider's own knowledge of metoeorology and the geography and topography of the area in which he flies. Hang gliding, in comparison to any other type of flying, takes place in a relatively small area and in many cases in the very lowest levels of the atmosphere. Basically, then, the meteorology in which the hang glider will be most interested is best described as low level mesoscale meteorology, that is to say in a relatively small horizontal area and confined to the low levels. One must understand that the weather patterns in meso-scale meteorology are governed by the weather patterns in a larger scale, synoptic meteorology, which is the scale that the briefer and the forecaster deal with, but that the synoptic pattern of weather can be locally modified to quite a large degree by local geography such that it is almost impossible to take into consideration all the possibilities in a single forecast or briefing.

The problem then is in interpreting the synoptic patterns to the meso-scale weather. This requires knowledge in two areas, meteorological theory and geography, on the part of both briefer and hang glider. Both people should have a knowledge in both areas, with the briefer being more knowlegeable in meteorological theory, and the hang glider more knowledgeable in the geography of the local area in which he flies. Between the knowledge of both, a satisfactory idea of weather patterns and suitability to hang gliding can be achieved. The weather briefer will be able to supply weather information to the hang glider helping him to understand the weather pattern and why it is occurring. He will also be able to help in suggesting what effects local geography will likely produce in this pattern. However, he can only do this if the hang glider has a sufficient understanding of meteorological theory to follow the reasoning of the briefer. The specifics of the local geography are more the responsibility of the hang glider since he should be more familiar with the relatively small area in which he will be conducting his flight. The briefer will be familiar with large scale geography but local details over a few square miles cannot be considered large scale. The ideal situation then, particularly for this type of briefing, is a discussion between the two parties making use of both people's knowledge. If the briefer doesn't know anything about geography or the hang glider doesn't know anything about meteorology, it follows then that the quality of the briefing will suffer and the hang glider pilot is the loser.

An article in a magazine is not the place to teach meteorological theory to anyone as the space available is much too small. However, there are some points of particular interest to the glider pilot. The first of these is the instability of the air, which, simply defined, is the tendency for the air to rise due to its own buoyancy. The initial force which makes the air rise can be supplied by several means which will be discussed later in this article; the concern now is what will happen to the rising air once the initial force which caused it to rise is removed. If the air continues to rise, it is said to be unstable. If it tends to sink back to earth when the initial force is removed, it is said to be stable.

What determines whether an air mass is stable or unstable is the rate of change of temperature with altitude. This is known as the lapse rate of the air mass. I think it is a safe statement to make that most people are aware that the temperature of the atmosphere is lower at higher levels. What all hang gliders should know is that a rising parcel of air cools as it rises, due to expansion. The rate at which the rising parcel cools is a constant, 3 degrees Celsius per 1000 feet. This is called the Dry Adiabatic Lapse Rate.

It now follows that if the lapse rate of the air mass is less than 3 degrees C per 1000 feet (say 2 degrees C per 1000 feet), a rising parcel of air will always be cooler than the surrounding air mass. Being cooler, it will also be heavier and will tend to sink back toward earth. The air mass is stable.

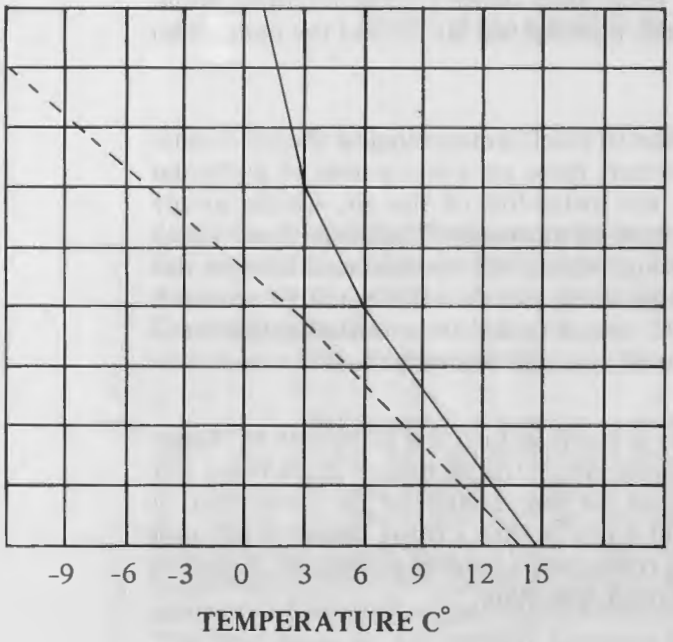
Now, if the lapse rate of the air mass is greater than 3 degrees C per 1000 feet, a rising parcel of air will be warmer and, therefore, lighter than the surrounding air and will tend to continue rising. In this case, the air mass is unstable.

In the Pacific Northwest the lapse rate of the air mass is measured every 12 hours by instruments carried aloft by balloons at Port Hardy, Prince George, Vernon, Spokane and Quillayute, Washington. This is the source of information supplied to all pilots regarding the stability of an air mass.

