



ARCHIVED - Archiving Content

Archived Content

Information identified as archived is provided for reference, research or recordkeeping purposes. It is not subject to the Government of Canada Web Standards and has not been altered or updated since it was archived. Please contact us to request a format other than those available.

ARCHIVÉE - Contenu archivé

Contenu archivé

L'information dont il est indiqué qu'elle est archivée est fournie à des fins de référence, de recherche ou de tenue de documents. Elle n'est pas assujettie aux normes Web du gouvernement du Canada et elle n'a pas été modifiée ou mise à jour depuis son archivage. Pour obtenir cette information dans un autre format, veuillez communiquer avec nous.

This document is archival in nature and is intended for those who wish to consult archival documents made available from the collection of Public Safety Canada.

Some of these documents are available in only one official language. Translation, to be provided by Public Safety Canada, is available upon request.

Le présent document a une valeur archivistique et fait partie des documents d'archives rendus disponibles par Sécurité publique Canada à ceux qui souhaitent consulter ces documents issus de sa collection.

Certains de ces documents ne sont disponibles que dans une langue officielle. Sécurité publique Canada fournira une traduction sur demande.

EPC FIELD REPORT 74/7

THE SYDNEY/BIG STORM REPORT

By: Jim Jefferson and Joseph Scanlon



Emergency Planning
Canada

Planification d'urgence
Canada

**LIBRARY/BIBLIOTHEQUE
EMERGENCY PLANNING CANADA
PLANIFICATION D'URGENCE CANADA
OTTAWA, ONTARIO**

HV
636
1974
S95
1974

EPC FIELD REPORT 74/7

THE SYDNEY/BIG STORM REPORT

By: Jim Jefferson and Joseph Scanlon

EMERGENCY PLANNING CANADA
PEARSON BUILDING
OTTAWA, CANADA
NOVEMBER, 1974

Copyright of this document does not belong to the Crown.
Proper authorization must be obtained from the author for
any intended use.
Les droits d'auteur du présent document n'appartiennent
pas à l'Etat. Toute utilisation du contenu du présent
document doit être approuvée préalablement par l'auteur.

The publication of this report
does not signify that the contents
necessarily reflect the views and
policies of EPC.



WORKING PAPER
For Information Only

This material is not to be
quoted or referenced without
the permission of EPC.

THE SYDNEY/BIG STORM REPORT

A report on a violent storm that struck Sydney
Nova Scotia on Sunday, October 20th, 1974.

By: Jim Jefferson and Joseph Scanlon
Carleton University
OTTAWA, Canada.

NOVEMBER 1974

WORKING PAPER
For Information only.

On Sunday, October the twentieth, 1974, a storm of unexpected ferocity struck the Atlantic provinces. In parts of that region -- Newfoundland, Prince Edward Island and mainland Nova Scotia -- the storm brought snow and high winds, the signs of an approaching winter. In Cape Breton Island, the northeastern-most part of Nova Scotia, the snow was missing but the winds were not. For five to six hours, Cape Breton was battered by a severe gale that included wind gusts of hurricane force. By mid-afternoon, the mayor of Cape Breton's largest community, Sydney, decided the situation was serious enough to justify the declaration of a state of emergency.

This document is a brief report on the storm that hit Sydney on Sunday, October the twentieth, and of the official and unofficial response to that storm. The document begins with a discussion of the weather, moves to an assessment of the storm's impact then continues with a review of the official and unofficial response to the various problems. Finally, there is a brief discussion of rumor (including an initial report of some findings) and a statement of conclusion. The document is supported by a number of appendices, among them a chart showing the community communications system during the crisis period.

The Storm Itself

The storm that struck Sydney was unquestionably a freak occurrence and this was the main reason why the community received no real warning of its intensity. The storm had been expected to pass along the coast of Cape Breton rather than hit the island itself. When it suddenly hit the city, there was little time for warning.*

But the lack of a weather information in Sydney was also related to two apparent problems associated with the weather office. First, because of the sudden turnaround in the weather, the one telephone line was jammed with incoming calls. The only person on duty found a caller on the line every time he picked up the phone. As a result he did not make any outgoing calls and Sydney's one surviving radio station, CJCB (the others were knocked out by the storm) did not get the detailed change in the weather until 11 p.m. Sunday, eight hours after the storm hit its peak. And the phone system wasn't the only problem. The teletype hook-up between Sydney and Halifax was disrupted because of storm conditions (Halifax as well as Sydney was hit by severe weather). Since the phone line was also jammed, the man on duty found it impossible to get into communication with Halifax and get the authorization necessary to issue a revised local weather advisory.

The lack of information (at least to officials) therefore, appears to result from a number of reasons, all of them intertwined. First, the weather conditions were freak ones: the storm did strike very suddenly. Second, there were serious communication problems in the weather office. Third, these problems made it impossible to get the authority necessary from the Maritimes weather office in Halifax to change the forecast. And finally, there was no formal way, anyway, of issuing local forecasts. The weather office, for example, did not know if local media had the forecast: callers don't necessarily identify themselves.