Keeping these values in mind and also remembering that the temperature of the atmosphere is lower as the distance from the earth increases, the following diagrams will illustrate the difference between a stable and an unstable air mass.

A glance at diagram number 1 will show two lines drawn on a graph which has horizontal lines indicating altitude and vertical lines indicating temperature. The solid line illustrates the temperature profile of the air mass over a given site at a given time. The dashed line shows what would happen if a parcel of air at the surface in that air mass, more particularly, a dry air mass, was forced to rise. The temperature of that air would decrease as indicated, cooling at the dry adiabatic lapse rate. The initial push forcing the air to rise could be one of five forces which will be discussed briefly later. The point to note at this time is that the rising air will be cooler than the air which surrounds it, therefore more dense and heavier. If this is the case, once the initial force causing the air to rise is removed, the rising parcel of air will return to lower altitudes. Diagram number one is an example of stable air, that is an air mass that will rise only if an external force is supplied.

1



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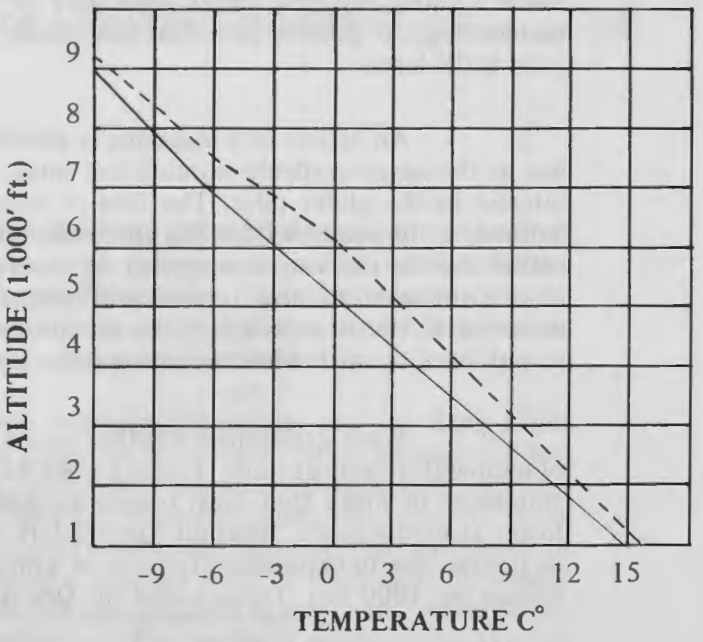

Lines shown on each diagram:

_____ Temperature profile (Lapse rate) in a sample air mass

– – – – DALR (Dry Adiabatic Lapse Rate)

Diagram number two is, of course, the exact opposite of number one. In this case, the air that is being forced to rise, finds itself surrounded by air that is cooler and therefore more dense. If this occurs, then the air will continue to rise since it will be buoyant. This example shows an air mass that is unstable, that is an air mass that will rise because of its own buoyancy.

In fact this is an over-simplification of instability, but it does serve to illustrate the point. In nature, things are rarely as simple as we would like them in order to deal with them. A complicated form of this diagram is drawn for certain stations every twelve hours at the weather office and is the source of information supplied to all pilots regarding the stability of an air mass.

Further over-simplification exists in these diagrams since stability of an air mass can also be modified by a number of things. Once again I have to plead lack of space and ignore for the purposes of this article, any explanation of this modification of stability. For those who are interested in further study, a visit to the library or a course in meteorology is advised, or perhaps a visit to the weather office where, if business is slow, a weather briefer will explain some of the points regarding modification. One should keep in mind that meteorology is a very complicated subject and one does not become an expert in a very short time.

A number of times I have stated that later in the article I would briefly discuss the forces that make the air rise in the first place. What then are these forces that provide initial lift to the air whether the air itself is stable or unstable? There are five lifting agencies that can provide initial lift to air. It must be remembered that as long as one of these lifting agencies is active, air will rise whether it is stable or unstable, since the lifting agency itself is providing a force.

The first of these lifting agencies is frontal lift, lift provided where two air masses meet at a front, the colder air mass forcing the warmer one to rise. This lift is probably the least favourable for hang gliders since poor weather is usually associated with it and actual vertical velocities are minimal.

Lift provided by convergence, i.e. air converging in a given area, can be quite useful to the hang gliders providing he knows local areas where convergence occurs. A local convergence area is an example of an individual's knowledge of his own area. We are speaking here of small areas of convergence, not of massive convergence associated with low pressure areas. An example most quoted to me by local pilots is located in the western Fraser Valley. At times, the weather pattern is such that Vancouver Airport has quite a strong northwesterly wind and Abbotsford will be reporting an easterly type of wind, usually somewhat lighter. When these two opposite wind patterns occur it is obvious that somewhere between Vancouver and Abbotsford the two flows of air will meet. At that point, theory says that lift should be provided since the excess air can only rise. The weather briefer can assist you in pointing out the fact that this situation exists, or will exist, but the pilot's own knowledge and observations will be necessary to find the exact location of the zone of convergence. This type of lift would be reasonably expected to persist as long as the wind pattern which created it continued to exist.

Mechanical turbulence provides lift, created by friction between the ground and moving air or wind. Mechanical turbulence will be greater at higher wind speeds and over rougher terrain. The lift occurs in an eddy form, where friction causes a tumbling effect in the air in the lower levels. Each eddy has a subsidence side and a corresponding uplift side. These eddies are not stationary but form and dissipate continuously and move downwind in a somewhat haphazard manner, and are therefore not reliable sources of lift. If lift

on any occasion is being provided by mechanical turbulence and the lift is lost, the best hope of finding it again is to travel downwind. This is the best hope, but not necessarily the answer since, as already stated, eddies dissipate and reform. Wind speeds of 15 knots or more will usually provide some amount of lift due to mechanical turbulence and once again the briefer can assist with wind forecasts for local areas.

Orographic lift is produced when moving air meets an obstacle such as a hill or range of hills, and is forced to rise over the obstruction. This is a very reliable form of lift, remaining on the upwind side of an obstacle for as long as the wind direction is constant. Even when the wind direction changes, lift can be found on another part of a hill. Stronger wind speed, of course, will provide stronger lift. Sumas Mountain is a good example of orographic lift at a relatively isolated hill, and lift can be found on any side of the hill depending on the direction of the wind. Once again the briefer can assist with wind forecasts at ground level and for various levels aloft. Wind direction frequently shifts with increasing altitude and will therefore cause a change in location of the best lift at different altitudes.

Orographic lift near a range of mountains can best be shown once again in the Fraser Valley. A southwesterly wind aloft will provide good lift along the mountains on the north side of the valley and a hang glider could conceivably follow the lift pattern cross-crountry moving up or down the north side of the valley keeping close to the mountains. Once again, the briefer's assistance will come from forecasts of wind speeds and directions aloft.

The final type of lift is convection. Convective lift is produced in what is considered by most to be its only form, when air is heated by the sun. This heated air then becomes buoyant and will rise due to its density. However, convective lift need not necessarily begin at ground level. One of the other lifting agencies can provide initial lift to air and when that rising air finds itself surrounded by air that is cooler and therefore heavier, it will once again have the buoyancy required for convective lift, that is to say the air is unstable, as illustrated in diagram number two. The point to remember is that convective lift can take over from any of the other forms of lift if the air is unstable; conversely, the air need not be unstable for lift to occur, providing one of the other lifting agencies provides a needed force to lift the air.

Another term used to describe areas of convective lift is thermal lift. Cumulus cloud is probably the most common indicator of thermal or convective activity, but a lack of cumulus does not necessarily mean that convection is not occurring. For example, the thermal may in fact exist but the air may be too dry to form cloud, or the cumulus cloud could be masked by other cloud. On days when the air mass is unstable but no cloud is forming, look for ground areas that are darker than surrounding land. These darker areas will absorb more radiation from the sun and will therefore have more heat available and therefore will provide more heat to the air over them, and thus will have the most likelihood of thermal activity. Once again the briefer will be able to assist you with an indication of the stability of the air and with forecasts of temperatures both surface and aloft.

At this point the reader may be getting suspicious that meteorology is a very difficult and complex subject providing as many problems as it provides answers. This is a fact that meteorologists have known for years. There are in fact very few, if any, fast and easy formulae that can simply be plugged into a given situation to provide some fast answers. The number of variables in a given situation is almost infinite and there is very seldom a straight yes or no answer. All one can do is look, study, and observe in all types of weather patterns, and applying meteorological theory, try to understand what is happening and what is likely to happen. It is a job for an expert in a very specialized field. With all the training, experience, and information available to meteorological personnel forecasting is far from an exact science. It is highly unlikely that reading a few books or taking a short course in

meteorology will qualify a pilot to be considered expert. The service is provided by the Atmospheric Environment Service and the briefer you talk to will be only too happy to assist you with your problem if you let him know what the problem is and are able to follow the reasoning he uses to provide most probable solution.

To sum it all up, one continues to learn as long as one continues to study the weather. The briefer and the service he provides is useful if the user understands why the weather occurs and is prepared to put this understanding to use by observing local or meso-scale conditions prevalent under certain synoptic scale patterns as explained by the briefer. How valuable a briefing will be will depend on you and your understanding of that briefing. Only you can make the most of a weather briefing.

Earl Coatta is a Meteorological technician and is presently involved with teaching a meteorology course at Douglas College.

LLOYD RICHARDS RETIRES

On Monday, October 31, 1977, Mr. T. Lloyd Richards retired from the Atmospheric Environment Service after 37 years of service. Lloyd's retirement was noted by several events reflecting not only his stature in the field of hydrometeorology and meteorology in general, but the esteem with which he is held by everyone at AES.