The Sydney weather office did provide information in answer to all individual callers. This meant that many individuals in Sydney had a clear picture of the weather: in fact many individuals had a better weather picture than did those officially responsible for looking after the emergency. In providing this information, the local man on duty actually changed the forecast unofficially.

*An official of the meteorological service pointed out that the marine weather forecast on Saturday, Oct. 19, contained a gale warning for the following day for waters surrounding Cape Breton. Such warnings in the marine forecast are commonplace and often ignored by the general public in that part of the country. Also included in the marine forecast was an advisory to listen to the regular forecast Sunday evening for further details. The regular forecast called for high winds, but the unexpected aspect of the weather was the intensity of those winds, and their direction. No forecast called for the winds of higher than 45 m.p.h., and no forecast predicted the shift in direction from northerly to southerly.

Several times above we have mentioned that the weather changed rapidly. Well, according to data supplied by the weather office (which was extremely helpful) that is exactly what happened. Within the space of a few hours: the temperature jumped up and down - rising 16 degrees then dropping rapidly; the winds abruptly shifted direction - blowing strongly first from the northwest, blowing very slightly from the west then moving on to gale force from the south; and, finally, the barometer went in and out of a crash dive - falling and rising more than one inch in less than 24 hours.

To make this weather picture clearer, we have tried to list the key weather information for a number of different times on Sunday, October 20th. That list should make clear the abrupt shifts in the weather; it is fairly easy to describe these events in a number of steps:

- 1) Early on Sunday morning (4:00 a.m.) the temperature was 38°, the wind was blowing fairly steady from the north/northeast with winds at 25 gusting to 34 miles per hour and the barometer was at 1004 millibars and falling. It was raining.
- 2) By noon, the temperature had climbed slightly to 45°, the winds had virtually stopped (they were only 8 miles per hour) though they were shifting direction, now at westerly. The barometer was still falling and falling rapidly, now 978 millibars. The rain had stopped although about 1 - 1½ inches of rain had accumulated since the early morning hours.
- 3) By 1:00 p.m., just an hour later, the temperature had climbed sharply to 58° (up 16° in two hours) the winds were picking up, now 40 gusting to 57 and they continued to shift. They were now blowing from the south-southwest which means they had shifted 240° during the day. The barometer was still falling, 974.5 and the rain had gone away.
- 4) By 3:00 p.m. the storm was at its peak. The temperature had dropped back, to 46°. The winds had changed to southerly, blowing at 55, gusting to 85 miles per hour. The barometer had dropped to 969 millibars - its low - a drop of 35 millibars since 4:00 a.m. (more than one inch).
- 5) By 5:00 p.m. the storm was starting to blow itself out. The temperature was 41°, the winds were blowing at 35 gusting to 64, still from the south-southwest, and the barometer was again climbing, now back to 975.

The Impact of the Storm

In his book, Organized Behavior in Disaster, Russell Dynes provides both a definition of disaster and a typology of disasters. The Sydney situation clearly meets the definition and fits into the typology. It was an event which put the community in severe danger, disrupted its social fabric, eliminated some essential services and caused real losses. Because it struck without warning and with limited duration, it fits the category of a Type I disaster (single impact, limited, without warning).

It seems possible that some persons will look at the crisis in Sydney and comment that since not a single life was lost - there were less than half a dozen serious injuries - the disaster definition is exaggerated. We would disagree with any such argument. For one thing, as most persons in the community went around saying, the absence of loss of life seems a miracle. For another, the other losses were very real and widespread. As the attached chart (Appendix A) shows, the storm affected just about everybody one way or another.

To make this material easier to follow, we have tried to subdivide this and subsequent sections of the report into a number of categories. First, we have looked at power problems. Second, we have examined other kinds of storm damage. Third, we have examined communications problems. Fourth, we have looked at other kinds of danger, some of it apprehended. (This parallel format means a reader, looking at the way the communications system works in the next section of the report, can look back to check the problem in communications if he wishes to do so.)

Classification is probably the best way to simplify material; but it can also make things appear more simplistic than they really are. Obviously all of the problems in Sydney are related. The fact there was no serious injury - mentioned above - was not known to those responsible for dealing with the emergency situation or to individuals in the community. The extent of the damage was not known either. And it was difficult to establish either of these points because of breakdowns in the communications system. Therefore some of the behaviour - which now could conceivably appear unnecessary - resulted directly from the lack of information. To take another example, the loss of power affected the ability of the community to pump water and thus increased the danger from fire. It seemed (and was) necessary to prepare for possible fire problems.

Despite these overlaps, it does seem easiest to provide the data on the storm's impact under various headings and that is what we have done.

1. Power

The most serious community-wide impact was total loss of power. This not only eliminated lighting throughout the city leaving 10,000 individual subscribers without power, it also caused related problems. It left many homes without heat and the elimination of the power source also eliminated the city's gasoline supply: electric gas pumps at service stations could not operate. (Outsiders, such as the R.C.M.P. had to come into Sydney, because they, too, ran out of gas.) More important, it eliminated the capacity of the city of Sydney to pump its water. If there had been a severe fire, Sydney might have run out of the number one antidote: water. (Strangely, this wasn't a problem for some homes or major hotels. Many residential homes still have their own artesian wells and one major hotel - the Isle Royale (where the evacuees were taken) still has its own well water.