On the evening of October 22 a farewell party was held for the Richards by his staff at the home of Mr. & Mrs. David Phillips. Lloyd was presented with the Hammond World Atlas, a "special edition Fisher-Price recording rain gauge" constructed by Dave Carr, and was well roasted by his staff. During the Second Conference on Hydrometeorology, chaired by Lloyd, the Richards were hosted by their many friends from out of town to a dinner at the revolving restaurant atop the CN Tower. Jim Bruce, ADM-EMS, and Bob Clark, Director of the Hydrologic R&D Lab in NOAA, thanked Lloyd on behalf of the international scientific community for his contribution to hydrometeorology.

As a further assault on their waistlines, a luncheon was held for Lloyd and Erma and was attended by over a hundred of Lloyd's friends, colleagues and recent retirees. Gifts were presented by Morley Thomas and speeches by Reg Noble, Clarence Boughner and Ted Wiacek outlined Lloyd's career and welcomed him to the ranks of the gainfully unemployed. A presentation on behalf of the employees of the Meteorological Applications Branch was made later in the day by Gord McKay and Ron Gillis. A chain saw along with a handsomely handcrafted carrying case, constructed by Fred Woodford, and a suitable cartoon caricature drawn by Bill Johnson were presented along with everyone's best wishes to Lloyd and his wife for a healthy, happy and productive retirement.

Lloyd graduated from McMaster University in 1940 and joined the Meteorological Branch of the Department of Transport in September of that year. Following on-the-job observer training at Malton he was posted to Moncton as an observer where he remained until October 1941. He was a member of Short Course No. 4 which ran at Headquarters from October until the end of January 1942. Other classmates included Bev Cudbird, Fred Page, Roby Titus, Keith McGlening, Des Wright and Morley Thomas. Early

Lloyd and Erma Richards.

Happy Retirement, Lloyd.

Photo/Photographie E. Elliotson.

in February of 1942, Lloyd was posted to a new meteorological office at Fort St. John, and participated in the development of weather services along the Alaska Highway and the Alaska Staging Route. Later in 1942, he served at Centralia, Ontario, and then came to Toronto for the Advanced Course in September. Following graduation he opened the station at Kapuskasing, Ontario, in January 1943, and then moved to the Dorval Ferry Command Forecast Office in July of 1944, where he was involved in developing Trans-Atlantic Aviation Forecasting during the vital two to three-year period at the close of the war when services were being developed for commercial aviation. In 1945 he earned a Master's degree in Meteorology from the University of Toronto. In June of 1946 Lloyd was posted to Gander where he remained until September 1948 when he returned to the Malton Forecast Office. During the 1950's Lloyd was active in radio and television. He substituted for Percy Saltzman on TV on Saturdays and prepared a weekly radio weather show for an agricultural program.

His Malton tour of duty was his longest prior to coming to the Climatology Division to head up the Lakes Investigations Unit in the Hydrometeorology Section in December 1961. When Jim Bruce left to become Director of CCIW, Lloyd became the Superintendent of Hydrometeorology and ultimately with the reorganization in 1971, Chief of the Hydrometeorology and Marine Applications Division within the Meteorological Applications Branch. Although Lloyd has been involved in many projects, perhaps the most noteworthy was his work for the International Field Year for the Great Lakes (IFYGL) sponsored by the International Hydrological Decade (IHD). He was selected as the Canadian Co-chairman of the Steering Committee whose task it was to study the IFYGL proposals and to recommend and set a course for subsequent studies. His efforts were noted in April 1974 with the presentation to him of a plaque "In appreciation for outstanding contributions to the success of the "IFYGL" by the Administrator of NOAA. Lloyd is the only original member of the committee still active in IFYGL.

Lloyd may have retired from AES but his career has not ended, only changed direction. He has accepted an invitation from CIDA to act as project consultant for the administrative and training aspects of a three-year flood-forecasting project in Colombia.

It would be difficult to briefly sum up the impact of Lloyd's career but perhaps the sign on his desk typified his contribution "le patron a du bon humeur, profitez-en". He was and we did.

Thank you, Lloyd, and best wishes to you and your family.

SILVER JUBILEE MEDAL

Silver Jubilee Medal and Citation. Photo/Photographie Rick Nutter

In celebration of the 25th anniversary of the accession of Her Majesty Queen Elizabeth II to the throne, a Silver Jubilee Medal is being distributed throughout the Commonwealth in 1977.

Nineteen employees of Atmospheric Environment Service have been nominated and the distribution is being made directly from the Department of the Secretary of State.

The Silver Jubilee Medal is being awarded to staff members who have displayed more than ordinary interest and assiduity in their performance of official duties over a period closely paralleling The Jubilee Years.

The following have been nominated by AES:–

Jacques A. Bureau	AES Quebec SEA Québec
Hugh Cameron	AES Headquarters SEA ADM Centrale
Eileen P. Crouch	AES Western SEA (Ouest)
Henry V. Dexter	AES Central SEA Centrale
Robert R. Dodds	AES Headquarters SEA ADM Centrale
Ernest H. Greckol	AES Headquarters SEA ADM Centrale
Edward J.A. Hamilton	AES Headquarters SEA ADM Centrale
Michael Kwizak	AES Headquarters SEA ADM Centrale
John A.D. MacNeill	AES Atlantic SEA Atlantique
Donald E. McClellan	AES Headquarters SEA ADM Centrale
John S. McLernon	AES Headquarters SEA ADM Centrale
Sadie M. Quinn	PFS Ontario SPM Ontario
Cyril F. Rowe	AES Atlantic SEA Atlantique
Gérard B. Salmon	AES Quebec SEA Québec
John H. Scarlett	AES Pacific SEA Pacifique
Norman H. Seguss	AES Ontario SEA Ontario
Katherine Simmons	AES Headquarters SEA ADM Centrale
Norman M. Simon	AES Headquarters SEA ADM Centrale
Desmond J. Wright	AES Headquarters SEA ADM Centrale

VISIT

by

H. Austin

The Canadian Forces Forecast Centre (Edmonton) and the Regina Weather Office Staff paid a visit to Canadian Forces Base Moose Jaw.

This visit was for the discussion of problems arising from the need for co-ordination of the efforts of the newly-created CFFC and those of the Regina Weather Office in order to provide full support to the military operations at CFB Moose Jaw.

Top Row/deuxième rang (L-R/de g. à d.)
Sgt. J. Schisler – CFB Moose Jaw, MWO K. Guindon – CFFC, Mr. J. McKay – CFFC, Sgt. W. Smith – CFFC, Mr. F. Letchford CFFC, Mr. D. Dixon – CFFC, Mr. J. Hendricks – Regina WO, Mr. K. Johnstone – Regina WO.
Bottom Row/premier rang (L-R/de g. à d.)
Mr. H. Austin – BMetO CFB Moose Jaw, WO G. Wood – CFWO Moose Jaw, Mr. C. Finlay – OIC CFFC Edmonton, Colonel D.H. Tate – Base Commander CFB Moose Jaw, Mrs. Linda Sortland – CFFC, Mrs. Anna McDougald – Regina WO, LCol T.A. Lyons – Base Operations Officer CFB Moose Jaw, and Mr. Don Bernachi – OIC Regina Weather Office.

MOTION SYSTEMS PROGNOSIS WORKSHOP AT WHITEHORSE Y.T.

A motion systems prognosis workshop was conducted at Whitehorse Y.T. during the first week of November, 1977. The objective of the workshop, the first ever held in Whitehorse, was to increase the skill of participants in motion systems prognosis. The program placed a high priority on short and mid range prognosis using both numerical guidance and manual techniques.

Meteorologists at the Yukon Weather Office, left to right,/ Les météorologistes du Bureau météorologique du Yukon, de g. à d.,
– Bill Hartman, Ken Clarke, Reg Dunkley, and Herb Wahl, OIC.

Meteorological Technicians,/ Les techniciens en météorologie, (L-R/de g. à d.)
Don Green, Manfred Drews and Stan Stobbe.

In parallel with the meteorologists' program, a training program was presented to the operations technicians. A relatively small number of participants at the workshop allowed for greater participation by everyone present.

The instructors for the meteorologists were Oscar Koren and Patrick King from the Professional Development Division of the Training Branch and John Linton, ODIT meteorologist from the Arctic Weather Centre; and the instructor for the operations technicians was Gwen Rawlings from the Technical Services Section.

The workshop lasted two days and was repeated twice to minimize interference with operational requirements of the Yukon Weather Office.

NEW SATELLITE CENTRE WILL HELP IN WEATHER FORECASTING

A new satellite receiving station now under construction in Toronto will help Canadian meteorologists to produce more timely and accurate weather forecasts.

As a first step towards the establishment of the station a 10-metre dish antenna for the direct reception of weather satellite data has been installed at the headquarters building of Environment Canada's Atmospheric Environment Service (AES) at 4905 Dufferin Street, Downsview, Ontario.

The new antenna will receive signals directly from the US stationary meteorological satellite GOES-EAST (Geostationary Operational Environmental Satellite-East) located 35,900 km from the earth's centre at 75° west longitude above the equator. The satellite position remains fixed in reference to the earth, scanning a picture of the full earth disc every 20 minutes.

Although the satellite is capable of covering an entire hemisphere, the data it provides are usually divided into sectors, according to information needs of meteorologists at a given time. Thus, sectors covering, say, virtually all of Canada, the Maritimes, or the Great Lakes region can be selected at will. The resolution will vary in keeping with the size of the area covered, becoming sharper or more diffused depending on the degree of enlargement.