Perhaps the overall impact of the power problem is best illustrated by the fact that the man responsible for the city water supply had to be chauffeured around by a relative because his car did not have sufficient gas.

2. Damage

But there were other storm problems as well. There were 42 trees down at various places throughout the community, a situation that resulted in the blockage of many main arteries. Roofs and parts of roofs were torn off houses and, in one specific area, MacDonald Heights, this situation forced evacuation. Throughout the community there were all kinds of bits of minor damage - shingles off, trailers overturned, aluminum siding ripped off a house, chimneys broken, windows smashed. For example, the windows of the Royal Bank on Victoria Road were smashed by debris blown off a store across the street. A window in an elderly lady's home on Victoria Road was smashed when a sign blew off the service station next door. A young child was injured when parts of a roof on MacDonald Crescent smashed the front window of her home and cut her with flying glass. Five workmen at Sysco Steel Plant were injured, one seriously, by flying debris.

A small sample survey found that 31.4% of those interviewed reported damage to their own homes, 62.9% reported some damage to a neighbor's home or property.

3. Communications

The communications system was seriously disrupted. Although the phone company was able to keep operations going throughout the storm (because of emergency power) at least one-third of the people in the survey reported complete disruption of their phone service and even more reported phone problems. Because the company needed to control the

overload on its lines, the Maritime Telephone and Telegraph Company was forced to put on line load controls which meant that many customers with service had to wait 10 seconds or longer for a dial tone. But this was only part of the total communications system. The mass media were severely disrupted: two of the three radio stations were knocked off the air from about 2 p.m. Sunday until early Monday morning. Both TV stations went off the air Sunday afternoon and remained off throughout the night.

The fire alarm system was knocked out as was the regular police radio system. (The police antenna on top of City Hall was blown down which left the police without a base station for its radio net.)

Even the radio station that did stay on the air had its difficulties. The mobile unit of CJCB radio worked only in one direction - to the station. The mobile reporter had to send in his reports then listen to the station on his car radio to see if they got through.

Transportation, too, was disrupted because communications also takes place by moving vehicles and by word of mouth. This was rendered difficult by the trees down which tended to block transportation along some of the main streets.

Finally, there were wires down throughout the community. The E.M.O. reported 44 live (Hot) wires flashing about at various places in the city.

4. Apprehended danger

The breakdown in the communications system meant that it was extremely difficult to identify the total amount of storm damage. For example, it was impossible to say at first whether there were injuries, fatalities, etc. and it was even more difficult to identify what dangers might arise. For example, there was a considerable concern about the possibility of fire, a danger ever present because of a number of things:

1. The frame construction of many of the homes;
2. The concern that water supplies would not hold out because of the loss of pumping power;
3. The concern that some streets were impassable and would block firefighting equipment;
4. The threat that snow might come and make the situation still worse; and
5. The fear that any one of the 44 live wires down could easily start a fire.

Officials were also concerned about the possibility of looting. A concern that many of the buildings with open (smashed) windows could invite people to steal property. Finally, there was some concern that the flashing live wires would in fact cause individual fatalities.

Official Response to Storm

The official response to the storm is presented under the same headings as the data about the storm. First we examine how the power problems were dealt with. Then we look at the response to the damage. Next we examine the communications system. Finally we look at the plans to deal with apprehended danger.

In order to present an understandable picture, however, it is necessary to look first at the background to Sydney's Emergency Measures Organization, which, with the full support and cooperation of the city's Mayor, Earl Tubbrett, had run a full-dress disaster rehearsal.

The simulation involved damage to the Sydney Academy or High School with the resulting simulated injuries to many students. During this simulation, the Academy itself was designated as an emergency centre even though a portion of the building was assumed to have been damaged.

Repeatedly during interviews, officials in Sydney said they wouldn't have been able to cope with the storm on Sunday, October 20th, and its effects, in the way they did without the experience of a simulation. The mayor said that the simulation was particularly useful to him because of the confusion that surrounded it. He said that when the real disaster occurred, he was not perturbed because of confused and conflicting reports because he had come to expect them during the crisis. He said that because he had been given warning of the simulated disaster, he had spent a number of weeks at that time thinking about how to deal with it and, as a result, how to work out in his own mind a method of dealing with an emergency situation.

The Director of EMO in the community, Bernie Reppa (also the City Planner) said that a number of changes made as a result of the simulation had proved effective during the crisis itself. For example, he said the plotting of damage, etc., had been done in a separate map room during the simulation. The map room and the communications centre were made one place so that all emergency controls could remain under tight control of the group running the operation.

The first organized official response came at 2:15 p.m. (three-quarters of an hour before the storm hit its peak) when the mayor received a call from an old friend telling him about the problems in MacDonald Heights. The mayor almost immediately telephoned the E.M.O.

director, Gernie Reppa, and, after trying vainly to use the telephone and radio to contact police headquarters to tell the police to bring in extra personnel and to tell them that E.M.O. would be activated. Because the mayor has a four-channel radio which is on among other things, the police radio system, he (and Reppa, who is also on the same system) could hear, immediately, enough police calls to convince them of the serious nature of the storm.