The satellite is capable of transmitting imagery in both the visual and infrared portions of the spectrum to provide night-time as well as daylight coverage. Visual information shows clouds, surface details and meteorological features such as cloud cover with a resolution of about 1 mile. The infrared image shows temperature variations at the earth's surface and in the atmosphere to permit differentiation between high and low cloud, cloud top temperature measurements, and the determination of surface temperature of water bodies.

Meteorological staff will program computers at the AES ground receiving station to sectorize and reformat satellite data for both research uses and distribution to weather forecast offices across the country via dedicated land lines. This will enable forecast offices to track weather systems as they move across the country, an aid in producing timely and reliable weather forecasts.

The Atmospheric Environment Service's new satellite antenna installed at the Downsview, Ontario Headquarters.
Installation de la nouvelle antenne de réception des données de satellite à l'Administration centrale du Service de l'Environnement atmosphérique à Downsview.

The antenna is built of steel structural components supporting aluminum panels which form a parabolic reflector that will maintain its surface accuracy in winds gusting up to 120 km/h to less than one millimetre.

The total structure weighs some seven and one half tons, and is built to withstand winds up to 200 km/h even when covered with five centimetres of ice. The antenna can be electrically moved to point at the satellite with an accuracy of less than one quarter of a degree, and can be swung through a wide arc for contact with any geostationary satellite over the equator within tuning range.

The satellite antenna was designed, built and installed by TIW Systems Ltd., a Toronto company specializing in the design and construction of sophisticated antennas and mounts.

Electronic processing equipment to complete the satellite tracking centre is currently being developed and produced, and is expected to come into operation by the summer of 1978.

NOUVEAU CENTRE DE LIAISON PAR SATELLITE POUR LES PRÉVISIONS MÉTÉOROLOGIQUES

Une nouvelle station de réception des données recueillies par satellite, actuellement en construction à Toronto, doit aider les météorologistes canadiens à produire en temps utile des prévisions météorologiques plus précises.

L'installation, à l'Administration centrale du Service de l'Environnement atmosphérique d'Environnement Canada (SEA) situé du 4905 de la rue Dufferin à Downsview (Ontario), d'une antenne parabolique de dix mètres de diamètre constitue la première phase de la création de la station.

La nouvelle antenne doit recevoir directement les signaux du satellite météorologique géostationnaire des Etats-Unis GOES-EST (satellite géostationnaire opérationnel pour l'étude du milieu-est) situé à 35,900 kilomètres du centre de la terre, à 75° de longitude ouest, au-dessus de l'équateur. Le satellite, dont la position reste fixe par rapport à la terre, fournit par balayage une photographie du disque complet de la terre toutes les 20 minutes.

Le satellite est en mesure d'embrasser tout l'hémisphère mais il fournit généalement les données par secteurs selon les besoins des météorologistes à un moment donné. Il est donc possible de choisir à son gré des secteurs embrassant tout le Canada ou bien les Maritimes ou encore la région des Grands lacs. La résolution dépend de la taille de la région comcernée, plus ou moins grande selon le degré d'agrandissement.

La satellite peut transmettre des photographies dans le visible et dans l'infrarouge pour assurer l'exploitation de nuit comme de jour. Les renseignements dans le visible montrent les nuages, les détails en surface et les caractéristiques météorologiques telles que la nébulosité avec une résolution d'environ un mille. Les photographies prises dans l'infrarouge montrent les variations de température à la surface de la terre et dans l'atmosphère, ce qui permet de différencier les nuages hauts des nuages bas, de mesurer la température au sommet des nuages et de déterminer la température en surface des masses d'eau.

Le personnel météorologique doit programmer les ordinateurs de la station terrienne du SEA afin de classer par secteurs et de restructurer les données recueillies par satellite tant pour la recherche que pour la diffusion, par des lignes terrestres spécialisées, aux bureaux de prévision météorologique de tout le pays. Les bureaux de prévision pourront ainsi suivre les systèmes météorologiques à mesure qu'il se déplacent au-dessus du pays, ce qui permettra d'établir des prévisions météorologiques sûres et en temps utile.

L'antenne se compose d'une structure d'acier sur laquelle reposent des panneaux d'aluminium formant un réflecteur parabolique qui doit garder sa précision en surface inférieure à 1 mm par des vents soufflant en rafales jusqu'à 120 km/h.

L'ensemble qui pèse environ 7 tonnes et demie est bâti de façon à résister à des vents pouvant atteindre 200 km/h, même s'il est recouvert d'une couche de glace de 5 cm d'épaisseur. Un système électrique permet d'orienter l'antenne vers le satellite avec une précision inférieure à un quart de degré et de lui faire décrire un arc de grande amplitude pour la mettre en liaison avec n'importe quel satellite géostationnaire à sa portée, situé au-dessus de l'équateur.

C'est la société torontoise TIW Systems Ltd., spécialisée dans la conception et la construction d'antennes et de systèmes perfectionnés qui a conçu, construit et installé cette antenne.

Du matériel de traitement électronique permettant de compléter le centre de poursuite des satellites est actuellement en cours d'élaboration et de production et il doit entrer en service d'ici à l'été de 1978.

LONG SERVICE AWARD PRESENTATION

A Long Service Award presentation was held in the AES Headquarters auditorium on Tuesday, November 22, 1977. Dr. A.E. Collin, Assistant Deputy Minister AES, presented pins and certificates to eighteen employees from Headquarters and the Ontario Region, in recognition of their 25 years' service in the Federal Public Service.

A few employees were unable to attend. Listed below are all eighteen recipients of Long Service Awards this year in AES.

W.L. Clink
H.L.F. Ferguson
L. Hansen
D.T. Hay
K.A. Henley
Y.G. Ishii
E.C. Jarvis
H.B. Kruger
Mrs. E. Moore
D.M. Scott
E. Stasyshyn
S. Steinhor
A. Swash
Mrs. T. Thomas
Dr. R.A. Treidl
J.R.G. Tremblay
W.A. Verge

DND CFB Greenwood

R.H. Bishop

REMISE DE DÉCORATIONS POUR LONGS ÉTATS DE SERVICE

Une remise de décorations pour longs états de service a eu lieu le mardi 22 novembre 1977 à l'auditorium de l'Administration centrale du SEA. M. A.E. Collin, sous-ministre adjoint du SEA, a remis décorations et certificats à treize employés de l'Administration centrale et de la Région de l'Ontario, en reconnaissance de leurs 25 années de service dans la Fonction publique

Certains des employés distingués ayant été dans l'impossibilité d'assister à la cérémonie, on trouvera ci-dessous la liste complète des dix-huit personnes honorées cette année au SEA pour leurs longs états de service.

MM. W.L. Clink
H.L.F. Ferguson
L. Hansen
D.T. Hay
K.A. Henley
Y.G. Ishii
E.C. Jarvis
H.B. Kruger
Mme E. Moore

MM. D.M. Scott
E. Stasyshyn
S. Steinhor
A. Swash
Mme T. Thomas
MM. R.A. Treidl
J.R.G. Tremblay
W.A. Verge

B.F.C. de Greenwood (MDN)

M. R.H. Bishop

COMPUTER APPLICATIONS FOR TECHNICIANS 77-1

Standing, left to right/Debout, de g. à d.:
Steve Laruk, Shig Ishida, Yoshi Maruoka, Liz Hurak, Mo Rafique, Frank Manning, Phil Sajecki.
Sitting, left to right/Assis, de g. à d.:
Instructors Raymond Gagnon, John Bendell and Trevor White (Course Director).

If someone asked us how things went on our course, we could look them straight in the eye and truthfully say, "Nothing went wrong, went wrong, went wrong, . . .". Actually, in spite of a cranky computer, good progress was made by the students.

The two week course, put on by the Coordination and Development Section of Technical Training Division, was designed to introduce staff of Network Standards Division of Central Services Directorate to Statistical and Computer manipulation of Meteorological Data. The students became very familiar with the operation of the HP 2100 series mini computer, and all the things that can go wrong with it.

Although the background of the students was quite varied (from non-technical to university), the course appeared to stimulate them universally. Perhaps this was because they were too busy to think about anything else. (In Technical Training, we don't like to see anyone with nothing to do.)

This was the first time the CAT course was given using the Training Branch computer, and as such, could be considered as a pilot for future courses. The students offered some valid suggestions for improvements in the future, and these will be implemented. We hope that our future courses will be even more successful then this one.

NORTHWEST PASSAGE IN A SAILBOAT

by

M. Neil Parker

The J.E. Bernier II is a 35 foot, specially designed sailboat, carrying no sophisticated navigational equipment and no professional sailors in its attempt to sail from Montreal to Vancouver via the Northwest Passage.

The Bernier – named for Captain Joseph-Elzear Bernier, who claimed the Arctic Islands for Canada early in this century – is not the first ship to attempt the passage. Nor, if she succeeds will she be the first to make it through.

The Gjoa, a steam powered vessel skippered by Roald Amundsen of Norway accomplished the feat over three seasons from 1903-1906.

The RCMP ice breaker St. Roch was the second – and last to make the passage in 1942.

The object of the expedition is to sensibilize people to Arctic development, and to compare the three Arctic regions – Greenland, Canada North and Alaska.

This voyage of the "Bernier" proved to have more than just a passing interest for the Arctic Weather Centre.

On two occasions while passing through Coronation Gulf and Amundsen Gulf the crew contacted the A.W.C. for assistance.

This was made possible by using the services of Mr. Neil Campbell, an Edmonton ham radio operator. After being contacted by one of the crew he phoned the A.W.C. and relayed the latest marine information.

Although the use of ham operators to routinely perform such tasks is not practical or necessary, it does demonstrate one alternate and effective means of obtaining specialized weather services during an emergency.