While the mayor set off for the police station, stopping en route to check into the power and works situations, Reppa headed for City Hall (where he discovered the power was out) and to radio station CJCB, where he issued a call to E.M.O. personnel. By the time the mayor and Reppa both arrived at the police station, the storm was still to reach its peak but the official response to the emergency was already well underway.

By 3:10 p.m., moments after the peak of the storm, a lot of problems were still developing. The police radio antennae was knocked down and the police were forced to shift to hand-held radios, but with system operators. A decision was made immediately to activate the emergency communications system (using citizens' band radio) which had been a part of the simulation (and which is described below).

By 4:30 p.m., while the winds were still gusting at hurricane force, the official situation had reached the point the mayor could call a meeting of key personnel. That 4:30 p.m. meeting was attended by E.M.O., police, fire, water, ambulance and R.C.M.P. personnel. And, by that time as well, as reported in more detail below, radio-equipped cars were patrolling the community, providing individual access to information and a means of gathering damage reports.

Perhaps at this point it is easier to go back and deal with the four problem areas mentioned above - the power situation, the damage situation, the communications problems and the other problem, apprehended dangers.

The Power Problem

The power problem caused a considerable number of difficulties throughout the community but most of the major ones were handled by emergency systems. Both hospitals had emergency power systems and were able to maintain their essential services throughout the power loss period through emergency generators. By the time one of the generators failed on Tuesday morning after 43 hours of continuous operation, it was possible to make a power hook-up within an hour or so and there were no serious difficulties as a result. The major problem in the hospitals arose from the laundry systems which were forced to wait for normal power to resume before they could go into full operation.

MT&T, the telephone company, was able to operate on emergency power and the essential part of the system did not go out of operation during the storm or after. The one radio station that remained on the air, CJCB, also had emergency power and was also able to remain on the air throughout the entire period.

The way the communications system was set up allowed the power corporation to remain in touch with the police station by telephone and by a citizens' band radio car stationed outside a building. Generally all official communications to and from the power corporation were routed through emergency headquarters at the police station. Power company officials said that all four telephone lines into their offices were jammed by incoming calls but apparently they were able to make outgoing calls on some of their phones. The manager of the Sydney power station was advised by the mayor to go on the radio and warn people of the danger of live wires and he was able to do so when a CJCB mobile car came to his power office and allowed him to make the broadcast without leaving his headquarters.

Permission was obtained from the power company, head office, to bring in men and equipment from outlying areas and also to bring in a helicopter to assess the situation from the air. There was extensive cooperation between the power company and the works warehouse because it was necessary for public works staff to use power saws and other equipment to cut the way clear for power workers to get into damaged areas and also for power people to clear wires so the others could clean up the street.

Because of the danger of a severe water shortage, the mayor appealed to the public not to make excessive use of water and although water pressure became very low in at least one area of the city, it was never completely cut off. Gravity flow from the main reservoir and from holding tanks filled each night, kept the water running. The power company at one point put its entire force at trying to fix the main power source and then went back to work on individual problems - a job that took the better part of the following week.

Power at the one emergency centre, the Sydney Academy, was also maintained by means of a generator. All schools were closed Monday and Tuesday, the two days after the storm, because of the loss of heat caused by loss of power.

The Damage Situation

But the most efficient damage control system involved the careful patrolling of the entire community of hand radio equipped police cars and by citizens' band radio cars. These mobile patrols radioed in regular damage reports and these reports were used to plot on the damage control map all of the damage situations. This means that those responsible had an ever-improving picture of the actual damage situation in the community.

The damage control system operated exactly as prepared in the simulation. A map was set up and each damage point was plotted. Since the most damage occurred at MacDonald Heights - this was the main area of concern. Here, with help from the regional housing authority, the city welfare department and from volunteers, persons living in the homes along MacDonald Crescent - a housing development - were evacuated first to the Holy Redeemer Parish Hall and then, where necessary, to the Isle Royale Hotel, where accommodation was paid for by the regional housing authority. Other emergency setups were made at the Sydney Academy where people could go for various kinds of assistance, even such things as candles and emergency food supplies. A lot of emergency workers were fed at the Academy at the peak of the clean-up period (Sunday night through Monday). The food was prepared by home economics teachers - part of it sent in unsolicited (another part of the plan).

The hospital emergency set-up was ready to roll but, in fact, was not activated because the actual flow of casualties to the hospital was below what was expected on a normal Sunday afternoon.

Communications

The communications network that was established is carefully diagrammed in Appendix B. It was the most elaborate and effective of all the systems. It involved careful use of the surviving telephone. A special hand-held radio system, a citizen band emergency radio set, a tie-in to the one surviving radio station, CJCB, and a ham radio set-up that linked the two hospitals to police headquarters and to each other.

- (1) MT&T made arrangements to have an operator monitor the two lines into the police department where the emergency headquarters was located so that emergency calls could be handled on a priority basis.
- (2) Controls were put on the entire telephone system to delay usage of the phones throughout the community to stop telephone overload. This meant that a substantial proportion of the population had to wait ten seconds or more for a dial tone but it was possible to route emergency calls into a home if the phone was working.
- (3) The director of radio station CJCB, the only one left on the air, carried a number of emergency announcements by the mayor, the director of EMO or the head of the power company and responded to each special request by broadcasting the information, recording it and by repeating it. For example, the mayor's plea to people to keep off the street was recorded and broadcast several times during the storm period.