Arctic veterans had assured skipper Real Bouvier and his crew that it was possible to make it through the Northwest Passage in a single season.

Now they know it isn't possible so that its time to decide about wintering at Tuktoyaktuk or proceeding to the Alaskan Coast.

PERSONNEL

The following have accepted positions as a result of competitions:
Les personnes suivantes ont accepté ces postes après concours:

76-DFE-WIN-CC-547	OIC, Observing Program, Resolute, N.W.T. EG-ESS-5 R. Gillis
77-DFE-WIN-CC-521	Senior Aerological Observer, Eureka, N.W.T. EG-ESS-5 R.E. Stainer
77-DFE-WIN-CC-521	Senior Aerological Observer, Isachsen, N.W.T. EG-ESS-5 D.W. Roberts
77-DFE-WIN-CC-521	Senior Aerological Observer, Mould Bay, N.W.T. EG-ESS-5 T.R. Gurdebeke
77-DFE-EDM-CC-19	Acting Appointment MT-4, Yukon Weather Office R.R. Dunkley
77-DFE-EDM-CCID-12	Secretary of Scientific Services ST-SCY-2 Edmonton Regional Office Sharen Paulson
77-DFE-EDM-CC-16	Shift Supervisor – Major Weather Office MT-6 Alberta Weather Office J.E. Ploc T.G. Medlicott N.C. Meadows

The following transfers took place:
Les mutations suivantes ont été effectuées:

A. Niitsoo EG-ESS-5	From:De Eureka, N.W.T. To:A AES Headquarters
D.D. Howett EG-ESS-3	From:De Eureka, N.W.T. To:A Western Region
J.G. Babin MT-2	From:De Canadian Forces Weather Office Bagotville To:A Transport Canada Training
F.S. Porter MT-5	From:De METOC Halifax To:A Gander Weather Office

Separations:
Démissions et retraites:

R.J. Grauman	Resigned	Western Region
G.R. Turner	Resigned	Western Region
C. Chambers	Resigned	Central Region

TRIVIA

The ideal survival kit is a billfold full of hundred dollar bills.

****

Diets are for people who are thick and tired of it.

****

Doing nothing is the most tiresome job in the world, because you can't stop and rest.

****

It may be that the world isn't any worse than it used to be, it's just that the news coverage is better.

****

Money does talk, but these days it takes a great big bankroll to be heard.

****

Life is like an onion: you peel it off one layer at a time, and sometimes you weep.

****

What keeps most would-be investors out of the stock market is the supermarket.

****

The hardest thing about skating is the ice – when you come right down to it.

****

DES PROVERBES QUÉBÈCOIS

"Qui aime bien châtie bien."
– Punir est une marque d'amour

"L'habit ne fait pas le moine."
– Les apparences sont trompeuses

"L'argent ne pousse pas dans les arbres."
– L'argent est difficile à gagner.

"Il n'y a pas de fumée sans feu."
– Il n'ya pas d'indice sans feu.

"Mieux voient quatre yeux que deux."
– Deux personnes valent mieux qu'une seule

"La nuit tous les chats sont gris."
– Dans l'ignorance, tout se ressemble.

"Grand feu de paille n'a rien qui vaille."
– Un excès soudain mais de courte durée est inutile.

"Il y a plus de jours que de semaines."
– Rien ne presse

"On ne tire pas de canon pour écraser une punaise."
– On n'adopte pas de solution disproportionnée au problème à résoudre.

THINKING

by

Walter D. Wintle

If you think you are beaten, you are
If you think you dare not, you don't
If you'd like to win, but think you can't
It's almost a cinch you won't.

If you think you'll lose, you're lost
For out in the world we find
Success begins with a fellow's will
It's all in the state of mind.

If you think you're outclassed, you are
You've got to think high to rise
You've got to be sure of yourself before
You can ever win a prize!

Life's battles don't always go
To the stronger or faster man
But sooner or later, the man who wins
Is the one who thinks he can.

PEUT-IL FAIRE TROP FROID POUR QU'IL NEIGE?

Certaines personnes disent parfois: "il fait bien trop froid pour qu'il neige". C'est faux. En réalité bien sûr, s'il fait extrêmement froid il ne tombera que très peu de neige. C'est parce que le degré d'humidité que l'air peut renfermer dépend de sa température. Plus l'air est chaud, plus il retient l'humidité. C'est la raison pour laquelle les plus fortes chutes de neige ont lieu lorsqu'il fait relativement doux, la neige tombe alors sous forme de flocons relativement gros. Lorsque l'air se refroidit, les flocons deviennent plus petits; ainsi, ceux qui tombent par grand froid sont minuscules. Mais quelle que soit la température de l'atmosphère, elle contient toujours une quantité infinitésimale d'humidité qui permet la formation de petits cristaux de neige. Ceci va donc à l'encontre de l'adage "il fait bien trop froid pour qu'il neige".