- (4) The police radio system shifted to a hand-held walkie-talkie system, a system that was forced to go into a relay type of operation passing information from person to person when the batteries started to wear down on the portable radios.
- (5) The citizens' band radio organization, React, set up a communications system throughout the entire community in two ways. First a CB base radio station was placed at the police station, and CB radio cars were placed at all critical points such as the police, the fire department outlets, the hospitals, the R.C.M.P., the Sydney Academy, the power company, etc. Second, citizens' band radio cars were sent out on a patrol basis throughout the entire community so that damage reports could be brought in and assessed. These patrols also provided citizens access to the emergency centre - as the cars moved around people stopped them and asked for help. Finally, police and other citizens' band patrol cars took over the monitoring duties of watching for fire danger because the fire alarm box system was out and because the citizens in many cases could not have reached the fire department by telephone.
- (6) There was a special ham radio hook-up connecting police and the hospitals. The hospital did not have to activate their emergency plans and in fact did remain in contact by phone but if there had been any need for emergency communications, this special radio system would have provided this. This was done by provincial E.M.O.

Unquestionably, in the minds of the emergency officials, the critical element in the communication system was the rapidly assembled and mobile citizens' band radio system. "Without citizens' band radio we would have been really up against it."

Apprehended Danger

There were also special arrangements made to take care of apprehended danger. The fire department was put on an extra shift basis with all men, including auxiliaries, called in using a special call system allowing all phones to be activated at one time. Citizens were asked to restrain their use of water and arrangements had been made in advance (although they were not needed) with surrounding fire departments to come in to give support in the case of serious fire.

Finally, in the case of looting, the militia which had volunteered, were told its personnel could be helpful. Militia personnel were sworn in and used to watch damaged properties. The extra police patrols were also stationed at critical points. For example, an around-the-clock police patrol was put at MacDonald Heights.

Public Response to Storm

A review of what we know about disaster suggests there was nothing particularly unusual about the general public response to the Sydney crisis situation. Those persons who had access to radio (and many did) listened to the broadcasts over CJCB and kept track of what was going on. Those persons who had telephones used them to try to get information about official problems (such as water or power) or, more likely, to find out about relatives or friends. And many persons moved about because of their concern for others, particularly because of their concern for members of their family.

1. Power

Interviews conducted by the Carleton crisis team suggest that the widespread nature of the power problem was understood and generally accepted. Some persons simply arranged to have a "picnic" in the living room or rooted out camp stoves and cooked their meals in that way.

The main concerns about power were not so much the loss of light (which appears to be taken stoically) but the loss of heat - which wasn't too serious given the temperature - and the loss of cold. This may sound contradictory, but, in fact, in a number of interviews, members of the team were told the number one concern was the possible loss of food supplies in a freezer.

2. Damage

Response to damage was of much the same order. A number of persons said they made no attempt to do anything about the damage as they assumed personnel would not be available. The only place where there was a serious demand for action was MacDonald Heights where the residents expressed concern about the quality of construction in their homes. (A survey by air suggested most of the damage occurred in the same part of each house regardless of the direction the house faced.) Elsewhere, most individuals simply waited for city work crews to clear away foliage or downed wires.

However, persons did head out for themselves to investigate the storm damage around their home or further away. Persons from MacDonald Heights returned to see how things were going. Others toured the most damaged areas. Most persons said, in interviews, that they had gone out on foot to see how badly their own neighbours were hit. There was a fair amount of movement in and around the community in the wake of the storm.

There was also a fair amount of movement during the storm itself by persons who were concerned about possible injury to others. A waitress left her job at a downtown restaurant to see if her children were allright at home. A woman walked through the height of the storm

and at one point was blown off her feet, in order to get her child at the hockey rink. A man drove from the suburbs to a downtown theatre to get his children who had gone to see a movie. (Again, this happened during the height of the storm.) Other people moved about the community, offering assistance to neighbours and/or strangers. One man who helped a number of people move their cars to avoid them being struck by falling trees - a man used his panel truck to help evacuate victims in the stricken housing development. A man used his family car to drive his father-in-law around on official business.

The above kinds of behaviour are described in the disaster literature as forms of convergence. They are quite common in and around disaster and they happened in Sydney.

3. Communications

Informational convergence also took place as people, both from within the community and from without the community, wanted to know about storm damage. In fact this appeared to be especially heavy after CBC national radio and TV and CTV-TV gave the Sydney disaster top billing on its 10 p.m. and 11 p.m. radio and TV national newscasts.

The phone load in Sydney itself virtually doubled the day after the storm, according to MT&T total, calls on Monday were 267,000 compared to 138,000 on the same day during a normal period two weeks earlier. The amount of long distance calling dramatically increased. Operator assisted calls went from 23,800 one week earlier to 49,400 the day of the storm. Direct dialing went from 22,200 a week earlier to 52,700 the day of the storm. Operator assisted calls remained high on Monday, although direct dialing returned to normal.

There was another type of convergence that usually follows in the wake of a storm and that results from the movement of persons and equipment for emergency purposes. There was some of this, too, in Sydney. The mobile radio cars and the extra police personnel were part of this. The extra power trucks were part of it. The city works crew normally off duty, that was called in to cut through and remove fallen trees, was also part of it. And the emergency trucks moving generators required to maintain equipment, were part of it, as were those people who were called in because of emergency to report to police headquarters to the various fire stations, to the militia or to other emergency places, such as the power company or telephone company, or works department.

Such movements are necessary and (although this didn't happen in Sydney) they can easily be hampered by unofficial movement: the mayor's appeal to the people to stay in was not entirely heeded.

4. Apprehended Danger

From our initial analysis of survey data, it would appear that the public had little fear of apprehended danger. The danger of fire was mentioned occasionally but not often cited as a major threat. Individuals made no mention of such problems as looting.

The Nature of Rumour

Although the bulk of this report is concerned with the storm, its impact, the official and unofficial response, the major interest of the authors (as mentioned earlier) is in unofficial information patterns - in the flow of information through unofficial, interpersonal communication channels whether those channels are accurate conveyors of news or inaccurate conveyors of rumour.

It was quite clear from the data gathered in Sydney that informal communication channels were extremely active. Individuals got information from the storm not only by radio - though CJCB was undoubtedly the vital central information medium throughout the crisis period - but also from friends and neighbours and relatives, either by seeing these people in person or by talking to them by telephone.

It is our intention in future to try to analyse these communication channels, to see how they operate, to see how effective they are, to see whether they carry significantly different kinds of information than those carried by the formal channels. Our first impression from the data gathered at Sydney, is that these channels are different, especially in the type of information they carry. The radio station, CJCB, carried general information, information aimed at groups or the whole community, or at particular groups. The interpersonal channels carried particular bits of information - such things as "mother is O.K. ..." "John has made it home" etc.

The importance of such channels shows up when people - in our survey - were asked to name the matter of most concern to them. They almost always talked about personal matters - concern about their own property or concern about personal or family safety or the safety of friends, relatives' friends, or neighbours. By and large, these concerns could not be alleviated by the information carried by the media. In order to find out, the individual had to find out for himself: thus the movement of individuals in search of information; thus the overload on the local telephone system.

Incidentally, informational convergence isn't confined to the crisis centre itself. As mentioned, when the storm situation hit the national headlines on CBC radio and television on CTV, the community was hit by a rash of calls from as far away as Toronto, Guelph and Vancouver - from persons who wanted to know whether their friends or their family were hit by the storm. Once again the general media reports could not

satisfy the craving for specific items of information. The significance of this is discussed below.

Although the research into this area of communications patterns was only preliminary in Sydney, there were some slightly less preliminary steps taken toward studying another phenomena that sometimes accompanies crisis and that is the phenomena of rumour.

Even in the small sample used, the Carleton crisis team picked up one recurring rumour and found it possible to follow that rumour in one case almost across the entire community. (That problem will be discussed in more detail in another later paper. For the meantime, we will content ourselves with a brief outline of that rumour pattern.)

The rumour concerned the alleged death of a child in the storm. First the rumour was picked up by a girl who lived in a house in the pier area of Sydney. She had heard it from someone who had come into the house where she lived the night of the storm. The person who had told her turned out to be a friend of the family - a young woman who had heard the information from a third person, a person who in turn got a phone call from one of the people who had been evacuated from the disaster-stricken area of MacDonald Heights. What all heard was a child from MacDonald Heights had been killed.

The person who had called the girl - the woman who had been evacuated - had heard the information during a conversation over the dinner table at the Isle Royale Hotel, where most of the evacuees were quartered. What had happened is that she had heard some people she did not know telling some people she did know about a child being killed. As it turned out she had been at the hospital when a child who was injured (the child received nine stitches) had been brought to the hospital and she immediately assumed that the child killed was that child and it appears that at this point the name of the child became part of the rumour.

The people who had been heard talking - the ones she didn't know - had picked up the rumour in a two-stage flow. The woman had heard it from her husband and when he had come to her at the Holy Redeemer Parish Centre where she had been evacuated.

The husband had heard the information from a man who was helping evacuate people during the height of the storm at MacDonald Heights. The man said there had been a child killed in the storm and he did not have specific information.

The man who had helped them evacuate had heard the information from another volunteer who had been driving a panel truck to help evacuate people during the height of the storm.

The man who had driven the panel stuck had heard the information at the corner of Henry and Summit Streets over in the pier when he had stopped his truck at a stop sign after having taken a detour to avoid storm damage. A man who was walking along the street had stopped to tell him that a child had been killed.

IT WAS NOT POSSIBLE TO TRACE THE RUMOUR BEYOND THIS POINT SPECIFICALLY BUT WE NOW HAVE SUFFICIENT INFORMATION TO INDICATE THAT THE SOURCE OF THE RUMOUR WAS EXTREMELY LIKELY TO BE AN OFFICIAL COMMUNICATION.

A few minutes before the incident involving the man with the truck, a police radio car had been at the corner of Victoria Road and Henry Street which is less than one block from the spot where the man with the truck got the information. One officer had been inside a home phoning about damage to the Royal Bank, his partner had been in the car with the door partly open and the radio on quite loud - when the call came in about an emergency involving a child at MacDonald Crescent who had been cut by glass as a result of flying debris. The police officer in the car got out of the car, got his partner out of the house, jumped in the car and sped off with sirens screaming. It appears to us that this was the information that led to the rumour spreading that a child had been killed. Since the call came in as an emergency one and the police responded immediately, it seems likely that the feeling that someone had died had developed in the crowd.

All of the above data is still in preliminary form since we are still looking at the questionnaires and the interviews but it appears that one can see how the rumour developed, how it became very specific and how it was passed on by word of mouth from person to person.

Incidentally, this rumour never appeared in any official transmissions in the press or over radio station CJCB.

Perhaps it should be reported the rumour did show up in a number of other survey interviews. It showed up once with a fireman and it was traced three stages in another case back to another fireman. Although it was possible to establish some connection between firemen and those involved around the MacDonald Heights area, it was not possible to pick up the specific inter-connections between the groups. But, as mentioned earlier, we expect to have more to say about rumour transmissions in another presentation.

Conclusions

The Carleton team is primarily concerned with the development of material about inter-personal communications systems and there are not too many conclusions about this aspect of the Sydney storm. Most of them are in relation to rumour studies and will be in a separate report.

In Sydney, we used a small research team to develop better mechanisms for dealing with crisis information patterns. Many of our conclusions are technical ones which are designed to help the team develop a better operational capacity in the future.

It did appear, however, that there are a number of conclusions one can reach, some of which are outside our field of expertise and some which overlap it.

- (1) It seems absolutely clear that a plan for an emergency is extremely useful and valuable. (Admittedly not a very surprising finding.)
- (2) It seems that if this plan is tried out, it will have a productive effect on the ability of a community to deal with the crisis.
- (3) It seems to the team, anyway, that one of the elements of a plan is that it must have someone prepared to take responsibility and this was certainly true in Sydney and, secondly, that there must be a fair amount of trust placed in the person responsible for emergency measures. What was particularly noticeable in Sydney was that the EMO Director did have the confidence of the mayor and was immediately involved with the mayor in the whole emergency operation. The first call that the mayor made after checking with the police was to the EMO Director, asking him to get the EMO operation underway.
- (4) It seems clear that radio is of critical importance and that communities that don't have at least one radio station on emergency power should be extremely concerned about their ability to deal with crisis communication. By the way, it didn't seem to us that it mattered at all which station was on the air. During interviews, some persons reported searching the radio channel to find an operational station and, since there was only one station on, this proved extremely easy. It did not matter to them whether they would have expected to find the CBC or some other station on. They found the station that was on, so it apparently is not of too much importance which station is operational.

In our view - based more on what we have read about other disasters rather than what we have seen - the Sydney operation was extremely well handled. It seems self-evident that having a plan and trying it out under simulated conditions is well worth the effort. It also seems perfectly obvious that clear-headed direction from the top is critical.

There are two comments, however, that might be made.

First, it is quite true that the authorities in Sydney had a plan and, to a considerable extent, followed it but it is also true that they did not follow it blindly. The works department - critical to the storm situation because of the fallen trees - was not in on the original simulation. The hospitals - little needed because of the lack of injury - were deeply involved in the original simulation. It is, in our view, a credit to the clear thinking in Sydney that the response was appropriate to the actual conditions rather than to some pre-conceived idea of what a disaster should be.

Second, it seems worth noting that Sydney was extremely lucky in one respect: the presence of a forceful leader in Mayor Tubbrett and his willingness to take charge. Dynes in "Organized Behaviour in Disaster" points out that during crisis "decision making...tends to occur at lower levels...than is normally the case." In one respect the real situation in Sydney followed exactly along the lines of the simulation. What would have happened if the mayor and the E.M.O. Director had not been available? (It occurred to us that it would be wise, in simulation, to eliminate some senior personnel without warning to provide a realistic test of the flexibility of an organization under crisis.)

In relation to information patterns, we have two additional comments to make, both of which may be somewhat modified in the light of further analysis of available data and further experience in the field.

- (1) It seems clear that the media had difficulty meeting the enormous demands for specific information during the storm. It was virtually impossible for the one radio station, CJCB, to provide information about individuals and there was a vast amount of movement by individuals and a lot of calls by individuals in the search for specific information. Perhaps this convergence could be reduced if the media took the trouble to make specific reports about non-damage or lack of damage; for example, if the media were able to report that a particular area was completely unhit by the storm, people concerned about someone in that area would not have been as perturbed and would probably not have felt compelled to seek further information. In short, what we are saying is that publicity of all the information, bad or good, may alleviate problems. In normal times good news is not news. In crises, good news may be important news which affects audience behaviour. (We intend to develop this idea further later.)
- (2) In relation to rumours, we acquired some data - still being looked at - which suggests that rumours continue to spread unless they are specifically contradicted. Perhaps the media should report and contradict rumours rather than ignore them. (Again, we may wish to make comments on this later.)

APPENDIX "A"

Before
Storm

Rain fell all morning
Winds strong - N/NE

NOON

Dead calm
Even sunny

1 P.M.

Winds picking up, S/SE
40 gusting to 57
Barometer falling rapidly

2 P.M.

Crisis begins - roofs off
MacDonald Heights
One radio station left -
just CJCB
Trees coming down
Live wires down
City power off

Mayor gets first call (12:15)
E.M.O. ordered to activate
(2:30)
E.M.O. head contacted - head
to CJCB
Police H.Q. designated as
emergency H.Q.
MacDonald Heights

3 P.M.

S T O R M H I T S I T S P E A K

Minor damage continues
42 trees down
Phone problems build up
44 live wires
Windows smashed

Children evacuated from
theatre
Police radio knocked out
Set up walkie-talkies
Mayor asks people to stay off
streets

4 P.M.

Trees still coming down
Wires still loose

CB patrol start to check on
damage

4:30 P.M.

First meeting of key
personnel
Mayor warns of fire danger

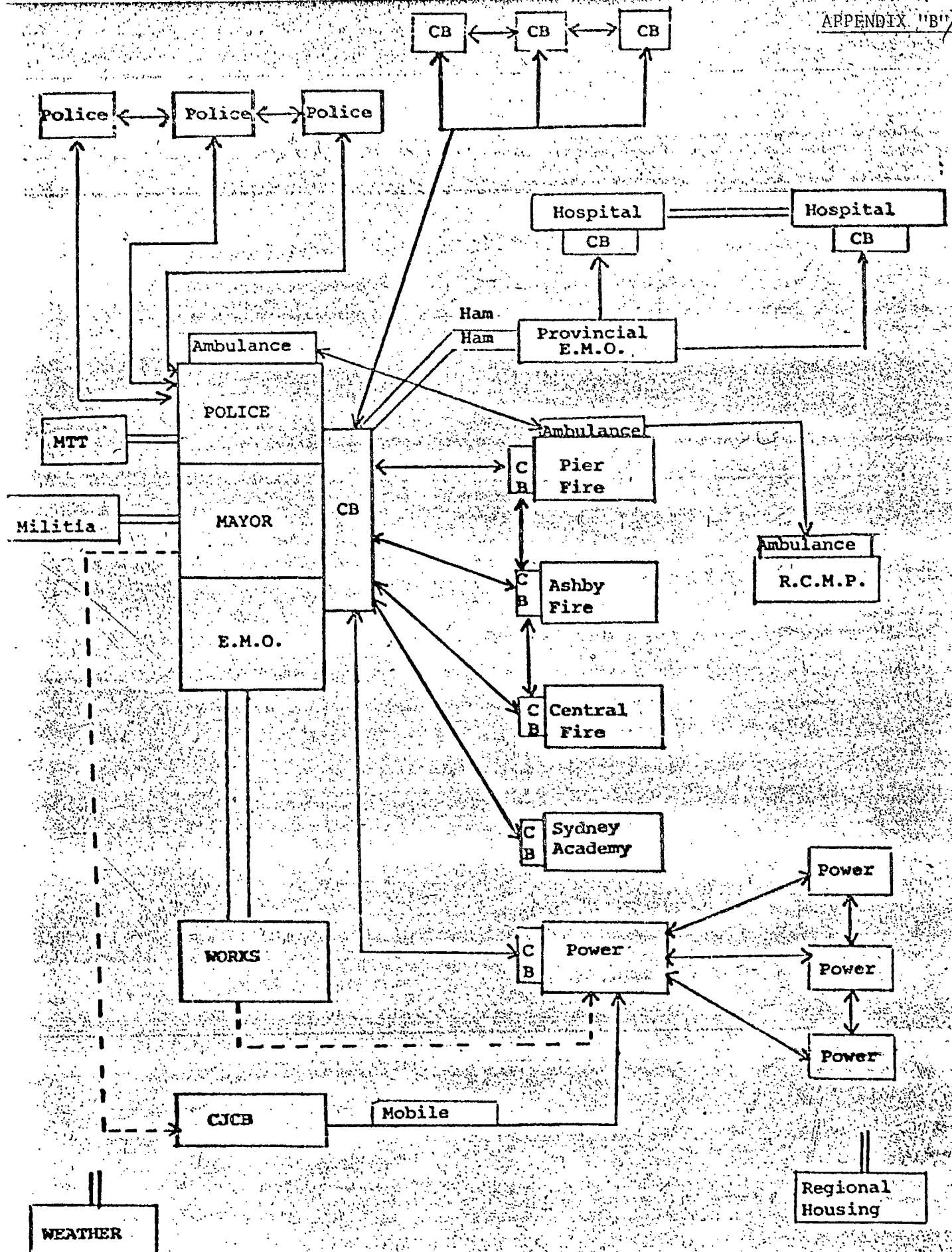
5 P.M.

Storm starting to abate
Still gusts of 64
Close to hurricane force
Barometer rising

Clean-up underway

5 P.M.

Militia sworn in to prevent
looting



2-Way Radio \longleftrightarrow

Formal Telephone \equiv

Word-of-Mouth $- - - - -$

~~Handwritten scribbles and markings, possibly remnants of text or a signature, located in the lower right quadrant of the page.~~